Noise Study Report

I-80/SR 65 Interchange Improvements Project

Placer County, Interstate 80 and State Route 65

03-PLA-80-PM 1.9 to 6.1
03-PLA-65-PM R4.8 to R7.3

EA 03-4E3200

May 2015

Caltrans
CALIFORNIA DEPARTMENT OF TRANSPORTATION

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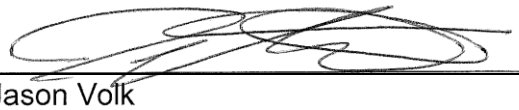
Prepared By:  Date: May 8, 2015

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Summary

The purpose of this Noise Study Report is to evaluate noise impacts and abatement, if necessary, under the requirements of Title 23, Part 772, of the Code of Federal Regulations (CFR), "Procedures for Abatement of Highway Traffic Noise," related to construction and operation of the Interstate-80/State Route 65 Interchange Project.

Provided in 23 CFR 772 are procedures for preparing operational and construction noise studies and evaluating noise abatement considered for federal and federal-aid highway projects. Under 23 CFR 772.7, projects are categorized as Type I, Type II, or Type III projects. Federal Highway Administration (FHWA) defines a Type I project as a proposed federal or federal-aid highway project for the construction of a highway at a new location, the physical alteration of an existing highway that significantly changes either the horizontal or vertical alignment, or an increase in the number of through traffic lanes. A Type II project is a noise barrier retrofit project that involves no changes to highway capacity or alignment. Type III projects are projects that do not meet the classifications of either a Type I or Type II project. Type III projects do not require a noise analysis.

Type I projects include those that create a completely new noise source as well as those that increase the volume or speed of traffic or move the traffic closer to a receptor. Type I projects include those that add an interchange, ramp, auxiliary lane, or truck-climbing lane to an existing highway or widen an existing ramp by a full lane width for its entire length. Projects that are unrelated to increased noise levels, such as striping, lighting, signing, and landscaping projects, are not considered Type I projects. The Interstate-80/State Route 65 Interchange Improvements Project is a Type I project.

A field investigation was conducted to identify land uses that could be subject to traffic and construction noise impacts resulting from the proposed project. Single-family and multi-family residences were identified as Activity Category B land uses in the project area. Outdoor recreational uses, schools, places of worship, parks, and cemeteries were identified as Activity Category C land uses. Outdoor areas associated with hotels were identified as Activity Category E land uses. Several commercial (Activity Category F) and undeveloped (Activity Category G) land uses are not subject to noise impacts.

Traffic noise levels were predicted using the FHWA Traffic Noise Model (TNM), Version 2.5. Existing worst-hour traffic noise levels were found to range from 47 to 77 A-weighted decibels hourly equivalent sound level (dBA Leq[h]).

Under design year build conditions, predicted traffic noise levels were found to range from 49 to 79 dBA Leq(h). Traffic noise levels would approach or exceed the noise abatement criteria for residential use (Activity Category B) at 22 receivers representing 271 dwelling units under all three build alternatives. For all three build alternatives, several Activity Category C land uses would be impacted, including seven parks, two playgrounds (one at a school and one at a place of worship), and an outdoor recreational area. Traffic noise impacts are therefore predicted to occur at these locations under design year build conditions.

Pursuant to California Department of Transportation (Caltrans) and FHWA regulations and guidance, noise abatement must be considered for land uses where traffic noise impacts are predicted to occur. For noise-sensitive receptors where traffic noise levels were predicted to approach or exceed the noise abatement criteria, noise abatement in the form of barriers was considered. Eight noise barriers were evaluated for impacted receivers at Activity Category B and Activity Category C land uses. All eight of the noise barriers evaluated were found to be acoustically feasible, providing at least 5 dB of noise reduction. Six of the eight barriers evaluated were found to meet the design goal of 7 dB of noise reduction.

During construction of the proposed project, noise from construction activities would intermittently dominate the noise environment in the immediate area of construction. Conventional construction equipment is expected to generate maximum noise levels ranging from 75 to 96 decibels (dB) at a distance of 50 feet. Noise from pile-driving would generate maximum noise levels of approximately 101 dB at a distance of 50 feet. Noise produced by construction equipment would diminish over distance at a rate of about 6 dB per doubling of distance. No adverse noise impacts from construction are anticipated because construction would be conducted in accordance with Caltrans' provisions in Section 14-8.02, "Noise Control," of the *Caltrans Standard Specifications* and applicable local noise standards. Furthermore, implementing the measures specified in Chapter 8 of this report would minimize temporary noise impacts from construction.

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List of Abbreviated Terms

Caltrans	California Department of Transportation
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CNEL	Community Noise Equivalent Level
dB	decibel
dBA	A-weighted decibels
dBA Leq[h]	A-weighted decibels hourly equivalent sound level
EN Line	eastbound to northbound connector ramp
FHWA	Federal Highway Administration
HOV	high-occupancy vehicle
Hz	Hertz
I-	Interstate
K-factors	calibration factors
kHz	kilohertz
Ldn	Day-Night Level
Leq	Equivalent Sound Level
Leq (h)	hourly equivalent sound level
Lmax	Maximum Sound Level
Lxx	Percentile-Exceeded Sound Level
mPa	micro-Pascals
mph	miles per hour
MTP	Metropolitan Transportation Plan
NAC	noise abatement criteria
NEPA	National Environmental Policy Act
NSR	noise study report
PCTPA	Placer County Transportation Planning Agency
Protocol	*Traffic Noise Analysis Protocol for New Highway Construction, Reconstruction, and Retrofit Barrier Projects*
RTP	Regional Transportation Plan
SACOG	Sacramento Area Council of Governments
SCS	Sustainable Communities Strategy
SE Line	southbound to eastbound connector ramp
SPL	sound pressure level
SR	State Route
SW Line	southbound to westbound connector ramp
TeNS	Technical Noise Supplement
TNM	Traffic Noise Model
vphpl	vehicles per hour per lane
WN Line	westbound to northbound connector ramp

Chapter 1. Introduction

1.1. Purpose of the Noise Study Report

The California Department of Transportation (Caltrans), in cooperation with the Placer County Transportation Planning Agency (PCTPA), Placer County, and the Cities of Roseville, Rocklin, and Lincoln, proposes to improve the Interstate 80 (I-80)/ State Route (SR) 65/ interchange in Placer County, California, to reduce future traffic congestion, improve operations and safety, and comply with current Caltrans and local agency design standards.

The purpose of this Noise Study Report (NSR) is to evaluate noise impacts and abatement, if necessary, under the requirements of Title 23, Part 772, of the Code of Federal Regulations (CFR), "Procedures for Abatement of Highway Traffic Noise," related to construction and operation of the I-80/SR 65 Interchange Project. Specifically, 23 CFR 772 provides procedures for preparing operational and construction noise studies and evaluating noise abatement considered for federal and federal-aid highway projects. According to 23 CFR 772.3, all highway projects that are developed in conformance with this regulation are deemed to be in conformance with Federal Highway Administration (FHWA) noise standards.

Caltrans' *Traffic Noise Analysis Protocol for New Highway Construction, Reconstruction, and Retrofit Barrier Projects* (Protocol), dated May 2011, provides Caltrans policy for implementing 23 CFR 772 in California. The Protocol outlines the requirements for preparing NSRs.

1.2. Project Purpose and Need

The project proposes to improve the I-80/SR 65 interchange in Placer County, California, to reduce future traffic congestion, improve operations and safety, and comply with current Caltrans and local agency design standards.

Project termini (i.e., limits) for the project were developed through an iterative process involving engineering design and traffic operations analysis. Preliminary design concepts were tested with the traffic operations analysis model to evaluate how lane transitions and vehicle weaving influenced peak-hour conditions. Refinements were made to ensure that mainline lane balance was logical and that transitions did not cause unacceptable traffic operations such as extensive queuing or reduced speeds.

The purpose and objectives of the project are listed below.

- Upgrade the I-80/SR 65 interchange and adjacent transportation facilities to reduce no-build traffic congestion.
- Upgrade the I-80/SR 65 interchange and adjacent transportation facilities to comply with current Caltrans and local agency design standards for safer and more efficient traffic operations while maintaining and, where feasible, improving the current level of community access at a minimum.
- Consider all travel modes and users in developing project alternatives.

The project is needed for the following reasons.

- Recurring morning and evening peak-period demand exceeds the current design capacity of the I-80/SR 65 interchange and adjacent transportation facilities, creating traffic operations and safety issues. These issues result in high delays, wasted fuel, and excessive air pollution and greenhouse gas emissions, all of which will be exacerbated by traffic from future population and employment growth.
- Interchange design features do not comply with current Caltrans design standards for safe and efficient traffic operations and limit existing community access to nearby land uses.
- Travel choices are limited in the project area because the transportation network does not include facilities for all modes and users consistent with the complete streets policies of Caltrans and local agencies.

Chapter 2. Project Description

The project is subject to state and federal environmental review requirements because the use of federal funds from the Federal Highway Administration is proposed. Accordingly, project documentation is being prepared in compliance with both the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA). Caltrans is the lead agency under NEPA and CEQA. This project is included in the Placer County 2035 Regional Transportation Plan (RTP) and the Sacramento Area Council of Governments (SACOG) 2035 Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS). Phase 1 of the project is programmed.

2.1. Location

The proposed project is located in Placer County in the cities of Roseville and Rocklin at the I-80/ SR 65 interchange (Figure 2-1). The project limits consist of I-80 from the Douglas Boulevard interchange to the Rocklin Road interchange (post miles 1.9–6.1) and SR 65 from the I-80 separation to the Pleasant Grove Boulevard interchange (post miles R4.8–R7.3). The total length of the project is 2.5 miles along SR 65 and 4.2 miles along I-80. The project area also includes various local roads—specifically portions of Galleria Boulevard/Stanford Ranch Road, Pleasant Grove Boulevard, Eureka Road/Atlantic Street, East Roseville Parkway, Rocklin Road, and Taylor Road.

2.2. Project Alternatives

The existing I-80/SR 65 interchange is a type F-6 freeway-to-freeway interchange. The purpose of the project is to reduce future traffic congestion, improve operations and safety, and comply with current Caltrans and local agency design standards. See figures 2-2 through 2-4 for a depiction of each build alternative and the limits of proposed improvements.

The following build alternatives are under consideration and were designed to satisfy the purpose and need identified previously while avoiding or minimizing environmental impacts.

- Alternative 1—Taylor Road Full Access Interchange
- Alternative 2—Collector–Distributor System Ramps
- Alternative 3—Taylor Road Interchange Eliminated

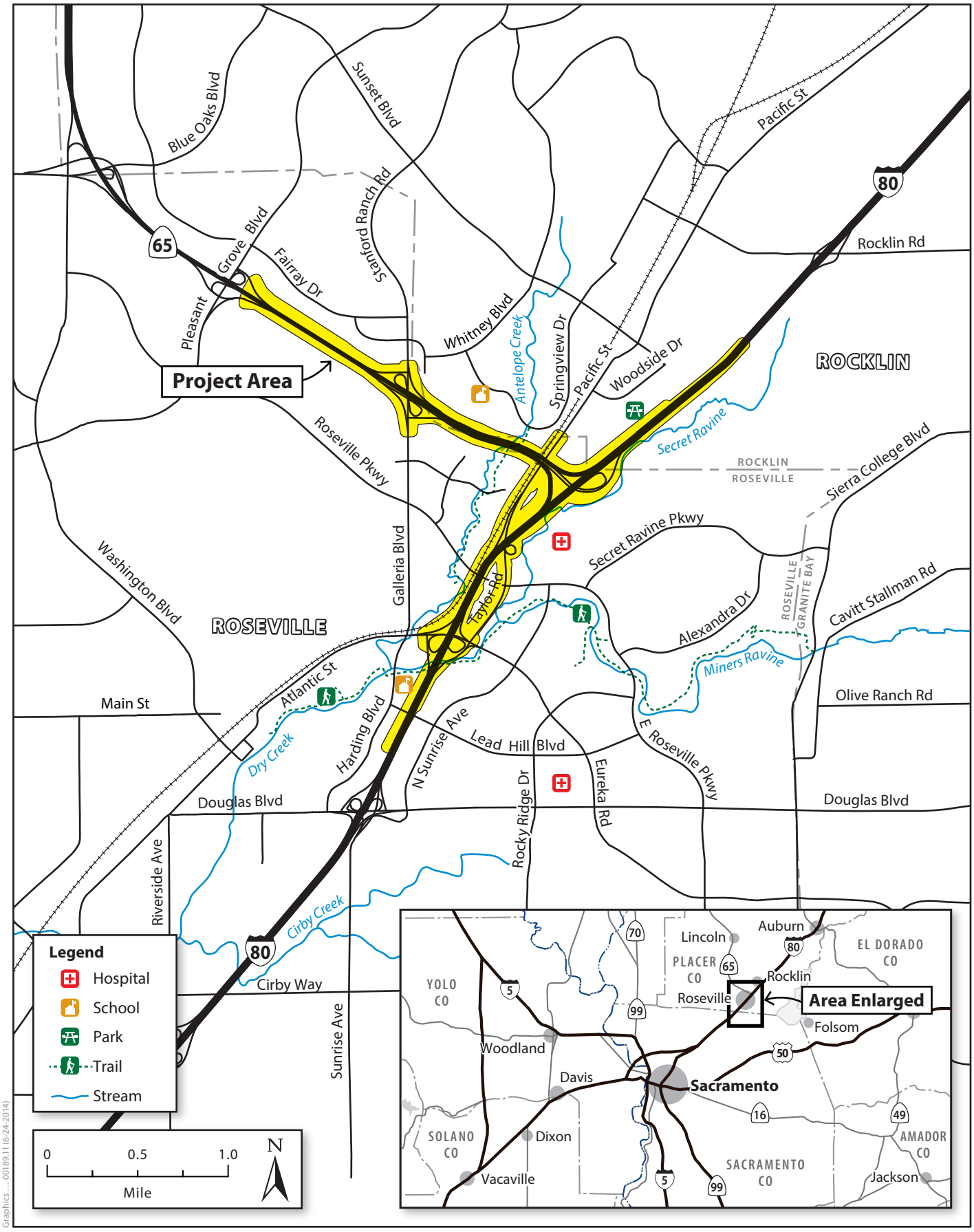
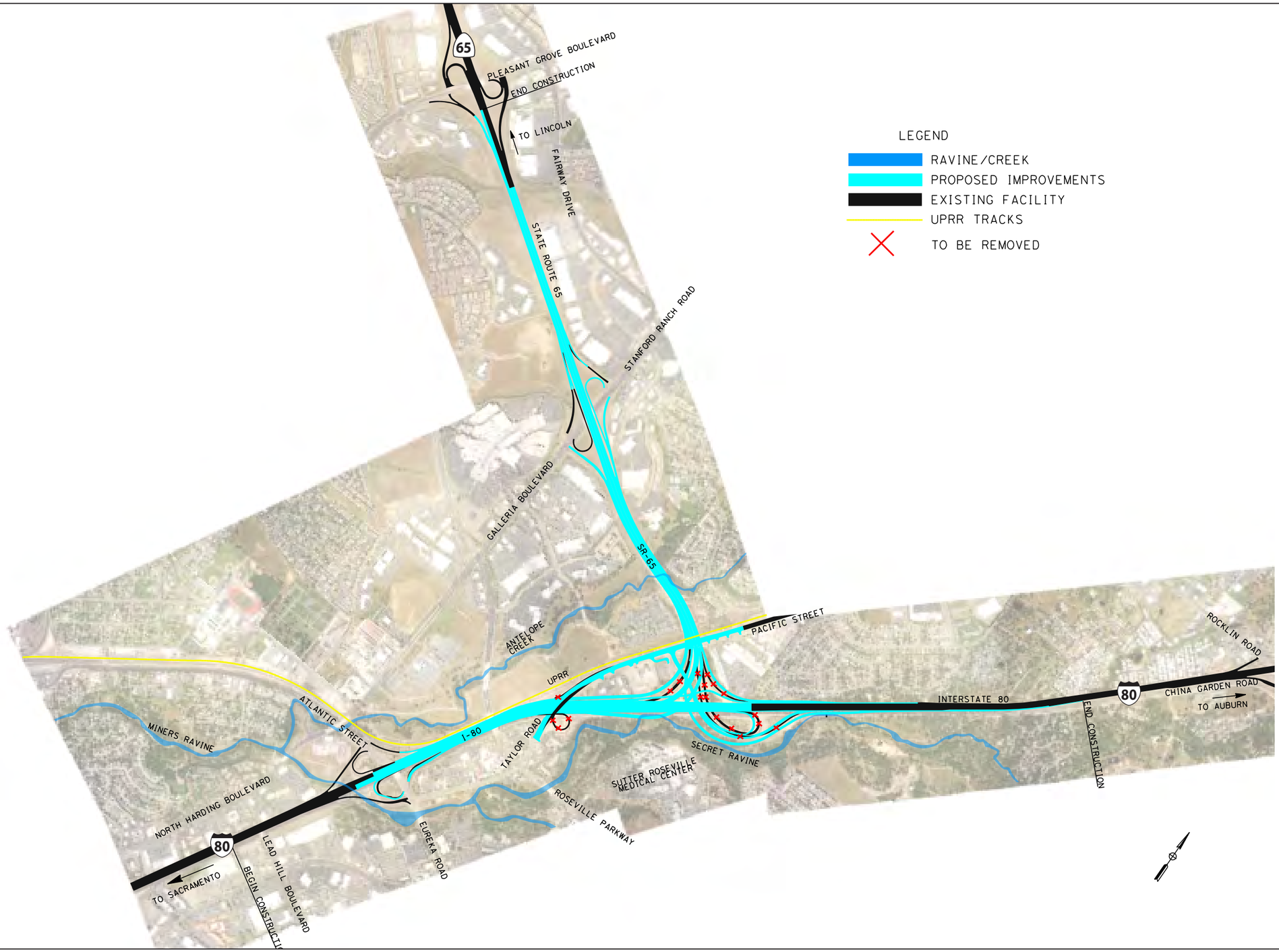


Figure 2-1
Project Location



Source: CH2MHill 2014.

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Figure 2-2
Alternative 1—Taylor Road Full Access Interchange

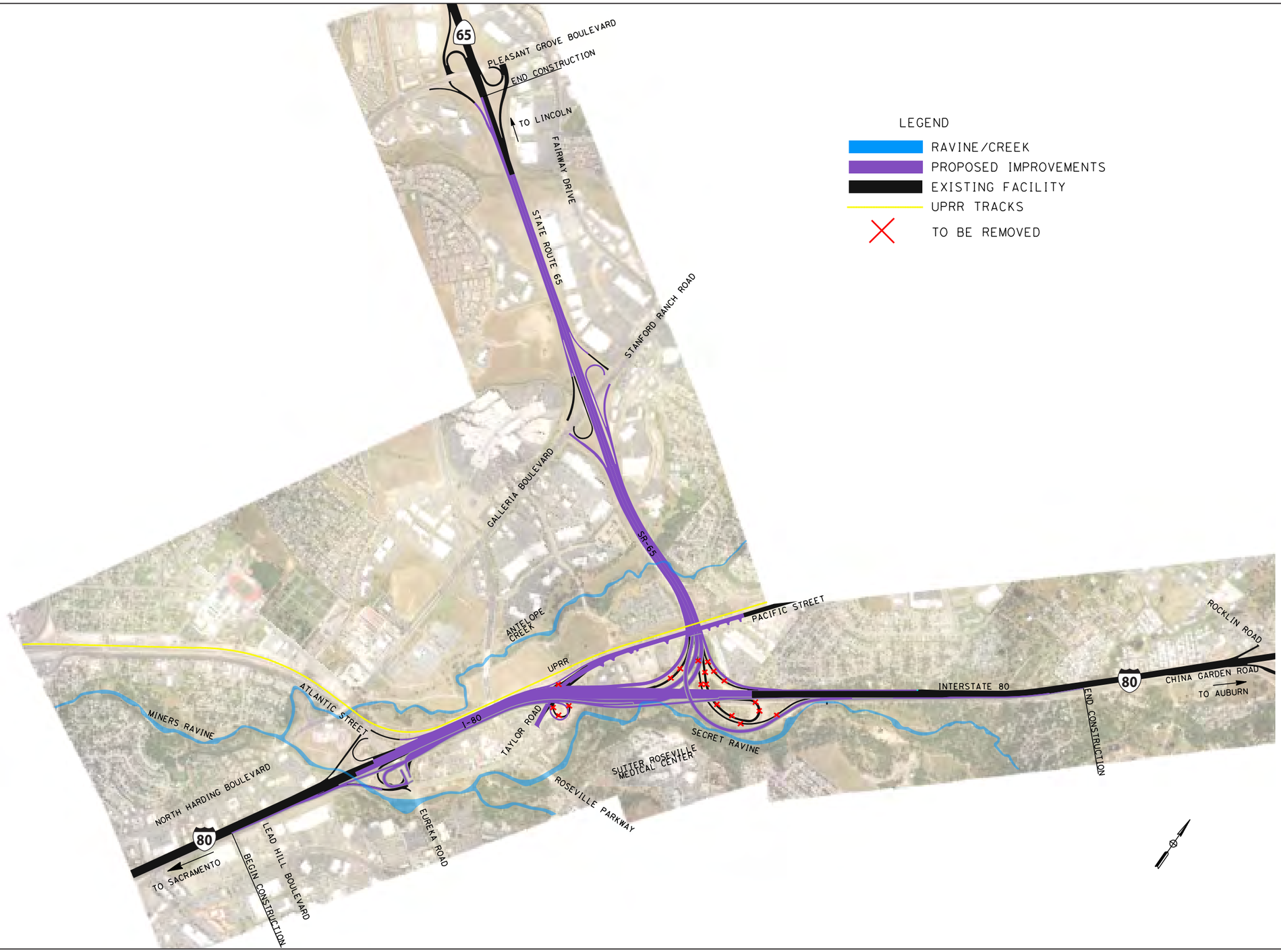

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Figure 2-3
Alternative 2—Collector-Distributor System Ramps

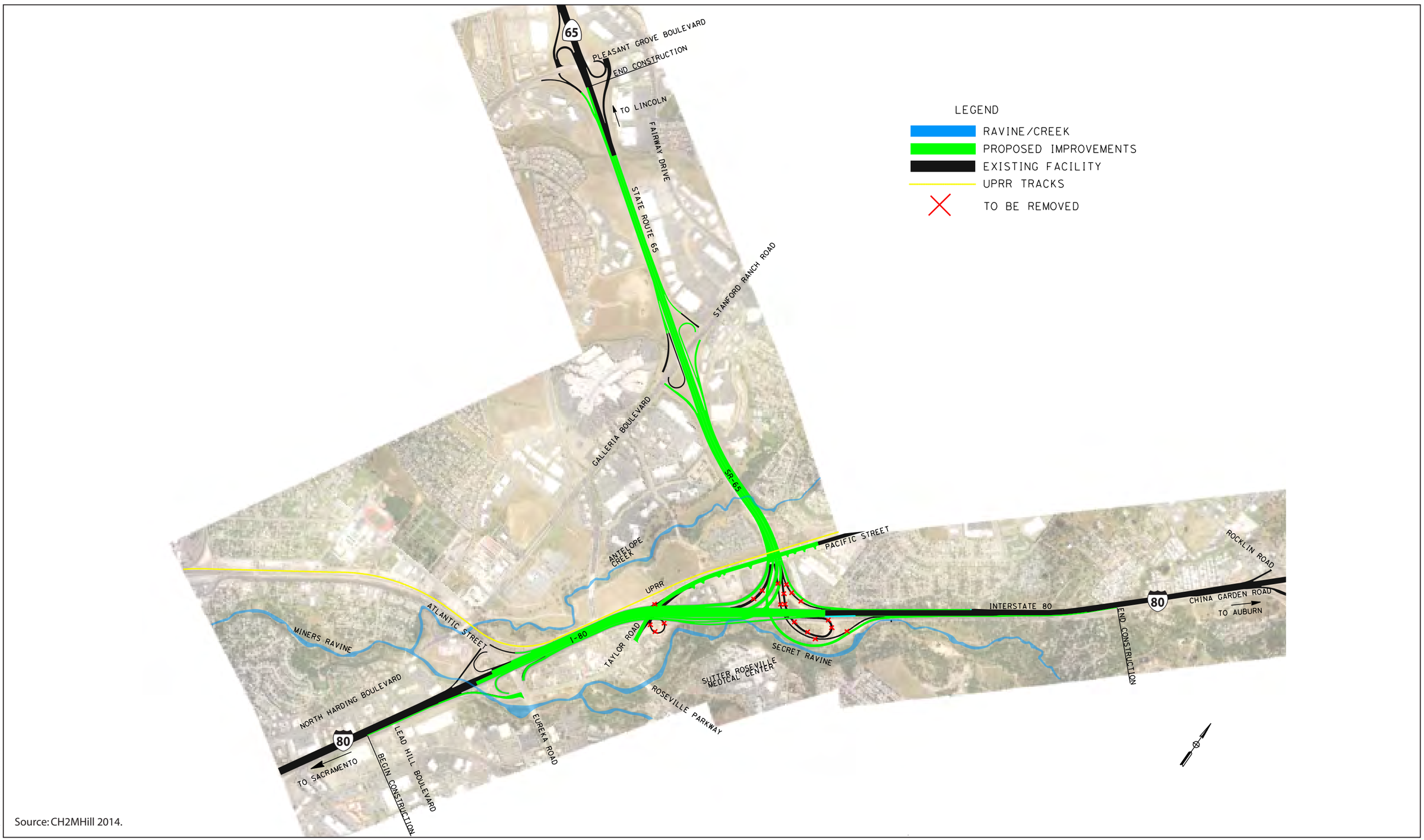

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Figure 2-4
Alternative 3—Taylor Road Interchange Eliminated

Alternatives 1, 2, and 3 propose to add capacity, a bidirectional high-occupancy vehicle (HOV) system, and high-speed connector ramps. Local and regional circulation and access would be improved, as would weaving conditions along I-80 between Eureka Road/Atlantic Street and Taylor Road and along SR 65 between the I-80/SR 65 interchange and Galleria Boulevard/ Stanford Ranch Road. Other improvements would include widening the East Roseville Viaduct, replacing the Taylor Road overcrossing, and realigning the existing eastbound I-80 to northbound SR 65 loop connector.

The build alternatives include common design features and have similar phasing approaches, staging, storage, and site access. Common design features of the build alternatives are listed below. For alignment and other improvement features that differ between alternative, see the individual alternative descriptions.

- I-80 would be widened to add one or two mixed-flow lanes and one or two auxiliary lanes in each direction of travel, depending on the location within the project limits. A retaining wall would be constructed in the eastbound direction between the Eureka Road interchange and the Roseville Parkway overcrossing. A tie-back wall would be constructed in the eastbound direction under the Roseville Parkway overcrossing.

- SR 65 would be widened to include one HOV lane, one additional mixed-flow lane, and one or two auxiliary lanes in each direction of travel, depending on the location within the project limits. Widening along SR 65 would occur on both the inside and outside of the existing pavement, in both the northbound and southbound directions. The median would be fully paved and include a concrete barrier. An additional concrete barrier would be added in the northbound direction between the HOV and general purpose lanes to prevent weaving between I-80 and the Galleria Boulevard/Stanford Ranch Road interchange. In the southbound direction, a 4-foot-wide pavement delineation soft barrier would separate the HOV and general purpose lanes to prohibit weaving between the Galleria Boulevard/Stanford Ranch Road on-ramp and the HOV direct connector ramp.

- The SR 65 mainline widening would require reconstruction of the ramp connections for all of the Galleria Boulevard/Stanford Ranch Road interchange ramps. The northbound Stanford Ranch Road slip off-ramp would be widened to two lanes to accommodate a future project at the ramp terminus. A retaining wall would be required along northbound SR 65 under the Galleria Boulevard/Stanford Ranch Road overcrossing to accommodate the northbound Galleria Boulevard loop off-ramp improvements. The southbound Galleria Boulevard/Stanford Ranch Road on-ramp would be reconstructed to a two-lane ramp plus HOV preferential lane. The southbound Pleasant Grove Boulevard on-ramp would also be

adjusted to accommodate the mainline widening. The existing wetland near the Pleasant Grove Boulevard on-ramp would not be affected and would be protected as an environmentally sensitive area during construction. The widening along SR 65 would occur within the existing right-of-way.

- The East Roseville Viaduct would be widened in the northbound and southbound directions, spanning Antelope Creek, Union Pacific Railroad tracks, and Taylor Road. The existing parallel structures would be widened on both sides and would require additional columns to support the widened structures. The additional columns would be placed parallel to the existing columns along the entire length of the viaduct. The viaduct widening in the northbound direction would shift the edge of deck approximately 33 feet closer to the Hearthstone apartment complex, and the widening in the southbound direction would shift the edge of deck approximately 10 feet closer to the Preserve at Creekside apartment complex.

- The existing eastbound I-80 to northbound SR 65 loop connector would be removed and replaced with a high-speed three-lane flyover. The existing eastbound to northbound and southbound to eastbound connector structures over I-80 would be removed and replaced, including existing piers and abutments. Approach roadways would be removed and re-graded.

- One lane of capacity would be added to each connector ramp by realigning the existing ramps. The westbound to northbound connector ramp (WN Line) would be constructed on fill with a retaining wall along a portion of the outside shoulder, while the southbound to eastbound (SE Line) and eastbound to northbound (EN Line) connector ramps would consist of a combination of fill, retaining walls, and structures. Impacts on the Secret Ravine floodway and/or floodplain would vary by alternative. The southbound to westbound connector ramp (SW Line) would vary slightly with each alternative.

- A direct connecting HOV ramp would be added to serve eastbound I-80 to northbound SR 65 and southbound SR 65 to westbound I-80. The HOV connector would be located in the I-80 median and retained by mechanically stabilized earth walls before transitioning to a structure over westbound I-80 and other local and/or connector ramps. The HOV connector would transition back to fill with a cast-in-place retaining wall along the shoulder before conforming to the East Roseville Viaduct. The HOV connector design would be the same across all three build alternatives.

- The existing I-80/Taylor Road ramp connections (eastbound off-ramp and westbound on-ramp) would be modified. The existing access from I-80 to the eastbound Taylor Road off-ramp would be removed and either relocated or reconfigured depending on the alternative.

- Taylor Road, within the project limits, would be improved, including replacement of the Taylor Road overcrossing. The structure would be replaced to accommodate the I-80 widening with a profile correction until conforming to the existing road grade. The facility would be widened to accommodate anticipated traffic volumes, but the number of lanes would vary by alternative. Curb, gutter, sidewalk, and driveway modifications would be constructed along the south side of Taylor Road to conform to the roadway widening.

- Other ramps and intersections of the I-80/Eureka Road/Atlantic Street interchange, SR 65/ Galleria Boulevard/Stanford Ranch Road interchange, and the SR 65/Pleasant Grove Boulevard interchange would be improved.

- Although all three build alternatives do not directly affect the Stone House on APN 015-162-007, the entire parcel may be acquired due to the percentage of the parcel that would be affected. Additionally, the build alternatives would affect the Cattlemen's Steakhouse parking lot. The area of impact varies by alternative.

- Transportation system management features would be incorporated into the build alternatives, including, ramp widening for storage or HOV bypass lanes, and auxiliary lanes.

2.2.1. Alternative 1—Taylor Road Full Access Interchange

This alternative would improve spacing and weaving movements between interchanges on I-80. The two existing Taylor Road interchange ramps would be relocated to the east and reconstructed in a Type L-1/L-12 interchange configuration, providing two additional ramp connections and improving access between the local streets and freeway system. The interchange would be positioned within the I-80/SR 65 interchange footprint and use portions of the existing eastbound I-80 to northbound SR 65 loop connector as well as the existing southbound SR 65 to eastbound I-80 connector. The existing Taylor Road interchange ramps would be removed and the area would be re-graded.

2.2.2. Alternative 2—Collector-Distributor System Ramps

This alternative would improve spacing and weaving movements between interchanges on I-80 by collecting and redirecting eastbound ramp traffic onto a collector-distributor ramp system. The collector-distributor system would provide eastbound access to Taylor Road and from Eureka Road at the Atlantic Street/Eureka Road interchange and would restrict local traffic from leaving or entering I-80 mainline until after the critical weave area between Eureka Road and the

I-80/SR 65 interchange. The two existing Taylor Road interchange ramps would remain in their current location but would be reconfigured to accommodate the surrounding improvements.

The proposed eastbound widening and retaining wall between the Eureka Road interchange and the Roseville Parkway overcrossing would require relocation of a 220 kV PG&E overhead transmission tower, the lines of which cross I-80 just south of Roseville Parkway. Alternative 2's eastbound lanes and retaining wall would impact the billboard located in the Golfland Sunsplash parking lot. The relocation of the steel tower and the billboard would require the Golfland Sunsplash parking lot to be reconfigured.

2.2.3. Alternative 3—Taylor Road Interchange Eliminated

Similar to Alternative 2, this alternative would improve spacing and weaving movements between interchanges on I-80 by collecting eastbound Eureka Road on-ramp traffic. Weaving on I-80 would be significantly improved because ramp traffic would be redirected to a ramp braid system and restricted from entering and exiting I-80 mainline until after the critical weave area between Eureka Road and the I-80/SR 65 interchange. Unique to Alternative 3, the two existing Taylor Road interchange ramps would be eliminated, and access to the Taylor Road area would be accommodated by the adjacent local interchanges at the Atlantic Street/Eureka Road, Rocklin Road, and Galleria Boulevard/Stanford Ranch Road interchanges. The connector ramps serving I-80 and SR 65 (SW, EN, SE, WN, and HOV) are the same between Alternatives 2 and 3.

The proposed eastbound widening and retaining wall between the Eureka Road interchange and the Roseville Parkway overcrossing would require relocation of a 220 kV PG&E overhead transmission tower, the lines of which cross I-80 just south of Roseville Parkway. Alternative 3 would also impact the billboard located in the Golfland Sunsplash parking lot. The relocation of the steel tower and the billboard would require the Golfland Sunsplash parking lot to be reconfigured.

2.2.4. No-Build Alternative (No-Project)

This alternative would not make any improvements to the I-80/SR 65 interchange or adjacent transportation facilities to satisfy the purpose and need identified above. HOV and auxiliary lanes proposed on SR 65 north of Galleria Boulevard/Stanford Ranch Road, and other local improvements separately proposed and identified in the Metropolitan Transportation Plan, would be implemented according to their proposed schedules.

Chapter 3. Fundamentals of Traffic Noise

The following is a brief discussion of fundamental traffic noise concepts. For a detailed discussion, please refer to the Caltrans *Technical Noise Supplement* (TeNS) (Caltrans 2013), a technical supplement to the Protocol, which is available on the Caltrans web site (<http://www.dot.ca.gov/hq/env/noise/pub/TeNS_Sept_2013B.pdf>).

3.1. Sound, Noise, and Acoustics

Sound can be described as the mechanical energy of a vibrating object transmitted by pressure waves through a liquid or gaseous medium (e.g., air) to a hearing organ, such as a human ear. *Noise* is defined as loud, unexpected, or annoying sound.

In the science of acoustics, the fundamental model consists of a sound (or noise) source, a receptor, and the propagation path between the two. The loudness of the noise source and obstructions or atmospheric factors affecting the propagation path to the receptor determine the sound level and characteristics of the noise perceived by the receptor. The field of acoustics deals primarily with the propagation and control of sound.

3.2. Frequency

Continuous sound can be described by frequency (pitch) and amplitude (loudness). A low-frequency sound is perceived as low in pitch. Frequency is expressed in terms of cycles per second, or Hertz (Hz) (e.g., a frequency of 250 cycles per second is referred to as 250 Hz). High frequencies are sometimes more conveniently expressed in kilohertz (kHz), or thousands of Hertz. The audible frequency range for humans is generally between 20 Hz and 20,000 Hz.

3.3. Sound Pressure Levels and Decibels

The amplitude of pressure waves generated by a sound source determines the loudness of that source. Sound pressure amplitude is measured in micro-Pascals (μPa). One μPa is approximately one hundred billionth (0.00000000001) of normal atmospheric pressure. Sound pressure amplitudes for different kinds of noise environments can range from less than 100 to 100,000,000 μPa. Because of this huge range of values, sound is rarely expressed in terms of μPa. Instead, a logarithmic scale is used to describe sound pressure level (SPL) in terms of decibels (dB). The threshold of hearing for young people is about 0 dB, which corresponds to 20 μPa.

3.4. Addition of Decibels

Because decibels are logarithmic units, SPLs cannot be added or subtracted through ordinary arithmetic. Under the decibel scale, a doubling of sound energy corresponds to a 3-dB increase. In other words, when two identical sources are each producing sound of the same loudness, the resulting sound level at a given distance would be 3 dB higher than one source under the same conditions. For example, if one automobile produces an SPL of 70 dB when it passes an observer, two cars passing simultaneously would not produce an SPL of 140 dB—rather, they would combine to produce an SPL of 73 dB. Under the decibel scale, three sources of equal loudness together produce a sound level 5 dB louder than one source.

3.5. A-Weighted Decibels

The decibel scale alone does not adequately characterize how humans perceive noise. The dominant frequencies of a sound substantially affect the human response to that sound. Although the intensity (energy per unit area) of the sound is a purely physical quantity, the loudness or human response is determined by the characteristics of the human ear.

Human hearing is limited in the range of audible frequencies as well as in the way it perceives the SPL in that range. In general, people are most sensitive to the frequency range of 1,000–8,000 Hz and perceive sounds within that range better than sounds of the same amplitude in higher or lower frequencies. To approximate the response of the human ear, sound levels of individual frequency bands are weighted, depending on the human sensitivity to those frequencies. Then, an A-weighted sound level (expressed in units of dBA [A-weighted decibels]) can be computed based on this information.

The A-weighting network approximates the frequency response of the average young ear when listening to most ordinary sounds. When people make judgments regarding the relative loudness or annoyance of a sound, their judgments correlate well with the A-scale sound levels of those sounds. Other weighting networks have been devised to address high noise levels or other special problems (e.g., B, C, and D scales), but these scales are rarely used in conjunction with highway traffic noise. Noise levels for traffic noise reports are typically reported in terms of dBA. Table 3-1 describes typical A-weighted noise levels for various noise sources.

Table 3-1. Typical A-Weighted Noise Levels

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	— 110 —	Rock band
Jet fly-over at 1,000 feet		
	— 100 —	
Gas lawnmower at 3 feet		
	— 90 —	
Diesel truck at 50 feet at 50 mph		Food blender at 3 feet
	— 80 —	Garbage disposal at 3 feet
Noisy urban area, daytime		
Gas lawnmower at 100 feet	— 70 —	Vacuum cleaner at 10 feet
Commercial area		Normal speech at 3 feet
Heavy traffic at 300 feet	— 60 —	
		Large business office
Quiet urban daytime	— 50 —	Dishwasher (next room)
Quiet urban nighttime	— 40 —	Theater; large conference room (background)
Quiet suburban nighttime		
	— 30 —	Library
Quiet rural nighttime		Bedroom at night; concert
	— 20 —	
		Broadcast/recording studio
	— 10 —	
Lowest threshold of human hearing	— 0 —	Lowest threshold of human hearing

Source: Caltrans 2013.

3.6. Human Response to Changes in Noise Levels

As discussed above, doubling sound energy results in a 3-dB increase in sound. However, given a sound level change measured with precise instrumentation, the subjective human perception of a doubling of loudness will usually be different from what is measured.

Under controlled conditions in an acoustical laboratory, the trained healthy human ear is able to discern 1-dB changes in sound levels when exposed to steady single-frequency (pure-tone) signals in the mid-frequency (1,000–to 8,000-Hz) range. In typical noisy environments, changes in noise of 1 to 2 dB are generally not perceptible. However, it is widely accepted that people are able to begin to detect sound level increases of 3 dB in typical noisy environments. Further, a

5-dB increase is generally perceived as a distinctly noticeable increase, and a 10-dB increase is generally perceived as a doubling of loudness. Therefore, a doubling of sound energy (e.g., doubling the volume of traffic on a highway), which would result in a 3-dB increase in sound, would generally be perceived as barely detectable.

3.7. Noise Descriptors

Noise in our daily environment fluctuates over time. Various noise descriptors have been developed to describe time-varying noise levels. The noise descriptors most commonly used in traffic noise analysis are listed below.

- **Equivalent Sound Level** (Leq): Leq represents an average of the sound energy occurring over a specified period. In effect, Leq is the steady-state sound level containing the same acoustical energy as the time-varying sound that actually occurs during the same period. The 1-hour A-weighted equivalent sound level (Leq[h]) is the energy average of A-weighted sound levels occurring during a 1-hour period, and it is the basis for noise abatement criteria (NAC) used by Caltrans and FHWA.

- **Percentile-Exceeded Sound Level** (Lxx): Lxx represents the sound level exceeded for a given percentage of a specified period (e.g., L10 is the sound level exceeded 10 percent of the time, and L90 is the sound level exceeded 90 percent of the time).

- **Maximum Sound Level** (Lmax): Lmax is the highest instantaneous sound level measured during a specified period.

- **Day-Night Level** (Ldn): Ldn is the energy average of A-weighted sound levels occurring over a 24-hour period, with a 10-dB penalty applied to A-weighted sound levels occurring during nighttime hours between 10 p.m. and 7 a.m.

- **Community Noise Equivalent Level** (CNEL): Similar to Ldn, CNEL is the energy average of the A-weighted sound levels occurring over a 24-hour period, with a 10-dB penalty applied to A-weighted sound levels occurring during the nighttime hours between 10 p.m. and 7 a.m. and a 5-dB penalty applied to the A-weighted sound levels occurring during evening hours between 7 p.m. and 10 p.m.

3.8. Sound Propagation

When sound propagates over a distance, it changes in level and frequency content. The manner in which noise reduces with distance depends on the factors listed below.

3.8.1. Geometric Spreading

Sound from a localized source (i.e., a *point source*) propagates uniformly outward in a spherical pattern. The sound level attenuates (or decreases) at a rate of 6 dB for each doubling of distance from a point source. Highways consist of several localized noise sources on a defined path and, hence, can be treated as a *line source*, which approximates the effect of several point sources. Noise from a line source propagates outward in a cylindrical pattern, often referred to as *cylindrical spreading*. Sound levels attenuate at a rate of 3 dB for each doubling of distance from a line source.

3.8.2. Ground Absorption

The propagation path of noise from a highway to a receptor is usually very close to the ground. Noise attenuation from ground absorption and reflective-wave canceling adds to the attenuation associated with geometric spreading. Traditionally, the excess attenuation has also been expressed in terms of attenuation per doubling of distance. This approximation is usually sufficiently accurate for distances of less than 200 feet. For acoustically hard sites (i.e., sites with a reflective surface between the source and the receptor, such as a parking lot or body of water), no excess ground attenuation is assumed. For acoustically absorptive or soft sites (i.e., soft dirt, grass, or scattered bushes and trees), an excess ground-attenuation value of 1.5 dB per doubling of distance is normally assumed. When added to the cylindrical spreading, the excess ground attenuation results in an overall drop-off rate of 4.5 dB per doubling of distance.

