State of California
**DEPARTMENT OF TRANSPORTATION**

Business, Transportation and Housing Agency

# Memorandum

***Flex your power!***
***Be energy efficient!***

**To:** FILE

**Date:** September 8, 2014

**File:** 05-0N7000
05-SB-101-1.4/12.3
South Coast HOV 101
Lanes Project

**From:** **DEPARTMENT OF TRANSPORTATION**
**DIVISION OF ENVIRONMENTAL ENGINEERING**

**Subject:** CORRECTION TO SOUNDWALL S374 AND S405

This errata provides correction to information provided on page 403 of the South Coast HOV 101 Lanes project. The environmental document incorrectly states, "In addition to the above considered noise barriers, several alternative soundwall locations for each soundwall S281, ***S374***, S471, and S489 were evaluated off state right-of-way, and none were found to be feasible or reasonable." Soundwall S374 should be removed and replaced with soundwall S405 which was analyzed off state right-of-way and no locations were found to be feasible or reasonable. The recommendations included in the final environmental document are not affected by this update, nor are any additions to the reports necessary due to this change.

State of California

DEPARTMENT OF TRANSPORTATION

California State Transportation Agency

# Memorandum

*Flex your power!*
*Be energy efficient!*

**To:** YVONNE HOFFMAN
Associate Environmental Planner

**Date:** March 4, 2014

**File:** SB-101-PM 1.4/12.3
South Coast 101
HOV Lane
05-0N7000

**From:** KEN ROMERO
Branch Chief
Central Region Environmental Engineering Branch

**Subject:** **ADDENDUM TO THE ORIGINAL SOUTH COST 101 HOV LANES PROJECT NOISE MEMO**

## Objective

Design has requested that the Environmental Engineering Unit provide an addendum showing the updated soundwalls recently evaluated for reasonableness and feasibility.

## Additional walls evaluated

A total of seven walls in the original NSR have been evaluated and updated for additional benefited receptors:

S210a: This soundwall is located along the right-of-way of SR 101.To achieve a 5-decibel reduction, a 14-foot-high soundwall a 500-foot-long would be needed to benefit the 14 dwelling units at Franciscan Village represented by receptors R18, R18A, R18C, R18D and R18F. Because this location is within the 100-year floodplain, the wall would need features designed to pass the flood flows using parallel walls with staggered openings for flood passage. The redesign for the flood passage increased the wall length by 280 feet which resulted in a total length of 780 feet for wall construction. The current estimated cost of the 780-foot soundwall is $513,240. The Noise Abatement Allowance, calculated in accordance with the Caltrans Traffic Noise Analysis Protocol, is $714,000. Since the cost of the 780-foot soundwall is less than the Noise Abatement Allowance, the soundwall is feasible and reasonable in accordance with the Caltrans *Traffic Noise Analysis Protocol* and would likely be incorporated into the project.

S374: This soundwall is located along the right-of-way of SR 101 in proximity of the the Summerland Cottages and Villas. To achieve a 5-decibel reduction for 19 dwelling units represented by receptors R47, R47A, R48A, R49A, R49.1, and R49.2, a 14-foot-high and approximately 1,300-foot-long soundwall was needed. In addition, Receptor R49.2 was found to be a severe receptor. The total cost allowance, calculated in accordance with the Caltrans *Traffic Noise Analysis Protocol*, is $817,000, based on a cost allowance of

$43,000 for the critical receptor R49.2. The current estimated cost of the soundwall is $855,400. S374 is not financially reasonable, but is still recommended for construction due to the severely affected receptor.

S464: This soundwall addition located along the right-of-way of SR 101 was added for floodplain mapping modifications. To achieve a 5-decibel reduction for 16 dwelling units represented by receptors R69, R70, R70A, and R71, a 13-foot-high and approximately 1,450-foot-long soundwall would be needed. The Noise Abatement Allowance, calculated in accordance with the Caltrans *Traffic Noise Analysis Protocol*, is $848,000. The current estimated cost of the soundwall is $763,750. Since the cost of the soundwall is less than the Noise Abatement Allowance, a soundwall at this location is considered reasonable and feasible and would be incorporated into the project.

S498: One additional segment location of soundwall S498 was identified. To achieve a 5-decibel noise reduction, an 8-foot-high and approximately 500-foot-long soundwall western extension located along the right-of-way would be needed to benefit 4 dwelling units represented by receptors R86 and R86B. R86B represents a new parcel created by a lot split after the Noise Study Report was completed; it has 2 benefited residence allowances. Additionally, a cottage behind the main home at R86 was not included in the original Noise Study Report. The Noise Abatement Allowance of the northern extension of soundwall S498, calculated in accordance with the Caltrans *Traffic Noise Analysis Protocol*, is $188,000. The current estimated cost of the western extension of soundwall S498 is also $188,000. Since the cost of the western end extension of soundwall S498 is the same as the Noise Abatement Allowance, the soundwall is feasible and reasonable in accordance with the Caltrans *Traffic Noise Analysis Protocol* and would likely be incorporated into the project.

S519: This soundwall extension is located along the right-of-way of SR 101. To achieve a 5-decibel reduction, a 12-foot-high noise wall extension to the west for 1003 feet would be needed to benefit the 12 dwelling units identified in the Noise Study Report represented by receptors R95, R96, R96A, R97 and R97A. The total cost allowance of this segment of soundwall S519, calculated in accordance with the Caltrans *Traffic Noise Analysis Protocol*, is $588,000. The current estimated cost of the western extension of soundwall S519 is $565,692. Since the cost of this section of soundwall S519 is less than the Noise Abatement Allowance, this section of the soundwall is feasible and reasonable in accordance with the Caltrans *Traffic Noise Analysis Protocol* and would likely be incorporated into the project.

S520: This soundwall extension is located along the right-of-way of SR 101. To achieve a 5-decibel reduction, a 8-foot-high noise wall extension to the west for 1800 feet would be needed to benefit the 15 dwelling units identified in the Noise Study Report and represented by receptors R88, R89, R90 and R90A. The Noise Abatement Allowance of this section of soundwall S520, calculated in accordance with the Caltrans *Traffic Noise Analysis Protocol*, is $735,000. The current estimated cost of this section of soundwall S520 is

$695,600. Since the cost of this section of soundwall S520 is less than the Noise Abatement Allowance, the western soundwall extension is feasible and reasonable in accordance with the Caltrans *Traffic Noise Analysis Protocol* and would likely be incorporated into the project. The most easterly 1,150 feet of this soundwall must remain at a height of 10 feet to protect severe receptors. The most westerly 650 feet of this soundwall is proposed at the 8-foot height.

S549: This soundwall is located on the edge of shoulder of SR 101. To achieve a 5-decibel reduction, a 10-foot-high soundwall approximately 1,705 feet long would be needed to benefit the 19 dwelling units identified in the Noise Study Report represented by receptors R100, R100A, R102 and R101. The most northerly 500 feet of soundwall would need to be constructed on a 2-foot retaining wall. The originally proposed R103 was replaced by R103A to represent the new wall end. The Noise Abatement Allowance for the soundwall, calculated in accordance with the Caltrans *Traffic Noise Analysis Protocol*, is $855,000. The current estimated cost of the soundwall is $848,350. Since the total cost of the soundwall at this location is less than the Noise Abatement Allowance, the soundwall is feasible and reasonable in accordance with the Caltrans *Traffic Noise Analysis Protocol* and would likely be incorporated into the project.

The attached table (Table 1) summarizes the additional walls with more details.

**Conclusion**

Based on the studies completed to date, Caltrans has considered noise barriers at 27 locations. The considered soundwalls vary in height from 8 to 16 feet and range in length from 450 to 5,200 feet. Calculations based on preliminary design data indicate that the soundwalls would reduce noise levels by 5 to 12 decibels for benefited receptors. Of the 27 soundwalls being considered, only 14 met reasonableness and feasibility requirements. These soundwalls vary in height from 8 to 16 feet high and from 499 to 2,169 feet long and would reduce noise levels by 5 to 12 decibels for benefitted receptors. If, during final design, conditions have substantially changed, noise abatement recommendations may be revised. The final decision on noise abatement would be made upon completion of the project design and the public involvement processes.

For questions or comments, please contact Allam Alhabaly, Transportation Engineer, at (559) 445-6218.

## Table 1

| Proposed SW | Receivers Protected by Wall | | Total NBR* | Wall Specifications | | | Height (ft) | Length (ft) | Total Cost of SW/SW's | Allowance per Benefited receptor | Total Allowance | Feasible (Y/N) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Receiver | NBR | | Location | From Station | To station | | | | | | |
| S210a | R18 | 3 | 14 | Staggered on RW | 203+00 | 208+00 | 14 | 780 | $513,240 | $51,000 | $714,000 | Y |
| | R18A | 7 | | | | | | | | | | |
| | R18C | 1 | | | | | | | | | | |
| | R18F | 1 | | | | | | | | | | |
| | R18D | 2 | | | | | | | | | | |
| S374 | R47 | 4 | 19 | RW | 367+00 | 380+00 | 14 | 1300 | $855,400 | $43,000 | $817,000 | Y |
| | R47A | 2 | | | | | | | | | | |
| | R48A | 3 | | | | | | | | | | |
| | R49A | 3 | | | | | | | | | | |
| | R49.1 | 5 | | | | | | | | | | |
| | R49.2** | 2 | | | | | | | | | | |
| S464 | R69 | 8 | 16 | RW | 452+50 | 465+00 | 13 | 1250 | $763,750 | $53,000 | $848,000 | Y |
| | R70 | 3 | | | | | | | | | | |
| | R70A | 2 | | | | | | | | | | |
| | R71 | 3 | | | | | | | | | | |
| S498 | R86 | 2 | 4 | RW | 500+50 | 505+50 | 8 | 500 | $188,000 | $47,000 | $188,000 | Y |
| | R86B | 2 | | | | | | | | | | |
| S519 | R95 | 2 | 12 | RW | 522+66 | 532+69 | 12 | 1003 | $527,340 | $51,000 | $612,000 | Y |
| | R96 | 3 | | | | | | | | | | |
| | R96A | 3 | | | | | | | | | | |
| | R97 | 3 | | | | | | | | | | |
| | R97A | 1 | | | | | | | | | | |
| S520 | R88 | 5 | 15 | RW | 512+00 | 530+00 | 8 | 1800 | $695,600 | $49,000 | $735,000 | Y |
| | R89 | 3 | | | | | | | | | | |
| | R90 | 3 | | | | | | | | | | |
| | R90A | 4 | | | | | | | | | | |
| S549 | R103 | 4 | 19 | Shoulder | 538+95 | 556+00 | 10 | 1705 | $848,350 | $45,000 | $855,000 | Y |
| | R100 | 7 | | | | | | | | | | |
| | R100A | 1 | | | | | | | | | | |
| | R101 | 2 | | | | | | | | | | |
| | R102 | 5 | | | | | | | | | | |

***NBR: number of benefited receivers**
**** Severe receptor**

State of California

# Memorandum

Business, Transportation and Housing Agency

To: Kimely Sawtell
District 5 Project Design

Date: December 19, 2011

File No.: 05-SB-101-PM 1.4-12.3
South Coast HOV Project
05-0N7000
Project# 05000000225

From: Ken Romero, Branch Chief
**CENTRAL CALIFORNIA ENVIRONMENTAL ENGINEERING BRANCH**

Subject: **Memorandum for the Noise Study and Vibration Reports for the South Coast US 101 HOV Lane Project**

The purpose of this memorandum is to update the Noise Study and Vibration Reports for the above project due to project changes that have occurred since the original reports were prepared. The primary changes were related to the proposed Cabrillo interchange configurations and the removal of Salinas Street Ramps from this project and included in the Milpas to Hot Springs Project that is currently under construction. The memo will also address construction noise, including construction noise associated with the raising of the railroad profile, and updates the number of benefited receptors in the body of the Noise Study Report to coincide with Appendix C of the Noise Study.

**Purpose**

The purpose of the project is the following:

- Reduce congestion and delay
- Provide capacity for future travel demand
- Improve travel time on U.S. 101 within the project limits
- Provide for high-occupancy-vehicle-lane continuity on U.S. 101 in southern Santa Barbara County, as planned for in the 2008 Regional Transportation Plan
- Encourage a modal shift to transit and carpooling

To achieve the project goals in 2040, on typical weekdays1 this project should do the following:

- Reduce corridor delay by at least 7,000 person-hours daily2
- Reduce peak hour peak direction travel time on U.S. 101 in the project area for carpoolers and express bus riders by 25 percent or more on average

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1 Performance measures were derived from 101 In Motion.

2 Delay is a measure of time "lost" per person due to travel in congested conditions. Delay occurs on U.S. 101 when vehicles travel at speeds below 55 miles per hour. Total person hours of delay are calculated by multiplying the amount of time lost per person per day during peak hours by the number of vehicles traveling during the congested peak periods.

**Need**

U.S. 101 is the main highway through the South Coast region of Santa Barbara County and serves as the primary connection for vehicle travel between the communities of Goleta, Santa Barbara, Montecito, Summerland, and Carpinteria. The highway, as part of the national highway system, is a major interregional road connecting Northern and Southern California. U.S. 101 also plays a large role in the state economy by serving as a secondary route to Interstate 5. Local highway travelers rely on U.S. 101 for travel related to school, personal use, business, and leisure. Employment is concentrated at the northern end of the corridor in and near the cities of Santa Barbara and Goleta. The University of California Santa Barbara campus, near Goleta, also attracts a large number of vehicles during the peak commute periods.

While the majority of the U.S. 101 corridor through Santa Barbara and Ventura counties is a six-lane freeway, about 16 miles between Mussel Shoals and Milpas Street is a four-lane freeway. U.S. 101 is the main route for commuters, interregional traffic, and cargo throughout the South Coast area. The project limits consist of a high-demand stretch of U.S. 101 that is a four-lane section bounded by a six-lane highway to the north and the proposed Ventura/Santa Barbara 101 HOV project. This project would add an HOV lane in each direction from Ventura County to the southern boundary of the project limits. That project is expected to begin construction late 2012 or early 2013.

Motorists on U.S. 101 through the project limits experience traffic congestion during the morning and afternoon peak travel periods. Currently, peak travel periods occur for two to four hours daily in each direction. By 2040, peak travel periods are expected to increase to eleven hours each day. For through-travelers from Ventura to Northern Santa Barbara and beyond this area would become a bottleneck without the project.

Updated Project Description

Caltrans proposes to add a lane on U.S. 101 in each direction, from 0.22 mile south of the Bailard Avenue overcrossing (post mile 1.4) in the city of Carpinteria to the southern portion of the City of Santa Barbara (post mile 10.8).

Three build alternatives and the No-Build Alternative are being considered for this project.

### *Common Design Features of the Build Alternatives*

Alternatives 1, 2, and 3 would include the following:

- Add a 12-foot lane in each direction on U.S. 101 to provide for a part- time, continuous access HOV lane within the project limits.

- Improve the southbound shoulder ditches near the Bailard Avenue interchange to provide a graded, flat-bottom swale to be used for storm water treatment.
- Replace bridge structures at Arroyo Paredon (Parida), Toro Canyon, Romero (Picay), Oak, and San Ysidro creeks.
- Widen bridge structures at Franklin and Santa Monica creeks.
- Widen traffic undercrossing structures at South Padaro Lane and Evans Avenue.
- Build a southbound auxiliary lane between the Sheffield Drive on-ramp and the Evans Avenue off-ramp.
- Replace the interchange at Sheffield Drive, which includes reconfiguring the southbound highway lanes and ramps. The reconstructed bridge would be 118 feet wide and would contain a single concrete barrier; the existing median planting would be removed. The one interchange configuration is being considered for all alternatives.
- Reconstruct the highway to remove a nonstandard-crest vertical curve north of Sheffield Drive near the Romero (Picay) Creek bridge. The freeway profile would be lowered a maximum of 2 feet to accomplish the reconstruction.
- Rebuild the interchange at Cabrillo Boulevard/Hot Springs. Five configurations, as described later in this section, are being considered for this interchange.
- Install traffic signals where warranted.
- Provide median landscaping from 0.4 mile south of Carpinteria Creek to 0.3 mile south of Carpinteria Creek.
- Install replacement planting where appropriate.
- Build soundwalls for noise abatement where appropriate.
- Build retaining walls where necessary. Each alternative and interchange configuration differs on the number of walls proposed. All build alternatives include a retaining wall on the southbound ramp at Sheffield Drive, retaining wall between Sheffield Drive and Evans Avenue on the southbound mainline, and a retaining wall along Ortega Hill.
- Provide noise attenuating surfacing on all travel lanes.
- Relocate underground and aboveground utilities as needed.
- Lengthen cross-culverts to accommodate additional pavement width.
- Build maintenance vehicle pullout areas.
- Build storm water treatment facilities.

### *Unique Design Features*

**Alternative 1—Widen inside and outside** (goal: balance competing resources)

- Selectively widen inside and outside within available right-of-way. This alternative was developed to maximize opportunities to retain and refine high value resources including scenic views, wetlands and median/outside landscaping.

- Add median landscaping, where appropriate: from Carpinteria Creek to Linden Avenue; near the South Padaro Lane interchange; Nidever Road to Garapato Creek; and near the North Padaro Lane interchange.
- Build one additional retaining wall to maximize median planting, on the southbound shoulder at the right-of-way line ending at the Santa Claus Lane southbound on-ramp (500 feet in length).

**Alternative 2—Widen to the outside** (goal: maximize median planting)

- Widen to the outside edge of pavement within the existing outside shoulder where feasible.
- Provide median landscaping, where appropriate: from Carpinteria Creek to Reynolds Avenue; and from Santa Monica Road to the Evans Avenue interchange.
- Build three additional retaining walls to maximize median planting: one on the southbound shoulder at the right-of-way line ending at the Santa Claus Lane southbound on-ramp (500 feet in length); one on the northbound shoulder near Greenwell Creek (700 feet in length); and one on the northbound shoulder near the northbound off-ramp to Summerland (300 feet in length.)

**Alternative 3—Widen to the inside** (goal: maximize the retention of outside planting)

- Widen to the inside edge of pavement within the existing median.
- Provide a single barrier in the median, separating the two inside paved shoulders, between Carpinteria Creek and Olive Mill Road. This largely retains the existing outside edge of pavement within these areas.
- No additional retaining walls are needed.

### *Cabrillo Boulevard Interchange*

The Cabrillo Boulevard interchange would be rebuilt under all three build alternatives. There are five mutually exclusive interchange configurations—F, Modified F, J, M, and Modified M—being considered under each of the three build alternatives. Two of the five configurations (F Modified and M Modified) would provide northbound access largely in the same way that it exists now with two northbound exits, one of the configurations would remove the off ramp at Hermosillo Road (configuration M), and two would consolidate the northbound off-ramp traffic at the Hermosillo Road off ramp (configurations F and J). Each configuration is described below and shown in more detail in Appendix G of the environmental document:

#### *F—Existing Northbound Mainlines/Southbound Half Diamond*

This configuration would do the following:

- Close both median off-ramps at Cabrillo Boulevard and the Los Patos Way off-ramp.

- Improve the northbound Hermosillo Drive off-ramp and the northbound Cabrillo Boulevard on-ramp.
- Acquire access control for 50' beyond the end of the southeast return of the reconstructed Hermosillo Road northbound off-ramp. Install access control fencing along the frontage of the existing gas station up to the first gas station driveway.
- Build new southbound on- and off- ramps to intersect at Cabrillo Boulevard immediately adjacent and to the right of the southbound freeway lanes.
- Install traffic signals when warranted at Hermosillo Road at Coast Village Road and at the Cabrillo Boulevard southbound ramps.

### *Modified F—Northbound Half Diamond with Hermosillo Drive Off-Ramp and Southbound Half Diamond*

This configuration would do the following:

- Close both median off-ramps at Cabrillo Boulevard and the Pos Patos off-ramp.
- Add a northbound right side off-ramp at Cabrillo Boulevard.
- Improve the northbound Cabrillo Boulevard on-ramp.
- Retain the northbound Hermosillo Drive off-ramp.
- Construct new southbound on- and off-ramps to intersect at Cabrillo Boulevard immediately adjacent and to the right of the southbound freeway lanes.

### *J—Existing Northbound Mainlines and Improve Los Patos Way*

This configuration would do the following:

- Close both median off-ramps at Cabrillo Boulevard.
- Improve the northbound Hermosillo Drive off-ramp and the northbound Cabrillo Boulevard on-ramp.
- Improve the southbound Los Patos Way off-ramp and add a new southbound Los Patos Way on-ramp.
- Install a traffic signal at the intersection of Hermosillo Road and Coast Village Road.
- Raise the railroad profile one to four feet for a distance of 0.67 miles as part of ramp improvements at the Los Patos Way railroad overhead structure. The railroad work, including the construction of several retaining walls, would occur in the railroad right of way with access from the state right of way.
- The Hermosillo Drive off-ramp would require the placement of access control fencing up to the first gas station driveway. The Los Patos Way ramp would also require the placement of access control fencing for a distance of 170 feet (just before the maintenance gate at the Andree Bird Refuge).

### *M—Northbound Half Diamond/Improve Los Patos Way*

This configuration would do the following:

- Close both median off-ramps at Cabrillo Boulevard and the northbound Hermosillo Drive off-ramp.
- Add a northbound Cabrillo Boulevard off-ramp and improve the northbound Cabrillo Boulevard on-ramp.
- Improve the southbound Los Patos Way off-ramp and add a new southbound Los Patos Way on-ramp. The Los Patos Way ramp would require the placement of access control fencing for a distance of 170 feet (just before the maintenance gate at the Andree Clark Bird Refuge).
- Raise the railroad profile one to four feet for a distance of 0.67 miles as part of ramp improvements at the Los Patos Way railroad overhead structure. The railroad work, including the construction of several retaining walls, would occur in the railroad right of way with access from the state right of way.
- Install a traffic signal at the Cabrillo Boulevard northbound ramps.

### *Modified M—Northbound Half Diamond with Hermosillo Drive Off-Ramp and Southbound Los Patos*

This configuration would do the following:

- Close both median off-ramps at Cabrillo Boulevard.
- Add a northbound right side off-ramp at Cabrillo Boulevard and improve the northbound Cabrillo Boulevard on-ramp.
- Retain the northbound Hermosillo Drive off-ramp.
- Improve the southbound Los Patos Way off-ramp and add a new southbound Los Patos Way on-ramp.
- Raise the railroad profile one to four feet for a distance of 0.67 miles as part of ramp improvements at the Los Patos Way railroad overhead structure. The railroad work, including the construction of several retaining walls, would occur in the railroad right of way with access from the state right of way.

### *Each build alternative would also do the following:*

- Replace bridge structures at Arroyo Paredon (Parida), Toro Canyon, Romero (Picay), Oak, and San Ysidro creeks
- Widen bridge structures at Franklin and Santa Monica creeks
- Widen traffic undercrossing structures at South Padaro Lane and Evans Avenue
- Build a southbound auxiliary lane between the Sheffield Drive on-ramp and the Evans Avenue off-ramp

- Provide median landscaping from 0.4 of a mile south of Carpinteria Creek to 0.3 of a mile south of Carpinteria Creek (this is the only spot where median planting is common to all build alternatives)
- Install replacement planting
- Build new retaining walls (the total number varies by alternative and Cabrillo Boulevard interchange configuration).
- Build soundwalls (about 27) for noise abatement where appropriate
- Provide noise attenuating surfacing on all travel lanes on U.S. 101 within the project limits
- Relocate utilities as needed
- Lengthen cross culverts to accommodate additional pavement width
- Build maintenance vehicle pullout areas (Alternative 1—11 pullouts; Alternative 2—21 pullouts; Alternative 3—1 pullout)
- Build storm water treatment facilities, at the following locations, that would typically have graded, flat-bottom swale(s): adjacent to the Bailard Avenue interchange; post mile 2.5; post mile 4.2; post mile 4.9; and post mile 6.8

## Locations considered for noise abatement that exceed 75dBA

Abatement is not *required* but is considered where severe impacts exceed 75dBA at the following soundwall and receptor locations;

Soundwall S174 – Receptor R13
Soundwall S181 – Receptors R23 through R25
Soundwall S210 – Receptors R20 and R21
Soundwall S392 – Receptor R50
Soundwall S424 – Receptors R60 and R61
Soundwall S464 – Receptors R71 through R73
Soundwall S498 – Receptor R84
Soundwall S519 – Receptors R93 and R94
Soundwall S520 – Receptors R88 and R89
Soundwall S535 – Receptor R98

## Noise Impacts due to the Cabrillo Interchange Alternatives

Land use in the vicinity of the project is mainly industrial; a noise report titled, "East Santa Barbara Route 101 Operational Improvements- EA 05-447800", dated August 2, 2002 was prepared for this portion of the project and updated on March 26,2004. The noise study analyzed the area of the project for potentially impacted receptors and recommended 4 barriers at the following locations:

- Punta Gorda St to Milpas St.
- Salinas St. to Punta Gorda St. (this wall exists and the study recommended either replacement or repair of this wall).
- Santa Barbara Municipal Tennis Stadium
- Santa Barbara Zoological Gardens.

The 2002 noise study used forecasted traffic volumes for the year 2025 of 1220 DHV. Traffic near the Cabrillo Interchange is expected to increase by 10% over the next 10 years. The design year for the Santa Barbara HOV project is 2036. Traffic noise levels for receptors in the vicinity of Cabrillo Interchange can be calculated by using a logarithmic conversion method explained in the 1998 TeNS, section N-2 13 5. Using the conversion method for one of the studied receptors, the Santa Barbara Municipal Tennis Stadium showed an increase of 0.4dBA (refer to calculation sheet attached). -This increase in noise levels is less than significant since the healthy human ear can barely perceive noise level changes of 3 dBA (refer to section N-2211 of the TeNS). Based on the project maps, aerial mapping, and site visit, there's been no new construction of residential units or other related properties.

Based on the above discussion, the proposed interchanges would not have new noise impacts or change the results and findings of the Noise Study Report prepared for the Milpas to Hot Springs project (August 2002).

## Noise impacts resulting from relocation of railroad tracks

The railroad is expected to be relocated 0 to 4 feet higher, 0 to 30 (average is 15 feet) feet closer for a distance of 800 feet to the Andree Clark Bird Refuge. The current location of the railroad is approximately 100 feet north of the bird refuge. The table below shows a noise level of 85 dBA at 50 feet or 82 dBA at 100 feet. Doubling the distance to the noise source produces a 3dBA noise increase. Where the railroad is relocated approximately 15 feet closer to the bird refuge, the noise level generated by the train would increase by only 0.7 dBA or 82.7 dBA. Refer to calculation sheets attached.

**Table 4.3-1**
**Typical Noise Levels**

| Transportation Sources | Noise Level (dBA) | Other Sources | Description |
|---|---|---|---|
| Jet takeoff (200 feet) | | | |
| | 130 | | painfully loud |
| | 120 | | |
| Car horn (3 feet) | 110 | | maximum vocal effort |
| 100 shout (0.5 feet) | | | very annoying |
| Heavy truck pass by (50 feet) | 90 | jack hammer (50 feet) | loss of hearing with |
| | | home shop tools (3 feet) | prolonged exposure |
| Train on a structure pass by (50 feet) | 85 | backhoe (50 feet) | |
| City bus pass by (50 feet) | | 80 bulldozer (50 feet) | annoying |
| | | vacuum cleaner (3 feet) | |
| Train pass by (50 feet) | 75 | blender (3 feet) | |
| City bus at stop (50 feet) | | | |
| Freeway traffic (50 feet) | 70 | lawn mower (50 feet) | |
| Train in station (50 feet) | 65 | washing machine (3 feet) | intrusive |
| | 60 | TV (10 feet) | |
| Light traffic (50 feet) | | talking (10 feet) | |
| Light traffic (100 feet) | 50 | refrigerator (3 feet) | quiet |
| | 40 | library | |
| | 30 | soft whisper (15 feet) | very quiet |

Sources: FTA (1995); EPA (1971, 1974).

## Number of benefited receptors according to Appendix C

The number of benefited receptors and corrected figures below should be used in place of those mentioned in the Noise Study Report:

- Soundwall S158: Page 35 (section 7.2.2.1) of the noise study report shows 21 SFR (Single Family Residence) should be 20 SFR in order to correspond with a total of 26 total benefited receptors as shown in Appendix C.
- On page 40 (second paragraph) of the noise study report, Receptor R14A should be replaced with R17A.
- On page 54 (second paragraph) of noise study report indicates 13 SFR, should be 11 SFR.

### Construction Noise Impacts

Land use in the vicinity of the Cabrillo Interchange is mainly industrial; a noise report titled, "East Santa Barbara Route 101 Operational Improvements- EA 05-447800," dated August 2, 2002, was prepared for this portion of the project and updated on March 26, 2004.

**Equipment Noise Control**

During construction in the vicinity of the Cabrillo interchange, noise from construction activities may intermittently dominate the noise environment in the immediate area of construction. Construction noise is regulated by Caltrans Standard Specifications Section 14-8.02 "Noise Control," which states that noise levels generated during construction shall comply with applicable local, state, and federal regulations, and that all equipment shall be fitted with adequate mufflers according to the manufacturers' specifications.

Table 8-1 summarizes noise levels produced by construction equipment commonly used on roadway construction projects. Construction equipment is expected to generate noise levels ranging from 70 to 90 dB at a distance of 50 feet, and noise produced by construction equipment would be reduced over distance at a rate of about 6 dB per doubling of distance.

**Table 8-1. Construction Equipment Noise**

| Equipment | Maximum Noise Level (dBA at 50 feet) |
|---|---|
| Scrapers | 89 |
| Bulldozers | 85 |
| Heavy Trucks | 88 |
| Backhoe | 80 |
| Pneumatic Tools | 85 |
| Concrete Pump | 82 |

*Source:* Federal Transit Administration 1995.

No adverse noise impacts from construction are anticipated because construction would be conducted in accordance with Caltrans Standard Specifications Section 14-8.02 and applicable local noise standards. Construction noise would be short-term, intermittent, and overshadowed by local traffic noise. Further, implementing the following measures would minimize the temporary noise impacts from construction:

- All equipment will have sound-control devices that are no less effective than those provided on the original equipment. No equipment will have an unmuffled exhaust.

As directed by Caltrans, the contractor will implement appropriate additional noise mitigation measures, including 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.

Due to the Andree Clark Bird Refuge located within the project limits, Standard Special Provisions S5-310, included below, shall be followed by the contractor in order to minimize noise impacts generated during construction. S5-310 will be modified by the contractor as applicable.

## 5-1.__ NOISE CONTROL

### General

This section applies to equipment on the project or associated with the project, including trucks, transit mixers, stationary equipment, and transient equipment.
Do not exceed 86 dBa at 50 feet from the project limits from _____ p.m. to _____ a.m. except you may perform the following activities during the hours and for the days shown in the following table:

**Noise Restriction Exceptions**

| Activity | Hours | | Days | |
|---|---|---|---|---|
| | From | To | From | Through |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

Do not operate construction equipment or run the equipment engines from 7:00 p.m. to 7:00 a.m. or on Sundays except you may operate equipment within the project limits during these hours to:

1. Service traffic control facilities
2. Service construction equipment

### Noise Monitoring

Provide 1 Type 1 sound level meter and 1 acoustic calibrator to be used by the Department until contract acceptance. Provide training by a person trained in noise monitoring to 1 Department employee designated by the Engineer. The sound level meter must be calibrated and certified by the manufacturer or other independent acoustical laboratory before delivery to the Department. Provide annual recalibration by the manufacturer or other independent acoustical laboratory. The sound level meter must be capable of taking measurements using the A-weighting network and the slow response settings. The measurement microphone must be fitted with a windscreen. The Department returns the equipment to you at contract acceptance.

The contract lump sum price paid for noise monitoring includes full compensation for furnishing all labor, materials, tools, equipment and incidentals and for doing all work involved in noise.

**Updates to the Vibration Report**
The vibration report for this project will only include an updated project description as described above.

If you have any questions, please contact Allam Alhabaly, Transportation Engineer at (559) 445-6218.

Traffic conversion method from Section N-2135 of the 1998 TeNS:

$dBA_2 = dBA_1 + 10\log(N)$ ; where N is traffic volume increase.

Traffic volumes used in the 2002 noise study = $\boxed{1220 \text{ DHV}}$ for the design year 2025.

If we assume an increase of 10% for the design year for the SR-101 HOV lanes. Traffic = $\boxed{1342 \text{ DH}}$

Future noise level at the tennis courts for the yr 2025 is 70 dBA, as predicted in 2002 NSR.

Using the above conversion formula for the year 2036:

$$dBA_{2036} = 70 + 10\log\left(\frac{1342}{1220}\right) = 70.4 \text{ dBA rounded to } 70 \text{ dBA}$$

Traffic conversion method from Section N-2141 of the 1998 TeNS:

$$dBA_2 = dBA_1 + 10\log(D_2/D_1)$$

$dBA_1$ : noise level at distance $D_1$

$dBA_2$ : noise level at distance $D_2$.

Current location of Bird Refuge is approximately 100 feet from the railroad track. ($D_1 \doteq 100$)

Assume $dBA_1$ to be the current noise level at the bird refuge due to the train pass.

According to the table provided in the addendum $dBA_1 = \boxed{82\ dBA}$.

Assume $dBA_2$ to be the new location of the rail road tracks, 15 feet closer to the bird refuge. ($D_2 = 85'$)

Applying the above formula yields:

$$dBA_2 = 82 + 10 \log\left(\frac{100}{85}\right)$$
$$= \boxed{82.7\ dBA}$$

STAEDTLER® No. 937 811E Engineer's Computation Pad

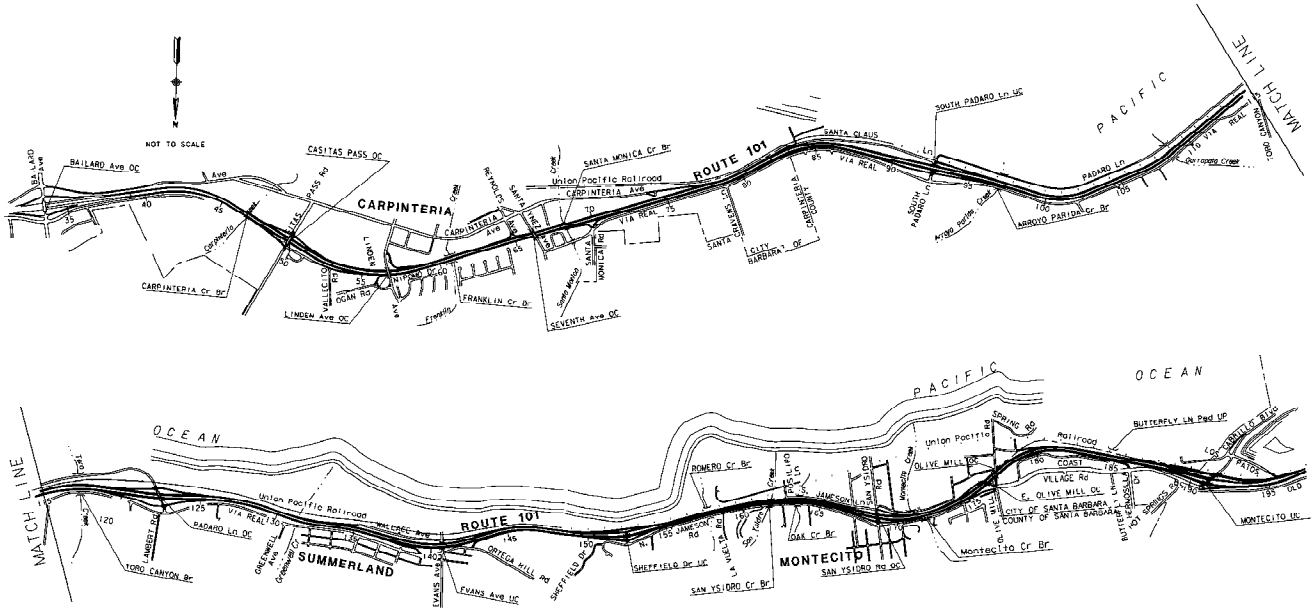
# Noise Study Report

# South Coast 101 HOV Lanes

In Santa Barbara County between 0.22 miles south of the Bailard Avenue overcrossing in the City of Carpinteria and Sycamore Creek in the City of Santa Barbara

05-SB-101-PM 1.4/12.3

05-0N7000




**March 2010**

# Noise Study Report

## South Coast 101 HOV Lanes

In Santa Barbara County between 0.44 mile south of Carpinteria Creek in the City of Carpinteria and Sycamore Creek in the City of Santa Barbara
05-SB-101-PM 2.0/12.3

**05-0N7000**

March 2010


Prepared By: _____ Date: 3/25/10

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District/Region 5

# Summary

The purpose of this Noise Study Report (NSR) is to evaluate traffic noise impacts and abatement under the requirements of Title 23, Part 772 of the Code of Federal Regulations (Title 23 CFR 772) “Procedures for Abatement of Highway Traffic Noise”. Title 23 CFR 772 provides procedures for preparing operational and construction noise studies as well as evaluating noise abatement considered for federal and federal-aid highway projects. According to Title 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.

The Santa Barbara 101 South Coast High Occupancy Vehicle (HOV) Project proposes to construct improvements to State Route 101 (SR-101) in Santa Barbara County from approximately 0.4 mile south of Carpinteria Creek Bridge (PM 2.0) in Carpinteria to Sycamore Creek Bridge (PM 12.3) in Santa Barbara. However, this noise study only evaluates areas along the proposed corridor from PM 2.0 to Carpinteria Creek Bridge (PM 2.3) and from Franklin Creek (PM 3.3) to Butterfly Lane (PM 10.8).

The project intends to accomplish the following goals with respect to widening through the corridor. The existing four-lane highway will be widened to six lanes by adding an HOV lane in each direction. The proposed project currently includes one build condition (consisting of two variations), and a no build condition. Since the proposed widening would occur primarily within the existing right-of-way, variations on the new HOV lanes alignment consist of adding them to either the inside or outside of the existing edge of travel way, or potentially a combination of inside and outside widening to preserve existing landscaping and avoid conflicts with other sensitive resources where possible. The build condition analysis ultimately provides alternative specific findings that are used to develop impact analysis conclusions based on how each variation involves widening to either the inside or outside location-by-location.

Land uses along the SR-101 project corridor are predominantly residential with pockets of commercial, agricultural, and recreational parcels. Except for the Summerland area, topography along the corridor is relatively flat. There is a Union Pacific Railroad (UPRR) train track south of SR-101 that is used to move freight and passengers by Amtrak’s Surfliner, which mostly runs parallel to the freeway. Traffic on SR-101 is the dominant source of noise in the area. Additionally, local roadways such as Via Real or Jameson Lane contribute a substantial amount of noise to the ambient environment especially during morning and afternoon commute hours. This noise study evaluates six distinct segments for analysis purposes. These grouping's are based on major local interchanges, similar topographies, and separate or unique neighborhoods. The six segments are: 1) PM 2.0 to Carpinteria Creek; 2) Franklin Creek to South Padaro Lane; 3) South Padaro Lane to North Padaro Lane; 4) North Padaro Lane to Sheffield Drive; 5) Sheffield Drive to San Ysidro Road/Eucalyptus Lane; and 6) San Ysidro Road/Eucalyptus Lane to Butterfly Lane.

Short-term monitoring was conducted at 30 locations in March 2009, and 15 locations in September 2009; using Larson-Davis Models 812, 820, and 870 Precision Type 1 sound level meters. Measurements were taken for a duration of 20-minutes at each site. Concurrent with the collection of sound level data, traffic counts on SR-101 were performed. Traffic on SR-101 near a measurement site was counted and classified by vehicle type (e.g. autos, medium trucks, heavy trucks). The purpose of the field traffic counts is to help calibrate the TNM 2.5 model so that the prediction of future noise levels can be made more accurately using projected design year traffic volumes. Meteorological conditions (temperature, wind speed and direction, relative humidity) were logged for each measurement session using a hand-held weather station. Long-term noise monitoring was conducted at three locations using a Larson-Davis Model 820 Type 1 sound level meter. Measured hourly averaged noise levels from both the short-term and long-term measurement sites ranged from 53 to 75 dBA.

In general, modeled noise levels were higher than measured noise levels except for a few measurement sites. Out of the 45 calibration sites, 13 of them had a difference greater than 2-dB between measured and modeled noise levels. This pattern confirms that heavy vegetation and complex topography throughout the project corridor provides more incremental noise reduction than the modeling can simulate.

There are 28 feasible sound walls identified for the inside widening option within the project study limits throughout the SR-101 corridor. Two sound walls, S182 and S188, would not be necessary under the outside widening option, because receptors behind these wall locations would not be impacted or a barrier would not be feasible to provide traffic noise abatement. There is slight variation with respect to height for several sound walls depending on which widening option is ultimately selected. The following summarizes the number of feasible sound walls and benefited receptors in each segment:

- PM 2.0 to Carpinteria Creek: A combined length of 1,705 feet would provide traffic noise abatement for 23 mobile homes of Rancho Granada and San Roque Mobile Home Parks as well as a community pool under both the inside or outside widening option..

- Franklin Creek to South Padaro Lane: With regard to the inside widening option, seven feasible barriers with a combined length of 9,989 feet would provide traffic noise abatement for 45 single-family residences, 38 multi-family residences (including planned multi-family residential units in the Dahlia Court expansion and the Casas de las Flores), 31 mobile home units, a swimming pool of Motel 6, and one recreational area. With regard to the outside widening option, five feasible barriers with a combined length of 8,435 feet would provide traffic noise abatement for 44 single-family residences, 38 multi-family residences (including planned multi-family residential units in the Dahlia Court expansion and the Casas de las Flores), and 31 mobile home units.

- South Padaro Lane to North Padaro Lane: Four feasible barriers with a combined length of 7,911 feet would provide traffic noise abatement for 92 single-family residences, eight multi-family residences, and one frontage unit of a religious

institution for the inside widening option. If the HOV lane is constructed under the outside widening option, four feasible barriers will provide traffic noise abatement for three less single-family residence than the inside widening option.

- North Padaro Lane to Sheffield Drive: Five feasible barriers are identified with the inside widening option with a combined length of 6,943 feet would provide traffic noise abatement for 63 single-family residences, 27 multi-family residences, eight mobile home units, three frontage units for the Inn of Summer Hill and the Summerland Inn, three frontage units of Summerland Elementary School, and three frontage units of community parks. Five feasible barriers for the outside widening option would provide traffic noise abatement for two additional multi-family residential units than the inside widening option. It appears that one of the feasible barriers is more effective in blocking line-of-sight to SR-101 for the two multi-family units on the hillside.

- Sheffield Drive to San Ysidro Road/Eucalyptus Lane: Six feasible barriers with a combined length of 8,393 feet would provide traffic noise abatement for 50 single-family residences and 11 multi-family residences under the inside widening option. If the HOV lane is constructed under the outside widening option, six feasible barriers will provide traffic noise abatement for two additional single-family residence than the inside widening option. This is because there would be more impacted noise receptors and a higher sound wall was analyzed to provide traffic noise abatement.

- San Ysidro Road/Eucalyptus Lane to Butterfly Lane: Four feasible barriers with a combined length of 7,872 feet would provide traffic noise abatement for 54 single-family residences and 13 multi-family residences under both the inside and outside widening options.

Construction noise is regulated by Caltrans' Standard Specifications. A new section of the 2006 Standard Specifications has been created and was posted as an amendment on the Headquarters' Office Engineer server on February 11th, 2009. It is titled Section 14 "Environmental Stewardship" and was derived from pre-existing portions of the Standard Specifications and standard special provisions which have been consolidated, reorganized, and converted into plain language. The requirements state that construction noise levels generated during construction shall comply with applicable local, state, and federal regulations and that all equipment shall be fitted with adequate mufflers according to the manufacturers' specifications. Temporary construction noise impacts would be unavoidable at areas located immediately adjacent to the proposed project alignment. However, minimization measures will be included in the environmental document to reduce overall impacts with respect to temporary construction noise impacts.

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# List of Abbreviated Terms

| | |
|---|---|
| CEQA | California Environmental Quality Act |
| CFR | Code of Federal Regulations |
| CNEL | Community Noise Equivalent Level |
| dB | Decibels |
| ED | Environmental Document |
| FHWA | Federal Highway Administration |
| Hz | Hertz |
| kHz | Kilohertz |
| $L_{dn}$ | Day-Night Level |
| $L_{eq}$ | Equivalent Sound Level |
| $L_{eq(h)}$ | Equivalent Sound Level over one hour |
| $L_{max}$ | Maximum Sound Level |
| LOS | Level of Service |
| $L_n$ | Percentile-Exceeded Sound Level |
| µPa | micro Pascals |
| mph | miles per hour |
| NAC | Noise Abatement Criteria |
| NADR | Noise Abatement Decision Report |
| NEPA | National Environmental Policy Act |
| NSR | Noise Study Report |
| PDS | Project Development Support |
| Protocol | Caltrans Traffic Noise Analysis Protocol for New Highway Construction, Reconstruction, and Retrofit Barrier Projects |
| PSR | Project Study Report |
| PTE | Permit to Enter |
| SPL | sound pressure level |
| SR | State Route |
| TeNS | Caltrans' Technical Noise Supplement |
| TNM 2.5 | FHWA Traffic Noise Model Version 2.5 |

# Chapter 1. Introduction

## 1.1. Purpose of the Noise Study Report

The purpose of this Noise Study Report (NSR) is to evaluate noise impacts and abatement under the requirements of Title 23, Part 772 of the Code of Federal Regulations (Title 23 CFR 772) “Procedures for Abatement of Highway Traffic Noise”. Title 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 Title 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.

The California Department of Transportation (Caltrans) Traffic Noise Analysis Protocol for New Highway Construction, Reconstruction, and Retrofit Barrier Projects (Protocol) (Caltrans, 2006) provides Caltrans policy for implementing Title 23 CFR 772 in California. The Protocol outlines the requirements for preparing noise study reports (NSR) in support of State highway projects. Noise impacts associated with this project under the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA) are evaluated in the Santa Barbara 101 South Coast High Occupancy Vehicle Project Environmental Document (ED), EA-0N7000.

This noise study evaluates six distinct segments for analysis purposes. These grouping's are based on major local interchanges, similar topographies, and separate or unique neighborhoods. The six segments are: 1) PM 2.0 to Carpinteria Creek; 2) Franklin Creek to South Padaro Lane; 3) South Padaro Lane to North Padaro Lane; 4) North Padaro Lane to Sheffield Drive; 5) Sheffield Drive to San Ysidro Road/Eucalyptus Lane; and 6) San Ysidro Road/Eucalyptus Lane to Butterfly Lane.

The study includes (a) short-term measurements; (b) long-term noise measurements; (b); (c) roadway traffic noise modeling using FHWA's Traffic Noise Model 2.5 (TNM 2.5); and (d) feasible noise abatement measures.

## 1.2. Project Purpose and Need

### 1.2.1. Purpose

The purpose of this project is to reduce congestion and improve travel time on State Route 101 (SR-101) within the project limits. To achieve this purpose, the project proposes to construct an additional lane on SR-101 in both the northbound and southbound directions to be used as High Occupancy Vehicle (HOV) lanes. Adding capacity to the corridor will reduce peak hour congestion and improve freeway operations within the project limits.

### 1.2.2. Need

The current Annual Average Daily Traffic (AADT) in the project limits ranges between 66,000 and 92,000 and is forecasted to exceed ranges of 94,000 to 130,000 by the year

2030. The existing capacity of SR-101 within the project limits, and throughout much of the Santa Barbara south coast, is congested during peak periods and weekends. During these times, the facility operates at Level of Service (LOS) F congested flow conditions for two to four hours daily in each direction (SBCAG *Congestion Management Program*, 2007). Without capacity improvements, LOS F conditions on SR-101 within the project limits are forecast to exceed nine hours a day in each direction by 2030 (SBCAG's *101 in Motion* July 2006).

The forecasted rise in congestion and delay is a result of several factors, including increased long distance commuting from Ventura County, internal population growth, which is forecast to expand by ten percent by 2020 in Santa Barbara County (SBCAG *Regional Growth Forecast*, 2007), and interregional traffic growth, including goods movement. There is a need to improve highway operations to reduce delay, travel time, and congestion related traffic collisions. The congested conditions on SR-101 result in delay for local traffic, transit, commercial trucking, tourist, commuters, and emergency response vehicles. The congested conditions of SR-101 also affect local parallel routes by substantially increasing the volume of diverted traffic from drivers attempting to avoid congested highway conditions. Analysis of historical collision trends in the corridor show a pattern of congestion-related traffic collisions. This project represents one component of a larger SR-101 corridor improvement strategy in northern Ventura County and southern Santa Barbara County.

# Chapter 2. Project Description

Caltrans proposes to widen SR-101 within the existing public right of way between 0.44 miles south of Carpinteria Creek in the City of Carpinteria and Sycamore Creek in the City of Santa Barbara. The southern limit of the project would connect to a concurrent SR-101/HOV capacity improvement project designed by District 7 (Los Angeles), EA 07-0P9800. The northern limit at Sycamore Creek Bridge conforms at the proposed SR-101/Milpas Street to Hot Springs Road operational improvements project designed by District 5 (San Luis Obispo), EA 05-44780.

Three build alternatives -- Alternatives 1, 2, and 3 -- and a No-Build Alternative are proposed for this project. Alternatives 1, 2, and 3 would add a single HOV lane in both the northbound and southbound directions and reconstruct interchanges at Sheffield Drive and Cabrillo Boulevard. All build alternatives provide add an additional lane in each direction to provide for a part time High Occupancy Vehicle (HOV) facility within the project limits. Alternative 1 proposes to balance competing resource interests such as scenic views, wetlands, and median/outside landscaping. Alternative 2 proposes to maximize landscaping in the median, and recognizes that some identified scenic resources may be partially blocked and some wetland areas impacted. Alternative 3 proposes to construct all new paved lanes within the existing available median and maximizes the retention of outside planting.