3.8.3. Atmospheric Effects

Receptors located downwind from a source can be exposed to increased noise levels relative to calm conditions, whereas locations upwind can experience lowered noise levels. Sound levels can be increased at large distances from the highway (e.g., more than 500 feet) due to atmospheric temperature inversion (i.e., increasing temperature with elevation). Other factors such as air temperature, humidity, and turbulence also can have significant effects.

3.8.4. Shielding by Natural or Human-Made Features

A large object or barrier in the path between a noise source and a receptor can substantially attenuate noise levels at the receptor. The amount of attenuation provided by shielding depends on the size of the object and the frequency content of the noise source. Natural terrain features (e.g., hills and dense woods) and human-made features (e.g., buildings and walls) can substantially reduce noise levels. Walls are often constructed between a source and a receptor for the specific purpose of noise reduction. A barrier that breaks the line of sight between a source and a receptor typically will result in at least 5 dB of noise reduction. Taller barriers provide increased noise reduction. Vegetation between the highway and receptor is rarely effective in reducing noise because it does not create a solid barrier.

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Chapter 4. Federal Regulations and State Policies

4.1. Federal Regulations

Federal guidelines for assessing traffic noise are contained in 23 CFR 772, "Procedures for Abatement of Highway Traffic Noise and Construction Noise." These regulations constitute the federal noise standard. Projects complying with this standard are also in compliance with the requirements of National Environmental Policy Act (NEPA).

4.1.1. 23 CFR 772

Provided in 23 CFR 772 are procedures for preparing operational and construction noise studies and evaluating noise abatement considered for federal and federal-aid highway projects. Under 23 CFR 772.7, projects are categorized as Type I, Type II, or Type III projects. FHWA defines a Type I project as a proposed federal or federal-aid highway project for the construction of a highway at a new location, the physical alteration of an existing highway that significantly changes either the horizontal or vertical alignment, or an increase in the number of through traffic lanes. A Type II project is a noise barrier retrofit project that involves no changes to highway capacity or alignment. Type III projects are projects that do not meet the classifications of either a Type I or Type II project. Type III projects do not require a noise analysis.

Type I projects include those that create a completely new noise source as well as those that increase the volume or speed of traffic or move the traffic closer to a receptor. Type I projects include those that add an interchange, ramp, auxiliary lane, or truck-climbing lane to an existing highway or widen an existing ramp by a full lane width for its entire length. Projects that are unrelated to increased noise levels, such as striping, lighting, signing, and landscaping projects, are not considered Type I projects. The I-80/SR 65 Interchange Improvements Project is a Type I project.

Under 23 CFR 772.11, noise abatement must be considered for Type I projects if the project is predicted to result in a traffic noise impact. In such cases, 23 CFR 772 requires the project sponsor to consider noise abatement before adoption of the final NEPA document. This process involves identification of noise abatement measures that are reasonable, feasible, and likely to be incorporated into the project as well as noise impacts for which no apparent solution is available.

Traffic noise impacts, as defined in 23 CFR 772.5, occur when the predicted noise level in the design year approaches or exceeds the NAC specified in 23 CFR 772, or a predicted noise level substantially exceeds the existing noise level (a substantial noise increase). However,

23 CFR 772 does not specifically define the terms *approach* or *substantial increase*; these criteria are defined in the Protocol, as described below.

Table 4-1 summarizes the NAC corresponding to various land use activity categories. Activity categories and related traffic noise impacts are determined according to actual land uses in a given area.

Table 4-1. Activity Categories and Noise Abatement Criteria

Activity Category	Noise Abatement Criteria, Hourly A-Weighted Noise Level (dBA Leq[h])[1] (Evaluation Location)	Description of Activities
A	57 (Exterior)	Lands on which serenity and quiet are of extraordinary significance and serve an important public need, and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B[2]	67 (Exterior)	Residential.
C[2]	67 (Exterior)	Active sport areas, amphitheaters, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreation areas, Section 4(f) sites, schools, television studios, trails, and trail crossings.
D	52 (Interior)	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, schools, and television studios.
E	72 (Exterior)	Exterior hotels, motels, offices, restaurants/bars, and other developed lands, properties, or activities not included in A–D or F.
F	N/A	Agriculture, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources, water treatment, electrical), and warehousing.
G	N/A	Undeveloped lands that are not permitted.

[1] The 1-hour A weighted equivalent sound level (Leq[h]) activity criteria values are for impact determination only and are not design standards for noise abatement measures. All values are A-weighted decibels (dBA).

[2] Includes undeveloped lands permitted for this activity category.

N/A – Not applicable. There is no noise abatement criteria for this activity category.

Source: 23 CFR 772.

In identifying noise impacts, primary consideration is given to exterior areas with frequent human use. In situations where there are no exterior activities or where the exterior activities are far from the roadway or physically shielded in a manner that prevents an impact on exterior activities, the interior criterion (Activity Category D) is used as the basis for determining a noise impact.

4.2. State Regulations and Policies

4.2.1. Traffic Noise Analysis Protocol for New Highway Construction and Reconstruction Projects

The Protocol specifies the policies, procedures, and practices to be used by agencies that sponsor new construction or reconstruction of federal or federal-aid highway projects. The NAC specified in the Protocol are the same as those specified in 23 CFR 772. The Protocol defines a noise increase as *substantial* when the predicted noise levels with project implementation exceed existing noise levels by 12 dB. The Protocol also states that a sound level is considered to approach an NAC level when the sound level is within 1 dB of the NAC identified in 23 CFR 772 (e.g., 66 dBA is considered to approach the NAC of 67 dBA but 65 dBA is not).

The TeNS of the Protocol provides detailed technical guidance for the evaluation of highway traffic noise. This includes field measurement methods, noise modeling methods, and report preparation guidance.

4.2.2. Section 216 of the California Streets and Highways Code

Section 216 of the California Streets and Highways Code relates to the noise effects of a proposed freeway project on public and private elementary and secondary schools. Under this code, a noise impact occurs if, as a result of a proposed freeway project, noise levels exceed 52 dBA Leq(h) in the interior of public or private elementary or secondary classrooms, libraries, multi-purpose rooms, or spaces. This requirement does not replace the “approach” or “exceed” NAC criterion for FHWA Activity Category D for classroom interiors, but it is a requirement that must be addressed in addition to the requirements of 23 CFR 772.

If a project results in a noise impact under this code, noise abatement must be provided to reduce classroom noise to a level that is at or below 52 dBA Leq(h). If the noise levels generated from freeway and non-freeway sources exceed 52 dBA Leq(h) prior to construction of the proposed freeway project, noise abatement must be provided to reduce the noise to the level that existed prior to construction of the project.

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Chapter 5. Study Methods and Procedures

5.1. Methods for Identifying Land Uses and Selecting Noise Measurement and Modeling Receptor Locations

A field investigation was conducted to identify land uses that could be subject to traffic and construction noise impacts from the proposed project. Land uses in the project area were categorized by land use type; activity category, as defined in Table 4-1; and the extent of frequent human use. Although all developed land uses are evaluated in this analysis, as stated in the Protocol, the focus of this impact analysis is on locations of frequent human use that would benefit from a lowered noise level, such as locations with defined outdoor activity areas. For this project, the potentially affected noise-sensitive uses with defined outdoor activity areas consist of the backyards of residential land uses. The noise monitoring and modeling locations are shown in Figure 5-1.

Short-term measurement locations were selected to represent frequent outdoor use areas along the project alignment. Additionally, a long-term measurement was conducted to capture the day-night traffic noise level patterns in the project area. Short-term and long-term measurement locations also were used as noise prediction model locations. Additional locations were selected as prediction sites to characterize the noise environment at frequent outdoor use areas along the project alignment.

5.2. Field Measurement Procedures

A field noise study was conducted in accordance with recommended procedures in the TeNS. The following is a summary of the procedures that were used to collect short-term and long-term sound level data.

5.2.1. Short-Term Measurements

Short-term monitoring was conducted at 24 locations along the project alignment from Monday, December 10 to Wednesday December 12, 2012, using a Larson Davis Type 1 (precision grade) sound-level meter. The short-term measurement locations are identified in Figure 5-1. Short-term measurements were attended by field staff to count traffic and record observations concurrent with the measurement. The Leq values collected during each measurement period (15 minutes in duration) were automatically recorded with digital integrating sound-level meters and subsequently logged manually on field data sheets for each measurement location. Dominant noise sources observed and other relevant measurement conditions were identified and logged manually on the field data sheets. The calibration of the meter was checked before and after the measurement, using a Larson-Davis Model CAL 200 calibrator.

Temperature, wind speed, and humidity were recorded manually during the short-term monitoring sessions using a Kestrel 3000 portable weather station. During the short-term measurements, wind speeds typically ranged from 0 to 10 miles per hour (mph). Temperatures ranged from 55°F to 65°F, with relative humidity ranging from 50 to 65 percent.

5.2.2. Long-Term Measurements

Long-term monitoring was conducted at three locations (LT-01 through LT-03) in the project area (Figure 5-1) using Larson-Davis Model 720 Type 2 sound level meters. The purpose of these measurements was to quantify the daily trend in noise levels throughout a 24-hour period and identify the peak traffic noise hour or "loudest" hour. The results of this measurement were used to describe variations in sound levels throughout the day, rather than absolute sound levels at a specific receptor of concern. The long-term sound level data were collected between Monday, December 10 and Wednesday, December 12, 2012. Field notes are included in Appendix D.

5.3. Traffic Noise Levels Prediction Methods

Traffic noise levels were predicted using the FHWA Traffic Noise Model (TNM), Version 2.5. TNM is a computer model based on two FHWA reports: FHWA-PD-96-009 and FHWA-PD-96-010 (FHWA 1998a, 1998b). Key inputs to the traffic noise model were the locations of roadways, shielding features (e.g., topography and buildings), noise barriers, and receptors, and ground type. Three-dimensional representations of these inputs were developed using CAD drawings, aerials, and topographic contours provided by the project engineer.

Traffic data for the project were obtained from the *I-80/SR 65 Interchange Improvements Transportation Analysis Report* prepared by Fehr & Peers (2014). Traffic data used in the model are summarized in Appendix A.

Traffic noise was evaluated under existing conditions, design year (2040) no-build conditions, and design year build conditions. Traffic volumes from the project traffic study during the p.m. peak hour were used to model design year no-build and build traffic volumes for ramps and local streets, as p.m. peak traffic volumes were generally higher than a.m. volumes. A volume of 1,900 vehicles per hour per lane (vphpl) was used to characterize worst-hour noise conditions for the I-80 mainline and the SR 65 mainline.

Legend

- Limit of Disturbance
- Retaining Wall
- Sound Wall
- Long-term monitoring sites
- Short-term monitoring sites

Land Use

- Residential
- School
- Park/Recreational
- Place of Worship
- Cemetery
- Lodging
- Commercial
- Undeveloped

N

0 300 600
Feet

ST-01
ST-02
ST-03

Sheet 1
Sheet 2
Sheet 3
Sheet 4

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Figure 5-1
Noise Monitoring Locations
Sheet 1

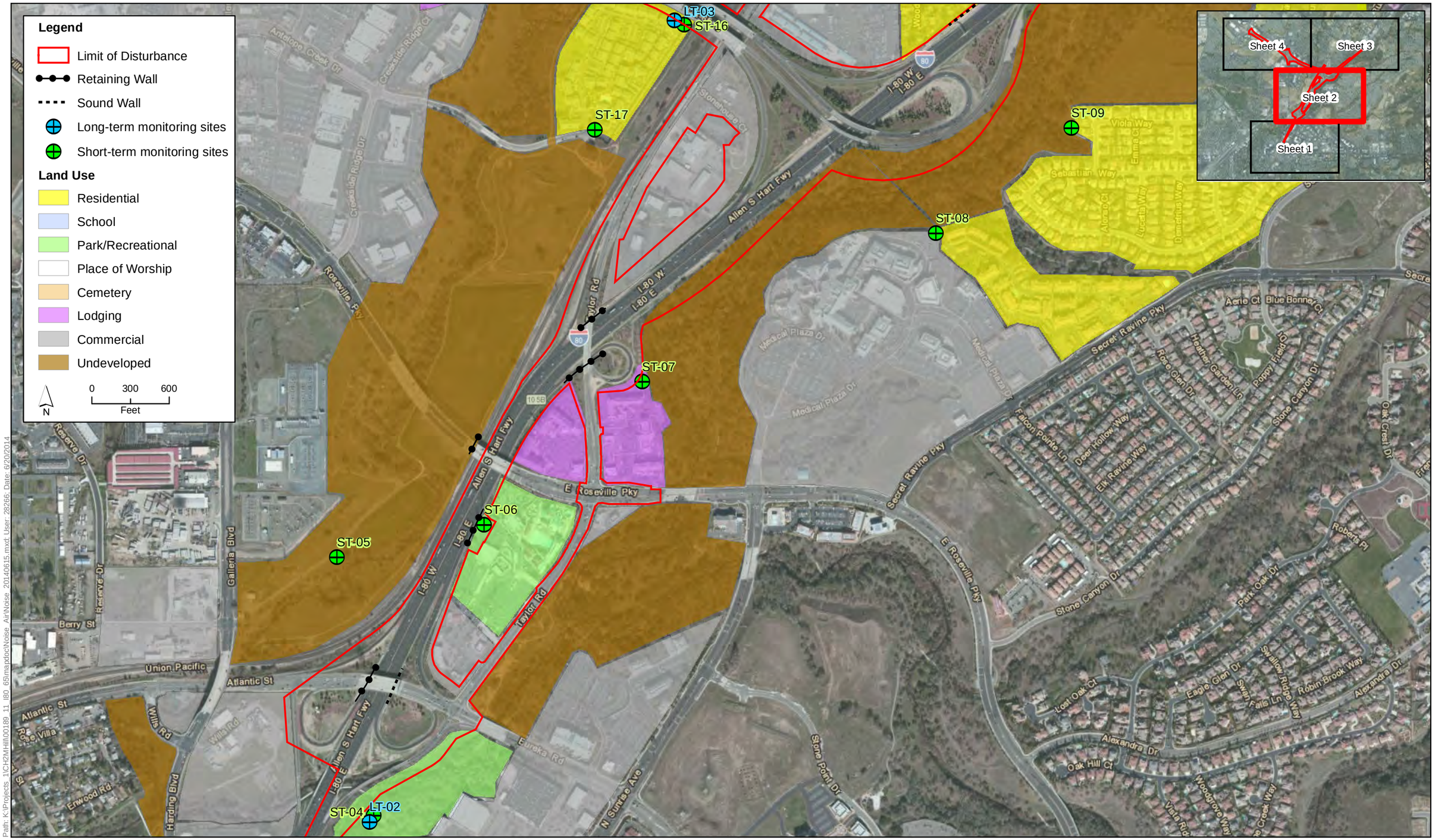

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Figure 5-1
Noise Monitoring Locations
Sheet 2

Legend

- Limit of Disturbance
- Retaining Wall
- Sound Wall
- Long-term monitoring sites
- Short-term monitoring sites

Land Use

- Residential
- School
- Park/Recreational
- Place of Worship
- Cemetery
- Lodging
- Commercial
- Undeveloped

N

0 300 600

Feet

Sheet 4

Sheet 3

Sheet 2

Sheet 1

ST-13

ST-14

ST-15

LT-01

ST-11

ST-10

ST-12

ST-19

ST-18

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Figure 5-1
Noise Monitoring Locations
Sheet 3

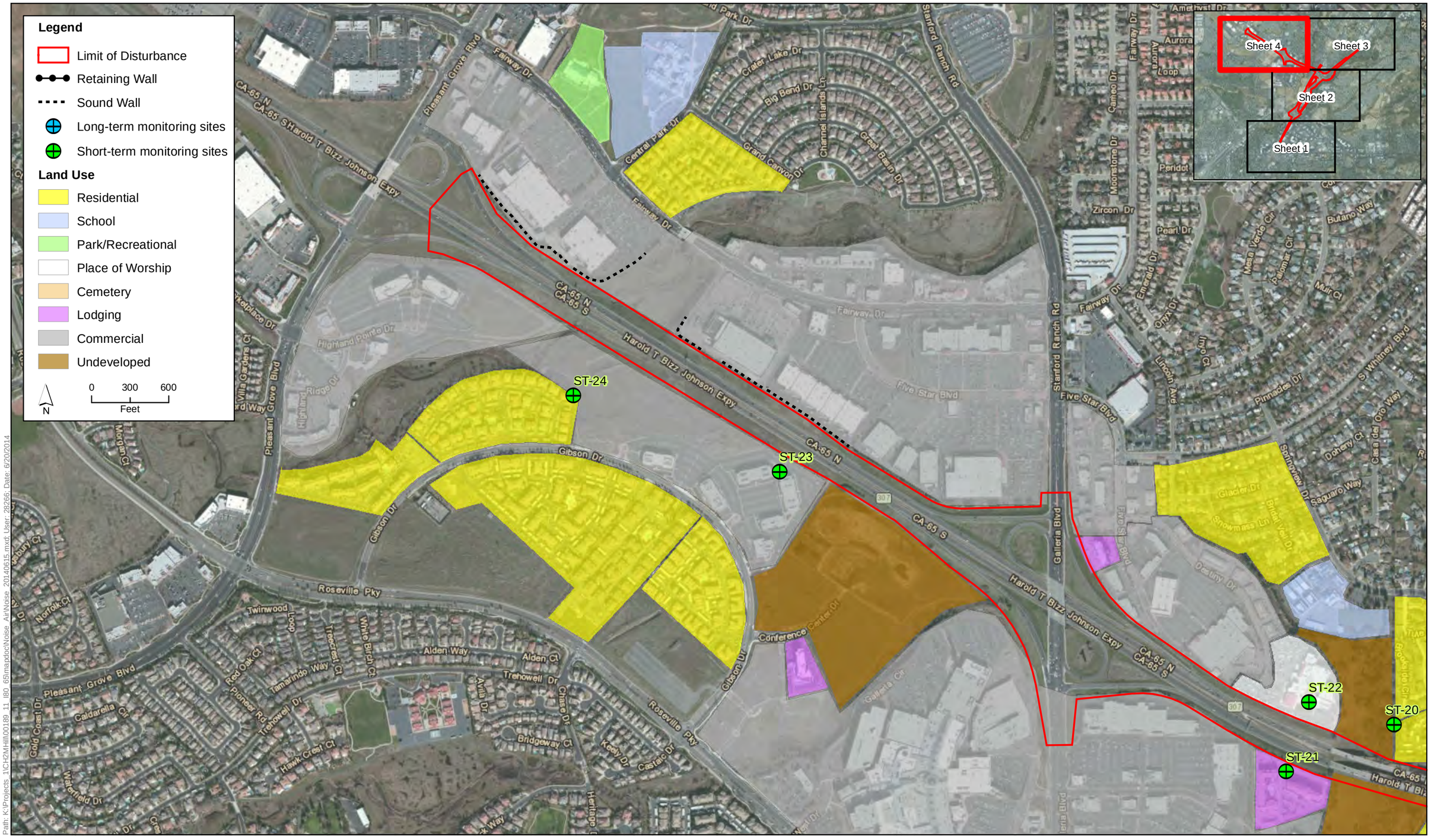

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Figure 5-1
Noise Monitoring Locations
Sheet 4

5.4. Methods for Identifying Traffic Noise Impacts and Consideration of Abatement

Traffic noise impacts occur at receptor locations where predicted design year noise levels approach or exceed the NAC for the applicable activity category, or where substantial noise increases above existing noise levels in the build or no-build condition would occur. Where traffic noise impacts are identified, noise abatement must be considered for reasonableness and feasibility, as required by 23 CFR 772 and the Protocol.

According to the Protocol, abatement measures are considered acoustically feasible if a minimum noise reduction of 5 dB is predicted for at least one impacted receptor with implementation of the abatement measures. Any receptor that is predicted to receive 5 dB or more of noise reduction from an abatement measures is identified as a "benefited" receptor. In addition, barriers should be designed to intercept the line of sight from the exhaust stack of a truck to the first tier of receptors, as stated in the Caltrans *Highway Design Manual*, Chapter 1100 (Caltrans 2012). Other factors that affect feasibility include topography, access requirements for driveways and ramps, the presence of local cross streets, utility conflicts, other noise sources in the area, and safety considerations. The overall reasonableness of noise abatement is determined by three factors.

- the noise reduction design goal,
- the cost of noise abatement, and
- the viewpoints of benefited receptors (including property owners and residents of the benefited receptors).

To meet the noise reduction design goal, a barrier must provide at least 7 dB of noise reduction at one or more benefited receptors. This design goal applies to any receptor and is not limited to impacted receptors.

The Protocol defines the procedure for assessing reasonableness of noise barriers from a cost perspective. A cost-per-residence allowance is calculated for each benefited residence (i.e., residences that receive at least 5 dB of noise reduction from a noise barrier that provides 7 dB for at least one receptor). The allowance currently is $64,000 per benefited residence. Total allowances are calculated by multiplying the cost per residence by the number of benefited residences.

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Chapter 6. Existing Noise Environment

6.1. Existing Land Uses

A field investigation was conducted to identify land uses that could be subject to traffic and construction noise impacts resulting from the proposed project. Single-family and multi-family residences were identified as Activity Category B land uses in the project area. Outdoor recreational uses, schools, places of worship, parks, and cemeteries were identified as Activity Category C land uses. Outdoor areas associated with hotels were identified as Activity Category E land uses. Several commercial (Activity Category F) and undeveloped (Activity Category G) land uses are not subject to noise impacts, as discussed in Chapter 4.

Although all land uses were evaluated in this analysis, as required by the Protocol, noise abatement was considered only for areas of frequent human use that would benefit from a lower noise level. Accordingly, the impact analysis focuses on locations with defined outdoor activity areas, such as residential backyards and common use areas at multi-family residences. Land uses are indicated by shaded polygons in Figure 5-1.

The study area was divided into three subareas, as described below.

East of I-80: Much of the study area east of I-80 consists of commercial use, undeveloped, open space, and park use. Two hotels with outdoor swimming pools (Activity Category E) are located near the Douglas Boulevard interchange. Two hotels are located adjacent to the Taylor Road interchange, one with an outdoor swimming pool and one with an outdoor ball court. Olympus Pointe Sculpture Park and walking trails (Activity Category C) are adjacent to Atlantic Street and Taylor Road. Golfland miniature golf course and Sunsplash water park (Activity Category C) are located adjacent to Roseville Parkway. Sutter Roseville Medical Center includes a ball court (Activity Category C) located near the I-80/SR 65 interchange. The Phoenician apartment complex and two other residential subdivisions (Activity Category B) are set back over 500 feet from I-80. Another residential neighborhood is located on Rustic Hills Drive, near the northern terminus of the project.

Northwest of the I-80/SR 65 interchange: This subarea lies west of I-80 and north of SR 65. The subarea consists primarily of single-family and multi-family residences (Activity Category B) and commercial uses (Activity Category F). Rocklin Mobile Home Park is located near the northern terminus of the project. A cemetery (Activity Category C) is located off Kannasto Road near the northern terminus of the project. Woodside Park (Activity Category C) is located adjacent to I-80 within a large residential neighborhood adjacent to the I-80/SR 65 interchange.

There are a series of existing soundwalls with heights of 12 to 14 feet along the neighborhood frontage to I-80. West of Taylor Road, SR 65 is on an elevated structure, adjacent to several multi-family and apartment housing complexes (Activity Category B), including Hearthstone, Springview Village, Placer West, and Woodstream. Each of these complexes includes common outdoor use areas such as swimming pools and playgrounds. Destiny Christian Church includes a playground (Activity Category C) with a line-of-sight to SR 65. Antelope Creek Elementary School (Activity Category C) is set back over 500 feet from SR 65.

Southwest of the I-80/SR 65 interchange: This subarea lies west of I-80 and south of SR 65. The subarea consists primarily of commercial uses (Activity Category F) and park uses (Activity Category C). The Galleria at Roseville shopping center, offices, and apartments are located west of Galleria Boulevard. The Galleria apartment buildings and condominiums (Activity Category B) are set back over 500 feet from SR 65. There are also several hotels with outdoor swimming pools along both SR 65 and I-80 frontage (Activity Category E). The Preserve at Creekside apartment complex is located adjacent to the East Roseville Viaduct near the I-80/SR 65 interchange. The Antelope Creek bicycle trail (Activity Category C) extends through much of the area. John Adams Academy includes an outdoor playground (Activity Category C) with a line-of-sight to I-80. Several hotels with outdoor swimming pools are located near the Douglas Road interchange, as well as a multi-family residential neighborhood, set back approximately 500 feet from I-80.

6.2. Noise Measurement Results

The existing noise environment is characterized below based on the short- and long-term noise monitoring that was conducted in the interchange project area.

6.2.1. Long-Term Monitoring

Long-term monitoring was conducted at three locations. The purpose of the long-term noise measurement was to determine the changes in noise levels within the project area throughout a typical day. Long-term sound level data were collected from Monday, December 10 to Wednesday, December 12, 2012.

Long-term monitoring site LT-01 (shown in Figure 5-1) was located within Woodside Park off of Westwood Drive in Rocklin. The monitor was attached to a tree near a basketball court. A sound wall with a nominal height of 14 feet extends along the frontage of the park facing I-80. The worst-hour noise level measured was 62.8 dBA Leq(h) during the 7 a.m. hour. Hourly noise levels and offsets between the worst-hour noise and each of the 24 hours of the measurement period are shown in Table 6-1.

Table 6-1. Summary of Long-Term Monitoring at Location LT-01: Woodside Park

Date	Time (hour beginning)	1-Hour Leq (dBA)	Difference from Worst-Hour Noise (dB)
December 10, 2012	13:00:00	60.5	-2.3
	14:00:00	60.7	-2.1
	15:00:00	61.2	-1.6
	16:00:00	61.4	-1.4
	17:00:00	61.8	-1.0
	18:00:00	61.2	-1.6
	19:00:00	60.2	-2.6
	20:00:00	60.4	-2.4
	21:00:00	59.4	-3.4
	22:00:00	57.5	-5.3
	23:00:00	57.7	-5.1
December 11, 2012	0:00:00	56.6	-6.2
	1:00:00	54.4	-8.4
	2:00:00	53.8	-9.0
	3:00:00	55.0	-7.8
	4:00:00	58.1	-4.7
	5:00:00	59.5	-3.3
	6:00:00	61.5	-1.3
	7:00:00	**62.8**	**0.0**
	8:00:00	61.9	-0.9
	9:00:00	61.5	-1.3
	10:00:00	61.5	-1.3
	11:00:00	62.0	-0.8
	12:00:00	62.6	-0.2
Maximum		62.8	
Minimum		53.8	

Note: Worst-hour noise is **bolded**.
dBA Leq[h] = A weighted equivalent sound level; dB = decibels

Long-term monitoring site LT-02 (shown in Figure 5-1) was located within Olympus Pointe Sculpture Park in Roseville. The monitor was attached to a tree within 100 feet of the Cosmos sculpture in the center of the park, facing I-80. The worst-hour noise level measured was 68.2 dBA Leq(h) during the 1 p.m. hour. Hourly noise levels and offsets between the worst-hour noise and each of the 24 hours of the measurement period are shown in Table 6-2.

Table 6-2. Summary of Long-Term Monitoring at Location LT-02: Olympus Pointe Sculpture Park

Date	Time (hour beginning)	1-Hour Leq (dBA)	Difference from Worst-Hour Noise (dB)
December 10, 2012	14:00:00	66.7	-1.5
	15:00:00	67.9	-0.3
	16:00:00	66.6	-1.6
	17:00:00	66.5	-1.7
	18:00:00	67.0	-1.2
	19:00:00	65.2	-3.0
	20:00:00	64.9	-3.3
	21:00:00	65.9	-2.3
	22:00:00	63.3	-4.9
	23:00:00	65.4	-2.8
December 11, 2012	0:00:00	63.3	-4.9
	1:00:00	58.3	-9.9
	2:00:00	58.0	-10.2
	3:00:00	58.6	-9.6
	4:00:00	64.9	-3.3
	5:00:00	64.6	-3.6
	6:00:00	67.3	-0.9
	7:00:00	68.2	0.0
	8:00:00	67.8	-0.4
	9:00:00	68.0	-0.2
	10:00:00	67.0	-1.2
	11:00:00	67.3	-0.9
	12:00:00	67.2	-1.0
	13:00:00	**68.2**	**0.0**
Maximum		68.2	
Minimum		58.0	

Note: Worst-hour noise is **bolded**.

Long-term monitoring site LT-03 (shown in Figure 5-1) was located within The Preserve at the Creekside apartment complex in Roseville. The monitor was attached to a tree approximately 75 feet from the edge of the East Roseville Viaduct. The worst-hour noise level measured was 60.9 dBA Leq(h) during the 1 p.m. hour. Hourly noise levels and offsets between the worst-hour noise and each of the 24 hours of the measurement period are shown in Table 6-3.

Table 6-3. Summary of Long-Term Monitoring at Location LT-3

Date	Time (hour beginning)	1-Hour Leq(dBA)	Difference from Worst-Hour Noise (dB)
December 11, 2012	14:00:00	59.8	-1.1
	15:00:00	59.1	-1.8
	16:00:00	58.7	-2.2
	17:00:00	56.9	-4.0
	18:00:00	58.3	-2.6
	19:00:00	58.3	-2.6
	20:00:00	58.9	-2.0
	21:00:00	57.3	-3.6
	22:00:00	56.6	-4.3
	23:00:00	54.7	-6.2
December 12, 2012	0:00:00	52.2	-8.7
	1:00:00	51.6	-9.3
	2:00:00	50.5	-10.4
	3:00:00	51.7	-9.2
	4:00:00	53.5	-7.4
	5:00:00	55.4	-5.5
	6:00:00	57.6	-3.3
	7:00:00	58.7	-2.2
	8:00:00	59.1	-1.8
	9:00:00	58.3	-2.6
	10:00:00	57.4	-3.5
	11:00:00	59.7	-1.2
	12:00:00	59.5	-1.4
	13:00:00	**60.9**	**0.0**
Maximum		60.9	
Minimum		50.5	

Note: Worst-hour noise is **bolded**.

6.2.2. Short-Term Monitoring

Results of short-term noise monitoring are shown in Table 6-4 in terms of measured Leq and traffic data collected concurrently with each measurement, with volumes normalized to 1 hour and vehicles classified according to TNM vehicle categories (automobiles, medium trucks, and heavy trucks). Traffic noise was observed to be the dominant ambient noise source at all sites. Short-term monitoring locations are shown in Figure 5-1.

Short-term noise measurements and respective traffic counts were conducted to characterize the noise environment adjacent to the project study area and to validate the accuracy of the TNM model calculations using traffic counted concurrently with measurements.

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Table 6-4. Summary of Short-Term Measurements

Receptor	Address	Land Uses/ Activity Category	Start Date/ Time	Duration (minutes)	Leq	Counted Traffic Normalized to One Hour			
						Direction	Autos	Medium Trucks	Heavy Trucks
ST-01	Best Western Plus, 220 Harding Boulevard, Roseville	Hotel/E	12/11/12 9:00 AM	15	63.2	I-80 WB	4,392 (65 mph)	132 (65 mph)	188 (65 mph)
						I-80 EB	4,424 (65 mph)	136 (65 mph)	200 (65 mph)
ST-02	Breuner Drive, Roseville	Duplex residential/B	12/11/12 9:00 AM	15	63.2	I-80 WB	4,392 (65 mph)	132 (65 mph)	188 (65 mph)
						I-80 EB	4,424 (65 mph)	136 (65 mph)	200 (65 mph)
						Harding Blvd. NB	660 (40 mph)	0	5 (40 mph)
						Harding Blvd. SB	660 (40 mph)	0	5 (40 mph)
ST-03	John Adams Academy, 1 Sierra Gate Plaza, Roseville	School/C	12/11/12 10:38 AM	15	63.9	I-80 WB	4,296 (65 mph)	96 (65 mph)	192 (65 mph)
						I-80 EB	4,252 (65 mph)	116 (65 mph)	228 (65 mph)
ST-04	Olympus Point Sculpture Park, Roseville	Park/C	12/11/12 10:38 AM	15	61.7	I-80 WB	4,296 (65 mph)	96 (65 mph)	192 (65 mph)
						I-80 EB	4,252 (65 mph)	116 (65 mph)	228 (65 mph)
ST-05	Antelope Creek Trail, Roseville	Park/C	12/12/12 10:43 AM	15	61.5	I-80 WB	4,360 (65 mph)	104 (65 mph)	116 (65 mph)
						I-80 EB	4,152 (65 mph)	100 (65 mph)	160 (65 mph)
ST-06	Golfland/Sunsplash, Taylor Road	Recreation area/C	12/12/12 10:43 AM	15	64.9	I-80 WB	4,360 (65 mph)	104 (65 mph)	116 (65 mph)
						I-80 EB	4,152 (65 mph)	100 (65 mph)	160 (65 mph)
ST-07	Residence Inn, 1930 Taylor Road, Roseville	Hotel/E	12/12/12 12:00 PM	15	56.9	I-80 WB	3,856 (65 mph)	112 (65 mph)	196 (65 mph)
						I-80 EB	3,916 (65 mph)	100 (65 mph)	212 (65 mph)
						Taylor Road	904 (30 mph)	16 (30 mph)	4 (30 mph)
						Taylor Road on-ramp	292 (30 mph)	4 (30 mph)	0
ST-08	Phoenician Apartments, 1501 Secret Ravine Parkway, Roseville	Multi-family residential/B	12/10/12 4:20 PM	15	53.7	SR 65 SB	3,916 (65 mph)	100 (65 mph)	212 (65 mph)
						SR 65 NB	3,856 (65 mph)	112 (65 mph)	196 (65 mph)
ST-09	Emerald Creek Subdivision, Roseville	Residential/B	12/10/12 4:21 PM	15	56.4	I-80 WB	4,408 (65 mph)	52 (65 mph)	44 (65 mph)
						I-80 EB	4,064 (65 mph)	40 (65 mph)	40 (65 mph)
ST-10	3228 Westwood Drive, Rocklin	Residential/B	12/10/12 12:06 PM	15	53.8	I-80 WB	4,300 (65 mph)	48 (65 mph)	24 (65 mph)
						I-80 EB	4,204 (65 mph)	44 (65 mph)	24 (65 mph)
ST-11	Woodside Park, Rocklin	Park/C	12/10/12 12:47 PM	15	56.3	I-80 WB	4,300 (65 mph)	48 (65 mph)	24 (65 mph)
						I-80 EB	4,204 (65 mph)	44 (65 mph)	24 (65 mph)
ST-12	Monument Spring Road, Rocklin	Residential/B	12/12/12 1:19 PM	15	56.7	I-80 WB	2,868 (65 mph)	96 (65 mph)	104 (65 mph)
						I-80 EB	3,156 (65 mph)	80 (65 mph)	76 (65 mph)
ST-13	Cemetery, Kannasto Street, Rocklin	Cemetery/C	12/12/12 1:19 PM	15	59.0	I-80 WB	3,156 (65 mph)	80 (65 mph)	76 (65 mph)
						I-80 EB	2,868 (65 mph)	96 (65 mph)	104 (65 mph)
ST-14	China Garden Road, Rocklin	Residential/B	12/12/12 3:19 PM	15	60.4	I-80 WB	3,752 (65 mph)	64 (65 mph)	52 (65 mph)
						I-80 EB	4,060 (65 mph)	76 (65 mph)	72 (65 mph)
ST-15	6375 Rustic Hills Drive, Rocklin	Residential/B	12/10/12 3:19 PM	15	55.6	I-80 WB	3,848 (65 mph)	64 (65 mph)	40 (65 mph)
						I-80 EB	4,008 (65 mph)	76 (65 mph)	72 (65 mph)
ST-16	Preserve at Creekside Apartments, Roseville	Multi-family residential/B	12/11/12 3:35 PM	15	66.7	SR 65 SB	4,196 (65 mph)	60 (65 mph)	20 (65 mph)
						SR 65 NB	4,032 (65 mph)	52 (65 mph)	36 (65 mph)
ST-17	Preserve at Creekside Apartments, Roseville	Multi-family residential/B	12/12/12 12:00 PM	15	58.4	SR 65 SB	2,940 (65 mph)	80 (65 mph)	168 (65 mph)
						SR 65 NB	2,892 (65 mph)	104 (65 mph)	208 (65 mph)
ST-18	Hearthstone Apartments, Rocklin	Multi-family residential/B	12/11/12 3:30 PM	15	62.8	SR 65 SB	2,888 (65 mph)	80 (65 mph)	152 (65 mph)
						SR 65 NB	2,820 (65 mph)	76 (65 mph)	140 (65 mph)
ST-19	Springview Village Apartments, Rocklin	Multi-family residential/B	12/11/12 4:08 PM	15	56.5	SR 65 SB	2,780 (65 mph)	64 (65 mph)	160 (65 mph)
						SR 65 NB	3,176 (65 mph)	64 (65 mph)	128 (65 mph)
ST-20	Placer West Apartments, Rocklin	Multi-family residential/B	12/11/12 2:54 PM	15	57.8	SR 65 SB	2,780 (65 mph)	64 (65 mph)	160 (65 mph)
						SR 65 NB	3,176 (65 mph)	64 (65 mph)	128 (65 mph)
ST-21	Homewood Suites, 401 Creekside Ridge Court, Roseville	Hotel/E	12/11/12 4:08 PM	15	64.2	SR 65 SB	3,308 (65 mph)	60 (65 mph)	172 (65 mph)
						SR 65 NB	3,836 (65 mph)	80 (65 mph)	64 (65 mph)
ST-22	Destiny Christian Church, 6900 Destiny Drive, Rocklin	Place of worship/C	12/11/12 2:18 PM	15	69.7	SR 65 SB	3,308 (65 mph)	60 (65 mph)	172 (65 mph)
						SR 65 NB	3,836 (65 mph)	80 (65 mph)	64 (65 mph)
ST-23	Office Park, 516 Gibson Drive, Roseville	Offices-outdoor use/E	12/11/12 12:02 PM	15	61.0	SR 65 SB	3,220 (65 mph)	44 (65 mph)	144 (65 mph)
						SR 65 NB	4,052 (65 mph)	60 (65 mph)	108 (65 mph)
ST-24	Terrace Apartments, Gibson Drive, Roseville	Multi-family residential/B	12/11/12 12:02 PM	15	57.7	SR 65 SB	3,220 (65 mph)	44 (65 mph)	144 (65 mph)
						SR 65 NB	4,052 (65 mph)	60 (65 mph)	108 (65 mph)

Note: Refer to Figure 5-1 for measurement locations.

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6.2.3. Traffic Noise Model Calibration

TNM was used to compare measured traffic noise levels to modeled noise levels at field measurement locations using traffic count data collected at the time of the noise measurements. At measurement locations where modeled existing sound level values differed from measured values by more than 3 dB, calibration factors (K-factors) were used to adjust modeled noise levels at those locations, and at nearby prediction locations.

K-factors and a comparison between measured and modeled noise levels at each measurement location are shown in Table 6-5. Of the 24 short-term measurement locations evaluated, 18 were found to be in close agreement (i.e., within 3 dB) with measured levels. At six of the measurement locations, modeled noise levels were 3 to 4 dB higher than measured levels. A K-factor of minus-3 dB (-3 dB) was applied to existing and future models at these receiver locations, as well as receiver locations in the vicinity of the respective measurement locations. At one of the measurement locations, modeled noise levels were 4 dB lower than measured levels. A K-factor of plus-4 dB (+4 dB) was applied to existing and future models at this location and adjacent receivers. After applying the K-factors, noise levels at all measurement sites were in close agreement with measured levels. K-factors are indicated by prediction location in sound level results tables in Appendix B.

Table 6-5. Comparison of Measured with Modeled Worst-Hour Noise Sound Levels

Measurement Location	Measured Existing Sound Level (dBA)	Modeled Existing Sound Level (dBA)	Measured Minus Modeled (dB)	K-Factor Used (dB)
ST-01	63.2	65.1	+ 1.9	0
ST-02	63.2	65.3	+ 2.1	0
ST-03	63.9	65.8	+ 1.9	0
ST-04	61.7	62.8	+ 1.1	0
ST-05	61.5	59.9	- 1.6	0
ST-06	64.9	67.4	+ 2.5	0
ST-07	56.9	59.3	+ 2.4	0
ST-08	53.7	56.2	+ 2.5	0
ST-09	56.4	57.7	+ 1.3	0
ST-10	53.8	57.1	+ 3.3	-3.0
ST-11	56.3	59.9	+ 3.6	-3.0
ST-12	56.7	58.2	+ 1.5	0
ST-13	59.0	63.1	+ 4.1	-3.0
ST-14	60.4	64.6	+ 4.2	-3.0
ST-15	55.6	58.4	+ 2.8	-3.0
ST-16	66.7	62.3	- 4.4	+4.0
ST-17	58.4	57.6	- 0.8	0
ST-18	62.8	60.5	- 2.3	0
ST-19	56.5	60.9	+ 4.4	-3.0
ST-20	57.8	57.6	- 0.2	0
ST-21	64.2	66.4	+ 2.2	0
ST-22	69.7	68.5	- 1.2	0
ST-23	61.0	61.3	+ 0.3	0
ST-24	57.7	57.3	- 0.4	0

dBA Leq[h] = A weighted equivalent sound level; dB = decibels

6.2.4. Existing Modeled Noise Levels

Predicted traffic noise levels under existing conditions are shown in Table B-1 of Appendix B. As shown in Table B-1, accounting for K-factors, existing worst-hour traffic noise levels range from 47 to 77 dBA Leq(h).

Chapter 7. Future Noise Environment, Impacts, and Considered Abatement

7.1. Future Noise Environment and Impacts

Traffic noise modeling results for existing conditions and design year conditions with and without the project are summarized in Table B-1 (see Appendix B). Predicted design year build condition traffic noise levels are compared with existing conditions and design year no-build conditions. The comparison with existing conditions is included in the analysis to identify traffic noise impacts under 23 CFR 772. The comparison of without-project conditions indicates the direct effect of the project. As stated in the TeNS, modeling results are rounded to the nearest decibel.

As shown in Table B-1, traffic noise levels for design year no-build conditions range from 48 to 78 dBA Leq(h). Under design year build conditions, predicted traffic noise levels range from 49 to 79 dBA Leq(h). This range of noise levels applies to all three build alternatives. Traffic noise levels would approach or exceed the NAC for residential use (Activity Category B) at 271 dwelling units under all three build alternatives. For all three build alternatives, several Activity Category C land uses would be impacted, including seven parks, two playgrounds (one at a school and one at a place of worship), and an outdoor recreational area. One outdoor swimming pool at a hotel would be impacted (Activity Category E).

As traffic noise impacts are predicted to occur at Activity Category B, Activity Category C, and Activity Category E land uses in the project area, noise abatement must be considered.

7.2. Preliminary Noise Abatement Analysis

According to 23 CFR 772(13)(c), federal funding may be used for the following abatement measures.

- Construction of noise barriers, including acquisition of property rights, either within or outside the highway right-of-way. Landscaping is not a viable noise abatement measure.
- Traffic management measures including, but not limited to, traffic control devices and signage for prohibition of certain vehicle types, time-use restrictions for certain vehicle types, modified speed limits, and exclusive lane designations.
- Alteration of horizontal and vertical alignments.
- Acquisition of real property or interests therein (predominantly unimproved property) to serve as a buffer zone to preempt development that would be adversely impacted by traffic noise.

- Noise insulation of Activity Category D land use facilities. Post-installation maintenance and operational costs for noise insulation are not eligible for federal-aid funding.

Each noise barrier was evaluated for feasibility based on achievable noise reduction. For each noise barrier found to be acoustically feasible, reasonable cost allowances were calculated. For any noise barrier to be considered reasonable from a cost perspective, the estimated cost of the noise barrier should be equal to or less than the total cost allowance calculated for the barrier. The cost calculations of the noise barrier should include all items appropriate and necessary for construction of the barrier, such as traffic control, drainage modification, and retaining walls.

The design of noise barriers presented in this report is preliminary and has been conducted at a level appropriate for environmental review and not for final design of the project. Preliminary information on the physical location, length, and height of noise barriers is provided in this report. If pertinent parameters change substantially during final project design, preliminary noise barrier designs may be modified or eliminated from the final project. A final decision on construction of the noise abatement will be made upon completion of the project design.

The following is a discussion of noise barriers evaluated in TNM for each of the project subareas. The barrier discussions apply to all build alternatives. Any differences in results between build alternatives for a given barrier design are described where applicable.

The noise barrier analysis summary tables are shown in Appendix C.

7.2.1. South of I-80

7.2.1.1. NOISE BARRIER A

The traffic noise modeling results in Table B-1 in Appendix B indicate that noise levels of up to 67 dBA Leq(h) are predicted at Olympic Pointe Sculpture Park. Traffic noise levels would increase by up to 1 dB relative to existing conditions, which would not result in a substantial increase in noise levels. Traffic noise levels would approach or exceed the NAC for Activity Category C land use at one receiver location. Therefore, traffic noise impacts are predicted to occur and noise abatement must be considered.

An acoustical analysis was conducted for Noise Barrier A, which would extend along the edge-of-shoulder of the eastbound I-80 off-ramp to Eureka Road. The total length of the barrier would be 870 feet. At a height of 20 feet, the barrier would provide up to 6 dB of noise reduction, which would not meet the design goal of 7 dB. While the design goal cannot be achieved for this barrier, the minimum noise reduction requirement of 5 dB can be achieved, benefiting one receiver location at the park (Activity Category C). Therefore the barrier is considered feasible. Calculated noise reductions and reasonable allowances for each barrier height are summarized in

Table 7-1. Noise Barrier A is shown in Figure 7-1 sheet 1. The noise barrier analysis summary table is shown in Table C-1 in Appendix C.

Table 7-1. Summary of Reasonableness Determination Data—Barrier A

Location: Olympus Pointe Sculpture Park, Roseville						
Predicted Sound Level without Barrier						
Design receptor:	R003 (Park use)					
Design year noise level, dBA Leq(h):	66 dBA (Alternatives 1–3)					
Design year noise level minus existing noise level:	1 dBA					
Design Year with Barrier	**10-Foot Barrier**	**12-Foot Barrier**	**14-Foot Barrier**	**16-Foot Barrier**	**18-Foot Barrier**	**20-Foot Barrier**
Barrier noise reduction, dB	2	4	5	5	6	6
Barrier design goal met?	No	No	No	No	No	No
Number of benefited receivers	0	0	1	1	1	1
Reasonable allowance per benefited receiver	$64,000	$64,000	$64,000	$64,000	$64,000	$64,000
Total reasonable allowance	$0	$0	$64,000	$64,000	$64,000	$64,000

7.2.1.2. NOISE BARRIER B

The traffic noise modeling results in Table B-1 in Appendix B indicate that a noise levels of up to 68 dBA Leq(h) are predicted at the Golfland miniature golf course. Traffic noise levels would increase by up to 2 dB relative to existing conditions, which would not result in a substantial increase in noise levels. Traffic noise levels would approach or exceed the NAC for Activity Category C land use at one receiver location. Therefore, traffic noise impacts are predicted to occur and noise abatement must be considered.

An acoustical analysis was conducted for Noise Barrier B, which would extend along the top of the I-80 right-of-way near the termination of the I-80 eastbound Eureka Road Slip on-ramp. The barrier would be a total length of 370 feet. The barrier would meet the noise reduction design goal of 7 dB at a height of 16 feet. Calculated noise reductions and reasonable allowances for each barrier height are summarized in Table 7-2. Noise Barrier B is shown in Figure 7-1 sheet 2. The noise barrier analysis summary table is shown in Table C-2 in Appendix C.

Table 7-2. Summary of Reasonableness Determination Data—Barrier B

Location: Golfland miniature golf course, Roseville					
Predicted Sound Level without Barrier					
Design receptor:	R015 (Recreational use)				
Design year noise level, dBA Leq(h):	68 dBA (Alternatives 1–3)				
Design year noise level minus existing noise level:	2 dBA				
Design Year with Barrier	**8-Foot Barrier**	**10-Foot Barrier**	**12-Foot Barrier**	**14-Foot Barrier**	**16-Foot Barrier**
Barrier noise reduction, dB	5	5	6	6	7
Barrier design goal met?	No	No	No	No	Yes
Number of benefited receivers	1	1	1	1	1
Reasonable allowance per benefited residence	$64,000	$64,000	$64,000	$64,000	$64,000
Total reasonable allowance	$64,000	$64,000	$64,000	$64,000	$64,000

7.2.1.3. NOISE BARRIER C

The traffic noise modeling results in Table B-1 in Appendix B indicate that noise levels of up to 72 dBA Leq(h) are predicted at the residential neighborhood on Rustic Hills Drive. Traffic noise levels would increase by up to 2 dB relative to existing conditions, which would not result in a substantial increase in noise levels. Traffic noise levels would approach or exceed the NAC for Activity Category B land use at five receiver locations representing a total of 10 residential units. Therefore, traffic noise impacts are predicted to occur and noise abatement must be considered.

An acoustical analysis was conducted for Noise Barrier C, which would extend along I-80 eastbound adjacent to the northern terminus of the project. Noise Barrier C would extend the existing wall by 610 linear feet to the west, for a total wall length of 1,530 feet. The barrier would meet the noise reduction design goal of 7 dB at a height of 12 feet.

Calculated noise reductions and reasonable allowances for each barrier height are summarized in Table 7-3. Noise Barrier C is shown in Figure 7-1, sheet 3. The noise barrier analysis summary table is shown in Table C-3 in Appendix C.

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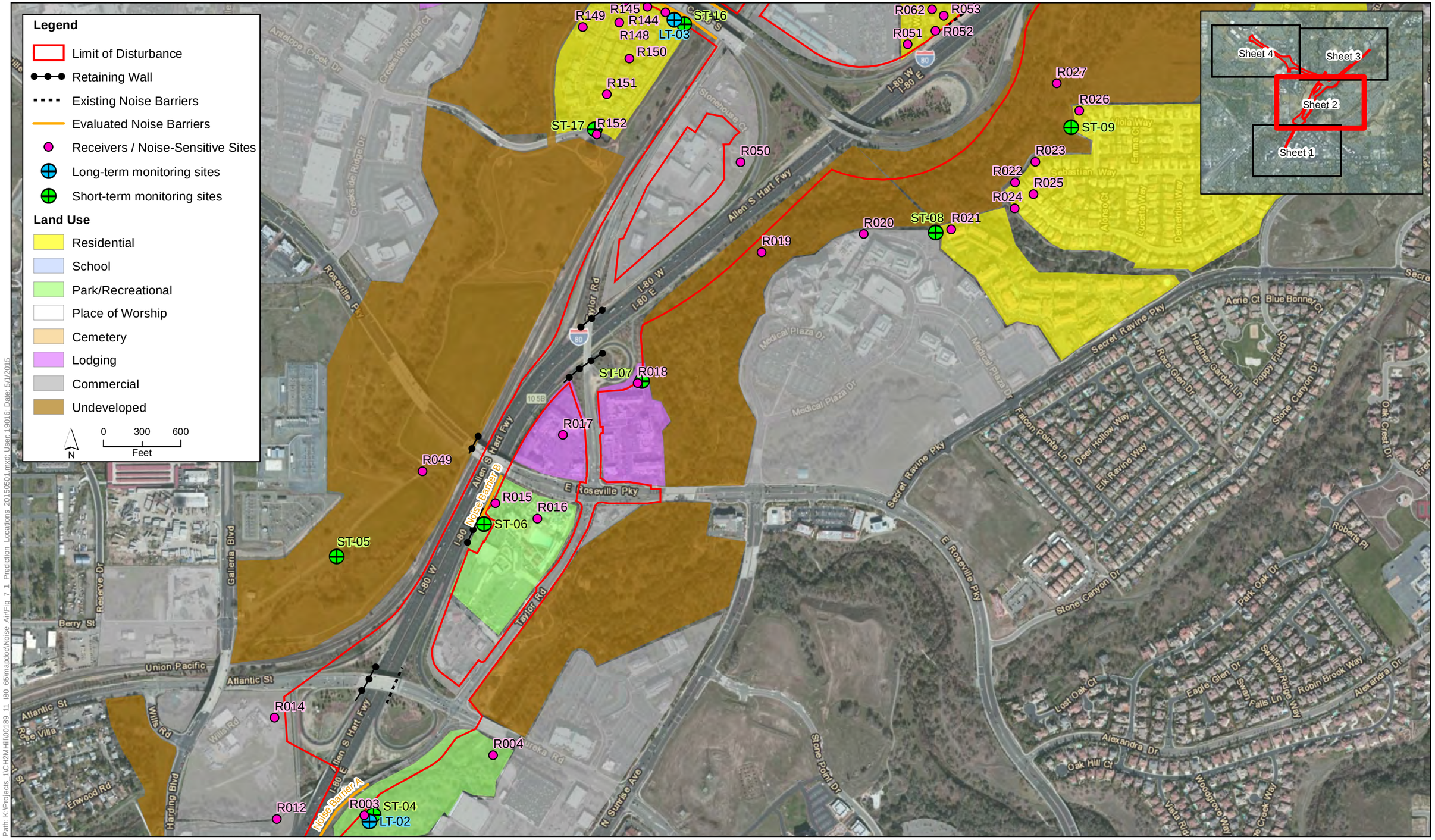
Figure 7-1
Noise Prediction Locations and Evaluated Noise Barriers
Sheet 1



Path: K:\Projects_1\CH2MHill\00189_11_I80_65\mapdoc\Noise_Air\Fig_7_1_Prediction_Locations_20150501.mxd: User: 19016: Date: 5//2015

Figure 7-1
Noise Prediction Locations and Evaluated Noise Barriers
Sheet 2

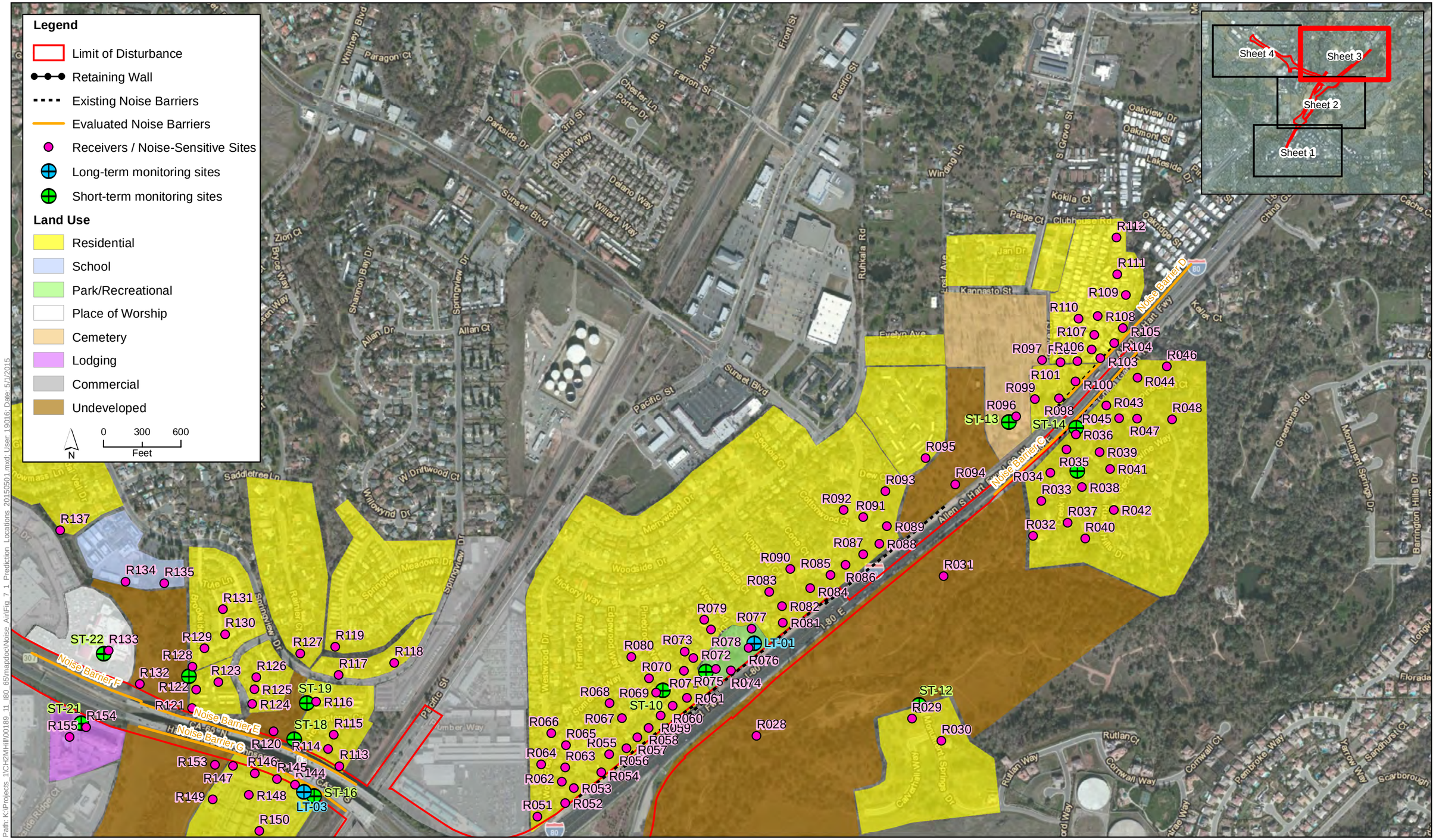


Figure 7-1
Noise Prediction Locations and Evaluated Noise Barriers
Sheet 3

Legend

- Limit of Disturbance
- Retaining Wall
- Existing Noise Barriers
- Evaluated Noise Barriers
- Receivers / Noise-Sensitive Sites
- Long-term monitoring sites
- Short-term monitoring sites

Land Use

- Residential
- School
- Park/Recreational
- Place of Worship
- Cemetery
- Lodging
- Commercial
- Undeveloped

N

0 300 600
Feet

Sheet 4
Sheet 3
Sheet 2
Sheet 1

R143
R142
R141
R140
R139
R138
R136
R163
R162
R164
ST-24
R160
R161
ST-23
R159
R157
R156
R158

CA-65 N
CA-65 S
Harold T Bizz Johnson Expy
Pleasant Grove Blvd
Fairway Dr
Central Park Dr
Crater Lake Dr
Big Bend Dr
Channel Islands Ln
Great Basin Dr
Grand Canyon Dr
Stanford Ranch Rd
Zircon Dr
Pearl Dr
Emerald Dr
Onyx Dr
Lincoln Ave
Five Star Blvd
Galleria Blvd
Marketplace Dr
Talmont Cir
Highland Pointe Dr
Highland Ridge Dr
Chambord Way
Villa Gardens Ct
Gibson Dr
Roseville Pky
Conference Center Dr
Galleria Cir
Alden Way
Alden Ct
Trehowell Dr
Twinwood Loop
Tamarindo Way
Treecrest Ct
White Birch Ct
Red Oak Ct
Pioneer Rd
Avila Dr
Chase Dr
Bridgeway Ct
Keely Dr
Castaic Dr
Hawk Crest Ct
Valleywood Way
Caldarella Cir
Gold Coast Dr
Legacy Ct
Brookhaven Dr
Waterfield Dr
Crescent Dr
Bermuda Ct
Fifteen Mile Dr
Pinecrest Ct
Crestfield Cir
Westminster Ct
Kingsbury Ct
Hallisey Dr
Norfolk Ct
Clancy Ct
Laurel Dr
Sean Ct
Bettencourt Dr
Morgan Way
Morgan Ct
Palomino Ct
Andalusian Way

Figure 7-1
Noise Prediction Locations and Evaluated Noise Barriers
Sheet 4

Table 7-3. Summary of Reasonableness Determination Data—Barrier C

Location: Rustic Hills Drive, Rocklin					
Predicted Sound Level without Barrier					
Design receptor:	R035 (Single-family residential)				
Design year noise level, dBA Leq(h):	72 dBA (Alternatives 1–3)				
Design year noise level minus existing noise level:	2 dBA				
Design Year with Barrier	**8-Foot Barrier**	**10-Foot Barrier**	**12-Foot Barrier**	**14-Foot Barrier**	**16-Foot Barrier**
Barrier noise reduction, dB	5	6	8	9	9
Barrier design goal met?	No	No	Yes	Yes	Yes
Number of benefited receivers	2	4	7	10	10
Reasonable allowance per benefited residence	$64,000	$64,000	$64,000	$64,000	$64,000
Total reasonable allowance	$128,000	$256,000	$448,000	$640,000	$640,000

7.2.2. Northeast of the I-80/SR 65 Interchange

7.2.2.1. NOISE BARRIER D

The traffic noise modeling results in Table B-1 in Appendix B indicate that noise levels of up to 78 dBA Leq(h) are predicted at Rocklin Mobile Home Park. Traffic noise levels would increase by up to 2 dB relative to existing conditions, which would not result in a substantial increase in noise levels. Traffic noise levels would approach or exceed the NAC for Activity Category B land use at nine receiver locations representing a total of 53 residential units. Therefore, traffic noise impacts are predicted to occur and noise abatement must be considered.

An acoustical analysis was conducted for Noise Barrier D, which would extend along I-80 westbound adjacent to the northern terminus of the project. The barrier would replace the existing wall that currently extends along a portion of the neighborhood frontage. Noise Barrier D would be 1,450 feet in total length. The barrier would meet the noise reduction design goal of 7 dB at a height of 12 feet. Calculated noise reductions and reasonable allowances for each barrier height are summarized in Table 7-4. Noise Barrier D is shown in Figure 7-1 sheet 3. The noise barrier analysis summary table is shown in Table C-4 in Appendix C.

Table 7-4. Summary of Reasonableness Determination Data—Barrier D

Location: Rocklin Mobile Home Park					
Predicted Sound Level without Barrier					
Design receptor:	R105 (Residential – mobile home park)				
Design year noise level, dBA Leq(h):	78 dBA (Alternatives 1–3)				
Design year noise level minus existing noise level:	2 dBA				
Design Year with Barrier	**8-Foot Barrier**	**10-Foot Barrier**	**12-Foot Barrier**	**14-Foot Barrier**	**16-Foot Barrier**
Barrier noise reduction, dB	3	5	7	10	11
Barrier design goal met?	No	No	Yes	Yes	Yes
Number of benefited receivers	0	4	13	13	20
Reasonable allowance per benefited residence	$64,000	$64,000	$64,000	$64,000	$64,000
Total reasonable allowance	$0	$256,000	$832,000	$832,000	$1,280,000

7.2.2.2. NOISE BARRIER E

The traffic noise modeling results in Table B-1 in Appendix B indicate that noise levels of up to 69 dBA Leq(h) are predicted at multi-family residential apartment buildings and condominiums adjacent to the East Roseville Viaduct. Traffic noise levels would increase by up to 4 dB relative to existing conditions, which would not result in a substantial increase in noise levels. Traffic noise levels would approach or exceed the NAC for Activity Category B land use at three receiver locations representing a total of 64 residential units and for Activity Category C land use at one receiver location representing park use. Therefore, traffic noise impacts are predicted to occur and noise abatement must be considered.

An acoustical analysis was conducted for Noise Barrier E, which would extend along the northbound SR 65 structure edge-of-pavement. The total length of Noise Barrier E would be 1,870 feet. For safety reasons, noise barriers with footings located within 15 feet of travel lanes cannot exceed 14 feet in height (Caltrans 2012). However, since SR 65 is on an elevated structure in this area, it is possible to break receiver line-of-sight to heavy truck exhaust stacks with a lower wall. Noise Barrier E would meet the noise reduction design goal of 7 dB at a height of 10 feet. Calculated noise reductions and reasonable allowances for each barrier height are summarized in Table 7-5. Noise Barrier E is shown in Figure 7-1 sheet 3. The noise barrier analysis summary table is shown in Table C-5 in Appendix C.

Table 7-5. Summary of Reasonableness Determination Data—Barrier E

Location: North of SR 65, east of Stanford Ranch Road				
Predicted Sound Level without Barrier				
Design receptor:	R113 (Multi-family residential)			
Design year noise level, dBA Leq(h):	69 dBA (Alternatives 2 and 3); 67 dBA (Alternative 1)			
Design year noise level minus existing noise level:	4 dBA			
Design Year with Barrier	**8-Foot Barrier**	**10-Foot Barrier**	**12-Foot Barrier**	**14-Foot Barrier**
Barrier noise reduction, dB	6	7	7	8
Barrier design goal met?	No	Yes	Yes	Yes
Number of benefited receivers	235	250	263	279
Reasonable allowance per benefited residence	$64,000	$64,000	$64,000	$64,000
Total reasonable allowance	$15,040,000	$16,000,000	$16,832,000	$17,856,000

7.2.2.3. NOISE BARRIER F

The traffic noise modeling results in Table B-1 in Appendix B indicate that noise levels of up to 71 dBA Leq(h) are predicted at the outdoor playground at Destiny Christian Church. Traffic noise levels would increase by up to 2 dB relative to existing conditions, which would not result in a substantial increase in noise levels. Traffic noise levels would approach or exceed the NAC for Activity Category C land use at one receiver location. Therefore, traffic noise impacts are predicted to occur and noise abatement must be considered.

An analysis was conducted for Noise Barrier F, which would extend along northbound SR 65 within the right-of-way. The total length of the barrier would be 950 feet. At a height of 20 feet, the barrier would provide up to 6 dB of noise reduction, which would not meet the design goal of 7 dB. While the design goal cannot be achieved for this barrier, the minimum noise reduction requirement of 5 dB can be achieved, benefiting one receiver location at the playground (Activity Category C). Therefore the barrier is considered feasible. Calculated noise reductions and reasonable allowances for each barrier height are summarized in Table 7-6. Noise Barrier F is shown in Figure 7-1. The noise barrier analysis summary table is shown in Table C-6 in Appendix C.

Table 7-6. Summary of Reasonableness Determination Data—Barrier F

Location: Destiny Christian Church						
Predicted Sound Level without Barrier						
Design receptor:	R133 (Playground – place of worship)					
Design year noise level, dBA Leq(h):	71 dBA (Alternatives 1-3)					
Design year noise level minus existing noise level:	2 dBA					
Design Year with Barrier	**10-Foot Barrier**	**12-Foot Barrier**	**14-Foot Barrier**	**16-Foot Barrier**	**18-Foot Barrier**	**20-Foot Barrier**
Barrier noise reduction, dB	3	4	5	5	6	6
Barrier design goal met?	No	No	No	No	No	No
Number of benefited receivers	0	0	1	1	1	1
Reasonable allowance per benefited residence	$64,000	$64,000	$64,000	$64,000	$64,000	$64,000
Total Reasonable Allowance	$0	$0	$64,000	$64,000	$64,000	$64,000

7.2.3. Northwest of the I-80/SR 65 Interchange

7.2.3.1. NOISE BARRIER G

The traffic noise modeling results in Table B-1 in Appendix B indicate that noise levels of up to 70 dBA Leq(h) are predicted at multi-family residential apartment buildings and condominiums adjacent to the elevated section of SR 65 east of Stanford Ranch Road. Traffic noise levels would increase by up to 9 dB relative to existing conditions, which would not result in a substantial increase in noise levels. Traffic noise levels would approach or exceed the NAC for Activity Category B land use at six receiver locations representing a total of 144 residential units. Therefore, traffic noise impacts are predicted to occur and noise abatement must be considered.

An acoustical analysis was conducted for Noise Barrier G, which would extend along the southbound SR 65 structure edge-of-pavement. The total length of Noise Barrier G would be 1,800 feet. For safety reasons, noise barriers with footings located within 15 feet of travel lanes cannot exceed 14 feet in height (Caltrans 2012). However, since SR 65 is on an elevated structure in this area, it is possible to break receiver line-of-sight to heavy truck exhaust stacks with a lower wall. Noise Barrier G would meet the noise reduction design goal of 7 dB at a height of 10 feet. Calculated noise reductions and reasonable allowances for each barrier height are summarized in Table 7-5. Noise Barrier G is shown in Figure 7-1 sheet 3. The noise barrier analysis summary table is shown in Table C-7 in Appendix C.

Table 7-7. Summary of Reasonableness Determination Data—Barrier G

Location: South of SR 65, east of Stanford Ranch Road				
Predicted Sound Level without Barrier				
Design receptor:	R146 (Multi-family residential)			
Design year noise level, dBA Leq(h):	74 dBA (Alternatives 2 and 3); 73 dBA (Alternative 1)			
Design year noise level minus existing noise level:	4 dBA			
Design Year with Barrier	**8-Foot Barrier**	**10-Foot Barrier**	**12-Foot Barrier**	**14-Foot Barrier**
Barrier noise reduction, db	6	7	7	8
Barrier design goal met?	No	Yes	Yes	Yes
Number of benefited receivers	128	128	128	128
Reasonable allowance per benefited residence	$64,000	$64,000	$64,000	$64,000
Total reasonable allowance	$8,192,000	$8,192,000	$8,192,000	$8,192,000

7.2.3.2. NOISE BARRIER H

The traffic noise modeling results in Table B-1 in Appendix B indicate that noise levels of up to 69 dBA Leq(h) are predicted at the outdoor playground at John Adams Academy on Harding Boulevard. Traffic noise levels would increase by up to 2 dB relative to existing conditions, which would not result in a substantial increase in noise levels. Traffic noise levels would approach or exceed the NAC for Activity Category C land use at one receiver location. Therefore, traffic noise impacts are predicted to occur and noise abatement must be considered.

An acoustical analysis was conducted for Noise Barrier H, which would extend along the school frontage facing I-80 westbound. The total length of the barrier would be 860 feet. The barrier would meet the noise reduction design goal of 7 dB at a height of 12 feet. Calculated noise reductions and reasonable allowances for each barrier height are summarized in Table 7-8. Noise Barrier H is shown in Figure 7-1. The noise barrier analysis summary table is shown in Table C-8 in Appendix C.

Table 7-8. Summary of Reasonableness Determination Data—Barrier H

Location: John Adams Academy, Harding Boulevard					
Predicted Sound Level without Barrier					
Design receptor:	R011 (School playground)				
Design year noise level, dBA Leq(h):	69 dBA (Alternatives 1–3)				
Design year noise level minus existing noise level:	2 dBA				
Design Year with Barrier	**8-Foot Barrier**	**10-Foot Barrier**	**12-Foot Barrier**	**14-Foot Barrier**	**16-Foot Barrier**
Barrier noise reduction, dB	4	5	7	8	8
Barrier design goal met?	No	No	Yes	Yes	Yes
Number of benefited receivers	0	1	1	1	1
Reasonable allowance per benefited residence	$64,000	$64,000	$64,000	$64,000	$64,000
Total reasonable allowance	$0	$64,000	$64,000	$64,000	$64,000

The approximate stationing for each barrier evaluated in this report is shown in Table 7-9.

In certain configurations, noise reflecting off reflective noise barriers (i.e., noise barriers constructed of noise-reflective materials) or structures can degrade the noise barriers' performance or cause noise increases in areas not protected by the barriers. To avoid this effect, Caltrans' standard practice is that walls be provided with an acoustically absorptive surface with a noise reduction coefficient of 0.80 or greater under either of the following conditions.

- The ratio of the spacing between new parallel barriers or retaining walls and the average height of the barriers or walls is 15:1 or less.
- Receptors on one side of the highway have a direct line of sight from an area of frequent human use that would benefit from a lowered noise level to a new barrier or new retaining wall on the opposite side of the highway.

For comparison with the reasonable allowance, the cost of implementing an absorptive surface that is triggered by either of the conditions described above shall not be included in the cost of the abatement.

Table 7-9. Noise Barrier Summary: Station Numbers for Each Evaluated Barrier Found to be Acoustically Feasible

Evaluated Barrier	Roadway	Approximate Station Numbers
Noise Barrier A	I-80 Eastbound off-ramp to Atlantic Street	3+40
	I-80 Eastbound off-ramp to Atlantic Street	12+10
Noise Barrier B	I-80 Eastbound mainline	84+00
	I-80 Eastbound mainline	87+70
Noise Barrier C	I-80 Eastbound mainline	178+00
	I-80 Eastbound mainline	30 feet east of northern terminus @193+00
Noise Barrier D	I-80 Westbound mainline	800 feet east of northern terminus @193+00
	I-80 Westbound mainline	186+80
Noise Barrier E	SR 65 Northbound mainline	133+00
	SR 65 Northbound mainline	151+70
Noise Barrier F	State Route 65 Northbound mainline	151+70
	State Route 65 Northbound mainline	161+20
Noise Barrier G	State Route 65 Southbound mainline	151+00
	State Route 65 Southbound off-ramp to I-80 Westbound	130+00
Noise Barrier H	I-80 Eastbound off-ramp to Atlantic Street	8+00
	I-80 Eastbound off-ramp to Atlantic Street	16+60

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Chapter 8. Construction Noise

During construction of the project, noise from construction activities may intermittently dominate the noise environment in the immediate area of construction. Construction noise is regulated by provisions in Section 14-8.02, "Noise Control," of the *Caltrans Standard Specifications*.

Two types of short-term noise impacts would occur during project construction. The first type would be from construction crew commutes and the transport of construction equipment and materials to the project site, which would incrementally raise noise levels on access roads leading to the site. The pieces of heavy equipment for grading and construction activities would be moved on site, would remain for the duration of each construction phase, and would not add to the daily traffic volume in the project vicinity. A high single-event noise exposure potential at a maximum level of 87 dBA Lmax from trucks passing at 50 feet would exist. However, the projected construction traffic would be minimal when compared to existing traffic volumes on other affected streets, and the associated long-term noise level change would not be perceptible. Therefore, construction-related worker commutes and equipment transport noise impacts would be short term and would not be adverse.

The second type of short-term noise impact would be from construction activities. Construction is performed in distinct steps, each of which has its own mix of equipment and consequently its own noise characteristics. These various sequential phases would change the character of the noise generated and the noise levels along the project alignment as construction progresses. Despite the variety in the type and size of construction equipment, similarities in the dominant noise sources and patterns of operation allow construction-related noise ranges to be categorized by work phase. Table 8-1 lists typical construction equipment noise levels (Lmax) recommended for noise impact assessments, based on a distance of 50 feet between the equipment and a noise receptor.

Typical noise levels at 50 feet from an active construction area range up to 91 dBA Lmax during the noisiest construction phases. The site preparation phase, which includes grading and paving, tends to generate the highest noise levels because the noisiest construction equipment is earthmoving equipment. Earthmoving equipment includes excavation machinery such as backfillers, bulldozers, and front loaders. Earthmoving and compacting equipment includes compactors, scrapers, and graders. Typical operating cycles for these types of construction equipment may involve 1 or 2 minutes of full-power operation followed by 3 or 4 minutes at lower power settings.

Table 8-1. Typical Construction Equipment Noise Levels

Type of Equipment	Range of Maximum Sound Levels (dBA Lmax at 50 feet)	Suggested Maximum Sound Levels for Analysis (dBA Lmax at 50 feet)
Pile drivers	81 to 96	93
Rock drills	83 to 99	96
Jackhammers	75 to 85	82
Pneumatic tools	78 to 88	85
Pumps	74 to 84	80
Scrapers	83 to 91	87
Haul trucks	83 to 94	88
Cranes	79 to 86	82
Portable generators	71 to 87	80
Rollers	75 to 82	80
Dozers	77 to 90	85
Tractors	77 to 82	80
Front-end loaders	77 to 90	86
Hydraulic backhoe	81 to 90	86
Hydraulic excavators	81 to 90	86
Graders	79 to 89	86
Air compressors	76 to 89	86
Trucks	81 to 87	86

Source: Bolt, Beranek & Newman 1987
dBA = A-weighted decibels
Lmax = maximum instantaneous noise level

Construction of the proposed project is expected to require the use of earthmovers, bulldozers, paving machines, water trucks, dump trucks, concrete trucks, rollers, and pickup trucks. Noise associated with the use of construction equipment is estimated between 79 and 89 dBA Lmax at a distance of 50 feet from the active construction area for the grading phase. As seen in Table 8-1, the maximum noise level generated by each earthmover is assumed to be approximately 86 dBA Lmax at 50 feet from the earthmover in operation. Each bulldozer would generate approximately 85 dBA Lmax at 50 feet. The maximum noise level generated by water trucks and pickup trucks is approximately 86 dBA Lmax at 50 feet from these vehicles. Each doubling of the sound source with equal strength increases the noise level by 3 dBA.

Each piece of construction equipment operates as an individual point source. The worst-case composite noise level at the nearest residence during this phase of construction would be 91 dBA Lmax (at a distance of 50 feet from an active construction area).

In addition to the standard construction equipment, bridge construction would require the use of pile drivers. As shown in Table 8-1, pile-driving generates noise levels of up to 96 dBA Lmax at 50 feet.

No adverse noise impacts from construction are anticipated because construction would be conducted in accordance with applicable local noise standards, provisions in Section 14-8.02, "Noise Control," of the *Caltrans Standard Specifications*, and applicable local noise standards.

Construction noise would be short term, intermittent, and overshadowed by local traffic noise. In addition, implementation of the following measure would further minimize the temporary noise impacts from construction:

> As directed by Caltrans, the contractor will implement appropriate additional noise mitigation measures, which may include changing the location of stationary construction equipment, turning off idling equipment, rescheduling construction activity, notifying adjacent residents in advance of construction work, and installing acoustic barriers around stationary construction noise sources.

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Chapter 9. References

Bolt, Beranek & Newman. 1987. *Noise Control for Buildings and Manufacturing Plants.*

California Department of Transportation (Caltrans). 2011. *Traffic Noise Analysis Protocol for New Highway Construction, Reconstruction, and Retrofit Barrier Projects.* August. Sacramento, CA.

———. 2010. *Standard Specifications*. Publications Unit

———. 2012. *Highway Design Manual*. Publications Unit.

———. 2013. *Technical Noise Supplement to the Traffic Noise Analysis Protocol.* September. Sacramento, CA: Division of Environmental Analysis. Available: <http://www.dot.ca.gov/hq/env/noise/pub/TeNS_Sept_2013B.pdf>. Accessed: July 2, 2014.

Fehr & Peers. 2014. *I-80/SR 65 Interchange Improvements Transportation Analysis Report*. Prepared for placer County Transportation Planning Agency, Roseville, CA. May.

Federal Highway Administration (FHWA) (Anderson, Grant S., Cynthia S. Y. Lee, Gregg G. Fleming). 1998a. *FHWA Traffic Noise Model, Version 1.0: User's Guide. Report No. FHWA-PD-96-009 and DOT-VNTSC-FHWA-98-1*. Cambridge, MA: John A. Volpe National Transportation Systems Center, Acoustics Facility, January.

———. (Menge, Christopher W., Christopher J. Rossano, Grant S. Anderson, Christopher J. Bajdek). 1998b. *FHWA Traffic Noise Model, Version 1.0: Technical Manual. Report No. FHWA-PD-96-010 and DOT-VNTSC-FHWA-98-2*. Cambridge, MA: John A. Volpe National Transportation Systems Center, Acoustics Facility, February.

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Chapter 10. NSR Preparer's Qualifications

Jason Volk has 13 years of experience in the analysis of transportation noise and has prepared numerous noise study reports for several state transportation departments, especially for Caltrans and the Virginia Department of Transportation. He has taught several courses on the use of the FHWA TNM for state transportation department staff in Massachusetts, New York, Texas, and California. He is a member of the Institute of Noise Control Engineering and Transportation Research Board.

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Appendix A Traffic Data

This appendix contains tables of traffic data for existing conditions, design year conditions without the project, and design year conditions with the project (Alternatives 1, 2, and 3).

Table A-1. Existing (2012) Peak Hour Traffic Volumes

Roadway	Segment	Number of Lanes	Total Volume PM Peak Hour Volume	Auto		Heavy Trucks		Speed
				%	Volume	%	Volume	(A/HT)
I-80 EB	Douglas Blvd to SR 65	4	6,518	97%	6,309	3%	209	65/65
I-80 EB HOV	Douglas Blvd to SR 65	1	1,085	100%	1,085	0%	0	65
I-80 EB offramp	Atlantic St	1	941	99%	932	1%	9	45/45
I-80 WBonramp	Atlantic St EB	1	229	99%	227	1%	2	65/65
I-80 offramp	Atlantic St EB	1	662	99%	655	1%	7	45/45
Atlantic St EB	--	2	840	100%	839	0%	0	30
Atlantic St WB	--	2	1,370	100%	1,365	0%	0	30
I-80 EB onramp	Atlantic St WB	1	900	99%	890	1%	9	65/65
Taylor Rd NB	--	1	890	100%	886	0%	0	30
Taylor Rd SB	--	1	569	100%	569	0%	0	30
I-80 EB offramp	Taylor Rd	1	510	99%	504	1%	5	45/45
SR 65 NB offramp	Pleasant Grove Blvd	1	1,010	99%	1,000	1%	10	45/45
SR 65 SB onramp	Pleasant Grove Blvd	1	580	100%	578	1%	6	60/60
I-80 EB offramp	SR 65 NB	2	3,190	99%	3,155	1%	32	45/45
SR 65 SB offramp	Galleria Blvd SB	1	790	99%	779	1%	8	45/45
SR 65 NB offramp	Galleria Blvd SB	1	1,150	99%	1,135	1%	11	45/45
SR 65 SB offramp	Galleria Blvd NB	1	980	99%	972	1%	10	60/60
Galleria Blvd SB	SR 65 to Roseville Parkway	2	2,170	100%	2,167	0%	0	30
Galleria Blvd NB	SR 65 to Roseville Parkway	2	2,170	100%	2,167	0%	0	30
SR 65 NB offramp	Galleria Blvd NB	1	1,150	99%	1,135	1%	11	45/45
SR 65 SB onramp	I-80 WB	2	2,440	99%	2,418	1%	24	65/65
I-80 WB offramp	SR 65 NB	2	1,170	99%	1,160	1%	12	45/45
Roseville Parkway	--	2	1,970	100%	1,973	0%	0	30
SR 65 SB	Pleasant Grove Blvd to I-80	2	3,800	98%	3,724	2%	76	60/60
Roseville Parkway	--	2	2,160	100%	2,160	0%	0	30
I-80 WB offramp	Atlantic St	1	370	100%	369	1%	4	45/45
SR 65 SB offramp	I-80 EB	2	1,580	99%	1,566	1%	16	65/65
SR 65 NB	Pleasant Grove Blvd to I-80	2	3,800	98%	3,724	2%	76	60/60
I-80 WB	Rocklin Rd to SR 65	3	3,600	92%	3,329	8%	270	65/65
I-80 EB	SR 65 to Rocklin Rd	3	4,590	97%	4,444	3%	147	65/65
I-80 WB	SR 65 to Douglas Blvd	3	5,270	92%	4,871	7%	395	65/65
I-80 WB HOV	SR 65 to Douglas Blvd	1	1,010	100%	1,008	0%	0	65

Table A-2. Future No-Project (2040) Peak Hour Traffic Volumes

Roadway	Segment	Number of Lanes	Total Volume PM Peak Hour Volume	Auto		Heavy Trucks		Speed
				%	Volume	%	Volume	(A/HT)
I-80 EB	Douglas Blvd to SR 65	4	7,600	97%	7,357	3%	243	65/65
I-80 EB HOV	Douglas Blvd to SR 65	1	1,850	100%	1,850	0%	0	65
I-80 EB offramp	Atlantic St	1	1,000	99%	990	1%	10	45/45
I-80 WBonramp	Atlantic St EB	1	351	99%	347	1%	4	65/65
I-80 offramp	Atlantic St EB	1	980	99%	970	1%	10	45/45
Atlantic St EB	--	2	840	100%	839	0%	0	30
Atlantic St WB	--	2	1,370	100%	1,365	0%	0	30
I-80 EB onramp	Atlantic St WB	1	1,150	99%	1,139	1%	12	65/65
Taylor Rd NB	--	1	1,000	100%	995	0%	0	30
Taylor Rd SB	--	1	940	100%	940	0%	0	30
I-80 EB offramp	Taylor Rd	1	850	99%	842	1%	9	45/45
SR 65 NB offramp	Pleasant Grove Blvd	1	1,020	99%	1,010	1%	10	45/45
SR 65 SB onramp	Pleasant Grove Blvd	1	1,060	99%	1,049	1%	11	60/60
I-80 EB offramp	SR 65 NB	2	3,800	99%	3,762	1%	38	45/45
SR 65 SB offramp	Galleria Blvd SB	1	1,580	99%	1,564	1%	16	45/45
SR 65 NB offramp	Galleria Blvd SB	1	1,380	99%	1,366	1%	14	45/45
SR 65 SB offramp	Galleria Blvd NB	1	1,160	99%	1,148	1%	12	60/60
Galleria Blvd SB	SR 65 to Roseville Parkway	2	2,780	100%	2,775	0%	0	30
Galleria Blvd NB	SR 65 to Roseville Parkway	2	2,780	100%	2,775	0%	0	30
SR 65 NB offramp	Galleria Blvd NB	1	1,380	99%	1,366	1%	14	45/45
SR 65 SB onramp	I-80 WB	2	3,550	99%	3,515	1%	36	65/65
I-80 WB offramp	SR 65 NB	2	1,900	99%	1,881	1%	19	45/45
Roseville Parkway	--	2	2,990	100%	2,990	0%	0	30
SR 65 SB	Pleasant Grove Blvd to I-80	2	3,800	98%	3,724	2%	76	60/60
Roseville Parkway	--	2	2,590	100%	2,590	0%	0	30
I-80 WB offramp	Atlantic St	1	500	99%	495	1%	5	45/45
SR 65 SB offramp	I-80 EB	2	1,900	99%	1,881	1%	19	65/65
SR 65 NB	Pleasant Grove Blvd to I-80	2	3,800	98%	3,724	2%	76	60/60
I-80 WB	Rocklin Rd to SR 65	3	5,160	93%	4,773	8%	387	65/65
I-80 EB	SR 65 to Rocklin Rd	3	5,700	97%	5,518	3%	182	65/65
I-80 WB	SR 65 to Douglas Blvd	3	5,700	97%	5,518	3%	182	65/65
I-80 WB HOV	SR 65 to Douglas Blvd	1	1,850	100%	1,850	0%	0	65