Two basic widening options were modeled to ensure that all build alternatives were modeled effectively for the noise study: 1) widening in the median throughout and 2) widening to the outside throughout the corridor. The build condition outputs were then compiled to produce alternative specific findings based on the unique conditions of each build alternative. These findings were used to assess project impacts and produce specific sound attenuation recommendations by alternative. Appendix H includes the three alternatives and lists by location, where inside lane widening or outside lane widening is the appropriate modeling representation for each. Since traffic noise abatement measures were already analyzed for frequent outdoor use areas between San Roque Mobile Home Park and Franklin Creek as part of Linden Avenue to Casitas Pass Road Interchange Project, noise impact analysis for this segment was not investigated in this noise study.

Since the proposed widening would occur primarily within the existing right-of-way, variations on the new HOV lane alignment consist primarily of adding them to either the inside or outside of the existing edge of travel way, or potentially a combination of inside and outside widening to preserve existing landscaping and avoid conflicts with other sensitive resources where possible. The following is a description of the No Build and Build (inside and outside widening options) Alternatives:

## 2.1. Common Design Features of the Build Alternatives

Caltrans proposes to widen State Route 101 within the existing public right of way between 0.44 miles south of Carpinteria Creek in the City of Carpinteria and Sycamore Creek in the City of Santa Barbara.

Three build alternatives -- Alternatives 1, 2 and 3 -- and a No-Build Alternative are proposed for this project. Alternatives 1, 2 and 3 would add a single HOV lane in both the northbound and southbound directions and reconstruct interchanges at Sheffield Drive and Cabrillo Boulevard. All build alternatives provide add an additional lane in each direction to provide for a part time High Occupancy Vehicle (HOV) facility within the project limits. Alternative 1 proposes to balance competing resource interests such as scenic views, wetlands, and median/outside landscaping. Alternative 2 proposes to maximize landscaping in the median, and recognizes that some identified scenic resources may be partially blocked and some wetland areas impacted. Alternative 3 proposes to construct all new paved lanes within the existing available median and maximizes the retention of outside planting.

#### 2.1.1.1. COMMON DESIGN FEATURES OF THE BUILD ALTERNATIVES

Alternatives 1, 2 and 3 would include the following:

### *Basic Common Design Features*

- Add an additional lane in each direction on Route 101 to provide for a part time, continuous access High Occupancy Vehicle (HOV) facility within the project limits.
- Replace bridge structures at: Arroyo Paredon (Parida), Toro Canyon, Romero (Picay), Oak, and San Ysidro Creeks.
- Widen bridge structures at Franklin and Santa Monica creeks.
- Widen traffic undercrossing structures at South Padaro Lane and Evans Avenue.
- Reconstruct the northbound off ramp and on ramp at Salinas Street.
- Convert the existing northbound auxiliary lane to a through lane between the northbound on ramp at Cabrillo Boulevard and Salinas Street off ramp.
- Construct a southbound auxiliary lane between the Sheffield Drive on ramp and the Evans Avenue off ramp.
- Reconstruct the interchanges at Sheffield Drive and Cabrillo Boulevard.
- Consideration, as design options, seven mutually exclusive Cabrillo Blvd. interchange configurations (F, H, I, J, L, M, and Q). Interchange configurations under consideration include:

F) SB 1/2 DIAMOND -Close both median off ramps at Cabrillo Blvd.; improve the northbound Hermosillo Drive off ramp and the northbound Cabrillo Blvd. on ramp. Construct new on and off ramps to intersect at Cabrillo Blvd., northbound and southbound, immediately adjacent and to the right of the freeway lane.

H) TIGHT DIAMOND- Close all existing off ramps, including the Los Patos Way and Hermosillo Drive ramps. Construct new on and off ramps to intersect at Cabrillo Blvd., northbound and southbound, immediately adjacent and to the right of the freeway lanes.

I) EXISTING MAINLINES / IMPROVE LOS PATOS - Close both median off ramps at Cabrillo Blvd.; improve the northbound Hermosillo Drive off ramp, the southbound Los Patos Way off ramp, and the northbound Cabrillo Blvd. on ramp.

J) EXISTING MAINLINES / IMPROVE LOS PATOS - Identical to Configuration "I" with the addition of a southbound Los Patos Way on ramp.

L) NB 1/2 DIAMOND / IMPROVE LOS PATOS -Close northbound and southbound median off ramps at Cabrillo Blvd. and close the northbound Hermosillo Drive off ramp; add a southbound Cabrillo Blvd. off ramp; improve the southbound Los Patos Way off ramp and the northbound Cabrillo Blvd. on ramps.

M) NB 1/2 DIAMOND / IMPROVE LOS PATOS -Identical to Configuration "L" with the addition of a southbound Los Patos Way onramp.

Q) HALF SINGLE POINT -Close the Los Patos southbound off ramp, the northbound and southbound median off ramps at Cabrillo Blvd, and the northbound on ramp at Cabrillo; construct a new Cabrillo Blvd southbound right side off ramp that will undercross three southbound freeway lanes and a new northbound right side on ramp that will undercross three northbound freeway lanes - both will join at the existing median ramp intersections at Cabrilllo Blvd.; also improve the northbound Hermosillo Drive off ramp.

### *Additional Common Design Features*

- Construct retaining walls at two locations: On the southbound outside shoulder at the right of way line along the southbound off ramp at Sheffield Drive (430 feet in length) and on the outside shoulder of the proposed southbound auxiliary lane from Sheffield Drive to Evans Avenue (1550 feet in length).

- Provide median landscaping in the first 0.2 mile at the southern limits of the project, and the last 0.5 mile of the project.

- Install replacement planting.

- Construct sound walls for noise abatement where appropriate.

- Provide noise attenuating pavement surface on all travel lanes.

- Relocate underground and aboveground utilities as needed.
- Lengthen cross culverts to accommodate additional pavement width.
- Construct maintenance vehicle pullout areas.
- Construct stormwater treatment facilities within the project limits and on publicly owned property near the Bailard Interchange (PM 1.6).

#### 2.1.1.2. UNIQUE DESIGN FEATURES OF THE BUILD ALTERNATIVES

***Alternative 1: Balanced Resources***

- This alternative proposes to balance competing resource interests such as scenic views, wetlands, and median/outside landscaping.
- Provide median landscaping, where appropriate, at several additional locations: from 0.2 mile from the southern limits of the project to Linden Avenue; the South Padaro Lane Interchange; and at the North Padaro Lane Interchange.
- The freeway outside edge of pavement requires widening in all locations where additional median landscaping is proposed.

***Alternative 2: Maximize Median Planting***

- This alternative proposes to maximize landscaping in the median, and recognizes that some identified scenic resources may be partially blocked and some wetland areas impacted.
- Provide median landscaping, where appropriate, at several additional locations: from 0.2 mile from the southern limits of the project to Reynolds Avenue; and from Santa Monica Road to the Evans Avenue Interchange.
- The freeway outside edge of pavement requires widening in all locations where additional median landscaping is proposed.
- Construct additional southbound auxiliary lanes between 1) the Santa Claus Lane on ramp and the Carpinteria Avenue off ramp and 2) the Reynolds Avenue on ramp and the Linden Avenue off ramp.
- Construct 3 additional retaining walls. One on the southbound shoulder at the right of way line ending at the Santa Claus Lane southbound on ramp (500 feet in length), one on the northbound shoulder near Greenwell Creek (700 feet in length) and one on the northbound shoulder near the northbound offramp to Summerland (300 feet in length.)

### *Alternative 3: Maximize Outside Planting*

- This alternative proposes to construct all new paved lanes within the existing available median and maximizes the retention of outside planting.

- A single concrete barrier separating the two inside paved shoulders will be provided in the median between Carpinteria Creek and Olive Mill Road, which largely retains the existing outside edge of pavement within these areas.

## 2.2. No Build

The No-Build Alternative would add no additional lanes to the highway, and would not relieve existing and future congestion. Air quality would not be improved by eliminating low speed air pollutants including carbon monoxide and greenhouse gas emissions.

## 2.3. Build Alternatives

Three build alternatives are proposed for evaluation in the environmental document.

### *Alternative 1: Balanced Resources*

- This alternative proposes to balance competing resource interests such as scenic views, wetlands, and median/outside landscaping.
- Provide median landscaping, where appropriate, at several additional locations: from 0.2 mile from the southern limits of the project to Linden Avenue; the South Padero Interchange; and at the North Padero Interchange.
- The freeway outside edge of pavement requires widening in all locations where additional median landscaping is proposed.

### *Alternative 2: Maximize Median Planting*

- This alternative proposes to maximize landscaping in the median, and recognizes that some identified scenic resources may be partially blocked and some wetland areas impacted.
- Provide median landscaping, where appropriate, at several additional locations: from 0.2 mile from the southern limits of the project to Reynolds Avenue; from Santa Monica Road to the South Padero Interchange; Nidever Road to Evans Avenue Interchange.
- The freeway outside edge of pavement requires widening in all locations where additional median landscaping is proposed.
- Construct additional southbound auxiliary lanes between 1) the Santa Clause Lane on ramp and the Carpinteria off ramp and 2) the Reynolds Avenue on ramp and the Linden Avenue off ramp.

### *Alternative 3: Maximize Outside Planting*

- This alternative proposes to construct all new paved lanes within the existing available median and maximizes the retention of outside planting.
- A single concrete barrier separating the two inside paved shoulders will be provided in the median between Carpinteria Creek and Olive Mill Road, which largely retains the existing outside edge of pavement within these areas.

Figure 2-1 shows the project regional location map and Figure 2-2 shows the vicinity map of the proposed project area.

**Figure 2-1. Project Regional Location Map**

**Figure 2-2. Project Vicinity Map**

# Chapter 3. Fundamentals of Traffic Noise

The following is a brief discussion of fundamental traffic noise concepts. For a detailed discussion, please refer to Caltrans' Technical Noise Supplement (TeNS) (Caltrans, 2009), a technical supplement to the Protocol, that is available on the Caltrans Web site (http://www.dot.ca.gov/hq/env/noise/pub/tens_complete.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 receiver, and the propagation path between the two. The loudness of the noise source and obstructions or atmospheric factors affecting the propagation path to the receiver determine the sound level and characteristics of the noise perceived by the receiver. 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, SPL 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 140 dB—rather, they would combine to produce 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 have a substantial effect on 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) 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 of the relative loudness or annoyance of a sound, their judgments correlate well with the A-weighted 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 A-weighted decibels or dBA. Table 3-1 describes typical A-weighted noise levels for various noise sources.

## 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 than 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 Hz–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) that would result in a 3 dB increase in sound, would generally be perceived as detectable by the average person.

**Table 3-1. Typical A-Weighted Noise Levels**

| Common Outdoor Activities | Noise Level (dBA) | Common Indoor Activities |
|---|---|---|
| | — 110 — | Rock band |
| Jet fly-over at 1000 feet | | |
| | — 100 — | |
| Gas lawn mower 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 lawn mower, 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, 2009.

## 3.7. Noise Descriptors

Noise in our daily environment fluctuates over time. Some fluctuations are minor, but some are substantial. Some noise levels occur in regular patterns, but others are random. Some noise levels fluctuate rapidly, but others slowly. Some noise levels vary widely, but others are relatively constant. Various noise descriptors have been developed to describe time-varying noise levels. The following are the noise descriptors most commonly used in traffic noise analysis:

- **Equivalent Sound Level ($L_{eq}$):** $L_{eq}$ represents an average of the sound energy occurring over a specified period. In effect, $L_{eq}$ 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 ($L_{eq}$[h]) is the energy average of A-weighted sound levels occurring during a one-hour period, and is the basis for noise abatement criteria (NAC) used by Caltrans and FHWA.

- **Percentile-Exceeded Sound Level ($L_n$):** $L_n$ represents the sound level exceeded for a given percentage of a specified period (e.g., $L_{10}$ is the sound level exceeded 10% of the time, and $L_{90}$ is the sound level exceeded 90% of the time).

- **Maximum Sound Level ($L_{max}$):** $L_{max}$ is the highest instantaneous sound level measured during a specified period.

- **Day-Night Level ($L_{dn}$):** $L_{dn}$ 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 $L_{dn}$, 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 following factors.

### 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 decibels 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 decibels for each doubling of distance from a line source.

### 3.8.2. Ground Absorption

The propagation path of noise from a highway to a receiver 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 receiver, such as a parking lot or body of water,), no excess ground attenuation is assumed. For acoustically absorptive or soft sites (i.e., those sites with an absorptive ground surface between the source and the receiver, such as soft dirt, grass, or scattered bushes and trees), an excess ground-attenuation value of 1.5 decibels 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 decibels per doubling of distance for a line source.

### 3.8.3. Atmospheric Effects

Receivers located downwind from a source can be exposed to increased noise levels relative to calm conditions, whereas locations upwind can have lowered noise levels. Sound levels can be increased at large distances (e.g., more than 500 feet) from the highway due to atmospheric temperature inversion (i.e., increasing temperature with elevation). Other factors such as air temperature, humidity, and turbulence can also 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 receiver can substantially attenuate noise levels at the receiver. 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 receiver specifically to reduce noise. A barrier that breaks the line of sight between a source and a receiver will typically result in at least 5 dB of noise reduction. Taller barriers provide increased noise reduction. Heavy vegetation between the highway and receiver could provide additional noise reduction.

# Chapter 4. Federal Regulations and State Policies

This report focuses on the requirements of Title 23 CFR 772, as discussed below.

## 4.1. Federal Regulations

### 4.1.1. Title 23 CFR 772

Title 23 CFR 772 provides procedures for preparing operational and construction noise studies and evaluating noise abatement considered for federal and federal-aid highway projects. Under Title 23 CFR 772.7, projects are categorized as either Type I or Type II projects. FHWA defines a Type I project as a proposed federal or federal-aid highway project for the construction of a highway on a new location, or the physical alteration of an existing highway which significantly changes either the horizontal or vertical alignment, or increases 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 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 receiver. Type I projects include the addition of an interchange, ramp, auxiliary lane, or truck-climbing lane to an existing highway, or the widening an existing ramp by a full lane width for its entire length. Projects unrelated to increased noise levels, such as striping, lighting, signing, and landscaping projects, are not considered Type I projects.

Under Title 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, Title 23 CFR 772 requires that the project sponsor “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, and of noise impacts for which no apparent solution is available.

Traffic noise impacts, as defined in Title 23 CFR 772.5, occur when the predicted noise level in the design year approaches or exceeds the Noise Abatement Criteria (NAC) specified in Title 23 CFR 772, or a predicted noise level substantially exceeds the existing noise level (a “substantial” noise increase). Title 23 CFR 772 does not specifically define the terms “substantial increase” or “approach”; these criteria are defined in the Protocol, as described below.

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

**Table 4-1. Activity Categories and Noise Abatement Criteria**

| Activity Category | NAC, Hourly A-Weighted Noise Level (dBA-$L_{eq}$[h]) | 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 | 67 Exterior | Picnic areas, recreation areas, playgrounds, active sport areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals |
| C | 72 Exterior | Developed lands, properties, or activities not included in categories A or B above |
| D | — | Undeveloped lands |
| E | 52 Interior | Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums |

Source: 23 CFR Part 772, 2009

In identifying noise impacts, primary consideration is given to exterior areas of frequent human use. In situations where there are no exterior activity areas, or where the exterior activities occur far from the roadway or physically shielded in a manner that prevents an impact on exterior activities, the interior criterion (Activity Category E) 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 Title 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 Title 23 CFR 772 (e.g., 66 dBA is considered to approach the NAC of 67 dBA, but 65 dBA is not).

The TeNS to 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 an $L_{eq}$(h) of 52 dBA in the interior of public or private elementary or

secondary classrooms, libraries, multipurpose rooms, or spaces. This requirement does not replace the "approach or exceed" NAC criterion for FHWA Activity Category E for classroom interiors, but it is a requirement that must be addressed in addition to the requirements of Title 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 an $L_{eq}(h)$ of 52 dBA. If the noise levels generated from freeway and non-freeway sources exceed an $L_{eq}(h)$ of 52 dBA prior to the construction of the proposed freeway project, then noise abatement must be provided to reduce the noise to the level that existed prior to construction of the project.

# Chapter 5. Study Methods and Procedures

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

An in depth field investigation was conducted to identify frequent outdoor use areas that could be subject to traffic noise impacts and to consider the physical setting of the freeway alignment relative to those areas. Land uses in the project area were categorized as defined in the Activity Category of Table 4-1. As stated in the Protocol, noise abatement is only considered for areas of frequent human use that would benefit from a lowered noise level. Accordingly, this impact analysis focuses on locations with defined outdoor activity areas, such as residential backyards and common use areas at multi-family residences. In some cases, decks or balconies of residences on hillsides with a view to the highway are also considered as outdoor activity areas. Undeveloped lands that are either planned, programmed, or designed to include outdoor use areas have also been evaluated where warranted. A few temporary lodging facilities such as motels and inns are also located within the project study area. If they currently have frequent human use areas such as a pool or common area where people congregate for 1 hour or more on a daily basis, then those areas were also evaluated for exterior noise impacts. Figures in Appendix A indicate the locations of relevant land use types within the study corridor.

Multiple outdoor noise measurements were taken throughout the project study corridor in order to evaluate existing noise levels and to calibrate the TNM 2.5 computer noise model. Specific measurement sites were chosen to be representative of receptor sites with similar topography, orientation to the highway, exposure angles, etc. with respect to frequent outdoor use areas adjacent to SR-101. Locations that are expected to receive the greatest traffic noise impacts, such as the first row of houses from the highway, were generally chosen. However, noise measurements at several second or third row residences were conducted in several areas with complex terrain features, such as the Summerland area of Santa Barbara County, because many of these non-first row homes on hillside locations still have a clear or partial view to the highway. Therefore, highway traffic noise could still be a significant constituent of the ambient noise for these non-first row residences.

Noise measurements were mainly conducted in frequent outdoor human-use areas along the project alignment primarily in backyard locations. Where permits to enter were not obtained, short-term measurements were conducted within a nearby front yard or sidewalk location determined to be acoustically representative of the actual frequent use area. All short-term measurement sites were selected so that unusual noise from sources such as barking dogs, air-conditioners, pool pumps, or car alarms would not affect the measurement.

## 5.2. Field Measurement Procedures

Noise measurements were conducted at selected locations to evaluate the existing noise environment. Noise measurements were conducted in conformance with the TeNS and

with the guidelines outlined in the FHWA's "Measuring of Highway Related Noise," FHWA-DP-96-046. The following is a brief description of the measurement procedures used for this project:

- Microphones were primarily placed approximately 5 feet above the ground or deck level and were positioned more than 10 feet from any wall or building to prevent reflections or unrepresentative shielding of the noise.
- Sound level meters were calibrated before and after each set of measurements.
- Following the calibration of equipment, a windscreen was placed over the microphone.
- Frequency weighting was set on "A", and the slow detector response was selected.
- Results of the short-term noise measurements were recorded on data sheets in the field. Long-term measured data were downloaded to the computer for tabulation and graphing.
- During the short-term noise measurements, any noise contaminations such as train pass-bys, barking dogs, local traffic, lawn mowers, etc. were noted.
- Traffic was counted for model calibration measurements. Vehicle types were separated into three vehicle groups: automobiles, medium trucks (2-axle with 6-wheels but not including dually pick-up trucks), and heavy trucks (3 or more axle vehicles). Average traffic speeds were measured using a radar gun or assumed to be the posted speed limit.
- Wind speed, temperature, humidity, and sky conditions were observed and documented during the short-term noise measurements.

The instruments used for the noise measurements included the following:

- Sound Level Meters – Larson Davis models 812, 820, and 870.
- Microphone Systems:
    - Larson Davis 812 and 820 System – Larson Davis model PRM 828 microphone preamp; Larson Davis model 2560, ½-inch pressure microphone.
    - Larson Davis 870 System - Larson Davis model 900B microphone preamps; Larson Davis model 2559, ½-inch pressure microphone.
- Acoustic Field Calibrators – Larson Davis model CAL 200 and CA250 constant pressure microphone calibrators.
- Microphone cables; 4-inch diameter windscreens; and tripods.
- Wind Monitor/Temperature and Humidity Gauge – Kestrel 3000 Pocket Weather Meter.
- Stationary Handheld Traffic Radar Detector – Astro Products Phantom Radar Detector.

### 5.2.1. Short-Term Measurements

Short-term monitoring was conducted at 30 locations in March of 2009 and 15 locations in September of 2009; using Larson-Davis Models 812, 820, and 870 Precision Type 1 sound level meters. Measurements were taken for a duration of 20-minutes at each site. Short-term monitoring was mostly conducted at Activity Category B land uses. The short-term measurement locations are identified in Appendix A.

During the short-term measurements, field staff attended each meter. During the measurement period (20 minutes in duration), dominant noise sources observed were also identified and logged. Using this approach, other non-traffic noise sources (such as aircraft and lawn equipment), which contributed significantly to measured noise levels could be identified. The calibration of the meter was checked before and after the measurement using Larson-Davis Model CAL200 and CA250 calibrators.

Temperature, wind speed, and humidity were recorded manually during the short-term monitoring session using a Kestrel 3000 portable weather station. During the short-term measurements, wind speeds typically ranged from 0 to 1 mile per hour (mph). Temperatures ranged from 56 to 83°F, with relative humidity typically 31–93%.

Traffic on SR-101 was videotaped using a camcorder; then, it was later classified and counted. Vehicles were classified as automobiles, medium-duty trucks, or heavy-duty trucks. An automobile was defined as a vehicle with two axles and four tires that are designed primarily to carry passengers. Small vans and light trucks were included in this category. Medium-duty trucks included all cargo vehicles with two axles and six tires. Heavy-duty trucks included all vehicles with three or more axles. The observed speed on SR-101 was 65 mph or higher. Heavy trucks appeared to be moving at a slightly lower speed than passenger cars and medium trucks.

### 5.2.2. Long -Term Measurements

Long-term monitoring was conducted at three locations using a Larson-Davis Model 820 Type 1 sound level meter. The purpose of these measurements was to identify variations in sound levels throughout the day. The long-term sound level data was collected for a 24-hour period. Long-term monitoring locations are shown in Appendix A, and addresses are listed in Table 6-1 of *Section 6.0 Existing Noise Environment*.

## 5.3. Prediction Methods

### 5.3.1. Traffic Noise Levels

The FHWA Traffic Noise Model Version 2.5 (TNM 2.5) was used for the noise computations (FHWA, 2004). TNM 2.5 inputs are based on a three-dimensional grid created for the study area to be modeled. All roadway, barrier, terrain lines, and receiver points are defined by their x, y, and z coordinates. Roadways, terrain lines, and barriers are coded into TNM 2.5 as line segments defined by their end points. Receivers, defined as single points, are typically located at frequent outdoor use areas such as residences, schools, and recreational areas. In general, receivers are modeled at a height of 5 feet above ground elevation. When the frequent outdoor use is on a deck overlooking the

freeway, an appropriate deck elevation from the ground level was added into the receptor height of 5 feet. Appendix B lists the addresses of modeled noise receivers.

In order to determine the noise levels generated by traffic, the TNM 2.5 computer program requires inputs of traffic volumes, speeds, and vehicle types. Three vehicle types were input into the model: cars, medium trucks, and heavy trucks. The propagation path between the source and receiver is modeled in TNM 2.5 by specifying special terrain features, rows of houses or building structures, and existing walls. Propagation of noise can be further specified by selecting ground types such as hard soil, loose soil, pavement, lawn, and field grass. The lawn option was chosen as the overall ground type for this study, because the grounds between receptors and SR-101 are heavily vegetated. All other natural obstructions, such as cuts and fills that could affect the future predicted noise levels were also included in the input files.

Traffic noise is a function of traffic type, volume, and speed. Generally, noise increases with increased speed and with higher volumes of traffic. However, at much higher volumes, travel speed decreases (stop and go conditions), so the worst-case noise levels are experienced when there is an optimum balance between the volume and speed. For purposes of determining noise impacts, the worst-case traffic noise occurs when traffic is operating under Level-of-Service (LOS) C conditions. Under these conditions, traffic is heavy, but remains free flowing. The volume on any lane is a function of its traffic type (main lane, HOV Lane, and Ramp) for LOS C conditions. Appendix B presents the comprehensive listing of the future traffic volumes and traffic distribution per direction of travel used for the noise analysis for the existing, future No Build, and Build conditions.

Truck percentages relative to the total traffic volume were obtained from Caltrans' Existing Conditions Operations Analysis prepared for this project (Caltrans, 2008a). In the traffic report, AM and PM peak hour truck volumes are categorized by street segments. In both directions, AM peak hour has higher truck percentages than PM peak hour; therefore, AM peak hour truck percentages are incorporated into the analysis to ensure the future peak hour noise levels to be more conservative. However, the report did not differentiate medium trucks from heavy trucks. The composition of medium and heavy trucks was obtained from *Annual Average Daily Truck Traffic on the California Highway System* in the Caltrans web site (Caltrans, 2008b). According to the compilation, the relative percentages of medium and heavy trucks in the project corridor were 40.7% and 59.3%, respectively. The relative distribution was applied to differentiate individual medium and heavy truck percentages throughout the corridor. It was assumed that the truck percentages in the future would remain similar to the existing conditions.

The loudest hour is generally characterized by free-flowing traffic at the highway design speed. Currently, SR-101 in project limits consists of two general lanes of travel in each direction, and each lane was modeled as an individual line string with the LOS volume of 1,900 vehicle per hour (vph) per lane in TNM 2.5. In modeling the Build conditions, a single HOV lane with the LOS C volume of 1,650 vph per lane was used to simulate the peak traffic noise hour. According to the traffic study, the existing peak hour traffic volumes on ramps along the project corridor are already exceeding those of LOS

conditions; however, the existing peak hour ramp volumes are not even near the upper limit of 1,000 vph per lane that is typically used for modeling on-/off-ramps of major highways. Since no significant improvements are planned except for the southbound Sheffield on-/off-ramps, the current peak hour ramp traffic volumes are assumed to be the same as those of the future conditions.

To validate the accuracy of TNM 2.5, modeled noise levels at measurement sites were compared to measured traffic noise levels. Traffic volumes manually counted during measurement periods were normalized to 1-hour volumes. These normalized volumes were assigned to the corresponding project area roadways to simulate the noise source strength at the roadways during the actual measurement periods. Modeled and measured sound levels were then compared to determine the accuracy of the model and if additional calibration of the model was necessary.

### 5.3.2. Train Noise Levels

Currently, the Union Pacific Railroad coupled with the Amtrak's Pacific Surfliner is utilizing the adjacent track, which mostly runs parallel to SR-101 within project limits. Approximately, six sets of trains per direction pass through the project area between 6:00 a.m. and 10:00 p.m. Train pass-by noise levels could be considered as a substantial component of the ambient noise at receptors that have adjoining property lines to the train tracks. It is especially true for residences near at-grade crossings as trains blow the horn to alarm drivers and pedestrians of their approach. The scope of work in this noise study was to investigate traffic noise impacts associated with the proposed project independently, not to incorporate any changes in the noise environment due to other external sources. Therefore, the noise contribution from neither pass by trains nor abatement measures for them has been included in this report.

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

Traffic noise impacts are considered to occur at receiver locations where predicted design-year traffic noise levels are at least 12 dB greater than existing noise levels, or where predicted design year traffic noise levels approach or exceed the NAC for the applicable activity category. Where traffic noise impacts are identified, noise abatement must be considered for reasonableness and feasibility as required by Title 23 CFR 772 and the Protocol.

According to the Protocol, abatement measures are considered acoustically feasible if a minimum noise reduction of 5 dB at impacted receiver locations is predicted with implementation of the abatement measures. In addition, barriers should be designed to intercept the line-of-sight from the exhaust stack of a truck to the first tier of receivers, as suggested by the Highway Design Manual, Chapter 1100. Other factors that affect feasibility include topography, access requirements for driveways and ramps, presence of local cross streets, utility conflicts, train crossings, and safety considerations. The overall reasonableness of noise abatement is determined by considering factors such as cost; absolute predicted noise levels; predicted future increase in noise levels; expected noise abatement benefits; build date of surrounding residential development along the highway;

environmental impacts of abatement construction; opinions of affected residents; input from the public and local agencies; and social, legal, and technological factors.

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). The 2008 base allowance of $31,000 is used for this project. Additional allowance dollars are added to the base allowance based on absolute noise levels, the increase in noise levels resulting from the project, achievable noise reduction, and the date of building construction in the area. Total allowances are calculated by multiplying the cost-per-residence by the number of benefited residences.

# 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 noise impacts from the proposed project. Single-family residences, multi-family residences, schools, religious institutions, and in some cases hotel/motels were identified as Activity Category B land uses in the project area. Numerous commercial uses in the area are Activity Category C land uses.

As required by the Protocol, noise abatement is only considered for areas of frequent human uses that would benefit from a lowered noise level. Accordingly, this impact analysis focuses on locations with defined outdoor activity areas, such as residential backyards, decks, common outdoor use areas for motel/hotels, school playgrounds, and common use areas at multi-family residences.

Land uses along the SR-101 project corridor are predominantly residential with pockets of commercial, agricultural, and recreational parcels. Except for the Summerland area, topography along the corridor is relatively flat. There is a UPRR train track south of SR-101 that is used to move freight and passengers by Amtrak's Surfliner, which mostly runs parallel to the freeway. Traffic on SR-101 is the dominant source of noise in the area. Additionally, local roadways such as Via Real or Jameson Lane contribute substantial amount of noise to the ambient environment especially during morning and afternoon commute hours. The project corridor can be largely divided into six segments based upon major local interchanges, similar or like topographies, and separate or unique neighborhoods. The following describes groups of neighborhoods in six segments.

**PM 2.0 to Carpinteria Creek:** Located to the north of SR-101 are mobile homes with pockets of vacant or agricultural lots. The Rancho Granada Mobile Home Park and the San Roque Mobile Home Park (Activity Category B) are the only receptor locations with frequent outdoor use areas within these limits. An existing 5- to 6-foot high private property wall provides some traffic noise reduction.

**Franklin Creek to South Padaro Lane:** Northerly from Franklin Creek, the adjacent areas on both sides of the corridor are predominantly residential, including single-family residences, mobile homes, townhouses, and apartments (Activity Category B). Some multi-family residential developments have masonry property walls, but most of the residential receptors are exposed to SR-101 traffic noise without any form of existing barrier. Motel 6, Sandy Reef Inn, and the Best Western Hotel are located within these limits along the corridor, but do not have frequent outdoor use areas directly facing the freeway. As the highway approaches South Padaro Lane, the surrounding areas become more agricultural and commercial. Past Santa Monica Road, the UPRR railroad track reaches SR-101 from the south and then runs parallel to it.

**South Padro Lane to North Padaro Lane:** Homes located south of SR-101 are primarily beach front homes, and there is dense vegetation between these homes and the highway. There is an at-grade crossing at South Padaro Lane, and trains blow their horn

prior to approaching the crossing. To the north of SR-101, there are single-family residences and multi-family residences (Activity Category B) in an area known as "Serena Park." There is a recently-constructed Caltrans' sound wall protecting most of these residences, and the height ranges from 10 to 14 feet. Other land uses along SR-101 in the area include the Santa Barbara Polo Club, vacant lots, commercial buildings, and a religious institution.

**North Padaro Lane to Sheffield Drive:** This area is known as Summerland, and the UPRR train track runs parallel to SR-101. There are at-grade crossings at Finney Street and Evans Avenue, and trains blow their horn as they approach the crossing. This creates a short-term spike in ambient noise at some residences near the crossing. Most of the first row residences (Activity Category B) north of the highway have been converted into commercial use or appear to be in the process of conversion to a commercial use. Many of the second or third row houses (Activity Category B) north of SR-101 are located on the hillside with a deck or a multi-level terraced backyard overlooking the ocean; these structural features can be considered as frequent outdoor use areas. There are beach front homes south of SR-101, and most of these homes have no frequent outdoor use areas directly facing the freeway. Other Activity Category B land uses include Summerland Elementary School, Lookout Park, and a basket ball court. There is the Summerland Inn without a frequent outdoor use area facing the freeway. If the future exterior noise is expected to be severely impacted, the interior of this inn (Activity Category E) could be considered as a potentially affected use.

**Sheffield Drive to San Ysidro Road/Eucalyptus Lane:** The land use on both sides of SR-101 is predominantly residential. The UPRR railroad track runs parallel to the highway and begins diverging from the highway near Posilipo Lane. There is an at-grade grade crossing at Posipilo Lane, and trains blow their horn as they are approaching. While most of first row homes (Activity Category B) north of SR-101 are directly exposed to freeway noise, residences south of SR-101 are buffered by heavy vegetation. The old Miramar Hotel site is located south of SR-101 and east of Eucalyptus Lane. Per the County of Santa Barbara, this parcel is planned for a future hotel and resort development. There is an existing 12-foot high sound wall on the right-of-way line just east of Posilipo Lane and south of SR-101.

**San Ysidro Road/Eucalyptus Lane to Butterfly Lane:** SR-101 is slightly depressed relative to the surrounding residences between Eucalyptus Lane and Olive Mill Road. The highway starts ascending past Olive Mill Road, and stays elevated relative to the surrounding residences. There is the Montecito Inn with a pool (Activity Category B). The UPRR railroad track approaches SR-101 in this segment and runs parallel to it. The predominant land use north of SR-101 becomes commercial past Olive Mill Road. A few residences south of SR-101 have 6- to 8-foot high private property walls, providing some noise reduction; however, most of the residences adjacent to the highway are exposed to SR-101 without any solid barriers such as masonry walls.

## 6.2. Noise Measurement Results

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

### 6.2.1. Short-term Monitoring

Short-term measurements were conducted at a total of 30 measurement sites in March of 2009 for a duration of 20 minutes each. Table 6-1 summarizes the short-term measurement results. The primary objectives of the short-term measurements were to evaluate the existing noise environment and calibrate the noise prediction model. In September of 2009, it was determined that an additional set of noise measurements in the Summerland area would be necessary. Due to the complexity of topography in the area and structural uniqueness of individual houses with decks and balconies, a second set of noise measurements at 15 additional locations were needed to determine how sound energy propagates through the complex terrain and rows of buildings. Using only eight measurements in the Summerland Area that were taken in March of 2009 would not be sufficient to conclude the existing noise levels at these far located residences with any accuracy. These September measurements were denoted with "CS" in Table 6-1 for distinction.

Also included in Table 6-1 are the land use types for each of the measurement sites. Project layout plans in Appendix A present the measurement locations. Appendix F includes noise measurement data sheets recorded in the field. Although many noise measurements were conducted at non-backyards such as front yards, sidewalks, or cul-de-sacs, the data collected is representative of geographically larger areas of frequent use areas. Noise measurements conducted at sidewalks or cul-de-sacs was necessary because PTEs could not be obtained at some prospective noise measurement locations. As summarized in Table 6-1 many measurement sites along the project corridor already approach or exceed the NAC of 66 dBA. Some of the measurements were not made when the highest hourly traffic noise levels occurred because taking short-term noise measurements at 45 locations during only the peak noise hours was not possible within a reasonable amount of time. The measured noise levels shown in Table 6-1 were taken at different times throughout the day, and they are not necessarily indicative of the existing peak hour noise levels. These measured levels were used to calibrate the TNM 2.5 as later described in *Section 6.3 Traffic Noise Modeling Calibration*, and the peak hour noise levels were calculated using the existing peak hour traffic volumes and speeds. This approach allows estimating the peak hour noise levels without necessarily making noise measurements only during the peak noise hours. This is one of methods suggested by the TeNS to adjust measured noise levels taken in other than the noisiest hour.

### 6.2.2 Long-Term Monitoring

Long-term measurements were conducted at three locations for at least 24 hours using a Larson Davis Model 820 Type 1 sound level meter. The long-term measurements were conducted to observe hourly noise distribution and identify the peak noise hours. Table 6-2 summarizes long-term monitoring results and shows addresses of three monitoring locations. Appendix F includes field survey sheets and hourly $L_{eq}$ graphs.

## Table 6-1. Short-Term Noise Measurement Results

| Site No.[1] | Street Address, City | Land Use[2] | Noise Abatement Category (Criterion)[3] | Meter Location | Meas. Dates | Start Time | Measured $L_{eq}$, dBA[4] |
|---|---|---|---|---|---|---|---|
| **March 2009 Measurements** | | | | | | | |
| ST1 | 5750 Via Real, Carpinteria (Rancho Granada MHP) | MH | B (67) | Entrance | 03/16/09 | 15:47 | 71.8 |
| ST2 | 4692 Carpinteria Ave #26, Carpinteria | MFR | B (67) | Garden area | 03/17/09 | 15:34 | 63.2 |
| ST3 | 1311 Chaney Ave, Carpinteria | SFR | B (67) | Cul-de-sac | 03/17/09 | 14:34 | 69.6 |
| ST4 | 1245 Cramer Cir, Carpinteria | SFR | B (67) | Front yard | 03/17/09 | 09:32 | 69.2 |
| ST5 | 4400 Carpinteria Ave #40, Carpinteria | MH | B (67) | Parking lot | 03/17/09 | 08:40 | 71.8 |
| ST6 | 4140 Via Real, Carpinteria | MFR | B (67) | Picnic area | 03/18/09 | 08:20 | 63.3 |
| ST7 | 32950 Via Rea, Carpinteria (The Sandpiper MHP) | MH | B (67) | Entrance | 03/17/09 | 13:46 | 71.4 |
| ST8 | 3579 Padaro Ln, Carpinteria | SFR | B (67) | Sidewalk | 03/18/09 | 09:36 | 64.9 |
| ST9 | 3393-3395 Padaro Ln, Carpinteria | SFR | B (67) | Sidewalk | 03/18/09 | 10:36 | 65.3 |
| ST10 | 3201 Beach Club Rd, Carpinteria | SFR | B (67) | Entrance | 03/18/09 | 13:46 | 66.0 |
| ST11 | 3111 Padaro Ln, Carpinteria | SFR | B (67) | Front yard | 03/16/09 | 11:00 | 57.4 |
| ST12 | 3250 Via Real, Carpinteria | MFR | B (67) | Sidewalk | 03/16/09 | 14:05 | 72.9 |
| ST13 | 130 Morgan Ln, Carpinteria | SFR | B (67) | Backyard | 03/16/09 | 12:10 | 62.8 |
| ST14 | 3095 Via Real, Carpinteria | SFR | B (67) | Cul-de-sac | 03/18/09 | 11:26 | 65.0 |
| ST15 | 2637 Margurite Wy, Summerland | SFR | B (67) | Backyard | 03/18/09 | 15:00 | 64.4 |
| ST15A | 2631 Freesia Dr, Summerland | SFR | B (67) | Sidewalk | 03/18/09 | 15:00 | 53.0 |
| ST16 | 2484 Via Real, Summerland | SFR | B (67) | Front yard | 03/19/09 | 08:02 | 70.5 |
| ST16A | 2474 Varley St, Summerland | SFR | B (67) | Front yard | 03/19/09 | 08:35 | 61.4 |
| ST17 | 135 Valencia Rd, Summerland (Summerland School) | SCH | B (67) | Playground | 03/18/09 | 16:34 | 63.5 |
| ST18 | 2385 Finney St, Summerland | SFR | B (67) | Front yard | 03/17/09 | 10:45 | 57.1 |
| ST19 | Lookout Park, Summerland | REC | B (67) | Volleyball Court | 03/17/09 | 11:43 | 59.8 |
| ST20 | 2230 Hardinge St, Summerland | SFR | B (67) | Sidewalk | 03/19/09 | 09:25 | 70.4 |

Notes:

1 - ST – Short-term measurements; CS – Short-term measurements in Summerland.

2 - SFR – Single-family residential; MFR – Multi-family residential; MH – Mobile home; REC – Recreational; SCH – School.

3 - According to Caltrans Traffic Noise Analysis Protocol.

4 - All short-term measured noise levels are 20-minutes $L_{eq}$.

## Table 6-1. Short-Term Noise Measurement Results (Cont'd)

| Site No.[1] | Street Address, City | Land Use[2] | Noise Abatement Category (Criterion)[3] | Meter Location | Meas. Dates | Start Time | Measured $L_{eq}$, dBA[4] |
|---|---|---|---|---|---|---|---|
| ST21 | 100 Arroqui St, Santa Barbara | SFR | B (67) | Sidewalk | 03/19/09 | 10:22 | 71.3 |
| ST22 | 1755 Fernald Point Ln, Santa Barbara | SFR | B (67) | Entrance | 03/19/09 | 11:04 | 62.7 |
| ST23 | 1639 Posilipo Ln, Santa Barbara | SFR | B (67) | Backyard | 03/20/09 | 10:40 | 65.6 |
| ST24 | 102 Hixon Rd, Santa Barbara | SFR | B (67) | Sidewalk | 03/19/09 | 11:49 | 71.1 |
| ST25 | 1411 S. Jameson Ln, Santa Barbara | SFR | B (67) | Entrance | 03/19/09 | 15:40 | 74.5 |
| ST26 | 106 La Vereda Rd, Santa Barbara | SFR | B (67) | Entrance | 03/20/09 | 09:30 | 65.5 |
| ST27 | 1278 Spring Rd, Santa Barbara | MFR | B (67) | Side yard | 03/20/09 | 13:33 | 67.9 |
| ST28 | 1154 Hill Rd, Santa Barbara | SFR | B (67) | Sidewalk | 03/20/09 | 11:30 | 65.5 |
| **September 2009 Measurements** | | | | | | | |
| CS1 | 2540 Varley St, Summerland | SFR | B (67) | Deck | 09/22/09 | 15:20 | 64.5 |
| CS2 | 2542 Banner Ave, Summerland | SFR | B (67) | Stairs | 09/22/09 | 15:20 | 59.6 |
| CS3 | 2485 Banner Ave, Summerland | SFR | B (67) | Backyard | 09/22/09 | 11:40 | 60.6 |
| CS4 | 144 Temple St, Summerland | SFR | B (67) | Side Yard | 09/22/09 | 11:40 | 60.3 |
| CS5 | 2540 Varley St, Summerland | SFR | B (67) | Front Yard | 09/22/09 | 12:40 | 60.6 |
| CS6 | 2432 Banner Ave, Summerland | SFR | B (67) | Front Yard | 09/22/09 | 12:40 | 60.3 |
| CS7 | 136 Colville St, Summerland | SFR | B (67) | Sidewalk | 09/22/09 | 17:00 | 64.5 |
| CS8 | 2386 Banner Ave, Summerland | SFR | B (67) | Deck | 09/22/09 | 17:00 | 64.8 |
| CS9 | 2314 Varley St, Summerland | SFR | B (67) | Deck | 09/23/09 | 12:40 | 63.2 |
| CS10 | 2336 Banner Ave, Summerland | SFR | B (67) | Front Yard | 09/23/09 | 12:40 | 63.6 |
| CS11 | 2260 Varley St, Summerland | SFR | B (67) | Property Line | 09/23/09 | 11:20 | 52.8 |
| CS12 | 2280 Banner Ave, Summerland | SFR | B (67) | Deck | 09/23/09 | 11:20 | 61.3 |
| CS13 | 2190 Hardinge Ave, Summerland | SFR | B (67) | Property Line | 09/23/09 | 15:40 | 67.4 |
| CS14 | 2187 Lillie Ave, Summerland | SFR | B (67) | Balcony | 09/23/09 | 15:40 | 70.3 |
| CS15 | 2220 Lillie Ave #A, Summerland | SFR | B (67) | Deck | 09/23/09 | 17:00 | 66.2 |

Notes:

1 - ST – Short-term measurements; CS – Short-term measurements in Summerland.

2 - SFR – Single-family residential; MFR – Multi-family residential; MH – Mobile home; REC – Recreational; SCH – School.

3 - According to Caltrans Traffic Noise Analysis Protocol.

4 - All short-term measured noise levels are 20-minutes $L_{eq}$.

**Table 6-2. Long-Term Noise Measurement Results**

| Site No.[1] | Street Address, City | Land Use[1] | Noise Abatement Category (Criterion)[2] | Meter Location | Meas. Dates | Start Time | Measured Peak Hour Leq(h), dBA[3] | Peak-Hour Time |
|---|---|---|---|---|---|---|---|---|
| LT1 | 1317 Sterling Ln, Carpinteria | SFR | B (67) | Backyard | 03/16/09 - 03/17/09 | 16:55 | 66 | 06:00 |
| LT2 | 2350 Finney St, Summerland | SFR | B (67) | Front Yard | 03/17/09 - 03/18/09 | 17:39 | 67 | 07:00 |
| LT3 | 1342 Virginia Rd, Santa Barbara | SFR | B (67) | Back Yard | 03/19/09 to 03/20/09 | 13:11 | 63 | 08:00 |

Notes:
1 - LT – Long-term measurements.
2 - Land Use: SFR – single-family residence.

## 6.3. Traffic Noise Model Calibration

All of the 45 short-term measurements (30 sites from March 2009 and 15 sites from September 2009 measurements) were taken to calibrate the Traffic Noise Model (TNM 2.5). Traffic volumes were recorded during the noise measurements. The traffic counts were tabulated according to three vehicle types, including automobiles, medium trucks (2-axle with 6-wheels but not including pick-up trucks), and heavy trucks (3 or more axles). As a general rule, the noise model is considered to be calibrated if the field measured values versus the modeled noise levels (using field collected traffic data) agree within 2 db of each other. If they don't, refinement of the noise model is performed until there is agreement between the two values. If after thorough re-evaluation calibration still cannot be achieved due to complex topography or other unusual circumstances, then a calibration constant is added such that the measured versus modeled values agree before any predictions can be made with the model.

Table 6-3 summarizes the calibration results of 45 short-term measurement locations and the traffic volumes that were used in the calibration process. In general, modeled noise levels were higher than measured noise levels except for a few measurement sites. Out of the 45 calibration sites, 13 of them had more than a 2-dB difference between measured and modeled noise levels. Furthermore, amongst these 13 calibration sites with more than a 2-dB difference, modeled noise levels at 12 sites were higher than the measured noise levels. This pattern confirms that heavy vegetation and complex topography along the project corridor provide more incremental noise reduction than the modeling may be able to simulate. Calibration sites with more than 2-dB difference can be categorized into four groups, and the following explains possible causes of the differences:

- Heavy vegetation: There is dense vegetation along SR-101 in front of ST4, ST9, ST10, ST18, and ST19. The heavy vegetation appears to be providing more noise attenuation than what TNM 2.5 can simulate (sound energy reduction through a densely vegetated medium). Often, noise reduction by heavy vegetation over a sizable horizontal span could be tantamount to noise reduction by a solid wall.

Therefore, applicable calibration factors shown in Table 6-3 are used for predicting existing and future peak noise levels at these five measurements sites and receptors that are acoustically similar to these measurement sites.

- Complex topography: The modeled noise levels at ST15A, CS2, CS4, and CS12 represent second and third row residences in the Summerland area, and these homes are elevated relative to SR-101. Sound energy emitted by vehicles on the highway travels through vegetation, local roadways, and a row(s) of houses. Various compositions of sound propagation media appear to be providing more noise reduction than what can be simulated by TNM 2.5. ST22 is a measurement site in Fernald Point development south of SR-101. Topography in front of this site features a creek and a railroad track over the berm, and it apparently results in more noise reduction than TNM 2.5's prediction can simulate.

- Storm channel: ST3 is a measurement site in Carpinteria where there is a storm water channel running parallel to SR-101 in this location. Furthermore, heavy vegetation between the channel and the residential property line also exists. The modeled noise level was higher by more than 2.0 dB compared to the measured level; thus, a calibration factor is applied to receptors that are in close proximity and acoustically similar to ST3.

- Behind an existing sound wall or a row(s) of buildings: ST14 is behind a sound wall in an area known as Serena Park. This area was modeled using "As-Built" drawings provided by Caltrans to be more precise. The measured noise level was 3-dB higher than the modeled noise level. Gaps between sound wall panels that were designed in case of a 100-year flood were probably causing some traffic noise leaks. Therefore, an upward adjustment factor of 3.0 was applied to this receptor. CS11 is a measurement site in the Summerland area, and it is located behind a row of box-shaped two story commercial buildings. Modeling the obstruction of noise as a solid barrier in TNM did not provide enough noise reduction to narrow the difference within 2.0 dB.