Table A-3. Future Project Alternative 1 (2040) Peak Hour Traffic Volumes

Roadway	Segment	Number of Lanes	Total Volume PM Peak Hour Volume	Auto		Heavy Trucks		Speed
				%	Volume	%	Volume	(A/HT)
I-80 EB	Douglas Blvd to SR 65	5	9,140	97%	8,848	3%	292	65/65
I-80 EB HOV	Douglas Blvd to SR 65	1	1,900	100%	1,900	0%	0	65
I-80 EB offramp	Atlantic St	1	951	99%	941	1%	10	45/45
I-80 WBonramp	Atlantic St EB	1	310	99%	307	1%	3	65/65
I-80 offramp	Atlantic St EB	1	1,070	99%	1,059	1%	11	45/45
Atlantic St EB	--	2	1,420	100%	1,420	0%	0	30
Atlantic St WB	--	2	1,820	100%	1,820	0%	0	30
I-80 EB onramp	Atlantic St WB	1	1,450	99%	1,436	1%	15	65/65
SR 65 NB offramp	Pleasant Grove Blvd	1	1,520	99%	1,505	1%	15	60/60
SR 65 SB onramp	Pleasant Grove Blvd	1	460	99%	455	1%	5	60/60
SR 65 SB offramp	Galleria Blvd SB	1	1,550	99%	1,535	1%	16	45/45
SR 65 NB offramp	Galleria Blvd SB	1	1,660	99%	1,643	1%	17	45/45
SR 65 SB offramp	Galleria Blvd NB	1	1,850	99%	1,832	1%	19	60/60
Galleria Blvd SB	SR 65 to Roseville Parkway	2	2,340	100%	2,340	0%	0	30
Galleria Blvd NB	SR 65 to Roseville Parkway	2	2,340	100%	2,340	0%	0	30
SR 65 NB offramp	Galleria Blvd NB	1	1,660	99%	1,643	1%	17	45/45
SR 65 SB onramp	I-80 WB	2	3,550	99%	3,515	1%	36	65/65
Roseville Parkway	--	2	3,030	100%	3,025	0%	0	30
SR 65 SB	Pleasant Grove Blvd to I-80	3	5,700	98%	5,586	2%	114	60/60
Roseville Parkway	--	2	2,140	100%	2,135	0%	0	30
I-80 WB offramp	Atlantic St	1	470	99%	465	1%	5	45/45
SR 65 SB offramp	I-80 EB	2	2,590	99%	2,564	1%	26	65/65
SR 65 NB	Pleasant Grove Blvd to I-80	3	5,700	98%	5,586	2%	114	60/60
I-80 WB	Rocklin Rd to SR 65	3	5,190	93%	4,801	7%	389	65/65
I-80 EB	SR 65 to Rocklin Rd	3	5,700	97%	5,518	3%	182	65/65
I-80 EB HOV	SR 65 to Rocklin Rd	1	1,050	100%	1,050	0%	0	65
I-80 WB	SR 65 to Douglas Blvd	4	7,600	93%	7,030	8%	570	65/65
I-80 WB HOV	SR 65 to Douglas Blvd	1	1,560	100%	1,560	0%	0	65
I-80 WB offramp	SR 65 NB	2	1,950	99%	1,931	1%	20	45/45
I-80 EB onramp	Taylor Rd	1	600	99%	594	1%	6	45/45
SR 65 SB offramp	I-80 EB	2	2,590	99%	2,564	1%	26	65/65
I-80 EB offramp	SR 65 NB	2	4,910	99%	4,861	1%	49	45/45
I-80 HOV offramp	SR 65	2	1,110	99%	1,099	1%	11	45/45
SR 65 SB offramp	I-80 WB	2	3,570	99%	3,534	1%	36	65/65
Taylor Rd NB	north of I-80	1	690	100%	690	0%	0	30
Taylor Rd SB	north of I-80	1	1,170	100%	1,170	0%	0	30

Table A-4. Future Project Alternative 2 (2040) Peak Hour Traffic Volumes

Roadway	Segment	Number of Lanes	Total Volume PM Peak Hour Volume	Auto		Heavy Trucks		Speed
				%	Volume	%	Volume	(A/HT)
I-80 EB	Douglas Blvd to SR 65	5	9,140	97%	8,848	3%	292	65/65
I-80 EB HOV	Douglas Blvd to SR 65	1	1,900	100%	1,900	0%	0	65
I-80 EB offramp	Atlantic St	1	1,680	99%	1,663	1%	17	45/45
I-80 WBonramp	Atlantic St EB	1	310	99%	307	1%	3	65/65
I-80 offramp	Atlantic St EB	1	1,140	99%	1,129	1%	11	65/65
Atlantic St EB	--	2	840	100%	839	0%	0	30
Atlantic St WB	--	2	1,370	100%	1,365	0%	0	30
I-80 EB onramp	Atlantic St WB	1	950	99%	941	1%	10	65/65
SR 65 NB offramp	Pleasant Grove Blvd	1	1,560	99%	1,544	1%	16	60/60
SR 65 SB onramp	Pleasant Grove Blvd	1	480	99%	475	1%	5	60/60
SR 65 SB offramp	Galleria Blvd SB	1	1,560	99%	1,544	1%	16	45/45
SR 65 NB offramp	Galleria Blvd SB	1	1,650	99%	1,634	1%	17	45/45
SR 65 SB offramp	Galleria Blvd NB	1	1,560	99%	1,544	1%	16	45/45
Galleria Blvd SB	SR 65 to Roseville Parkway	2	2,340	100%	2,340	0%	0	30
Galleria Blvd NB	SR 65 to Roseville Parkway	2	2,340	100%	2,340	0%	0	30
SR 65 NB offramp	Galleria Blvd NB	1	1,120	99%	1,109	1%	11	60/60
SR 65 SB onramp	I-80 WB	2	3,550	99%	3,515	1%	36	65/65
Roseville Parkway	--	2	2,010	100%	2,005	0%	0	30
SR 65 SB	Pleasant Grove Blvd to I-80	3	5,700	98%	5,586	2%	114	60/60
Roseville Parkway	--	2	3,310	100%	3,305	0%	0	30
I-80 WB offramp	Atlantic St	1	1,140	99%	1,129	1%	11	65/65
SR 65 SB offramp	I-80 EB	2	2,590	99%	2,564	1%	26	65/65
SR 65 NB	Pleasant Grove Blvd to I-80	3	5,700	98%	5,586	2%	114	60/60
I-80 WB	Rocklin Rd to SR 65	3	5,140	93%	4,755	8%	386	65/65
I-80 EB	SR 65 to Rocklin Rd	3	5,700	97%	5,518	3%	182	65/65
I-80 EB HOV	SR 65 to Rocklin Rd	1	1,050	100%	1,050	0%	0	65
I-80 WB	SR 65 to Douglas Blvd	4	7,230	93%	6,688	7%	542	65/65
I-80 WB HOV	SR 65 to Douglas Blvd	1	1,570	100%	1,570	0%	0	45
I-80 WB offramp	SR 65 NB	2	2,070	99%	2,049	1%	21	45/45
I-80 EB onramp	Taylor Rd	1	600	99%	594	1%	6	45/45
SR 65 SB offramp	I-80 EB	2	2,590	99%	2,564	1%	26	65/65
I-80 EB offramp	SR 65 NB	2	2,560	99%	2,534	1%	26	45/45
I-80 HOV offramp	SR 65	2	1,900	100%	1,900	0%	0	45
SR 65 SB offramp	I-80 WB	2	3,550	99%	3,515	1%	36	45/45
Taylor Rd NB	north of I-80	1	710	99%	705	0%	0	30
Taylor Rd SB	north of I-80	1	800	100%	800	0%	0	30

Table A-5. Future Project Alternative 3 (2040) Peak Hour Traffic Volumes

Roadway	Segment	Number of Lanes	Total Volume PM Peak Hour Volume	Auto		Heavy Trucks		Speed
				%	Volume	%	Volume	(A/HT)
I-80 EB	Douglas Blvd to SR 65	5	8,940	97%	8,654	3%	286	65/65
I-80 EB HOV	Douglas Blvd to SR 65	1	1,900	100%	1,900	0%	0	65
I-80 EB offramp	Atlantic St	1	1,200	99%	1,188	1%	12	45/45
I-80 WBonramp	Atlantic St EB	1	310	99%	307	1%	3	65/65
I-80 offramp	Atlantic St EB	1	1,330	99%	1,317	1%	13	45/45
Atlantic St EB	--	2	1,420	100%	1,415	0%	0	30
Atlantic St WB	--	2	1,950	100%	1,945	0%	0	30
I-80 EB onramp	Atlantic St WB	1	1,650	99%	1,634	1%	17	65/65
SR 65 NB offramp	Pleasant Grove Blvd	1	1,560	99%	1,544	1%	16	45/45
SR 65 SB onramp	Pleasant Grove Blvd	1	480	99%	475	1%	5	60/60
SR 65 SB offramp	Galleria Blvd SB	1	1,550	99%	1,535	1%	16	45/45
SR 65 NB offramp	Galleria Blvd SB	1	1,810	99%	1,792	1%	18	45/45
SR 65 SB offramp	Galleria Blvd NB	1	1,900	99%	1,881	1%	19	60/60
Galleria Blvd SB	SR 65 to Roseville Parkway	2	2,450	100%	2,450	0%	0	30
Galleria Blvd NB	SR 65 to Roseville Parkway	2	2,450	100%	2,450	0%	0	30
SR 65 NB offramp	Galleria Blvd NB	1	1,110	99%	1,099	1%	11	60/60
SR 65 SB onramp	I-80 WB	2	3,700	99%	3,663	1%	37	65/65
Roseville Parkway	--	2	3,030	100%	3,025	0%	0	30
SR 65 SB	Pleasant Grove Blvd to I-80	3	5,700	98%	5,586	2%	114	60/60
Roseville Parkway	--	2	2,190	100%	2,190	0%	0	30
I-80 WB offramp	Atlantic St	1	1,100	99%	1,089	1%	11	45/45
SR 65 SB offramp	I-80 EB	2	2,610	99%	2,584	1%	26	65/65
SR 65 NB	Pleasant Grove Blvd to I-80	3	5,700	98%	5,586	2%	114	60/60
I-80 WB	Rocklin Rd to SR 65	3	5,300	93%	4,903	8%	398	65/65
I-80 EB	SR 65 to Rocklin Rd	3	5,700	97%	5,518	3%	182	65/65
I-80 EB HOV	SR 65 to Rocklin Rd	1	1,050	100%	1,050	0%	0	65
I-80 WB	SR 65 to Douglas Blvd	4	7,600	93%	7,030	8%	570	65/65
I-80 WB HOV	SR 65 to Douglas Blvd	1	1,530	100%	1,530	0%	0	65
I-80 WB offramp	SR 65 NB	2	1,990	99%	1,970	1%	20	45/45
I-80 EB onramp	Taylor Rd	1	600	99%	594	1%	6	45/45
SR 65 SB offramp	I-80 EB	2	2,610	99%	2,584	1%	26	65/65
I-80 EB offramp	SR 65 NB	2	4,990	99%	4,940	1%	50	45/45
I-80 HOV offramp	SR 65	2	1,180	100%	1,180	0%	0	65
SR 65 SB offramp	I-80 WB	2	3,700	99%	3,663	1%	37	65/65
Taylor Rd NB	north of I-80	1	950	100%	950	0%	0	30
Taylor Rd SB	north of I-80	1	1,330	100%	1,325	0%	0	30

Appendix B Predicted Existing and Future Noise Levels

Table B-1 summarizes the traffic noise modeling results for existing and design year conditions with and without the project (Alternatives 1, 2, and 3).

Table B-1 Predicted Existing (2012) and Future (2040) Noise Levels

Receiver ID	Land Use/Activity Category	Description	Location	Number of Residential Dwelling units	Existing, dBA Leq(h)	Design-year no-build noise level, dBA Leq(h)	Design year no-build minus existing, dB	Design-year build noise level, Alt 1, dBA Leq(h)	Design-year Build Alt 1 minus Existing, dB	Design-year build minus no-build, dB	Noise Abatement Criterion, dBA Leq(h)	Impact Type (None or A/E)	Design-year build noise level, Alt 2, dBA Leq(h)	Design-year Build Alt 2 minus Existing, dB	Impact Type (None or A/E)	Design-year build noise level, Alt 3, dBA Leq(h)	Design-year Build Alt 3 minus Existing, dB	Impact Type (None or A/E)
R001	Lodging / E	Pool Orchid Suites	N Sunrise Ave	1	56	56	0	58	+ 2	+ 2	71	None	58	+ 2	None	58	+ 2	None
R002	Commercial / F	Fry's	N Sunrise Ave	0	73	74	+ 1	75	+ 2	+ 1	--	None	75	+ 2	None	75	+ 2	None
R003	Park / C	Sculpture	N Sunrise Ave	0	65	65	0	67	+ 2	+ 2	66	A/E	67	+ 2	A/E	67	+ 2	A/E
R004	Park / C	Miner's Ravine Trail	N Sunrise Ave	0	55	55	0	56	+ 1	+ 1	66	None	56	+ 1	None	57	+ 2	None
R005	Lodging / E	Pool Heritage Inn Suites	N Harding Blvd	1	76	75	- 1	78	+ 2	+ 3	71	None (1)	77	+ 1	None (1)	78	+ 2	None (1)
R006	Lodging / E	Pool Best Western Roseville Inn	N Harding Blvd	1	66	66	0	69	+ 3	+ 3	71	None	69	+ 3	None	69	+ 3	None
R007	Commercial / F	Claim Jumper	N Harding Blvd	0	77	77	0	79	+ 2	+ 2	--	None	79	+ 2	None	79	+ 2	None
R008	Residential / B	Duplex	N Harding Blvd	12	58	58	0	60	+ 2	+ 2	66	None	60	+ 2	None	60	+ 2	None
R009	Residential / B	Duplex	N Harding Blvd	16	58	58	0	62	+ 4	+ 4	66	None	62	+ 4	None	62	+ 4	None
R010	Residential / B	Townhouse (4plex)	N Harding Blvd	20	59	59	0	61	+ 2	+ 2	66	None	61	+ 2	None	61	+ 2	None
R011	School / C	John Adams Academy playground	N Harding Blvd	1	67	67	0	69	+ 2	+ 2	66	A/E	69	+ 2	A/E	69	+ 2	A/E
R012	Park / C	Miner's Ravine Trail	N Harding Blvd	0	66	65	- 1	68	+ 2	+ 3	66	A/E	68	+ 2	A/E	68	+ 2	A/E
R013	Residential / B	Townhouse (4plex)	N Harding Blvd	20	56	56	0	58	+ 2	+ 2	66	None	58	+ 2	None	58	+ 2	None
R014	Commercial / F	Industrial	N Harding Blvd	0	60	61	+ 1	62	+ 2	+ 1	--	None	63	+ 3	None	62	+ 2	None
R015	Recreational / C	Golfland	Taylor Rd	1	67	66	- 1	69	+ 2	+ 3	66	A/E	69	+ 2	A/E	69	+ 2	A/E
R016	Recreational / C	Sunsplash	Taylor Rd	2	57	58	+ 1	59	+ 2	+ 1	66	None	58	+ 1	None	59	+ 2	None
R017	Lodging / E	Pool Hilton Garden inn	Taylor Rd	1	63	64	+ 1	65	+ 2	+ 1	71	None	65	+ 2	None	65	+ 2	None
R018	Lodging / E	Ball court Residence Inn	Taylor Rd	1	62	63	+ 1	64	+ 2	+ 1	71	None	64	+ 2	None	64	+ 2	None
R019	Undeveloped / G	Wetland Preserve	Roseville Pkwy	0	69	70	+ 1	69	0	- 1	--	None	68	- 1	None	69	0	None
R020	Commercial / F	Medical Plaza	Secret Ravine Pkwy	0	56	56	0	61	+ 5	+ 5	--	None	60	+ 4	None	61	+ 5	None
R021	Residential / B	Apts - Phoenician	Secret Ravine Pkwy	54	57	58	+ 1	61	+ 4	+ 3	66	None	61	+ 4	None	61	+ 4	None
R022	Residential / B	Emerald Creek - SFH	Sebastien Way	3	57	58	+ 1	60	+ 3	+ 2	66	None	60	+ 3	None	60	+ 3	None
R023	Residential / B	Emerald Creek - SFH	Sebastien Way	4	57	58	+ 1	60	+ 3	+ 2	66	None	60	+ 3	None	60	+ 3	None
R024	Residential / B	Emerald Creek - SFH	Sebastien Way	3	56	56	0	60	+ 4	+ 4	66	None	60	+ 4	None	60	+ 4	None
R025	Residential / B	Emerald Creek - SFH	Sebastien Way	5	55	56	+ 1	58	+ 3	+ 2	66	None	58	+ 3	None	58	+ 3	None
R026	Residential / B	Emerald Creek - SFH	Viola Way	4	55	56	+ 1	56	+ 1	0	66	None	56	+ 1	None	56	+ 1	None
R027	Undeveloped / G	Wetland Preserve	Roseville Pkwy	0	57	58	+ 1	60	+ 3	+ 2	--	None	60	+ 3	None	60	+ 3	None
R028	Undeveloped / G	Wetland Preserve	Roseville Pkwy	0	66	67	+ 1	67	+ 1	0	--	None	67	+ 1	None	67	+ 1	None
R029	Residential / B	Roseville - SFH	Monument Springs Rd	1	60	61	+ 1	61	+ 1	0	66	None	61	+ 1	None	61	+ 1	None
R030	Residential / B	Roseville - SFH	Monument Springs Rd	1	58	59	+ 1	59	+ 1	0	66	None	59	+ 1	None	59	+ 1	None
R031	Undeveloped / G	Wetland Preserve	China Garden Rd	0	**68**	**69**	+ 1	**69**	+ 1	0	--	None	**69**	+ 1	None	**69**	+ 1	None
R032	Residential / B	SFH	Creekview Ct	2	**64**	**65**	+ 1	**65**	+ 1	0	66	None	**65**	+ 1	None	**65**	+ 1	None
R033	Residential / B	SFH	Creekview Ct	2	**65**	**66**	+ 1	**66**	+ 1	0	66	A/E	**66**	+ 1	A/E	**66**	+ 1	A/E
R034	Residential / B	SFH	Creekview Ct	2	**70**	**71**	+ 1	**71**	+ 1	0	66	A/E	**71**	+ 1	A/E	**71**	+ 1	A/E
R035	Residential / B	SFH	Rustic Hills Dr	2	**71**	**71**	0	**72**	+ 1	+ 1	66	A/E	**72**	+ 1	A/E	**72**	+ 1	A/E
R036	Residential / B	SFH	Rustic Hills Dr	1	**67**	**68**	+ 1	**68**	+ 1	0	66	A/E	**68**	+ 1	A/E	**68**	+ 1	A/E
R037	Residential / B	SFH	Creekview Ct	3	**57**	**58**	+ 1	**58**	+ 1	0	66	None	**58**	+ 1	None	**58**	+ 1	None
R038	Residential / B	SFH	Creekview Ct	3	**57**	**58**	+ 1	**58**	+ 1	0	66	None	**58**	+ 1	None	**58**	+ 1	None
R039	Residential / B	SFH	Rustic Hills Dr	3	**57**	**58**	+ 1	**58**	+ 1	0	66	None	**58**	+ 1	None	**58**	+ 1	None
R040	Residential / B	SFH	Rustic Hills Dr	6	**54**	**55**	+ 1	**55**	+ 1	0	66	None	**55**	+ 1	None	**55**	+ 1	None
R041	Residential / B	SFH	Secret Ravine Way	5	**52**	**53**	+ 1	**54**	+ 2	+ 1	66	None	**54**	+ 2	None	**54**	+ 2	None
R042	Residential / B	SFH	Rustic Hills Dr	6	**56**	**57**	+ 1	**57**	+ 1	0	66	None	**57**	+ 1	None	**57**	+ 1	None
R043	Residential / B	SFH	Rustic Hills Dr	2	**63**	**64**	+ 1	**64**	+ 1	0	66	None	**64**	+ 1	None	**64**	+ 1	None
R044	Residential / B	SFH	Pine Crest Ct	3	**65**	**66**	+ 1	**66**	+ 1	0	66	A/E	**66**	+ 1	A/E	**66**	+ 1	A/E
R045	Residential / B	SFH	Rustic Hills Dr	2	**59**	**61**	+ 2	**61**	+ 2	0	66	None	**61**	+ 2	None	**61**	+ 2	None
R046	Residential / B	SFH	Pine Crest Ct	2	**63**	**64**	+ 1	**64**	+ 1	0	66	None	**64**	+ 1	None	**64**	+ 1	None
R047	Residential / B	SFH	Rustic Hills Dr	6	**57**	**59**	+ 2	**59**	+ 2	0	66	None	**59**	+ 2	None	**59**	+ 2	None
R048	Residential / B	SFH	Rustic Hills Dr	2	**53**	**55**	+ 2	**55**	+ 2	0	66	None	**55**	+ 2	None	**55**	+ 2	None
R049	Park / C	Antelope Creek Trail	Galleria Blvd	0	66	66	0	68	+ 2	+ 2	66	A/E	68	+ 2	A/E	68	+ 2	A/E
R050	Commercial / F	Industrial	Taylor Rd	0	73	73	0	72	- 1	- 1	--	None	70	- 3	None	72	- 1	None
R051	Residential / B	SFH	Woodcrest Ct	2	**62**	**63**	+ 1	**63**	+ 1	0	66	None	**63**	+ 1	None	**63**	+ 1	None
R052	Residential / B	SFH	Woodcrest Ct	2	**59**	**61**	+ 2	**61**	+ 2	0	66	None	**61**	+ 2	None	**61**	+ 2	None
R053	Residential / B	SFH	Delwood Ct	2	**59**	**60**	+ 1	**60**	+ 1	0	66	None	**60**	+ 1	None	**60**	+ 1	None
R054	Residential / B	SFH	Delwood Ct	2	**61**	**62**	+ 1	**63**	+ 2	+ 1	66	None	**63**	+ 2	None	**63**	+ 2	None
R055	Residential / B	SFH	Westwood Dr	2	**59**	**60**	+ 1	**61**	+ 2	+ 1	66	None	**60**	+ 1	None	**61**	+ 2	None
R056	Residential / B	SFH	Westwood Dr	2	**60**	**61**	+ 1	**62**	+ 2	+ 1	66	None	**62**	+ 2	None	**62**	+ 2	None
R057	Residential / B	SFH	Westwood Dr	2	**60**	**61**	+ 1	**61**	+ 1	0	66	None	**61**	+ 1	None	**61**	+ 1	None
R058	Residential / B	SFH	Westwood Dr	2	**59**	**61**	+ 2	**60**	+ 1	- 1	66	None	**60**	+ 1	None	**60**	+ 1	None
R059	Residential / B	SFH	Westwood Dr	2	**59**	**61**	+ 2	**61**	+ 2	0	66	None	**60**	+ 1	None	**61**	+ 2	None
R060	Residential / B	SFH	Westwood Dr	3	**60**	**61**	+ 1	**61**	+ 1	0	66	None	**61**	+ 1	None	**61**	+ 1	None
R061	Residential / B	SFH	Westwood Dr	3	**61**	**62**	+ 1	**63**	+ 2	+ 1	66	None	**62**	+ 1	None	**63**	+ 2	None

Table B-1 Predicted Existing (2012) and Future (2040) Noise Levels

Receiver ID	Land Use/Activity Category	Description	Location	Number of Residential Dwelling units	Existing, dBA Leq(h)	Design-year no-build noise level, dBA Leq(h)	Design year no-build minus existing, dB	Design-year build noise level, Alt 1, dBA Leq(h)	Design-year Build Alt 1 minus Existing, dB	Design-year build minus no-build, dB	Noise Abatement Criterion, dBA Leq(h)	Impact Type (None or A/E)	Design-year build noise level, Alt 2, dBA Leq(h)	Design-year Build Alt 2 minus Existing, dB	Impact Type (None or A/E)	Design-year build noise level, Alt 3, dBA Leq(h)	Design-year Build Alt 3 minus Existing, dB	Impact Type (None or A/E)
R062	Residential / B	SFH	Woodcrest Ct	3	**55**	**56**	+ 1	**56**	+ 1	0	66	None	**56**	+ 1	None	**56**	+ 1	None
R063	Residential / B	SFH	Delwood Ct	5	**52**	**53**	+ 1	**54**	+ 2	+ 1	66	None	**53**	+ 1	None	**54**	+ 2	None
R064	Residential / B	SFH	Woodcrest Ct	2	**55**	**56**	+ 1	**57**	+ 2	+ 1	66	None	**57**	+ 2	None	**57**	+ 2	None
R065	Residential / B	SFH	Westwood Dr	6	**52**	**53**	+ 1	**54**	+ 2	+ 1	66	None	**54**	+ 2	None	**54**	+ 2	None
R066	Residential / B	SFH	Westwood Dr	7	**53**	**54**	+ 1	**54**	+ 1	0	66	None	**54**	+ 1	None	**54**	+ 1	None
R067	Residential / B	SFH	Westwood Dr	5	**51**	**53**	+ 2	**53**	+ 2	0	66	None	**53**	+ 2	None	**53**	+ 2	None
R068	Residential / B	SFH	Somerset Way	5	**51**	**52**	+ 1	**52**	+ 1	0	66	None	**52**	+ 1	None	**52**	+ 1	None
R069	Residential / B	SFH	Westwood Dr	4	**56**	**58**	+ 2	**58**	+ 2	0	66	None	**58**	+ 2	None	**58**	+ 2	None
R070	Residential / B	SFH	Edgewood Way	4	**51**	**52**	+ 1	**52**	+ 1	0	66	None	**52**	+ 1	None	**52**	+ 1	None
R071	Residential / B	SFH	Pinebrook Way	2	**54**	**55**	+ 1	**55**	+ 1	0	66	None	**55**	+ 1	None	**55**	+ 1	None
R072	Residential / B	SFH	Westwood Dr	2	**53**	**55**	+ 2	**55**	+ 2	0	66	None	**55**	+ 2	None	**55**	+ 2	None
R073	Residential / B	SFH	Ridgewood Ct	4	**50**	**51**	+ 1	**52**	+ 2	+ 1	66	None	**51**	+ 1	None	**52**	+ 2	None
R074	Park / C	Woodside Park	Westwood Dr	1	**59**	**61**	+ 2	**61**	+ 2	0	66	None	**61**	+ 2	None	**61**	+ 2	None
R075	Park / C	Woodside Park	Westwood Dr	1	**59**	**60**	+ 1	**60**	+ 1	0	66	None	**60**	+ 1	None	**61**	+ 2	None
R076	Park / C	Woodside Park	Westwood Dr	1	**58**	**59**	+ 1	**59**	+ 1	0	66	None	**59**	+ 1	None	**59**	+ 1	None
R077	Park / C	Woodside Park	Westwood Dr	1	**57**	**58**	+ 1	**59**	+ 2	+ 1	66	None	**59**	+ 2	None	**59**	+ 2	None
R078	Residential / B	SFH	Westwood Dr	4	**55**	**56**	+ 1	**56**	+ 1	0	66	None	**56**	+ 1	None	**56**	+ 1	None
R079	Residential / B	SFH	Westwood Dr	3	**50**	**51**	+ 1	**52**	+ 2	+ 1	66	None	**51**	+ 1	None	**52**	+ 2	None
R080	Residential / B	SFH	Edgewood Way	19	**50**	**51**	+ 1	**52**	+ 2	+ 1	66	None	**52**	+ 2	None	**52**	+ 2	None
R081	Residential / B	SFH	Woodglade Ct	2	**61**	**62**	+ 1	**62**	+ 1	0	66	None	**62**	+ 1	None	**62**	+ 1	None
R082	Residential / B	SFH	Woodglade Ct	4	**59**	**60**	+ 1	**60**	+ 1	0	66	None	**60**	+ 1	None	**60**	+ 1	None
R083	Residential / B	SFH	Woodglade Ct	3	**54**	**55**	+ 1	**56**	+ 2	+ 1	66	None	**55**	+ 1	None	**56**	+ 2	None
R084	Residential / B	SFH	Kingwood Cir	4	**59**	**60**	+ 1	**60**	+ 1	0	66	None	**60**	+ 1	None	**60**	+ 1	None
R085	Residential / B	SFH	Kingwood Cir	2	**59**	**61**	+ 2	**61**	+ 2	0	66	None	**61**	+ 2	None	**61**	+ 2	None
R086	Residential / B	SFH	Kingwood Cir	2	**59**	**61**	+ 2	**61**	+ 2	0	66	None	**60**	+ 1	None	**61**	+ 2	None
R087	Residential / B	SFH	Kingwood Cir	3	**61**	**62**	+ 1	**62**	+ 1	0	66	None	**62**	+ 1	None	**62**	+ 1	None
R088	Residential / B	SFH	Aspen Ct	2	**62**	**63**	+ 1	**63**	+ 1	0	66	None	**63**	+ 1	None	**63**	+ 1	None
R089	Residential / B	SFH	Aspen Ct	1	**63**	**65**	+ 2	**65**	+ 2	0	66	None	**65**	+ 2	None	**65**	+ 2	None
R090	Residential / B	SFH	Kingwood Cir	10	**58**	**59**	+ 1	**59**	+ 1	0	66	None	**59**	+ 1	None	**59**	+ 1	None
R091	Residential / B	SFH	Aspen Ct	3	**54**	**55**	+ 1	**55**	+ 1	0	66	None	**55**	+ 1	None	**55**	+ 1	None
R092	Residential / B	SFH	Kingwood Cir	3	**53**	**55**	+ 2	**55**	+ 2	0	66	None	**55**	+ 2	None	**55**	+ 2	None
R093	Residential / B	SFH	Dew Ct	6	**58**	**60**	+ 2	**60**	+ 2	0	66	None	**60**	+ 2	None	**60**	+ 2	None
R094	Undeveloped / G	Open	Cemetary	0	**70**	**72**	+ 2	**72**	+ 2	0	--	None	**71**	+ 1	None	**72**	+ 2	None
R095	Residential / B	4plex Sutter Ridge	Ridge View Cir	20	**58**	**59**	+ 1	**59**	+ 1	0	66	None	**59**	+ 1	None	**59**	+ 1	None
R096	Cemetary / C	Rocklin Cemetary District	Kannasto St	1	**63**	**65**	+ 2	**65**	+ 2	0	66	None	**65**	+ 2	None	**65**	+ 2	None
R097	Cemetary / C	Rocklin Cemetary District	Kannasto St	1	**57**	**58**	+ 1	**58**	+ 1	0	66	None	**58**	+ 1	None	**58**	+ 1	None
R098	Residential / B	SFH	Grove Ct	1	**64**	**65**	+ 1	**65**	+ 1	0	66	None	**65**	+ 1	None	**65**	+ 1	None
R099	Undeveloped / G	Industrial	Grove Ct	0	**64**	**65**	+ 1	**65**	+ 1	0	--	None	**65**	+ 1	None	**65**	+ 1	None
R100	Undeveloped / G	Industrial	Grove Ct	0	**62**	**64**	+ 2	**64**	+ 2	0	--	None	**64**	+ 2	None	**64**	+ 2	None
R101	Residential / B	Rocklin Mobile Home Park	S Grove Ct	6	63	64	+ 1	64	+ 1	0	66	None	64	+ 1	None	64	+ 1	None
R102	Residential / B	Rocklin Mobile Home Park	S Grove Ct	4	66	67	+ 1	67	+ 1	0	66	A/E	67	+ 1	A/E	67	+ 1	A/E
R103	Residential / B	Rocklin Mobile Home Park	S Grove Ct	4	66	68	+ 2	68	+ 2	0	66	A/E	68	+ 2	A/E	68	+ 2	A/E
R104	Residential / B	Rocklin Mobile Home Park	S Grove Ct	3	68	69	+ 1	69	+ 1	0	66	A/E	69	+ 1	A/E	69	+ 1	A/E
R105	Residential / B	Rocklin Mobile Home Park	S Grove Ct	4	77	78	+ 1	78	+ 1	0	66	A/E	78	+ 1	A/E	78	+ 1	A/E
R106	Residential / B	Rocklin Mobile Home Park	S Grove Ct	4	66	67	+ 1	67	+ 1	0	66	A/E	67	+ 1	A/E	67	+ 1	A/E
R107	Residential / B	Rocklin Mobile Home Park	S Grove Ct	6	65	66	+ 1	66	+ 1	0	66	A/E	66	+ 1	A/E	66	+ 1	A/E
R108	Residential / B	Rocklin Mobile Home Park	S Grove Ct	7	64	66	+ 2	66	+ 2	0	66	A/E	66	+ 2	A/E	66	+ 2	A/E
R109	Residential / B	Rocklin Mobile Home Park	S Grove Ct	9	69	70	+ 1	70	+ 1	0	66	A/E	70	+ 1	A/E	70	+ 1	A/E
R110	Residential / B	Rocklin Mobile Home Park	S Grove Ct	16	60	61	+ 1	61	+ 1	0	66	None	61	+ 1	None	61	+ 1	None
R111	Residential / B	Rocklin Mobile Home Park	S Grove Ct	12	66	67	+ 1	67	+ 1	0	66	A/E	67	+ 1	A/E	67	+ 1	A/E
R112	Residential / B	Pool Rocklin Mobile Home Park	S Grove Ct	1	61	62	+ 1	62	+ 1	0	66	None	62	+ 1	None	62	+ 1	None
R113	Residential / B	Hearthstone apts.	Springview Dr	48	66	67	+ 1	67	+ 1	0	66	A/E	69	+ 3	A/E	69	+ 3	A/E
R114	Residential / B	Hearthstone apts.	Springview Dr	45	61	62	+ 1	61	0	- 1	66	None	61	0	None	61	0	None
R115	Residential / B	Pool Hearthstone apts.	Springview Dr	48	59	60	+ 1	60	+ 1	0	66	None	61	+ 2	None	62	+ 3	None
R116	Residential / B	Springview Village	Springview Dr	25	**55**	**56**	+ 1	**58**	+ 3	+ 2	66	None	**58**	+ 3	None	**58**	+ 3	None
R117	Residential / B	Springview Village	Springview Dr	17	**53**	**53**	0	**54**	+ 1	+ 1	66	None	**54**	+ 1	None	**54**	+ 1	None
R118	Residential / B	Pool Springview Village	Springview Dr	1	**55**	**55**	0	**57**	+ 2	+ 2	66	None	**57**	+ 2	None	**57**	+ 2	None
R119	Residential / B	SFH	Twin Creeks Ln	13	**54**	**54**	0	**56**	+ 2	+ 2	66	None	**56**	+ 2	None	**56**	+ 2	None
R120	Park / C	Antelope Creek Trail	Springview Dr	0	63	64	+ 1	66	+ 3	+ 2	66	A/E	66	+ 3	A/E	66	+ 3	A/E
R121	Residential / B	Placer West apts.	Placer West Dr	16	63	64	+ 1	67	+ 4	+ 3	66	A/E	67	+ 4	A/E	67	+ 4	A/E
R122	Residential / B	Playground Placer West apts.	Placer West Dr	9	62	63	+ 1	65	+ 3	+ 2	66	None	65	+ 3	None	65	+ 3	None

Table B-1 Predicted Existing (2012) and Future (2040) Noise Levels

Receiver ID	Land Use/Activity Category	Description	Location	Number of Residential Dwelling units	Existing, dBA Leq(h)	Design-year no-build noise level, dBA Leq(h)	Design year no-build minus existing, dB	Design-year build noise level, Alt 1, dBA Leq(h)	Design-year Build Alt 1 minus Existing, dB	Design-year build minus no-build, dB	Noise Abatement Criterion, dBA Leq(h)	Impact Type (None or A/E)	Design-year build noise level, Alt 2, dBA Leq(h)	Design-year Build Alt 2 minus Existing, dB	Impact Type (None or A/E)	Design-year build noise level, Alt 3, dBA Leq(h)	Design-year Build Alt 3 minus Existing, dB	Impact Type (None or A/E)
R123	Residential / B	Placer West apts.	Placer West Dr	20	59	59	0	61	+ 2	+ 2	66	None	61	+ 2	None	61	+ 2	None
R124	Residential / B	The Crossing	Placer West Dr	16	59	60	+ 1	62	+ 3	+ 2	66	None	62	+ 3	None	62	+ 3	None
R125	Residential / B	The Crossing	Placer West Dr	12	58	59	+ 1	61	+ 3	+ 2	66	None	61	+ 3	None	61	+ 3	None
R126	Residential / B	Pool The Crossing	Placer West Dr	41	55	56	+ 1	58	+ 3	+ 2	66	None	58	+ 3	None	58	+ 3	None
R127	Residential / B	SFH	Rainier Ct	4	59	60	+ 1	60	+ 1	0	66	None	61	+ 2	None	61	+ 2	None
R128	Residential / B	Woodstream Apts.	Springview Dr	15	57	58	+ 1	60	+ 3	+ 2	66	None	60	+ 3	None	60	+ 3	None
R129	Residential / B	Woodstream Apts.	Springview Dr	15	54	55	+ 1	56	+ 2	+ 1	66	None	56	+ 2	None	56	+ 2	None
R130	Residential / B	Woodstream Apts.	Springview Dr	30	50	51	+ 1	52	+ 2	+ 1	66	None	52	+ 2	None	52	+ 2	None
R131	Residential / B	Ball court/pool Woodstream Apts.	Springview Dr	30	53	54	+ 1	55	+ 2	+ 1	66	None	55	+ 2	None	55	+ 2	None
R132	Undeveloped / G	Open	Springview Dr	0	71	72	+ 1	74	+ 3	+ 2	--	None	74	+ 3	None	74	+ 3	None
R133	Place of Worship / C	Playground Destiny Christian Church	Destiny Dr	1	66	67	+ 1	68	+ 2	+ 1	66	A/E	68	+ 2	A/E	68	+ 2	A/E
R134	School / C	Athletic field Antelope Creek ES	Springview Dr	6	58	59	+ 1	60	+ 2	+ 1	66	None	60	+ 2	None	60	+ 2	None
R135	School / C	Athletic field Antelope Creek ES	Springview Dr	1	58	59	+ 1	60	+ 2	+ 1	66	None	60	+ 2	None	61	+ 3	None
R136	Commercial / F	American Furniture Galleries	Destiny Dr	0	72	72	0	74	+ 2	+ 2	--	None	74	+ 2	None	74	+ 2	None
R137	Residential / B	SFH	Springview Dr	4	58	58	0	60	+ 2	+ 2	66	None	60	+ 2	None	60	+ 2	None
R138	Lodging / E	Pool Comfort Suites	5 Star Blvd	1	60	61	+ 1	62	+ 2	+ 1	71	None	62	+ 2	None	63	+ 3	None
R139	Residential / B	SFH	Lincoln Ave	6	53	54	+ 1	55	+ 2	+ 1	66	None	55	+ 2	None	55	+ 2	None
R140	Commercial / F	Golf Galaxy	5 Star Blvd	0	61	61	0	63	+ 2	+ 2	--	None	63	+ 2	None	63	+ 2	None
R141	Undeveloped / G	Open	Fairway Dr	0	64	64	0	65	+ 1	+ 1	--	None	65	+ 1	None	65	+ 1	None
R142	Residential / B	Coventry Park apts.	Fairway Dr	50	53	53	0	55	+ 2	+ 2	66	None	55	+ 2	None	55	+ 2	None
R143	School / C	Athletic field Thomas Jefferson ES	Fairway Dr	1	51	52	+ 1	53	+ 2	+ 1	66	None	53	+ 2	None	53	+ 2	None
R144	Residential / B	The Preserve at Creekside apts.	Antelope Creek Dr	16	**64**	**65**	+ 1	**71**	+ 7	+ 6	66	A/E	**72**	+ 8	A/E	**72**	+ 8	A/E
R145	Residential / B	The Preserve at Creekside apts.	Antelope Creek Dr	16	**65**	**66**	+ 1	**73**	+ 8	+ 7	66	A/E	**74**	+ 9	A/E	**74**	+ 9	A/E
R146	Residential / B	The Preserve at Creekside apts.	Antelope Creek Dr	16	**65**	**66**	+ 1	**73**	+ 8	+ 7	66	A/E	**73**	+ 8	A/E	**73**	+ 8	A/E
R147	Residential / B	The Preserve at Creekside apts.	Antelope Creek Dr	16	**63**	**64**	+ 1	**71**	+ 8	+ 7	66	A/E	**71**	+ 8	A/E	**71**	+ 8	A/E
R148	Residential / B	The Preserve at Creekside apts.	Antelope Creek Dr	64	**65**	**66**	+ 1	**70**	+ 5	+ 4	66	A/E	**71**	+ 6	A/E	**71**	+ 6	A/E
R149	Residential / B	The Preserve at Creekside apts.	Antelope Creek Dr	16	**63**	**64**	+ 1	**69**	+ 6	+ 5	66	A/E	**69**	+ 6	A/E	**70**	+ 7	A/E
R150	Residential / B	The Preserve at Creekside apts.	Antelope Creek Dr	48	**61**	**61**	0	**64**	+ 3	+ 3	66	None	**63**	+ 2	None	**64**	+ 3	None
R151	Residential / B	The Preserve at Creekside apts.	Antelope Creek Dr	100	59	60	+ 1	62	+ 3	+ 2	66	None	61	+ 2	None	62	+ 3	None
R152	Residential / B	The Preserve at Creekside apts.	Antelope Creek Dr	32	62	62	0	64	+ 2	+ 2	66	None	63	+ 1	None	64	+ 2	None
R153	Park / C	Antelope Creek Trail	Antelope Creek Dr	1	**63**	**64**	+ 1	**70**	+ 7	+ 6	66	A/E	**71**	+ 8	A/E	**71**	+ 8	A/E
R154	Commercial / F	Homewood Suites	Creekside Ridge Ct	1	70	70	0	72	+ 2	+ 2	--	None	72	+ 2	None	72	+ 2	None
R155	Lodging / E	Pool Homewood Suites	Creekside Ridge Ct	1	60	61	+ 1	63	+ 3	+ 2	71	None	63	+ 3	None	63	+ 3	None
R156	Commercial / F	Galleria	Roseville Pkwy	0	56	56	0	58	+ 2	+ 2	--	None	58	+ 2	None	58	+ 2	None
R157	Undeveloped / G	Open	Conference Center Dr	0	64	65	+ 1	67	+ 3	+ 2	--	None	67	+ 3	None	67	+ 3	None
R158	Lodging / E	Pool Hyall Place	Gibson Dr	1	47	47	0	49	+ 2	+ 2	71	None	49	+ 2	None	49	+ 2	None
R159	Commercial / F	Offices	Gibson Dr	0	61	61	0	64	+ 3	+ 3	--	None	64	+ 3	None	64	+ 3	None
R160	Residential / B	Galleria apts.	Gibson Dr	80	52	52	0	54	+ 2	+ 2	66	None	54	+ 2	None	54	+ 2	None
R161	Residential / B	Pool Galleria apts.	Gibson Dr	80	51	52	+ 1	54	+ 3	+ 2	66	None	53	+ 2	None	54	+ 3	None
R162	Residential / B	Terrace apts.	Gibson Dr	40	57	57	0	60	+ 3	+ 3	66	None	60	+ 3	None	60	+ 3	None
R163	Residential / B	Terrace apts.	Gibson Dr	40	57	57	0	60	+ 3	+ 3	66	None	60	+ 3	None	60	+ 3	None
R164	Residential / B	Playground Terrace apts.	Gibson Dr	48	52	52	0	53	+ 1	+ 1	66	None	53	+ 1	None	53	+ 1	None
ST-01	Lodging / E	Pool Best Western Roseville Inn	N Harding Blvd	0	68	68	0	70	+ 2	+ 2	71	None	70	+ 2	None	70	+ 2	None
ST-02	Residential / B	Duplex	N Harding Blvd	0	59	59	0	61	+ 2	+ 2	66	None	60	+ 1	None	61	+ 2	None
ST-03	School / C	John Adams Academy playground	N Harding Blvd	0	68	67	- 1	69	+ 1	+ 2	66	A/E	69	+ 1	A/E	69	+ 1	A/E
ST-04	Park / C	Sculpture	N Sunrise Ave	0	65	65	0	67	+ 2	+ 2	66	A/E	67	+ 2	A/E	67	+ 2	A/E
ST-05	Park / C	Antelope Creek Trail	Galleria Blvd	0	63	63	0	65	+ 2	+ 2	66	None	65	+ 2	None	65	+ 2	None
ST-06	Recreational / C	Golfland	Taylor Rd	0	66	67	+ 1	68	+ 2	+ 1	66	A/E	68	+ 2	A/E	68	+ 2	A/E
ST-07	Lodging / E	Ball court Residence Inn	Taylor Rd	0	63	63	0	65	+ 2	+ 2	71	None	65	+ 2	None	65	+ 2	None
ST-08	Commercial / F	Medical Plaza	Secret Ravine Pkwy	0	57	58	+ 1	62	+ 5	+ 4	--	None	62	+ 5	None	62	+ 5	None
ST-09	Residential / B	Emerald Creek - SFH	Viola Way	0	56	57	+ 1	57	+ 1	0	66	None	57	+ 1	None	57	+ 1	None
ST-10	Residential / B	SFH	Westwood Dr	0	**55**	**57**	+ 2	**57**	+ 2	0	66	None	**57**	+ 2	None	**57**	+ 2	None
ST-11	Park / C	Woodside Park	Westwood Dr	0	**58**	**59**	+ 1	**60**	+ 2	+ 1	66	None	**60**	+ 2	None	**60**	+ 2	None
ST-12	Residential / B	Roseville - SFH	Monument Springs Rd	0	60	61	+ 1	61	+ 1	0	66	None	61	+ 1	None	61	+ 1	None
ST-13	Cemetary / C	Rocklin Cemetary District	Kannasto St	0	**63**	**64**	+ 1	**64**	+ 1	0	66	None	**64**	+ 1	None	**65**	+ 2	None
ST-14	Residential / B	SFH	Rustic Hills Dr	0	**64**	**66**	+ 2	**65**	+ 1	- 1	66	None	**65**	+ 1	None	**65**	+ 1	None
ST-15	Residential / B	SFH	Rustic Hills Dr	0	**59**	**60**	+ 1	**60**	+ 1	0	66	None	**60**	+ 1	None	**60**	+ 1	None
ST-16	Residential / B	The Preserve at Creekside apts.	Antelope Creek Dr	0	**66**	**67**	+ 1	**71**	+ 5	+ 4	66	A/E	**72**	+ 6	A/E	**73**	+ 7	A/E
ST-17	Residential / B	The Preserve at Creekside apts.	Antelope Creek Dr	0	61	62	+ 1	63	+ 2	+ 1	66	None	63	+ 2	None	64	+ 3	None
ST-18	Residential / B	Hearthstone apts.	Springview Dr	0	64	65	+ 1	66	+ 2	+ 1	66	A/E	67	+ 3	A/E	67	+ 3	A/E
ST-19	Residential / B	Springview Village	Springview Dr	0	**55**	**56**	+ 1	**58**	+ 3	+ 2	66	None	**58**	+ 3	None	**58**	+ 3	None

Table B-1 Predicted Existing (2012) and Future (2040) Noise Levels

Receiver ID	Land Use/Activity Category	Description	Location	Number of Residential Dwelling units	Existing, dBA Leq(h)	Design-year no-build noise level, dBA Leq(h)	Design year no-build minus existing, dB	Design-year build noise level, Alt 1, dBA Leq(h)	Design-year Build Alt 1 minus Existing, dB	Design-year build minus no-build, dB	Noise Abatement Criterion, dBA Leq(h)	Impact Type (None or A/E)	Design-year build noise level, Alt 2, dBA Leq(h)	Design-year Build Alt 2 minus Existing, dB	Impact Type (None or A/E)	Design-year build noise level, Alt 3, dBA Leq(h)	Design-year Build Alt 3 minus Existing, dB	Impact Type (None or A/E)
ST-20	Residential / B	Woodstream Apts.	Springview Dr	0	60	61	+ 1	63	+ 3	+ 2	66	None	63	+ 3	None	63	+ 3	None
ST-21	Lodging / E	Homewood Suites	Creekside Ridge Ct	0	69	70	+ 1	72	+ 3	+ 2	71	A/E	72	+ 3	A/E	72	+ 3	A/E
ST-22	Place of Worship / C	Playground Destiny Christian Church	Destiny Dr	0	69	69	0	71	+ 2	+ 2	66	A/E	71	+ 2	A/E	71	+ 2	A/E
ST-23	Commercial / F	Outdoor use Offices	Gibson Dr	0	61	61	0	63	+ 2	+ 2	--	None	63	+ 2	None	63	+ 2	None
ST-24	Residential / B	Terrace apts.	Gibson Dr	0	57	57	0	60	+ 3	+ 3	66	None	60	+ 3	None	60	+ 3	None
LT-01	Park / C	Woodside Park	Westwood Dr	0	**58**	**59**	+ 1	**60**	+ 2	+ 1	66	None	**59**	+ 1	None	**60**	+ 2	None
LT-02	Park / C	Sculpture	N Sunrise Ave	0	65	65	0	67	+ 2	+ 2	66	A/E	67	+ 2	A/E	67	+ 2	A/E
LT-03	Residential / B	The Preserve at Creekside apts.	Antelope Creek Dr	0	**65**	**67**	+ 2	**71**	+ 6	+ 4	66	A/E	**73**	+ 8	A/E	**73**	+ 8	A/E

Notes:
A/E = Approach or Exceed Noise Abatement Criterion for indicated Activity Category
Shaded cells indicate that a K-factor of minus-3 (-3 dB) was applied to the modeling result.

(1) This receiver is located south of the project terminus, and is not considered to be impacted by the project.

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Appendix C Noise Barrier Analysis

Table C-1. Barrier Analysis for Noise Barrier A

	Position R003	Position ST-04	Total Number of Benefited Receivers
Number of Units Represented	1	0	--
Existing Traffic Noise Level (dBA L_{eq}[h])	65	65	--
Future with Project Traffic Noise Level (dBA Leq[h])	66	66	--
Future with Project - Existing Traffic Noise Level (dBA Leq[h])	2	2	--
10-Foot Barrier			
Future with Project Traffic Noise Level (dBA Leq[h])	64	65	--
Predicted Noise Reduction (dB)	2	1	--
Number of Benefited Receivers	0	0	0
12-Foot Barrier			
Future with Project Traffic Noise Level (dBA Leq[h])	62	64	--
Predicted Noise Reduction (dB)	4	2	--
Number of Benefited Receivers	0	0	0
14-Foot Barrier			
Future with Project Traffic Noise Level (dBA Leq[h])	61	63	--
Predicted Noise Reduction (dB)	5	3	--
Number of Benefited Receivers	1	0	1
16-Foot Barrier			
Future with Project Traffic Noise Level (dBA Leq[h])	61	62	--
Predicted Noise Reduction (dB)	5	4	--
Number of Benefited Receivers	1	0	1
18-Foot Barrier			
Future with Project Traffic Noise Level (dBA Leq[h])	60	61	--
Predicted Noise Reduction (dB)	6	5	--
Number of Benefited Receivers	1	0	1
20-Foot Barrier			
Future with Project Traffic Noise Level (dBA Leq[h])	60	60	--
Predicted Noise Reduction (dB)	6	6	--
Number of Benefited Receivers	1	0	1

Table C-2. Barrier Analysis for Noise Barrier B

	Position R015	Position R016	Total Number of Benefited Receivers
Number of Units Represented	1	2	--
Existing Traffic Noise Level (dBA L_{eq}[h])	66	57	--
Future with Project Traffic Noise Level (dBA Leq[h])	68	59	--
Future with Project - Existing Traffic Noise Level (dBA Leq[h])	2	2	--
8-Foot Barrier			
Future with Project Traffic Noise Level (dBA Leq[h])	63	57	--
Predicted Noise Reduction (dB)	5	2	--
Number of Benefited Receivers	1	0	1
10-Foot Barrier			
Future with Project Traffic Noise Level (dBA Leq[h])	63	57	--
Predicted Noise Reduction (dB)	5	2	--
Number of Benefited Receivers	1	0	1
12-Foot Barrier			
Future with Project Traffic Noise Level (dBA Leq[h])	62	57	--
Predicted Noise Reduction (dB)	6	2	--
Number of Benefited Receivers	1	0	1
14-Foot Barrier			
Future with Project Traffic Noise Level (dBA Leq[h])	62	57	--
Predicted Noise Reduction (dB)	6	2	--
Number of Benefited Receivers	1	0	1
16-Foot Barrier			
Future with Project Traffic Noise Level (dBA Leq[h])	61	57	--
Predicted Noise Reduction (dB)	7	2	--
Number of Benefited Receivers	1	0	1

Table C-3. Barrier Analysis for Noise Barrier C

	Position R032	Position R033	Position R034	Position R035	Position R036	Position R037	Position R038	Position R039	Position R040	Position R041	Position R042	Position R043	Position R044	Position R045	Position R046	Position R047	Position R048	Position ST-14	Position ST-15	Total Number of Benefited Receivers
Number of Units Represented	2	2	2	2	1	3	3	3	6	5	6	2	3	2	2	6	2	0	0	--
Existing Traffic Noise Level (dBA L_{eq}[h])	57	65	70	71	67	57	57	57	54	52	56	63	65	59	63	57	53	64	59	--
Future with Project Traffic Noise Level (dBA Leq[h])	58	66	71	72	68	58	58	58	55	54	57	64	66	61	64	59	55	65	60	--
Future with Project - Existing Traffic Noise Level (dBA Leq[h])	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	--
8-Foot Barrier																				
Future with Project Traffic Noise Level (dBA Leq[h])	59	65	68	71	72	59	60	62	56	57	58	71	68	62	64	61	56	70	61	--
Predicted Noise Reduction (dB)	1	1	3	1	4	1	2	4	1	3	1	7	2	1	0	2	1	5	1	--
Number of Benefited Receivers	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10-Foot Barrier																				
Future with Project Traffic Noise Level (dBA Leq[h])	55	60	64	67	67	55	56	58	52	54	55	65	63	59	59	57	53	65	57	--
Predicted Noise Reduction (dB)	3	6	7	5	1	3	2	0	3	0	2	1	3	2	5	2	2	0	3	--
Number of Benefited Receivers	0	2	2	2	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	8
12-Foot Barrier																				
Future with Project Traffic Noise Level (dBA Leq[h])	54	58	62	64	64	53	55	57	51	54	54	63	62	59	58	57	52	64	57	--
Predicted Noise Reduction (dB)	4	8	9	8	4	5	3	1	4	0	3	1	4	2	6	2	3	1	3	--
Number of Benefited Receivers	0	2	2	2	0	3	0	0	0	0	0	0	0	0	2	0	0	0	0	11
14-Foot Barrier																				
Future with Project Traffic Noise Level (dBA Leq[h])	54	57	60	63	63	52	54	57	50	53	53	62	61	58	58	56	52	63	56	--
Predicted Noise Reduction (dB)	4	9	11	9	5	6	4	1	5	1	4	2	5	3	6	3	3	2	4	--
Number of Benefited Receivers	0	2	2	2	1	3	0	0	6	0	0	0	3	0	2	0	0	0	0	21
16-Foot Barrier																				
Future with Project Traffic Noise Level (dBA Leq[h])	53	56	59	61	62	51	53	56	49	53	52	61	60	57	57	56	52	61	55	--
Predicted Noise Reduction (dB)	5	10	12	11	6	7	5	2	6	1	5	3	6	4	7	3	3	4	5	--
Number of Benefited Receivers	2	2	2	2	1	3	3	0	6	0	6	0	3	0	2	0	0	0	0	32

Table C-4. Barrier Analysis for Noise Barrier D

	Position R101	Position R102	Position R103	Position R104	Position R105	Position R106	Position R107	Position R108	Position R109	Position R110	Position R111	Position R112	Total Number of Benefited Receivers
Number of Units Represented	6	4	4	3	4	4	6	7	9	16	12	1	--
Existing Traffic Noise Level (dBA L_{eq}[h])	63	66	66	68	77	66	65	64	69	60	66	61	--
Future with Project Traffic Noise Level (dBA Leq[h])	64	67	68	69	78	67	66	66	70	61	67	62	--
Future with Project - Existing Traffic Noise Level (dBA Leq[h])	1	1	1	1	1	1	1	1	1	1	1	1	--
8-Foot Barrier													
Future with Project Traffic Noise Level (dBA Leq[h])	67	70	74	73	76	69	66	65	67	62	65	61	--
Predicted Noise Reduction (dB)	3	3	6	4	2	2	0	1	3	1	2	1	--
Number of Benefited Receivers	0	0	0	0	0	0	0	0	0	0	0	0	0
10-Foot Barrier													
Future with Project Traffic Noise Level (dBA Leq[h])	66	69	70	70	73	67	65	64	66	61	65	60	--
Predicted Noise Reduction (dB)	2	2	2	1	5	0	1	2	4	0	2	2	--
Number of Benefited Receivers	0	0	0	0	4	0	0	0	0	0	0	0	4
12-Foot Barrier													
Future with Project Traffic Noise Level (dBA Leq[h])	65	67	68	68	71	66	64	63	64	61	63	60	--
Predicted Noise Reduction (dB)	1	0	0	1	7	1	2	3	6	0	4	2	--
Number of Benefited Receivers	0	0	0	0	4	0	0	0	9	0	0	0	13
14-Foot Barrier													
Future with Project Traffic Noise Level (dBA Leq[h])	64	66	66	66	68	64	63	62	63	60	63	59	--
Predicted Noise Reduction (dB)	0	1	2	3	10	3	3	4	7	1	4	3	--
Number of Benefited Receivers	0	0	0	0	4	0	0	0	9	0	0	0	13
16-Foot Barrier													
Future with Project Traffic Noise Level (dBA Leq[h])	64	65	65	65	67	63	62	61	63	59	63	59	--
Predicted Noise Reduction (dB)	0	2	3	4	11	4	4	5	7	2	4	3	--
Number of Benefited Receivers	0	0	0	0	4	0	0	7	9	0	0	0	20

Table C-5. Barrier Analysis for Noise Barrier E

	Position R113	Position R114	Position R115	Position R116	Position R117	Position R118	Position R119	Position R120	Position R121	Position R122	Position R123	Position R124	Position R125	Position R126	Position R127	Position R128	Position R129	Position R130	Position ST-18	Position ST-19	Position ST-20	Total Number of Benefited Receivers
Number of Units Represented	48	45	48	25	17	1	13	0	16	9	20	16	12	41	4	15	15	30	0	0	0	--
Existing Traffic Noise Level (dBA L_{eq}[h])	66	61	59	55	53	55	54	63	63	62	59	59	58	55	59	57	54	50	64	55	60	--
Future with Project Traffic Noise Level (dBA Leq[h])	67	61	60	58	54	57	56	66	67	65	61	62	61	58	60	60	56	52	66	58	63	--
Future with Project - Existing Traffic Noise Level (dBA Leq[h])	1	0	1	3	1	2	2	3	4	3	3	3	3	3	1	2	1	2	3	3	3	--
8-Foot Barrier																						
Future with Project Traffic Noise Level (dBA Leq[h])	65	56	55	52	51	54	52	63	63	60	55	57	55	53	55	55	52	50	64	52	58	--
Predicted Noise Reduction (dB)	2	5	5	6	3	3	4	3	4	5	6	5	6	5	5	5	4	2	2	6	5	--
Number of Benefited Receivers	0	45	48	25	0	0	0	0	0	9	20	16	12	41	4	15	0	0	0	0	0	235
10-Foot Barrier																						
Future with Project Traffic Noise Level (dBA Leq[h])	65	56	54	52	50	54	52	63	63	59	54	57	54	53	54	54	50	50	64	52	58	--
Predicted Noise Reduction (dB)	2	5	6	6	4	3	4	3	4	6	7	5	7	5	6	6	6	2	2	6	5	--
Number of Benefited Receivers	0	45	48	25	0	0	0	0	0	9	20	16	12	41	4	15	15	0	0	0	0	250
12-Foot Barrier																						
Future with Project Traffic Noise Level (dBA Leq[h])	65	55	54	51	50	53	50	62	63	59	54	56	54	52	53	54	50	49	64	51	57	--
Predicted Noise Reduction (dB)	2	6	6	7	4	4	6	4	4	6	7	6	7	6	7	6	6	3	2	7	6	--
Number of Benefited Receivers	0	45	48	25	0	0	13	0	0	9	20	16	12	41	4	15	15	0	0	0	0	263
14-Foot Barrier																						
Future with Project Traffic Noise Level (dBA Leq[h])	65	55	54	51	50	53	50	62	62	58	53	56	54	52	53	54	49	49	64	51	57	--
Predicted Noise Reduction (dB)	2	6	6	7	4	4	6	4	5	7	8	6	7	6	7	6	7	3	2	7	6	--
Number of Benefited Receivers	0	45	48	25	0	0	13	0	16	9	20	16	12	41	4	15	15	0	0	0	0	279

Table C-6. Barrier Analysis for Noise Barrier F

	Position R133	Position ST-22	Total Number of Benefited Receivers
Number of Units Represented	0	1	--
Existing Traffic Noise Level (dBA L_{eq}[h])	66	69	--
Future with Project Traffic Noise Level (dBA Leq[h])	68	71	--
Future with Project - Existing Traffic Noise Level (dBA Leq[h])	2	2	--
10-Foot Barrier			
Future with Project Traffic Noise Level (dBA Leq[h])	66	68	--
Predicted Noise Reduction (dB)	2	3	--
Number of Benefited Receivers	0	0	0
12-Foot Barrier			
Future with Project Traffic Noise Level (dBA Leq[h])	65	67	--
Predicted Noise Reduction (dB)	3	4	--
Number of Benefited Receivers	0	0	0
14-Foot Barrier			
Future with Project Traffic Noise Level (dBA Leq[h])	64	66	--
Predicted Noise Reduction (dB)	4	5	--
Number of Benefited Receivers	0	1	1
16-Foot Barrier			
Future with Project Traffic Noise Level (dBA Leq[h])	64	66	--
Predicted Noise Reduction (dB)	4	5	--
Number of Benefited Receivers	0	1	1
18-Foot Barrier			
Future with Project Traffic Noise Level (dBA Leq[h])	64	65	--
Predicted Noise Reduction (dB)	4	6	--
Number of Benefited Receivers	0	1	1
20-Foot Barrier			
Future with Project Traffic Noise Level (dBA Leq[h])	63	65	--
Predicted Noise Reduction (dB)	5	6	--
Number of Benefited Receivers	0	1	1

Table C-7. Barrier Analysis for Noise Barrier G

	Position R144	Position R145	Position R146	Position R147	Position R148	Position R149	Position R150	Position R151	Position ST-16	Position ST-17	Position LT-03	Total Number of Benefited Receivers
Number of Units Represented	16	16	16	16	64	16	48	100	0	0	0	--
Existing Traffic Noise Level (dBA L_{eq}[h])	64	65	65	63	65	63	61	59	66	61	65	--
Future with Project Traffic Noise Level (dBA Leq[h])	71	73	73	71	70	69	64	62	71	63	71	--
Future with Project - Existing Traffic Noise Level (dBA Leq[h])	7	9	8	8	6	6	3	2	5	2	6	--
8-Foot Barrier												
Future with Project Traffic Noise Level (dBA Leq[h])	68	68	67	66	65	63	64	61	63	62	62	--
Predicted Noise Reduction (dB)	3	5	6	5	5	6	0	1	8	1	9	--
Number of Benefited Receivers	0	16	16	16	64	16	0	0	0	0	0	128
10-Foot Barrier												
Future with Project Traffic Noise Level (dBA Leq[h])	68	68	66	65	64	62	64	61	63	62	62	--
Predicted Noise Reduction (dB)	3	5	7	6	6	7	0	1	8	1	9	--
Number of Benefited Receivers	0	16	16	16	64	16	0	0	0	0	0	128
12-Foot Barrier												
Future with Project Traffic Noise Level (dBA Leq[h])	68	67	66	64	63	62	63	61	63	62	62	--
Predicted Noise Reduction (dB)	3	6	7	7	7	7	1	1	8	1	9	--
Number of Benefited Receivers	0	16	16	16	64	16	0	0	0	0	0	128
14-Foot Barrier												
Future with Project Traffic Noise Level (dBA Leq[h])	67	67	65	64	63	61	63	61	63	62	62	--
Predicted Noise Reduction (dB)	4	6	8	7	7	8	1	1	8	1	9	--
Number of Benefited Receivers	0	16	16	16	64	16	0	0	0	0	0	128

Table C-8. Barrier Analysis for Noise Barrier H

	Position	Position	Total Number of Benefited Receivers
	R011	ST-03	
Number of Units Represented	1	0	--
Existing Traffic Noise Level (dBA L_{eq}[h])	67	67	--
Future with Project Traffic Noise Level (dBA Leq[h])	69	69	--
Future with Project - Existing Traffic Noise Level (dBA Leq[h])	2	2	--
8-Foot Barrier			
Future with Project Traffic Noise Level (dBA Leq[h])	65	65	--
Predicted Noise Reduction (dB)	4	4	--
Number of Benefited Receivers	0	0	0
10-Foot Barrier			
Future with Project Traffic Noise Level (dBA Leq[h])	64	65	--
Predicted Noise Reduction (dB)	5	4	--
Number of Benefited Receivers	1	0	1
12-Foot Barrier			
Future with Project Traffic Noise Level (dBA Leq[h])	62	62	--
Predicted Noise Reduction (dB)	7	7	--
Number of Benefited Receivers	1	0	1
14-Foot Barrier			
Future with Project Traffic Noise Level (dBA Leq[h])	61	61	--
Predicted Noise Reduction (dB)	8	8	--
Number of Benefited Receivers	1	0	1
16-Foot Barrier			
Future with Project Traffic Noise Level (dBA Leq[h])	61	61	--
Predicted Noise Reduction (dB)	8	8	--
Number of Benefited Receivers	1	0	1

Appendix D Supplemental Data

Site ST-01

NOISE MEASUREMENT SITE INFORMATION SHEET

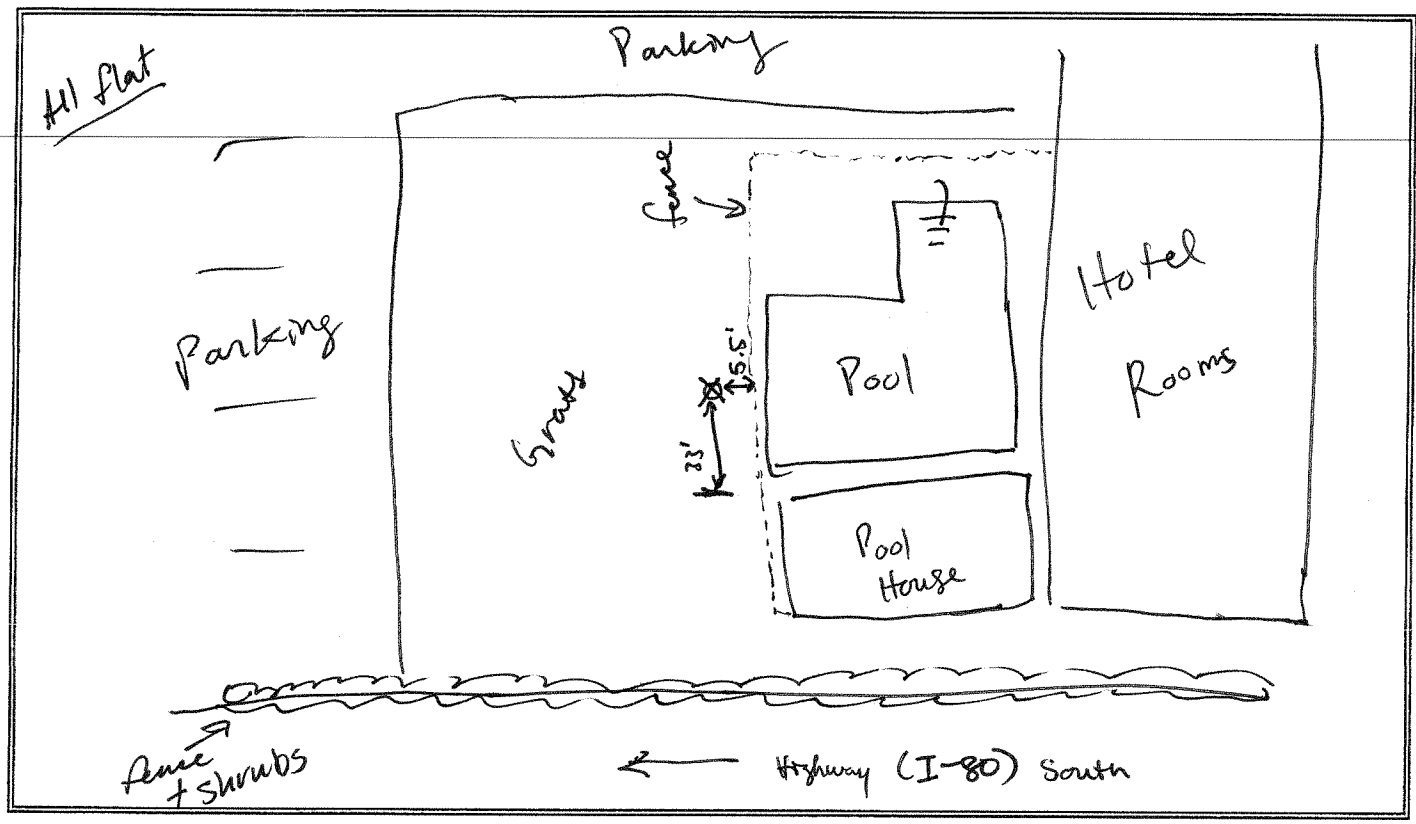
Jones & Stokes

PROJECT NAME: I80/65 PROJECT #: 189.11

SITE NUMBER: SP 2 38°44.693'N 121° 16.086'W DATE/TIME: 12/11/2012 9:00 AM

LOCATION/ADDRESS: Best Western Roseville Poolside ENGINEERS: B. Chang

SITE SKETCH: Show microphone location, nearby residences/buildings, potential reflective surfaces, project roadways, local roadways, driveways, ground type, trees. Indicate reference distances between objects, arrows showing wind direction, North, and camera locations/directions. Describe the line-of-sight and topography/elevation changes relative to noise sources.



WEATHER DATA: (temperature, wind speed/direction, sky conditions, relative humidity)

60°F, <1mph, clear, 59%

EQUIPMENT DATA: (sound level meter, microphone, preamp, calibrator, factory cal. date)

Blue, Blue, , 114

ESTIMATED CONSTRUCTION DATE OF RESIDENCES: (Pre-1978, or new construction)

POSTED SPEED: 65 mph COMMENTS:

TRAFFIC COUNTS:

Roadway/Direction	Autos	Medium	Heavy	Speed	Start Time	Duration

Site ST-01

NOISE MEASUREMENT LOG SHEET (20)

Jones & Stokes

PROJECT NAME: I80/65 PROJECT #: 189.11

SITE NUMBER: ST2 38°44.693'N 121.16.086'W DATE/TIME: 12/11/12 9:00AM

LOCATION/ADDRESS: Best Western Roseville Poolside ENGINEERS: B. Chang

#	Minute Starting	Measured Leq (dBA)	O or X	Autos	Medium Trucks	Heavy Trucks	Other Noise Sources/Comments (include SLM equipment, Calibration Data)
1	9:00	62.7	O				cal 114.0
2	9:01	63.7	O				
3	9:02	64.1	O				
4	9:03	64.1	O				
5	9:04	62.5	O				
6	9:05	63.1	O				
7	9:06	61.7	O				
8	9:07	63.4	O				
9	9:08	63.5	O				
10	9:09	62.5	O				
11	9:10	63.5	O				
12	9:11	62.3	O				
13	9:12	63.0	O				
14	9:13	63.8	O				
15	9:14	63.0	O				
16	9:15	64.1	O				
17							
18							
19							
20							

Leq
Lmax
Lmin
L10
L33
L50
L90

Overall Leq (Include "O" minutes, Exclude "X" minutes) = _____ dBA

Subset Leq (Exclude "O" and "X" minutes) = _____ dBA

"O" = other characteristic sources that contributed to the Leq

"X" = exclude from Leq calculation; a non-typical source contaminated the measurement

Site ST-02

NOISE MEASUREMENT SITE INFORMATION SHEET

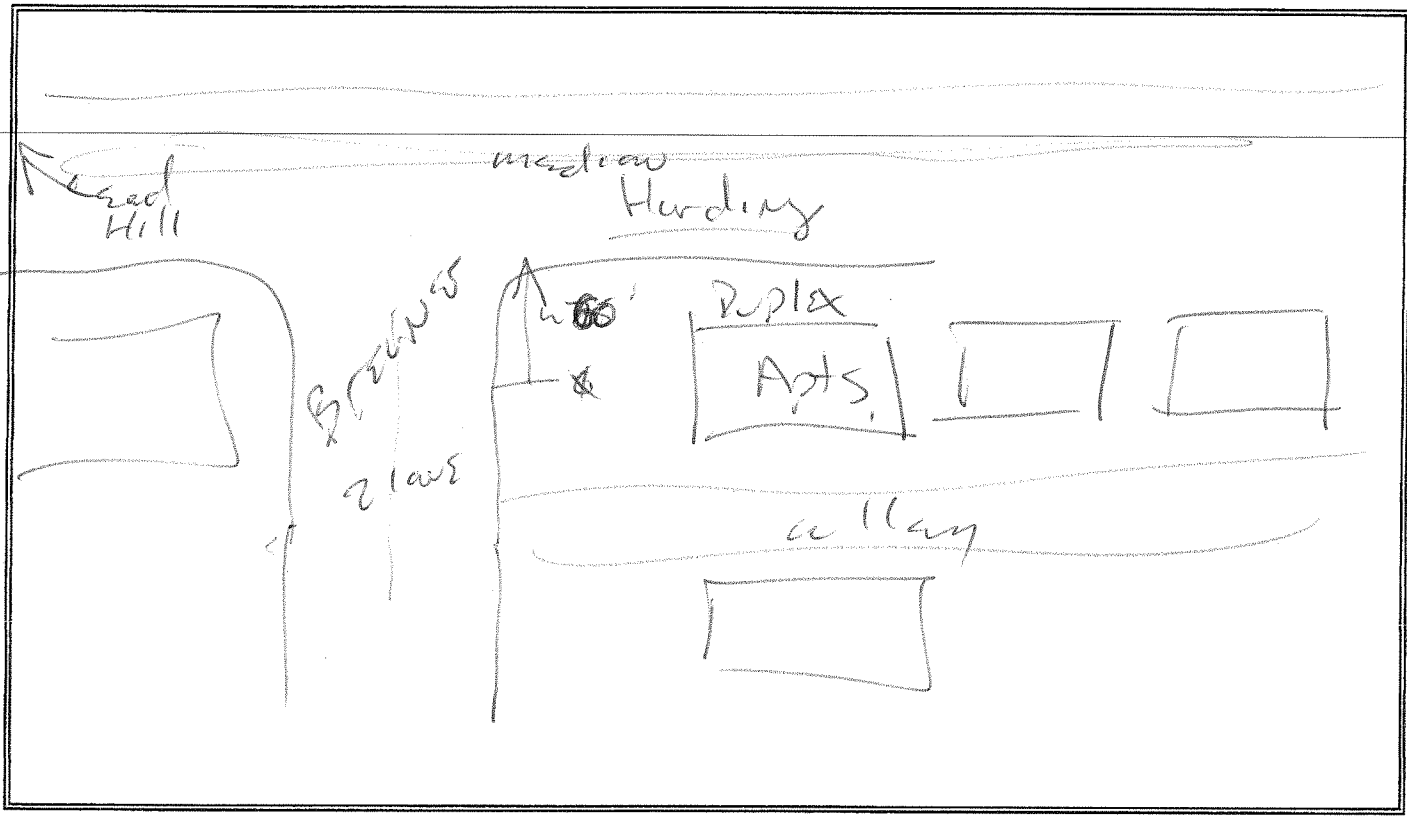
Jones & Stokes

PROJECT NAME: SR65 PROJECT #: 189.11

SITE NUMBER: 4 DATE/TIME: 12-11

LOCATION/ADDRESS: Bowman Harding ENGINEERS: JV

SITE SKETCH: Show microphone location, nearby residences/buildings, potential reflective surfaces, project roadways, local roadways, driveways, ground type, trees. Indicate reference distances between objects, arrows showing wind direction, North, and camera locations/directions. Describe the line-of-sight and topography/elevation changes relative to noise sources.



WEATHER DATA: (temperature, wind speed/direction, sky conditions, relative humidity)

CLR 60s.

EQUIPMENT DATA: (sound level meter, microphone, preamp, calibrator, factory cal. date)

Green

ESTIMATED CONSTRUCTION DATE OF RESIDENCES: (Pre-1978, or new construction)

POSTED SPEED: COMMENTS:

TRAFFIC COUNTS:

Roadway/Direction	Autos	Medium	Heavy	Speed	Start Time	Duration

Site ST-02

NOISE MEASUREMENT LOG SHEET (20)

Jones & Stokes

PROJECT NAME: SR 65 PROJECT #: 189.11

SITE NUMBER: 4 DATE/TIME: 12-11

LOCATION/ADDRESS: Brewer / Harding ENGINEERS: JW

#	Minute Starting	Measured Leq (dBA)	O or X	Autos	Medium Trucks	Heavy Trucks	Other Noise Sources/Comments (include SLM equipment, Calibration Data)
1	9:00	63,9					trio chg 114,0
2	9:01	62,4					dust of 1st
3	9:02	60,0					blowers coming
4	9:03	63,3					steadily ever
5	9:04	62,3					closer...
6	9:05	60,8					local traffic.
7	9:06	61,5					can't really hear
8	9:07	59,9					I-80.
9	9:08	65,2					
10	9:09	60,7					
11	9:10	60,4					
12	9:11	61,6					
13	9:12	61,5					
14	9:13	63,3					
15	9:14	63,0					
16							
17							
18							
19							
20							

Leq
Lmax
Lmin
L10
L33
L50
L90

Overall Leq (Include "O" minutes, Exclude "X" minutes) = _____ dBA

Subset Leq (Exclude "O" and "X" minutes) = _____ dBA

"O" = other characteristic sources that contributed to the Leq

"X" = exclude from Leq calculation; a non-typical source contaminated the measurement

Site ST-03

NOISE MEASUREMENT SITE INFORMATION SHEET

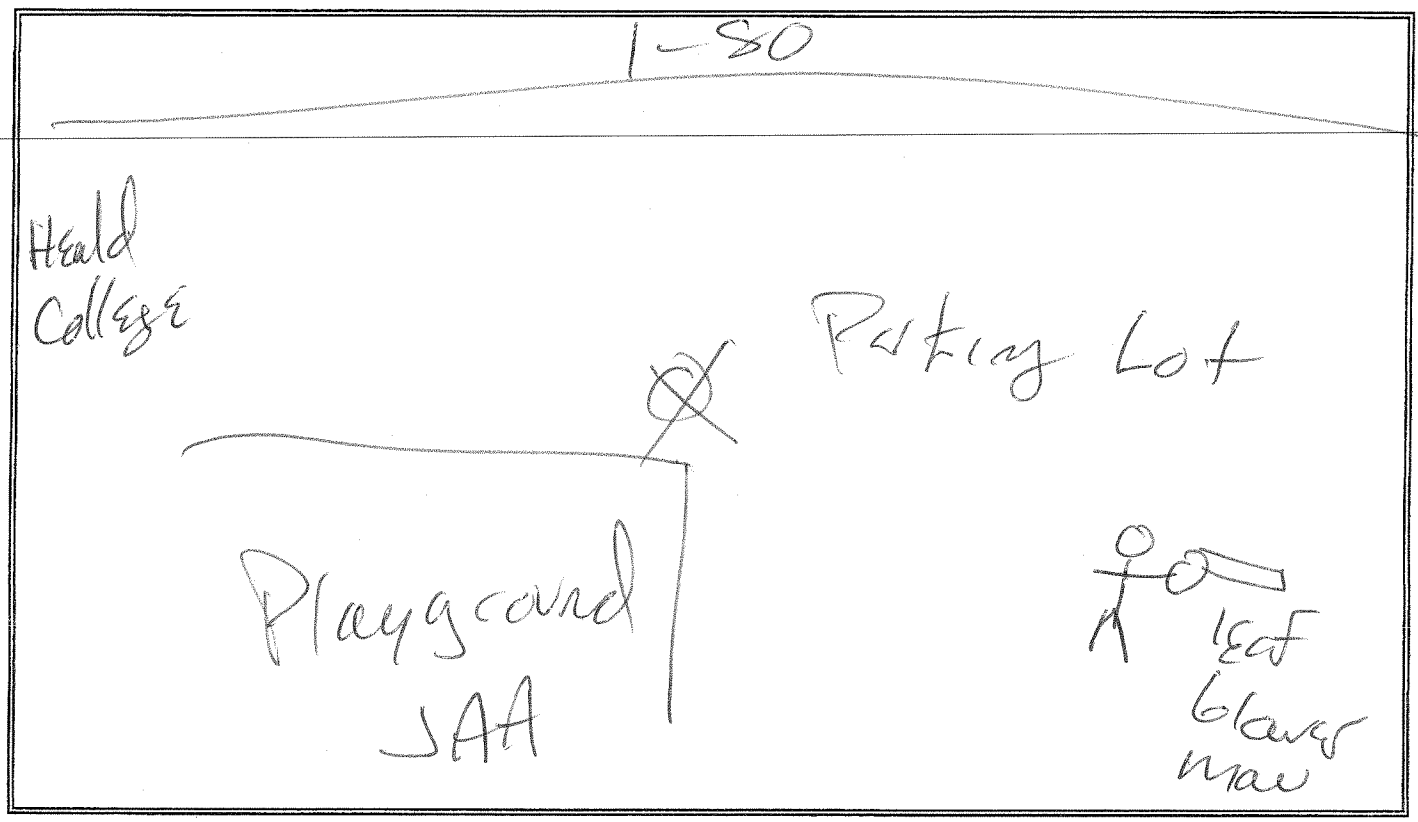
Jones & Stokes

PROJECT NAME: SR 65 PROJECT #: 189.11

SITE NUMBER: P3 DATE/TIME: 12:11

LOCATION/ADDRESS: JAA ENGINEERS: JV

SITE SKETCH: Show microphone location, nearby residences/buildings, potential reflective surfaces, project roadways, local roadways, driveways, ground type, trees. Indicate reference distances between objects, arrows showing wind direction, North, and camera locations/directions. Describe the line-of-sight and topography/elevation changes relative to noise sources.



WEATHER DATA: (temperature, wind speed/direction, sky conditions, relative humidity)

Crew CLR 60°

EQUIPMENT DATA: (sound level meter, microphone, preamp, calibrator, factory cal. date)

ESTIMATED CONSTRUCTION DATE OF RESIDENCES: (Pre-1978, or new construction)

POSTED SPEED: COMMENTS:

TRAFFIC COUNTS:

Roadway/Direction	Autos	Medium	Heavy	Speed	Start Time	Duration

Site ST-03

NOISE MEASUREMENT LOG SHEET (20)

Jones & Stokes

PROJECT NAME: I-80 SR65 PROJECT #: 189.11

SITE NUMBER: P3 DATE/TIME: 12-11

LOCATION/ADDRESS: JAA ENGINEERS: JV

#	Minute Starting	Measured Leq (dBA)	O or X	Autos	Medium Trucks	Heavy Trucks	Other Noise Sources/Comments (include SLM equipment, Calibration Data)
1	1038	73,7	—				Cal Checked
2	1039	77.2	✓				114.0
3	1040	78 3	✓				1st of 6 leaves
4	1041	69 -	✓				always
5	1042	71,5	✓				
6	1043	72,2	✓				
7	1044	67,6	✓				
8	1045	64,9	✓				
9	1046	63,1	✓				
10	1047	62,7	✓				
11	1048	61,4	O				
12	1049	64,9	✓				
13	1050	64,1	✓				
14	1051	63,6	O				
15	1052	64,0	—				~~N~~ traffic
16	1053	63,3					minute
17	1054	64,4	—				ok
18							
19							
20							

Leq
Lmax
Lmin
L10
L33
L50
L90

Overall Leq (Include "O" minutes, Exclude "X" minutes) = _____ **dBA**

Subset Leq (Exclude "O" and "X" minutes) = _____ **dBA**

"O" = other characteristic sources that contributed to the Leq

"X" = exclude from Leq calculation; a non-typical source contaminated the measurement

Site ST-04

NOISE MEASUREMENT SITE INFORMATION SHEET

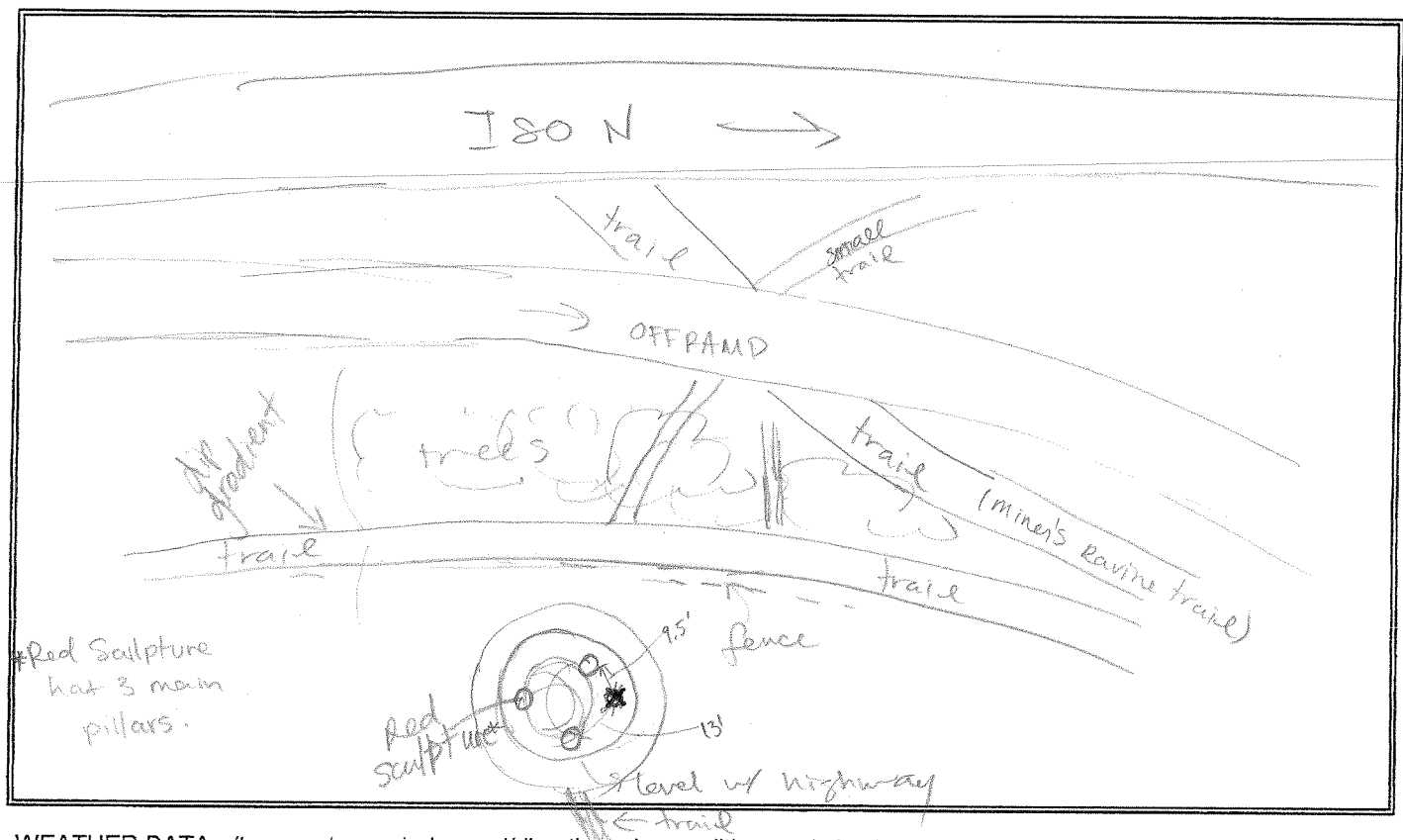
Jones & Stokes

PROJECT NAME: I80/65 PROJECT #: 189.11

SITE NUMBER: P29 DATE/TIME: 12/11/2012 10:38AM

LOCATION/ADDRESS: Sculpture park 38°045.719'N 121°15.708'W ENGINEERS: B. Chang

SITE SKETCH: Show microphone location, nearby residences/buildings, potential reflective surfaces, project roadways, local roadways, driveways, ground type, trees. Indicate reference distances between objects, arrows showing wind direction, North, and camera locations/directions. Describe the line-of-sight and topography/elevation changes relative to noise sources.