## Table 6-3. Noise Model Calibration

| Measurement Site | Date | Start Time | Noise Levels, $L_{eq(h)}$, dBA | | Deviation, dB | Applied Adjustment, dB | K factor Designation | Direction | Total Hourly Volume | Cars | Medium Trucks | Heavy Trucks[1] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Measured | Modeled | | | | | | Hourly Volume (%)[2] | | |
| ST1 | 03/16/09 | 15:47 | 71.8 | 71.9 | 0.1 | 0.0 | N/A | NB | 1848 | 1755 (95.0) | 33 (1.8) | 60 (3.2) |
| | | | | | | | | SB | 3198 | 3063 (95.8) | 78 (2.4) | 57 (1.8) |
| ST2 | 03/17/09 | 15:34 | 63.2 | 61.7 | -1.5 | 0.0 | N/A | NB | 2264 | 2172 (95.9) | 39 (1.7) | 53 (2.3) |
| | | | | | | | | SB | 3229 | 3131 (97.0) | 49 (1.5) | 49 (1.5) |
| ST3 | 03/17/09 | 14:34 | 69.6 | 73.0 | 3.4 | -3.5 | K1 | NB | 2271 | 2199 (96.8) | 30 (1.3) | 42 (1.8) |
| | | | | | | | | SB | 2229 | 2103 (94.3) | 42 (1.9) | 84 (3.8) |
| ST4 | 03/17/09 | 09:35 | 69.2 | 71.9 | 2.7 | -2.5 | K2 | NB | 2133 | 1950 (91.4) | 84 (3.9) | 99 (4.6) |
| | | | | | | | | Off ramp | 108 | 102 (94.4) | 0 (0.0) | 6 (5.6) |
| | | | | | | | | SB | 1650 | 1452 (88.0) | 87 (5.3) | 111 (6.7) |
| ST5 | 03/17/09 | 08:40 | 71.8 | 72.6 | 0.8 | 0.0 | N/A | NB | 2511 | 2325 (92.6) | 84 (3.3) | 102 (4.1) |
| | | | | | | | | Off ramp | 171 | 162 (94.7) | 6 (3.5) | 3 (1.8) |
| | | | | | | | | SB | 1725 | 1578 (91.5) | 54 (3.1) | 93 (5.4) |
| ST6 | 03/18/09 | 08:20 | 63.3 | 62.6 | -0.7 | 0.0 | N/A | NB | 2463 | 2289 (92.9) | 99 (4.0) | 75 (3.0) |
| | | | | | | | | On ramp | 426 | 405 (95.1) | 15 (3.5) | 6 (1.4) |
| | | | | | | | | SB | 1725 | 1623 (94.1) | 36 (2.1) | 66 (3.8) |
| ST7 | 03/17/09 | 13:46 | 71.4 | 70.8 | -0.6 | 0.0 | N/A | NB | 2040 | 1938 (95.0) | 48 (2.4) | 54 (2.6) |
| | | | | | | | | SB | 2466 | 2256 (91.5) | 96 (3.9) | 114 (4.6) |
| ST8 | 03/18/09 | 09:36 | 64.9 | 65.1 | 0.2 | 0.0 | N/A | NB | 2394 | 2256 (94.2) | 72 (3.0) | 66 (2.8) |
| | | | | | | | | SB | 1902 | 1701 (89.4) | 66 (3.5) | 135 (7.1) |
| ST9 | 03/18/09 | 10:16 | 65.3 | 68.3 | 3.0 | -3.0 | K3 | NB | 2028 | 1857 (91.6) | 84 (4.1) | 87 (4.3) |
| | | | | | | | | SB | 2100 | 1863 (88.7) | 114 (5.4) | 123 (5.9) |
| ST10 | 03/18/09 | 13:46 | 66.0 | 68.2 | 2.2 | -2.0 | K4 | NB | 2148 | 2019 (94.0) | 57 (2.7) | 72 (3.4) |
| | | | | | | | | SB | 2472 | 2286 (92.5) | 90 (3.6) | 96 (3.9) |
| ST11 | 03/16/09 | 11:00 | 57.4 | 57.0[3] | -0.4 | 0.0 | N/A | NB | 1818 | 1731 (95.2) | 39 (2.1) | 48 (2.6) |
| | | | | | | | | SB | 1803 | 1626 (90.2) | 45 (2.5) | 132 (7.3) |
| | | | | | | | | On ramp | 45 | 45 (100.0) | 0 (0.0) | 0 (0.0) |
| ST12 | 03/16/09 | 14:05 | 72.9 | 72.8 | -0.1 | 0.0 | N/A | NB | 2091 | 1956 (93.5) | 57 (2.7) | 78 (3.7) |
| | | | | | | | | SB | 2460 | 2271 (92.3) | 84 (3.4) | 105 (4.3) |
| ST13 | 03/16/09 | 12:10 | 62.8 | 63.0 | 0.2 | 0.0 | N/A | NB | 2466 | 2322 (94.2) | 39 (1.6) | 105 (4.3) |
| | | | | | | | | SB | 2103 | 1944 (92.4) | 81 (3.9) | 78 (3.7) |
| ST14 | 03/18/09 | 11:26 | 65.0 | 62.2 | -2.8 | 3.0 | K5 | NB | 2337 | 2184 (93.5) | 69 (3.0) | 84 (3.6) |
| | | | | | | | | SB | 1932 | 1758 (91.0) | 69 (3.6) | 105 (5.4) |
| ST15 | 03/18/09 | 15:00 | 64.4 | 63.9 | -0.5 | 0.0 | N/A | NB | 1989 | 1911 (96.1) | 30 (1.5) | 48 (2.4) |
| ST15A | | | 53.0 | 55.4 | 2.4 | -2.5 | K6 | SB | 3081 | 2922 (94.8) | 87 (2.8) | 72 (2.3) |

Notes:

1 - The observed operating speed of heavy trucks was approximately 60 mph which is slower than cars and medium trucks. The observed speed of 60 mph was used for calibration.

2 - Hourly volumes listed hereinbelow are obtained via multiplying 20-minute traffic counts by three.

3 - There is a 6-foot high wood fence on the property line, but it is not included in the calibration modeling.

4 - Northbound traffic started to slow down due to weekend traffic out of town; thus, the observed speed of 50 mph was used for this specific case.

## Table 6-3. Noise Model Calibration (Cont'd)

| Measurement Site | Date | Start Time | Noise Levels, $L_{eq(h)}$, dBA | | Deviation, dB | Applied Adjustment, dB | K factor Designation | Direction | Total Hourly Volume | Cars | Medium Trucks | Heavy Trucks[1] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Measured | Modeled | | | | | | Hourly Volume (%)[2] | | |
| ST16 | 03/19/09 | 08:02 | 70.5 | 72.0 | 1.5 | 0.0 | N/A | NB | 3237 | 3078 (95.1) | 66 (2.0) | 93 (2.9) |
| | | | | | | | | SB | 2226 | 2067 (92.9) | 78 (3.5) | 81 (3.6) |
| ST16A | 03/19/09 | 08:35 | 61.4 | 63.3 | 1.9 | 0.0 | N/A | NB | 2994 | 2802 (93.6) | 111 (3.7) | 81 (2.7) |
| | | | | | | | | SB | 1842 | 1656 (89.9) | 78 (4.2) | 108 (5.9) |
| ST17 | 03/18/09 | 16:34 | 63.5 | 64.6 | 1.1 | 0.0 | N/A | NB | 3677 | 3554 (96.7) | 54 (1.5) | 69 (1.9) |
| | | | | | | | | SB | 2269 | 2185 (96.3) | 54 (2.4) | 31 (1.4) |
| ST18 | 03/17/09 | 10:45 | 57.1 | 60.8 | 3.7 | -3.5 | K7 | NB | 2136 | 1998 (93.5) | 60 (2.8) | 78 (3.7) |
| | | | | | | | | SB | 1938 | 1722 (88.9) | 105 (5.4) | 111 (5.7) |
| ST19 | 03/17/09 | 11:43 | 59.8 | 62.5 | 2.7 | -2.5 | K8 | NB | 2118 | 1968 (92.9) | 87 (4.1) | 63 (3.0) |
| | | | | | | | | SB | 2112 | 1911 (90.5) | 84 (4.0) | 117 (5.5) |
| | | | | | | | | Off ramp | 117 | 114 (97.4) | 3 (2.6) | 0 (0.0) |
| ST20 | 03/19/09 | 09:25 | 70.4 | 70.5 | 0.1 | 0.0 | N/A | NB | 2298 | 2136 (93.0) | 75 (3.3) | 87 (3.8) |
| | | | | | | | | SB | 1857 | 1635 (88.0) | 90 (4.8) | 132 (7.1) |
| ST21 | 03/19/09 | 10:22 | 71.3 | 73.2 | 1.9 | 0.0 | N/A | NB | 2418 | 2292 (94.8) | 78 (3.2) | 48 (2.0) |
| | | | | | | | | SB | 2130 | 1890 (88.7) | 75 (3.5) | 165 (7.7) |
| ST22 | 03/19/09 | 11:04 | 62.7 | 65.9 | 3.2 | -3.0 | K9 | NB | 2319 | 2079 (89.7) | 102 (4.4) | 138 (6.0) |
| | | | | | | | | SB | 2367 | 2205 (93.2) | 90 (3.8) | 72 (3.0) |
| ST23 | 03/20/09 | 10:40 | 65.6 | 67.1 | 1.5 | 0.0 | N/A | NB | 2997 | 2802 (93.5) | 99 (3.3) | 96 (3.2) |
| | | | | | | | | SB | 2622 | 2436 (92.9) | 75 (2.9) | 111 (4.2) |
| | | | | | | | | On ramp | 63 | 63 (100.0) | 0 (0.0) | 0 (0.0) |
| ST24 | 03/19/09 | 11:49 | 71.1 | 73.0 | 1.9 | 0.0 | N/A | NB | 2727 | 2583 (94.7) | 69 (2.5) | 75 (2.8) |
| | | | | | | | | SB | 2442 | 2196 (89.9) | 108 (4.4) | 138 (5.7) |
| ST25 | 03/19/09 | 15:40 | 74.5 | 74.8 | 0.3 | 0.0 | N/A | NB | 3432 | 3264 (95.1) | 66 (1.9) | 102 (3.0) |
| | | | | | | | | SB | 3705 | 3594 (97.0) | 75 (2.0) | 36 (1.0) |
| | | | | | | | | On ramp | 345 | 336 (97.4) | 3 (0.9) | 6 (1.7) |
| ST26 | 03/20/09 | 09:30 | 65.5 | 65 | -0.5 | 0.0 | N/A | NB | 2814 | 2616 (93.0) | 114 (4.1) | 84 (3.0) |
| | | | | | | | | On ramp | 315 | 303 (96.2) | 12 (3.8) | 0 (0.0) |
| | | | | | | | | SB | 2121 | 1947 (91.8) | 81 (3.8) | 93 (4.4) |
| ST27 | 03/20/09 | 13:33 | 67.9 | 68.8 | 0.9 | 0.0 | N/A | NB[4] | 3342 | 3204 (95.9) | 63 (1.9) | 75 (2.2) |
| | | | | | | | | SB | 3261 | 3000 (92.0) | 120 (3.7) | 141 (4.3) |
| ST28 | 03/20/09 | 11:30 | 65.5 | 66.4 | 0.9 | 0.0 | N/A | NB | 3219 | 3060 (95.1) | 87 (2.7) | 72 (2.2) |
| | | | | | | | | SB | 2802 | 2613 (93.3) | 84 (3.0) | 105 (3.7) |

Notes:

1 - The observed operating speed of heavy trucks was approximately 60 mph which is slower than cars and medium trucks. The observed speed of 60 mph was used for calibration.

2 - Hourly volumes listed hereinbelow are obtained via multiplying 20-minute traffic counts by three.

3 - There is a 6-foot high wood fence on the property line, but it is not included in the calibration modeling.

4 - Northbound traffic started to slow down due to weekend traffic out of town; thus, the observed speed of 50 mph was used for this specific case.

## Table 6-3. Noise Model Calibration (Cont'd)

| Measurement Site | Date | Start Time | Noise Levels, $L_{eq(h)}$, dBA | | Deviation, dB | Applied Adjustment, dB | K factor Designation | Direction | Total Hourly Volume | Cars | Medium Trucks | Heavy Trucks[1] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Measured | Modeled | | | | | | Hourly Volume (%)[2] | | |
| CS1 | 09/22/09 | 3:20 PM | 64.5 | 65.5 | 1.0 | 0.0 | N/A | NB | 1830 | 1755 (95.9) | 66 (3.6) | 9 (0.5) |
| CS2 | | | 59.6 | 63.6 | 4.0 | -4.0 | KS1 | SB | 3408 | 3189 (93.6) | 135 (4.0) | 84 (2.5) |
| CS3 | 09/22/09 | 11:40 AM | 60.6 | 62.1 | 1.5 | 0.0 | N/A | NB | 2514 | 2346 (93.3) | 69 (2.7) | 99 (3.9) |
| CS4 | | | 60.3 | 62.9 | 2.6 | -2.5 | KS2 | SB | 2172 | 1959 (90.2) | 90 (4.1) | 123 (5.7) |
| CS5 | 09/22/09 | 12:40 PM | 60.6 | 62.4 | 1.8 | 0.0 | N/A | NB | 2313 | 2142 (92.6) | 66 (2.9) | 105 (4.5) |
| CS6 | | | 60.3 | 58.6 | -1.7 | 0.0 | N/A | SB | 2265 | 2025 (89.4) | 138 (6.1) | 102 (4.5) |
| CS7 | 09/22/09 | 5:00 PM | 64.5 | 63.2 | -1.3 | 0.0 | N/A | NB | 2088 | 2019 (96.7) | 12 (0.6) | 57 (2.7) |
| CS8 | | | 64.8 | 64.4 | -0.4 | 0.0 | N/A | SB | 3531 | 3405 (96.4) | 57 (1.6) | 69 (2.0) |
| CS9 | 09/23/09 | 12:40 PM | 63.2 | 61.8 | -1.4 | 0.0 | N/A | NB | 2358 | 2160 (91.6) | 84 (3.6) | 114 (4.8) |
| CS10 | | | 63.6 | 64.1 | 0.5 | 0.0 | N/A | SB | 2190 | 1959 (89.5) | 117 (5.3) | 114 (5.2) |
| CS11 | 09/23/09 | 11:20 AM | 52.8 | 55.2 | 2.4 | -2.5 | KS3 | NB | 2085 | 1905 (91.4) | 75 (3.6) | 105 (5.0) |
| CS12 | | | 61.3 | 63.4 | 2.1 | -2.0 | KS4 | SB | 2073 | 1851 (89.3) | 90 (4.3) | 132 (6.4) |
| CS13 | 09/23/09 | 3:20 PM | 67.4 | 67.9 | 0.5 | 0.0 | N/A | NB | 2151 | 1995 (92.7) | 72 (3.3) | 84 (3.9) |
| CS14 | | | 70.3 | 68.4 | -1.9 | 0.0 | N/A | SB | 3288 | 3090 (94.0) | 96 (2.9) | 102 (3.1) |
| CS15 | 09/23/09 | 5:00 PM | 66.2 | 66.0 | -0.2 | 0.0 | N/A | NB | 2022 | 1911 (94.5) | 42 (2.1) | 69 (3.4) |
| | | | | | | | | SB | 2949 | 2802 (95.0) | 69 (2.3) | 78 (2.6) |

Notes:

1 - The observed operating speed of heavy trucks was approximately 60 mph which is slower than cars and medium trucks. The observed speed of 60 mph was used for calibration.

2 - Hourly volumes listed hereinbelow are obtained via multiplying 20-minute traffic counts by three.

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

This noise study was conducted to determine future traffic noise impacts of the proposed project at frequent human use areas within the highway corridor. The future worst case traffic noise impact at frequent outdoor human use areas along the project corridor was modeled for the No Build Alternative and two Build Alternatives (inside and outside widening options), in order to determine appropriate abatement measures. This section discusses the future noise environment and feasible noise abatement measures for impacted locations.

## 7.1. Future Noise Environment and Impacts

Tables in Appendix C summarize traffic noise levels for the existing and design-year No Build condition as well as for design-year Build condition. Predicted design-year traffic noise levels with the project are compared to existing conditions and to the design-year no-project conditions. The comparison to existing conditions is included in the analysis to identify traffic noise impacts under Title 23 CFR 772. The comparison to no-project conditions indicates the direct effect of the project.

As stated in the TeNS, modeling results are rounded to the nearest decibel before comparisons are made. In some cases, this can result in relative changes that may not appear intuitive. An example would be a comparison between sound levels of 64.4 and 64.5 dBA. The difference between these two values is 0.1 dB. However, after rounding, the difference is reported as 1 dB.

Modeling results in Appendix C indicate that predicted traffic noise levels ($L_{eq[h]}$) for the design-year with-project conditions approach or exceed the NAC of 67 dBA for Activity Category B land uses at most of residences near SR-101 throughout the study corridor. Therefore, traffic noise impacts are predicted to occur at Activity Category B or E land uses within the project area. Accordingly, noise abatement must be considered at those locations.

## 7.2. Preliminary Noise Abatement Analysis

In accordance with Title 23 CFR 772, noise abatement is considered where traffic noise impacts are predicted in areas of frequent human use that would benefit from a lowered noise level. Potential noise abatement measures identified in the Protocol include the following:

- Avoiding the impact by using design alternatives, such as altering the horizontal and vertical alignment of the project;
- Constructing noise barriers;
- Acquiring property to serve as a buffer zone;

- Using traffic management measures to regulate types of vehicles and speeds; and
- Acoustically insulating public-use or nonprofit institutional structures.

All of these abatement options have been considered. However, because of the constrained configuration and suburban location of the project, abatement in the form of noise barrier walls is the only abatement measure considered to be feasible. Noise barrier analysis was conducted by placing sound walls at the highway mainline shoulders, on/off-ramp shoulders, right-of-way lines, and in limited cases within private property.

Each noise barrier has been evaluated for feasibility based on achievable noise reduction (5 db or more). For each noise barrier found to be acoustically feasible, reasonable cost allowances were calculated. Worksheets provided in Appendix E summarize the reasonable cost allowance calculations at critical design receivers based on the allowance calculation procedure identified in the Protocol. Refer to the Protocol for the definition of the critical design receiver. Tables in Appendix C summarize the results at receiver locations for sound walls that have been evaluated in detail for this project.

For any noise barrier to be considered reasonable from a cost perspective, the estimated cost to build the noise barrier should be equal to or less than the total cost allowance of benefited receptors 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, retaining walls, and among others. Construction cost estimates are not provided in this NSR, but are presented in the Noise Abatement Decision Report (NADR). The NADR is a design responsibility and is prepared to compile information from the NSR, other relevant environmental studies, and design considerations into a single, comprehensive document before public review of the project. The NADR is prepared by the project engineer after completion of the NSR and prior to publication of the draft environmental document. The NADR includes noise abatement construction cost estimates that have been prepared and signed by the project engineer based on site-specific conditions. Construction cost estimates are compared to reasonableness allowances in the NADR to identify which wall configurations are reasonable from a cost perspective.

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 the final project design, preliminary noise barrier designs may be modified or eliminated from the final project. A final decision on the construction of location specific noise abatement will be made upon completion of the project design.

The analysis was conducted with barrier heights ranging from 8 to 16 feet. The barriers heights and locations were evaluated to determine if a minimum 5 dB attenuation at the outdoor frequent use areas of the representative receivers could be achieved. The reason for limiting the maximum sound wall height to 16 feet above the ground line is to comply with the suggestions set forth by Highway Design Manual (Caltrans, 2007). The minimum barrier height required to cut the line-of-sight from each receiver to the exhaust

stacks of heavy trucks has been calculated for all feasible barriers. These heights were evaluated through calculations performed by TNM 2.5.

The minimum heights and locations of the sound walls that would provide feasible abatement are shown graphically on the figures in Appendix A. Worksheets A and B of the cost analysis are included in Appendix E.

The following discussion considers 28 areas where feasible abatement was identified and warranted. Tables 7-1 through Table 7-28 summarize the data used to assess the abatement cost allowances at each of the considered barrier heights. The following analysis presents predicted future traffic noise levels at various receptors and abatement measures for the two widening options. In most cases, feasible wall heights and the number of benefited residences between the inside and outside widening options are similar throughout the corridor. When feasible barrier heights are different between the inside and outside widening options, figures in Appendix A indicate the wall height differences. Upon the finalization of build alternatives and its implementation, feasible wall heights for either one of the two widening options can be selected for traffic noise abatement. Modeling these two widening options establishes ranges of sound wall heights and future traffic noise levels, which can be readily available for wall height determination in any of three build alternatives. Predicted noise levels are shown in Appendix C, and tables showing top-of-wall heights of feasible sound walls are included in Appendix D. Reasonable allowance calculations are presented in Appendix E.

### 7.2.1. Feasible Sound Walls – PM 2.0 to Carpinteria Creek

#### 7.2.1.1. SOUND WALLS S90 AND S98

Sound wall S90 would be located on the right-of-way line between Stations 84+50 and 93+00. The sound wall would provide feasible noise abatement for the outdoor use areas of six mobile homes in Rancho Granada Mobile Home Park that are represented by Receptors R1 and R2. Sound wall S98 between stations 93+00 and 102+00 in conjunction with sound wall S90 would benefit 17 additional mobile homes and a community pool (1 frontage unit) in San Roque Mobile Home Park that are represented by Receptor R3 through R3B. Sound wall S98 alone cannot provide feasible noise abatement for 11 mobile homes that are represented by Receptor R3. Mobile home units represented by Receptor R3C in San Roque Mobile Home Park would not approach the NAC of 67 dBA; thus, no abatement measure would be required; however, sound wall S98 would reduce traffic noise at this area.

Table 7-1 summarizes predicted sound wall performance and associated cost allowance information that would only benefit Rancho Granada Mobile Home Park. Table 7-2 summarizes this barrier that would provide additional benefit for receptors in San Roque Mobile Home Park. Figure 1 in Appendix A shows the minimum lengths and heights required for these sound walls to provide feasible traffic noise abatement.

**Outside widening option:** If sound wall S90 is designed to provide abatement for mobile home units for Receptors R1A and R2 only, the barrier configuration would be identical to the inside widening option, Build Alternative. However, in order to provide abatement for additional mobile homes for San Roque Mobile Home Park, a portion of sound walls S90 and S98 from Stations 91+00 to 94+00 would have to be 16 ft high to

provide minimum feasible abatement. Figure 1 in Appendix A shows the minimum lengths and heights required for these sound walls to provide feasible traffic noise abatement.

**Table 7-1. Summary of Reasonableness Determination Data – Sound Wall S90 [a]**

| Barrier I.D.: S90 | | | | | |
|---|---|---|---|---|---|
| **Predicted Sound Level without Barrier** | | | | | |
| Critical Design Receiver: R2 | | | | | |
| Design Year Noise Level, dBA $L_{eq}$(h): 72 | | | | | |
| Design Year Noise Level Minus Existing Noise Level: 2 | | | | | |
| **Design Year with Barrier** | **8-Foot Barrier** | **10-Foot Barrier** | **12-Foot Barrier** | **14-Foot Barrier** | **16-Foot Barrier** |
| Barrier Noise Reduction, dB | 1 | 3 | 5 | 6 | 6 |
| Number of Benefited Residences | 0 | 0 | 5 | 6 | 6 |
| New Highway or More than 50% of Residences Predate 1978[b] | Yes | Yes | Yes | Yes | Yes |
| Reasonable Allowance Per Benefited Residence | NA | NA | $45,000 | $47,000 | $47,000 |
| Total Reasonable Allowance | NA | NA | $225,000 | $282,000 | $282,000 |

*Notes:* NA-Not applicable. Barrier does not provide 5 dB of noise reduction.

[a] A NADR will be prepared that will identify noise barrier construction cost information and the noise barriers that are reasonable from a cost perspective.

[b] This adjustment increases the abatement allowance by $10,000 if the project is new highway construction or if most of the benefited residences (more than 50%) existed before January 1, 1978.

**Table 7-2. Summary of Reasonableness Determination Data – Sound Wall S98 [a]**

| Barrier I.D.: S98 – Option to provide noise abatement for San Roque Mobile Home Park | | | | | |
|---|---|---|---|---|---|
| **Predicted Sound Level without Barrier** | | | | | |
| Critical Design Receiver: R3A | | | | | |
| Design Year Noise Level, dBA $L_{eq}$(h): 72 | | | | | |
| Design Year Noise Level Minus Existing Noise Level: 3 | | | | | |
| **Design Year with Barrier** | **8-Foot Barrier** | **10-Foot Barrier** | **12-Foot Barrier** | **14-Foot Barrier** | **16-Foot Barrier** |
| Barrier Noise Reduction, dB | 2 | 3 | 5 | 7 | 8 |
| Number of Benefited Residences | 0 | 0 | 1 | 18 | 18 |
| New Highway or More than 50% of Residences Predate 1978[b] | Yes | Yes | Yes | Yes | Yes |
| Reasonable Allowance Per Benefited Residence | NA | NA | $47,000 | $49,000 | $49,000 |
| Total Reasonable Allowance | NA | NA | $47,000 | $882,000 | $882,000 |

*Notes:* NA-Not applicable. Barrier does not provide 5 dB of noise reduction.

[a] A NADR will be prepared that will identify noise barrier construction cost information and the noise barriers that are reasonable from a cost perspective.

[b] This adjustment increases the abatement allowance by $10,000 if the project is new highway construction or if most of the benefited residences (more than 50%) existed before January 1, 1978.

## 7.2.2. Feasible Sound Walls – Franklin Creek to South Padaro Lane

### 7.2.2.1. SOUND WALL S158

Sound wall S158 would provide feasible traffic noise abatement for 21 single-family residences represented by Receptors R4 through R6 and six multi-family residences in the proposed Dahlia Court Apartment complex expansion represented by Receptor R7A. As of November 2009, conceptual architectural review for the Dahlia Court expansion

was already submitted to the City of Carpinteria (PSHHC, 2009). Per Protocol, undeveloped lands are planned, designed, and programmed before the date of public knowledge, noise abatement must be considered as part of the transportation project. Since the conceptual architectural review was submitted during the environmental phase of Santa Barabara 101 South Coast Project, the expansion could be considered as planned before the date of public knowledge. Therefore, the future traffic noise impacts of the proposed apartment complex due to the proposed project are analyzed in this noise study.

This sound wall would tie into the proposed 12-foot high sound wall that is planned to be constructed as part of the Linden Avenue and Casitas Pass Road Interchange Project. It would be located on the right-of-way line from Stations 151+00 to 163+00, transition from the right-of-way line at Station 163+00 to the northbound shoulder of SR-101, and terminate at Station 169+00. The transition intends to minimize adverse impacts on an existing wetland in this area. The right-of-way line currently runs over a storm water channel mostly in this section; the channel will be reconstructed and enclosed as part of this project according to the Caltrans. Thus, it was assumed that the sound wall bottom elevations on top of the reconstructed storm water channel would be same as the northbound shoulder of SR-101. Table 7-3 summarizes predicted sound wall performance and associated cost allowance information. Figure 3 in Appendix A shows the minimum length and heights required for this sound wall to provide feasible traffic noise abatement.

**Table 7-3. Summary of Reasonableness Determination Data – Sound Wall S158 [a]**

| Barrier I.D.: S158 | | | | | |
|---|---|---|---|---|---|
| **Predicted Sound Level without Barrier** | | | | | |
| Critical Design Receiver: R6 | | | | | |
| Design Year Noise Level, dBA $L_{eq}$(h): 74 | | | | | |
| Design Year Noise Level Minus Existing Noise Level: 3 | | | | | |
| **Design Year with Barrier** | **8-Foot Barrier** | **10-Foot Barrier** | **12-Foot Barrier** | **14-Foot Barrier** | **16-Foot Barrier** |
| Barrier Noise Reduction, dB | 9 | 10 | 11 | 12 | 13 |
| Number of Benefited Residences | 19 | 20 | 26 | 31 | 31 |
| New Highway or More than 50% of Residences Predate 1978[b] | Yes | Yes | Yes | Yes | Yes |
| Reasonable Allowance Per Benefited Residence | $51,000 | $51,000 | $51,000 | $53,000 | $53,000 |
| Total Reasonable Allowance | $969,000 | $1.020M | $1.326M | $1.643M | $1.643M |

*Notes:* NA-Not applicable. Barrier does not provide 5 dB of noise reduction.

[a] A NADR will be prepared that will identify noise barrier construction cost information and the noise barriers that are reasonable from a cost perspective.

[b] This adjustment increases the abatement allowance by $10,000 if the project is new highway construction or if most of the benefited residences (more than 50%) existed before January 1, 1978.

#### 7.2.2.2. SOUND WALL S174

Sound wall S174 on the right-of-way from Station 170+07 to 178+56 would provide feasible traffic noise abatement for 12 single-family residences represented by Receptors R11 through R13A along Cramer Circle north of SR-101. Table 7-4 summarizes predicted sound wall performance and associated cost allowance information. Figures 3

and 4 in Appendix A show the minimum length and height required for this sound wall to provide feasible traffic noise abatement.

***Severely Impacted Receptors:*** Two single-family residences, 1362 and 1364 Cramer Circle, represented by Receptor R13 would experience a predicted peak hour noise of 75 dBA without a barrier in place; thus, these residences would be considered severely impacted. These severely impacted residences are denoted with Ⓘ in Figure 4 of Appendix A. If sound wall S174 is determined to be unreasonable, providing the sound wall or building acoustical treatment would still be required for two single-family residences represented by Receptor R13.

**Table 7-4. Summary of Reasonableness Determination Data – Sound Wall S174 [a]**

| Barrier I.D.: S174 | | | | | |
|---|---|---|---|---|---|
| **Predicted Sound Level without Barrier** | | | | | |
| Critical Design Receiver: R13 | | | | | |
| Design Year Noise Level, dBA $L_{eq}$(h): 75 | | | | | |
| Design Year Noise Level Minus Existing Noise Level: 3 | | | | | |
| **Design Year with Barrier** | **8-Foot Barrier** | **10-Foot Barrier** | **12-Foot Barrier** | **14-Foot Barrier** | **16-Foot Barrier** |
| Barrier Noise Reduction, dB | 7 | 9 | 11 | 12 | 13 |
| Number of Benefited Residences | 8 | 10 | 12 | 12 | 13 |
| New Highway or More than 50% of Residences Predate 1978[b] | Yes | Yes | Yes | Yes | Yes |
| Reasonable Allowance Per Benefited Residence | $51,000 | $53,000 | $53,000 | $55,000 | $55,000 |
| Total Reasonable Allowance | $408,000 | $530,000 | $636,000 | $660,000 | $715,000 |

*Notes:* NA-Not applicable. Barrier does not provide 5 dB of noise reduction.

[a] A NADR will be prepared that will identify noise barrier construction cost information and the noise barriers that are reasonable from a cost perspective.

[b] This adjustment increases the abatement allowance by $10,000 if the project is new highway construction or if most of the benefited residences (more than 50%) existed before January 1, 1978.

#### 7.2.2.3. SOUND WALL S181

Sound wall S181 on the southbound shoulder of SR-101 between Station 171+19 and 191+00 would provide feasible traffic noise abatement for 11 single-family residences, 16 multi-family residences, and 21 mobile homes of the Sea Breeze Mobile Home Park that are represented by Receptors R23 through R27. There is an existing 6 feet sound wall on top of a 6-foot high berm in front of Receptor R22, and raising this sound wall to the combined height of 16 feet would not provide the additional 5-dB reduction required by the Caltrans' feasibility criterion. If sound wall S181 is determined to be reasonable to build, this barrier shall be tied into or overlap with the existing sound wall. Table 7-5 summarizes predicted sound wall performance and associated cost allowance information. Figure 4 in Appendix A shows the minimum length and height required for this sound wall to provide feasible traffic noise abatement.

***Severely Impacted Receptors:*** The future peak hour traffic noise levels at five single-family residences, 1094 and 1097 Cramer Road; 4484 Carpinteria Avenue; 1041 and 1043 Plum Street, and 11 first row mobile homes of Sea Breeze Mobile Homes would exceed 75 dBA without a barrier in place; thus, these receptors would be considered

severely impacted. These severely impacted residences are denoted with Ⓘ in Figure 4 of Appendix A. If sound wall S181 is determined to be unreasonable, providing the sound wall would still be required for residences represented by Receptors R23 through R25. Providing building acoustical treatment for single-family homes could be an option, but it would not be effective in noise reduction for mobile homes; thus, a sound wall would be the only option to provide abatement for all of the severely impacted receptors in this area.

#### 7.2.2.4. SOUND WALL S182

Sound wall S182 on the northbound shoulder of SR-101 between Stations 179+50 and 184+00, in combination with sound walls S174 and S188, would provide feasible traffic noise abatement for one single-family residence represented by Receptor R14. The eastern end of this barrier cannot be extended beyond 179+50 in order to be in compliance with a "crash recovery zone" requirement. Table 7-6 summarizes predicted sound wall performance and associated cost allowance information. Figure 4 in Appendix A show the minimum length and height required for this sound wall to provide feasible traffic noise abatement.

**Outside widening option:** The future peak hour traffic noise at Receptor R14 would not be impacted by this option; thus, no abatement is considered.

**Table 7-5. Summary of Reasonableness Determination Data – Sound Wall S181 [a]**

| Barrier I.D.: S181 | | | | | |
|---|---|---|---|---|---|
| **Predicted Sound Level without Barrier** | | | | | |
| Critical Design Receiver: R23 | | | | | |
| Design Year Noise Level, dBA $L_{eq}$(h): 78 | | | | | |
| Design Year Noise Level Minus Existing Noise Level: 2 | | | | | |
| **Design Year with Barrier** | **8-Foot Barrier** | **10-Foot Barrier** | **12-Foot Barrier** | **14-Foot Barrier** | **16-Foot Barrier** |
| Barrier Noise Reduction, dB | 8 | 10 | 12 | 13 | 14 |
| Number of Benefited Residences | 31 | 48 | 48 | 48 | 55 |
| New Highway or More than 50% of Residences Predate 1978[b] | No | No | No | No | No |
| Reasonable Allowance Per Benefited Residence | $39,000 | $41,000 | $43,000 | $43,000 | $43,000 |
| Total Reasonable Allowance | $1.209M | $1.968 M | $2.064M | $2.064M | $2.365M |

*Notes:* NA-Not applicable. Barrier does not provide 5 dB of noise reduction.

[a] A NADR will be prepared that will identify noise barrier construction cost information and the noise barriers that are reasonable from a cost perspective.

[b] This adjustment increases the abatement allowance by $10,000 if the project is new highway construction or if most of the benefited residences (more than 50%) existed before January 1, 1978.

**Table 7-6. Summary of Reasonableness Determination Data – Sound Wall S182 [a]**

| Barrier I.D.: S182 | | | | | |
|---|---|---|---|---|---|
| **Predicted Sound Level without Barrier** | | | | | |
| Critical Design Receiver: R14 | | | | | |
| Design Year Noise Level, dBA $L_{eq}$(h): 67 | | | | | |
| Design Year Noise Level Minus Existing Noise Level: 3 | | | | | |
| **Design Year with Barrier** | **8-Foot Barrier** | **10-Foot Barrier** | **12-Foot Barrier** | **14-Foot Barrier** | **16-Foot Barrier** |
| Barrier Noise Reduction, dB | 3 | 3 | 4 | 4 | 5 |
| Number of Benefited Residences | 0 | 0 | 0 | 0 | 1 |
| New Highway or More than 50% of Residences Predate 1978[b] | No | No | No | No | No |
| Reasonable Allowance Per Benefited Residence | NA | NA | NA | NA | $45,000 |
| Total Reasonable Allowance | NA | NA | NA | NA | $45,000 |

*Notes:* NA-Not applicable. Barrier does not provide 5 dB of noise reduction.

[a] A NADR will be prepared that will identify noise barrier construction cost information and the noise barriers that are reasonable from a cost perspective.

[b] This adjustment increases the abatement allowance by $10,000 if the project is new highway construction or if most of the benefited residences (more than 50%) existed before January 1, 1978.

### 7.2.2.5. SOUND WALL S188

Sound wall S188 on the right-of-way line of SR-101 northbound from Station 183+00 to 194+00 would provide feasible traffic noise abatement for a swimming pool of Motel 6 and one frontage unit of a grassy common area of an apartment complex that are represented by Receptors R15 and R17, respectively. Table 7-7 summarizes predicted sound wall performance and associated cost allowance information. Figure 4 in Appendix A shows the minimum length and height required for this sound wall to provide feasible traffic noise abatement.

**Table 7-7. Summary of Reasonableness Determination Data – Sound Wall S188 [a]**

| Barrier I.D.: S188 | | | | | |
|---|---|---|---|---|---|
| **Predicted Sound Level without Barrier** | | | | | |
| Critical Design Receiver: R15 | | | | | |
| Design Year Noise Level, dBA $L_{eq}$(h): 66 | | | | | |
| Design Year Noise Level Minus Existing Noise Level: 3 | | | | | |
| **Design Year with Barrier** | **8-Foot Barrier** | **10-Foot Barrier** | **12-Foot Barrier** | **14-Foot Barrier** | **16-Foot Barrier** |
| Barrier Noise Reduction, dB | 3 | 3 | 5 | 5 | 6 |
| Number of Benefited Residences | 0 | 0 | 2 | 2 | 2 |
| New Highway or More than 50% of Residences Predate 1978[b] | No | No | No | No | No |
| Reasonable Allowance Per Benefited Residence | NA | NA | $35,000 | $35,000 | $35,000 |
| Total Reasonable Allowance | NA | NA | $70,000 | $70,000 | $70,000 |

*Notes:* NA-Not applicable. Barrier does not provide 5 dB of noise reduction.

[a] A NADR will be prepared that will identify noise barrier construction cost information and the noise barriers that are reasonable from a cost perspective.

[b] This adjustment increases the abatement allowance by $10,000 if the project is new highway construction or if most of the benefited residences (more than 50%) existed before January 1, 1978.

**Outside widening option:** The future peak hour traffic noise at the Motel 6 pool would neither approach nor exceed the NAC; thus, no abatement is considered. One frontage unit of a grassy area represented by Receptor R17 would not receive a minimum 5-dB reduction; thus, the future peak hour traffic noise at this receptor cannot be abated with a barrier at the right-of-way line. Due to the crossing streets and patios, no other locations would be practical for a sound wall.

#### 7.2.2.6. SOUND WALL S210

Sound wall S210 on the right-of-way of SR-101 northbound from Station 194+00 to 221+00 would provide feasible traffic noise abatement for 12 multi-family residences and 10 mobile homes of The Sandpiper Mobile Village that are represented by Receptors R18 through R20. This barrier would also benefit four multi-family units of the proposed Casas de las Flores multi-family development represented by Receptor R14A. The proposed development site is currently used as Carpinteria Camper Park. As of November 2009, conceptual architectural review for this development was already submitted to the City of Carpinteria (PSHHC, 2009). Per Protocol, undeveloped lands are planned, designed, and programmed before the date of public knowledge, noise abatement must be considered as part of the transportation project. Since the conceptual architectural review was submitted during the environmental phase of Santa Barbara 101 South Coast Project, the development could be considered as planned before the date of public knowledge. Therefore, the future traffic noise impacts of the proposed Casas de las Flores complex due to the proposed project are analyzed in this noise study.

Table 7-8 summarizes predicted sound wall performance and associated cost allowance information. Figures 4 and 5 in Appendix A show the minimum length and height required for this sound wall to provide feasible traffic noise abatement.

***Severely Impacted Receptors:*** The future exterior peak hour noise levels at seven first row mobile homes in The Sandpiper Mobil Village that are represented by Receptor R21 would exceed 75 dBA without a barrier in place; thus, these receptors would be considered severely impacted. If sound wall S210 is determined to be unreasonable, providing either a sound wall or possibly interior acoustical treatment would still be required for these severely impacted mobile homes. Providing building acoustical treatment for single-family homes could be an option, but it would not be effective in noise reduction for mobile homes; thus, a sound wall would be the only option to provide abatement for all of the severely impacted receptors that are identified in this area The severely impacted mobile homes are denoted with Ⓘ in Figure 5 of Appendix A.

**Table 7-8. Summary of Reasonableness Determination Data – Sound Wall S210 [a]**

| Barrier I.D.: S210 | | | | | |
|---|---|---|---|---|---|
| **Predicted Sound Level without Barrier** | | | | | |
| Critical Design Receiver: R21 | | | | | |
| Design Year Noise Level, dBA $L_{eq}$(h): 76 | | | | | |
| Design Year Noise Level Minus Existing Noise Level: 2 | | | | | |
| **Design Year with Barrier** | **8-Foot Barrier** | **10-Foot Barrier** | **12-Foot Barrier** | **14-Foot Barrier** | **16-Foot Barrier** |
| Barrier Noise Reduction, dB | 6 | 8 | 9 | 10 | 11 |
| Number of Benefited Residences | 12 | 16 | 21 | 32 | 32 |
| New Highway or More than 50% of Residences Predate 1978[b] | No | No | No | No | No |
| Reasonable Allowance Per Benefited Residence | $39,000 | $39,000 | $41,000 | $41,000 | $41,000 |
| Total Reasonable Allowance | $468,000 | $624,000 | $861,000 | $1.312M | $1.312M |

*Notes:* NA-Not applicable. Barrier does not provide 5 dB of noise reduction.

[a] A NADR will be prepared that will identify noise barrier construction cost information and the noise barriers that are reasonable from a cost perspective.

[b] This adjustment increases the abatement allowance by $10,000 if the project is new highway construction or if most of the benefited residences (more than 50%) existed before January 1, 1978.

## 7.2.3. Feasible Sound Walls – South Padaro Lane to North Padaro Lane

### 7.2.3.1. SOUND WALL S238

Sound wall S238 would be located on the right-of-way of SR-101 northbound from Station 231+00 to 242+00, and it would provide feasible abatement from highway traffic noise for a frequent outdoor use area of one single-family residence represented by Receptor R39A. Table 7-9 summarizes predicted sound wall performance and associated cost allowance information. Figures 5 and 6 in Appendix A show the minimum length and height required for this sound wall to provide feasible traffic noise abatement.

**Table 7-9. Summary of Reasonableness Determination Data – Sound Wall S238 [a]**

| Barrier I.D.: S238 | | | | | |
|---|---|---|---|---|---|
| **Predicted Sound Level without Barrier** | | | | | |
| Critical Design Receiver: R39A | | | | | |
| Design Year Noise Level, dBA $L_{eq}$(h): 67 | | | | | |
| Design Year Noise Level Minus Existing Noise Level: 3 | | | | | |
| **Design Year with Barrier** | **8-Foot Barrier** | **10-Foot Barrier** | **12-Foot Barrier** | **14-Foot Barrier** | **16-Foot Barrier** |
| Barrier Noise Reduction, dB | 1 | 2 | 4 | 5 | 5 |
| Number of Benefited Residences | 0 | 0 | 0 | 1 | 1 |
| New Highway or More than 50% of Residences Predate 1978[b] | Yes | Yes | Yes | Yes | Yes |
| Reasonable Allowance Per Benefited Residence | NA | NA | NA | $45,000 | $45,000 |
| Total Reasonable Allowance | NA | NA | NA | $45,000 | $45,000 |

*Notes:* NA-Not applicable. Barrier does not provide 5 dB of noise reduction.

[a] A NADR will be prepared that will identify noise barrier construction cost information and the noise barriers that are reasonable from a cost perspective.

[b] This adjustment increases the abatement allowance by $10,000 if the project is new highway construction or if most of the benefited residences (more than 50%) existed before January 1, 1978.

#### 7.2.3.2. SOUND WALL S257

Sound wall S257 would be located along the southbound shoulder of SR-101 from Stations 251+00 to 263+00, providing feasible noise abatement for the front yard areas of 12 single-family residences represented by Receptors R28 and R29. These residences have narrow lots that are slightly angled to the freeway, and their backyards are adjacent to beachfront. The frequent outdoor use areas of almost all of these residences appear to be their backyards, and the future peak hour noise levels at their backyards, represented by Receptors R28A and R29A, would neither approach nor exceed the exterior noise impact criterion of 67 dBA. Therefore, considering solely the beachfront backyards as a frequent outdoor use area, sound wall S257 might not be necessary. It is imperative to point out that some of the benefited residences behind the west end of sound wall S257 would also need sound wall S281 to receive 5-dB reduction.

Table 7-10 summarizes predicted sound wall performance and associated cost allowance information. Under consideration of the front yards as probable frequent outdoor use areas, Figures 6 and 7 in Appendix A show the minimum length and height required for this sound wall to provide feasible traffic noise abatement.

**Table 7-10. Summary of Reasonableness Determination Data – Sound Wall S257 [a]**

| | | | | | |
|---|---|---|---|---|---|
| Barrier I.D.: S257 | | | | | |
| **Predicted Sound Level without Barrier** | | | | | |
| Critical Design Receiver: R29 | | | | | |
| Design Year Noise Level, dBA $L_{eq}$(h): 67 | | | | | |
| Design Year Noise Level Minus Existing Noise Level: 1 | | | | | |
| **Design Year with Barrier** | **8-Foot Barrier** | **10-Foot Barrier** | **12-Foot Barrier** | **14-Foot Barrier** | **16-Foot Barrier** |
| Barrier Noise Reduction, dB | 3 | 4 | 6 | 7 | 8 |
| Number of Benefited Residences | 0 | 0 | 12 | 12 | 12 |
| New Highway or More than 50% of Residences Predate 1978[b] | Yes | Yes | Yes | Yes | Yes |
| Reasonable Allowance Per Benefited Residence | NA | NA | $45,000 | $45,000 | $45,000 |
| Total Reasonable Allowance | NA | NA | $540,000 | $540,000 | $540,000 |

*Notes:* NA-Not applicable. Barrier does not provide 5 dB of noise reduction.

[a] A NADR will be prepared that will identify noise barrier construction cost information and the noise barriers that are reasonable from a cost perspective.

[b] This adjustment increases the abatement allowance by $10,000 if the project is new highway construction or if most of the benefited residences (more than 50%) existed before January 1, 1978.

#### 7.2.3.3. SOUND WALL S281

Sound wall S281 would be located along the shoulder of SR-101 from Station 262+00 to 286+00, transition to the right-of-way from Station 286+00 to 287+00, and continue until Station 314+00. This sound wall would benefit 61 single-family residences located south of SR-101 with future traffic noise levels approaching or exceeding the NAC of 67 dBA. Nine additional single-family residences without an identified noise impact would also receive a 5-dB reduction, because this barrier has to be in place to meet the feasibility requirement for adjacent impacted receptors. Receptors R31A, R31B, R32B, and R35A represent frequent outdoor use areas of these benefited nine residences without a noise

impact. Some of the benefited residences behind the eastern end of sound wall S281 would also need sound wall S257 to receive 5-dB reduction.

There are 17 residences located toward the eastern end of sound wall S281 with narrow lots that are slightly angled to the freeway, and their front yards are facing the freeway. Considering solely the beachfront backyards as a frequent outdoor use, a portion of this barrier from Station 262+00 to 273+00 might be eliminated.

Receptors R36, R37, and R38 represent eight residences along Padaro Lane south of SR-101. These residences are estate homes on multi-acre lots, and their typical outdoor use areas are located further back from the property line facing SR-101. The modeling result indicates that the future peak hour noise levels at these residences would not be impacted; thus, sound wall S281 would not need to be extended to protect these residences. Table 7-11 summarizes predicted sound wall performance and associated cost allowance information. Figures 7 and 8 in Appendix A show the minimum length and height required for this sound wall to provide feasible traffic noise abatement.

**Table 7-11. Summary of Reasonableness Determination Data – Sound Wall S281 [a]**

| Barrier I.D.: S281 | | | | | |
|---|---|---|---|---|---|
| **Predicted Sound Level without Barrier** | | | | | |
| Critical Design Receiver: R31 | | | | | |
| Design Year Noise Level, dBA $L_{eq}$(h): 71 | | | | | |
| Design Year Noise Level Minus Existing Noise Level: 2 | | | | | |
| **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 | 10 |
| Number of Benefited Residences | 33 | 44 | 70 | 73 | 76 |
| New Highway or More than 50% of Residences Predate 1978[b] | Yes | Yes | Yes | Yes | Yes |
| Reasonable Allowance Per Benefited Residence | $45,000 | $47,000 | $47,000 | $49,000 | $49,000 |
| Total Reasonable Allowance | $1.485M | $2.068M | $3.290M | $3.577M | $3.724M |

*Notes:* NA-Not applicable. Barrier does not provide 5 dB of noise reduction.

[a] A NADR will be prepared that will identify noise barrier construction cost information and the noise barriers that are reasonable from a cost perspective.

[b] This adjustment increases the abatement allowance by $10,000 if the project is new highway construction or if most of the benefited residences (more than 50%) existed before January 1, 1978.

#### 7.2.3.4. SOUND WALL S310

Sound wall S310 would be located on the right-of-way line of SR-101 northbound and tie into the eastern end of the existing sound wall protecting the Serena Park area. This barrier would provide feasible traffic noise abatement for nine single-family residences, eight multi-family residences, and one frontage unit of a religious institution along Vial Real that are represented by Receptors R39 through R42. Table 7-11 summarizes predicted sound wall performance and associated cost allowance information. Figure 8 in Appendix A shows the minimum length and height required for this sound wall to provide feasible traffic noise abatement.

***Receptors without Abatement:*** The future peak hour noise levels at two residences represented by Receptors R42A and R43 would exceed the NAC of 67 dBA; however,

sound wall S310 would not provide the required 5-dB noise reduction for these residences. The eastern portion of the existing Serena Park sound wall is already providing some noise reduction, and constructing sound wall S310 would not provide an additional 5-dB reduction. However, if this sound wall is to be constructed, these two residences would get traffic noise reduction as much as 4-dB.

**Table 7-12. Summary of Reasonableness Determination Data – Sound Wall S310 [a]**

| Barrier I.D.: S310 | | | | | |
|---|---|---|---|---|---|
| **Predicted Sound Level without Barrier** | | | | | |
| Critical Design Receiver: R41 | | | | | |
| Design Year Noise Level, dBA $L_{eq}$(h): 74 | | | | | |
| Design Year Noise Level Minus Existing Noise Level: 3 | | | | | |
| **Design Year with Barrier** | **8-Foot Barrier** | **10-Foot Barrier** | **12-Foot Barrier** | **14-Foot Barrier** | **16-Foot Barrier** |
| Barrier Noise Reduction, dB | 5 | 7 | 9 | 10 | 11 |
| Number of Benefited Residences | 2 | 10 | 18 | 18 | 18 |
| New Highway or More than 50% of Residences Predate 1978[b] | Yes | Yes | Yes | Yes | Yes |
| Reasonable Allowance Per Benefited Residence | $47,000 | $49,000 | $51,000 | $51,000 | $51,000 |
| Total Reasonable Allowance | $94,000 | $490,000 | $918,000 | $918,000 | $918,000 |

*Notes:* NA-Not applicable. Barrier does not provide 5 dB of noise reduction.

[a] A NADR will be prepared that will identify noise barrier construction cost information and the noise barriers that are reasonable from a cost perspective.

[b] This adjustment increases the abatement allowance by $10,000 if the project is new highway construction or if most of the benefited residences (more than 50%) existed before January 1, 1978.

#### 7.2.3.5. SOUND WALL S334

Sound wall S334 would be located on the right-of-way of SR-101 northbound and should tie into the western end of the existing sound wall protecting the Serena Park area. This barrier would provide feasible traffic noise abatement for one single-family residence represented by Receptor R45. Table 7-13 summarizes predicted sound wall performance and associated cost allowance information. Figure 9 in Appendix A shows the minimum length and height required for this sound wall to provide feasible traffic noise abatement.

***Receptors without Abatement:*** The future peak hour noise level at one residence represented by Receptor R45A would exceed the NAC of 67 dBA (approaching the NAC for the outside widening option); however, this barrier would not provide the required 5-dB noise reduction for this residence. The western end portion of the existing Serena Park wall is already providing some noise reduction to this receptor, and constructing sound wall S334 would not provide an incremental 5-dB reduction. Therefore, sound wall S334 would not be considered feasible in providing noise abatement for Receptor R45A.

Due to the presence of an existing wetland on the right-of-way, this barrier cannot be extended to protect one single-family receptor represented by Receptor R46; therefore, this receptor would be impacted without abatement.

**Table 7-13. Summary of Reasonableness Determination Data – Sound Wall S334 [a]**

| Barrier I.D.: S334 | | | | | |
|---|---|---|---|---|---|
| **Predicted Sound Level without Barrier** | | | | | |
| Critical Design Receiver: R45 | | | | | |
| Design Year Noise Level, dBA $L_{eq}$(h): 74 | | | | | |
| Design Year Noise Level Minus Existing Noise Level: 2 | | | | | |
| **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 | 6 | 6 | 7 |
| Number of Benefited Residences | 0 | 1 | 1 | 1 | 1 |
| New Highway or More than 50% of Residences Predate 1978[b] | Yes | Yes | Yes | Yes | Yes |
| Reasonable Allowance Per Benefited Residence | NA | $45,000 | $47,000 | $47,000 | $47,000 |
| Total Reasonable Allowance | NA | $45,000 | $47,000 | $47,000 | $47,000 |

*Notes:* NA-Not applicable. Barrier does not provide 5 dB of noise reduction.

[a] A NADR will be prepared that will identify noise barrier construction cost information and the noise barriers that are reasonable from a cost perspective.

[b] This adjustment increases the abatement allowance by $10,000 if the project is new highway construction or if most of the benefited residences (more than 50%) existed before January 1, 1978.

## 7.2.4. Feasible Sound Walls – North Padaro Lane to Sheffield Drive

The Summerland area is featured with complex topography, and many residences located on hillside area are structurally unique with decks and balconies facing the ocean. Many non-first row residences have a clear view to SR-101 with peak hour traffic noise levels approaching or exceeding the NAC of 67 dBA. Receptors with “RS” notation are non-first row residences that have been analyzed in this section.

### 7.2.4.1. SOUND WALL S374

Sound wall S334 would be located on the right-of-way of SR-101 northbound from Station 367+00 to 380+00. The barrier would provide noise abatement for nine single-family residences and three frontage units of Ocean View Park. The sound wall ends at Station 380+00 because extending it farther to the west would not provide the necessary 5-dB noise reduction to meet feasibility requirements for additional residences. Second row residences represented by Receptors R47B through R47D and R48C would neither approach nor exceed the NAC of 67 dBA; thus, no noise abatement would be required for these receptors. Table 7-14 summarizes predicted sound wall performance and associated cost allowance information. Figure 10 in Appendix A shows the minimum length and height required for this sound wall to provide feasible traffic noise abatement.

***Receptors without Abatement:*** The future peak hour noise levels at two single-family residences and four multi-family residential units, represented by Receptors R48 and R48B, respectively, would exceed the NAC of 67 dBA; however, sound wall S374 would not provide feasible noise abatement for these residences due to their high elevation relative to the highway. Similarly, a portion of Ocean View Park that is adjacent to Greenwell Avenue, represented by Receptor R49, would not be abated because of its elevation to the highway.

**Table 7-14. Summary of Reasonableness Determination Data – Sound Wall S374 [a]**

| Barrier I.D.: S374 | | | | | |
|---|---|---|---|---|---|
| **Predicted Sound Level without Barrier** | | | | | |
| Critical Design Receiver: R49A | | | | | |
| Design Year Noise Level, dBA $L_{eq}$(h): 73 | | | | | |
| Design Year Noise Level Minus Existing Noise Level: 2 | | | | | |
| **Design Year with Barrier** | **8-Foot Barrier** | **10-Foot Barrier** | **12-Foot Barrier** | **14-Foot Barrier** | **16-Foot Barrier** |
| Barrier Noise Reduction, dB | 0 | 4 | 5 | 7 | 8 |
| Number of Benefited Residences | 0 | 0 | 9 | 12 | 12 |
| New Highway or More than 50% of Residences Predate 1978[b] | No | No | No | No | No |
| Reasonable Allowance Per Benefited Residence | NA | NA | $35,000 | $37,000 | $37,000 |
| Total Reasonable Allowance | NA | NA | $315,000 | $444,000 | $444,000 |

*Notes:* NA-Not applicable. Barrier does not provide 5 dB of noise reduction.

[a] A NADR will be prepared that will identify noise barrier construction cost information and the noise barriers that are reasonable from a cost perspective.

[b] This adjustment increases the abatement allowance by $10,000 if the project is new highway construction or if most of the benefited residences (more than 50%) existed before January 1, 1978.

#### 7.2.4.2. SOUND WALL S392

Sound wall S392 would be located at or within the right-of-way line from Station 383+00 to 407+02. This barrier would provide noise abatement for the frequent outdoor use areas of first row receptors, which include six single-family and nine multi-family residences, two frontage units of Inn of Summer Hill, a basketball court, and a religious institution. There are a few non first row residences on Varley Street and Banner Avenue, where future predicted peak hour traffic noise levels would approach or exceed the NAC of 67 dBA. Some of these residences would also receive benefit from sound wall S392, which are 12 single-family and two multi-family residences represented by Receptors RS1.4, RS2.1, R2.2, RS2.4, RS3.1, RS3.2, RS3.3, RS3.7 RS4.2, RS4.3, RS4.4, and RS4.10. Three frontage units of the Summerland Elementary School represented by Receptor RS4.1 would fall into this category, too. Some of non-impacted residences would also receive 5-dB reduction, because this barrier has to be in place to meet the feasibility requirement at adjacent impacted receptors. These non impacted receptors with 5-dB reduction are three single-family residences represented by Receptors R56 and RS3.5. In order for some of the benefited residences near the western end of Sound wall S392 to receive a minimum of 5-dB reduction, sound wall S414 would need to be in place.

Table 7-15 summarizes the predicted sound wall performance and associated cost allowance information. Figure 11 in Appendix A shows the minimum length and height required for this sound wall to provide feasible traffic noise abatement.

***Severely Impacted Receptors:*** The future exterior peak hour noise levels at 2535 and 2549 Varley Street that are represented by Receptor R50 would exceed 75 dBA; thus, these two residences would be considered severely impacted. Sound wall S392 at the right-of-way line would not provide the 5-dB reduction for these two severely impacted receptors to meet the feasibility criterion because of their high elevations relative to SR-101. Therefore, providing either a sound wall on private property or acoustical treatment

would still be required for these two severely impacted residences. The severely impacted residences are denoted with Ⓘ in Figure 11 of Appendix A.

***Receptors without Abatement:*** There are 12 single-family residences represented by Receptors RS1.1, RS1.2, RS2.3, RS2.5, RS2.6, RS4.6, and RS4.8 and nine multi-family residences represented by Receptors RS4.5, RS4.7, and RS4.9 where the future peak hour traffic noise levels would approach or exceed the NAC of 67 dBA. However, sound wall S392 would not provide the 5-dB reduction to meet the feasibility criterion. The sound wall is not feasible at the right-of-way line because it would not break the line-of-sight to the freeway because of the high elevations of these receptors relative to SR-101.

**Outside widening option:** Based upon the feasibility criterion of a sound wall, a portion of sound wall S392 from Station 383+00 to 390+00 would have to be raised to 16 feet high. One impacted residence represented by RS1.4 would not receive a 5-dB reduction with a 14-foot high wall from Station 386+00 to 390+00 under the outside widening option. Figure 11 in Appendix A shows the minimum length and height required for this sound wall to provide feasible traffic noise abatement.

**Table 7-15. Summary of Reasonableness Determination Data – Sound Wall S392 [a]**

| Barrier I.D.: S392 | | | | | |
|---|---|---|---|---|---|
| **Predicted Sound Level without Barrier** | | | | | |
| Critical Design Receiver: R52 | | | | | |
| Design Year Noise Level, dBA $L_{eq}$(h): 74 | | | | | |
| Design Year Noise Level Minus Existing Noise Level: 2 | | | | | |
| **Design Year with Barrier** | **8-Foot Barrier** | **10-Foot Barrier** | **12-Foot Barrier** | **14-Foot Barrier** | **16-Foot Barrier** |
| Barrier Noise Reduction, dB | 8 | 9 | 10 | 11 | 12 |
| Number of Benefited Residences | 10 | 11 | 20 | 29 | 39 |
| New Highway or More than 50% of Residences Predate 1978[b] | Yes | Yes | Yes | Yes | Yes |
| Reasonable Allowance Per Benefited Residence | $47,000 | $49,000 | $49,000 | $49,000 | $51,000 |
| Total Reasonable Allowance | $470,000 | $539,000 | $980,000 | $1.421M | $1.989M |

*Notes:* NA-Not applicable. Barrier does not provide 5 dB of noise reduction.

[a] A NADR will be prepared that will identify noise barrier construction cost information and the noise barriers that are reasonable from a cost perspective.

[b] This adjustment increases the abatement allowance by $10,000 if the project is new highway construction or if most of the benefited residences (more than 50%) existed before January 1, 1978.

#### 7.2.4.3. SOUND WALL S405

Sound wall S405 on the southbound shoulder of SR-101 from Station 403+00 to 412+00 would provide feasible noise reduction for one single-family residence represented by Receptor R65. All other residences on Finney Street except for Receptor R63 have garages facing the highway, and there are no frequent outdoor use areas directly facing the highway. The frequent outdoor use areas of these receptors are behind the buildings overlooking the ocean, and the peak hour noise levels at the backyards would be below the NAC of 67 dBA. Receptor R63 has a garden area facing the highway; however, its predicted future peak hour noise level would be below the NAC of 67 dBA. Sound wall S405 shown in Figures 11 and 12 would provide noise abatement for Receptor R65 only, thus, it does not extend more than what is necessary for Receptor R65. Table 7-16

summarizes predicted sound wall performance and associated cost allowance information. Figures 11 and 12 in Appendix A show the minimum length and height required for this sound wall to provide feasible traffic noise abatement.

**Table 7-16. Summary of Reasonableness Determination Data – Sound Wall S405 [a]**

| Barrier I.D.: S405 | | | | | |
|---|---|---|---|---|---|
| **Predicted Sound Level without Barrier** | | | | | |
| Critical Design Receiver: R65 | | | | | |
| Design Year Noise Level, dBA $L_{eq}$(h): 68 | | | | | |
| Design Year Noise Level Minus Existing Noise Level: 2 | | | | | |
| **Design Year with Barrier** | **8-Foot Barrier** | **10-Foot Barrier** | **12-Foot Barrier** | **14-Foot Barrier** | **16-Foot Barrier** |
| Barrier Noise Reduction, dB | 4 | 6 | 6 | 6 | 7 |
| Number of Benefited Residences | 0 | 1 | 1 | 1 | 2 |
| New Highway or More than 50% of Residences Predate 1978[b] | No | No | No | No | No |
| Reasonable Allowance Per Benefited Residence | NA | $35,000 | $35,000 | $35,000 | $35,000 |
| Total Reasonable Allowance | NA | $35,000 | $35,000 | $35,000 | $70,000 |

*Notes:* NA-Not applicable. Barrier does not provide 5 dB of noise reduction.

[a] A NADR will be prepared that will identify noise barrier construction cost information and the noise barriers that are reasonable from a cost perspective.

[b] This adjustment increases the abatement allowance by $10,000 if the project is new highway construction or if most of the benefited residences (more than 50%) existed before January 1, 1978.

#### 7.2.4.4. SOUND WALL S414

Sound wall S414 would be located along the northbound shoulder of SR-101 from Station 406+50 to 420+50. This barrier would provide noise abatement for eight first row single-family residences represented by Receptors R57 and R58. There are many non-first row residences on Varley Street and Banner Avenue as well as Lillie Avenue with future peak hour noise levels approaching or exceeding the NAC of 67 dBA. Some of these residences would receive a minimum of 5-dB reduction from sound wall S414, which are 10 single-family and 13 multi-family residences represented by Receptors RS5.2, RS5.5, RS5.6, RS6.1, RS6.2, RS6.3, and RS6.7 through RS6.10. Some of the non-impacted residences would also receive a 5-dB reduction because this barrier has to be in place to meet the feasibility requirement at adjacent impacted receptors. These non impacted receptors with an identified benefit are 16 single-family and two multi-family residences represented by Receptors RS5.1, RS5.3, RS5.4 , RS5.8, RS5.9, and RS5.10. It is imperative to point out that sound wall S414 would be feasible in providing noise abatement only if it is built in conjunction with sound walls S392 and S424. Otherwise, sound wall S413 alone would not provide a minimum of 5-dB reduction for the impacted receptors.

Table 7-17 summarizes predicted sound wall performance and associated cost allowance information. Figures 11 and 12 in Appendix A show the minimum length and height required for this sound wall to provide feasible traffic noise abatement.

***Receptors without Abatement:*** There are 13 single-family and three multi-family residences represented by Receptors RS6.4, RS6.5, and RS6.11 through RS 6.15 where the future peak hour noise levels would approach or exceed the NAC of 67 dBA.

However, sound wall S414 would not provide a 5-dB reduction to meet the feasibility requirements because it would not break the line-of-sight to the freeway due to the higher elevation of these receptor sites.

**Table 7-17. Summary of Reasonableness Determination Data – Sound Wall S414 [a]**

| Barrier I.D.: S414 | | | | | |
|---|---|---|---|---|---|
| **Predicted Sound Level without Barrier** | | | | | |
| Critical Design Receiver: R58 | | | | | |
| Design Year Noise Level, dBA $L_{eq}$(h): 74 | | | | | |
| Design Year Noise Level Minus Existing Noise Level: 2 | | | | | |
| **Design Year with Barrier** | **8-Foot Barrier** | **10-Foot Barrier** | **12-Foot Barrier** | **14-Foot Barrier** | **16-Foot Barrier** |
| Barrier Noise Reduction, dB | 6 | 8 | 10 | 11 | 12 |
| Number of Benefited Residences | 4 | 7 | 24 | 36 | 49 |
| New Highway or More than 50% of Residences Predate 1978[b] | Yes | Yes | Yes | Yes | Yes |
| Reasonable Allowance Per Benefited Residence | $47,000 | $47,000 | $49,000 | $49,000 | $51,000 |
| Total Reasonable Allowance | $188,000 | $329,000 | $1.176M | $1.764M | $2.499M |

*Notes:* NA-Not applicable. Barrier does not provide 5 dB of noise reduction.

[a] A NADR will be prepared that will identify noise barrier construction cost information and the noise barriers that are reasonable from a cost perspective.

[b] This adjustment increases the abatement allowance by $10,000 if the project is new highway construction or if most of the benefited residences (more than 50%) existed before January 1, 1978.

#### 7.2.4.5. SOUND WALL S424

Sound wall S424 would be located along the bike path adjacent to the shoulder of SR-101 from Station 420+27 to 429+00. This barrier would provide the noise abatement for the frequent outdoor use areas of one multi-family residential unit represented by Receptor R58A and eight mobile homes represented by Receptors R60 and R61 as well as one frontage unit of Summerland Inn represented by Receptor R59. Table 7-18 summarizes predicted sound wall performance and associated cost allowance information. Figure 12 in Appendix A shows the minimum length and height required for this sound wall to provide feasible traffic noise abatement.

***Receptors without Abatement:*** The future peak hour noise levels at two mobile homes by Receptor R61A would approach or exceed the NAC of 67 dBA. However, sound wall S424 would not provide 5-dB reduction to meet the feasibility requirement. The sound wall is not feasible because it would not break the line-of-sight to the freeway due to the high elevations of these receptors and distance from the highway.

***Severely Impacted Receptors:*** The future exterior peak hour noise levels at seven mobiles that are adjacent to SR-101 would exceed 75 dBA without a barrier in place; thus, these receptors would be considered severely impacted. If sound wall S424 is determined to be unreasonable, providing the sound wall would still be required for these severely impacted mobile homes represented by Receptors R60 and R61. The severely impacted mobile homes are denoted with Ⓘ in Figure 12 of Appendix A.

**Table 7-18. Summary of Reasonableness Determination Data – Sound Wall S424 [a]**

| Barrier I.D.: S424 | | | | | |
|---|---|---|---|---|---|
| **Predicted Sound Level without Barrier** | | | | | |
| Critical Design Receiver: R60 | | | | | |
| Design Year Noise Level, dBA $L_{eq}$(h): 75 | | | | | |
| Design Year Noise Level Minus Existing Noise Level: 1 | | | | | |
| **Design Year with Barrier** | **8-Foot Barrier** | **10-Foot Barrier** | **12-Foot Barrier** | **14-Foot Barrier** | **16-Foot Barrier** |
| Barrier Noise Reduction, dB | 1 | 2 | 4 | 6 | 8 |
| Number of Benefited Residences | 0 | 1 | 2 | 8 | 11 |
| New Highway or More than 50% of Residences Predate 1978[b] | Yes | Yes | Yes | Yes | Yes |
| Reasonable Allowance Per Benefited Residence | NA | NA | NA | $49,000 | $49,000 |
| Total Reasonable Allowance | NA | NA | NA | $392,000 | $539,000 |

*Notes:* NA-Not applicable. Barrier does not provide 5 dB of noise reduction.

[a] A NADR will be prepared that will identify noise barrier construction cost information and the noise barriers that are reasonable from a cost perspective.

[b] This adjustment increases the abatement allowance by $10,000 if the project is new highway construction or if most of the benefited residences (more than 50%) existed before January 1, 1978.

## 7.2.5. Feasible Sound Walls – Sheffield Drive to San Ysidro Road/ Eucalyptus Lane

### 7.2.5.1. SOUND WALLS S446

Sound wall S446 on the northbound shoulder of the Sheffield off-ramp would provide feasible abatement for one single-family residence by Receptor R67. Table 7-19 summarizes predicted sound wall performance and associated cost allowance information. It is imperative to point out that Receptor R67 behind this wall also needs sound wall S452 to receive 5-dB reduction. Sound wall S446 alone would not provide feasible traffic noise abatement for Receptor R67.

Figure 13 in Appendix A shows the minimum length and height required for this sound wall to provide feasible traffic noise abatement.

### 7.2.5.2. SOUND WALL S452

Sound wall S452 on the mainline shoulder of SR-101 northbound would provide feasible abatement for six single-family residences and eight multi-family residences of Villa de Montecito Apartments represented by Receptors R68A through R70. In order for Receptor R70 to receive a minimum 5-dB reduction, sound wall S464 has to be in place in conjunction with sound wall S452. Sound wall S452 alone would not provide noise abatement for three residences represented by Receptor R70. Table 7-20 summarizes predicted sound wall performance and associated cost allowance information. Figure 13 in Appendix A shows the minimum length and height required for this sound wall to provide feasible traffic noise abatement.

**Table 7-19. Summary of Reasonableness Determination Data – Sound Wall S446 [a]**

| Barrier I.D.: S446 | | | | | |
|---|---|---|---|---|---|
| **Predicted Sound Level without Barrier** | | | | | |
| Critical Design Receiver: R67 | | | | | |
| Design Year Noise Level, dBA $L_{eq}$(h): 69 | | | | | |
| Design Year Noise Level Minus Existing Noise Level: 3 | | | | | |
| **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 |
| Number of Benefited Residences | 1 | 1 | 1 | 1 | 1 |
| New Highway or More than 50% of Residences Predate 1978[b] | No | No | No | No | No |
| Reasonable Allowance Per Benefited Residence | $35,000 | $37,000 | $37,000 | $39,000 | $39,000 |
| Total Reasonable Allowance | $35,000 | $37,000 | $37,000 | $39,000 | $39,000 |

*Notes:* NA-Not applicable. Barrier does not provide 5 dB of noise reduction.

[a] A NADR will be prepared that will identify noise barrier construction cost information and the noise barriers that are reasonable from a cost perspective.

[b] This adjustment increases the abatement allowance by $10,000 if the project is new highway construction or if most of the benefited residences (more than 50%) existed before January 1, 1978.

**Table 7-20. Summary of Reasonableness Determination Data – Sound Wall S452 [a]**

| Barrier I.D.: S452 | | | | | |
|---|---|---|---|---|---|
| **Predicted Sound Level without Barrier** | | | | | |
| Critical Design Receiver: R70 | | | | | |
| Design Year Noise Level, dBA $L_{eq}$(h): 69 | | | | | |
| Design Year Noise Level Minus Existing Noise Level: 2 | | | | | |
| **Design Year with Barrier** | **8-Foot Barrier** | **10-Foot Barrier** | **12-Foot Barrier** | **14-Foot Barrier** | **16-Foot Barrier** |
| Barrier Noise Reduction, dB | 4 | 6 | 8 | 8 | 9 |
| Number of Benefited Residences | 0 | 12 | 14 | 14 | 14 |
| New Highway or More than 50% of Residences Predate 1978[b] | Yes | Yes | Yes | Yes | Yes |
| Reasonable Allowance Per Benefited Residence | NA | $45,000 | $45,000 | $45,000 | $47,000 |
| Total Reasonable Allowance | NA | $540,000 | $630,000 | $630,000 | $658,000 |

*Notes:* NA-Not applicable. Barrier does not provide 5 dB of noise reduction.

[a] A NADR will be prepared that will identify noise barrier construction cost information and the noise barriers that are reasonable from a cost perspective.

[b] This adjustment increases the abatement allowance by $10,000 if the project is new highway construction or if most of the benefited residences (more than 50%) existed before January 1, 1978.

#### 7.2.5.3. SOUND WALL S464

Sound wall S464 on the shoulder of the northbound on-ramp and on the right-of-way line on SR-101 northbound would provide feasible abatement for 13 single-family residences represented by Receptors R70A through R73. Table 7-21 summarizes predicted sound wall performance and associated cost allowance information. Figures 13 and 14 in Appendix A show the minimum length and height required for this sound wall to provide feasible traffic noise abatement.

***Severely Impacted Receptors:*** Seven residences, 100 and 111 Arroqui Road; two residential units in 1790 North Jameson Lane; and 24, 135, and 136 La Vuelta Road, represented by Receptors R71 through R73 would experience future peak hour noise levels exceeding 75 dBA without a barrier in place; thus, these receptors would be considered severely impacted. If sound wall S464 is determined to be unreasonable, providing either a sound wall or acoustical treatment would still be required for these severely impacted residences. Although a few receptors behind sound wall S464 are not severely impacted, the entire barrier would be required to provide noise abatement for all of the severely impacted receptors in this area. The severely impacted residences are denoted with Ⓘ in Figure 13 of Appendix A.

**Table 7-21. Summary of Reasonableness Determination Data – Sound Wall S464 [a]**

| Barrier I.D.: S464 | | | | | |
|---|---|---|---|---|---|
| **Predicted Sound Level without Barrier** | | | | | |
| Critical Design Receiver: R72 | | | | | |
| Design Year Noise Level, dBA $L_{eq}$(h): 76 | | | | | |
| Design Year Noise Level Minus Existing Noise Level: 2 | | | | | |
| **Design Year with Barrier** | **8-Foot Barrier** | **10-Foot Barrier** | **12-Foot Barrier** | **14-Foot Barrier** | **16-Foot Barrier** |
| Barrier Noise Reduction, dB | 6 | 8 | 10 | 11 | 12 |
| Number of Benefited Residences | 8 | 11 | 13 | 13 | 13 |
| New Highway or More than 50% of Residences Predate 1978[b] | Yes | Yes | Yes | Yes | Yes |
| Reasonable Allowance Per Benefited Residence | $49,000 | $49,000 | $51,000 | $51,000 | $53,000 |
| Total Reasonable Allowance | $392,000 | $539,000 | $663,000 | $663,000 | $689,000 |

*Notes:* NA-Not applicable. Barrier does not provide 5 dB of noise reduction.

[a] A NADR will be prepared that will identify noise barrier construction cost information and the noise barriers that are reasonable from a cost perspective.

[b] This adjustment increases the abatement allowance by $10,000 if the project is new highway construction or if most of the benefited residences (more than 50%) existed before January 1, 1978.

#### 7.2.5.4. SOUND WALL S471

Sound wall S471 would be located on the southbound shoulder of SR-101 from Station 461+35 to 475+00 and would transition to the right-of-way line from Station 475+00 to 481+00. The barrier would provide feasible abatement for 16 single-family residences along Fernald Point Lane that are represented by Receptors R74 through R78. This barrier cannot be extended beyond Station 481+00 because of a creek. This creek is considered a biologically sensitive habit area, and extending a sound wall beyond Station 481+00 would require substantial construction activities that might adversely affect the natural habit. Table 7-22 summarizes the predicted sound wall performance and associated cost allowance information. Figures 13 and 14 in Appendix A show the minimum length and height required for this sound wall to provide feasible traffic noise abatement.

***Receptors without Abatement:*** There are four single-family residences east of Posilipo Lane between Fernald Point Lane and SR-101. These four residences represented by Receptors R79 and R80 are behind an existing 12-ft high sound wall, and the future peak hour noise levels at these receptors would still approach or exceed the NAC of 67 dBA. Raising the existing sound wall to the maximum allowed height of 16 feet would not

provide an additional 5-dB reduction; thus, future peak hour traffic noise at these residences cannot be abated.

**Outside widening option:** Two single-family residences represented by Receptor R74A would be additionally impacted under the outside widening option. Therefore, a portion of sound wall S471 from Station 461+35 to 466+00 would have to be raised to 10 feet. This wall configuration would provide the necessary 5-dB reduction for these two additional residences compared to the inside widening option; therefore, the total benefited residences would be 18 homes. Figures 13 and 14 in Appendix A show the minimum length and heights required for this sound wall to provide feasible traffic noise abatement.

**Table 7-22. Summary of Reasonableness Determination Data – Sound Wall S471 [a]**

| Barrier I.D.: S471 | | | | | |
|---|---|---|---|---|---|
| **Predicted Sound Level without Barrier** | | | | | |
| Critical Design Receiver: R75 | | | | | |
| Design Year Noise Level, dBA $L_{eq}$(h): 73 | | | | | |
| Design Year Noise Level Minus Existing Noise Level: 2 | | | | | |
| **Design Year with Barrier** | **8-Foot Barrier** | **10-Foot Barrier** | **12-Foot Barrier** | **14-Foot Barrier** | **16-Foot Barrier** |
| Barrier Noise Reduction, dB | 6 | 7 | 9 | 10 | 11 |
| Number of Benefited Residences | 10 | 12 | 14 | 18 | 19 |
| New Highway or More than 50% of Residences Predate 1978[b] | Yes | Yes | Yes | Yes | Yes |
| Reasonable Allowance Per Benefited Residence | $47,000 | $47,000 | $49,000 | $49,000 | $49,000 |
| Total Reasonable Allowance | $470,000 | $564,000 | $686,000 | $882,000 | $931,000 |

*Notes:* NA-Not applicable. Barrier does not provide 5 dB of noise reduction.

[a] A NADR will be prepared that will identify noise barrier construction cost information and the noise barriers that are reasonable from a cost perspective.

[b] This adjustment increases the abatement allowance by $10,000 if the project is new highway construction or if most of the benefited residences (more than 50%) existed before January 1, 1978.

#### 7.2.5.5. SOUND WALL S489

Sound wall S489 on the private property line along southbound SR-101 from Station 486+53 to 490+13 would provide feasible abatement for one single-family residence and three multi-family units represented by Receptors R81 and R82. This barrier cannot be placed on the right-of-way line because it would cause visibility issues for vehicles approaching the Posilipo Lane on-ramp to southbound SR-101. Table 7-23 summarizes predicted sound wall performance and associated cost allowance information. Figure 14 in Appendix A shows the minimum length and height required for this sound wall to provide feasible traffic noise abatement.

***Receptors without Abatement:*** The future peak hour noise levels at two multi-family residential units represented by Receptor R82A would exceed the NAC of 67 dBA; however, sound wall S489 would not provide feasible noise abatement for these residences. According to the building location plan of the proposed Miramar Hotel development, a sound wall on the hotel's property line was included in front of the hotel rooms located within the western portion of the property. Within the eastern portion of property, where sound wall S489 would tie into, ball room and main buildings were proposed to be built. Extending the sound wall past the main ball room and main

building would block the view of the hotel from SR-101, and it is most likely opposed by the hotel developer. Therefore, this sound wall cannot be extended beyond the property line of the proposed Miramar Hotel development. A cluster of single-family residences that are represented by Receptor R79 and R80 behind the existing 12-ft high sound wall would not receive 5-dB reduction by raising the barrier to 16 feet; thus, these receptors would remain unabated.

#### 7.2.5.6. SOUND WALL S498

Sound wall S498 on the right-of-way line of northbound SR-101 from Station 483+00 to 505+69 would provide feasible abatement for 13 single-family residences represented by Receptors R83 through R86. Table 7-24 summarizes predicted sound wall performance and associated cost allowance information. Figures 14 and 15 in Appendix A show the minimum length and height required for this sound wall to provide feasible traffic noise abatement.

***Severely Impacted Receptors:*** The future peak hour noise levels at four first row residences, 1580, 1586, and 1620 North Jameson Lane as well as 102 Hixon Road, represented by Receptor R84 would equal or exceed 75 dBA, thus, these residences would be considered severely impacted. If sound wall S498 is determined to be unreasonable, providing either a sound wall or acoustical treatment would still be required for these severely impacted residences. The severely impacted residences are denoted with Ⓘ in Figure 14 of Appendix A.

**Table 7-23. Summary of Reasonableness Determination Data – Sound Wall S489 [a]**

| Barrier I.D.: S489 | | | | | |
|---|---|---|---|---|---|
| **Predicted Sound Level without Barrier** | | | | | |
| Critical Design Receiver: R81 | | | | | |
| Design Year Noise Level, dBA $L_{eq}$(h): 74 | | | | | |
| Design Year Noise Level Minus Existing Noise Level: 1 | | | | | |
| **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 | 5 | 5 | 6 |
| Number of Benefited Residences | 0 | 1 | 4 | 4 | 4 |
| New Highway or More than 50% of Residences Predate 1978[b] | No | No | No | No | No |
| Reasonable Allowance Per Benefited Residence | NA | $35,000 | $35,000 | $35,000 | $37,000 |
| Total Reasonable Allowance | NA | $35,000 | $140,000 | $140,000 | $148,000 |

*Notes:* NA-Not applicable. Barrier does not provide 5 dB of noise reduction.

[a] A NADR will be prepared that will identify noise barrier construction cost information and the noise barriers that are reasonable from a cost perspective.

[b] This adjustment increases the abatement allowance by $10,000 if the project is new highway construction or if most of the benefited residences (more than 50%) existed before January 1, 1978.

**Table 7-24. Summary of Reasonableness Determination Data – Sound Wall S498 [a]**

| Barrier I.D.: S498 | | | | | |
|---|---|---|---|---|---|
| **Predicted Sound Level without Barrier** | | | | | |
| Critical Design Receiver: R84 | | | | | |
| Design Year Noise Level, dBA $L_{eq}$(h): 76 | | | | | |
| Design Year Noise Level Minus Existing Noise Level: 3 | | | | | |
| **Design Year with Barrier** | **8-Foot Barrier** | **10-Foot Barrier** | **12-Foot Barrier** | **14-Foot Barrier** | **16-Foot Barrier** |
| Barrier Noise Reduction, dB | 7 | 9 | 10 | 11 | 11 |
| Number of Benefited Residences | 10 | 11 | 13 | 15 | 17 |
| New Highway or More than 50% of Residences Predate 1978[b] | Yes | Yes | Yes | Yes | Yes |
| Reasonable Allowance Per Benefited Residence | $51,000 | $53,000 | $53,000 | $53,000 | $53,000 |
| Total Reasonable Allowance | $510,000 | $583,000 | $689,000 | $795,000 | $901,000 |

*Notes:* NA-Not applicable. Barrier does not provide 5 dB of noise reduction.

[a] A NADR will be prepared that will identify noise barrier construction cost information and the noise barriers that are reasonable from a cost perspective.

[b] This adjustment increases the abatement allowance by $10,000 if the project is new highway construction or if most of the benefited residences (more than 50%) existed before January 1, 1978.

## 7.2.6. Feasible Sound Walls – San Ysidro Road/Eucalyptus Lane to Butterfly Lane

### 7.2.6.1. SOUND WALL S519

Sound wall S519 on the right-of-way of southbound SR-101 from Station 505+29 to 532+69 would provide feasible abatement for 20 single-family and two multi-family residences represented by Receptors R92 through R97A with future noise impacts. These receptors represent outdoor use areas of residences south of SR-101 between Eucalyptus Lane and Olive Mill Road. Three single family residences represented by Receptor R96 would neither approach nor exceed the NAC of 67 dBA. These non-impacted residences would receive a benefit because sound wall S519 has to be in place to provide feasible noise abatement to adjacent impacted receptors. Table 7-25 summarizes predicted sound wall performance and associated cost allowance information. Figures 15 and 16 in Appendix A show the minimum length and height required for this sound wall to provide feasible traffic noise abatement.

***Receptors without Abatement:*** The future peak hour noise level at a multi-family residence represented by Receptor R97B adjacent to Olive Mill Road would exceed the NAC of 67 dBA; however, this barrier would not provide the required 5-dB reduction because of an opening for the Olive Mill Road Overcrossing.

***Severely Impacted Receptors:*** The future peak hour noise levels at three single-family residences, 1411, 1433, 1447 South Jameson Lane, and two multi-family residential units, 1403 South Jameson Lane, represented by Receptors R93 and R94, would equal or exceed 75 dBA; thus, these residences would be considered severely impacted. If sound wall S519 is determined to be unreasonable, providing either a sound wall or acoustical treatment would still be required for these severely impacted residences. The severely impacted residences are denoted with Ⓘ in Figure 15 of Appendix A.

**Outside widening option:** Under this widening option, two single family residences that are represented by Receptor R92 would not be impacted by future traffic noise. Even though Receptor R92 is not anticipated to receive traffic noise impact, sound wall S519 in front of Receptor R92 is still required to meet the feasibility requirement for the adjacent Receptor R92A. A portion of sound wall S519 from Station 505+29 to 511+00 could be lowered to 12 feet to provide a minimum 5-dB reduction for Receptor R92A. Sound wall S519 under the outside widening option would provide feasible abatement for 18 single-family and two multi-family residences represented by Receptors R92A through R97A with future noise impacts. Figures 15 and 16 in Appendix A show the minimum length and heights required for this sound wall to provide feasible traffic noise abatement.

**Table 7-25. Summary of Reasonableness Determination Data – Sound Wall S519 [a]**

| Barrier I.D.: S519 | | | | | |
|---|---|---|---|---|---|
| **Predicted Sound Level without Barrier** | | | | | |
| Critical Design Receiver: R93 | | | | | |
| Design Year Noise Level, dBA $L_{eq}$(h): 75 | | | | | |
| Design Year Noise Level Minus Existing Noise Level: 2 | | | | | |
| **Design Year with Barrier** | **8-Foot Barrier** | **10-Foot Barrier** | **12-Foot Barrier** | **14-Foot Barrier** | **16-Foot Barrier** |
| Barrier Noise Reduction, dB | 7 | 9 | 10 | 11 | 12 |
| Number of Benefited Residences | 14 | 17 | 25 | 31 | 33 |
| New Highway or More than 50% of Residences Predate 1978[b] | Yes | Yes | Yes | Yes | Yes |
| Reasonable Allowance Per Benefited Residence | $49,000 | $51,000 | $51,000 | $51,000 | $53,000 |
| Total Reasonable Allowance | $686,000 | $867,000 | $1.275M | $1.581M | $1.749M |

*Notes:* NA-Not applicable. Barrier does not provide 5 dB of noise reduction.

[a] A NADR will be prepared that will identify noise barrier construction cost information and the noise barriers that are reasonable from a cost perspective.

[b] This adjustment increases the abatement allowance by $10,000 if the project is new highway construction or if most of the benefited residences (more than 50%) existed before January 1, 1978.

### 7.2.6.2. SOUND WALL S520

Sound wall S520 on the right-of-way line of northbound SR-101 from Station 506+40 to 530+69 would provide feasible abatement for 16 single-family residences represented by Receptors R87 through R90A. These receptors represent outdoor use areas of residences north of SR-101 between San Ysidro Road and Olive Mill Road. The future peak hour traffic noise level at single-family residences represented by Receptors R87B, R87A, and R91 would neither approach nor exceed the NAC of 67 dBA; thus, no abatement measures would be necessary. Table 7-26 summarizes predicted sound wall performance and associated cost allowance information. Figures 15 and 16 in Appendix A show the minimum length and height required for this sound wall to provide feasible traffic noise abatement.

***Severely Impacted Receptors:*** The future peak hour noise levels at three first row residences, 1410 and 1430 North Jameson Lane as well as 1424 La Vereda Lane that are represented by Receptors R88 and R89 would equal 75 dBA without a barrier in place; thus, these residences would be considered severely impacted. If sound wall S520 is determined to be unreasonable, providing either a sound wall or acoustical treatment

would still be required for these severely impacted residences. The severely impacted residences are denoted with Ⓘ in Figure 15 of Appendix A.

**Table 7-26. Summary of Reasonableness Determination Data – Sound Wall S520 [a]**

| Barrier I.D.: S520 | | | | | |
|---|---|---|---|---|---|
| **Predicted Sound Level without Barrier** | | | | | |
| Critical Design Receiver: R88 | | | | | |
| Design Year Noise Level, dBA $L_{eq}$(h): 75 | | | | | |
| Design Year Noise Level Minus Existing Noise Level: 2 | | | | | |
| **Design Year with Barrier** | **8-Foot Barrier** | **10-Foot Barrier** | **12-Foot Barrier** | **14-Foot Barrier** | **16-Foot Barrier** |
| Barrier Noise Reduction, dB | 8 | 10 | 11 | 12 | 13 |
| Number of Benefited Residences | 16 | 16 | 17 | 18 | 21 |
| New Highway or More than 50% of Residences Predate 1978[b] | Yes | Yes | Yes | Yes | Yes |
| Reasonable Allowance Per Benefited Residence | $49,000 | $51,000 | $51,000 | $53,000 | $53,000 |
| Total Reasonable Allowance | $784,000 | $816,000 | $867,000 | $954,000 | $1.113M |

*Notes:* NA-Not applicable. Barrier does not provide 5 dB of noise reduction.

[a] A NADR will be prepared that will identify noise barrier construction cost information and the noise barriers that are reasonable from a cost perspective.

[b] This adjustment increases the abatement allowance by $10,000 if the project is new highway construction or if most of the benefited residences (more than 50%) existed before January 1, 1978.

#### 7.2.6.3. SOUND WALL S535

Sound wall S535 on the right-of-way of southbound SR-101 from Station 533+75 to 538+74 would provide feasible abatement for two single-family and four multi-family residential units represented by Receptors R98, R98A, and R99. A 6-foot high private property wall provides some reduction from highway noise for Receptor R99; thus, this receptor would not be severely impacted. Table 7-27 summarizes predicted sound wall performance and associated cost allowance information. Figure 16 in Appendix A shows the minimum length and height required for this sound wall to provide feasible traffic noise abatement.

***Severely Impacted Receptors:*** The future peak hour noise level at one residence, 75 Olive Mill Road, represented by Receptor R98 would exceed 75 dBA; thus, this residence would be considered severely impacted. If sound wall S535 is determined to be unreasonable, providing either the sound wall or acoustical treatment for Receptor R98 would still be required for this severely impacted residence. Although single- and multi-family residences represented by Receptors R98A and R99 behind sound wall S535 are not severely impacted, the entire barrier would be required to provide noise abatement for the severely impacted Receptor R98. This severely impacted residence is denoted with Ⓘ in Figure 16 of Appendix A.

**Table 7-27. Summary of Reasonableness Determination Data – Sound Wall S535 [a]**

| Barrier I.D.: S535 | | | | | |
|---|---|---|---|---|---|
| **Predicted Sound Level without Barrier** | | | | | |
| Critical Design Receiver: R98 | | | | | |
| Design Year Noise Level, dBA $L_{eq}$(h): 76 | | | | | |
| Design Year Noise Level Minus Existing Noise Level: 3 | | | | | |
| **Design Year with Barrier** | **8-Foot Barrier** | **10-Foot Barrier** | **12-Foot Barrier** | **14-Foot Barrier** | **16-Foot Barrier** |
| Barrier Noise Reduction, dB | 8 | 9 | 10 | 10 | 11 |
| Number of Benefited Residences | 1 | 3 | 6 | 6 | 6 |
| New Highway or More than 50% of Residences Predate 1978[b] | Yes | No | No | No | No |
| Reasonable Allowance Per Benefited Residence | $51,000 | $43,000 | $43,000 | $43,000 | $43,000 |
| Total Reasonable Allowance | $51,000 | $129,000 | $258,000 | $258,000 | $258,000 |

*Notes:* NA-Not applicable. Barrier does not provide 5 dB of noise reduction.

[a] A NADR will be prepared that will identify noise barrier construction cost information and the noise barriers that are reasonable from a cost perspective.

[b] This adjustment increases the abatement allowance by $10,000 if the project is new highway construction or if most of the benefited residences (more than 50%) existed before January 1, 1978.

### 7.2.6.4. SOUND WALL S549

Sound wall S549 on the southbound shoulder of SR-101 from Station 538+95 to 559+00 would provide feasible abatement for outdoor use areas of 14 single-family and seven multi-family residences represented by Receptors R100A through R103. Table 7-28 summarizes predicted sound wall performance and associated cost allowance information. Figure 16 in Appendix A shows the minimum length and height required for this sound wall to provide feasible traffic noise abatement.

**Table 7-28. Summary of Reasonableness Determination Data – Sound Wall S549 [a]**

| Barrier I.D.: S549 | | | | | |
|---|---|---|---|---|---|
| **Predicted Sound Level without Barrier** | | | | | |
| Critical Design Receiver: R103 | | | | | |
| Design Year Noise Level, dBA $L_{eq}$(h): 70 | | | | | |
| Design Year Noise Level Minus Existing Noise Level: 1 | | | | | |
| **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 | 7 | 8 | 8 |
| Number of Benefited Residences | 20 | 20 | 21 | 21 | 21 |
| New Highway or More than 50% of Residences Predate 1978[b] | Yes | Yes | Yes | Yes | Yes |
| Reasonable Allowance Per Benefited Residence | $45,000 | $47,000 | $47,000 | $47,000 | $47,000 |
| Total Reasonable Allowance | $900,000 | $940,000 | $987,000 | $987,000 | $987,000 |

*Notes:* NA-Not applicable. Barrier does not provide 5 dB of noise reduction.

[a] A NADR will be prepared that will identify noise barrier construction cost information and the noise barriers that are reasonable from a cost perspective.

[b] This adjustment increases the abatement allowance by $10,000 if the project is new highway construction or if most of the benefited residences (more than 50%) existed before January 1, 1978.

# Chapter 8. Construction Noise

During the construction phases of the project, noise from construction activities may intermittently dominate the noise environment in the immediate area of construction. Construction noise is regulated by Caltrans' Standard Specifications. A new section of the 2006 Standard Specifications has been created and was posted as an amendment on the Headquarters' Office Engineer server on February 11th, 2009. It is titled Section 14 "Environmental Stewardship" and was derived from pre-existing portions of the Standard Specifications and standard special provisions which have been consolidated, reorganized, and converted into plain language. These requirements state that noise levels generated during construction shall comply with applicable local, state, and federal regulations and that all equipment shall be fitted with adequate mufflers according to the manufacturers' specifications.

Table 8-1 summarizes noise levels produced by construction equipment commonly used on roadway construction projects. As indicated, equipment involved in construction is expected to generate noise levels ranging from 80 to 89 dBA at a distance of 50 feet. Noise produced by construction equipment would be reduced over distance at a rate of about 6 dB per doubling of distance. No significant adverse noise impacts from construction are anticipated because construction would be conducted in accordance with Caltrans' Standard Specifications and would be short-term, intermittent, and dominated by local traffic noise.

Sound control shall conform to the provisions in Section 14-8.02, "Noise Control," of the Standard Specifications.

**Table 8-1. Construction Equipment Noise**

| Equipment | Maximum Noise Level (dBA at 50 feet) |
|---|---|
| Scrapers | 89 |
| Bulldozers | 85 |
| Heavy Trucks | 88 |
| Backhoe | 80 |
| Pneumatic Tools | 85 |
| Concrete Pump | 82 |

*Source:* Federal Transit Administration, 2006

Caltrans Standard Specifications Section 14-8.02 requires the following mandatory noise abatement measures:

- Per Section 14-8.02 Noise Control, do not exceed 86 dBA at 50 feet from the job site activities from 9 PM to 6 AM
- Each internal combustion engine, used for any purpose on the job, or related to the job, shall be equipped with a muffler of a type recommended by the manufacturer. No internal combustion engine shall be operated on the job site without an appropriate muffler.

In addition to the abatement measures listed above, implementing the following recommended measures would help minimize temporary construction noise impacts:

- Minimize construction activities at residential areas during evening, nighttime, weekend, and holiday periods. Noise impacts are typically minimized when construction activities are performed during daytime hours. However, nighttime construction may be desirable (e.g. in commercial areas where businesses may be disrupted during daytime hours) or necessary to avoid major traffic disruption.
- If possible, avoid using impact pile driving for bridge demo/reconstruction. Utilize less noise intrusive pile installation techniques such as vibratory pile driving or CIDH piling.
- In case of construction noise complaints by the public, the construction manager shall be notified and the specific noise producing activity may be changed, altered, or temporarily suspended if necessary. Consult district noise staff if especially egregious noise producing activities can not be reduced in the field.
- All equipment shall have sound-control devices no less effective than those provided on the original equipment. No equipment shall have an un-muffled exhaust.
- When feasible, the use of loud sound signals (e.g. back-up warning buzzers or alarms) shall be avoided in favor of light warnings except those required by safety laws for the protection of personnel.
- Plan to conduct truck loading, unloading and hauling operations so that noise is kept to a minimum by carefully selecting routes to avoid going through residential neighborhoods to the greatest possible extent.
- Use and relocate temporary barriers, if needed, to protect sensitive receptors from excessive construction noise generated by small items such as compressors, generators, pneumatic tools, and jackhammers. Noise barriers can be made of heavy plywood, moveable insulated sound blankets, or other best available control techniques.
- As directed by the Caltrans' resident engineer, the contractor shall implement appropriate additional noise abatement measures including, but not limited to, changing the location of stationary construction equipment, turning off idling equipment, rescheduling construction activity, notifying adjacent residents in advance of construction work, or installing acoustic barriers around stationary construction noise sources.
- When it would not interfere with other construction activities, construct recommended permanent sound walls during the first phase of construction to protect sensitive receptors from subsequent construction noise, dust, light, glare, etc.

# Chapter 9. References


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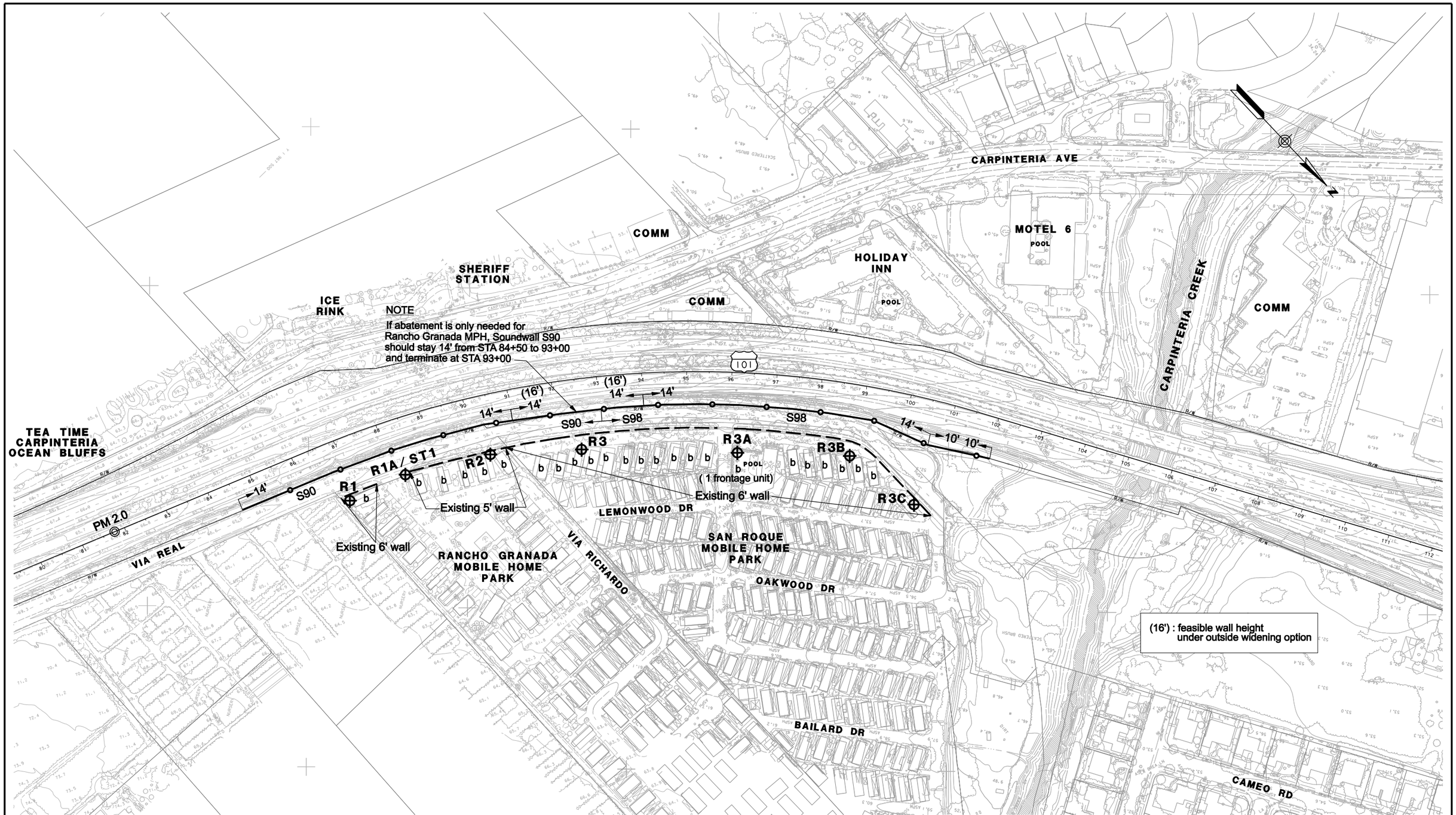
PSHHC, 2009. Peoples' Self-Help Housing Corporation. e-mail from Ken Trigueiro, Director of Rental Housing Development, November 30.