WEATHER DATA: (temperature, wind speed/direction, sky conditions, relative humidity)

58°F, 1.0 mph, clear, 60%

EQUIPMENT DATA: (sound level meter, microphone, preamp, calibrator, factory cal. date)

Blue, Blue, , , July 2012

ESTIMATED CONSTRUCTION DATE OF RESIDENCES: (Pre-1978, or new construction) N/A

POSTED SPEED: 65 COMMENTS:

TRAFFIC COUNTS:

Roadway/Direction	Autos	Medium	Heavy	Speed	Start Time	Duration

Site ST-04

NOISE MEASUREMENT LOG SHEET (20)

Jones & Stokes

PROJECT NAME: I80/65 PROJECT #: 189.11

SITE NUMBER: D29 38°45.319'N 121°15.708'W DATE/TIME: 12/11/12 10:38AM

LOCATION/ADDRESS: Sculpture Park ENGINEERS: B. Chang

#	Minute Starting	Measured Leq (dBA)	O or X	Autos	Medium Trucks	Heavy Trucks	Other Noise Sources/Comments (include SLM equipment, Calibration Data)
1	10:38	62.2					Calibrated 114.0dB
2	10:39	61.8					
3	10:40	61.9					
4	10:41	62.1					Jack Hammer in Distance
5	10:42	61.7					
6	10:43	61.9					
7	10:44	62.2					
8	10:45	61.9					
9	10:46	60.7					
10	10:47	60.9					
11	10:48	61.3					
12	10:49	62.0					
13	10:50	62.3					
14	10:51	61.8					
15	10:52	60.4					
16							Police
17							
18							
19							
20							

Leq
Lmax
Lmin
L10
L33
L50
L90

Overall Leq (Include "O" minutes, Exclude "X" minutes) = dBA

Subset Leq (Exclude "O" and "X" minutes) = dBA

"O" = other characteristic sources that contributed to the Leq

"X" = exclude from Leq calculation; a non-typical source contaminated the measurement

Site ST-05

NOISE MEASUREMENT SITE INFORMATION SHEET

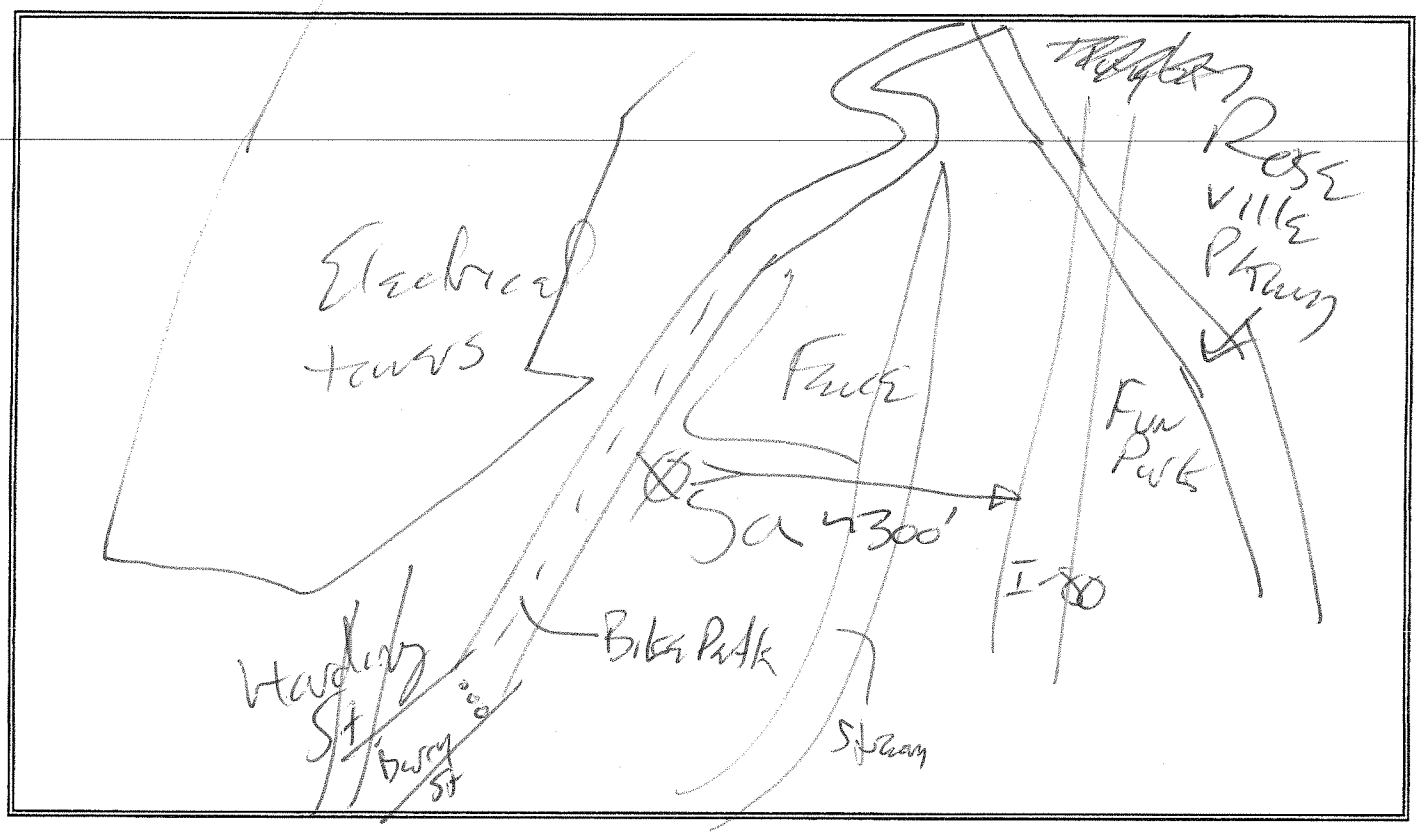
Jones & Stokes

PROJECT NAME: SR 65 PROJECT #: 189.11

SITE NUMBER: ST-5 DATE/TIME: 12-12-12

LOCATION/ADDRESS: Ant Ck Bike TC ENGINEERS: JV

SITE SKETCH: Show microphone location, nearby residences/buildings, potential reflective surfaces, project roadways, local roadways, driveways, ground type, trees. Indicate reference distances between objects, arrows showing wind direction, North, and camera locations/directions. Describe the line-of-sight and topography/elevation changes relative to noise sources.



WEATHER DATA: (temperature, wind speed/direction, sky conditions, relative humidity)

Partly Cloudy

EQUIPMENT DATA: (sound level meter, microphone, preamp, calibrator, factory cal. date)

Green

ESTIMATED CONSTRUCTION DATE OF RESIDENCES: (Pre-1978, or new construction)

POSTED SPEED: COMMENTS:

TRAFFIC COUNTS:

Roadway/Direction	Autos	Medium	Heavy	Speed	Start Time	Duration

Site ST-05

NOISE MEASUREMENT LOG SHEET (20)

Jones & Stokes

PROJECT NAME: SR65 PROJECT #: 189.11

SITE NUMBER: 5a DATE/TIME: 12-12-12

LOCATION/ADDRESS: Ant Ck BT ENGINEERS: JV

#	Minute Starting	Measured Leq (dBA)	O or X	Autos	Medium Trucks	Heavy Trucks	Other Noise Sources/Comments (include SLM equipment, Calibration Data)
1	10:43	61,3					Cal 114.0
2	10:44	61,3					
3	10:45	62,9					I-80 dominant
4	10:46	62,3					Roseville Pkwy
5	10:47	61,9					visible but
6	10:48	60,9					not noticeably
7	10:49	60,6					audible.
8	10:50	60,7					
9	10:51	60,8					
10	10:52	61,7					
11	10:53	61,4					
12	10:54	62,3					
13	10:55	61,4					
14	10:56	61,1					
15	10:57	60,3					
16							
17							Checks
18							113.8
19							
20							

Leq
Lmax
Lmin
L10
L33
L50
L90

Overall Leq (Include "O" minutes, Exclude "X" minutes) = _____ **dBA**

Subset Leq (Exclude "O" and "X" minutes) = _____ **dBA**

"O" = other characteristic sources that contributed to the Leq

"X" = exclude from Leq calculation; a non-typical source contaminated the measurement

Site ST-06

NOISE MEASUREMENT SITE INFORMATION SHEET

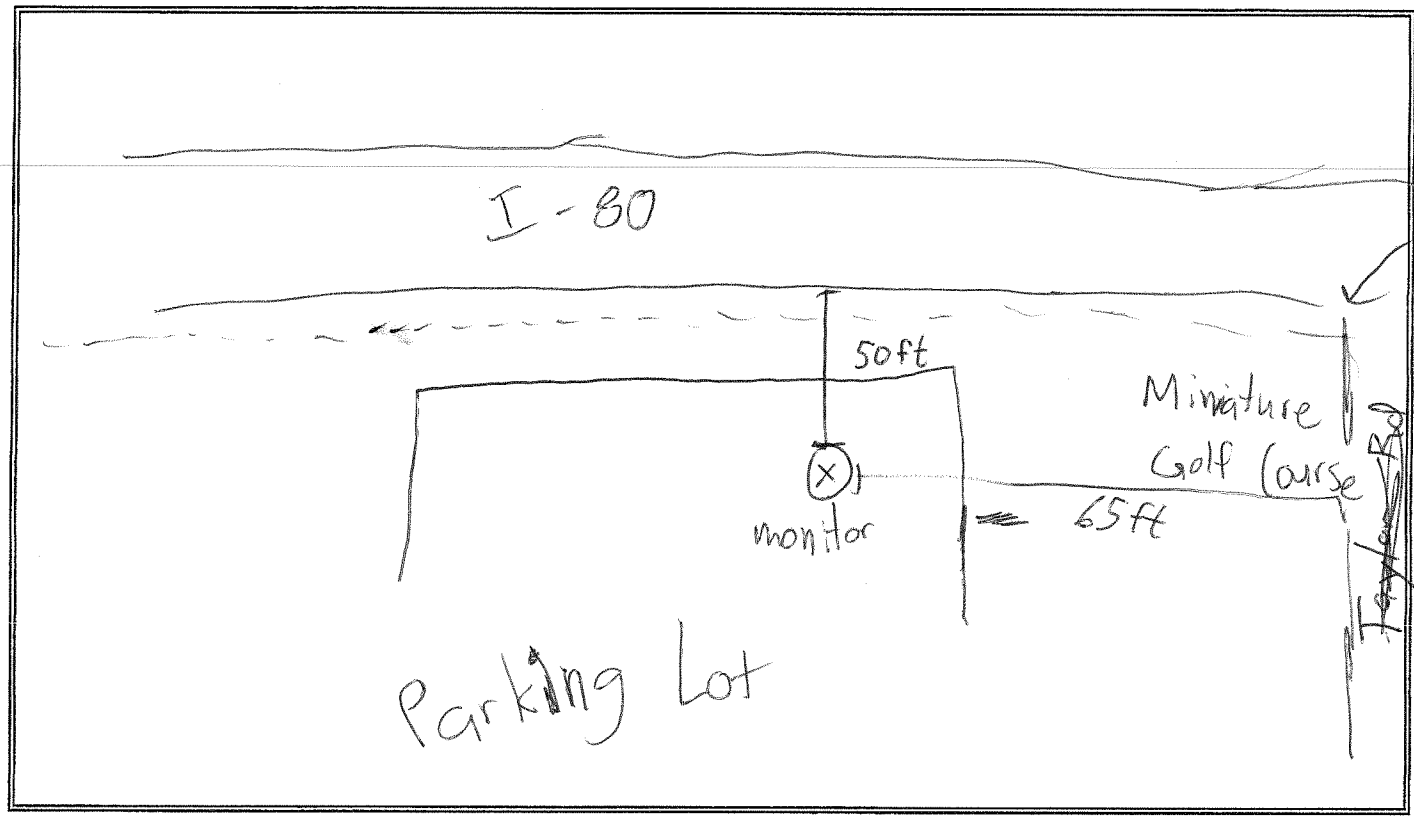
Jones & Stokes

PROJECT NAME: 80/65 | PROJECT #: 189.11

SITE NUMBER: P28a-37 | DATE/TIME: 12/12/12

LOCATION/ADDRESS: N 38° 45.691' W 121° 15.527' | ENGINEERS: Matsui

SITE SKETCH: Show microphone location, nearby residences/buildings, potential reflective surfaces, project roadways, local roadways, driveways, ground type, trees. Indicate reference distances between objects, arrows showing wind direction, North, and camera locations/directions. Describe the line-of-sight and topography/elevation changes relative to noise sources.



WEATHER DATA: (temperature, wind speed/direction, sky conditions, relative humidity)

57F, 2.4mph, Partly Cloudy, 76%

EQUIPMENT DATA: (sound level meter, microphone, preamp, calibrator, factory cal. date)

0239 Blue 114.0 18 July 2012

ESTIMATED CONSTRUCTION DATE OF RESIDENCES: (Pre-1978, or new construction)

POSTED SPEED: 65 COMMENTS:

TRAFFIC COUNTS:

Roadway/Direction	Autos	Medium	Heavy	Speed	Start Time	Duration

Site ST-06

NOISE MEASUREMENT LOG SHEET (20)

Jones & Stokes

PROJECT NAME: 80/65 PROJECT #: 189.11

SITE NUMBER: P28a-37 DATE/TIME: 12/12/12

LOCATION/ADDRESS: N 38° 45.691' W121° 15.526' ENGINEERS: Matsui

#	Minute Starting	Measured Leq (dBA)	O or X	Autos	Medium Trucks	Heavy Trucks	Other Noise Sources/Comments (include SLM equipment, Calibration Data)
1	43	64.1					
2	44	64.2					
3	45	65.2					
4	46	66.5	X				loud bangs
5	47	65.0					
6	48	64.2					
7	49	64.0					
8	50	65.3					
9	51	64.1					
10	52	64.5					
11	53	66.4					
12	54	66.2					
13	55	64.6					
14	56	64.5					
15	57	64.9					
16							
17							
18							
19							
20							

Leq
Lmax
Lmin
L10
L33
L50
L90

Overall Leq (Include "O" minutes, Exclude "X" minutes) = _____ **dBA**

Subset Leq (Exclude "O" and "X" minutes) = _____ **dBA**

"O" = other characteristic sources that contributed to the Leq

"X" = exclude from Leq calculation; a non-typical source contaminated the measurement

Site ST-07

NOISE MEASUREMENT SITE INFORMATION SHEET

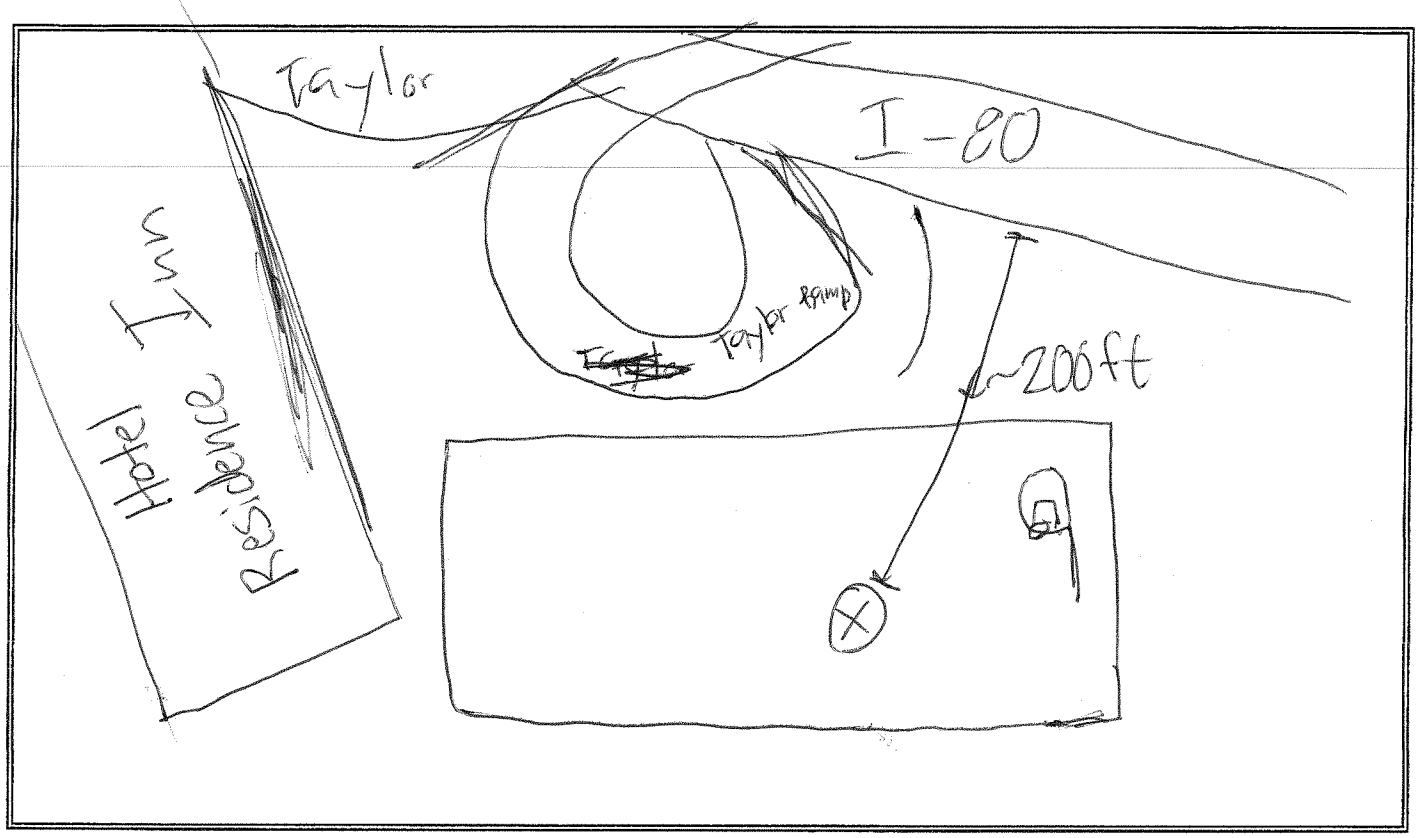
Jones & Stokes

PROJECT NAME: 80/65 PROJECT #: 189.11

SITE NUMBER: P20 DATE/TIME: 12/12/12

LOCATION/ADDRESS: N 38°45.889 W121° 15.266 ENGINEERS: Matsui

SITE SKETCH: Show microphone location, nearby residences/buildings, potential reflective surfaces, project roadways, local roadways, driveways, ground type, trees. Indicate reference distances between objects, arrows showing wind direction, North, and camera locations/directions. Describe the line-of-sight and topography/elevation changes relative to noise sources.



WEATHER DATA: (temperature, wind speed/direction, sky conditions, relative humidity)

53.4 , 1.1mph , Partly Cloudy , 69.5%

EQUIPMENT DATA: (sound level meter, microphone, preamp, calibrator, factory cal. date)

0239 Blue , 114.0 18 July 2012

ESTIMATED CONSTRUCTION DATE OF RESIDENCES: (Pre-1978, or new construction)

POSTED SPEED: 30-40 mph COMMENTS:

TRAFFIC COUNTS:

Roadway/Direction	Autos	Medium	Heavy	Mot.	Speed	Start Time	Duration
Taylor S ~~Ramp~~	222	4	1	4	30		
Ramp	73	1			20-25		

Site ST-07

NOISE MEASUREMENT LOG SHEET (20)

Jones & Stokes

PROJECT NAME: 80/65 PROJECT #: 189.11

SITE NUMBER: P28 DATE/TIME: 12/12/12

LOCATION/ADDRESS: N 38° 45.869 W121° 15.266' ENGINEERS: Matsui

#	Minute Starting	Measured Leq (dBA)	O or X	Autos	Medium Trucks	Heavy Trucks	Other Noise Sources/Comments (include SLM equipment, Calibration Data)
1	1200	57.0					
2	1201	55.8					
3	1202	57.8					Helicopter
4	1203	59.1					
5	1204	59.5					plane distant
6	1205	56.6					siren
7	1206	57.5					
8	1207	58.0					Helicopter
9	1208	55.8					
10	1209	54.6					
11	1210	55.9					
12	1211	56.0					
13	1212	56.0					
14	1213	55.6					
15	1214	55.5					
16							
17							
18							
19							
20							

MDL 1

Leq
Lmax
Lmin
L10
L33
L50
L90

Overall Leq (Include "O" minutes, Exclude "X" minutes) = dBA

Subset Leq (Exclude "O" and "X" minutes) = dBA

"O" = other characteristic sources that contributed to the Leq

"X" = exclude from Leq calculation; a non-typical source contaminated the measurement

25 A

Site ST-08

NOISE MEASUREMENT SITE INFORMATION SHEET

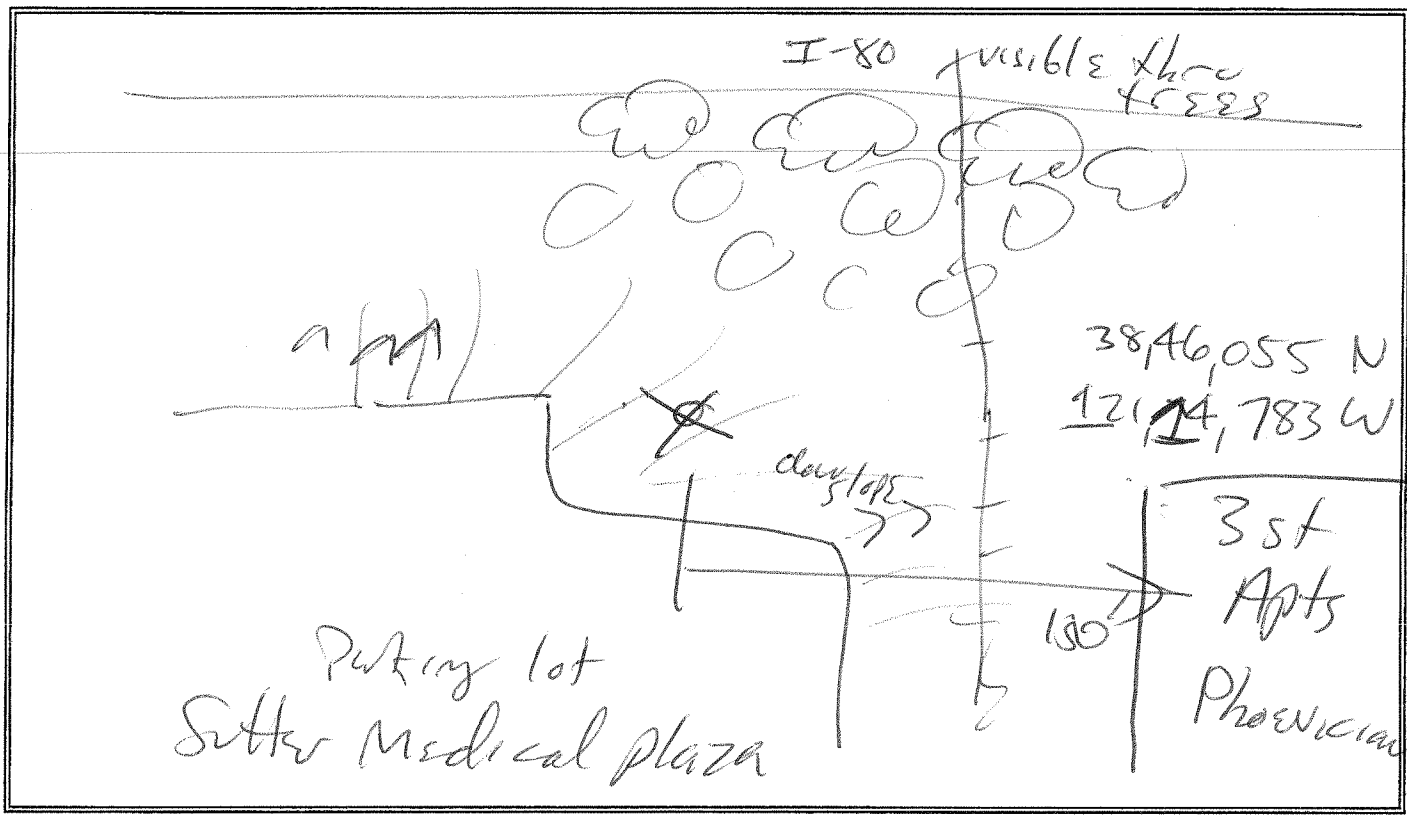
Jones & Stokes

PROJECT NAME: I-80-SR65 PROJECT #: 18911

SITE NUMBER: 27 DATE/TIME: 12-10-12

LOCATION/ADDRESS: Sutter Med/Phoenician ENGINEERS: SV

SITE SKETCH: Show microphone location, nearby residences/buildings, potential reflective surfaces, project roadways, local roadways, driveways, ground type, trees. Indicate reference distances between objects, arrows showing wind direction, North, and camera locations/directions. Describe the line-of-sight and topography/elevation changes relative to noise sources.



WEATHER DATA: (temperature, wind speed/direction, sky conditions, relative humidity)

CLR, No wind

EQUIPMENT DATA: (sound level meter, microphone, preamp, calibrator, factory cal. date)

Green.

ESTIMATED CONSTRUCTION DATE OF RESIDENCES: (Pre-1978, or new construction)

POSTED SPEED: _____ COMMENTS: _____

TRAFFIC COUNTS:

Roadway/Direction	Autos	Medium	Heavy	Speed	Start Time	Duration

Site ST-08

NOISE MEASUREMENT LOG SHEET (20)

Jones & Stokes

PROJECT NAME: SR65 PROJECT #: 189.11

SITE NUMBER: 27 DATE/TIME: 12-10-12

LOCATION/ADDRESS: Sutter Med Center/Phoenixcean ENGINEERS: SV

#	Minute Starting	Measured Leq (dBA)	O or X	Autos	Medium Trucks	Heavy Trucks	Other Noise Sources/Comments (include SLM equipment, Calibration Data)
1	16:20	53,6					pical 114,1
2	16:21	53,8					parking lot
3	16:22	53,7					I-50 interx,
4	16:23	53,3					distant cars starting
5	16:24	53,1					
6	16:25	52,5					
7	16:26	64,6	X				hello, car starts
8	16:27	53,8					freq
9	16:28	53,5					
10	16:29	54,1					
11	16:30	53,6					
12	16:31	52,9					
13	16:32	53,2					
14	16:33	54,0					
15	16:34	54,9					
16	16:35	55,3					
17							
18							
19							
20							

Leq	
Lmax	
Lmin	
L10	
L33	
L50	
L90	

Overall Leq (Include "O" minutes, Exclude "X" minutes) = dBA

Subset Leq (Exclude "O" and "X" minutes) = dBA

"O" = other characteristic sources that contributed to the Leq

"X" = exclude from Leq calculation; a non-typical source contaminated the measurement

Site ST-09

NOISE MEASUREMENT SITE INFORMATION SHEET

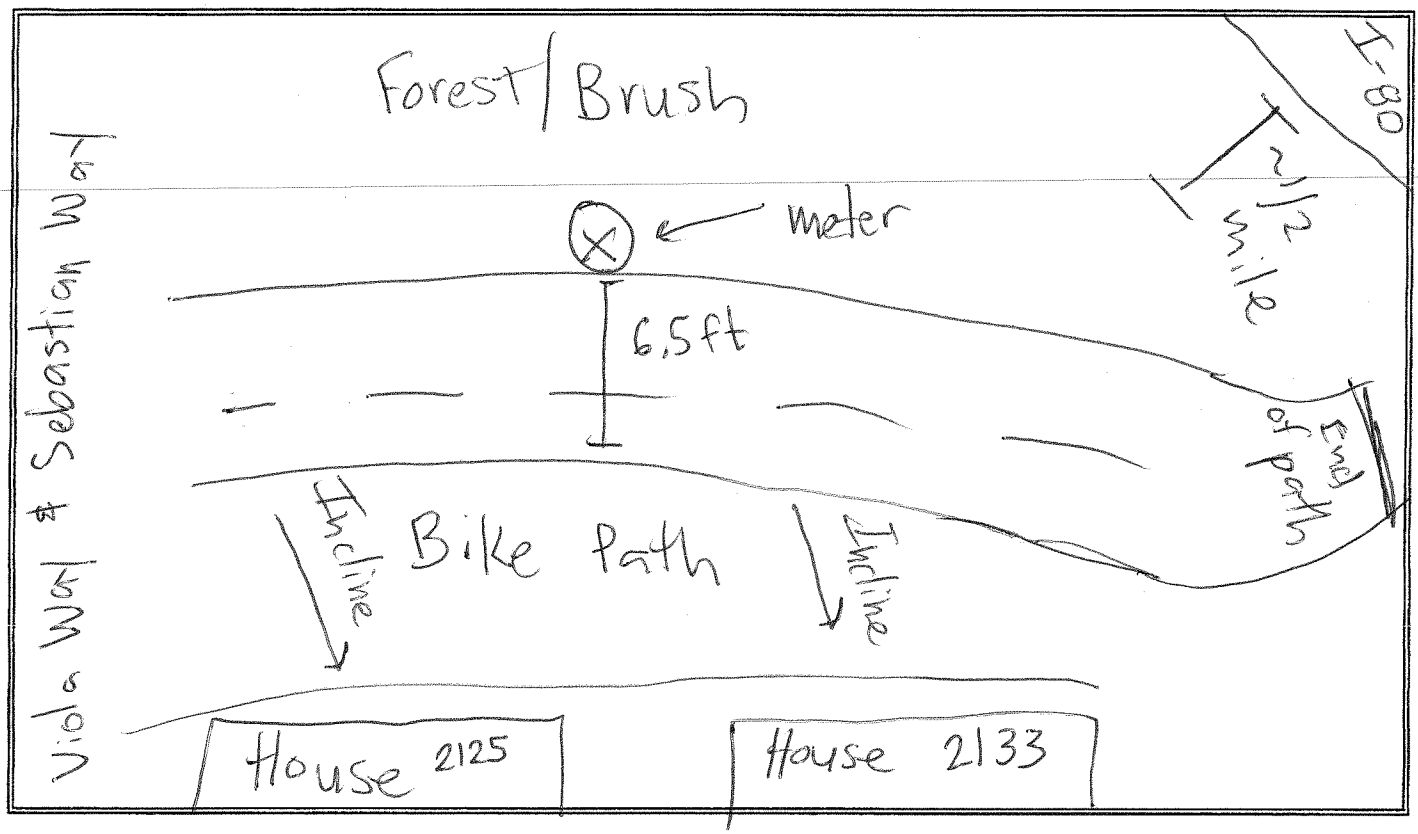
Jones & Stokes

PROJECT NAME: 80/65 PROJECT #: 189.11

SITE NUMBER: P26 DATE/TIME: 12/10/12

LOCATION/ADDRESS: N 38° 46.189' W 121° 14.558' ENGINEERS: Matsui

SITE SKETCH: Show microphone location, nearby residences/buildings, potential reflective surfaces, project roadways, local roadways, driveways, ground type, trees. Indicate reference distances between objects, arrows showing wind direction, North, and camera locations/directions. Describe the line-of-sight and topography/elevation changes relative to noise sources.



WEATHER DATA: (temperature, wind speed/direction, sky conditions, relative humidity)

~~56.6~~ F 0 mph Clear 64.2%

EQUIPMENT DATA: (sound level meter, microphone, preamp, calibrator, factory cal. date)

0239 Blue 113.8 18 July 2012

ESTIMATED CONSTRUCTION DATE OF RESIDENCES: (Pre-1978, or new construction)

POSTED SPEED: Bike Path COMMENTS:

TRAFFIC COUNTS:

Roadway/Direction	Autos	Medium	Heavy	Speed	Start Time	Duration
Bikes: 1						

Site ST-09

NOISE MEASUREMENT LOG SHEET (20)

Jones & Stokes

PROJECT NAME: 80/65 — PROJECT #: 189.11

SITE NUMBER: P26 — DATE/TIME: 12/10/12

LOCATION/ADDRESS: N 38° 46.189' W 121° 14.558' — ENGINEERS: Matsui

#	Minute Starting	Measured Leq (dBA)	O or X	Autos	Medium Trucks	Heavy Trucks	Other Noise Sources/Comments (include SLM equipment, Calibration Data)
1	16 21	54.2					
2	1622	54.4					
3	1623	54.5					
4	1624	54.1					
5	1625	53.9					
6	1626	63.5	X				Helicopter
7	1627	58.6					Helicopter, first 15 seconds
8	1628	56.2					
9	1629	57.6					
10	1630	57.5					
11	1631	57.3					
12	1632	57.2					
13	1633	58.0					
14	1634	57.7					
15	1635	57.6					
16	36						
17	37						
18	38						
19	39						
20	40						

Leq
Lmax
Lmin
L10
L33
L50
L90

Overall Leq (Include "O" minutes, Exclude "X" minutes) = _____ **dBA**

Subset Leq (Exclude "O" and "X" minutes) = _____ **dBA**

"O" = other characteristic sources that contributed to the Leq

"X" = exclude from Leq calculation; a non-typical source contaminated the measurement

Site ST-10

NOISE MEASUREMENT SITE INFORMATION SHEET

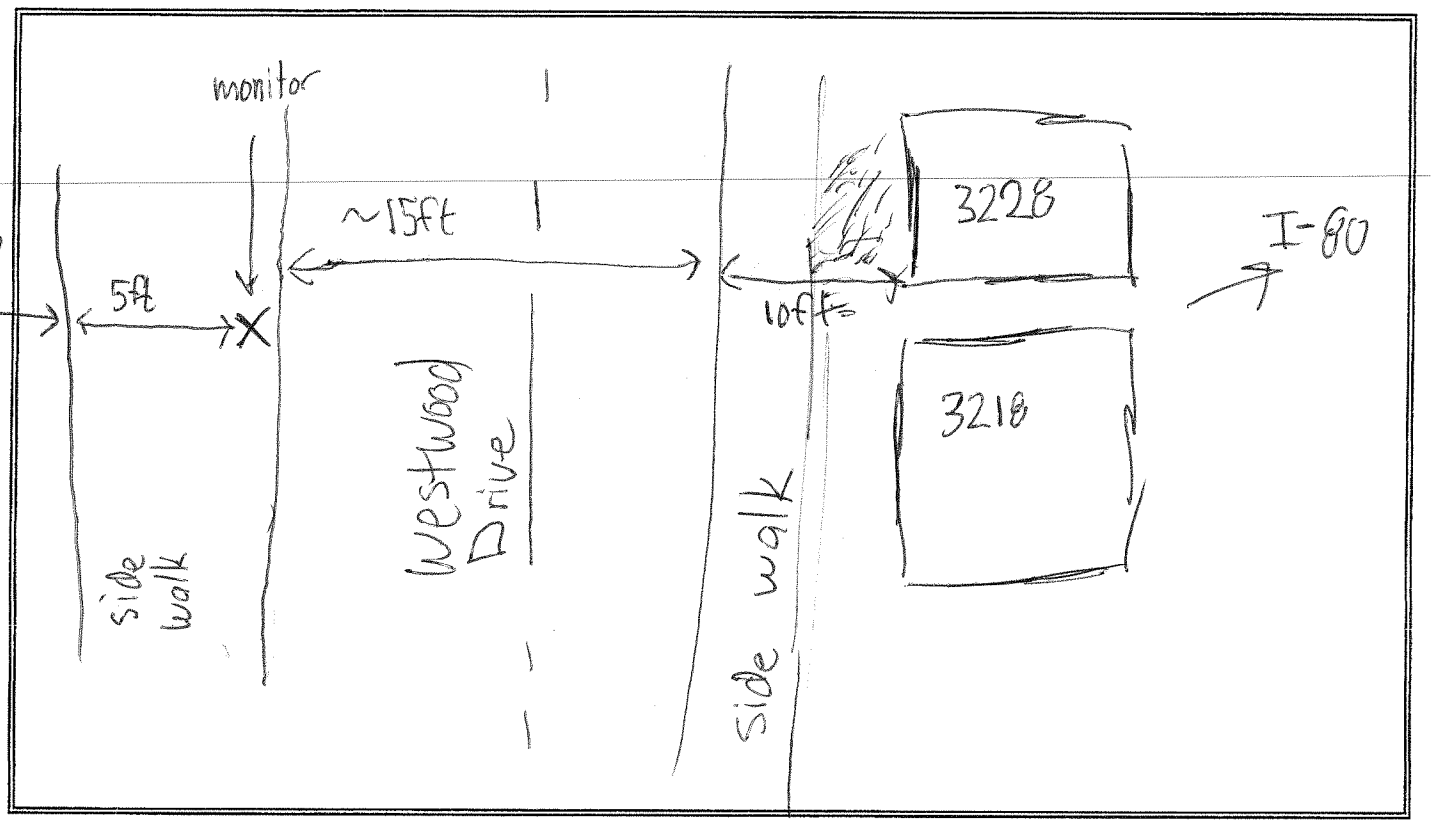
Jones & Stokes

PROJECT NAME: 80/65 | PROJECT #: 189.11

SITE NUMBER: P19 | DATE/TIME: 12/10/12

LOCATION/ADDRESS: N 38° 46.460' W 121° 14.621' | ENGINEERS: Matsui

SITE SKETCH: Show microphone location, nearby residences/buildings, potential reflective surfaces, project roadways, local roadways, driveways, ground type, trees. Indicate reference distances between objects, arrows showing wind direction, North, and camera locations/directions. Describe the line-of-sight and topography/elevation changes relative to noise sources.