# **Appendix A** Modeled Receiver and Feasible Noise Barrier Locations




**LEGEND**

| | | | |
|---|---|---|---|
| ⊕ Rxx | – NOISE RECEPTOR SITE | SFR OR S | – SINGLE FAMILY RESIDENCE |
| ⊕ LT | – LONGTERM MEASUREMENT | MFR OR M | – MULTI–FAMILY RESIDENCE |
| ⊕ ST | – SHORTTERM MEASUREMENT | COMM OR C | – COMMERCIAL |
| b | – BENEFITED RESIDENCE | —o——o— | – SOUNDWALL |
| Ⓘ | – SEVERELY IMPACTED RECEPTOR | — — — — | – EXISTING WALL |

1in : 200ft

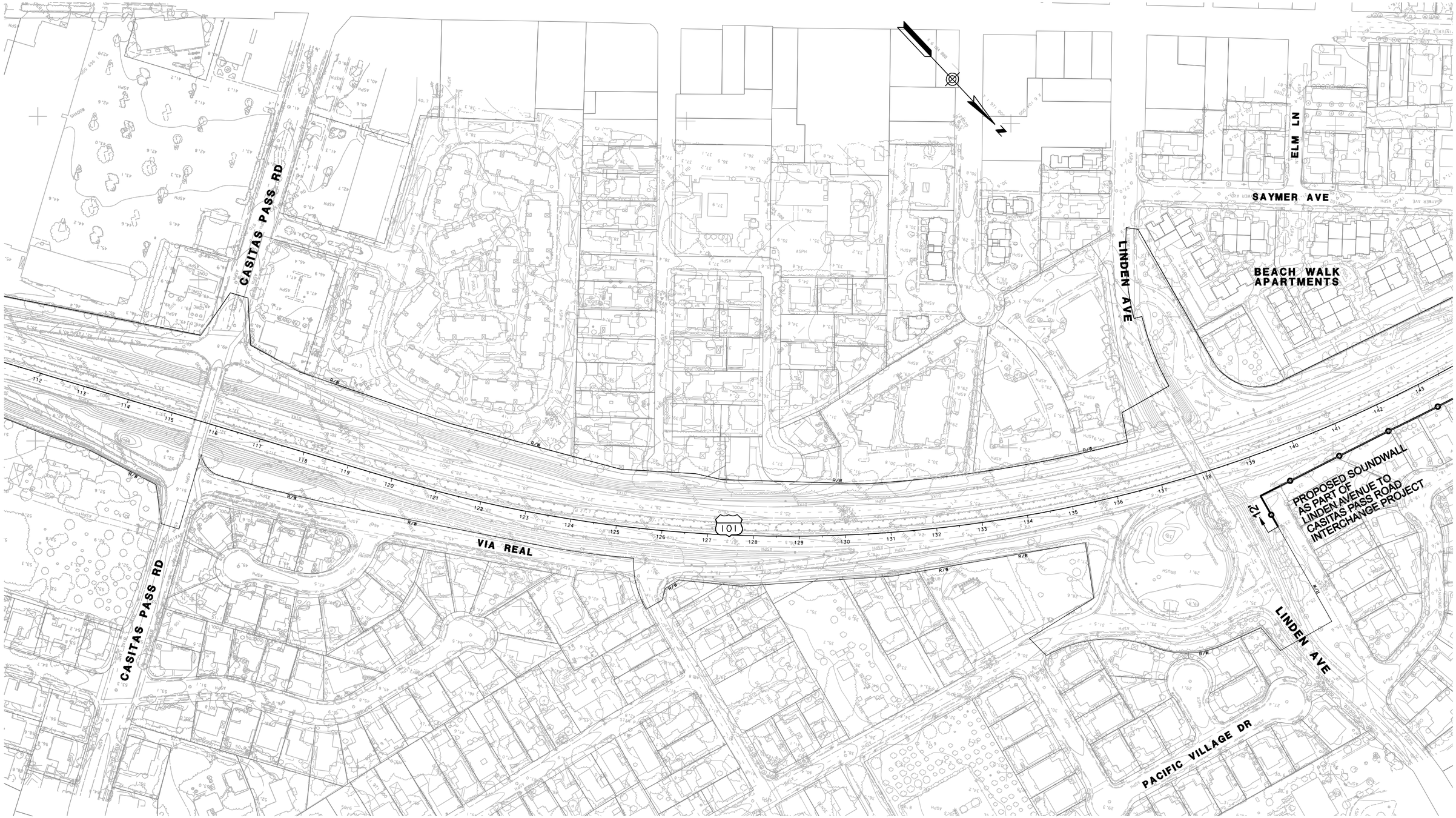
0 ft 100ft 200ft 300ft

**PARSONS**
100 WEST WALNUT ST.
PASADENA, CA 91124
(626) 440-6100

**SOUTH COAST 101 HOV LANES**
**NOISE RECEPTOR & BARRIER LOCATIONS**
**BUILD ALTERNATIVE**

MARCH 25, 2010

FIGURE 1




**LEGEND**

- Rxx – NOISE RECEPTOR SITE
- LT – LONGTERM MEASUREMENT
- ST – SHORTTERM MEASUREMENT
- b – BENEFITED RESIDENCE
- I – SEVERELY IMPACTED RECEPTOR
- SFR OR S – SINGLE FAMILY RESIDENCE
- MFR OR M – MULTI-FAMILY RESIDENCE
- COMM OR C – COMMERCIAL
- SOUNDWALL
- EXISTING WALL

1in : 200ft

0 ft 100ft 200ft 300ft

PARSONS
100 WEST WALNUT ST.
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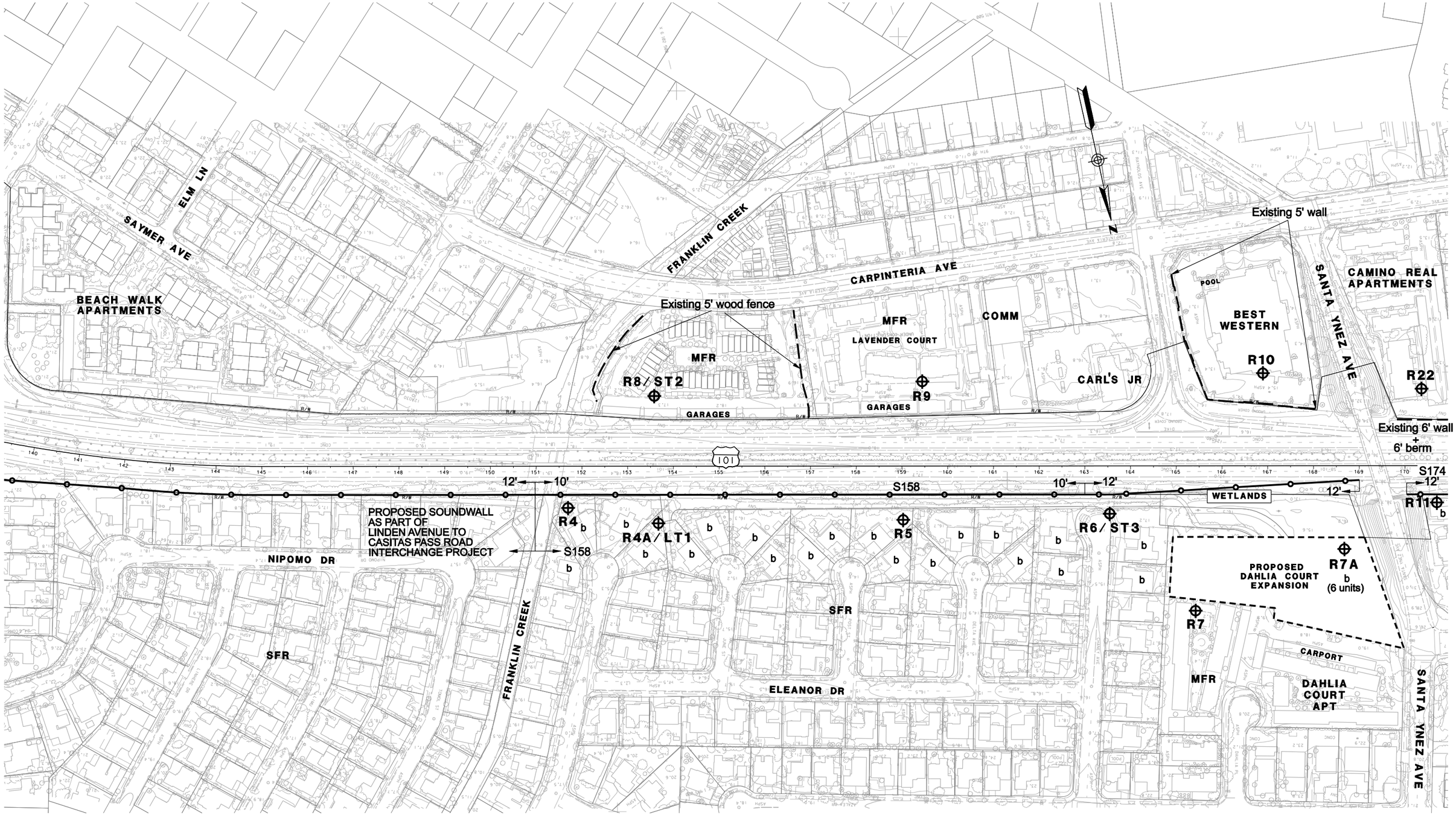
FIGURE 2

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- SOUNDWALL
- EXISTING WALL

1in : 200ft

0 ft 100ft 200ft 300ft

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**NOISE RECEPTOR & BARRIER LOCATIONS**
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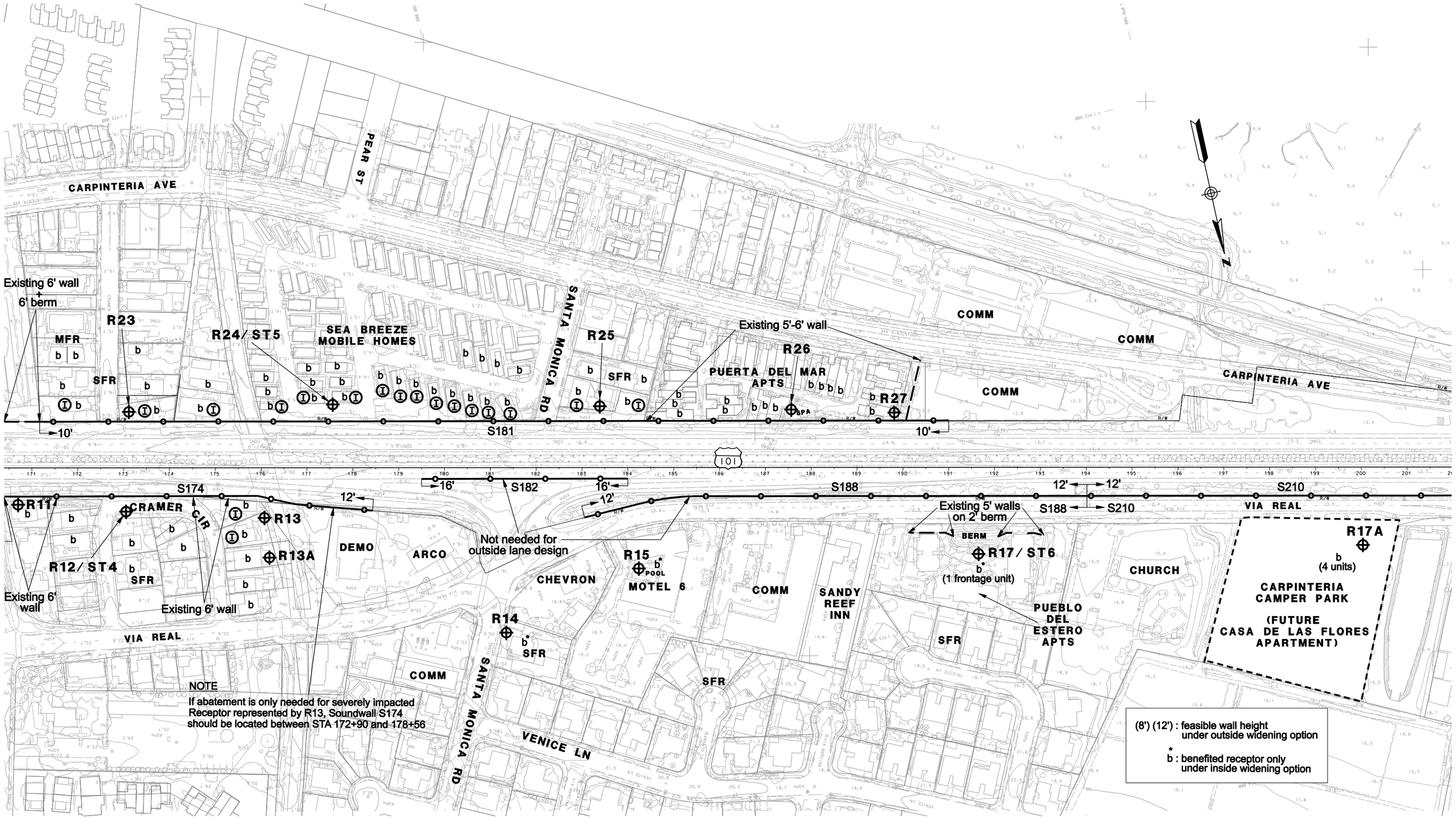
FIGURE 3




**LEGEND**

| | | | |
|---|---|---|---|
| Rxx | – NOISE RECEPTOR SITE | SFR OR S | – SINGLE FAMILY RESIDENCE |
| LT | – LONGTERM MEASUREMENT | MFR OR M | – MULTI–FAMILY RESIDENCE |
| ST | – SHORTTERM MEASUREMENT | COMM OR C | – COMMERCIAL |
| b | – BENEFITED RESIDENCE | | – SOUNDWALL |
| I | – SEVERELY IMPACTED RECEPTOR | | – EXISTING WALL |

1in : 200ft

0 ft 100ft 200ft 300ft

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**NOISE RECEPTOR & BARRIER LOCATIONS**
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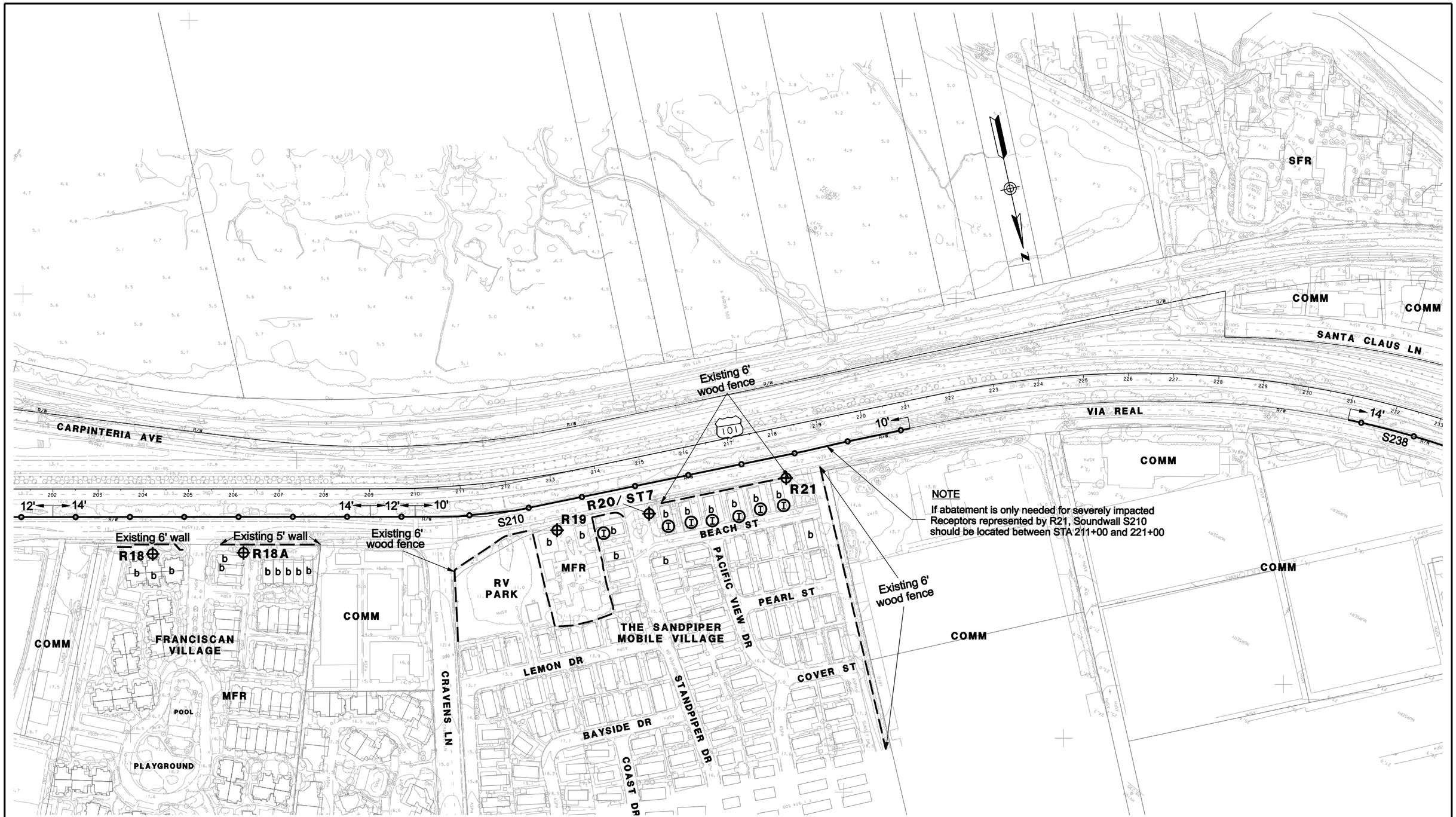
FIGURE 4




**LEGEND**

- ⊕Rxx – NOISE RECEPTOR SITE
- ⊕LT – LONGTERM MEASUREMENT
- ⊕ST – SHORTTERM MEASUREMENT
- b – BENEFITED RESIDENCE
- Ⓘ – SEVERELY IMPACTED RECEPTOR
- SFR OR S – SINGLE FAMILY RESIDENCE
- MFR OR M – MULTI-FAMILY RESIDENCE
- COMM OR C – COMMERCIAL
- —o——o– SOUNDWALL
- — — — — EXISTING WALL

1in : 200ft

0 ft 100ft 200ft 300ft

PARSONS
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**SOUTH COAST 101 HOV LANES**
**NOISE RECEPTOR & BARRIER LOCATIONS**
**BUILD ALTERNATIVE**

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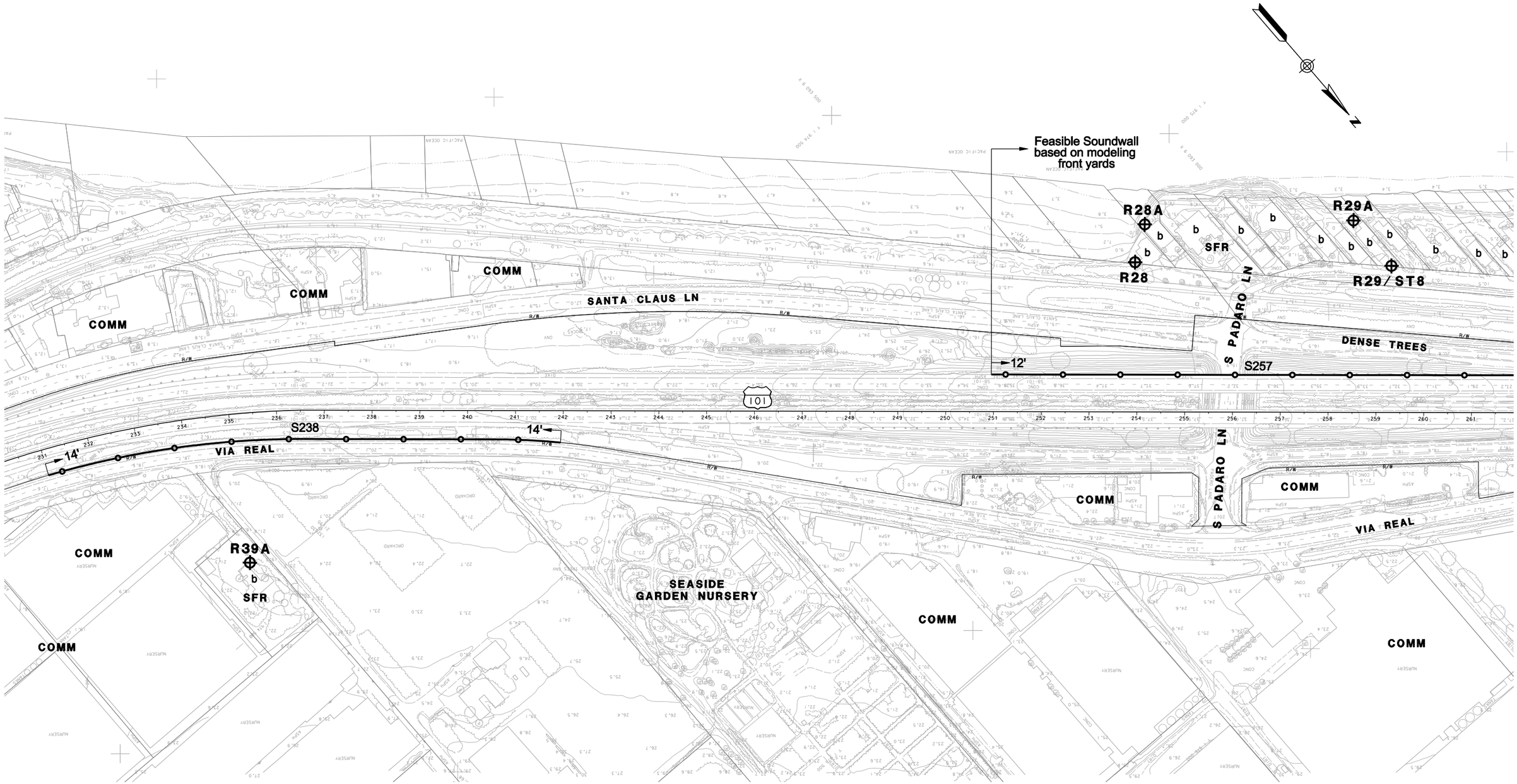
FIGURE 5




**LEGEND**

- ⊕Rxx – NOISE RECEPTOR SITE
- ⊕LT – LONGTERM MEASUREMENT
- ⊕ST – SHORTTERM MEASUREMENT
- b – BENEFITED RESIDENCE
- Ⓘ – SEVERELY IMPACTED RECEPTOR
- SFR OR S – SINGLE FAMILY RESIDENCE
- MFR OR M – MULTI–FAMILY RESIDENCE
- COMM OR C – COMMERCIAL
- –o——o– SOUNDWALL
- — — — — EXISTING WALL

1in : 200ft

0 ft 100ft 200ft 300ft

PARSONS
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**SOUTH COAST 101 HOV LANES**
**NOISE RECEPTOR & BARRIER LOCATIONS**
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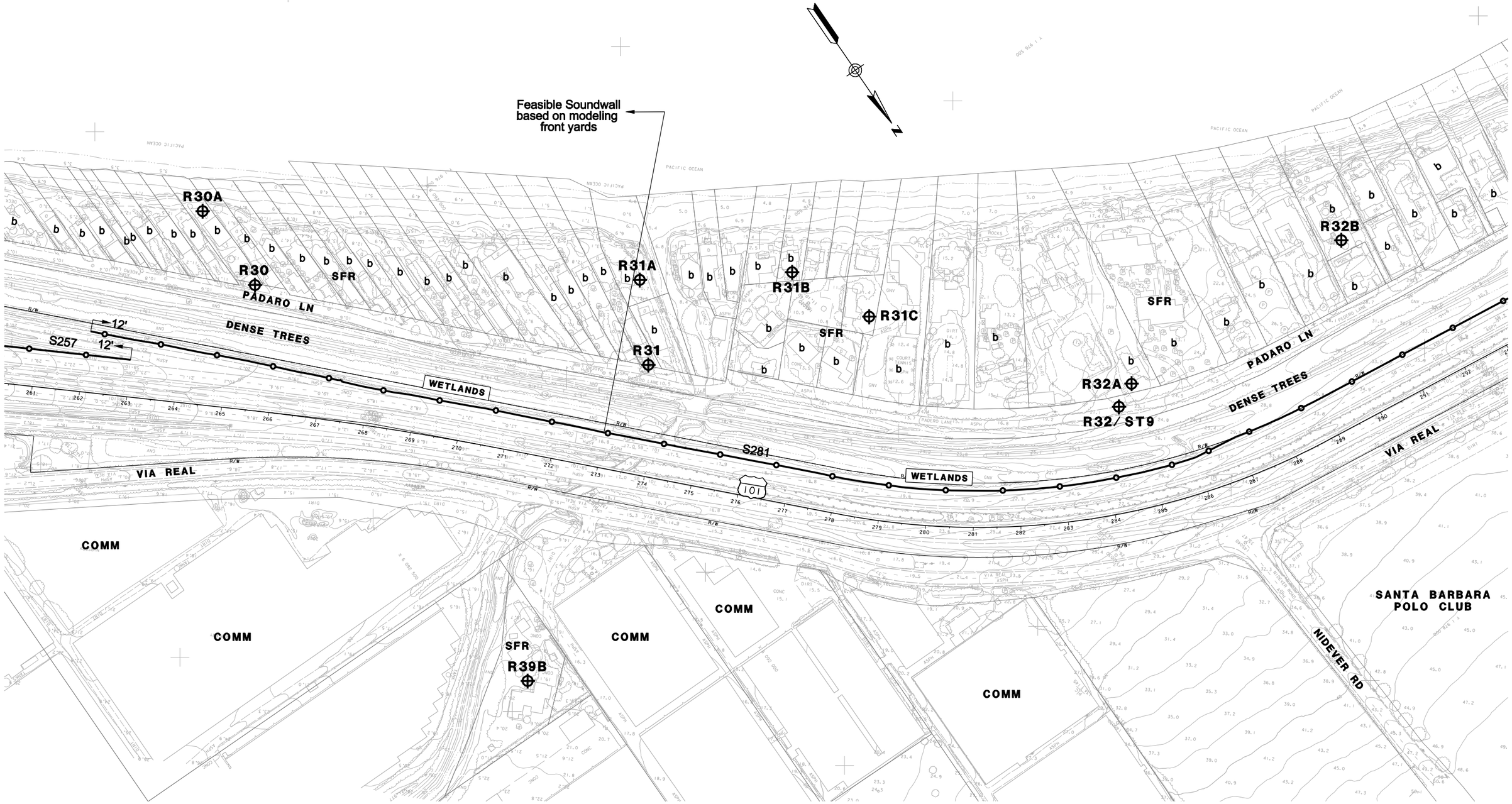
FIGURE 6




**LEGEND**

- ⊕Rxx – NOISE RECEPTOR SITE
- ⊕LT – LONGTERM MEASUREMENT
- ⊕ST – SHORTTERM MEASUREMENT
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- COMM OR C – COMMERCIAL
- —o—o— – SOUNDWALL
- — — — — – EXISTING WALL

1in : 200ft

0 ft 100ft 200ft 300ft

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**SOUTH COAST 101 HOV LANES**
**NOISE RECEPTOR & BARRIER LOCATIONS**
**BUILD ALTERNATIVE**

MARCH 25, 2010

FIGURE 7

**LEGEND**

| | | | |
|---|---|---|---|
| ⊕ Rxx | – NOISE RECEPTOR SITE | SFR OR S | – SINGLE FAMILY RESIDENCE |
| ⊕ LT | – LONGTERM MEASUREMENT | MFR OR M | – MULTI-FAMILY RESIDENCE |
| ⊕ ST | – SHORTTERM MEASUREMENT | COMM OR C | – COMMERCIAL |
| b | – BENEFITED RESIDENCE | —o—o— | – SOUNDWALL |
| Ⓘ | – SEVERELY IMPACTED RECEPTOR | — — — — | – EXISTING WALL |

1in : 200ft

0 ft 100ft 200ft 300ft

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**SOUTH COAST 101 HOV LANES**
**NOISE RECEPTOR & BARRIER LOCATIONS**
**BUILD ALTERNATIVE**

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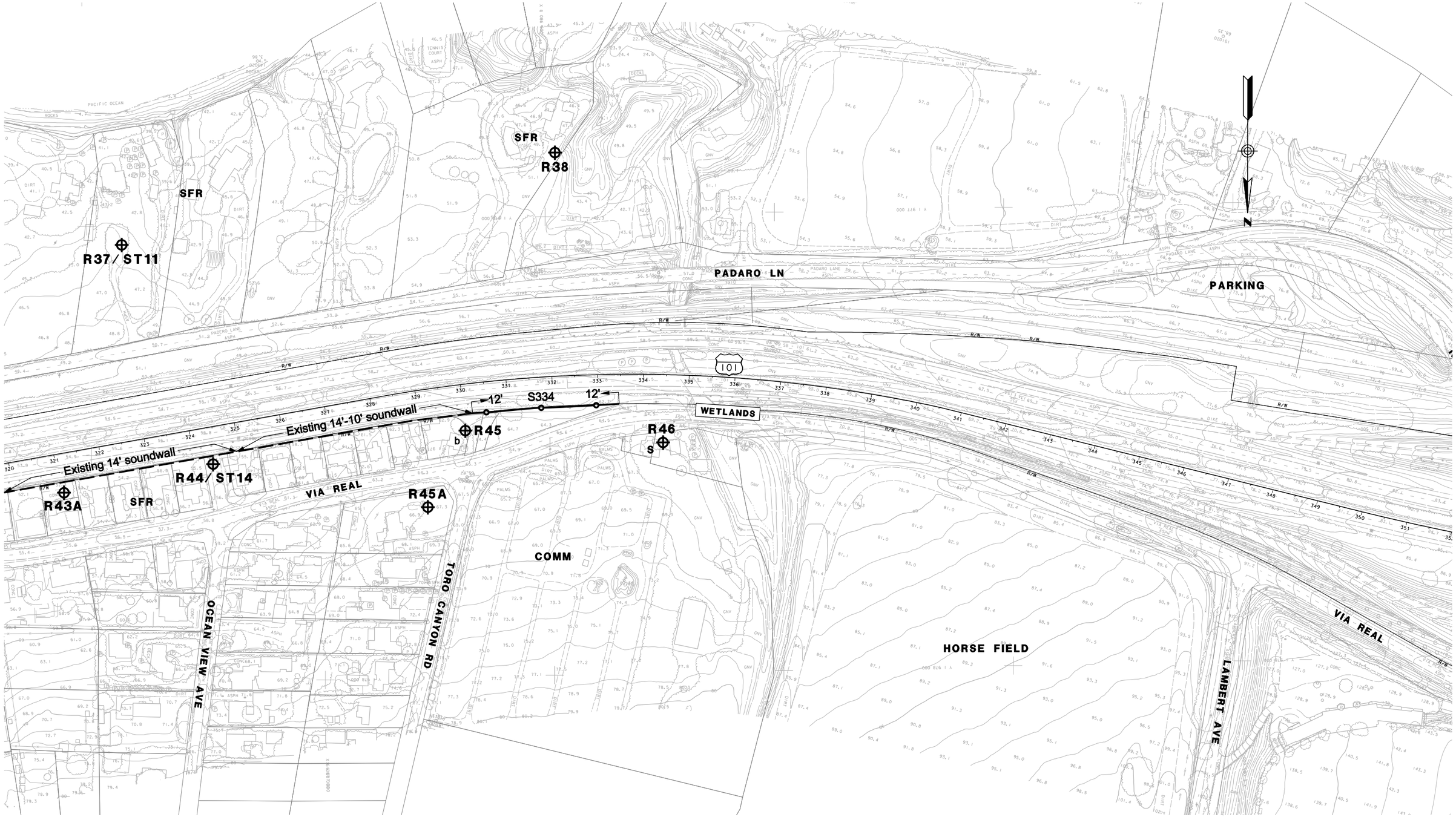
FIGURE 8




**LEGEND**

- Rxx – NOISE RECEPTOR SITE
- LT – LONGTERM MEASUREMENT
- ST – SHORTTERM MEASUREMENT
- b – BENEFITED RESIDENCE
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- MFR OR M – MULTI–FAMILY RESIDENCE
- COMM OR C – COMMERCIAL
- SOUNDWALL
- EXISTING WALL

1in : 200ft

0 ft 100ft 200ft 300ft

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**SOUTH COAST 101 HOV LANES**
**NOISE RECEPTOR & BARRIER LOCATIONS**
**BUILD ALTERNATIVE**

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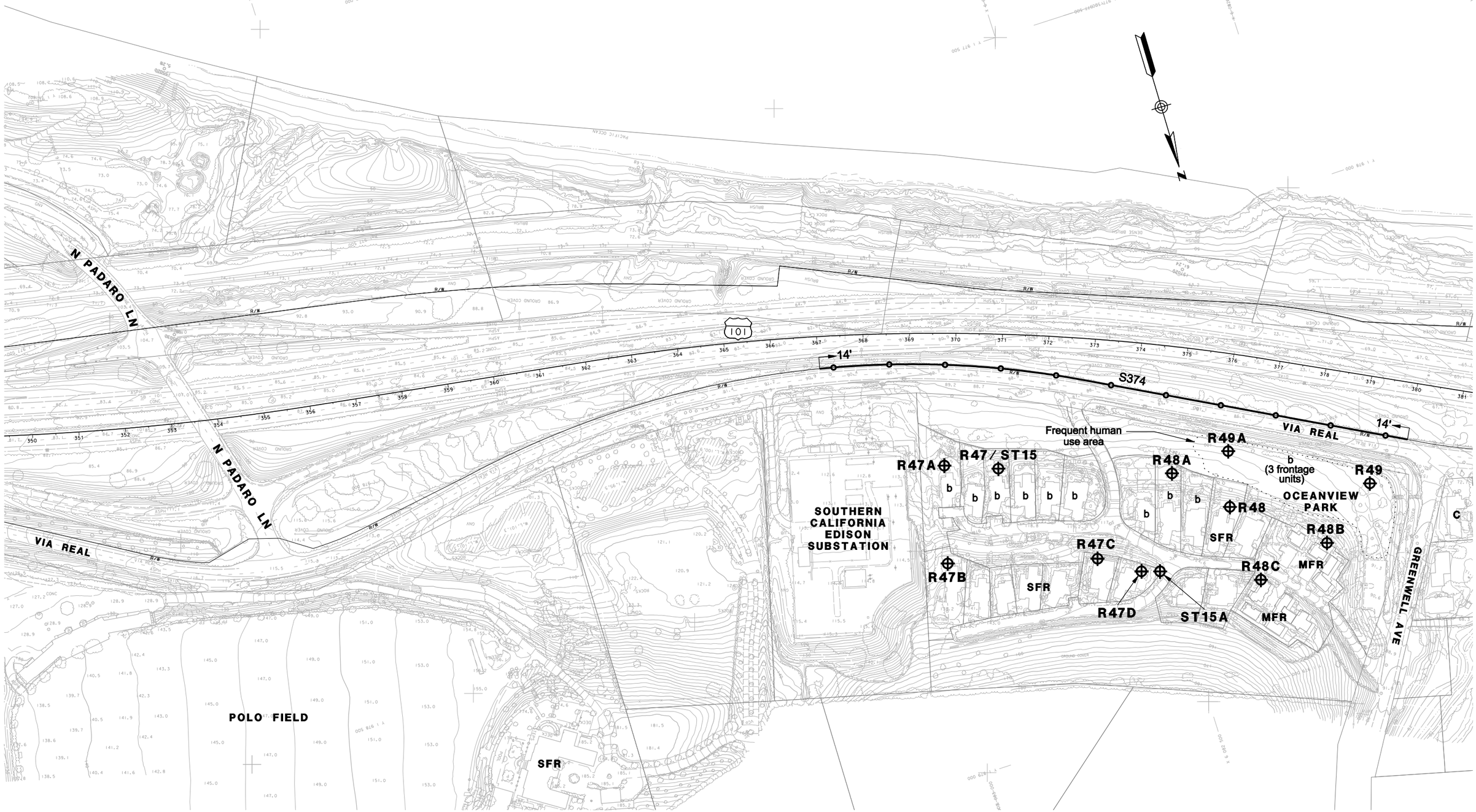
FIGURE 9




**LEGEND**

- ⊕Rxx – NOISE RECEPTOR SITE
- ⊕LT – LONGTERM MEASUREMENT
- ⊕ST – SHORTTERM MEASUREMENT
- b – BENEFITED RESIDENCE
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- MFR OR M – MULTI–FAMILY RESIDENCE
- COMM OR C – COMMERCIAL
- —o—o— – SOUNDWALL
- — — — — – EXISTING WALL

1in : 200ft

0 ft 100ft 200ft 300ft

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**SOUTH COAST 101 HOV LANES**
**NOISE RECEPTOR & BARRIER LOCATIONS**
**BUILD ALTERNATIVE**

MARCH 25, 2010 | FIGURE 10

**LEGEND**

- Rxx – NOISE RECEPTOR SITE
- LT – LONGTERM MEASUREMENT
- ST – SHORTTERM MEASUREMENT
- b – BENEFITED RESIDENCE
- I – SEVERELY IMPACTED RECEPTOR
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- COMM OR C – COMMERCIAL
- SOUNDWALL
- EXISTING WALL

1in : 200ft

0 ft 100ft 200ft 300ft

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# SOUTH COAST 101 HOV LANES
# NOISE RECEPTOR & BARRIER LOCATIONS
# BUILD ALTERNATIVE

MARCH 25, 2010

FIGURE 11

(b) : benefited residence only under outside lane design

* b : benefited residence only under inside lane design

LOOKOUT PARK
PLAYGROUND
R66/ ST19
WALLACE AVE
EVANS AVE
S405
10'
Existing 6' wall
101
S414
16'
14'
14'
16'
16'
S424
STORAGE
R61
R61A
R61B
R60
R59
(1 frontage units)
SUMMERLAND INN
COMM
R58A
MFR
MOBILE HOMES
ORTEGA HILL RD
R58/ ST20
POST OFFICE
RS6.1
RS6.2
MFR
(4 units)
RS6.3/ CS13
RS6.4
RS6.5
RS6.7
RS6.8
M
(2 units)
RS6.10
RS6.11
LILLIE AVE
RS5.4/ CS11
RS6.9/ CS15
RS6.15
RS6.12/ CS14
RS6.13
RS6.14
RS6.6
SEARS ST
ORTEGA HILL RD
BANNER AVE
RS5.10
EVANS AVE
COMM
COMM
COMM
EASEMENT 4/27/44 601 OFFICIAL RECORDS 219

**LEGEND**

| | | | |
|---|---|---|---|
| Rxx | – NOISE RECEPTOR SITE | SFR OR S | – SINGLE FAMILY RESIDENCE |
| LT | – LONGTERM MEASUREMENT | MFR OR M | – MULTI-FAMILY RESIDENCE |
| ST | – SHORTTERM MEASUREMENT | COMM OR C | – COMMERCIAL |
| b | – BENEFITED RESIDENCE | | – SOUNDWALL |
| I | – SEVERELY IMPACTED RECEPTOR | | – EXISTING WALL |

1in : 200ft

0 ft 100ft 200ft 300ft

PARSONS
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PASADENA, CA 91124
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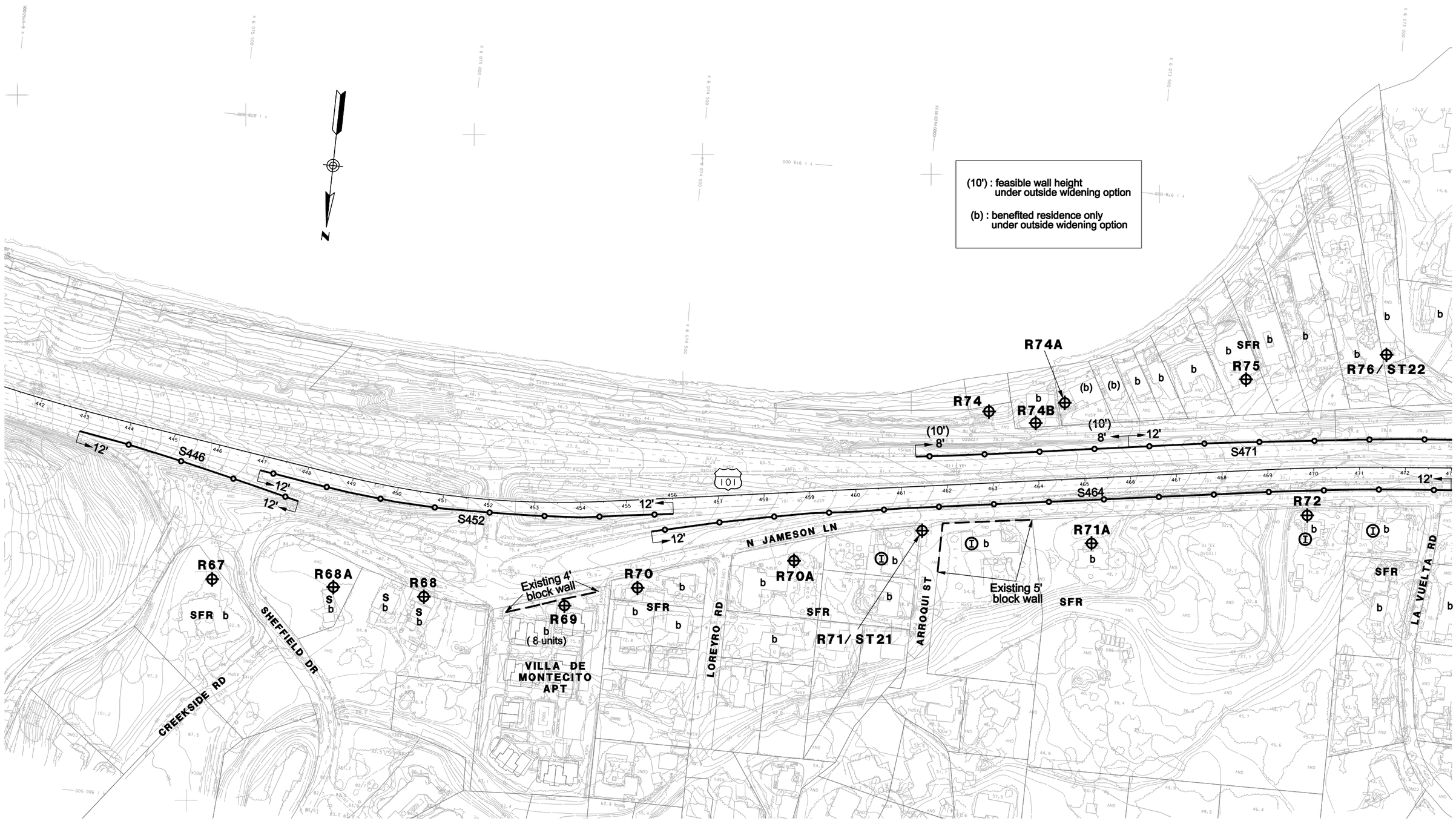
**SOUTH COAST 101 HOV LANES**
**NOISE RECEPTOR & BARRIER LOCATIONS**
**BUILD ALTERNATIVE**

MARCH 25, 2010

FIGURE 12




**LEGEND**

- Rxx – NOISE RECEPTOR SITE
- LT – LONGTERM MEASUREMENT
- ST – SHORTTERM MEASUREMENT
- b – BENEFITED RESIDENCE
- I – SEVERELY IMPACTED RECEPTOR
- SFR OR S – SINGLE FAMILY RESIDENCE
- MFR OR M – MULTI-FAMILY RESIDENCE
- COMM OR C – COMMERCIAL
- SOUNDWALL
- EXISTING WALL

1in : 200ft

0 ft 100ft 200ft 300ft

PARSONS
100 WEST WALNUT ST.
PASADENA, CA 91124
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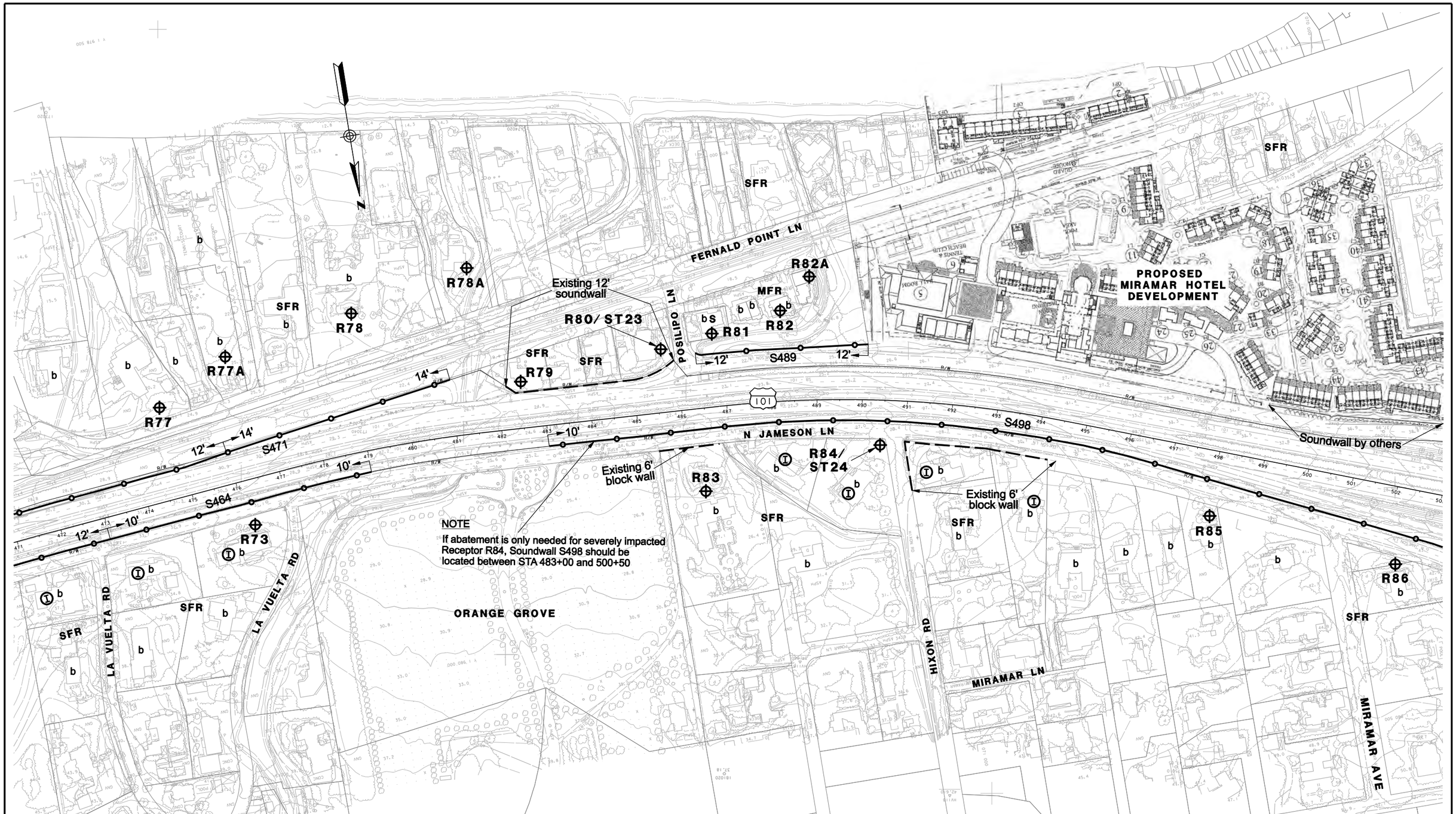
**SOUTH COAST 101 HOV LANES**
**NOISE RECEPTOR & BARRIER LOCATIONS**
**BUILD ALTERNATIVE**

MARCH 25, 2010

FIGURE 13




**LEGEND**

| | | | |
|---|---|---|---|
| Rxx | – NOISE RECEPTOR SITE | SFR OR S | – SINGLE FAMILY RESIDENCE |
| LT | – LONGTERM MEASUREMENT | MFR OR M | – MULTI–FAMILY RESIDENCE |
| ST | – SHORTTERM MEASUREMENT | COMM OR C | – COMMERCIAL |
| b | – BENEFITED RESIDENCE | | – SOUNDWALL |
| I | – SEVERELY IMPACTED RECEPTOR | | – EXISTING WALL |

1in : 200ft

0 ft 100ft 200ft 300ft

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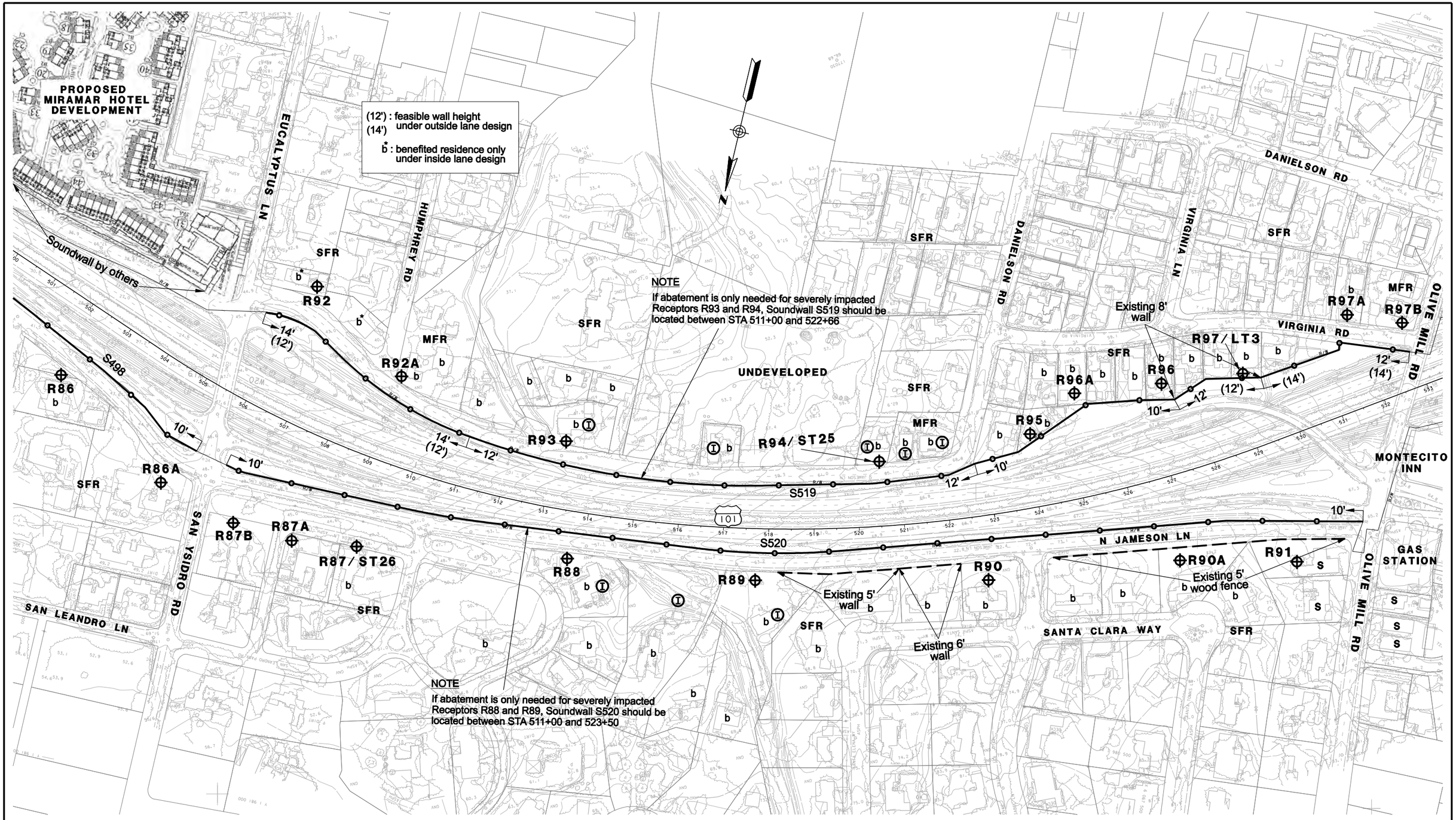
**SOUTH COAST 101 HOV LANES**
**NOISE RECEPTOR & BARRIER LOCATIONS**
**BUILD ALTERNATIVE**

MARCH 25, 2010

FIGURE 14




**LEGEND**

| | | | |
|---|---|---|---|
| Rxx | – NOISE RECEPTOR SITE | SFR OR S | – SINGLE FAMILY RESIDENCE |
| LT | – LONGTERM MEASUREMENT | MFR OR M | – MULTI–FAMILY RESIDENCE |
| ST | – SHORTTERM MEASUREMENT | COMM OR C | – COMMERCIAL |
| b | – BENEFITED RESIDENCE | | – SOUNDWALL |
| I | – SEVERELY IMPACTED RECEPTOR | | – EXISTING WALL |

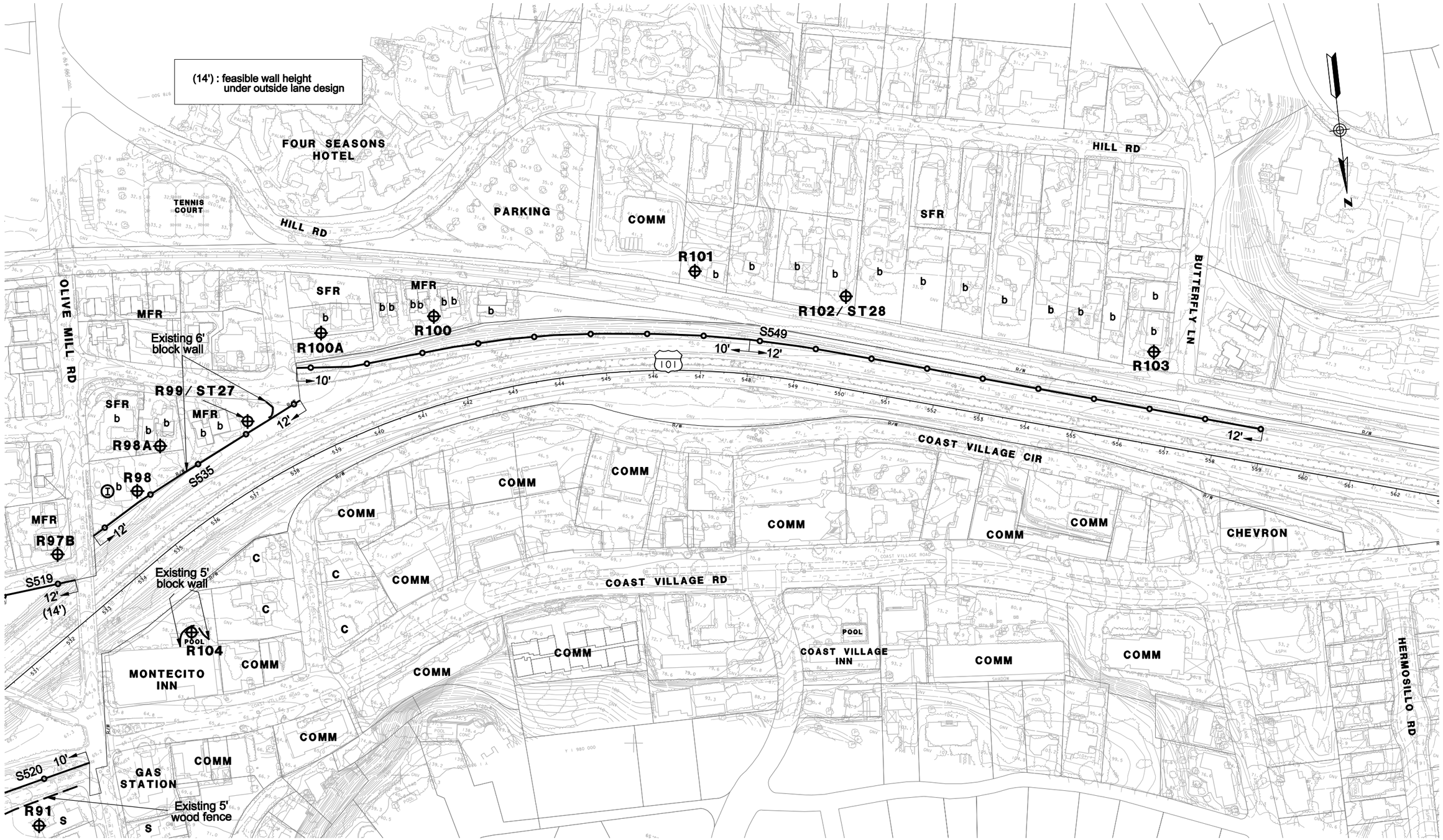
1in : 200ft

0 ft 100ft 200ft 300ft

**PARSONS**
100 WEST WALNUT ST.
PASADENA, CA 91124
(626) 440-6100

**SOUTH COAST 101 HOV LANES**
**NOISE RECEPTOR & BARRIER LOCATIONS**
**BUILD ALTERNATIVE**

MARCH 25, 2010 | FIGURE 15




**LEGEND**

| | | | |
|---|---|---|---|
| Rxx | – NOISE RECEPTOR SITE | SFR OR S | – SINGLE FAMILY RESIDENCE |
| LT | – LONGTERM MEASUREMENT | MFR OR M | – MULTI–FAMILY RESIDENCE |
| ST | – SHORTTERM MEASUREMENT | COMM OR C | – COMMERCIAL |
| b | – BENEFITED RESIDENCE | | – SOUNDWALL |
| I | – SEVERELY IMPACTED RECEPTOR | | – EXISTING WALL |

1in : 200ft

0 ft 100ft 200ft 300ft

**PARSONS**

100 WEST WALNUT ST.
PASADENA, CA 91124
(626) 440-6100

**SOUTH COAST 101 HOV LANES**
**NOISE RECEPTOR & BARRIER LOCATIONS**
**BUILD ALTERNATIVE**

MARCH 25, 2010

FIGURE 16

# **Appendix B** Traffic Data Used in TNM Modeling

# TABLE B-1 – EXISTING AM PEAK HOURS NORTHBOUND TRAFFIC VOLUMES

| Description of Traffic Lane | Number of Lanes | Total Peak Hour Traffic Volumes [1] | Travel Speeds, mph | Volumes by Vehicle Type | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Cars | % Cars | Medium Trucks | % MT | Heavy Trucks | %HT |
| ***Northbound Highway 101 Main Lines*** | | | | | | | | | |
| *101 - Bailard Ave to Casitas Pass Rd* | | | | | | | | | |
| Inside Lane | 1 | 1,220 | 65 | 1,128 | | 42 | | 50 | |
| Outside Lane | 1 | 1,220 | 65 | 1,128 | | 42 | | 50 | |
| *Subtotal* | 2 | 2,440 | | 2,256 | 92.46% | 83 | 3.42% | 100 | 4.08% |
| *101 - Casitas Pass Rd to Linden Ave* | | | | | | | | | |
| Inside Lane | 1 | 1,158 | 65 | 1,066 | | 42 | | 50 | |
| Outside Lane | 1 | 1,158 | 65 | 1,066 | | 42 | | 50 | |
| *Subtotal* | 2 | 2,316 | | 2,132 | 92.06% | 83 | 3.60% | 100 | 4.30% |
| *101 - Linden Ave to Santa Monica Rd* | | | | | | | | | |
| Inside Lane | 1 | 1,362 | 65 | 1,265 | | 45 | | 52 | |
| Outside Lane | 1 | 1,362 | 65 | 1,265 | | 45 | | 52 | |
| *Subtotal* | 2 | 2,724 | | 2,530 | 92.88% | 89 | 3.28% | 104 | 3.81% |
| *101 - Santa Monica Rd to S Padero Ln* | | | | | | | | | |
| Inside Lane | 1 | 1,420 | 65 | 1,323 | | 45 | | 52 | |
| Outside Lane | 1 | 1,420 | 65 | 1,323 | | 45 | | 52 | |
| *Subtotal* | 2 | 2,839 | | 2,645 | 93.17% | 90 | 3.18% | 104 | 3.66% |
| *101 - S Padero Ln to N Padaro Ln* | | | | | | | | | |
| Inside Lane | 1 | 1,415 | 65 | 1,316 | | 47 | | 52 | |
| Outside Lane | 1 | 1,414 | 65 | 1,315 | | 47 | | 52 | |
| *Subtotal* | 2 | 2,829 | | 2,631 | 92.98% | 94 | 3.33% | 104 | 3.67% |
| *101 - N Padaro Ln to Hollister St* | | | | | | | | | |
| Inside Lane | 1 | 1,549 | 65 | 1,448 | | 48 | | 53 | |
| Outside Lane | 1 | 1,549 | 65 | 1,448 | | 48 | | 53 | |
| *Subtotal* | 2 | 3,098 | | 2,896 | 93.48% | 95 | 3.08% | 106 | 3.41% |
| *101 - Hollister St to Ortega Hill Rd* | | | | | | | | | |
| Inside Lane | 1 | 1,517 | 65 | 1,418 | | 46 | | 52 | |
| Outside Lane | 1 | 1,517 | 65 | 1,418 | | 46 | | 52 | |
| *Subtotal* | 2 | 3,034 | | 2,836 | 93.47% | 93 | 3.05% | 104 | 3.44% |
| *101 - Ortega Hill Rd to Sheffield Dr* | | | | | | | | | |
| Inside Lane | 1 | 1,622 | 65 | 1,521 | | 48 | | 53 | |
| Outside Lane | 1 | 1,622 | 65 | 1,521 | | 48 | | 53 | |
| *Subtotal* | 2 | 3,244 | | 3,042 | 93.77% | 95 | 2.94% | 106 | 3.25% |
| *101 - Sheffield Dr to San Ysidro Rd* | | | | | | | | | |
| Inside Lane | 1 | 1,625 | 65 | 1,524 | | 48 | | 53 | |
| Outside Lane | 1 | 1,624 | 65 | 1,523 | | 48 | | 53 | |
| *Subtotal* | 2 | 3,249 | | 3,047 | 93.77% | 95 | 2.94% | 106 | 3.25% |
| *101 - San Ysidro Rd to Olive Mill Rd* | | | | | | | | | |
| Inside Lane | 1 | 1,742 | 65 | 1,640 | | 49 | | 53 | |
| Outside Lane | 1 | 1,741 | 65 | 1,638 | | 49 | | 54 | |
| *Subtotal* | 2 | 3,483 | | 3,278 | 94.10% | 97 | 2.79% | 107 | 3.08% |
| *101 - Olive Mill Rd to Hermosillo Rd* | | | | | | | | | |
| Inside Lane | 1 | 1,622 | 65 | 1,524 | | 46 | | 52 | |
| Outside Lane | 1 | 1,622 | 65 | 1,524 | | 46 | | 52 | |
| *Subtotal* | 2 | 3,244 | | 3,048 | 93.96% | 92 | 2.84% | 104 | 3.20% |
| *101 - Hermosillo Rd to Cabrillo Blvd* | | | | | | | | | |
| Inside Lane | 1 | 1,581 | 65 | 1,483 | | 46 | | 52 | |
| Outside Lane | 1 | 1,580 | 65 | 1,482 | | 46 | | 52 | |
| *Subtotal* | 2 | 3,161 | | 2,965 | 93.78% | 92 | 2.92% | 104 | 3.28% |

Source: Caltrans, 2008

# TABLE B-2 – EXISTING AM PEAK HOURS SOUTHBOUND TRAFFIC VOLUMES

| Description of Traffic Lane | Number of Lanes | Total Peak Hour Traffic Volumes [1] | Travel Speeds, mph | Volumes by Vehicle Type | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Cars | % Cars | Medium Trucks | % MT | Heavy Trucks | %HT |
| ***Southbound Highway 101 Main Lines*** | | | | | | | | | |
| *101 - Bailard Ave to Casitas Pass Rd* | | | | | | | | | |
| Inside Lane | 1 | 815 | 65 | 758 | | 25 | | 31 | |
| Outside Lane | 1 | 815 | 65 | 758 | | 25 | | 31 | |
| *Subtotal* | 2 | 1,630 | | 1,516 | 93.01% | 51 | 3.11% | 62 | 3.82% |
| *101 - Casitas Pass Rd to Linden Ave* | | | | | | | | | |
| Inside Lane | 1 | 821 | 65 | 767 | | 24 | | 30 | |
| Outside Lane | 1 | 821 | 65 | 766 | | 24 | | 31 | |
| *Subtotal* | 2 | 1,642 | | 1,533 | 93.36% | 49 | 2.98% | 61 | 3.69% |
| *101 - Linden Ave to Reynolds Ave* | | | | | | | | | |
| Inside Lane | 1 | 948 | 65 | 892 | | 25 | | 31 | |
| Outside Lane | 1 | 947 | 65 | 891 | | 25 | | 31 | |
| *Subtotal* | 2 | 1,895 | | 1,783 | 94.06% | 50 | 2.66% | 62 | 3.25% |
| *101 - Reynolds Ave to Carpinteria Ave* | | | | | | | | | |
| Inside Lane | 1 | 915 | 65 | 860 | | 25 | | 30 | |
| Outside Lane | 1 | 914 | 65 | 859 | | 25 | | 30 | |
| *Subtotal* | 2 | 1,829 | | 1,719 | 93.96% | 50 | 2.71% | 60 | 3.31% |
| *101 - Carpinteria Ave to Santa Claus Ln* | | | | | | | | | |
| Inside Lane | 1 | 980 | 65 | 925 | | 25 | | 30 | |
| Outside Lane | 1 | 980 | 65 | 925 | | 25 | | 30 | |
| *Subtotal* | 2 | 1,960 | | 1,850 | 94.39% | 50 | 2.53% | 60 | 3.09% |
| *101 - Santa Claus Ln to S Padera Ln* | | | | | | | | | |
| Inside Lane | 1 | 936 | 65 | 883 | | 24 | | 29 | |
| Outside Lane | 1 | 935 | 65 | 882 | | 24 | | 29 | |
| *Subtotal* | 2 | 1,871 | | 1,765 | 94.31% | 48 | 2.56% | 58 | 3.11% |
| *101 - S Padera Ln to N Padera Ln* | | | | | | | | | |
| Inside Lane | 1 | 996 | 65 | 944 | | 23 | | 28 | |
| Outside Lane | 1 | 995 | 65 | 943 | | 23 | | 28 | |
| *Subtotal* | 2 | 1,991 | | 1,887 | 94.75% | 47 | 2.34% | 56 | 2.83% |
| *101 - N Padera Ln to Wallace Avenue* | | | | | | | | | |
| Inside Lane | 1 | 1,026 | 65 | 974 | | 23 | | 28 | |
| Outside Lane | 1 | 1,026 | 65 | 974 | | 23 | | 28 | |
| *Subtotal* | 2 | 2,052 | | 1,948 | 94.93% | 47 | 2.27% | 56 | 2.75% |
| *101 - Wallace Avenue to Evans St* | | | | | | | | | |
| Inside Lane | 1 | 1,007 | 65 | 955 | | 23 | | 28 | |
| Outside Lane | 1 | 1,006 | 65 | 954 | | 23 | | 28 | |
| *Subtotal* | 2 | 2,013 | | 1,909 | 94.81% | 47 | 2.32% | 56 | 2.80% |
| *101 - Evans St to Sheffield Dr* | | | | | | | | | |
| Inside Lane | 1 | 1,050 | 65 | 998 | | 24 | | 28 | |
| Outside Lane | 1 | 1,050 | 65 | 998 | | 24 | | 28 | |
| *Subtotal* | 2 | 2,100 | | 1,996 | 95.05% | 48 | 2.27% | 56 | 2.68% |
| *101 - Sheffield Dr to Posilipo Ln* | | | | | | | | | |
| Inside Lane | 1 | 1,197 | 65 | 1,144 | | 24 | | 29 | |
| Outside Lane | 1 | 1,197 | 65 | 1,144 | | 24 | | 29 | |
| *Subtotal* | 2 | 2,394 | | 2,288 | 95.57% | 48 | 2.03% | 58 | 2.40% |
| *101 - Posilipo Ln to Eucalyptus Ln* | | | | | | | | | |
| Inside Lane | 1 | 1,162 | 65 | 1,110 | | 24 | | 28 | |
| Outside Lane | 1 | 1,162 | 65 | 1,110 | | 24 | | 28 | |
| *Subtotal* | 2 | 2,324 | | 2,220 | 95.52% | 48 | 2.05% | 56 | 2.42% |
| *101 - Eucalyptus Ln to Olive Mill Rd* | | | | | | | | | |
| Inside Lane | 1 | 1,349 | 65 | 1,295 | | 25 | | 29 | |
| Outside Lane | 1 | 1,349 | 65 | 1,295 | | 25 | | 29 | |
| *Subtotal* | 2 | 2,698 | | 2,590 | 96.00% | 49 | 1.83% | 58 | 2.13% |
| *101 - Olive Mill Rd to Channel Dr* | | | | | | | | | |
| Inside Lane | 1 | 1,246 | 65 | 1,193 | | 24 | | 29 | |
| Outside Lane | 1 | 1,245 | 65 | 1,192 | | 24 | | 29 | |
| *Subtotal* | 2 | 2,491 | | 2,385 | 95.72% | 48 | 1.95% | 58 | 2.31% |
| *101 - Channel Dr to Cabrillo Blvd* | | | | | | | | | |
| Inside Lane | 1 | 1,431 | 65 | 1,377 | | 25 | | 29 | |
| Outside Lane | 1 | 1,430 | 65 | 1,375 | | 25 | | 30 | |
| *Subtotal* | 2 | 2,861 | | 2,752 | 96.17% | 49 | 1.72% | 59 | 2.07% |

Source: Caltrans, 2008

## TABLE B-3 – EXISTING AM PEAK HOURS NORTHBOUND RAMP VOLUME

| Description of Traffic Lane | Number of Lanes | Total Peak Hour Traffic Volumes [1] | Travel Speeds, mph | Volumes by Vehicle Type | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Cars | % Cars | Medium Trucks | % MT | Heavy Trucks | %HT |
| ***Northbound*** | | | | | | | | | |
| Santa Monica Rd Off-ramp | 1 | 226 | 65 - 10 | 223 | 98.67% | 1 | 0.54% | 2 | 0.79% |
| Santa Monica Rd On-ramp | 1 | 341 | 10 - 65 | 336 | 98.53% | 3 | 0.94% | 2 | 0.52% |
| S Padero Ln Off-ramp | 1 | 141 | 65 - 20 | 137 | 97.16% | 2 | 1.58% | 2 | 1.26% |
| S Padero Ln On-ramp | | 131 | 25 - 65 | 124 | 94.66% | 5 | 3.99% | 2 | 1.36% |
| N Padero Ln Off-ramp | 1 | 71 | 65 - 25 | 71 | 100.00% | 0 | 0.00% | 0 | 0.00% |
| Hollister St Off-ramp | 1 | 64 | 65 - 10 | 60 | 93.75% | 3 | 4.40% | 1 | 1.85% |
| Ortega Hill Rd On-ramp | 1 | 210 | 10 - 65 | 206 | 98.10% | 3 | 1.34% | 1 | 0.56% |
| Sheffield Rd Off-ramp | 1 | 189 | 65 - 25 | 188 | 99.47% | 0 | 0.22% | 1 | 0.31% |
| Sheffield Rd On-ramp | 1 | 194 | 25 - 65 | 193 | 99.48% | 0 | 0.21% | 1 | 0.31% |
| San Ysidro Rd Off-ramp | 1 | 160 | 65 - 25 | 159 | 99.38% | 0 | 0.25% | 1 | 0.37% |
| San Ysidro Rd On-ramp | 1 | 393 | 25 - 65 | 389 | 98.98% | 2 | 0.57% | 2 | 0.45% |
| Olive Mill Rd Off-ramp | 1 | 238 | 65 - 25 | 230 | 96.64% | 5 | 2.12% | 3 | 1.25% |

Source: Caltrans, 2008

## TABLE B-4 – EXISTING AM PEAK HOURS SOUTHBOUND RAMP VOLUME

| Description of Traffic Lane | Number of Lanes | Total Peak Hour Traffic Volumes [1] | Travel Speeds, mph | Volumes by Vehicle Type | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Cars | % Cars | Medium Trucks | % MT | Heavy Trucks | %HT |
| ***Southbound*** | | | | | | | | | |
| Reynolds Ave On-ramp | 1 | 182 | 65 - 10 | 180 | 98.90% | 1 | 0.45% | 1 | 0.65% |
| Reynolds Ave Off-ramp | 1 | 111 | 10 - 65 | 111 | 100.00% | 0 | 0.00% | 0 | 0.00% |
| S Padero Ln Off-ramp | 1 | 237 | 65 - 25 | 233 | 98.31% | 2 | 0.94% | 2 | 0.75% |
| N Padero Ln On-ramp | 1 | 86 | 25 - 65 | 86 | 100.00% | 0 | 0.00% | 0 | 0.00% |
| N Padero Ln Off-ramp | 1 | 233 | 65 - 25 | 232 | 99.57% | 0 | 0.17% | 1 | 0.25% |
| Posilipo Ln On-ramp | 1 | 152 | 10 - 65 | 152 | 100.00% | 0 | 0.00% | 0 | 0.00% |
| Eucalyptus Ln Off-ramp | 1 | 375 | 65 - 25 | 372 | 99.20% | 2 | 0.48% | 1 | 0.32% |
| Channel Dr Off-ramp | 1 | 370 | 65 - 25 | 368 | 99.46% | 1 | 0.22% | 1 | 0.32% |
| Olive Mill Rd On-ramp | 1 | 369 | 65 - 25 | 368 | 99.73% | 1 | 0.27% | 0 | 0.00% |

Source: Caltrans, 2008

# TABLE B-5 – EXISTING PM PEAK HOURS NORTHBOUND TRAFFIC VOLUME

| Description of Traffic Lane | Number of Lanes | Total Peak Hour Traffic Volumes [1] | Travel Speeds, mph | Volumes by Vehicle Type | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Cars | % Cars | Medium Trucks | % MT | Heavy Trucks | %HT |
| ***Northbound Highway 101 Main Lines*** | | | | | | | | | |
| *101 - Bailard Ave to Casitas Pass Rd* | | | | | | | | | |
| Inside Lane | 1 | 1,054 | 65 | 1,000 | | 27 | | 26 | |
| Outside Lane | 1 | 1,053 | 65 | 999 | | 27 | | 26 | |
| *Subtotal* | 2 | 2,107 | | 1,999 | 94.85% | 55 | 2.60% | 52 | 2.48% |
| *101 - Casitas Pass Rd to Linden Ave* | | | | | | | | | |
| Inside Lane | 1 | 1,025 | 65 | 971 | | 28 | | 26 | |
| Outside Lane | 1 | 1,025 | 65 | 971 | | 28 | | 26 | |
| *Subtotal* | 2 | 2,050 | | 1,942 | 94.73% | 55 | 2.70% | 52 | 2.52% |
| *101 - Linden Ave to Santa Monica Rd* | | | | | | | | | |
| Inside Lane | 1 | 1,117 | 65 | 1,063 | | 28 | | 26 | |
| Outside Lane | 1 | 1,117 | 65 | 1,063 | | 28 | | 26 | |
| *Subtotal* | 2 | 2,234 | | 2,126 | 95.17% | 56 | 2.50% | 52 | 2.34% |
| *101 - Santa Monica Rd to S Padero Ln* | | | | | | | | | |
| Inside Lane | 1 | 1,124 | 65 | 1,075 | | 23 | | 26 | |
| Outside Lane | 1 | 1,124 | 65 | 1,075 | | 23 | | 26 | |
| *Subtotal* | 2 | 2,248 | | 2,150 | 95.64% | 46 | 2.04% | 52 | 2.32% |
| *101 - S Padero Ln to N Padaro Ln* | | | | | | | | | |
| Inside Lane | 1 | 1,134 | 65 | 1,078 | | 29 | | 26 | |
| Outside Lane | 1 | 1,133 | 65 | 1,077 | | 29 | | 27 | |
| *Subtotal* | 2 | 2,267 | | 2,155 | 95.04% | 58 | 2.57% | 53 | 2.36% |
| *101 - N Padaro Ln to Hollister St* | | | | | | | | | |
| Inside Lane | 1 | 1,179 | 65 | 1,124 | | 29 | | 26 | |
| Outside Lane | 1 | 1,178 | 65 | 1,122 | | 29 | | 27 | |
| *Subtotal* | 2 | 2,357 | | 2,246 | 95.27% | 59 | 2.49% | 53 | 2.24% |
| *101 - Hollister St to Ortega Hill Rd* | | | | | | | | | |
| Inside Lane | 1 | 1,152 | 65 | 1,097 | | 29 | | 26 | |
| Outside Lane | 1 | 1,151 | 65 | 1,095 | | 29 | | 27 | |
| *Subtotal* | 2 | 2,303 | | 2,192 | 95.16% | 59 | 2.55% | 53 | 2.29% |
| *101 - Ortega Hill Rd to Sheffield Dr* | | | | | | | | | |
| Inside Lane | 1 | 1,227 | 65 | 1,169 | | 31 | | 27 | |
| Outside Lane | 1 | 1,227 | 65 | 1,169 | | 31 | | 27 | |
| *Subtotal* | 2 | 2,454 | | 2,338 | 95.27% | 61 | 2.49% | 54 | 2.20% |
| *101 - Sheffield Dr to San Ysidro Rd* | | | | | | | | | |
| Inside Lane | 1 | 1,299 | 65 | 1,241 | | 31 | | 27 | |
| Outside Lane | 1 | 1,299 | 65 | 1,240 | | 31 | | 28 | |
| *Subtotal* | 2 | 2,598 | | 2,481 | 95.50% | 62 | 2.38% | 55 | 2.10% |
| *101 - San Ysidro Rd to Olive Mill Rd* | | | | | | | | | |
| Inside Lane | 1 | 1,462 | 65 | 1,402 | | 32 | | 28 | |
| Outside Lane | 1 | 1,462 | 65 | 1,401 | | 32 | | 29 | |
| *Subtotal* | 2 | 2,924 | | 2,803 | 95.86% | 63 | 2.16% | 57 | 1.97% |
| *101 - Olive Mill Rd to Hermosillo Rd* | | | | | | | | | |
| Inside Lane | 1 | 1,366 | 65 | 1,308 | | 30 | | 28 | |
| Outside Lane | 1 | 1,365 | 65 | 1,307 | | 30 | | 28 | |
| *Subtotal* | 2 | 2,731 | | 2,615 | 95.73% | 60 | 2.21% | 56 | 2.04% |
| *101 - Hermosillo Rd to Cabrillo Blvd* | | | | | | | | | |
| Inside Lane | 1 | 1,337 | 65 | 1,279 | | 30 | | 28 | |
| Outside Lane | 1 | 1,337 | 65 | 1,279 | | 30 | | 28 | |
| *Subtotal* | 2 | 2,673 | | 2,557 | 95.66% | 60 | 2.25% | 56 | 2.09% |

Source: Caltrans, 2008

# TABLE B-6 – EXISTING PM PEAK HOURS SOUTHBOUND TRAFFIC VOLUME

| Description of Traffic Lane | Number of Lanes | Total Peak Hour Traffic Volumes [1] | Travel Speeds, mph | Volumes by Vehicle Type | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Cars | % Cars | Medium Trucks | % MT | Heavy Trucks | %HT |
| ***Southbound Highway 101 Main Lines*** | | | | | | | | | |
| *101 - Bailard Ave to Casitas Pass Rd* | | | | | | | | | |
| Inside Lane | 1 | 1,615 | 65 | 1,558 | | 27 | | 30 | |
| Outside Lane | 1 | 1,614 | 65 | 1,556 | | 27 | | 31 | |
| *Subtotal* | 2 | 3,229 | | 3,114 | 96.42% | 54 | 1.67% | 61 | 1.87% |
| *101 - Casitas Pass Rd to Linden Ave* | | | | | | | | | |
| Inside Lane | 1 | 1,568 | 65 | 1,513 | | 26 | | 29 | |
| Outside Lane | 1 | 1,568 | 65 | 1,512 | | 26 | | 30 | |
| *Subtotal* | 2 | 3,136 | | 3,025 | 96.46% | 51 | 1.64% | 59 | 1.89% |
| *101 - Linden Ave to Reynolds Ave* | | | | | | | | | |
| Inside Lane | 1 | 1,722 | 65 | 1,666 | | 27 | | 29 | |
| Outside Lane | 1 | 1,721 | 65 | 1,664 | | 27 | | 30 | |
| *Subtotal* | 2 | 3,443 | | 3,330 | 96.70% | 54 | 1.56% | 59 | 1.70% |
| *101 - Reynolds Ave to Carpinteria Ave* | | | | | | | | | |
| Inside Lane | 1 | 1,687 | 65 | 1,631 | | 26 | | 29 | |
| Outside Lane | 1 | 1,686 | 65 | 1,630 | | 26 | | 29 | |
| *Subtotal* | 2 | 3,373 | | 3,261 | 96.66% | 53 | 1.57% | 58 | 1.72% |
| *101 - Carpinteria Ave to Santa Claus Ln* | | | | | | | | | |
| Inside Lane | 1 | 1,832 | 65 | 1,776 | | 27 | | 29 | |
| Outside Lane | 1 | 1,832 | 65 | 1,775 | | 27 | | 30 | |
| *Subtotal* | 2 | 3,664 | | 3,551 | 96.92% | 53 | 1.45% | 59 | 1.62% |
| *101 - Santa Claus Ln to S Padera Ln* | | | | | | | | | |
| Inside Lane | 1 | 1,725 | 65 | 1,671 | | 26 | | 28 | |
| Outside Lane | 1 | 1,725 | 65 | 1,671 | | 26 | | 28 | |
| *Subtotal* | 2 | 3,450 | | 3,342 | 96.87% | 52 | 1.50% | 56 | 1.63% |
| *101 - S Padera Ln to N Padera Ln* | | | | | | | | | |
| Inside Lane | 1 | 1,844 | 65 | 1,792 | | 25 | | 27 | |
| Outside Lane | 1 | 1,843 | 65 | 1,790 | | 25 | | 28 | |
| *Subtotal* | 2 | 3,687 | | 3,582 | 97.14% | 49 | 1.34% | 55 | 1.50% |
| *101 - N Padera Ln to Wallace Avenue* | | | | | | | | | |
| Inside Lane | 1 | 1,917 | 65 | 1,865 | | 25 | | 27 | |
| Outside Lane | 1 | 1,917 | 65 | 1,864 | | 25 | | 28 | |
| *Subtotal* | 2 | 3,834 | | 3,729 | 97.26% | 51 | 1.33% | 55 | 1.42% |
| *101 - Wallace Avenue to Evans St* | | | | | | | | | |
| Inside Lane | 1 | 1,868 | 65 | 1,816 | | 25 | | 27 | |
| Outside Lane | 1 | 1,868 | 65 | 1,815 | | 25 | | 28 | |
| *Subtotal* | 2 | 3,736 | | 3,631 | 97.19% | 51 | 1.36% | 55 | 1.46% |
| *101 - Evans St to Sheffield Dr* | | | | | | | | | |
| Inside Lane | 1 | 1,900 | 65 | 1,847 | | 26 | | 27 | |
| Outside Lane | 1 | 1,900 | 65 | 1,846 | | 26 | | 28 | |
| *Subtotal* | 2 | 3,800 * | | 3,693 | 97.18% | 52 | 1.36% | 55 | 1.44% |
| *101 - Sheffield Dr to Posilipo Ln* | | | | | | | | | |
| Inside Lane | 1 | 1,900 | 65 | 1,847 | | 26 | | 27 | |
| Outside Lane | 1 | 1,900 | 65 | 1,846 | | 26 | | 28 | |
| *Subtotal* | 2 | 3,800 * | | 3,693 | 97.18% | 52 | 1.38% | 55 | 1.44% |
| *101 - Posilipo Ln to Eucalyptus Ln* | | | | | | | | | |
| Inside Lane | 1 | 1,892 | 65 | 1,839 | | 26 | | 27 | |
| Outside Lane | 1 | 1,892 | 65 | 1,838 | | 26 | | 28 | |
| *Subtotal* | 2 | 3,784 | | 3,677 | 97.17% | 52 | 1.37% | 55 | 1.44% |
| *101 - Eucalyptus Ln to Olive Mill Rd* | | | | | | | | | |
| Inside Lane | 1 | 1,900 | 65 | 1,846 | | 26 | | 28 | |
| Outside Lane | 1 | 1,900 | 65 | 1,846 | | 26 | | 28 | |
| *Subtotal* | 2 | 3,800 * | | 3,692 | 97.16% | 52 | 1.38% | 56 | 1.47% |
| *101 - Olive Mill Rd to Channel Dr* | | | | | | | | | |
| Inside Lane | 1 | 1,836 | 65 | 1,784 | | 25 | | 27 | |
| Outside Lane | 1 | 1,836 | 65 | 1,783 | | 25 | | 28 | |
| *Subtotal* | 2 | 3,672 | | 3,567 | 97.14% | 51 | 1.38% | 55 | 1.49% |
| *101 - Channel Dr to Cabrillo Blvd* | | | | | | | | | |
| Inside Lane | 1 | 1,900 | 65 | 1,846 | | 26 | | 28 | |
| Outside Lane | 1 | 1,900 | 65 | 1,846 | | 26 | | 28 | |
| *Subtotal* | 2 | 3,800 | | 3,692 | 97.16% | 51 | 1.35% | 56 | 1.47% |

Source: Caltrans, 2008

# TABLE B-7 – FUTURE NO BULD LOS C NORTHBOUND TRAFFIC VOLUME

| Description of Traffic Lane | Number of Lanes | Total Peak Hour Traffic Volumes [1] | Travel Speeds, mph | Volumes by Vehicle Type | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Cars | % Cars | Medium Trucks | % MT | Heavy Trucks | %HT |
| ***Northbound Highway 101 Main Lines*** | | | | | | | | | |
| *101 - Bailard Ave to Casitas Pass Rd* | | | | | | | | | |
| Inside Lane | 1 | 1,900 | 65 | 1,757 | | 65 | | 78 | |
| Outside Lane | 1 | 1,900 | 65 | 1,757 | | 65 | | 78 | |
| *Subtotal* | 2 | 3,800 | | 3,514 | 92.46% | 130 | 3.42% | 156 | 4.08% |
| *101 - Casitas Pass Rd to Linden Ave* | | | | | | | | | |
| Inside Lane | 1 | 1,900 | 65 | 1,750 | | 68 | | 82 | |
| Outside Lane | 1 | 1,900 | 65 | 1,750 | | 68 | | 82 | |
| *Subtotal* | 2 | 3,800 | | 3,500 | 92.06% | 136 | 3.60% | 164 | 4.30% |
| *101 - Linden Ave to Santa Monica Rd* | | | | | | | | | |
| Inside Lane | 1 | 1,900 | 65 | 1,766 | | 62 | | 72 | |
| Outside Lane | 1 | 1,900 | 65 | 1,766 | | 62 | | 72 | |
| *Subtotal* | 2 | 3,800 | | 3,532 | 92.88% | 124 | 3.28% | 144 | 3.81% |
| *101 - Santa Monica Rd to S Padero Ln* | | | | | | | | | |
| Inside Lane | 1 | 1,900 | 65 | 1,771 | | 60 | | 69 | |
| Outside Lane | 1 | 1,900 | 65 | 1,771 | | 60 | | 69 | |
| *Subtotal* | 2 | 3,800 | | 3,542 | 93.17% | 120 | 3.18% | 138 | 3.66% |
| *101 - S Padero Ln to N Padaro Ln* | | | | | | | | | |
| Inside Lane | 1 | 1,900 | 65 | 1,767 | | 63 | | 70 | |
| Outside Lane | 1 | 1,900 | 65 | 1,767 | | 63 | | 70 | |
| *Subtotal* | 2 | 3,800 | | 3,534 | 92.98% | 126 | 3.33% | 140 | 3.67% |
| *101 - N Padaro Ln to Hollister St* | | | | | | | | | |
| Inside Lane | 1 | 1,900 | 65 | 1,776 | | 59 | | 65 | |
| Outside Lane | 1 | 1,900 | 65 | 1,776 | | 59 | | 65 | |
| *Subtotal* | 2 | 3,800 | | 3,552 | 93.48% | 118 | 3.08% | 130 | 3.41% |
| *101 - Hollister St to Ortega Hill Rd* | | | | | | | | | |
| Inside Lane | 1 | 1,900 | 65 | 1,777 | | 58 | | 65 | |
| Outside Lane | 1 | 1,900 | 65 | 1,777 | | 58 | | 65 | |
| *Subtotal* | 2 | 3,800 | | 3,554 | 93.47% | 116 | 3.05% | 130 | 3.44% |
| *101 - Ortega Hill Rd to Sheffield Dr* | | | | | | | | | |
| Inside Lane | 1 | 1,900 | 65 | 1,782 | | 56 | | 62 | |
| Outside Lane | 1 | 1,900 | 65 | 1,782 | | 56 | | 62 | |
| *Subtotal* | 2 | 3,800 | | 3,564 | 93.77% | 112 | 2.94% | 124 | 3.25% |
| *101 - Sheffield Dr to San Ysidro Rd* | | | | | | | | | |
| Inside Lane | 1 | 1,900 | 65 | 1,782 | | 56 | | 62 | |
| Outside Lane | 1 | 1,900 | 65 | 1,782 | | 56 | | 62 | |
| *Subtotal* | 2 | 3,800 | | 3,564 | 93.77% | 112 | 2.94% | 124 | 3.25% |
| *101 - San Ysidro Rd to Olive Mill Rd* | | | | | | | | | |
| Inside Lane | 1 | 1,900 | 65 | 1,788 | | 53 | | 59 | |
| Outside Lane | 1 | 1,900 | 65 | 1,788 | | 53 | | 59 | |
| *Subtotal* | 2 | 3,800 | | 3,576 | 94.10% | 106 | 2.79% | 118 | 3.08% |
| *101 - Olive Mill Rd to Hermosillo Rd* | | | | | | | | | |
| Inside Lane | 1 | 1,900 | 65 | 1,785 | | 54 | | 61 | |
| Outside Lane | 1 | 1,900 | 65 | 1,785 | | 54 | | 61 | |
| *Subtotal* | 2 | 3,800 | | 3,570 | 93.96% | 108 | 2.84% | 122 | 3.20% |
| *101 - Hermosillo Rd to Cabrillo Blvd* | | | | | | | | | |
| Inside Lane | 1 | 1,900 | 65 | 1,783 | | 55 | | 62 | |
| Outside Lane | 1 | 1,900 | 65 | 1,783 | | 55 | | 62 | |
| *Subtotal* | 2 | 3,800 | | 3,566 | 93.78% | 110 | 2.92% | 124 | 3.28% |

Source: Caltrans, 2008

# TABLE B-8 – FUTURE NO BUILD LOS C SOUTHBOUND TRAFFIC VOLUME

| Description of Traffic Lane | Number of Lanes | Total Peak Hour Traffic Volumes [1] | Travel Speeds, mph | Volumes by Vehicle Type | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Cars | % Cars | Medium Trucks | % MT | Heavy Trucks | %HT |
| ***Southbound Highway 101 Main Lines*** | | | | | | | | | |
| *101 - Bailard Ave to Casitas Pass Rd* | | | | | | | | | |
| Inside Lane | 1 | 1,900 | 65 | 1,768 | | 59 | | 73 | |
| Outside Lane | 1 | 1,900 | 65 | 1,768 | | 59 | | 73 | |
| *Subtotal* | 2 | 3,800 | | 3,536 | 93.01% | 118 | 3.11% | 146 | 3.82% |
| *101 - Casitas Pass Rd to Linden Ave* | | | | | | | | | |
| Inside Lane | 1 | 1,900 | 65 | 1,773 | | 57 | | 70 | |
| Outside Lane | 1 | 1,900 | 65 | 1,773 | | 57 | | 70 | |
| *Subtotal* | 2 | 3,800 | | 3,546 | 93.36% | 114 | 2.98% | 140 | 3.69% |
| *101 - Linden Ave to Reynolds Ave* | | | | | | | | | |
| Inside Lane | 1 | 1,900 | 65 | 1,788 | | 50 | | 62 | |
| Outside Lane | 1 | 1,900 | 65 | 1,788 | | 50 | | 62 | |
| *Subtotal* | 2 | 3,800 | | 3,576 | 94.06% | 100 | 2.66% | 124 | 3.25% |
| *101 - Reynolds Ave to Carpinteria Ave* | | | | | | | | | |
| Inside Lane | 1 | 1,900 | 65 | 1,786 | | 51 | | 63 | |
| Outside Lane | 1 | 1,900 | 65 | 1,786 | | 51 | | 63 | |
| *Subtotal* | 2 | 3,800 | | 3,572 | 93.96% | 102 | 2.71% | 126 | 3.31% |
| *101 - Carpinteria Ave to Santa Claus Ln* | | | | | | | | | |
| Inside Lane | 1 | 1,900 | 65 | 1,793 | | 48 | | 59 | |
| Outside Lane | 1 | 1,900 | 65 | 1,793 | | 48 | | 59 | |
| *Subtotal* | 2 | 3,800 | | 3,586 | 94.39% | 96 | 2.53% | 118 | 3.09% |
| *101 - Santa Claus Ln to S Padera Ln* | | | | | | | | | |
| Inside Lane | 1 | 1,900 | 65 | 1,792 | | 49 | | 59 | |
| Outside Lane | 1 | 1,900 | 65 | 1,792 | | 49 | | 59 | |
| *Subtotal* | 2 | 3,800 | | 3,584 | 94.31% | 98 | 2.56% | 118 | 3.11% |
| *101 - S Padera Ln to N Padera Ln* | | | | | | | | | |
| Inside Lane | 1 | 1,900 | 65 | 1,801 | | 45 | | 54 | |
| Outside Lane | 1 | 1,900 | 65 | 1,801 | | 45 | | 54 | |
| *Subtotal* | 2 | 3,800 | | 3,602 | 94.75% | 90 | 2.34% | 108 | 2.83% |
| *101 - N Padera Ln to Wallace Avenue* | | | | | | | | | |
| Inside Lane | 1 | 1,900 | 65 | 1,805 | | 43 | | 52 | |
| Outside Lane | 1 | 1,900 | 65 | 1,805 | | 43 | | 52 | |
| *Subtotal* | 2 | 3,800 | | 3,610 | 94.93% | 86 | 2.27% | 104 | 2.75% |
| *101 - Wallace Avenue to Evans St* | | | | | | | | | |
| Inside Lane | 1 | 1,900 | 65 | 1,803 | | 44 | | 53 | |
| Outside Lane | 1 | 1,900 | 65 | 1,803 | | 44 | | 53 | |
| *Subtotal* | 2 | 3,800 | | 3,606 | 94.81% | 88 | 2.32% | 106 | 2.80% |
| *101 - Evans St to Sheffield Dr* | | | | | | | | | |
| Inside Lane | 1 | 1,900 | 65 | 1,806 | | 43 | | 51 | |
| Outside Lane | 1 | 1,900 | 65 | 1,806 | | 43 | | 51 | |
| *Subtotal* | 2 | 3,800 | | 3,612 | 95.05% | 86 | 2.27% | 102 | 2.68% |
| *101 - Sheffield Dr to Posilipo Ln* | | | | | | | | | |
| Inside Lane | 1 | 1,900 | 65 | 1,816 | | 38 | | 46 | |
| Outside Lane | 1 | 1,900 | 65 | 1,816 | | 38 | | 46 | |
| *Subtotal* | 2 | 3,800 | | 3,632 | 95.57% | 76 | 2.03% | 92 | 2.40% |
| *101 - Posilipo Ln to Eucalyptus Ln* | | | | | | | | | |
| Inside Lane | 1 | 1,900 | 65 | 1,815 | | 39 | | 46 | |
| Outside Lane | 1 | 1,900 | 65 | 1,815 | | 39 | | 46 | |
| *Subtotal* | 2 | 3,800 | | 3,630 | 95.52% | 78 | 2.05% | 92 | 2.42% |
| *101 - Eucalyptus Ln to Olive Mill Rd* | | | | | | | | | |
| Inside Lane | 1 | 1,900 | 65 | 1,824 | | 35 | | 41 | |
| Outside Lane | 1 | 1,900 | 65 | 1,824 | | 35 | | 41 | |
| *Subtotal* | 2 | 3,800 | | 3,648 | 96.00% | 70 | 1.83% | 82 | 2.13% |
| *101 - Olive Mill Rd to Channel Dr* | | | | | | | | | |
| Inside Lane | 1 | 1,900 | 65 | 1,819 | | 37 | | 44 | |
| Outside Lane | 1 | 1,900 | 65 | 1,819 | | 37 | | 44 | |
| *Subtotal* | 2 | 3,800 | | 3,638 | 95.72% | 74 | 1.95% | 88 | 2.31% |
| *101 - Channel Dr to Cabrillo Blvd* | | | | | | | | | |
| Inside Lane | 1 | 1,900 | 65 | 1,828 | | 33 | | 39 | |
| Outside Lane | 1 | 1,900 | 65 | 1,828 | | 33 | | 39 | |
| *Subtotal* | 2 | 3,800 | | 3,656 | 96.17% | 66 | 1.72% | 78 | 2.07% |