WEATHER DATA: (temperature, wind speed/direction, sky conditions, relative humidity)

69F? | ~0.7 mph | clear | 80.5

EQUIPMENT DATA: (sound level meter, microphone, preamp, calibrator, factory cal. date)

04/30 green | 114.0 | 19 Aug 2010

ESTIMATED CONSTRUCTION DATE OF RESIDENCES: (Pre-1978, or new construction)

POSTED SPEED: ~20 mph COMMENTS:

TRAFFIC COUNTS:

Roadway/Direction	Autos	Medium	Heavy	Speed	Start Time	Duration
	1111					

Site ST-10

NOISE MEASUREMENT LOG SHEET (20)

Jones & Stokes

PROJECT NAME: 80/65 PROJECT #: 189.11

SITE NUMBER: 19 DATE/TIME: 12/10/12

LOCATION/ADDRESS: N 38° 46.460' W121° 14.621' ENGINEERS: Matsui

#	Minute Starting	Measured Leq (dBA)	O or X	Autos	Medium Trucks	Heavy Trucks	Other Noise Sources/Comments (include SLM equipment, Calibration Data)
1	12:06	49.7					
2	12:07	55.2					
3	12:08	49.7					
4	12:09	49.6					
5	12:10	57.4					
6	12:11	50.3					
7	12:12	49.8					
8	12:13	59.0					
9	12:14	50.6					
10	12:15	53.3					
11	12:16	57.0					
12	12:17	50.5					
13	12:18	51.4					
14	12 19	50.8					
15	12:20	51.6					
16	12:21	51.4					
17	12:22	50.5					
18	12:23	56.0					car
19	12:24	57.2					car starting, car
20	12:25	48.9					car idling

Leq
Lmax
Lmin
L10
L33
L50
L90

Overall Leq (Include "O" minutes, Exclude "X" minutes) = _____ dBA

Subset Leq (Exclude "O" and "X" minutes) = _____ dBA

"O" = other characteristic sources that contributed to the Leq

"X" = exclude from Leq calculation; a non-typical source contaminated the measurement

Site ST-11

NOISE MEASUREMENT SITE INFORMATION SHEET

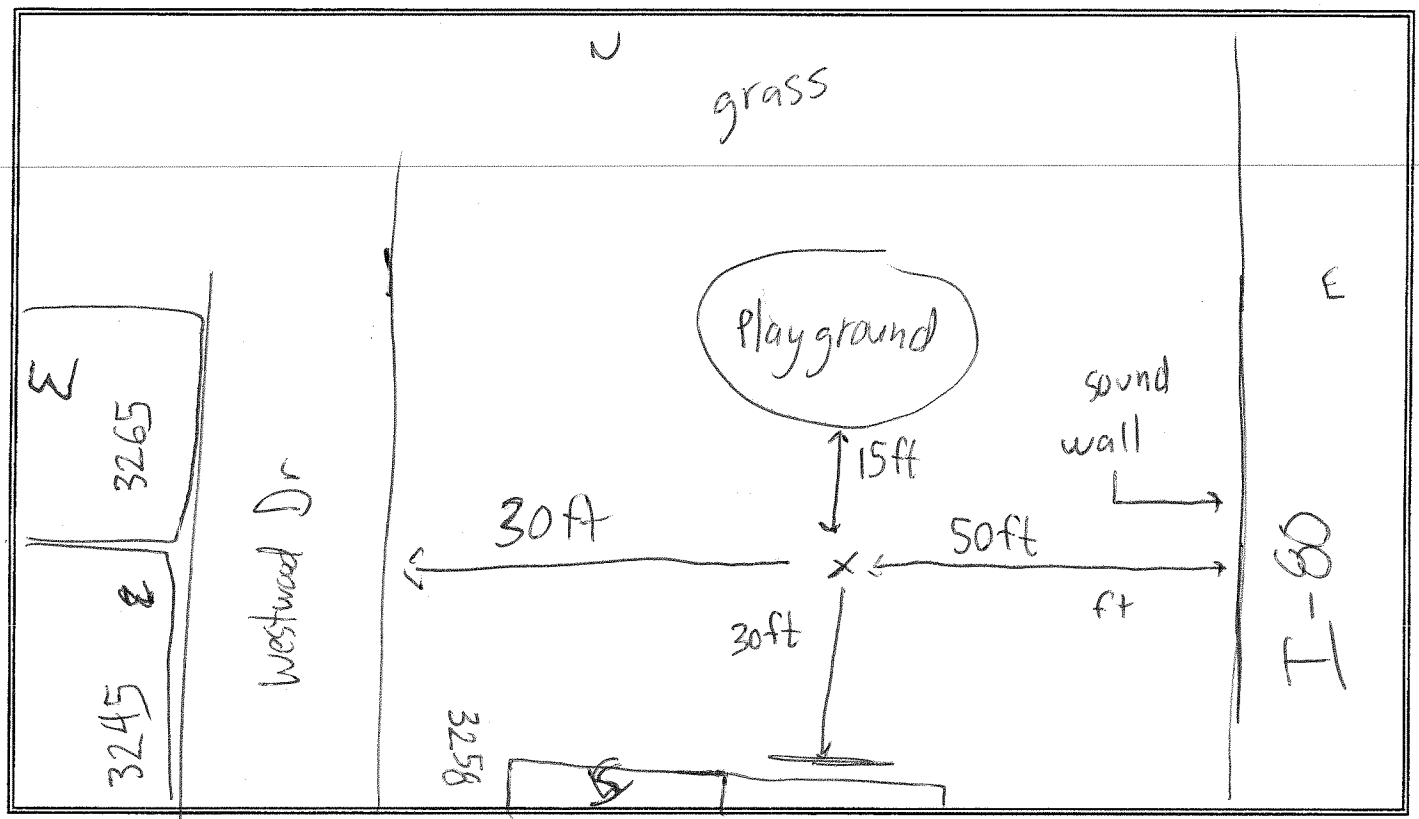
Jones & Stokes

PROJECT NAME: 8065 PROJECT #: 189.11

SITE NUMBER: P1B DATE/TIME: 12/10/12

LOCATION/ADDRESS: N 38°46.485' W 121°14.552' ENGINEERS: Matsui

SITE SKETCH: Show microphone location, nearby residences/buildings, potential reflective surfaces, project roadways, local roadways, driveways, ground type, trees. Indicate reference distances between objects, arrows showing wind direction, North, and camera locations/directions. Describe the line-of-sight and topography/elevation changes relative to noise sources.



WEATHER DATA: (temperature, wind speed/direction, sky conditions, relative humidity)

60.6F ~2mph clear 66%

EQUIPMENT DATA: (sound level meter, microphone, preamp, calibrator, factory cal. date)

0430 green 1H.0 19 Aug 2010

ESTIMATED CONSTRUCTION DATE OF RESIDENCES: (Pre-1978, or new construction)

POSTED SPEED: ~20 COMMENTS:

TRAFFIC COUNTS:

Roadway/Direction	Autos	Medium	Heavy	Speed	Start Time	Duration
	~~4~~ 2					

Site ST-11

NOISE MEASUREMENT LOG SHEET (20)

Jones & Stokes

PROJECT NAME: 80/65 PROJECT #: 189.11

SITE NUMBER: P18 DATE/TIME: 12/10/12

LOCATION/ADDRESS: N38° 46.485' W121° 14.552 ENGINEERS: Matsui

#	Minute Starting	Measured Leq (dBA)	O or X	Autos	Medium Trucks	Heavy Trucks	Other Noise Sources/Comments (include SLM equipment, Calibration Data)
1	12:47	56.7					
2	1248	57.9					
3	1249	57.0					
4	1250	58.5	X				train horn, hammering
5	1251	57.0					train horn (faint)
6	1252	56.4					
7	1253	56.6					
8	1254	56.1					
9	1255	56.0					
10	1256	56.3					
11	1257	56.0		1			banging
12	1258	55.2		3			bird, banging
13	1259	56.0		1			
14	1 00	56.0					
15	1 01	54.8					
16							
17							
18							
19							
20							

Leq	
Lmax	
Lmin	
L10	
L33	
L50	
L90	

Overall Leq (Include "O" minutes, Exclude "X" minutes) = _____ **dBA**

Subset Leq (Exclude "O" and "X" minutes) = _____ **dBA**

"O" = other characteristic sources that contributed to the Leq

"X" = exclude from Leq calculation; a non-typical source contaminated the measurement

Site ST-12

NOISE MEASUREMENT SITE INFORMATION SHEET

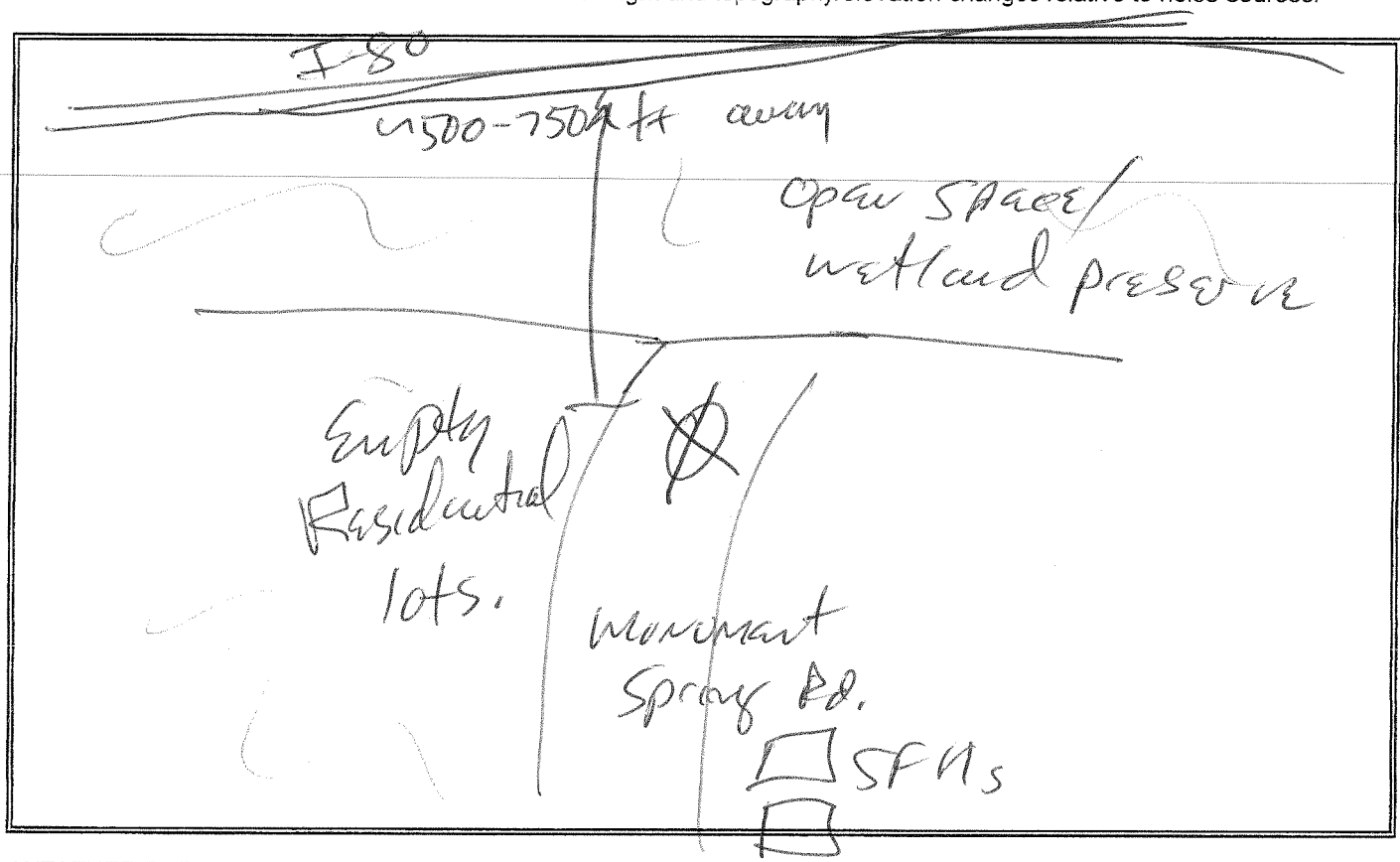
Jones & Stokes

PROJECT NAME: SR 65 PROJECT #: 187.11

SITE NUMBER: D256 DATE/TIME: 12-12-12

LOCATION/ADDRESS: Monument Spr. ENGINEERS: JV

SITE SKETCH: Show microphone location, nearby residences/buildings, potential reflective surfaces, project roadways, local roadways, driveways, ground type, trees. Indicate reference distances between objects, arrows showing wind direction, North, and camera locations/directions. Describe the line-of-sight and topography/elevation changes relative to noise sources.



WEATHER DATA: (temperature, wind speed/direction, sky conditions, relative humidity)

P Cloudy 50's

EQUIPMENT DATA: (sound level meter, microphone, preamp, calibrator, factory cal. date)

Green

ESTIMATED CONSTRUCTION DATE OF RESIDENCES: (Pre-1978, or new construction)

POSTED SPEED: COMMENTS:

TRAFFIC COUNTS:

Roadway/Direction	Autos	Medium	Heavy	Speed	Start Time	Duration
Local	0					

Site ST-12

NOISE MEASUREMENT LOG SHEET (20)

Jones & Stokes

PROJECT NAME: SR65 PROJECT #: 189.11

SITE NUMBER: D256 DATE/TIME: 12-12-12

LOCATION/ADDRESS: Monuments Pkwy ENGINEERS: JV

#	Minute Starting	Measured Leq (dBA)	O or X	Autos	Medium Trucks	Heavy Trucks	Other Noise Sources/Comments (include SLM equipment, Calibration Data)
1	1:19	56,8					
2	1:20	57,3					I-80
3	1:21	56,4					
4	1:22	56,3					
5	1:23	55,5					
6	1:24	55,2					
7	1:25	55,9					
8	1:26	56,5					
9	1:27	59,3					
10	1:28	57,1					train horn
11	1:29	56,0					"
12	1:30	55,5					"
13	1:31	57,0					
14	1:32	55,7					
15	1:33	56,4					
16							
17							
18							
19							
20							

Leq
Lmax
Lmin
L10
L33
L50
L90

Overall Leq (Include "O" minutes, Exclude "X" minutes) = _____ **dBA**

Subset Leq (Exclude "O" and "X" minutes) = _____ **dBA**

"O" = other characteristic sources that contributed to the Leq

"X" = exclude from Leq calculation; a non-typical source contaminated the measurement

Site ST-13

NOISE MEASUREMENT SITE INFORMATION SHEET

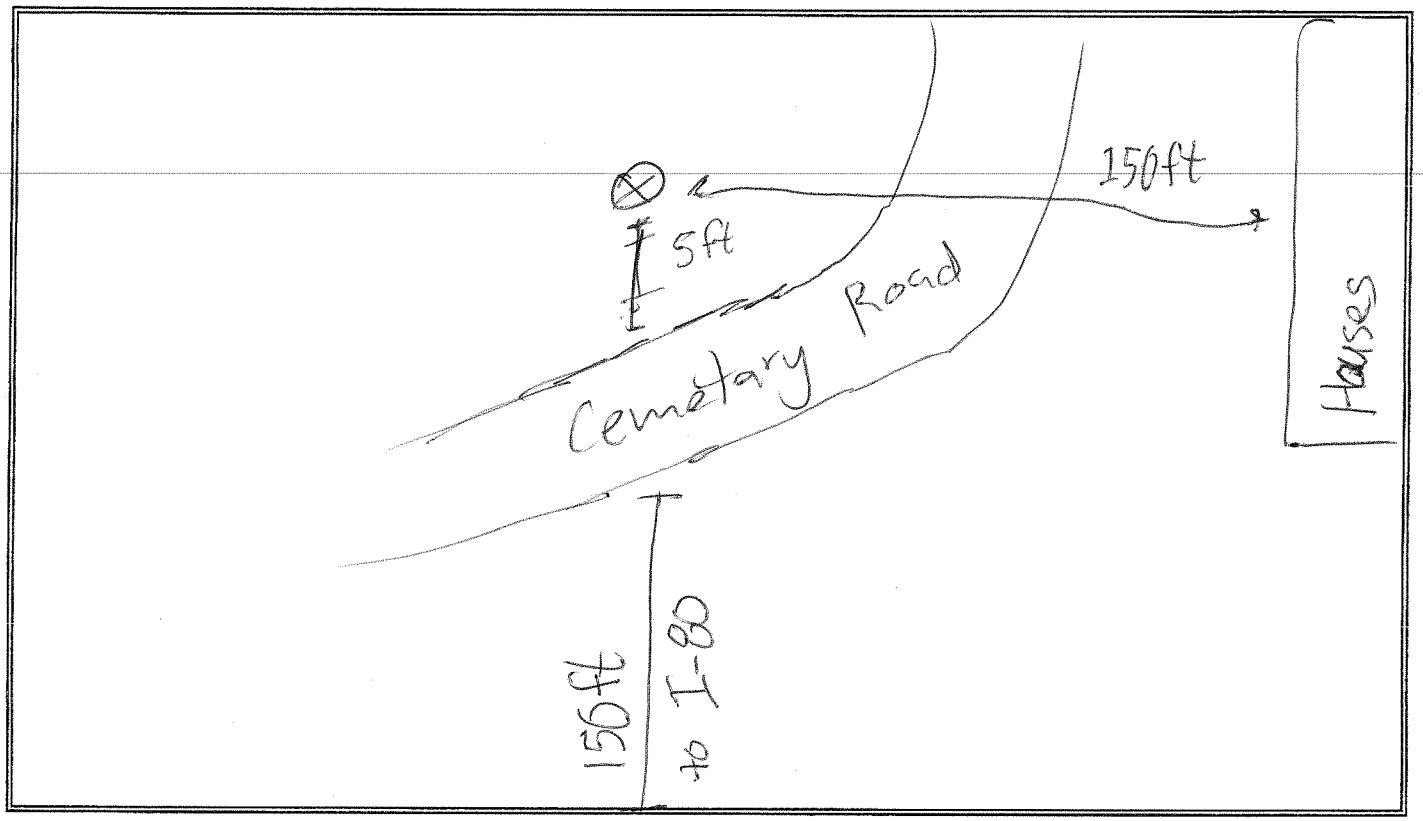
Jones & Stokes

PROJECT NAME: 80/65 PROJECT #: 189.11

SITE NUMBER: R22 800' DATE/TIME: 12/12/12

LOCATION/ADDRESS: N 38° 46.[redacted] W 121° 14.053' ENGINEERS: Matsui

SITE SKETCH: Show microphone location, nearby residences/buildings, potential reflective surfaces, project roadways, local roadways, driveways, ground type, trees. Indicate reference distances between objects, arrows showing wind direction, North, and camera locations/directions. Describe the line-of-sight and topography/elevation changes relative to noise sources.



WEATHER DATA: (temperature, wind speed/direction, sky conditions, relative humidity)

57.5F, 1.5mph, Partly Cloudy, 57%

EQUIPMENT DATA: (sound level meter, microphone, preamp, calibrator, factory cal. date)

0239 Blue 114.0 18 July 2012

ESTIMATED CONSTRUCTION DATE OF RESIDENCES: (Pre-1978, or new construction)

POSTED SPEED: 65 COMMENTS:

TRAFFIC COUNTS:

Roadway/Direction	Autos	Medium	Heavy	Speed	Start Time	Duration

Site ST-13

NOISE MEASUREMENT LOG SHEET (20)

Jones & Stokes

PROJECT NAME: 80/65 PROJECT #: 189.11

SITE NUMBER: P22 DATE/TIME: 12/12/12

LOCATION/ADDRESS: N38° 46.800' W 121° 14.053' ENGINEERS: Matsui

#	Minute Starting	Measured Leq (dBA)	O or X	Autos	Medium Trucks	Heavy Trucks	Other Noise Sources/Comments (include SLM equipment, Calibration Data)
1	13 19	59.5		1			pickup truck
2	13 20	58.1					
3	1321	59.0					
4	1322	58.1					
5	1323	57.5					
6	1324	59.1					
7	1325	59.2					
8	1326	59.4					
9	1327	62.4	X				train horn (distant)
10	1328	59.9	O				train horn (distant)
11	1329	60.4	O				" "
12	1330	58.8					
13	1331	58.6					
14	1332	58.3					
15	1333	59.0					
16							
17							
18							
19							
20							

Leq	
Lmax	
Lmin	
L10	
L33	
L50	
L90	

Overall Leq (Include "O" minutes, Exclude "X" minutes) = _____ dBA

Subset Leq (Exclude "O" and "X" minutes) = _____ dBA

"O" = other characteristic sources that contributed to the Leq

"X" = exclude from Leq calculation; a non-typical source contaminated the measurement

Site ST-14

NOISE MEASUREMENT SITE INFORMATION SHEET

Jones & Stokes

PROJECT NAME: 80/65 PROJECT #: 189.11

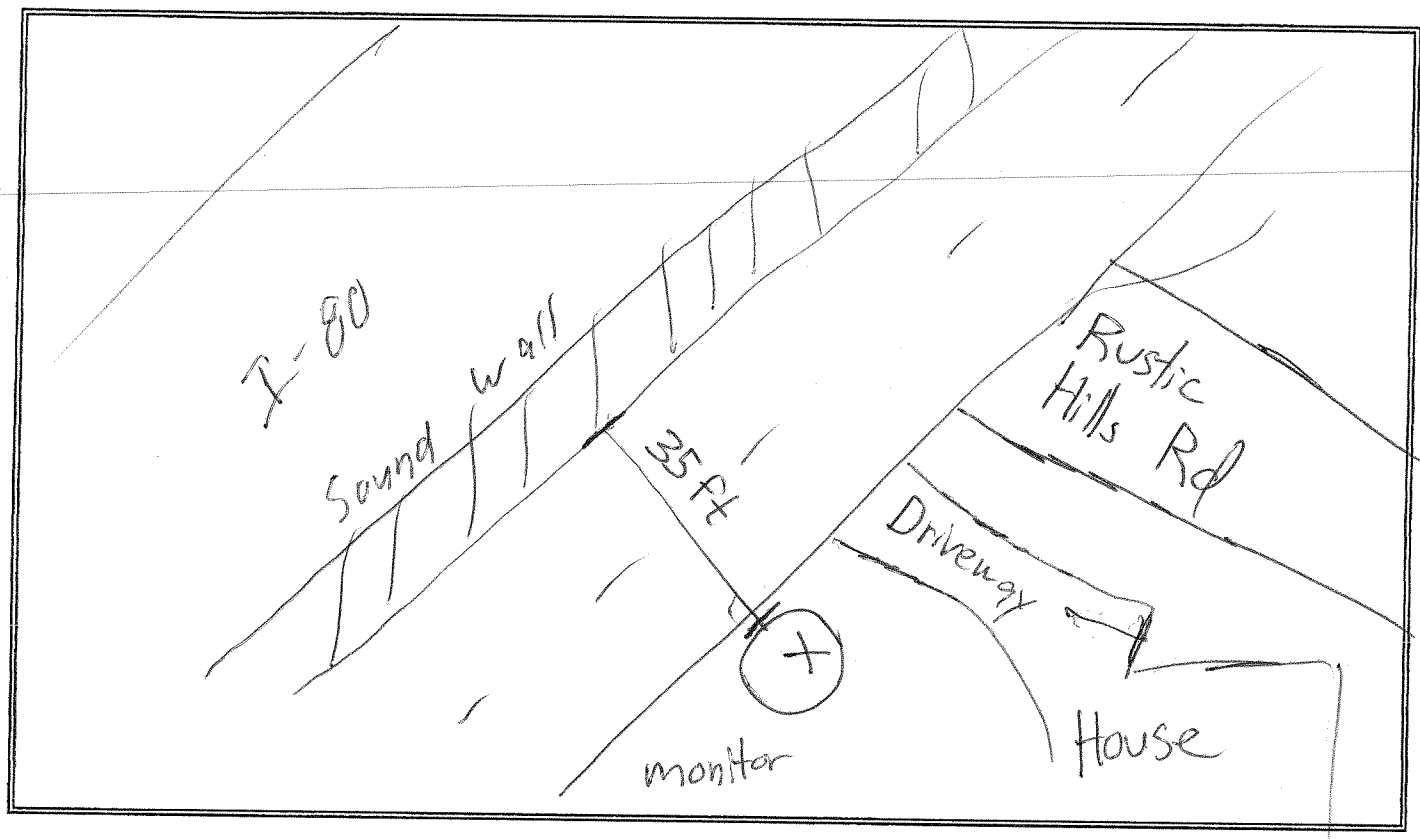
SITE NUMBER: 24~~65~~ 790

DATE/TIME: 12/10/12

LOCATION/ADDRESS: N 38° 46.~~788~~' W 121° 13.946'

ENGINEERS: Matsui

SITE SKETCH: Show microphone location, nearby residences/buildings, potential reflective surfaces, project roadways, local roadways, driveways, ground type, trees. Indicate reference distances between objects, arrows showing wind direction, North, and camera locations/directions. Describe the line-of-sight and topography/elevation changes relative to noise sources.



WEATHER DATA: (temperature, wind speed/direction, sky conditions, relative humidity)

60° F | 1.7 mph | clear | 68.2%

EQUIPMENT DATA: (sound level meter, microphone, preamp, calibrator, factory cal. date)

0239 Blue | 113.8 | 18 July 2012

ESTIMATED CONSTRUCTION DATE OF RESIDENCES: (Pre-1978, or new construction)

POSTED SPEED: 65 mph COMMENTS:

TRAFFIC COUNTS:

Roadway/Direction	Autos	Medium	Heavy	Speed	Start Time	Duration

Site ST-14

NOISE MEASUREMENT LOG SHEET (20)

Jones & Stokes

PROJECT NAME: 80/65 PROJECT #: 189.11

SITE NUMBER: 24 DATE/TIME: 12/10/12

LOCATION/ADDRESS: N 38° 46.790 W 121° 39.96 ENGINEERS: Matsui

#	Minute Starting	Measured Leq (dBA)	O or X	Autos	Medium Trucks	Heavy Trucks	Other Noise Sources/Comments (include SLM equipment, Calibration Data)
1	15:19	60.1					
2	15 20	60.7					
3	15 21	60.2					
4	15 22	59.7					
5	15 23	64.1	X		1		Fire engine (no siren just engine)
6	15 24	60.0					
7	15 25	60.1	O		1		Car
8	15 26	60.8	O		1		Car
9	15 27	61.3					
10	15 28	60.4					
11	15 29	60.8	O				motorcycle
12	15 30	60.5		1			Car
13	15 31	59.6					
14	15 32	60.0	O	1			Car
15	15 33	60.9					
16							
17							
18							
19							
20							

Leq	
Lmax	
Lmin	
L10	
L33	
L50	
L90	

Overall Leq (Include "O" minutes, Exclude "X" minutes) = _____ **dBA**

Subset Leq (Exclude "O" and "X" minutes) = _____ **dBA**

"O" = other characteristic sources that contributed to the Leq

"X" = exclude from Leq calculation; a non-typical source contaminated the measurement

Site ST-15

NOISE MEASUREMENT SITE INFORMATION SHEET

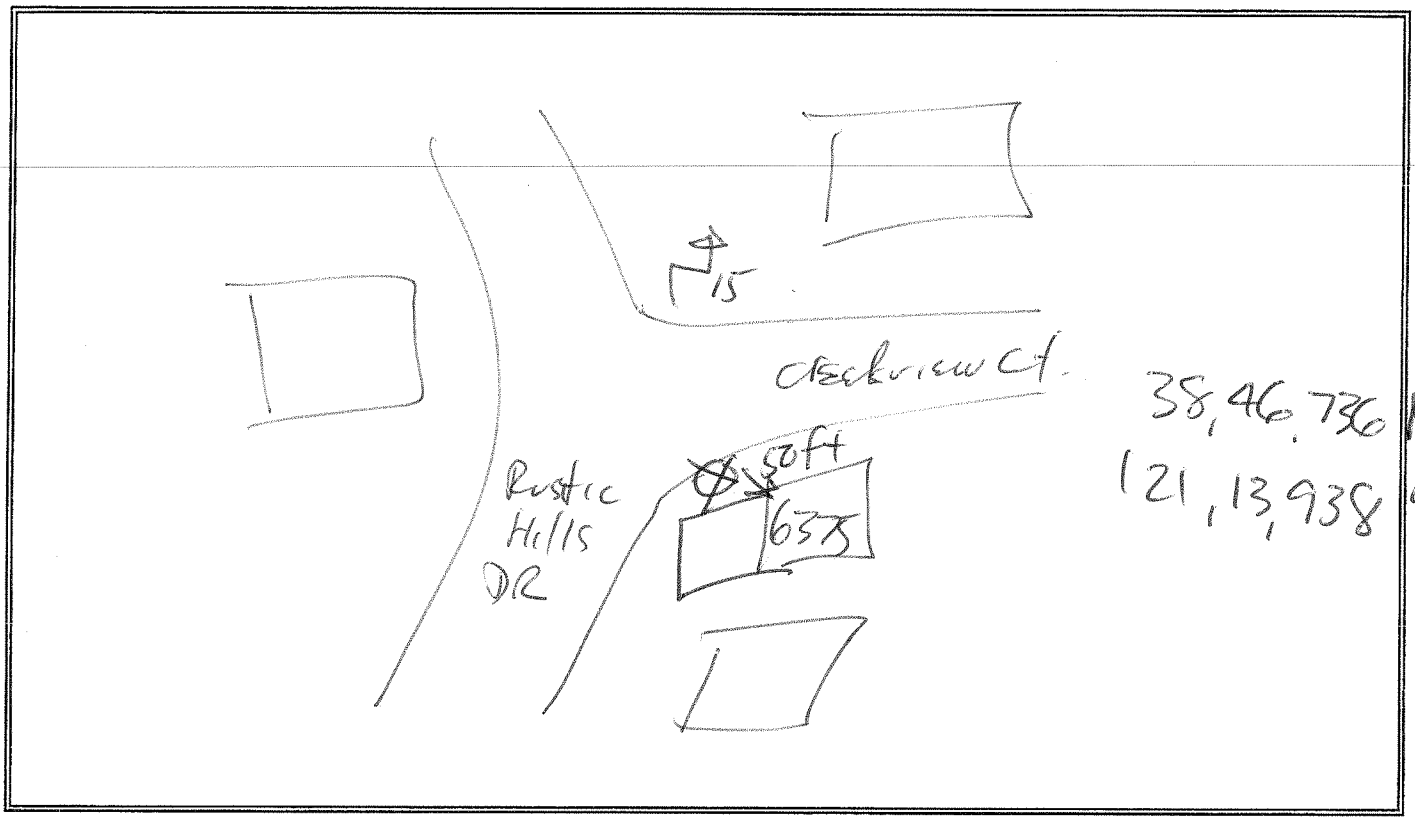
Jones & Stokes

PROJECT NAME: I-80 / SR 65 PROJECT #: 189, 11

SITE NUMBER: P25 DATE/TIME: 12-10-12

LOCATION/ADDRESS: 6375 Rustic Hills Dr. ENGINEERS: Volk

SITE SKETCH: Show microphone location, nearby residences/buildings, potential reflective surfaces, project roadways, local roadways, driveways, ground type, trees. Indicate reference distances between objects, arrows showing wind direction, North, and camera locations/directions. Describe the line-of-sight and topography/elevation changes relative to noise sources.



WEATHER DATA: (temperature, wind speed/direction, sky conditions, relative humidity)

CLR 460°

EQUIPMENT DATA: (sound level meter, microphone, preamp, calibrator, factory cal. date)

LD 812 GREEN

ESTIMATED CONSTRUCTION DATE OF RESIDENCES: (Pre-1978, or new construction)

POSTED SPEED: COMMENTS:

TRAFFIC COUNTS:

Roadway/Direction	Autos	Medium	Heavy	Speed	Start Time	Duration

Site ST-15

NOISE MEASUREMENT LOG SHEET (20)

Jones & Stokes

PROJECT NAME: I-80 SR65 PROJECT #: 189,11

SITE NUMBER: P25 DATE/TIME: 12-10-12

LOCATION/ADDRESS: 6375 Rustic Hills Rd ENGINEERS: JV

#	Minute Starting	Measured Leq (dBA)	O or X	Autos	Medium Trucks	Heavy Trucks	Other Noise Sources/Comments (include SLM equipment, Calibration Data)
1	3 19	59,8					talking clk 114,1
2	3 20	57,3					
3	3 21	53,0					
4	3 22	52,7	! X				
5	3 23	65,7	X			1	fire truck backs up
6	3 24	69,4	X			1	and stopped ??
7	3 25	57,6					
8	3 26	55,6		1			
9	3 27	55,6					
10	3 28	53,4					
11	3 29	54,5					
12	3 30	61,6		X (MC)			
13	3 31	53,1					
14	3 32	54,6		1			
15	3 33	53,2					
16							
17							
18							
19							
20							

Leq	
Lmax	
Lmin	
L10	
L33	
L50	
L90	

Overall Leq (Include "O" minutes, Exclude "X" minutes) = _____ dBA

Subset Leq (Exclude "O" and "X" minutes) = _____ dBA

"O" = other characteristic sources that contributed to the Leq

"X" = exclude from Leq calculation; a non-typical source contaminated the measurement

Site ST-16

NOISE MEASUREMENT SITE INFORMATION SHEET

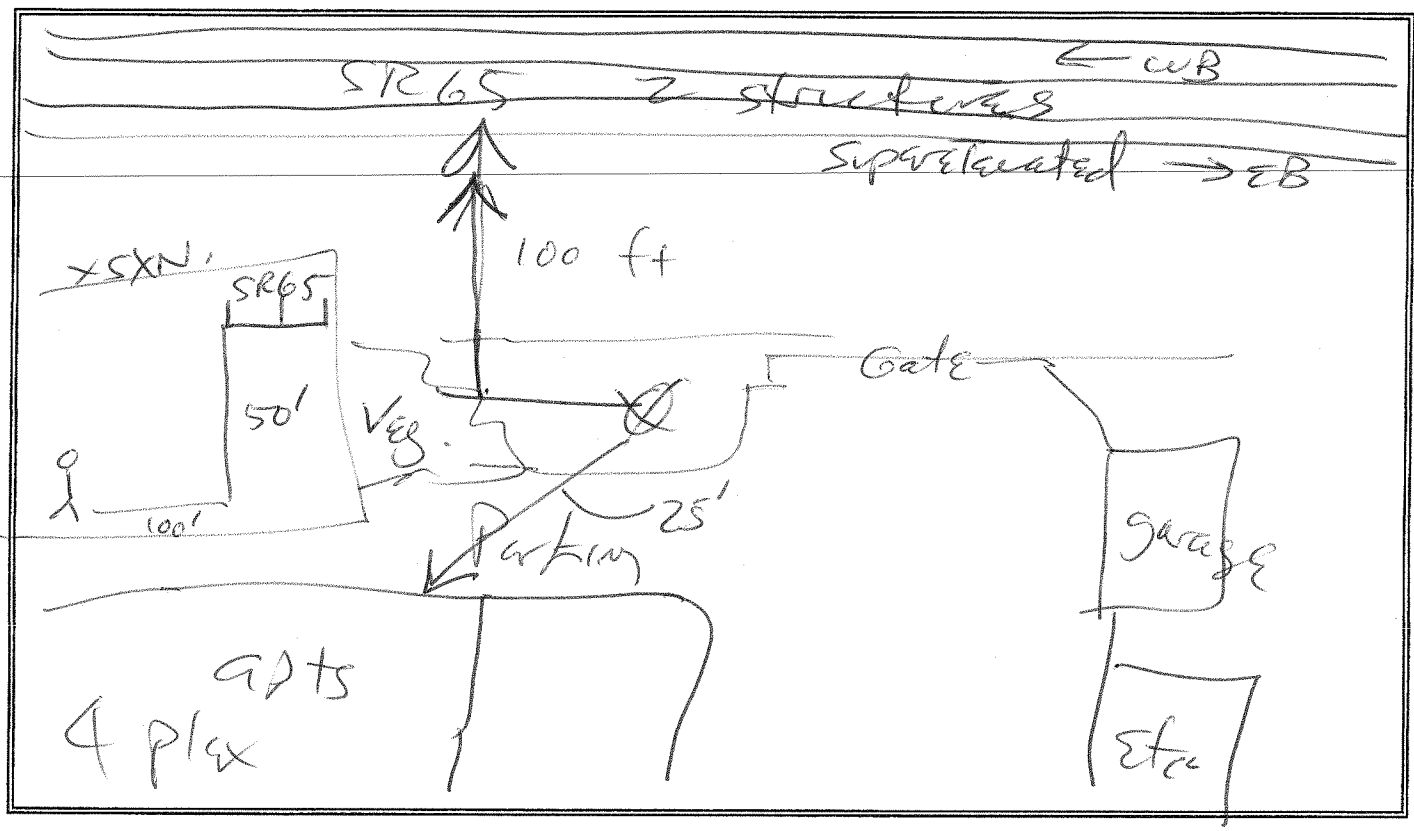
Jones & Stokes

PROJECT NAME: SR65 PROJECT #: 189.11

SITE NUMBER: 8 DATE/TIME: 12-11-12

LOCATION/ADDRESS: ST-2 ENGINEERS: JV

SITE SKETCH: Show microphone location, nearby residences/buildings, potential reflective surfaces, project roadways, local roadways, driveways, ground type, trees. Indicate reference distances between objects, arrows showing wind direction, North, and camera locations/directions. Describe the line-of-sight and topography/elevation changes relative to noise sources.



WEATHER DATA: (temperature, wind speed/direction, sky conditions, relative humidity)

Overcast 50's

EQUIPMENT DATA: (sound level meter, microphone, preamp, calibrator, factory cal. date)

Crew

ESTIMATED CONSTRUCTION DATE OF RESIDENCES: (Pre-1978, or new construction)

POSTED SPEED: COMMENTS:

TRAFFIC COUNTS:

Roadway/Direction	Autos	Medium	Heavy	Speed	Start Time	Duration

Site ST-16

NOISE MEASUREMENT LOG SHEET (20)

Jones & Stokes

PROJECT NAME: SR65 PROJECT #: 189.11

SITE NUMBER: 8 DATE/TIME: 12-11-12

LOCATION/ADDRESS: ST-2 ENGINEERS: JU

#	Minute Starting	Measured Leq (dBA)	O or X	Autos	Medium Trucks	Heavy Trucks	Other Noise Sources/Comments (include SLM equipment, Calibration Data)
1	3:35	66,0					SR65
2	3:36	66,2					
3	3:37	66,4					
4	3:38	66,5					
5	3:39	67,1					
6	3:40	66,4					
7	3:41	67,4					
8	3:42	66,4					
9	3:43	66,6					
10	3:44	66,8					
11	3:45	66,7					
12	3:46	67,1					
13	3:47	66,7					
14	3:48	66,9					
15	3:49	66,5					
16							
17							
18							
19							
20							

Leq
Lmax
Lmin
L10
L33
L50
L90

Overall Leq (Include "O" minutes, Exclude "X" minutes) = _____ **dBA**

Subset Leq (Exclude "O" and "X" minutes) = _____ **dBA**

"O" = other characteristic sources that contributed to the Leq

"X" = exclude from Leq calculation; a non-typical source contaminated the measurement

Site ST-17

NOISE MEASUREMENT SITE INFORMATION SHEET

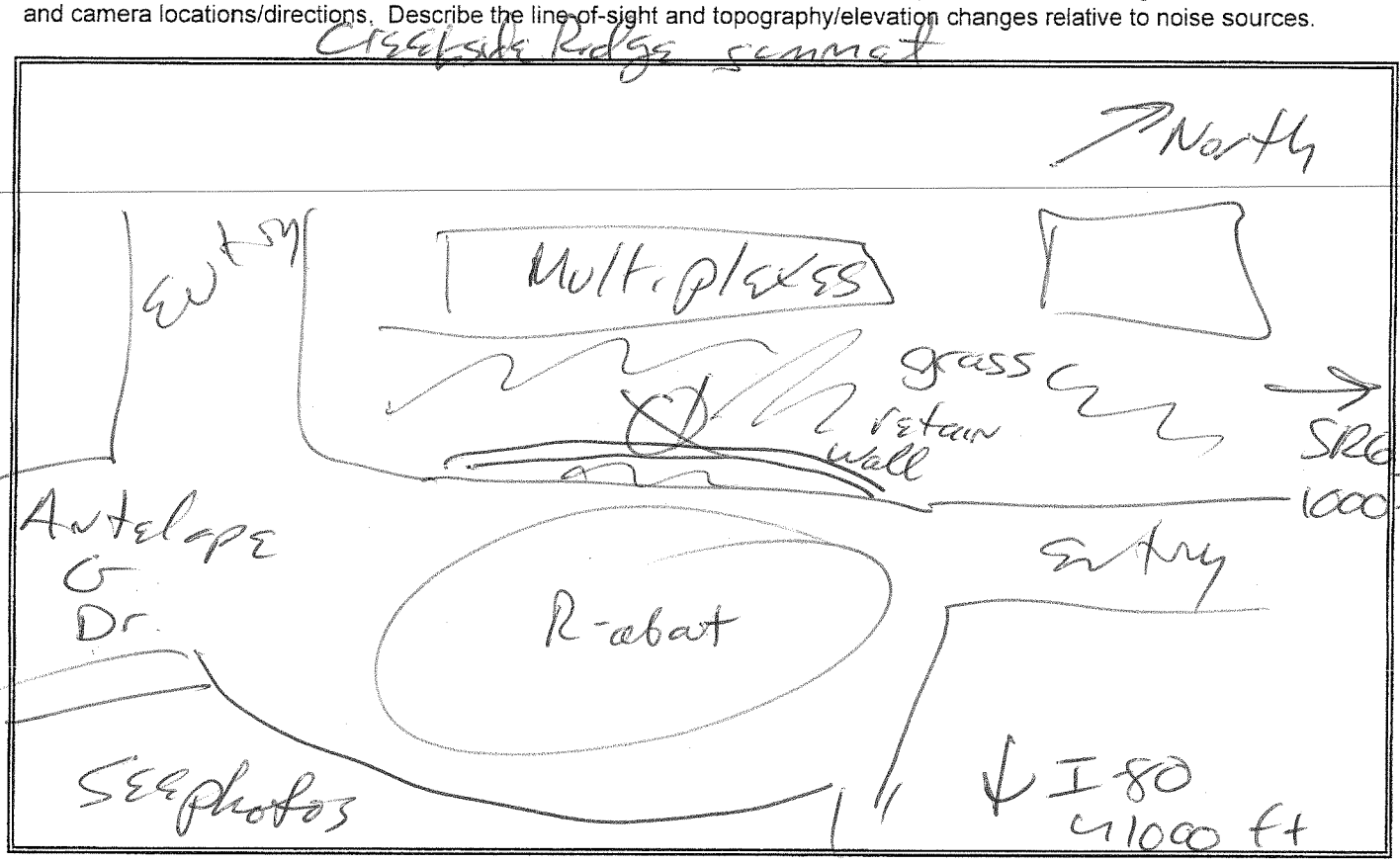
Jones & Stokes

PROJECT NAME: SR 65 PROJECT #: 189.11

SITE NUMBER: P6 DATE/TIME: 12-12-12

LOCATION/ADDRESS: Antelope Creek Apts. ENGINEERS: JV

SITE SKETCH: Show microphone location, nearby residences/buildings, potential reflective surfaces, project roadways, local roadways, driveways, ground type, trees. Indicate reference distances between objects, arrows showing wind direction, North, and camera locations/directions. Describe the line-of-sight and topography/elevation changes relative to noise sources.