Source: Caltrans, 2008

# TABLE B-9 – FUTURE BUILD LOS C NORTHBOUND TRAFFIC VOLUME

| Description of Traffic Lane | Number of Lanes | Total Peak Hour Traffic Volumes [1] | Travel Speeds, mph | Volumes by Vehicle Type | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Cars | % Cars | Medium Trucks | % MT | Heavy Trucks | %HT |
| ***Northbound Highway 101 Main Lines*** | | | | | | | | | |
| *101 - Bailard Ave to Casitas Pass Rd* | | | | | | | | | |
| HOV Lane | 1 | 1,650 | 65 | 1,588 | | 62 | | | |
| Inside Lane | 1 | 1,900 | 65 | 1,727 | | 62 | | 111 | |
| Outside Lane | 1 | 1,900 | 65 | 1,727 | | 62 | | 111 | |
| *Subtotal* | 3 | 5,450 | | 5,042 | 92.46% | 186 | 3.42% | 222 | 4.08% |
| *101 - Casitas Pass Rd to Linden Ave* | | | | | | | | | |
| HOV Lane | 1 | 1,650 | 65 | 1,585 | | 65 | | | |
| Inside Lane | 1 | 1,900 | 65 | 1,718 | | 65 | | 117 | |
| Outside Lane | 1 | 1,900 | 65 | 1,718 | | 65 | | 117 | |
| *Subtotal* | 3 | 5,450 | | 5,021 | 92.06% | 195 | 3.60% | 234 | 4.30% |
| *101 - Linden Ave to Santa Monica Rd* | | | | | | | | | |
| HOV Lane | 1 | 1,650 | 65 | 1,590 | | 60 | | | |
| Inside Lane | 1 | 1,900 | 65 | 1,736 | | 60 | | 104 | |
| Outside Lane | 1 | 1,900 | 65 | 1,736 | | 60 | | 104 | |
| *Subtotal* | 3 | 5,450 | | 5,062 | 92.88% | 180 | 3.28% | 208 | 3.81% |
| *101 - Santa Monica Rd to S Padero Ln* | | | | | | | | | |
| HOV Lane | 1 | 1,650 | 65 | 1,592 | | 58 | | | |
| Inside Lane | 1 | 1,900 | 65 | 1,742 | | 58 | | 100 | |
| Outside Lane | 1 | 1,900 | 65 | 1,742 | | 58 | | 100 | |
| *Subtotal* | 3 | 5,450 | | 5,076 | 93.17% | 174 | 3.18% | 200 | 3.66% |
| *101 - S Padero Ln to N Padaro Ln* | | | | | | | | | |
| HOV Lane | 1 | 1,650 | 65 | 1,589 | | 61 | | | |
| Inside Lane | 1 | 1,900 | 65 | 1,739 | | 61 | | 100 | |
| Outside Lane | 1 | 1,900 | 65 | 1,739 | | 61 | | 100 | |
| *Subtotal* | 3 | 5,450 | | 5,067 | 92.98% | 183 | 3.33% | 200 | 3.67% |
| *101 - N Padaro Ln to Hollister St* | | | | | | | | | |
| HOV Lane | 1 | 1,650 | 65 | 1,594 | | 56 | | | |
| Inside Lane | 1 | 1,900 | 65 | 1,751 | | 56 | | 93 | |
| Outside Lane | 1 | 1,900 | 65 | 1,751 | | 56 | | 93 | |
| *Subtotal* | 3 | 5,450 | | 5,096 | 93.48% | 168 | 3.08% | 186 | 3.41% |
| *101 - Hollister St to Ortega Hill Rd* | | | | | | | | | |
| HOV Lane | 1 | 1,650 | 65 | 1,595 | | 55 | | | |
| Inside Lane | 1 | 1,900 | 65 | 1,751 | | 55 | | 94 | |
| Outside Lane | 1 | 1,900 | 65 | 1,751 | | 55 | | 94 | |
| *Subtotal* | 3 | 5,450 | | 5,097 | 93.47% | 165 | 3.05% | 188 | 3.44% |
| *101 - Ortega Hill Rd to Sheffield Dr* | | | | | | | | | |
| HOV Lane | 1 | 1,650 | 65 | 1,597 | | 53 | | | |
| Inside Lane | 1 | 1,900 | 65 | 1,758 | | 53 | | 89 | |
| Outside Lane | 1 | 1,900 | 65 | 1,758 | | 53 | | 89 | |
| *Subtotal* | 3 | 5,450 | | 5,113 | 93.77% | 159 | 2.94% | 178 | 3.25% |
| *101 - Sheffield Dr to San Ysidro Rd* | | | | | | | | | |
| HOV Lane | 1 | 1,650 | 65 | 1,597 | | 53 | | | |
| Inside Lane | 1 | 1,900 | 65 | 1,758 | | 53 | | 89 | |
| Outside Lane | 1 | 1,900 | 65 | 1,758 | | 53 | | 89 | |
| *Subtotal* | 3 | 5,450 | | 5,113 | 93.77% | 159 | 2.94% | 178 | 3.25% |
| *101 - San Ysidro Rd to Olive Mill Rd* | | | | | | | | | |
| HOV Lane | 1 | 1,650 | 65 | 1,599 | | 51 | | | |
| Inside Lane | 1 | 1,900 | 65 | 1,765 | | 51 | | 84 | |
| Outside Lane | 1 | 1,900 | 65 | 1,765 | | 51 | | 84 | |
| *Subtotal* | 3 | 5,450 | | 5,129 | 94.10% | 153 | 2.79% | 168 | 3.08% |
| *101 - Olive Mill Rd to Hermosillo Rd* | | | | | | | | | |
| HOV Lane | 1 | 1,650 | 65 | 1,598 | | 52 | | | |
| Inside Lane | 1 | 1,900 | 65 | 1,761 | | 52 | | 87 | |
| Outside Lane | 1 | 1,900 | 65 | 1,761 | | 52 | | 87 | |
| *Subtotal* | 3 | 5,450 | | 5,120 | 93.96% | 156 | 2.84% | 174 | 3.20% |
| *101 - Hermosillo Rd to Cabrillo Blvd* | | | | | | | | | |
| HOV Lane | 1 | 1,650 | 65 | 1,597 | | 53 | | | |
| Inside Lane | 1 | 1,900 | 65 | 1,758 | | 53 | | 89 | |
| Outside Lane | 1 | 1,900 | 65 | 1,758 | | 53 | | 89 | |
| *Subtotal* | 3 | 5,450 | | 5,113 | 93.78% | 159 | 2.92% | 178 | 3.28% |

Source: Caltrans, 2008

# TABLE B-10 – FUTURE BUILD LOSC SOUTHBOUND TRAFFIC VOLUME

| Description of Traffic Lane | Number of Lanes | Total Peak Hour Traffic Volumes [1] | Travel Speeds, mph | Volumes by Vehicle Type | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Cars | % Cars | Medium Trucks | % MT | Heavy Trucks | %HT |
| ***Southbound Highway 101 Main Lines*** | | | | | | | | | |
| *101 - Bailard Ave to Casitas Pass Rd* | | | | | | | | | |
| HOV Lane | 1 | 1,650 | 65 | 1,593 | | 57 | | | |
| Inside Lane | 1 | 1,900 | 65 | 1,739 | | 57 | | 104 | |
| Outside Lane | 1 | 1,900 | 65 | 1,739 | | 57 | | 104 | |
| *Subtotal* | 3 | 5,450 | | 5,071 | 93.01% | 171 | 3.11% | 208 | 3.82% |
| *101 - Casitas Pass Rd to Linden Ave* | | | | | | | | | |
| HOV Lane | 1 | 1,650 | 65 | 1,596 | | 54 | | | |
| Inside Lane | 1 | 1,900 | 65 | 1,746 | | 54 | | 100 | |
| Outside Lane | 1 | 1,900 | 65 | 1,746 | | 54 | | 100 | |
| *Subtotal* | 3 | 5,450 | | 5,088 | 93.36% | 162 | 2.98% | 200 | 3.69% |
| *101 - Linden Ave to Reynolds Ave* | | | | | | | | | |
| HOV Lane | 1 | 1,650 | 65 | 1,602 | | 48 | | | |
| Inside Lane | 1 | 1,900 | 65 | 1,763 | | 48 | | 89 | |
| Outside Lane | 1 | 1,900 | 65 | 1,763 | | 48 | | 89 | |
| *Subtotal* | 3 | 5,450 | | 5,128 | 94.06% | 144 | 2.66% | 178 | 3.25% |
| *101 - Reynolds Ave to Carpinteria Ave* | | | | | | | | | |
| HOV Lane | 1 | 1,650 | 65 | 1,601 | | 49 | | | |
| Inside Lane | 1 | 1,900 | 65 | 1,761 | | 49 | | 90 | |
| Outside Lane | 1 | 1,900 | 65 | 1,761 | | 49 | | 90 | |
| *Subtotal* | 3 | 5,450 | | 5,123 | 93.96% | 147 | 2.71% | 180 | 3.31% |
| *101 - Carpinteria Ave to Santa Claus Ln* | | | | | | | | | |
| HOV Lane | 1 | 1,650 | 65 | 1,604 | | 46 | | | |
| Inside Lane | 1 | 1,900 | 65 | 1,770 | | 46 | | 84 | |
| Outside Lane | 1 | 1,900 | 65 | 1,770 | | 46 | | 84 | |
| *Subtotal* | 3 | 5,450 | | 5,144 | 94.39% | 138 | 2.53% | 168 | 3.09% |
| *101 - Santa Claus Ln to S Padera Ln* | | | | | | | | | |
| HOV Lane | 1 | 1,650 | 65 | 1,604 | | 46 | | | |
| Inside Lane | 1 | 1,900 | 65 | 1,769 | | 46 | | 85 | |
| Outside Lane | 1 | 1,900 | 65 | 1,769 | | 46 | | 85 | |
| *Subtotal* | 3 | 5,450 | | 5,142 | 94.31% | 138 | 2.56% | 170 | 3.11% |
| *101 - S Padera Ln to N Padera Ln* | | | | | | | | | |
| HOV Lane | 1 | 1,650 | 65 | 1,607 | | 43 | | | |
| Inside Lane | 1 | 1,900 | 65 | 1,780 | | 43 | | 77 | |
| Outside Lane | 1 | 1,900 | 65 | 1,780 | | 43 | | 77 | |
| *Subtotal* | 3 | 5,450 | | 5,167 | 94.75% | 129 | 2.34% | 154 | 2.83% |
| *101 - N Padera Ln to Wallace Avenue* | | | | | | | | | |
| HOV Lane | 1 | 1,650 | 65 | 1,609 | | 41 | | | |
| Inside Lane | 1 | 1,900 | 65 | 1,784 | | 41 | | 75 | |
| Outside Lane | 1 | 1,900 | 65 | 1,784 | | 41 | | 75 | |
| *Subtotal* | 3 | 5,450 | | 5,177 | 94.93% | 123 | 2.27% | 150 | 2.75% |
| *101 - Wallace Avenue to Evans St* | | | | | | | | | |
| HOV Lane | 1 | 1,650 | 65 | 1,608 | | 42 | | | |
| Inside Lane | 1 | 1,900 | 65 | 1,782 | | 42 | | 76 | |
| Outside Lane | 1 | 1,900 | 65 | 1,782 | | 42 | | 76 | |
| *Subtotal* | 3 | 5,450 | | 5,172 | 94.81% | 126 | 2.32% | 152 | 2.80% |
| *101 - Evans St to Sheffield Dr* | | | | | | | | | |
| HOV Lane | 1 | 1,650 | 65 | 1,609 | | 41 | | | |
| Inside Lane | 1 | 1,900 | 65 | 1,786 | | 41 | | 73 | |
| Outside Lane | 1 | 1,900 | 65 | 1,786 | | 41 | | 73 | |
| *Subtotal* | 3 | 5,450 | | 5,181 | 95.05% | 123 | 2.27% | 146 | 2.68% |
| *101 - Sheffield Dr to Posilipo Ln* | | | | | | | | | |
| HOV Lane | 1 | 1,650 | 65 | 1,613 | | 37 | | | |
| Inside Lane | 1 | 1,900 | 65 | 1,798 | | 37 | | 65 | |
| Outside Lane | 1 | 1,900 | 65 | 1,798 | | 37 | | 65 | |
| *Subtotal* | 3 | 5,450 | | 5,209 | 95.57% | 111 | 2.03% | 130 | 2.40% |
| *101 - Posilipo Ln to Eucalyptus Ln* | | | | | | | | | |
| HOV Lane | 1 | 1,650 | 65 | 1,613 | | 37 | | | |
| Inside Lane | 1 | 1,900 | 65 | 1,797 | | 37 | | 66 | |
| Outside Lane | 1 | 1,900 | 65 | 1,797 | | 37 | | 66 | |
| *Subtotal* | 3 | 5,450 | | 5,207 | 95.52% | 111 | 2.05% | 132 | 2.42% |
| *101 - Eucalyptus Ln to Olive Mill Rd* | | | | | | | | | |
| HOV Lane | 1 | 1,650 | 65 | 1,617 | | 33 | | | |
| Inside Lane | 1 | 1,900 | 65 | 1,809 | | 33 | | 58 | |
| Outside Lane | 1 | 1,900 | 65 | 1,809 | | 33 | | 58 | |
| *Subtotal* | 3 | 5,450 | | 5,235 | 96.00% | 99 | 1.83% | 116 | 2.13% |
| *101 - Olive Mill Rd to Channel Dr* | | | | | | | | | |
| HOV Lane | 1 | 1,650 | 65 | 1,615 | | 35 | | | |
| Inside Lane | 1 | 1,900 | 65 | 1,802 | | 35 | | 63 | |
| Outside Lane | 1 | 1,900 | 65 | 1,802 | | 35 | | 63 | |
| *Subtotal* | 3 | 5,450 | | 5,219 | 95.72% | 105 | 1.95% | 126 | 2.31% |
| *101 - Channel Dr to Cabrillo Blvd* | | | | | | | | | |
| HOV Lane | 1 | 1,650 | 65 | 1,619 | | 31 | | | |
| Inside Lane | 1 | 1,900 | 65 | 1,812 | | 31 | | 57 | |
| Outside Lane | 1 | 1,900 | 65 | 1,812 | | 31 | | 57 | |
| *Subtotal* | 3 | 5,450 | | 5,243 | 96.17% | 93 | 1.72% | 114 | 2.07% |

Source: Caltrans, 2008

# **Appendix C** Predicted Future Noise Levels and Noise Barrier Analysis

# INSIDE WIDENING OPTION

# Build Alternative - Inside Widening Option

| Receiver I.D. | | Barrier I.D. and Location | Land Use[2] | Number of Dwelling Units | Existing Noise Level Leq(h), dBA[1,3] | State Route 101 South Coast HOV Future Worst Hour Noise Levels - Leq(h), dBA[1,6] | | | | | | Noise Prediction with Barrier, Barrier Insertion Loss (I.L.), and Number of Benefitted Receivers (NBR) | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Design Year Noise Level without Project Leq(h), dBA[1] | Design Year Noise Level with Project Leq(h), dBA[1] | Design Year Noise Level without Project Minus Existing Conditions Leq(h), dBA | Design Year Noise Level with Project minus No Project Conditions Leq(h), dBA | Activity Category (NAC) | Impact Type[4] | 8 feet | | | 10 feet | | | 12 feet | | | 14 feet | | | 16 feet | | |
| | | | | | | | | | | | | Leq(h) | I.L. | NBR | Leq(h) | I.L. | NBR | Leq(h) | I.L. | NBR | Leq(h) | I.L. | NBR | Leq(h) | I.L. | NBR |
| R 1 | W | S90 R/W | MH | 1 | 68 MOD | 70 | 71 | 2 | 1 | B (67) | A/E | 68 | 3 | 0 | 68 | 3 | 0 | 67 T | 4 | 0 | **66 R** | **5** | 1 | 66 | 5 | 1 |
| R 1A | * | | -- | -- | 73 M,ST1 | 75 | 76 | 2 | 1 | N/A | N/A | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| R 2 | C,W | | MH | 5 | 70 MOD | 72 | 72 | 2 | 0 | B (67) | A/E | 71 | 1 | 0 | 69 | 3 | 0 | 67 T | 5 | 5 | **66 R,5** | **6** | 5 | 66 | 6 | 5 |
| R 3 | W | S98 R/W | MH | 11 | 67 MOD | 69 | 70 | 2 | 1 | B (67) | A/E | 69 | 1 | 0 | 69 | 1 | 0 | 67 T | 3 | 0 | **65 R** | **5** | 11 | 65 | 5 | 11 |
| R 3A | C,W | | REC | 1 | 69 MOD | 71 | 72 | 2 | 1 | B (67) | A/E | 70 | 2 | 0 | 69 | 3 | 0 | 67 | 5 | 1 | **65 T,R** | **7** | 1 | 64 | 8 | 1 |
| R 3B | W | | MH | 6 | 67 MOD | 69 | 70 | 2 | 1 | B (67) | A/E | 69 | 1 | 0 | 67 | 3 | 0 | 66 T | 4 | 0 | **65 R** | **5** | 6 | 65 | 5 | 6 |
| R 3C | W | | MH | 2 | 62 MOD | 64 | 65 | 2 | 1 | B (67) | NONE | 64 | 1 | 0 | 63 | 2 | 0 | 63 | 2 | 0 | 62 | 3 | 0 | 61 | 4 | 0 |
| R 4 | K1 | S158 R/W & Shoulder | SFR | 2 | 72 MOD | 72 | 74 | 0 | 2 | B (67) | A/E | 66 | 8 | 2 | **64 T,R** | **10** | 2 | 63 | 11 | 2 | 62 | 12 | 2 | 61 | 13 | 2 |
| R 4A | K1 | | SFR | 2 | 66 M,LT1 | 68 | 70 | 2 | 2 | B (67) | A/E | 65 | 5 | 1 | **62 T,R** | **8** | 2 | 61 | 9 | 2 | 61 | 9 | 2 | 60 | 10 | 2 |
| R 5 | K1 | | SFR | 12 | 70 MOD | 72 | 73 | 2 | 1 | B (67) | A/E | 66 | 7 | 12 | **63 T,R** | **10** | 12 | 62 | 11 | 12 | 61 | 12 | 12 | 61 | 12 | 12 |
| R 6 | K1,C | | SFR | 4 | 71 M,ST3 | 72 | 74 | 1 | 2 | B (67) | A/E | 65 | 9 | 4 | 64 T | 10 | 4 | **63 R,5** | **11** | 4 | 62 | 12 | 4 | 61 | 13 | 4 |
| R 7 | | | MFR | 5 | 61 MOD | 63 | 65 | 2 | 2 | B (67) | NONE | 62 | 3 | 0 | 62 | 3 | 0 | 61 | 4 | 0 | 60 | 5 | 5 | 59 | 6 | 5 |
| R 7A | | | MFR | 6 | 67 | 69 | 70 | 2 | 1 | B (67) | A/E | 67 | 3 | 0 | 66 | 4 | 0 | **64 T,R** | **6** | 6 | 63 | 7 | 6 | 63 | 7 | 6 |
| R 8 | G | -- | MFR | 16 | 63 M,ST2 | 64 | 65 | 1 | 1 | B (67) | NONE | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| R 9 | G | | MFR | 14 | 60 MOD | 61 | 62 | 1 | 1 | B (67) | NONE | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| R 10 | W,H | | MOT | -- | 70 MOD | 71 | 73 | 1 | 2 | N/A | N/A | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| R 10 | W | | MOT | 2 | 45 MOD/INT | 46 | 48 | 1 | 2 | E (52) | NONE | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| R 11 | K2,W | S174 R/W | SFR | 2 | 67 MOD | 68 | 69 | 1 | 1 | B (67) | A/E | 67 T | 2 | 0 | 65 | 4 | 0 | **64 R** | **5** | 1 | 63 | 6 | 1 | 62 | 7 | 2 |
| R 12 | K2 | | SFR | 6 | 71 M,ST4 | 72 | 74 | 1 | 2 | B (67) | A/E | 67 | 7 | 5 | 64 T | 10 | 5 | **63 R,5** | **11** | 6 | 62 | 12 | 6 | 61 | 13 | 6 |
| R 13 | C | | SFR | 2 | 72 MOD | 73 | 75 | 1 | 2 | B (67) | A/E | 68 | 7 | 2 | 66 T | 9 | 2 | **64 R,5** | **11** | 2 | 63 | 12 | 2 | 62 | 13 | 2 |
| R 13A | ** | | SFR | 3 | 69 MOD | 71 | 72 | 2 | 1 | B (67) | A/E | 67 | 5 | 1 | 65 | 7 | 3 | **64 T,R** | **8** | 3 | 63 | 9 | 3 | 63 | 9 | 3 |
| R 14 | C | S182 Shoulder | SFR | 1 | 63 MOD | 65 | 66 | 2 | 1 | B (67) | A/E | 64 | 2 | 0 | 63 | 3 | 0 | 62 | 4 | 0 | 62 T | 4 | 0 | **61 R** | **5** | 1 |

**Notes:**

1 - Leq(h) are A-weighted, peak hour noise levels in decibels.
2 - Land Use: SFR - single-family residence; MFR - multi-family residence; MH - mobile Home; MOT - motel/hotel; SCH - School; REC - recreational/park; REL - religious institution.
3 - M - Measured noise level; STxx or LTxx - measurement site number; INT - Interior; MOD - Modeled noise level using TNM.
4 - S = Substantial Increase (12 dBA or more); A/E = Approach or exceed NAC.
5 - Barrier height needed to meet requirements at adjacent receptor(s).
6 - Traffic noise from the freeway only; other local noise sources are not included.

C - Critical design receiver.
R - The minimum height to meet feasibility requirements of Caltrans' Noise Abatement Criteria.
W - Existing private property wall or soundwall.
* - Measurement or modeling purpose only: no outdoor use area.
G - Garages providing traffic noise reduction.
T - Minimum height required to block the line-of-sight from the receptor to truck exhaust stacks.
H - Exterior modeling point for a motel: interior noise estimated using the modeled noise level at this point.
** - Non first row residences.
K1 - A calibration factor of -3.5 dB is applied for this receptor and adjacent receptors with similar topographic features.
K2 - A calibration factor of -2.5 dB is applied for this receptor and adjacent receptors with similar topographic features.

# Build Alternative - Inside Widening Option

| Receiver I.D. | Barrier I.D. and Location | Land Use[2] | Number of Dwelling Units | Existing Noise Level Leq(h), dBA[1,3] | Design Year Noise Level without Project Leq(h), dBA[1] | Design Year Noise Level with Project Leq(h), dBA[1] | Design Year Noise Level without Project Minus Existing Conditions Leq(h), dBA | Design Year Noise Level with Project minus No Project Conditions Leq(h), dBA | Activity Category (NAC) | Impact Type[4] | 8 feet Leq(h) | 8 feet I.L. | 8 feet NBR | 10 feet Leq(h) | 10 feet I.L. | 10 feet NBR | 12 feet Leq(h) | 12 feet I.L. | 12 feet NBR | 14 feet Leq(h) | 14 feet I.L. | 14 feet NBR | 16 feet Leq(h) | 16 feet I.L. | 16 feet NBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | State Route 101 South Coast HOV Future Worst Hour Noise Levels - Leq(h), dBA[1,6] | | | | | | Noise Prediction with Barrier, Barrier Insertion Loss (I.L.), and Number of Benefitted Receivers (NBR) | | | | | | | | | | | | | | |
| R 15 C | S188 | MOT | 1 | 63 MOD | 65 | 66 | 2 | 1 | B (67) | A/E | 63 | 3 | 0 | 63 | 3 | 0 | **61** T,R | **5** | 1 | 61 | 5 | 1 | 60 | 6 | 1 |
| R 17 | R/W | REC | 1 | 64 M,ST6 | 65 | 67 | 1 | 2 | B (67) | A/E | 64 | 3 | 0 | 63 | 4 | 0 | **62** T,R | **5** | 1 | 63 D | 4 | 1 | 62 | 5 | 1 |
| R 17A | | MFR | 4 | 69 MOD | 70 | 72 | 1 | 2 | B (67) | A/E | 68 | 4 | 0 | 67 | 5 | 4 | **64** T,R | **8** | 4 | 63 | 9 | 4 | 62 | 10 | 4 |
| R 18 W | | MFR | 3 | 68 MOD | 69 | 71 | 1 | 2 | B (67) | A/E | 68 | 3 | 0 | 67 | 4 | 0 | 66 T | 5 | 3 | **65** R,5 | **6** | 3 | 64 | 7 | 3 |
| R 18A W | S210 | MFR | 7 | 69 MOD | 70 | 71 | 1 | 1 | B (67) | A/E | 69 | 2 | 0 | 69 | 2 | 0 | 67 T | 4 | 0 | **66** R | **5** | 7 | 64 | 7 | 7 |
| R 19 | R/W | MFR | 4 | 72 MOD | 73 | 74 | 1 | 1 | B (67) | A/E | 68 | 6 | 2 | **66** T,R | **8** | 2 | 64 | 10 | 4 | 64 | 10 | 4 | 63 | 11 | 4 |
| R 20 * | | -- | -- | 72 M,ST7 | 73 | 75 | 1 | 2 | N/A | N/A | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| R 21 C | | MH | 14 | 74 MOD | 75 | 76 | 1 | 1 | B (67) | A/E | 70 | 6 | 10 | **68** T,R | **8** | 10 | 67 | 9 | 10 | 66 | 10 | 14 | 65 | 11 | 14 |
| R 22 W | | MFR | 2 | 68 MOD | 69 | 70 | 1 | 1 | B (67) | A/E | -- | -- | -- | -- | -- | -- | -- | -- | -- | 68 | 2 | 0 | 67 | 3 | 0 |
| R 23 C | | SFR | 9 | 76 MOD | 77 | 78 | 1 | 1 | B (67) | A/E | 70 | 8 | 6 | **68** T,R | **10** | 9 | 66 | 12 | 9 | 65 | 13 | 9 | 64 | 14 | 9 |
| R 24 | S181 | MH | 28 | 74 M,ST5 | 76 | 77 | 2 | 1 | B (67) | A/E | 70 | 7 | 21 | **67** T,R | **10** | 21 | 66 | 11 | 21 | 65 | 12 | 21 | 64 | 13 | 28 |
| R 25 | R/W | SFR | 4 | 74 MOD | 76 | 77 | 2 | 1 | B (67) | A/E | 70 | 7 | 4 | **68** T,R | **9** | 4 | 66 | 11 | 4 | 65 | 12 | 4 | 64 | 13 | 4 |
| R 26 W | | MFR | 8 | 70 MOD | 72 | 73 | 2 | 1 | B (67) | A/E | 70 | 3 | 0 | **68** T,R | **5** | 8 | 67 | 6 | 8 | 66 | 7 | 8 | 65 | 8 | 8 |
| R 27 W | | MFR | 6 | 70 MOD | 72 | 73 | 1 | 1 | B (67) | A/E | 69 | 4 | 0 | **67** T,R | **6** | 6 | 66 | 7 | 6 | 65 | 8 | 6 | 64 | 9 | 6 |
| R 28 | | SFR | 3 | 66 MOD | 67 | 67 | 1 | 0 | B (67) | A/E | 64 | 3 | 0 | 63 T | 4 | 0 | **62** R | **5** | 3 | 62 | 5 | 3 | 61 | 6 | 3 |
| R 28A *** | S257 | SFR | 3 | 61 MOD | 62 | 62 | 1 | 0 | B (67) | NONE | 60 | 2 | 0 | 60 T | 2 | 0 | 59 | 3 | 0 | 59 | 3 | 0 | 59 | 3 | 0 |
| R 29 C | Shoulder | SFR | 9 | 66 M,ST8 | 67 | 67 | 1 | 0 | B (67) | A/E | 64 | 3 | 0 | 63 T | 4 | 0 | **61** R | **6** | 9 | 60 | 7 | 9 | 59 | 8 | 9 |
| R 29A *** | | SFR | 9 | 54 MOD | 55 | 56 | 1 | 1 | B (67) | NONE | 54 | 2 | 0 | 53 T | 3 | 0 | 52 | 4 | 0 | 51 | 5 | 9 | 51 | 5 | 9 |

**Notes:**

1 - Leq(h) are A-weighted, peak hour noise levels in decibels.
2 - Land Use: SFR - single-family residence; MFR - multi-family residence; MH - mobile Home; MOT - motel/hotel; SCH - School; REC - recreational/park; REL - religious institution.
3 - M - Measured noise level; STxx or LTxx - measurement site number; INT - Interior; MOD - Modeled noise level using TNM.
4 - S = Substantial Increase (12 dBA or more); A/E = Approach or exceed NAC.
5 - Barrier height needed to meet requirements at adjacent receptor(s).
6 - Traffic noise from the freeway only; other local noise sources are not included.
C - Critical design receiver.
R - The minimum height to meet feasibility requirements of Caltrans' Noise Abatement Criteria.
W - Existing private property wall or soundwall.
* - Measurement or modeling purpose only: no outdoor use area.
D - The result is the effect of multiple diffraction caused by two barriers in series (TNM Technical Manual, Page 90, 1998).
T - Minimum height required to block the line-of-sight from the receptor to truck exhaust stacks.
H - Exterior modeling point for a motel: interior noise estimated using the modeled noise level at this point.
** - Non first row residences. *** - Beachfront frequent outdoor use area.

# Build Alternative - Inside Widening Option

| Receiver I.D. | Barrier I.D. and Location | Land Use[2] | Number of Dwelling Units | Existing Noise Level Leq(h), dBA[1,3] | State Route 101 South Coast HOV Future Worst Hour Noise Levels - Leq(h), dBA[1,6] | | | | | | Noise Prediction with Barrier, Barrier Insertion Loss (I.L.), and Number of Benefitted Receivers (NBR) | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Design Year Noise Level without Project Leq(h), dBA[1] | Design Year Noise Level with Project Leq(h), dBA[1] | Design Year Noise Level without Project Minus Existing Conditions Leq(h), dBA | Design Year Noise Level with Project minus No Project Conditions Leq(h), dBA | Activity Category (NAC) | Impact Type[4] | 8 feet | | | 10 feet | | | 12 feet | | | 14 feet | | | 16 feet | | |
| | | | | | | | | | | | Leq(h) | I.L. | NBR | Leq(h) | I.L. | NBR | Leq(h) | I.L. | NBR | Leq(h) | I.L. | NBR | Leq(h) | I.L. | NBR |
| R 30 | S281 R/W & Shoulder | SFR | 17 | 68 MOD | 69 | 70 | 1 | 1 | B (67) | A/E | 65 | 5 | 17 | 63 | 7 | 17 | **62** T,R | **8** | 17 | 61 | 9 | 17 | 60 | 10 | 17 |
| R 30A *** | | SFR | 17 | 56 MOD | 57 | 58 | 1 | 1 | B (67) | NONE | 56 | 2 | 0 | 55 | 3 | 0 | 54 | 4 | 0 | 53 | 5 | 17 | 52 | 6 | 17 |
| R 31 C | | SFR | 7 | 69 MOD | 70 | 71 | 1 | 1 | B (67) | A/E | 66 | 5 | 7 | 65 | 6 | 7 | **63** T,R | **8** | 7 | 62 | 9 | 7 | 61 | 10 | 7 |
| R 31A ** | | SFR | 1 | 63 MOD | 64 | 65 | 1 | 1 | B (67) | NONE | 65 | 0 | 0 | 61 | 4 | 0 | **59** 5 | **6** | 1 | 58 | 7 | 1 | 58 | 7 | 1 |
| R 31B ** | | SFR | 7 | 62 MOD | 63 | 64 | 1 | 1 | B (67) | NONE | 61 | 3 | 0 | 60 | 4 | 0 | **58** 5 | **6** | 4 | 58 | 6 | 4 | 57 | 7 | 7 |
| R 31C ** | | SFR | 1 | 63 MOD | 64 | 65 | 1 | 1 | B (67) | NONE | 63 | 2 | 0 | 62 | 3 | 0 | 61 | 4 | 0 | 59 | 6 | 1 | 58 | 7 | 1 |
| R 32 K3,* | | -- | -- | 67 M,ST9 | 68 | 68 | 1 | 0 | N/A | N/A | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| R 32A K3 | | SFR | 11 | 65 MOD | 66 | 67 | 1 | 1 | B (67) | A/E | 64 | 3 | 0 | 63 | 4 | 0 | **62** T,R | **5** | 11 | 59 | 8 | 11 | 58 | 9 | 11 |
| R 32B K3,** | | SFR | 2 | 59 MOD | 60 | 62 | 1 | 2 | B (67) | NONE | 59 | 3 | 0 | 58 | 4 | 0 | **56** 5 | **6** | 2 | 55 | 7 | 2 | 54 | 8 | 2 |
| R 33 K4 | | SFR | 12 | 64 MOD | 65 | 66 | 1 | 1 | B (67) | A/E | 62 | 4 | 0 | 61 | 5 | 11 | **59** T,R | **7** | 11 | 58 | 8 | 12 | 57 | 9 | 12 |
| R 34 K4 | | SFR | 6 | 64 MOD | 66 | 66 | 2 | 0 | B (67) | A/E | 63 | 3 | 0 | 62 | 4 | 0 | **60** T,R | **6** | 6 | 59 | 7 | 6 | 58 | 8 | 6 |
| R 34A K4,** | | SFR | 1 | 59 MOD | 61 | 62 | 2 | 1 | B (67) | NONE | 60 | 2 | 0 | 60 | 2 | 0 | 58 | 4 | 0 | 57 | 5 | 1 | 56 | 6 | 1 |
| R 35A K4,** | | SFR | 2 | 59 MOD | 60 | 62 | 1 | 2 | B (67) | NONE | 59 | 3 | 0 | 59 | 3 | 0 | **57** 5 | **5** | 2 | 56 | 6 | 2 | 55 | 7 | 2 |
| R 35 | | SFR | 9 | 68 M,ST10 | 69 | 69 | 1 | 0 | B (67) | A/E | 64 | 5 | 9 | 62 | 7 | 9 | **61** T,R | **8** | 9 | 60 | 9 | 9 | 59 | 10 | 9 |
| R 36 | -- | SFR | 3 | 63 MOD | 64 | 65 | 1 | 1 | B (67) | NONE | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| R 37 | | SFR | 3 | 59 M,ST11 | 60 | 61 | 1 | 1 | B (67) | NONE | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| R 38 | | SFR | 2 | 59 MOD | 61 | 62 | 2 | 1 | B (67) | NONE | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| R 39A C | S238 R/W | SFR | 1 | 64 MOD | 66 | 67 | 2 | 1 | B (67) | A/E | 66 | 1 | 0 | 65 | 2 | 0 | 63 | 4 | 0 | **62** T,R | **5** | 1 | 62 | 5 | 1 |
| R 39B | -- | SFR | 1 | 61 MOD | 64 | 64 | 3 | 0 | B (67) | NONE | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

**Notes:**

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3 - M - Measured noise level; STxx or LTxx - measurement site number; INT - Interior; MOD - Modeled noise level using TNM.
4 - S = Substantial Increase (12 dBA or more); A/E = Approach or exceed NAC.
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6 - Traffic noise from the freeway only; other local noise sources are not included.
C - Critical design receiver.
R - The minimum height to meet feasibility requirements of Caltrans' Noise Abatement Criteria.
T - Minimum height required to block the line-of-sight from the receptor to truck exhaust stacks.
W - Existing private property wall or soundwall.
H - Exterior modeling point for a motel: interior noise estimated using the modeled noise level at this point.
* - Measurement or modeling purpose only: no outdoor use area.
** - Non first row residences.
*** - Beachfront frequent outdoor use area.
K3 - A calibration factor of -3.0 dB is applied for this receptor and adjacent receptors with similar topographic features.
K4 - A calibration factor of -2.0 dB is applied for this receptor and adjacent receptors with similar topographic features.

# Build Alternative - Inside Widening Option

| Receiver I.D. | Barrier I.D. and Location | Land Use[2] | Number of Dwelling Units | Existing Noise Level Leq(h), dBA[1,3] | Design Year Noise Level without Project Leq(h), dBA[1] | Design Year Noise Level with Project Leq(h), dBA[1] | Design Year Noise Level without Project Minus Existing Conditions Leq(h), dBA | Design Year Noise Level with Project minus No Project Conditions Leq(h), dBA | Activity Category (NAC) | Impact Type[4] | 8 feet Leq(h) | 8 feet I.L. | 8 feet NBR | 10 feet Leq(h) | 10 feet I.L. | 10 feet NBR | 12 feet Leq(h) | 12 feet I.L. | 12 feet NBR | 14 feet Leq(h) | 14 feet I.L. | 14 feet NBR | 16 feet Leq(h) | 16 feet I.L. | 16 feet NBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | State Route 101 South Coast HOV Future Worst Hour Noise Levels - Leq(h), dBA[1,6] | | | | | | Noise Prediction with Barrier, Barrier Insertion Loss (I.L.), and Number of Benefitted Receivers (NBR) | | | | | | | | | | | | | | |
| R 39 | | MFR | 8 | 69 MOD | 70 | 72 | 1 | 2 | B (67) | A/E | 68 | 4 | 0 | 67 | 5 | 8 | **66** R,5 | **6** | 8 | 65 | 7 | 8 | 65 | 7 | 8 |
| R 39C * | | -- | -- | 73 M,ST12 | 75 | 76 | 2 | 1 | B (67) | N/A | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| R 40 W | | SFR | 5 | 64 M,ST13 | 65 | 66 | 1 | 1 | B (67) | A/E | 63 | 3 | 0 | 62 | 4 | 0 | **60** T,R | **6** | 5 | 59 | 7 | 5 | 59 | 7 | 5 |
| R 41 C | S310 | REL | 1 | 71 MOD | 72 | 74 | 1 | 2 | B (67) | A/E | 69 | 5 | 1 | 67 | 7 | 1 | **65** T,R | **9** | 1 | 64 | 10 | 1 | 63 | 11 | 1 |
| R 41A ** | R/W | SFR | 1 | 63 MOD | 64 | 66 | 1 | 2 | B (67) | A/E | 63 | 3 | 0 | 63 | 3 | 0 | **61** R | **5** | 1 | 60 | 6 | 1 | 60 | 6 | 1 |
| R 42 | | SFR | 3 | 69 MOD | 70 | 71 | 1 | 1 | B (67) | A/E | 66 | 5 | 1 | 64 T | 7 | 1 | **63** R,5 | **8** | 3 | 62 | 9 | 3 | 61 | 10 | 3 |
| R 42A W,** | | SFR | 1 | 64 MOD | 65 | 66 | 1 | 1 | B (67) | A/E | 64 | 2 | 0 | 63 | 3 | 0 | 62 | 4 | 0 | 62 | 4 | 0 | 62 | 4 | 0 |
| R 43 W | | SFR | 1 | 68 MOD | 69 | 70 | 1 | 1 | B (67) | A/E | 67 | 3 | 0 | 66 | 4 | 0 | 66 | 4 | 0 | 66 | 4 | 0 | 66 | 4 | 0 |
| R 43A K5,W | -- | SFR | 4 | 66 MOD | 67 | 69 | 1 | 2 | B (67) | A/E | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 67 | 2 | 0 |
| R 44 K5,W | | SFR | 9 | 66 M,ST14 | 68 | 69 | 2 | 1 | B (67) | A/E | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 68 | 1 | 0 |
| R 45 C, W | S334 | SFR | 1 | 72 MOD | 73 | 74 | 1 | 1 | B (67) | A/E | 70 | 4 | 0 | 69 | 5 | 1 | **68** T,R | **6** | 1 | 68 | 6 | 1 | 67 | 7 | 1 |
| R 45A W | R/W | SFR | 1 | 64 MOD | 65 | 67 | 1 | 2 | B (67) | A/E | 66 | 1 | 0 | 66 | 1 | 0 | 65 | 2 | 0 | 65 | 2 | 0 | 65 | 2 | 0 |
| R 46 | -- | SFR | 1 | 71 MOD | 72 | 74 | 1 | 2 | B (67) | A/E | 73 | 1 | 0 | 73 | 1 | 0 | 73 | 1 | 0 | 73 | 1 | 0 | 73 | 1 | 0 |
| R 47A | | SFR | 2 | 65 MOD | 66 | 68 | 1 | 2 | B (67) | A/E | 65 | 3 | 0 | 64 | 4 | 0 | 63 T | 5 | 2 | **62** R,5 | **6** | 2 | 62 | 6 | 2 |
| R 47 | | SFR | 4 | 65 M,ST15 | 66 | 68 | 1 | 2 | B (67) | A/E | 65 | 3 | 0 | 64 | 4 | 0 | 63 | 5 | 4 | **62** T,R | **6** | 4 | 62 | 6 | 4 |
| R 47B K6,** | | SFR | 3 | 57 MOD | 58 | 60 | 1 | 2 | B (67) | NONE | 60 | 0 | 0 | 59 | 1 | 0 | 58 | 2 | 0 | 58 | 2 | 0 | 58 | 2 | 0 |
| R 47C K6,** | | SFR | 3 | 59 MOD | 60 | 62 | 1 | 2 | B (67) | NONE | 61 | 1 | 0 | 61 | 1 | 0 | 60 | 2 | 0 | 58 | 4 | 0 | 58 | 4 | 0 |
| R 47D K6,** | | SFR | 3 | 56 M,ST15A | 57 | 59 | 1 | 2 | B (67) | NONE | 58 | 1 | 0 | 57 | 2 | 0 | 57 | 2 | 0 | 56 | 3 | 0 | 55 | 4 | 0 |
| R 48A | S374 | SFR | 3 | 67 MOD | 68 | 70 | 1 | 2 | B (67) | A/E | 68 | 2 | 0 | 67 | 3 | 0 | 66 | 4 | 0 | **65** T,R | **5** | 3 | 64 | 6 | 3 |
| R 48 | R/W | SFR | 2 | 67 MOD | 68 | 70 | 1 | 2 | B (67) | A/E | 69 | 1 | 0 | 69 | 1 | 0 | 68 | 2 | 0 | 67 | 3 | 0 | 66 | 4 | 0 |
| R 48B | | MFR | 4 | 63 MOD | 64 | 66 | 1 | 2 | B (67) | A/E | 66 | 0 | 0 | 66 | 0 | 0 | 65 | 1 | 0 | 64 | 2 | 0 | 64 | 2 | 0 |
| R 48C K6,** | | MFR | 6 | 56 MOD | 57 | 59 | 1 | 2 | B (67) | NONE | 58 | 1 | 0 | 58 | 1 | 0 | 58 | 1 | 0 | 58 | 1 | 0 | 56 | 3 | 0 |
| R 49A C | | REC | 3 | 71 MOD | 71 | 73 | 0 | 2 | B (67) | A/E | 71 | 0 | 0 | 69 | 4 | 0 | 68 | 5 | 3 | **66** T,R | **7** | 3 | 65 | 8 | 3 |
| R 49 | | REC | 1 | 70 MOD | 71 | 72 | 1 | 1 | B (67) | A/E | 72 | 0 | 0 | 71 | 1 | 0 | 70 | 2 | 0 | 70 | 2 | 0 | 69 | 3 | 0 |

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3 - M - Measured noise level; STxx or LTxx - measurement site number; INT - Interior; MOD - Modeled noise level using TNM.
4 - S = Substantial Increase (12 dBA or more); A/E = Approach or exceed NAC.
5 - Barrier height needed to meet requirements at adjacent receptor(s).
6 - Traffic noise from the freeway only; other local noise sources are not included.
C - Critical design receiver.
R - The minimum height to meet feasibility requirements of Caltrans' Noise Abatement Criteria.
W - Existing private property wall or soundwall.
* - Measurement or modeling purpose only: no outdoor use area.
T - Minimum height required to block the line-of-sight from the receptor to truck exhaust stacks.
H - Exterior modeling point for a motel: interior noise estimated using the modeled noise level at this point.
** - Non first row residences.
K5 - A calibration factor of +3.0 dB is applied for this receptor and adjacent receptors with similar topographic features.
K6 - A calibration factor of -2.5 dB is applied for this receptor and adjacent receptors with similar topographic features.

# Build Alternative - Inside Widening Option

| Receiver I.D. | Barrier I.D. and Location | Land Use[2] | Number of Dwelling Units | Existing Noise Level Leq(h), dBA[1,3] | State Route 101 South Coast HOV Future Worst Hour Noise Levels - Leq(h), dBA[1,6] | | | | | | Noise Prediction with Barrier, Barrier Insertion Loss (I.L.), and Number of Benefitted Receivers (NBR) | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Design Year Noise Level without Project Leq(h), dBA[1] | Design Year Noise Level with Project Leq(h), dBA[1] | Design Year Noise Level without Project Minus Existing Conditions Leq(h), dBA | Design Year Noise Level with Project minus No Project Conditions Leq(h), dBA | Activity Category (NAC) | Impact Type[4] | 8 feet | | | 10 feet | | | 12 feet | | | 14 feet | | | 16 feet | | |
| | | | | | | | | | | | Leq(h) | I.L. | NBR | Leq(h) | I.L. | NBR | Leq(h) | I.L. | NBR | Leq(h) | I.L. | NBR | Leq(h) | I.L. | NBR |
| R 50 | S392 R/W | SFR | 2 | 74 MOD | 75 | 76 | 1 | 1 | B (67) | A/E | 76 | 0 | 0 | 76 | 0 | 0 | 75 | 1 | 0 | 74 | 2 | 0 | 73 L | 3 | 0 |
| R 51 | | MOT | 2 | 72 MOD | 72 | 74 | 0 | 2 | B (67) | A/E | 68 | 6 | 2 | 66 T | 8 | 2 | 65 | 9 | 2 | **64 R,5** | **10** | 2 | 63 | 11 | 2 |
| R S1.1 ** | | SFR | 1 | 69 MOD | 70 | 72 | 1 | 2 | B (67) | A/E | 71 | 1 | 0 | 71 | 1 | 0 | 71 | 1 | 0 | 70 | 2 | 0 | 70 | 2 | 0 |
| R S1.2 ** | | SFR | 2 | 67 M,CS1 | 68 | 70 | 1 | 2 | B (67) | A/E | 68 | 2 | 0 | 68 | 2 | 0 | 67 | 3 | 0 | 67 | 3 | 0 | 67 | 3 | 0 |
| R S1.3 ** | | SFR | 2 | 62 MOD | 63 | 65 | 1 | 2 | B (67) | NONE | 63 | 2 | 0 | 62 | 3 | 0 | 62 | 3 | 0 | 61 | 4 | 0 | 60 | 5 | 2 |
| R S1.4 ** | | SFR | 1 | 66 MOD | 67 | 69 | 1 | 2 | B (67) | A/E | 67 | 2 | 0 | 66 | 3 | 0 | 65 | 4 | 0 | **64 R** | **5** | 1 | 63 | 6 | 1 |
| R S1.5 KS1,** | | SFR | 3 | 63 MOD | 63 | 65 | 0 | 2 | B (67) | NONE | 65 | 0 | 0 | 65 | 0 | 0 | 65 | 0 | 0 | 64 | 1 | 0 | 64 | 1 | 0 |
| R S1.6 KS1,** | | SFR | 2 | 60 M,CS2 | 61 | 63 | 1 | 2 | B (67) | NONE | 62 | 1 | 0 | 62 | 1 | 0 | 62 | 1 | 0 | 61 | 2 | 0 | 61 | 2 | 0 |
| R S1.7 KS1,** | | MFR | 4 | 61 MOD | 61 | 64 | 0 | 3 | B (67) | NONE | 62 | 2 | 0 | 62 | 2 | 0 | 61 | 3 | 0 | 61 | 3 | 0 | 60 | 4 | 0 |
| R S1.8 KS1,** | | SFR | 2 | 63 MOD | 63 | 65 | 0 | 2 | B (67) | NONE | 64 | 1 | 0 | 63 | 2 | 0 | 63 | 2 | 0 | 62 | 3 | 0 | 61 | 4 | 0 |
| R 52 C | | SFR | 6 | 72 M,ST16 | 73 | 74 | 1 | 1 | B (67) | A/E | 66 T | 8 | 6 | 65 | 9 | 6 | 64 | 10 | 6 | 63 | 11 | 6 | **62 R,5** | **12** | 6 |
| R S2.1 ** | | SFR | 1 | 66 MOD | 67 | 69 | 1 | 2 | B (67) | A/E | 66 | 3 | 0 | 65 | 4 | 0 | 65 | 4 | 0 | 64 | 5 | 1 | **64 R** | **5** | 1 |
| R S2.2 ** | | SFR | 1 | 67 MOD | 68 | 70 | 1 | 2 | B (67) | A/E | 68 | 2 | 0 | 67 | 3 | 0 | 66 | 4 | 0 | 65 | 5 | 1 | **64 R** | **6** | 1 |
| R S2.3 ** | | SFR | 2 | 63 M,CS3 | 64 | 66 | 1 | 2 | B (67) | A/E | 65 | 1 | 0 | 64 | 2 | 0 | 64 | 2 | 0 | 63 | 3 | 0 | 63 | 3 | 0 |
| R S2.4 ** | | SFR | 2 | 64 M,ST16A | 65 | 67 | 1 | 2 | B (67) | A/E | 65 | 2 | 0 | 64 | 3 | 0 | 63 | 4 | 0 | 63 | 4 | 0 | **62 R** | **5** | 2 |
| R S2.5 KS2,** | | SFR | 2 | 63 MOD | 64 | 66 | 1 | 2 | B (67) | A/E | 65 | 1 | 0 | 64 | 2 | 0 | 63 | 3 | 0 | 62 | 4 | 0 | 62 | 4 | 0 |
| R S2.6 KS2,** | | SFR | 2 | 64 MOD | 64 | 66 | 0 | 2 | B (67) | A/E | 65 | 1 | 0 | 64 | 2 | 0 | 64 | 2 | 0 | 63 | 3 | 0 | 62 | 4 | 0 |
| R S2.7 KS2,** | | SFR | 2 | 61 M,CS4 | 62 | 64 | 1 | 2 | B (67) | NONE | 63 | 1 | 0 | 62 | 2 | 0 | 61 | 3 | 0 | 61 | 3 | 0 | 60 | 4 | 0 |
| R 53 | | SFR | 2 | 70 MOD | 70 | 72 | 0 | 2 | B (67) | A/E | 66 T | 6 | 2 | 65 | 7 | 2 | 64 | 8 | 2 | 63 | 9 | 2 | **62 R,5** | **10** | 2 |
| R S3.1 ** | | SFR | 1 | 64 M,CS5 | 65 | 67 | 1 | 2 | B (67) | A/E | 63 | 4 | 0 | 62 | 5 | 1 | 61 | 6 | 1 | 60 | 7 | 1 | **59 R,5** | **8** | 1 |
| R S3.2 ** | | SFR | 1 | 66 MOD | 66 | 68 | 0 | 2 | B (67) | A/E | 66 | 2 | 0 | 65 | 3 | 0 | 65 | 3 | 0 | 64 | 4 | 0 | **63 R** | **5** | 1 |
| R S3.3 ** | | SFR | 1 | 66 MOD | 67 | 68 | 1 | 1 | B (67) | A/E | 66 | 2 | 0 | 65 | 3 | 0 | 65 | 3 | 0 | 64 | 4 | 0 | **63 R** | **5** | 1 |
| R S3.4 ** | | SFR | 3 | 60 MOD | 61 | 62 | 1 | 1 | B (67) | NONE | 61 | 1 | 0 | 60 | 2 | 0 | 59 | 3 | 0 | 59 | 3 | 0 | 58 | 4 | 0 |
| R S3.5 ** | | SFR | 1 | 60 M,CS6 | 60 | 62 | 0 | 2 | B (67) | NONE | 60 | 2 | 0 | 59 | 3 | 0 | 58 | 4 | 0 | 58 | 4 | 0 | **57 5** | **5** | 1 |
| R S3.6 ** | | SFR | 2 | 61 MOD | 62 | 64 | 1 | 2 | B (67) | NONE | 62 | 2 | 0 | 62 | 2 | 0 | 61 | 3 | 0 | 61 | 3 | 0 | 60 | 4 | 0 |
| R S3.7 ** | | MFR | 2 | 66 MOD | 67 | 68 | 1 | 1 | B (67) | A/E | 67 | 1 | 0 | 66 | 2 | 0 | 65 | 3 | 0 | 64 | 4 | 0 | **63 R** | **5** | 2 |

**Notes:**

1 - Leq(h) are A-weighted, peak hour noise levels in decibels.
2 - Land Use: SFR - single-family residence; MFR - multi-family residence; MH - mobile Home; MOT - motel/hotel; SCH - School; REC - recreational/park; REL - religious institution.
3 - M - Measured noise level; STxx or LTxx - measurement site number; INT - Interior; MOD - Modeled noise level using TNM.
4 - S = Substantial Increase (12 dBA or more); A/E = Approach or exceed NAC.
5 - Barrier height needed to meet requirements at adjacent receptor(s).
6 - Traffic noise from the freeway only; other local noise sources are not included.