WEATHER DATA: (temperature, wind speed/direction, sky conditions, relative humidity)

P Cloudy 50s-60s 70%

EQUIPMENT DATA: (sound level meter, microphone, preamp, calibrator, factory cal. date)

Crem

ESTIMATED CONSTRUCTION DATE OF RESIDENCES: (Pre-1978, or new construction)

POSTED SPEED: COMMENTS:

TRAFFIC COUNTS:

Roadway/Direction	Autos	Medium	Heavy	Speed	Start Time	Duration
Antelop Creek	22			25	12:00	15 min

NOISE MEASUREMENT LOG SHEET (20)

Jones & Stokes

PROJECT NAME: SR 65 PROJECT #: 189.11

SITE NUMBER: P6 DATE/TIME: 12.12.12

LOCATION/ADDRESS: APTS. ENGINEERS: JV

#	Minute Starting	Measured Leq (dBA)	O or X	Autos	Medium Trucks	Heavy Trucks	Other Noise Sources/Comments (include SLM equipment, Calibration Data)
1	12:00	59,0					Distant highway traffic
2	12:01	57,7					
3	12:02	58,4					Local traffic
4	12:03	60,2		pickup trucks			accessory complex.
5	12:04	59,0					
6	12:05	56,3					wind in the flags..
7	12:06	57,9					
8	12:07	57,8					
9	12:08	57,8					cal change 114,0
10	12:09	57,0					
11	12:10	57,1					
12	12:11	56,2					
13	12:12	61,8					
14	12:13	58,5					
15	12:14	57,1					
16							
17							
18							
19							
20							

Leq	
Lmax	
Lmin	
L10	
L33	
L50	
L90	

Overall Leq (Include "O" minutes, Exclude "X" minutes) = _____ dBA

Subset Leq (Exclude "O" and "X" minutes) = _____ dBA

"O" = other characteristic sources that contributed to the Leq

"X" = exclude from Leq calculation; a non-typical source contaminated the measurement

NOISE MEASUREMENT SITE INFORMATION SHEET

Site ST-18

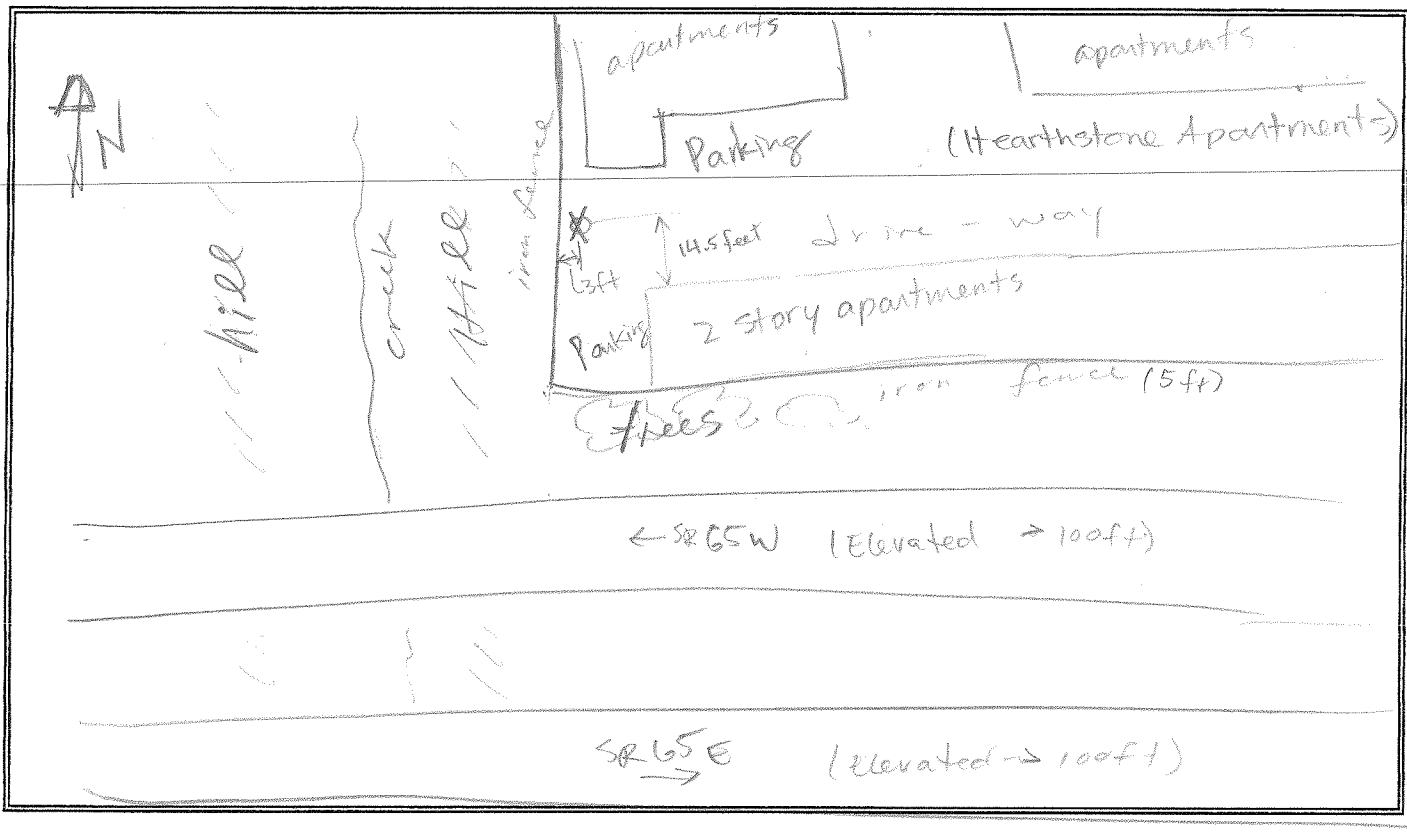
Jones & Stokes

PROJECT NAME: I 80/65 PROJECT #: 189.1

SITE NUMBER: P16 DATE/TIME: 12/11/12 3:30 PM

LOCATION/ADDRESS: N38° 46.404' W 121° 15.226 ENGINEERS: R Chang

SITE SKETCH: Show microphone location, nearby residences/buildings, potential reflective surfaces, project roadways, local roadways, driveways, ground type, trees. Indicate reference distances between objects, arrows showing wind direction, North, and camera locations/directions. Describe the line-of-sight and topography/elevation changes relative to noise sources.



WEATHER DATA: (temperature, wind speed/direction, sky conditions, relative humidity)

59°F, 0 mph, overcast, 73%

EQUIPMENT DATA: (sound level meter, microphone, preamp, calibrator, factory cal. date)

Blue, Blue, , July 2012

ESTIMATED CONSTRUCTION DATE OF RESIDENCES: (Pre-1978, or new construction) New

POSTED SPEED: 65 mph COMMENTS:

TRAFFIC COUNTS:

Roadway/Direction	Autos	Medium	Heavy	Speed	Start Time	Duration

Site ST-18

NOISE MEASUREMENT LOG SHEET (20)

Jones & Stokes

PROJECT NAME: I80/65 PROJECT #: 189.11

SITE NUMBER: P16 DATE/TIME: 12/11/12 3:30pm

LOCATION/ADDRESS: N 38°46.404' W121° 15.226' ENGINEERS: B. Chang

#	Minute Starting	Measured Leq (dBA)	O or X	Autos	Medium Trucks	Heavy Trucks	Other Noise Sources/Comments (include SLM equipment, Calibration Data)
1	3:30	63.1					
2	3:31	64.0					
3	3:32	62.7					
4	3:33	63.5					talking, car in nearby driveway
5	3:34	62.8					
6	3:35	62.7					
7	3:36	62.0					
8	3:37	61.8					
9	3:38	61.9					
10	3:39	63.3					
11	3:40	62.1					
12	3:41	62.6					
13	3:42	62.4					
14	3:43	63.3					nearby car entering garage
15	3:44	63.3					
16							
17							
18							
19							
20							

Leq	
Lmax	
Lmin	
L10	
L33	
L50	
L90	

Overall Leq (Include "O" minutes, Exclude "X" minutes) = _____ **dBA**

Subset Leq (Exclude "O" and "X" minutes) = _____ **dBA**

"O" = other characteristic sources that contributed to the Leq

"X" = exclude from Leq calculation; a non-typical source contaminated the measurement

Site ST-19

NOISE MEASUREMENT SITE INFORMATION SHEET

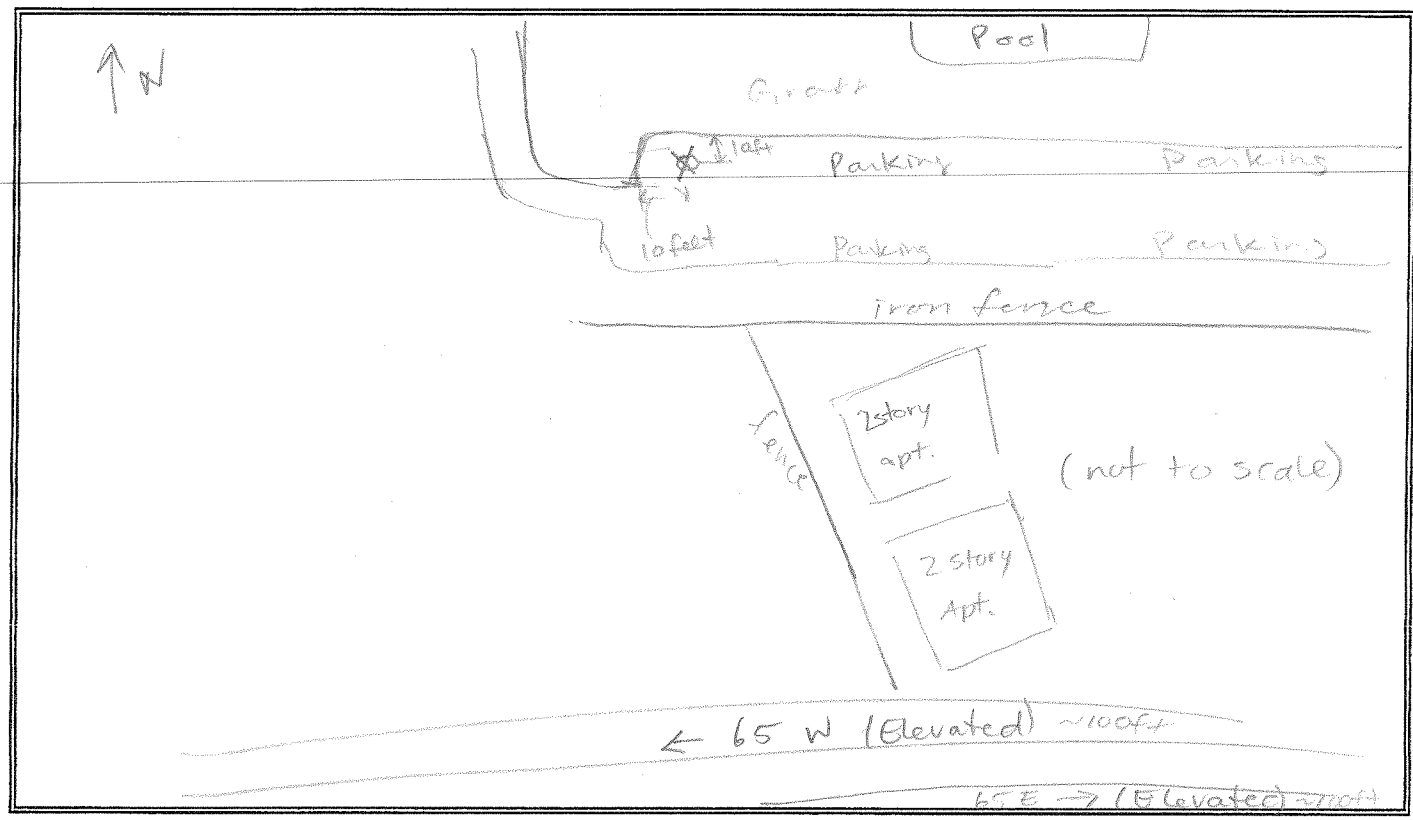
Jones & Stokes

PROJECT NAME: I 80/65 PROJECT #: 189.11

SITE NUMBER: P17 DATE/TIME: 12/11/12

LOCATION/ADDRESS: N38° 46.449', W 121° 15.202' ENGINEERS: B. Chang 4:08 pm

SITE SKETCH: Show microphone location, nearby residences/buildings, potential reflective surfaces, project roadways, local roadways, driveways, ground type, trees. Indicate reference distances between objects, arrows showing wind direction, North, and camera locations/directions. Describe the line-of-sight and topography/elevation changes relative to noise sources.



WEATHER DATA: (temperature, wind speed/direction, sky conditions, relative humidity)

51°F, 0 mph, overcast, 77%

EQUIPMENT DATA: (sound level meter, microphone, preamp, calibrator, factory cal. date)

Blue, Blue, , , July 2012

ESTIMATED CONSTRUCTION DATE OF RESIDENCES: (Pre-1978, or new construction) New

POSTED SPEED: 65 mph COMMENTS:

TRAFFIC COUNTS:

Roadway/Direction	Autos	Medium	Heavy	Speed	Start Time	Duration

Site ST-19

NOISE MEASUREMENT LOG SHEET (20)

Jones & Stokes

PROJECT NAME: I80/65 PROJECT #: 189.11

SITE NUMBER: P17 DATE/TIME: 12/11/12 4:08 PM

LOCATION/ADDRESS: N38°46.449', W121° 15.202' ENGINEERS: B. Chang

#	Minute Starting	Measured Leq (dBA)	O or X	Autos	Medium Trucks	Heavy Trucks	Other Noise Sources/Comments (include SLM equipment, Calibration Data)
1	4:08	57.2					birds
2	4:09	57.1					car driving by in lot
3	4:10	56.6					
4	4:11	56.9					
5	4:12	56.4					
6	4:13	57.2					overhead jet
7	4:14	56.7					
8	4:15	56.6					
9	4:16	57.4					
10	4:17	56.7					car driving by in lot
11	4:18	55.3					
12	4:19	55.8					
13	4:20	55.2					
14	4:21	55.0					
15	4:22	56.0					
16							
17							
18							
19							
20							

Leq	
Lmax	
Lmin	
L10	
L33	
L50	
L90	

Overall Leq (Include "O" minutes, Exclude "X" minutes) = _____ dBA

Subset Leq (Exclude "O" and "X" minutes) = _____ dBA

"O" = other characteristic sources that contributed to the Leq

"X" = exclude from Leq calculation; a non-typical source contaminated the measurement

Site ST-20

NOISE MEASUREMENT SITE INFORMATION SHEET

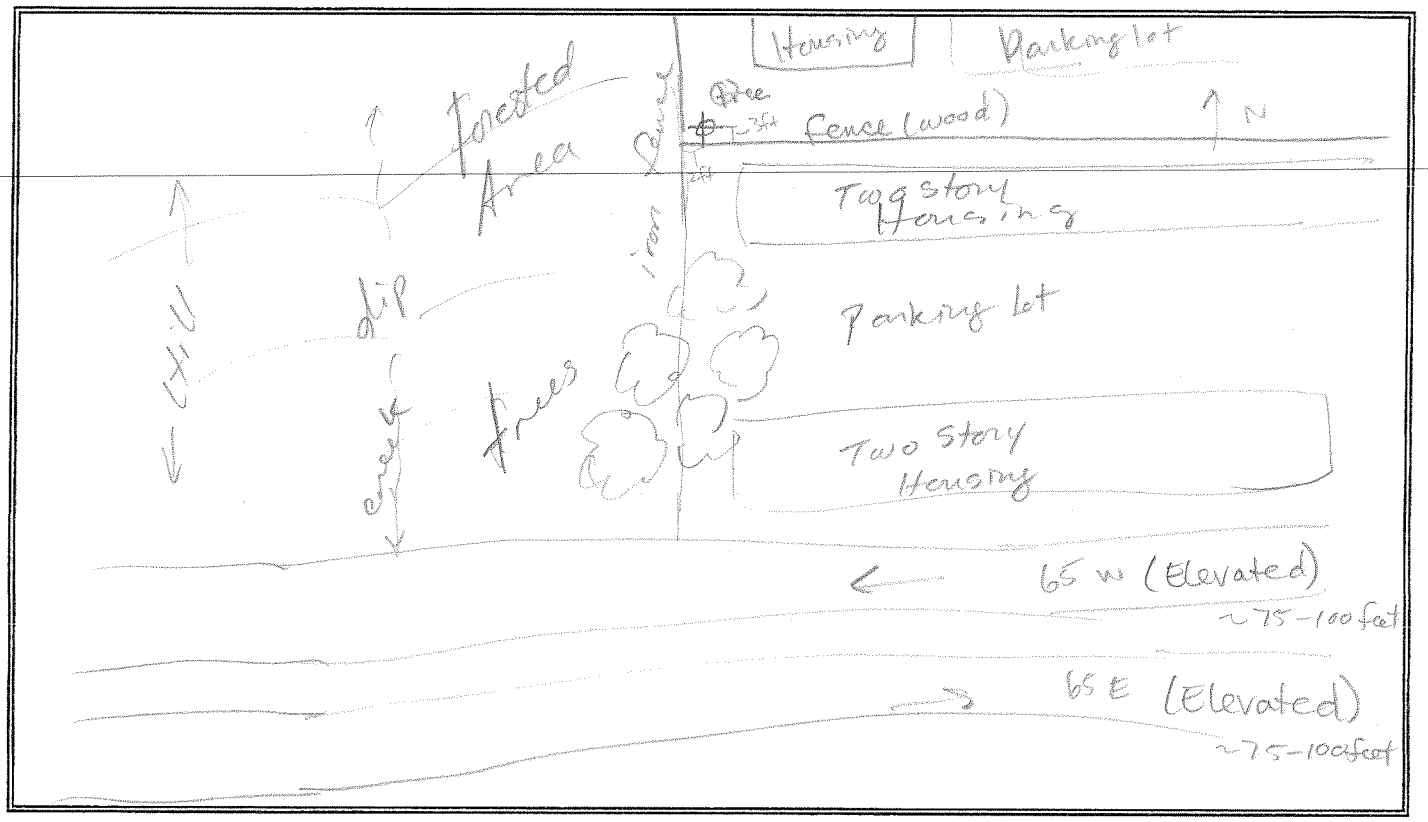
Jones & Stokes

PROJECT NAME: I80/65 PROJECT #: 189.11

SITE NUMBER: P15 6332 Brocksite circle. DATE/TIME: 12/11/12 2:54

LOCATION/ADDRESS: N 38° 46.479' W 121° 15.396' ENGINEERS: B. Chang

SITE SKETCH: Show microphone location, nearby residences/buildings, potential reflective surfaces, project roadways, local roadways, driveways, ground type, trees. Indicate reference distances between objects, arrows showing wind direction, North, and camera locations/directions. Describe the line-of-sight and topography/elevation changes relative to noise sources.



WEATHER DATA: (temperature, wind speed/direction, sky conditions, relative humidity)

51.4°F, <1 mph, overcast, 57%

EQUIPMENT DATA: (sound level meter, microphone, preamp, calibrator, factory cal. date)

Blue, Blue, , July 2012

ESTIMATED CONSTRUCTION DATE OF RESIDENCES: (Pre-1978, or new construction) New

POSTED SPEED: 65 COMMENTS:

TRAFFIC COUNTS:

Roadway/Direction	Autos	Medium	Heavy	Speed	Start Time	Duration

NOISE MEASUREMENT LOG SHEET (20)

Jones & Stokes

PROJECT NAME: I80/65 PROJECT #: 189.11

SITE NUMBER: P15 DATE/TIME: 12/11/2012 2:54

LOCATION/ADDRESS: N38°46.479' W121°15.396' ENGINEERS: B. Chang

#	Minute Starting	Measured Leq (dBA)	O or X	Autos	Medium Trucks	Heavy Trucks	Other Noise Sources/Comments (include SLM equipment, Calibration Data)
1	14:54	57.7					
2	14:55	57.6					
3	14:56	58.8					
4	14:57	57.1					Leaf blower in distance
5	14:58	58.6					
6	14:59	57.9					
7	15:00	56.2					
8	15:01	56.5					
9	15:02	57.0					
10	15:03	58.6					
11	15:04	58.3					
12	15:05	57.5					
13	15:06	57.4					
14	15:07	59.5					
15	15:08	57.7					
16							
17							
18							
19							
20							

Leq
Lmax
Lmin
L10
L33
L50
L90

Overall Leq (Include "O" minutes, Exclude "X" minutes) = dBA

Subset Leq (Exclude "O" and "X" minutes) = dBA

"O" = other characteristic sources that contributed to the Leq

"X" = exclude from Leq calculation; a non-typical source contaminated the measurement

Site St-21

NOISE MEASUREMENT SITE INFORMATION SHEET

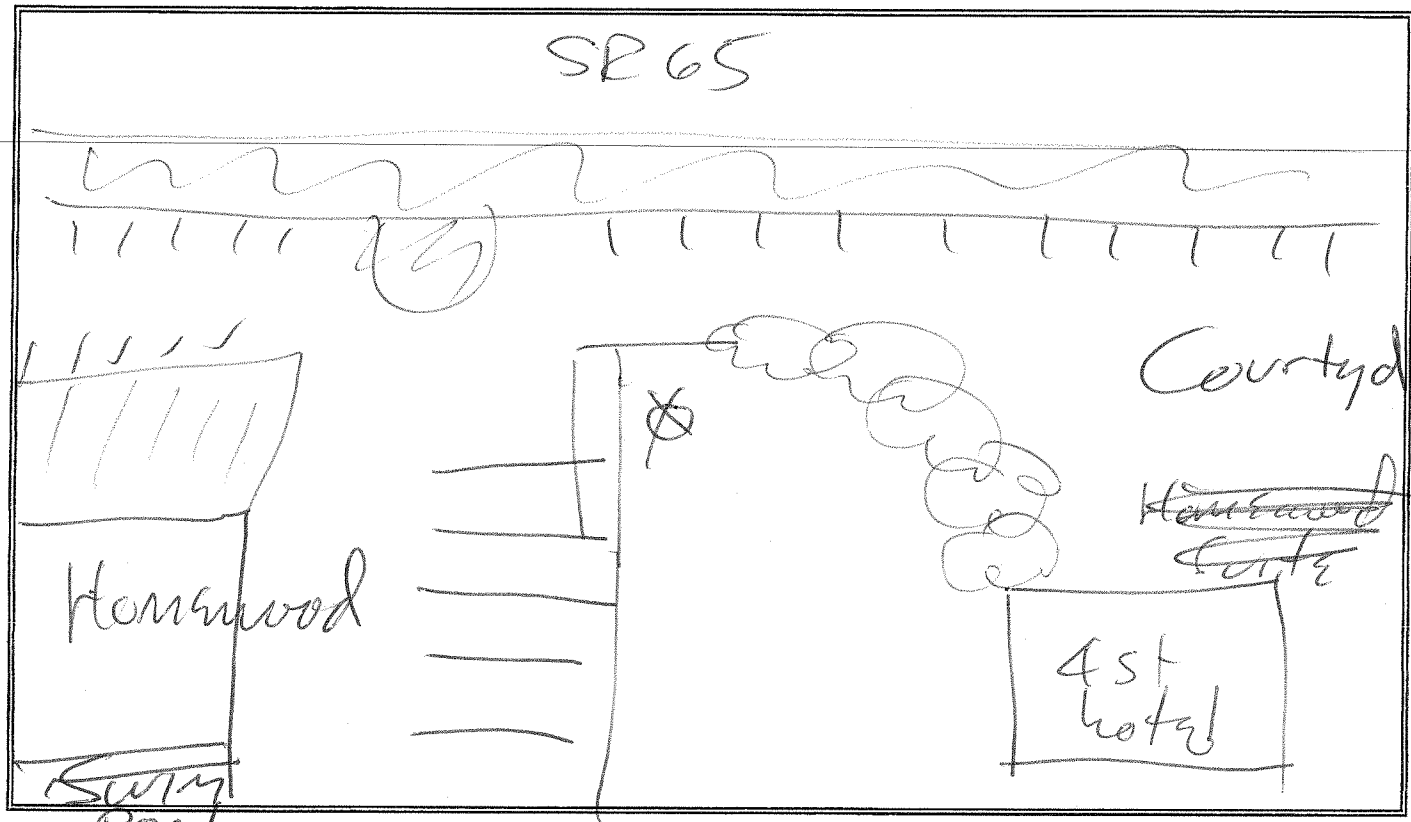
Jones & Stokes

PROJECT NAME: SR 65 PROJECT #: 189.11

SITE NUMBER: 9 DATE/TIME: 12-11-12

LOCATION/ADDRESS: ~~Homewood Suite~~ Courtyd ENGINEERS: N

SITE SKETCH: Show microphone location, nearby residences/buildings, potential reflective surfaces, project roadways, local roadways, driveways, ground type, trees. Indicate reference distances between objects, arrows showing wind direction, North, and camera locations/directions. Describe the line-of-sight and topography/elevation changes relative to noise sources.



WEATHER DATA: (temperature, wind speed/direction, sky conditions, relative humidity)

Overcast Grey 60°F

EQUIPMENT DATA: (sound level meter, microphone, preamp, calibrator, factory cal. date)

ESTIMATED CONSTRUCTION DATE OF RESIDENCES: (Pre-1978, or new construction)

POSTED SPEED: COMMENTS:

TRAFFIC COUNTS:

Roadway/Direction	Autos	Medium	Heavy	Speed	Start Time	Duration

Site ST-21

NOISE MEASUREMENT LOG SHEET (20)

Jones & Stokes

PROJECT NAME: SR65 PROJECT #: 189.11

SITE NUMBER: 9 DATE/TIME: 12-11-12

LOCATION/ADDRESS: Cervantes/Market ENGINEERS: JV

#	Minute Starting	Measured Leq (dBA)	O or X	Autos	Medium Trucks	Heavy Trucks	Other Noise Sources/Comments (include SLM equipment, Calibration Data)
1	4:08	63,7					direct 114,1
2	4:09	63,6					SR65
3	4:10	66,3					
4	4:11	64,7					
5	4:12	64,8					
6	4:13	64,5					
7	4:14	64,0					
8	4:15	64,8					
9	4:16	64,0					
10	4:17	63,6					
11	4:18	63,7					
12	4:19	63,9					
13	4:20	63,5					
14	4:21	63,2					
15	4:22	62,9					
16							
17							
18							
19							
20							

Leq
Lmax
Lmin
L10
L33
L50
L90

Overall Leq (Include "O" minutes, Exclude "X" minutes) = dBA

Subset Leq (Exclude "O" and "X" minutes) = dBA

"O" = other characteristic sources that contributed to the Leq

"X" = exclude from Leq calculation; a non-typical source contaminated the measurement

Site ST-22

NOISE MEASUREMENT SITE INFORMATION SHEET

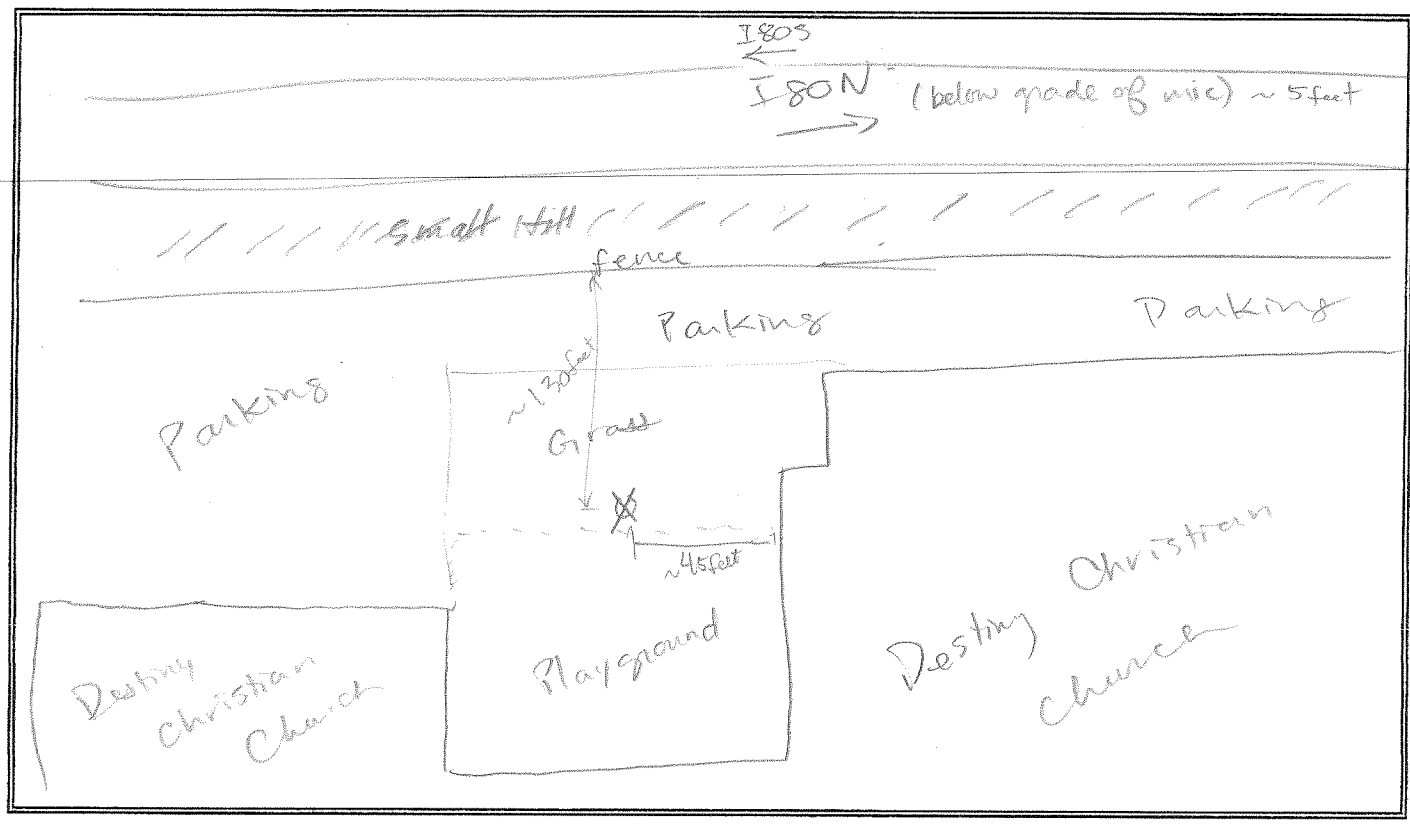
Jones & Stokes

PROJECT NAME: I-80/65 PROJECT #: 189.11

SITE NUMBER: P14 DATE/TIME: 12/11/2012 2:18 pm

LOCATION/ADDRESS: Destiny Christian Church 38°46.512' 121°15.536' ENGINEERS: B. Chang

SITE SKETCH: Show microphone location, nearby residences/buildings, potential reflective surfaces, project roadways, local roadways, driveways, ground type, trees. Indicate reference distances between objects, arrows showing wind direction, North, and camera locations/directions. Describe the line-of-sight and topography/elevation changes relative to noise sources.



WEATHER DATA: (temperature, wind speed/direction, sky conditions, relative humidity)

63°F, 1.8mph, overcast, 63%

EQUIPMENT DATA: (sound level meter, microphone, preamp, calibrator, factory cal. date)

Blue, Blue, , 3143, July 2012

ESTIMATED CONSTRUCTION DATE OF RESIDENCES: (Pre-1978, or new construction) New

POSTED SPEED: 65 COMMENTS:

TRAFFIC COUNTS:

Roadway/Direction	Autos	Medium	Heavy	Speed	Start Time	Duration

NOISE MEASUREMENT LOG SHEET (20)

Jones & Stokes

PROJECT NAME: I80/65 PROJECT #: 189.11

SITE NUMBER: P14 N 38°46.512' DATE/TIME: 12/14/12

LOCATION/ADDRESS: Destiny Christian Church W 121°15.536' ENGINEERS: B. Chang

#	Minute Starting	Measured Leq (dBA)	O or X	Autos	Medium Trucks	Heavy Trucks	Other Noise Sources/Comments (include SLM equipment, Calibration Data)
1	14:18	69.9					Calibrated @ 114dB
2	14:19	68.4					
3	14:20	68.4					
4	14:21	70.7					
5	14:22	69.4					moved equipment this hour
6	14:23	70.3					
7	14:24	70.7					
8	14:25	69.5					
9	14:26	68.7					
10	14:27	70.5					
11	14:28	71.2					Sound of some caution tape fluttering ~ 20 feet away
12	14:29	70.3					" "
13	14:30	69.5					
14	14:31	68.1					
15	14:32	68.8					
16	[redacted]						
17							
18							
19							
20							

Leq
Lmax
Lmin
L10
L33
L50
L90

Overall Leq (Include "O" minutes, Exclude "X" minutes) = _____ dBA

Subset Leq (Exclude "O" and "X" minutes) = _____ dBA

"O" = other characteristic sources that contributed to the Leq

"X" = exclude from Leq calculation; a non-typical source contaminated the measurement

Site ST-23

NOISE MEASUREMENT SITE INFORMATION SHEET

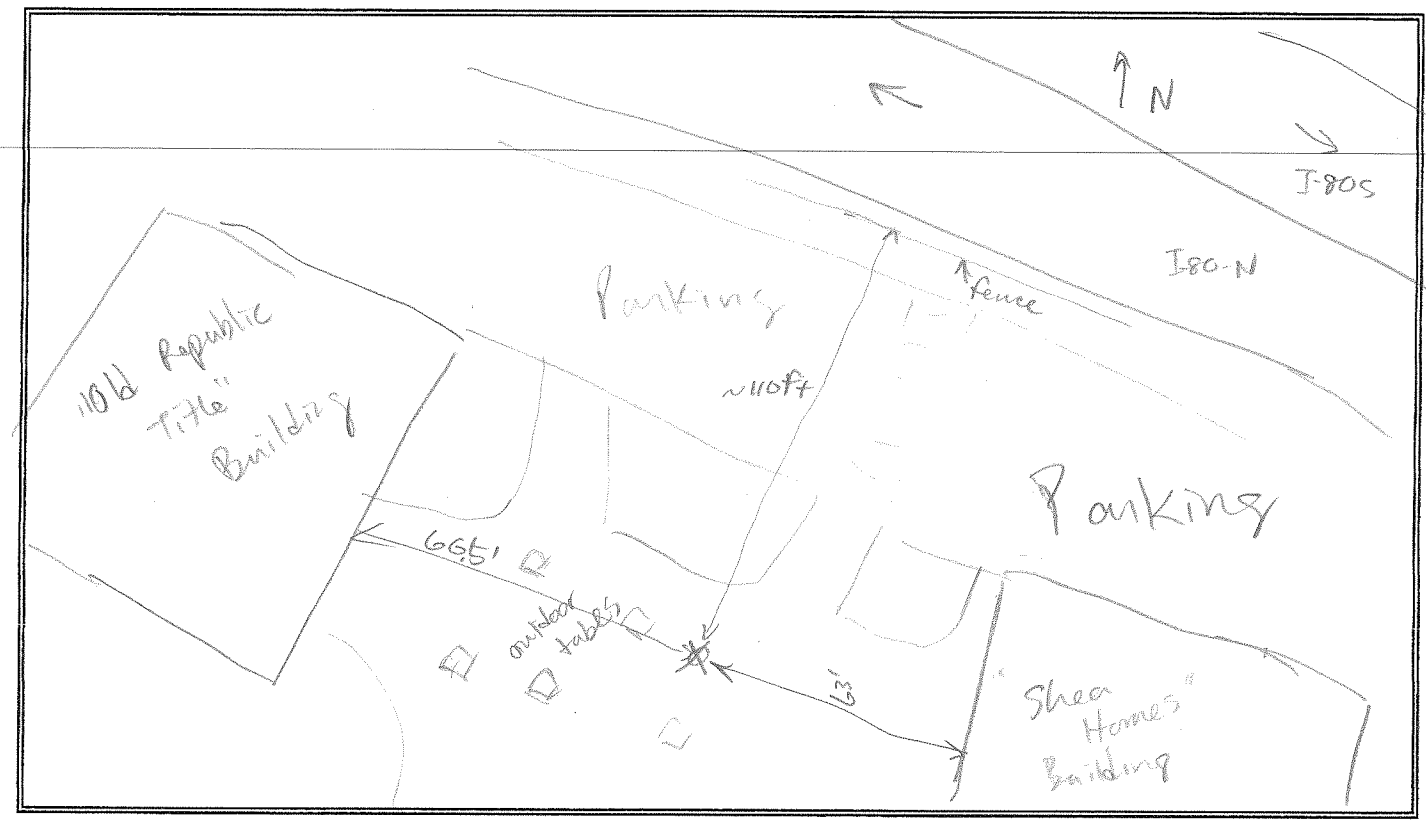
Jones & Stokes

PROJECT NAME: I80/65 PROJECT #: 189.11

SITE NUMBER: P10 DATE/TIME: 12/11/2012

LOCATION/ADDRESS: 38°40.813'N 121°16.400'W ENGINEERS: B. Chang

SITE SKETCH: Show microphone location, nearby residences/buildings, potential reflective surfaces, project roadways, local roadways, driveways, ground type, trees. Indicate reference distances between objects, arrows showing wind direction, North, and camera locations/directions. Describe the line-of-sight and topography/elevation changes relative to noise sources.



WEATHER DATA: (temperature, wind speed/direction, sky conditions, relative humidity)

64.8°F, 4 mph, clear, 57%

EQUIPMENT DATA: (sound level meter, microphone, preamp, calibrator, factory cal. date)

Blue, Blue, , , July 2012

ESTIMATED CONSTRUCTION DATE OF RESIDENCES: (Pre-1978, or new construction) New Construction

POSTED SPEED: 65mph COMMENTS:

TRAFFIC COUNTS:

Roadway/Direction	Autos	Medium	Heavy	Speed	Start Time	Duration

Site St-23

NOISE MEASUREMENT LOG SHEET (20)

Jones & Stokes

PROJECT NAME: I80/I65 PROJECT #: 189.11

SITE NUMBER: P10 DATE/TIME: 12/11/2012

LOCATION/ADDRESS: 38°46.813'N 121°16.400'W ENGINEERS: B. Chang

#	Minute Starting	Measured Leq (dBA)	O or X	Autos	Medium Trucks	Heavy Trucks	Other Noise Sources/Comments (include SLM equipment, Calibration Data)
1	12:02	61.6					Calibrated @ 114dB (leaf blower in distance)
2	12:03	61.2					leaf blower in distance.
3	12:04	60.0					leaf blower in distance.
4	12:05	59.9					talking
5	12:06	61.9					leaf blower in distance.
6	12:07	60.5					
7	12:08	60.1					
8	12:09	60.7					
9	12:10	59.8					
10	12:11	59.9					1 car passing slowly in parking lot (LDV)
11	12:12	62.2					
12	12:13	60.7					people walking by in high heels about 20 feet from mic.
13	12:14	62.0					people walking by talking 15ft from mic.
14	12:15	62.1					
15	12:16	62.0					LDV car starting in parking lot
16							
17							
18							
19							
20							

Leq	
Lmax	
Lmin	
L10	
L33	
L50	
L90	

Overall Leq (Include "O" minutes, Exclude "X" minutes) = _____ **dBA**

Subset Leq (Exclude "O" and "X" minutes) = _____ **dBA**

"O" = other characteristic sources that contributed to the Leq

"X" = exclude from Leq calculation; a non-typical source contaminated the measurement

Site ST-24

NOISE MEASUREMENT SITE INFORMATION SHEET

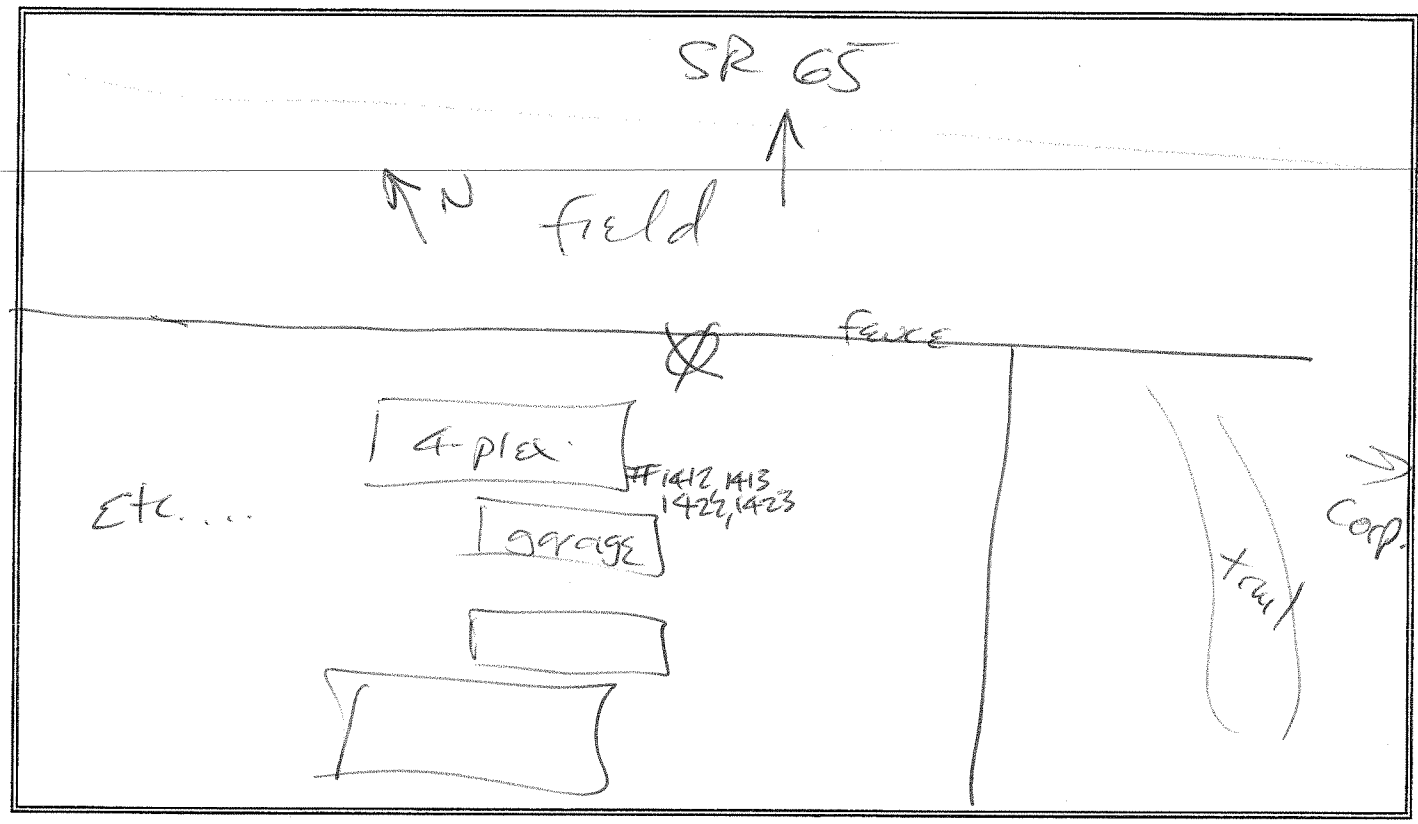
Jones & Stokes

PROJECT NAME: SR 65 PROJECT #: 189.11

SITE NUMBER: 11 DATE/TIME: 12-11-12

LOCATION/ADDRESS: Lux Apts ENGINEERS: JV

SITE SKETCH: Show microphone location, nearby residences/buildings, potential reflective surfaces, project roadways, local roadways, driveways, ground type, trees. Indicate reference distances between objects, arrows showing wind direction, North, and camera locations/directions. Describe the line-of-sight and topography/elevation changes relative to noise sources.



WEATHER DATA: (temperature, wind speed/direction, sky conditions, relative humidity)

CLR/hazy 60's

EQUIPMENT DATA: (sound level meter, microphone, preamp, calibrator, factory cal. date)

Graw

ESTIMATED CONSTRUCTION DATE OF RESIDENCES: (Pre-1978, or new construction)

POSTED SPEED: COMMENTS:

TRAFFIC COUNTS:

Roadway/Direction	Autos	Medium	Heavy	Speed	Start Time	Duration

Site ST-24

NOISE MEASUREMENT LOG SHEET (20)

Jones & Stokes

PROJECT NAME: SR 65 PROJECT #: 18911

SITE NUMBER: 11 DATE/TIME: 12-11-12

LOCATION/ADDRESS: Lux Apts ENGINEERS: W

#	Minute Starting	Measured Leq (dBA)	O or X	Autos	Medium Trucks	Heavy Trucks	Other Noise Sources/Comments (include SLM equipment, Calibration Data)
1	12:02	57,9					SR 65
2	12:03	57,7					
3	12:04	58,3					
4	12:05	56,7					wind in trees
5	12:06	57,6					
6	12:07	57,3					
7	12:08	56,4					
8	12:09	57,6					
9	12:10	58,1					
10	12:11	57,4					
11	12:12	58,9					
12	12:13	59,0					
13	12:14	56,8					
14	12:15	57,9					
15	12:16	56,9					
16							
17							
18							
19							
20							

Leq
Lmax
Lmin
L10
L33
L50
L90

Overall Leq (Include "O" minutes, Exclude "X" minutes) = _____ **dBA**

Subset Leq (Exclude "O" and "X" minutes) = _____ **dBA**

"O" = other characteristic sources that contributed to the Leq

"X" = exclude from Leq calculation; a non-typical source contaminated the measurement