C - Critical design receiver.
R - The minimum height to meet feasibility requirements of Caltrans' Noise Abatement Criteria.
W - Existing private property wall or soundwall.
* - Measurement or modeling purpose only: no outdoor use area.
L - A soundwall taller than 16 ft would be required to block the line of sight to truck stack.
T - Minimum height required to block the line-of-sight from the receptor to truck exhaust stacks.
H - Exterior modeling point for a motel: interior noise estimated using the modeled noise level at this point.
** - Non first row residences.

KS1- A calibration factor of -4.0 dB is applied for this receptor and adjacent receptors with similar topographic features.
KS2- A calibration factor of -2.5 dB is applied for this receptor and adjacent receptors with similar topographic features.

# Build Alternative - Inside Widening Option

| Receiver I.D. | Barrier I.D. and Location | Land Use[2] | Number of Dwelling Units | Existing Noise Level Leq(h), dBA[1,3] | State Route 101 South Coast HOV Future Worst Hour Noise Levels - Leq(h), dBA[1,6] | | | | | | Noise Prediction with Barrier, Barrier Insertion Loss (I.L.), and Number of Benefitted Receivers (NBR) | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Design Year Noise Level without Project Leq(h), dBA[1] | Design Year Noise Level with Project Leq(h), dBA[1] | Design Year Noise Level without Project Minus Existing Conditions Leq(h), dBA | Design Year Noise Level with Project minus No Project Conditions Leq(h), dBA | Activity Category (NAC) | Impact Type[4] | 8 feet | | | 10 feet | | | 12 feet | | | 14 feet | | | 16 feet | | |
| | | | | | | | | | | | Leq(h) | I.L. | *NBR* | Leq(h) | I.L. | *NBR* | Leq(h) | I.L. | *NBR* | Leq(h) | I.L. | *NBR* | Leq(h) | I.L. | *NBR* |
| R 55 | | MFR | 7 | 67 MOD | 68 | 69 | 1 | 1 | B (67) | A/E | 66 | 3 | *0* | 65 | 4 | *0* | 63 | 6 | *7* | 62 T | 7 | *7* | **60 R,5** | **9** | *7* |
| R 56 W | | SFR | 2 | 62 MOD | 62 | 64 | 0 | 2 | B (67) | NONE | 61 | 3 | *0* | 60 | 4 | *0* | 59 | 5 | *2* | 58 | 6 | *2* | **58 5** | **6** | *2* |
| R S4.1 ** | | SCH | 3 | 66 M,ST17 | 66 | 68 | 0 | 2 | B (67) | A/E | 66 | 2 | *0* | 65 | 3 | *0* | 64 | 4 | *0* | 63 | 5 | *3* | **62 R,5** | **6** | *3* |
| R S4.2 ** | | SFR | 1 | 64 M,CS7 | 65 | 66 | 1 | 1 | B (67) | A/E | 65 | 1 | *0* | 64 | 2 | *0* | 63 | 3 | *0* | 61 | 5 | *1* | **60 R,5** | **6** | *1* |
| R S4.3 ** | | SFR | 1 | 64 MOD | 65 | 66 | 1 | 1 | B (67) | A/E | 64 | 2 | *0* | 63 | 3 | *0* | 62 | 4 | *0* | 61 | 5 | *1* | **60 R,5** | **6** | *1* |
| R S4.4 ** | S392 | SFR | 1 | 64 MOD | 65 | 66 | 1 | 1 | B (67) | A/E | 64 | 2 | *0* | 63 | 3 | *0* | 62 | 4 | *0* | 61 | 5 | *1* | **60 R,5** | **6** | *1* |
| R S4.5 ** | R/W | MFR | 3 | 65 MOD | 66 | 67 | 1 | 1 | B (67) | A/E | 66 | 1 | *0* | 65 | 2 | *0* | 65 | 2 | *0* | 64 | 3 | *0* | 63 | 4 | *0* |
| R S4.6 ** | | SFR | 1 | 66 M,CS8 | 66 | 68 | 0 | 2 | B (67) | A/E | 67 | 1 | *0* | 66 | 2 | *0* | 65 | 3 | *0* | 65 | 3 | *0* | 64 | 4 | *0* |
| R S4.7 ** | | MFR | 4 | 65 MOD | 66 | 67 | 1 | 1 | B (67) | A/E | 66 | 1 | *0* | 65 | 2 | *0* | 64 | 3 | *0* | 64 | 3 | 0 | 63 | 4 | 0 |
| R S4.8 ** | | SFR | 2 | 66 MOD | 67 | 68 | 1 | 1 | B (67) | A/E | 67 | 1 | *0* | 66 | 2 | *0* | 66 | 2 | *0* | 65 | 3 | *0* | 64 | 4 | *0* |
| R S4.9 ** | | MFR | 2 | 66 MOD | 67 | 68 | 1 | 1 | B (67) | A/E | 67 | 1 | *0* | 66 | 2 | *0* | 66 | 2 | *0* | 65 | 3 | *0* | 64 | 4 | *0* |
| R S4.10 ** | | SFR | 1 | 65 M,CS10 | 66 | 67 | 1 | 1 | B (67) | A/E | 66 | 1 | *0* | 65 | 2 | *0* | 65 | 2 | *0* | 63 | 4 | *0* | **62 R** | **5** | *1* |
| R 57 | | SFR | 4 | 68 MOD | 68 | 70 | 0 | 2 | B (67) | A/E | 65 | 5 | *2* | 64 | 6 | *2* | 62 T | 8 | *2* | 61 | 9 | *4* | **60 R,5** | **10** | *4* |
| R S5.1 ** | | SFR | 6 | 63 M,CS9 | 64 | 65 | 1 | 1 | B (67) | NONE | 63 | 2 | *0* | 62 | 3 | *0* | 61 | 4 | *0* | 60 | 5 | *3* | **59 5** | **6** | *6* |
| R S5.2 KS3,** | | SFR | 2 | 66 MOD | 67 | 67 | 1 | 0 | B (67) | A/E | 64 | 3 | *0* | 63 | 4 | *0* | 62 | 5 | *2* | 61 | 6 | *2* | **60 R,5** | **7** | *2* |
| R S5.3 KS3,** | | SFR | 1 | 62 MOD | 63 | 64 | 1 | 1 | B (67) | NONE | 60 | 4 | *0* | 59 | 5 | *1* | 59 | 5 | *1* | 57 | 7 | *1* | **56 5** | **8** | *1* |
| R S5.4 KS3,** | | SFR | 4 | 53 M,CS11 | 54 | 55 | 1 | 1 | B (67) | NONE | 53 | 2 | *0* | 52 | 3 | *0* | 50 | 5 | *4* | 50 | 5 | *4* | **49 5** | **6** | *4* |
| R S5.5 ** | S414 | MFR | 5 | 66 MOD | 67 | 68 | 1 | 1 | B (67) | A/E | 67 | 1 | *0* | 66 | 2 | *0* | 65 | 3 | *0* | 64 | 4 | *0* | **63 R** | **5** | *5* |
| R S5.6 ** | Shoulder | SFR | 2 | 66 MOD | 67 | 68 | 1 | 1 | B (67) | A/E | 67 | 1 | *0* | 66 | 2 | *0* | 65 | 3 | *0* | 64 | 4 | *0* | **63 R** | **5** | *2* |
| R S5.7 KS4,** | | SFR | 2 | 62 MOD | 63 | 64 | 1 | 1 | B (67) | NONE | 63 | 1 | *0* | 63 | 1 | *0* | 62 | 2 | *0* | 62 | 2 | *0* | 61 | 3 | *0* |
| R S5.8 KS4,** | | MFR | 2 | 62 MOD | 62 | 64 | 0 | 2 | B (67) | NONE | 61 | 3 | *0* | 61 | 3 | *0* | 60 | 4 | *0* | 59 | 5 | *2* | **58 5** | **6** | *2* |
| R S5.9 KS4,** | | SFR | 2 | 63 M,CS12 | 64 | 65 | 1 | 1 | B (67) | NONE | 61 | 4 | *0* | 61 | 4 | *0* | 60 | 5 | *2* | 59 | 6 | *2* | **58 5** | **7** | *2* |
| R S5.10 KS4,** | | SFR | 3 | 53 MOD | 54 | 55 | 1 | 1 | B (67) | NONE | 53 | 2 | *0* | 52 | 3 | *0* | 51 | 4 | *0* | 49 | 6 | *3* | **48 5** | **7** | *3* |

**Notes:**

1 - Leq(h) are A-weighted, peak hour noise levels in decibels.
2 - Land Use: SFR - single-family residence; MFR - multi-family residence; MH - mobile Home; MOT - motel/hotel; SCH - School; REC - recreational/park; REL - religious institution.
3 - M - Measured noise level; STxx or LTxx - measurement site number; INT - Interior; MOD - Modeled noise level using TNM.
4 - S = Substantial Increase (12 dBA or more); A/E = Approach or exceed NAC.
5 - Barrier height needed to meet requirements at adjacent receptor(s).
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C - Critical design receiver.
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W - Existing private property wall or soundwall.
* - Measurement or modeling purpose only: no outdoor use area.
L - A soundwall taller than 16 ft would be required to block the line of sight to truck stack.
T - Minimum height required to block the line-of-sight from the receptor to truck exhaust stacks.
H - Exterior modeling point for a motel: interior noise estimated using the modeled noise level at this point.
** - Non first row residences.
KS1- A calibration factor of -2.5 dB is applied for this receptor and adjacent receptors with similar topographic features.
KS2- A calibration factor of -2.0 dB is applied for this receptor and adjacent receptors with similar topographic features.

# Build Alternative - Inside Widening Option

| Receiver I.D. | Barrier I.D. and Location | Land Use[2] | Number of Dwelling Units | Existing Noise Level Leq(h), dBA[1,3] | State Route 101 South Coast HOV Future Worst Hour Noise Levels - Leq(h), dBA[1,6] | | | | | | Noise Prediction with Barrier, Barrier Insertion Loss (I.L.), and Number of Benefitted Receivers (NBR) | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Design Year Noise Level without Project Leq(h), dBA[1] | Design Year Noise Level with Project Leq(h), dBA[1] | Design Year Noise Level without Project Minus Existing Conditions Leq(h), dBA | Design Year Noise Level with Project minus No Project Conditions Leq(h), dBA | Activity Category (NAC) | Impact Type[4] | 8 feet | | | 10 feet | | | 12 feet | | | 14 feet | | | 16 feet | | |
| | | | | | | | | | | | Leq(h) | I.L. | NBR | Leq(h) | I.L. | NBR | Leq(h) | I.L. | NBR | Leq(h) | I.L. | NBR | Leq(h) | I.L. | NBR |
| R 58 C | S414 Shoulder | SFR | 4 | 72 M,ST20 | 73 | 74 | 1 | 1 | B (67) | A/E | 68 | 6 | 1 | 66 | 8 | 1 | 64 | 10 | 4 | 63 | 11 | 4 | **62 R,5** | **12** | 4 |
| R S6.1 ** | | MFR | 4 | 72 MOD | 73 | 74 | 1 | 1 | B (67) | A/E | 71 | 3 | 0 | 70 | 4 | 0 | 69 | 5 | 4 | 68 | 6 | 4 | **67 R,5** | **7** | 4 |
| R S6.2 ** | | SFR | 2 | 70 MOD | 71 | 72 | 1 | 1 | B (67) | A/E | 70 | 2 | 0 | 69 | 3 | 0 | 68 | 4 | 0 | 67 | 5 | 2 | **67 R,5** | **5** | 2 |
| R S6.3 ** | | SFR | 2 | 69 M,CS13 | 69 | 71 | 0 | 2 | B (67) | A/E | 69 | 2 | 0 | 69 | 2 | 0 | 68 | 3 | 0 | 67 | 4 | 0 | **66 R** | **5** | 2 |
| R S6.4 ** | | SFR | 2 | 69 MOD | 70 | 71 | 1 | 1 | B (67) | A/E | 70 | 1 | 0 | 69 | 2 | 0 | 68 | 3 | 0 | 67 | 4 | 0 | 67 | 4 | 0 |
| R S6.5 ** | | SFR | 1 | 67 MOD | 68 | 69 | 1 | 1 | B (67) | A/E | 68 | 1 | 0 | 68 | 1 | 0 | 67 | 2 | 0 | 66 | 3 | 0 | 65 | 4 | 0 |
| R S6.6 ** | | MFR | 3 | 60 MOD | 61 | 62 | 1 | 1 | B (67) | NONE | 61 | 1 | 0 | 61 | 1 | 0 | 60 | 2 | 0 | 59 | 3 | 0 | 59 | 3 | 0 |
| R S6.7 ** | | SFR | 1 | 67 MOD | 68 | 69 | 1 | 1 | B (67) | A/E | 64 | 5 | 1 | 64 | 5 | 1 | 63 | 6 | 1 | 61 | 8 | 1 | **60 R,5** | **9** | 1 |
| R S6.8 ** | | MFR | 2 | 68 MOD | 69 | 69 | 1 | 0 | B (67) | A/E | 66 | 3 | 0 | 64 | 5 | 2 | 64 | 5 | 2 | 62 | 7 | 2 | **61 R,5** | **8** | 2 |
| R S6.9 ** | | MFR | 2 | 67 M,CS15 | 68 | 69 | 1 | 1 | B (67) | A/E | 67 | 2 | 0 | 65 | 4 | 0 | 64 | 5 | 2 | 63 | 6 | 2 | **62 R,5** | **7** | 2 |
| R S6.10 ** | | SFR | 1 | 68 MOD | 69 | 70 | 1 | 1 | B (67) | A/E | 69 | 1 | 0 | 68 | 2 | 0 | 67 | 3 | 0 | 66 | 4 | 0 | **65 R** | **5** | 1 |
| R S6.11 ** | | SFR | 3 | 70 MOD | 71 | 72 | 1 | 1 | B (67) | A/E | 71 | 1 | 0 | 71 | 1 | 0 | 70 | 2 | 0 | 69 | 3 | 0 | 68 | 4 | 0 |
| R S6.12 ** | | SFR | 3 | 69 M,CS14 | 70 | 71 | 1 | 1 | B (67) | A/E | 70 | 1 | 0 | 70 | 1 | 0 | 69 | 2 | 0 | 68 | 3 | 0 | 67 | 4 | 0 |
| R S6.13 ** | | SFR | 1 | 68 MOD | 69 | 70 | 1 | 1 | B (67) | A/E | 69 | 1 | 0 | 69 | 1 | 0 | 68 | 2 | 0 | 67 | 3 | 0 | 66 | 4 | 0 |
| R S6.14 ** | | MFR | 3 | 63 MOD | 64 | 66 | 1 | 2 | B (67) | A/E | 65 | 1 | 0 | 65 | 1 | 0 | 64 | 2 | 0 | 64 | 2 | 0 | 62 | 4 | 0 |
| R S6.15 ** | | SFR | 3 | 68 MOD | 69 | 70 | 1 | 1 | B (67) | A/E | 69 | 1 | 0 | 69 | 1 | 0 | 69 | 1 | 0 | 68 | 2 | 0 | 67 | 3 | 0 |
| R 58A | S424 Shoulder | MFR | 2 | 67 MOD | 67 | 69 | 0 | 2 | B (67) | A/E | 66 | 3 | 0 | 66 | 3 | 0 | 64 | 5 | 1 | **62 R.5** | **7** | 1 | 61 | 8 | 2 |
| R 59 | | MOT | 1 | 70 MOD | 71 | 72 | 1 | 1 | N/A | N/A | 68 | 4 | -- | 67 | 5 | -- | 65 | 7 | -- | **63** | **9** | -- | 62 | 10 | -- |
| R 59 | | MOT | 1 | 50 MOD | 51 | 52 | 1 | 1 | E (52) | A/E | 48 | 4 | 0 | 47 | 5 | 1 | 45 | 7 | 1 | **43 R,5** | **9** | 1 | 42 | 10 | 1 |
| R 60 C | | MH | 7 | 74 MOD | 74 | 75 | 0 | 1 | B (67) | A/E | 74 | 1 | 0 | 73 | 2 | 0 | 71 | 4 | 0 | **69 R** | **6** | 7 | 67 L | 8 | 7 |
| R 61 | | MH | 1 | 73 MOD | 74 | 75 | 1 | 1 | B (67) | A/E | 75 | 0 | 0 | 74 | 1 | 0 | 73 | 2 | 0 | 71 | 4 | 0 | **70 R,L** | **5** | 1 |
| R 61A ** | | MH | 2 | 66 MOD | 66 | 68 | 0 | 2 | B (67) | A/E | 68 | 0 | 0 | 67 | 1 | 0 | 67 | 1 | 0 | 65 | 3 | 0 | 64 L | 4 | 0 |
| R 61B | | REC | 1 | 63 MOD | 64 | 65 | 1 | 1 | B (67) | NONE | 64 | 1 | 0 | 64 | 1 | 0 | 63 | 2 | 0 | 62 | 3 | 0 | 61 | 4 | 0 |
| R 62 K7 | S405 Shoulder | SFR | 3 | 54 MOD | 55 | 56 | 1 | 1 | B (67) | NONE | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| R 63 K7 | | SFR | 3 | 58 M,ST18 | 59 | 61 | 1 | 2 | B (67) | NONE | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| R 64 | | SFR | 5 | 58 MOD | 59 | 60 | 1 | 1 | B (67) | NONE | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| R 64A * | | SFR | 5 | 66 M,LT2 | 67 | 68 | 1 | 1 | N/A | N/A | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| R 65 C | | SFR | 2 | 66 MOD | 66 | 68 | 0 | 2 | B (67) | A/E | 64 | 4 | 0 | **62 T,R** | **6** | 1 | 62 | 6 | 1 | 62 | 6 | 1 | 61 | 7 | 2 |
| R 66 K8 | -- | REC | 4 | 61 M,ST19 | 62 | 63 | 1 | 1 | B (67) | NONE | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

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** - non first row residences.
K7 - A calibration factor of -3.5 dB is applied for this receptor and adjacent receptors with similar topographic features.
K8 - A calibration factor of -2.5 dB is applied for this receptor and adjacent receptors with similar topographic features.

# Build Alternative - Inside Widening Option

| Receiver I.D. | Barrier I.D. and Location | Land Use[2] | Number of Dwelling Units | Existing Noise Level Leq(h), dBA[1,3] | Design Year Noise Level without Project Leq(h), dBA[1] | Design Year Noise Level with Project Leq(h), dBA[1] | Design Year Noise Level without Project Minus Existing Conditions Leq(h), dBA | Design Year Noise Level with Project minus No Project Conditions Leq(h), dBA | Activity Category (NAC) | Impact Type[4] | 8 feet Leq(h) | 8 feet I.L. | 8 feet NBR | 10 feet Leq(h) | 10 feet I.L. | 10 feet NBR | 12 feet Leq(h) | 12 feet I.L. | 12 feet NBR | 14 feet Leq(h) | 14 feet I.L. | 14 feet NBR | 16 feet Leq(h) | 16 feet I.L. | 16 feet NBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | State Route 101 South Coast HOV Future Worst Hour Noise Levels - Leq(h), dBA1,6 | | | | | | Noise Prediction with Barrier, Barrier Insertion Loss (I.L.), and Number of Benefitted Receivers (NBR) | | | | | | | | | | | | | | |
| R 67 C | S446 Shoulder | SFR | 1 | 66 MOD | 68 | 69 | 2 | 1 | B (67) | A/E | 64 | 5 | 1 | 63 | 6 | 1 | **61** T,R | **8** | 1 | 60 | 9 | 1 | 60 | 9 | 1 |
| R 68A | S452 Shoulder | SFR | 1 | 64 MOD | 66 | 67 | 2 | 1 | B (67) | A/E | 64 | 3 | 0 | 62 | 5 | 1 | **60** T,R | **7** | 1 | 60 | 7 | 1 | 59 | 8 | 1 |
| R 68 | | SFR | 2 | 65 MOD | 66 | 68 | 1 | 2 | B (67) | A/E | 64 | 4 | 0 | 63 | 5 | 2 | **61** T,R | **7** | 2 | 60 | 8 | 2 | 60 | 8 | 2 |
| R 69 | | MFR | 8 | 65 MOD | 66 | 68 | 1 | 2 | B (67) | A/E | 64 | 4 | 0 | 63 | 5 | 8 | **61** T,R | **7** | 8 | 60 | 8 | 8 | 60 | 8 | 8 |
| R 70 C | | SFR | 3 | 67 MOD | 68 | 69 | 1 | 1 | B (67) | A/E | 65 | 4 | 0 | 63 | 6 | 1 | **61** T,R | **8** | 3 | 61 | 8 | 3 | 60 | 9 | 3 |
| R 70A | S464 Shoulder & R/W | SFR | 2 | 71 MOD | 73 | 73 | 2 | 0 | B (67) | A/E | 67 | 6 | 1 | 66 | 7 | 1 | **63** T,R | **10** | 2 | 62 | 11 | 2 | 61 | 12 | 2 |
| R 71 | | SFR | 3 | 74 M,ST21 | 75 | 76 | 1 | 1 | B (67) | A/E | 69 | 7 | 2 | 66 | 10 | 3 | **65** T,R | **11** | 3 | 64 | 12 | 3 | 63 | 13 | 3 |
| R 71A | | SFR | 1 | 70 MOD | 72 | 74 | 2 | 2 | B (67) | A/E | 68 | 6 | 1 | 66 T | 8 | 1 | **64** R,5 | **10** | 1 | 63 | 11 | 1 | 62 | 12 | 1 |
| R 72 C | | SFR | 3 | 74 MOD | 75 | 76 | 1 | 1 | B (67) | A/E | 70 | 6 | 2 | 68 | 8 | 2 | **66** T,R | **10** | 3 | 65 | 11 | 3 | 64 | 12 | 3 |
| R 73 | | SFR | 4 | 75 MOD | 76 | 77 | 1 | 1 | B (67) | A/E | 70 | 7 | 2 | **68** T,R | **9** | 4 | 67 | 10 | 4 | 66 | 11 | 4 | 66 | 11 | 4 |
| R 83 | S498 R/W | SFR | 1 | 69 MOD | 71 | 72 | 2 | 1 | B (67) | A/E | 68 | 4 | 0 | **66** T,R | **6** | 1 | 65 | 7 | 1 | 64 | 8 | 1 | 64 | 8 | 1 |
| R 84 C | | SFR | 6 | 73 M,ST24 | 75 | 76 | 2 | 1 | B (67) | A/E | 69 | 7 | 4 | **67** T,R | **9** | 4 | 66 | 10 | 6 | 65 | 11 | 6 | 65 | 11 | 6 |
| R 85 | | SFR | 9 | 70 MOD | 72 | 73 | 2 | 1 | B (67) | A/E | 67 | 6 | 5 | **65** T,R | **8** | 5 | 64 | 9 | 5 | 63 | 10 | 7 | 62 | 11 | 7 |
| R 86 | | SFR | 2 | 68 MOD | 69 | 71 | 1 | 2 | B (67) | A/E | 65 | 6 | 1 | **64** T,R | **7** | 1 | 63 | 8 | 1 | 62 | 9 | 1 | 61 | 10 | 2 |
| R 86A | | SFR | 2 | 62 MOD | 63 | 65 | 1 | 2 | B (67) | NONE | 61 | 4 | 0 | 61 | 4 | 0 | 61 | 4 | 0 | 61 | 4 | 0 | 60 | 5 | 1 |
| R 74 | S471 Shoulder | SFR | 1 | 59 MOD | 61 | 62 | 2 | 1 | B (67) | NONE | 60 | 2 | 0 | 60 | 2 | 0 | 60 | 2 | 0 | 60 | 2 | 0 | 59 | 3 | 0 |
| R 74B | | SFR | 1 | 70 MOD | 71 | 72 | 1 | 1 | B (67) | A/E | **66** T,R | **6** | 1 | 65 | 7 | 1 | 64 | 8 | 1 | 64 | 8 | 1 | 63 | 9 | 1 |
| R 74A | | SFR | 2 | 63 MOD | 64 | 65 | 1 | 1 | B (67) | NONE | 62 | 3 | 0 | 62 | 3 | 0 | 61 | 4 | 0 | 60 | 5 | 2 | 60 | 5 | 2 |
| R 75 C | | SFR | 5 | 71 MOD | 72 | 73 | 1 | 1 | B (67) | A/E | 67 | 6 | 5 | 66 | 7 | 5 | **64** T,R | **9** | 5 | 63 | 10 | 5 | 62 | 11 | 5 |
| R 76 K9 | | SFR | 4 | 64 M,ST22 | 65 | 66 | 1 | 1 | B (67) | A/E | 61 | 5 | 4 | 61 | 5 | 4 | **59** T,R | **7** | 4 | 57 | 9 | 4 | 57 | 9 | 4 |
| R 77 | | SFR | 3 | 67 MOD | 68 | 69 | 1 | 1 | B (67) | A/E | 65 | 4 | 0 | 63 | 6 | 2 | **61** T,R | **8** | 2 | 60 | 9 | 2 | 59 | 10 | 3 |
| R 77A | | SFR | 2 | 67 MOD | 68 | 68 | 1 | 0 | B (67) | A/E | 65 | 3 | 0 | 64 | 4 | 0 | 62 T | 6 | 2 | **62** R,5 | **6** | 2 | 60 | 8 | 2 |
| R 78 | | SFR | 2 | 63 MOD | 65 | 66 | 2 | 1 | B (67) | A/E | 65 | 1 | 0 | 63 | 3 | 0 | 62 T | 4 | 0 | **61** R | **5** | 2 | 61 | 5 | 2 |
| R 78A | | SFR | 1 | 62 MOD | 63 | 64 | 1 | 1 | B (67) | NONE | 64 | 0 | 0 | 63 | 1 | 0 | 63 | 1 | 0 | 62 | 2 | 0 | 62 | 2 | 0 |
| R 79 W | -- | SFR | 3 | 64 MOD | 65 | 66 | 1 | 1 | B (67) | A/E | -- | -- | -- | -- | -- | -- | -- | -- | -- | 65 | 1 | 0 | 64 | 2 | 0 |
| R 80 W | | SFR | 1 | 68 M,ST23 | 69 | 70 | 1 | 1 | B (67) | A/E | -- | -- | -- | -- | -- | -- | -- | -- | -- | 69 | 1 | 0 | 69 | 1 | 0 |

**Notes:**

1 - Leq(h) are A-weighted, peak hour noise levels in decibels.
2 - Land Use: SFR - single-family residence; MFR - multi-family residence; MH - mobile Home; MOT - motel/hotel; SCH - School; REC - recreational/park; REL - religious institution.
3 - M - Measured noise level; STxx or LTxx - measurement site number; INT - Interior; MOD - Modeled noise level using TNM.
4 - S = Substantial Increase (12 dBA or more); A/E = Approach or exceed NAC.
5 - Barrier height needed to meet requirements at adjacent receptor(s).
6 - Traffic noise from the freeway only; other local noise sources are not included.
C - Critical design receiver.
R - The minimum height to meet feasibility requirements of Caltrans' Noise Abatement Criteria.
W - Existing private property wall or soundwall.
* - Measurement or modeling purpose only: no outdoor use area.
K9 - A calibration factor of -3.0 dB is applied for this receptor and adjacent receptors with similar topographic features.
T - Minimum height required to block the line-of-sight from the receptor to truck exhaust stacks.
H - Exterior modeling point for a motel: interior noise estimated using the modeled noise level at this point.
** - Non first row residences.

# Build Alternative - Inside Widening Option

| Receiver I.D. | Barrier I.D. and Location | Land Use[2] | Number of Dwelling Units | Existing Noise Level Leq(h), dBA[1,3] | Design Year Noise Level without Project Leq(h), dBA[1] | Design Year Noise Level with Project Leq(h), dBA[1] | Design Year Noise Level without Project Minus Existing Conditions Leq(h), dBA | Design Year Noise Level with Project minus No Project Conditions Leq(h), dBA | Activity Category (NAC) | Impact Type[4] | 8 feet Leq(h) | 8 feet I.L. | 8 feet NBR | 10 feet Leq(h) | 10 feet I.L. | 10 feet NBR | 12 feet Leq(h) | 12 feet I.L. | 12 feet NBR | 14 feet Leq(h) | 14 feet I.L. | 14 feet NBR | 16 feet Leq(h) | 16 feet I.L. | 16 feet NBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | State Route 101 South Coast HOV Future Worst Hour Noise Levels - Leq(h), dBA1,6 | | | | | | Noise Prediction with Barrier, Barrier Insertion Loss (I.L.), and Number of Benefitted Receivers (NBR) | | | | | | | | | | | | | | |
| R 81 C | S489 Private Property | SFR | 1 | 73 MOD | 74 | 74 | 1 | 0 | B (67) | A/E | 70 T | 4 | 0 | 69 | 5 | 1 | **69 R,5** | **5** | 1 | 69 | 5 | 1 | 68 | 6 | 1 |
| R 82 | | MFR | 3 | 67 MOD | 68 | 69 | 1 | 1 | B (67) | A/E | 66 | 3 | 0 | 65 T | 4 | 0 | **64 R** | **5** | 3 | 63 | 6 | 3 | 63 | 6 | 3 |
| R 82A | | MFR | 2 | 67 MOD | 68 | 68 | 1 | 0 | B (67) | A/E | 66 | 2 | 0 | 66 | 2 | 0 | 65 | 3 | 0 | 65 | 3 | 0 | 65 | 3 | 0 |
| R 87B | S520 R/W | SFR | 1 | 62 MOD | 62 | 64 | 0 | 2 | B (67) | NONE | 61 | 3 | 0 | 61 | 3 | 0 | 61 | 3 | 0 | 60 | 4 | 0 | 60 | 4 | 0 |
| R 87A | | SFR | 1 | 63 MOD | 64 | 65 | 1 | 1 | B (67) | NONE | 62 | 3 | 0 | 61 | 4 | 0 | 61 | 4 | 0 | 60 | 5 | 1 | 60 | 5 | 1 |
| R 87 | | SFR | 1 | 66 M,ST26 | 66 | 68 | 0 | 2 | B (67) | A/E | 63 | 5 | 1 | **62 T,R** | **6** | 1 | 61 | 7 | 1 | 60 | 8 | 1 | 60 | 8 | 1 |
| R 88 C | | SFR | 6 | 73 MOD | 73 | 75 | 0 | 2 | B (67) | A/E | 67 | 8 | 5 | **65 T,R** | **10** | 5 | 64 | 11 | 5 | 63 | 12 | 5 | 62 | 13 | 5 |
| R 89 | | SFR | 4 | 74 MOD | 74 | 75 | 0 | 1 | B (67) | A/E | 68 | 7 | 3 | **66 T,R** | **9** | 3 | 65 | 10 | 4 | 64 | 11 | 4 | 63 | 12 | 4 |
| R 90 | | SFR | 5 | 70 MOD | 70 | 72 | 0 | 2 | B (67) | A/E | 66 | 6 | 3 | **64 T,R** | **8** | 3 | 64 | 8 | 3 | 63 | 9 | 3 | 62 | 10 | 5 |
| R 90A | | SFR | 4 | 66 MOD | 66 | 68 | 0 | 2 | B (67) | A/E | 63 | 5 | 4 | **62 T,R** | **6** | 4 | 61 | 7 | 4 | 61 | 7 | 4 | 60 | 8 | 4 |
| R 91 | | SFR | 2 | 60 MOD | 61 | 62 | 1 | 1 | B (67) | NONE | 59 | 3 | 0 | 58 | 4 | 0 | 58 | 4 | 0 | 58 | 4 | 0 | 57 | 5 | 1 |
| R 92 | S519 R/W | SFR | 4 | 63 MOD | 64 | 66 | 1 | 2 | B (67) | A/E | 62 | 4 | 0 | 62 T | 4 | 0 | 62 | 4 | 0 | **61 R** | **5** | 2 | 61 | 5 | 2 |
| R 92A | | MFR | 4 | 69 MOD | 70 | 71 | 1 | 1 | B (67) | A/E | 65 | 6 | 2 | 64 | 7 | 2 | 63 T | 8 | 2 | **62 R,5** | **9** | 2 | 61 | 10 | 4 |
| R 93 C | | SFR | 5 | 73 MOD | 73 | 75 | 0 | 2 | B (67) | A/E | 68 | 7 | 3 | 66 T | 9 | 3 | **65 R,5** | **10** | 5 | 64 | 11 | 5 | 63 | 12 | 5 |
| R 94 | | SFR | 6 | 75 M,ST25 | 75 | 76 | 0 | 1 | B (67) | A/E | 70 | 6 | 4 | 68 | 8 | 4 | **67 T,R** | **9** | 4 | 66 | 10 | 6 | 65 | 11 | 6 |
| R 95 | | SFR | 3 | 72 MOD | 73 | 74 | 1 | 1 | B (67) | A/E | 64 T | 10 | 3 | **64 R,5** | **10** | 3 | 63 | 11 | 3 | 62 | 12 | 3 | 61 | 13 | 3 |
| R 96A | | SFR | 4 | 65 MOD | 65 | 67 | 0 | 2 | B (67) | A/E | 61 T | 6 | 2 | **61 R,5** | **6** | 2 | 60 | 7 | 4 | 60 | 7 | 4 | 59 | 8 | 4 |
| R 96 | | SFR | 5 | 63 MOD | 64 | 65 | 1 | 1 | B (67) | NONE | 61 | 4 | 0 | **60 5** | **5** | 3 | 60 | 5 | 3 | 59 | 6 | 5 | 59 | 6 | 5 |
| R 97 | | SFR | 3 | 63 M,LT3 | 64 | 66 | 1 | 2 | B (67) | A/E | 64 | 2 | 0 | 62 T | 4 | 0 | **60 R** | **6** | 3 | 59 | 7 | 3 | 58 | 8 | 3 |
| R 97A | | SFR | 4 | 65 MOD | 66 | 68 | 1 | 2 | B (67) | A/E | 64 | 4 | 0 | 64 | 4 | 0 | **63 T,R** | **5** | 1 | 63 | 5 | 1 | 63 | 5 | 1 |
| R 97B | | MFR | 1 | 69 MOD | 70 | 72 | 1 | 2 | B (67) | A/E | 70 | 2 | 0 | 70 | 2 | 0 | 70 | 2 | 0 | 70 | 2 | 0 | 70 | 2 | 0 |

**Notes:**

1 - Leq(h) are A-weighted, peak hour noise levels in decibels.
2 - Land Use: SFR - single-family residence; MFR - multi-family residence; MH - mobile Home; MOT - motel/hotel; SCH - School; REC - recreational/park; REL - religious institution.
3 - M - Measured noise level; STxx or LTxx - measurement site number; INT - Interior; MOD - Modeled noise level using TNM.
4 - S = Substantial Increase (12 dBA or more); A/E = Approach or exceed NAC.
5 - Barrier height needed to meet requirements at adjacent receptor(s).
6 - Traffic noise from the freeway only; other local noise sources are not included.
C - Critical design receiver.
R - The minimum height to meet feasibility requirements of Caltrans' Noise Abatement Criteria.
W - Existing private property wall or soundwall.
* - Measurement or modeling purpose only: no outdoor use area.
T - Minimum height required to block the line-of-sight from the receptor to truck exhaust stacks.
H - Exterior modeling point for a motel: interior noise estimated using the modeled noise level at this point.
** - Non first row residences.

# Build Alternative - Inside Widening Option

| Receiver I.D. | Barrier I.D. and Location | Land Use[2] | Number of Dwelling Units | Existing Noise Level Leq(h), dBA[1,3] | Design Year Noise Level without Project Leq(h), dBA[1] | Design Year Noise Level with Project Leq(h), dBA[1] | Design Year Noise Level without Project Minus Existing Conditions Leq(h), dBA | Design Year Noise Level with Project minus No Project Conditions Leq(h), dBA | Activity Category (NAC) | Impact Type[4] | 8 feet Leq(h) | 8 feet I.L. | 8 feet NBR | 10 feet Leq(h) | 10 feet I.L. | 10 feet NBR | 12 feet Leq(h) | 12 feet I.L. | 12 feet NBR | 14 feet Leq(h) | 14 feet I.L. | 14 feet NBR | 16 feet Leq(h) | 16 feet I.L. | 16 feet NBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | State Route 101 South Coast HOV Future Worst Hour Noise Levels - Leq(h), dBA1,6 | | | | | | Noise Prediction with Barrier, Barrier Insertion Loss (I.L.), and Number of Benefitted Receivers (NBR) | | | | | | | | | | | | | | |
| R 98 C | S535 R/W | SFR | 1 | 73 MOD | 74 | 76 | 1 | 2 | B (67) | A/E | 68 T | 8 | *1* | 67 | 9 | *1* | **66 R,5** | **10** | *1* | 66 | 10 | *1* | 65 | 11 | *1* |
| R 98A ** | | MFR | 3 | 66 MOD | 66 | 68 | 0 | 2 | B (67) | A/E | 65 T | 3 | *0* | 64 | 4 | *0* | **63 R** | **5** | *3* | 62 | 6 | *3* | 61 | 7 | *3* |
| R 99 W | | MFR | 2 | 68 M,ST27 | 69 | 70 | 1 | 1 | B (67) | A/E | 67 T | 3 | *0* | 65 | 5 | *2* | **65 R,5** | **5** | *2* | 63 | 7 | *2* | 62 | 8 | *2* |
| R 100A | S549 Shoulder | SFR | 2 | 65 MOD | 66 | 67 | 1 | 1 | B (67) | A/E | 62 | 5 | *1* | **62 T,R** | **5** | *1* | 60 | 7 | *1* | 60 | 7 | *1* | 59 | 8 | *1* |
| R 100 | | MFR | 8 | 65 MOD | 66 | 67 | 1 | 1 | B (67) | A/E | 62 | 5 | *7* | **61 T,R** | **6** | *7* | 61 | 6 | *7* | 60 | 7 | *7* | 60 | 7 | *7* |
| R 101 | | SFR | 2 | 65 MOD | 66 | 67 | 1 | 1 | B (67) | A/E | 62 | 5 | *2* | **60 T,R** | **7** | *2* | 60 | 7 | *2* | 59 | 8 | *2* | 58 | 9 | *2* |
| R 102 | | SFR | 5 | 67 M,ST28 | 67 | 69 | 0 | 2 | B (67) | A/E | 64 | 5 | *5* | 63 | 6 | *5* | **61 T,R** | **8** | *5* | 60 | 9 | *5* | 60 | 9 | *5* |
| R 103 C | | SFR | 6 | 69 MOD | 69 | 70 | 0 | 1 | B (67) | A/E | 65 | 5 | *5* | 64 | 6 | *5* | **63 T,R** | **7** | *6* | 62 | 8 | *6* | 62 | 8 | *6* |
| R 104 | -- | MOT | 1 | 62 MOD | 62 | 64 | 0 | 2 | B (67) | None | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

**Notes:**

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2 - Land Use: SFR - single-family residence; MFR - multi-family residence; MH - mobile Home; MOT - motel/hotel; SCH - School; REC - recreational/park; REL - religious institution.
3 - M - Measured noise level; STxx or LTxx - measurement site number; INT - Interior; MOD - Modeled noise level using TNM.
4 - S = Substantial Increase (12 dBA or more); A/E = Approach or exceed NAC.
5 - Barrier height needed to meet requirements at adjacent receptor(s).
6 - Traffic noise from the freeway only; other local noise sources are not included.
C - Critical design receiver.
R - The minimum height to meet feasibility requirements of Caltrans' Noise Abatement Criteria.
W - Existing private property wall or soundwall.
* - Measurement or modeling purpose only: no outdoor use area.
T - Minimum height required to block the line-of-sight from the receptor to truck exhaust stacks.
H - Exterior modeling point for a motel: interior noise estimated using the modeled noise level at this point.
** - Non first row residences.

# OUTSIDE WIDENING OPTION

# Build Alternative - Outside Widening Option

| Receiver I.D. | Barrier I.D. and Location | Land Use[2] | Number of Dwelling Units | Existing Noise Level Leq(h), dBA[1,3] | State Route 101 South Coast HOV Future Worst Hour Noise Levels - Leq(h), dBA[1,6] | | | | | | Noise Prediction with Barrier, Barrier Insertion Loss (I.L.), and Number of Benefitted Receivers (NBR) | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Design Year Noise Level without Project Leq(h), dBA[1] | Design Year Noise Level with Project Leq(h), dBA[1] | Design Year Noise Level without Project Minus Existing Conditions Leq(h), dBA | Design Year Noise Level with Project minus No Project Conditions Leq(h), dBA | Activity Category (NAC) | Impact Type[4] | 8 feet | | | 10 feet | | | 12 feet | | | 14 feet | | | 16 feet | | |
| | | | | | | | | | | | Leq(h) | I.L. | NBR | Leq(h) | I.L. | NBR | Leq(h) | I.L. | NBR | Leq(h) | I.L. | NBR | Leq(h) | I.L. | NBR |
| R 1 W | S90 R/W | MH | 1 | 68 MOD | 70 | 71 | 2 | 1 | B (67) | A/E | 68 | 3 | 0 | 68 | 3 | 0 | 67 T | 4 | 0 | **66 R** | **5** | 1 | 66 | 5 | 1 |
| R 1A * | | -- | -- | 73 M,ST1 | 75 | 76 | 2 | 1 | N/A | N/A | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| R 2 C,W | | MH | 5 | 70 MOD | 72 | 73 | 2 | 1 | B (67) | A/E | 71 | 2 | 0 | 69 | 4 | 0 | 68 T | 5 | 5 | **67 R,5** | **6** | 5 | 66 | 7 | 5 |
| R 3 W | S98 R/W | MH | 11 | 67 MOD | 69 | 70 | 2 | 1 | B (67) | A/E | 70 | 0 | 0 | 69 | 1 | 0 | 67 T | 3 | 0 | 66 | 4 | 0 | **65 R** | **5** | 11 |
| R 3A C,W | | REC | 1 | 69 MOD | 71 | 72 | 2 | 1 | B (67) | A/E | 70 | 2 | 0 | 69 | 3 | 0 | 67 | 5 | 1 | **65 T,R** | **7** | 1 | 64 | 8 | 1 |
| R 3B W | | MH | 6 | 67 MOD | 69 | 70 | 2 | 1 | B (67) | A/E | 69 | 1 | 0 | 67 | 3 | 0 | 66 T | 4 | 0 | **65 R** | **5** | 6 | 64 | 6 | 6 |
| R 3C W | | MH | 2 | 62 MOD | 64 | 65 | 2 | 1 | B (67) | NONE | 64 | 1 | 0 | 63 | 2 | 0 | 62 | 3 | 0 | 62 | 3 | 0 | 61 | 4 | 0 |
| R 4 K1 | S158 R/W & Shoulder | SFR | 2 | 72 MOD | 72 | 74 | 0 | 2 | B (67) | A/E | 67 | 7 | 2 | **64 T,R** | **10** | 2 | 63 | 11 | 2 | 62 | 12 | 2 | 61 | 13 | 2 |
| R 4A K1 | | SFR | 2 | 66 M,LT1 | 68 | 70 | 2 | 2 | B (67) | A/E | 65 | 5 | 1 | **62 T,R** | **8** | 2 | 61 | 9 | 2 | 61 | 9 | 2 | 60 | 10 | 2 |
| R 5 K1 | | SFR | 12 | 70 MOD | 72 | 73 | 2 | 1 | B (67) | A/E | 66 | 7 | 12 | **64 T,R** | **9** | 12 | 62 | 11 | 12 | 61 | 12 | 12 | 61 | 12 | 12 |
| R 6 K1,C | | SFR | 4 | 71 M,ST3 | 72 | 74 | 1 | 2 | B (67) | A/E | 66 | 8 | 4 | 64 T | 10 | 4 | **63 R,5** | **11** | 4 | 62 | 12 | 4 | 61 | 13 | 4 |
| R 7 | | MFR | 5 | 61 MOD | 63 | 64 | 2 | 1 | B (67) | NONE | 62 | 2 | 0 | 62 | 2 | 0 | 60 | 4 | 0 | 59 | 5 | 5 | 59 | 5 | 5 |
| R 7A | | MFR | 6 | 67 MOD | 69 | 70 | 2 | 1 | B (67) | A/E | 67 | 3 | 0 | 66 | 4 | 0 | **64 T,R** | **6** | 6 | 63 | 7 | 6 | 62 | 8 | 6 |
| R 8 G | -- | MFR | 16 | 63 M,ST2 | 64 | 65 | 1 | 1 | B (67) | NONE | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| R 9 G | | MFR | 14 | 60 MOD | 61 | 62 | 1 | 1 | B (67) | NONE | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| R 10 W,H | | MOT | -- | 70 MOD | 71 | 73 | 1 | 2 | N/A | N/A | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| R 10 W | | MOT | 2 | 45 MOD/INT | 46 | 48 | 1 | 2 | E (52) | NONE | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| R 11 K2,W | S174 R/W | SFR | 2 | 67 MOD | 68 | 70 | 1 | 2 | B (67) | A/E | 67 T | 3 | 0 | 65 | 5 | 1 | **64 R** | **6** | 1 | 62 | 8 | 1 | 61 | 9 | 2 |
| R 12 K2 | | SFR | 6 | 71 M,ST4 | 72 | 74 | 1 | 2 | B (67) | A/E | 67 | 7 | 5 | 64 T | 10 | 5 | **63 R,5** | **11** | 6 | 62 | 12 | 6 | 61 | 13 | 6 |
| R 13 C | | SFR | 2 | 72 MOD | 73 | 75 | 1 | 2 | B (67) | A/E | 68 | 7 | 2 | 66 T | 9 | 2 | **65 R,5** | **10** | 2 | 63 | 12 | 2 | 62 | 13 | 2 |
| R 13A ** | | SFR | 3 | 69 MOD | 71 | 72 | 2 | 1 | B (67) | A/E | 67 | 5 | 1 | 65 | 7 | 3 | **65 T,R** | **7** | 3 | 63 | 9 | 3 | 63 | 9 | 3 |
| R 14 | -- | SFR | 1 | 63 MOD | 65 | 65 | 2 | 0 | B (67) | A/E | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

**Notes:**

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2 - Land Use: SFR - single-family residence; MFR - multi-family residence; MH - mobile Home; MOT - motel/hotel; SCH - School; REC - recreational/park; REL - religious institution.
3 - M - Measured noise level; STxx or LTxx - measurement site number; INT - Interior; MOD - Modeled noise level using TNM.
4 - S = Substantial Increase (12 dBA or more); A/E = Approach or exceed NAC.
5 - Barrier height needed to meet requirements at adjacent receptor(s).
6 - Traffic noise from the freeway only; other local noise sources are not included.

C - Critical design receiver.
R - The minimum height to meet feasibility requirements of Caltrans' Noise Abatement Criteria.
W - Existing private property wall or soundwall.
* - Measurement or modeling purpose only: no outdoor use area.
G - Garages providing traffic noise reduction.
T - Minimum height required to block the line-of-sight from the receptor to truck exhaust stacks.
H - Exterior modeling point for a motel: interior noise estimated using the modeled noise level at this point.
** - Non first row residences.
K1 - A calibration factor of -3.5 dB is applied for this receptor and adjacent receptors with similar topographic features.
K2 - A calibration factor of -2.5 dB is applied for this receptor and adjacent receptors with similar topographic features.

# Build Alternative - Outside Widening Option

| Receiver I.D. | Barrier I.D. and Location | Land Use[2] | Number of Dwelling Units | Existing Noise Level Leq(h), dBA[1,3] | Design Year Noise Level without Project Leq(h), dBA[1] | Design Year Noise Level with Project Leq(h), dBA[1] | Design Year Noise Level without Project Minus Existing Conditions Leq(h), dBA | Design Year Noise Level with Project minus No Project Conditions Leq(h), dBA | Activity Category (NAC) | Impact Type[4] | 8 feet Leq(h) | 8 feet I.L. | 8 feet NBR | 10 feet Leq(h) | 10 feet I.L. | 10 feet NBR | 12 feet Leq(h) | 12 feet I.L. | 12 feet NBR | 14 feet Leq(h) | 14 feet I.L. | 14 feet NBR | 16 feet Leq(h) | 16 feet I.L. | 16 feet NBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | State Route 101 South Coast HOV Future Worst Hour Noise Levels - Leq(h), dBA[1,6] | | | | | | Noise Prediction with Barrier, Barrier Insertion Loss (I.L.), and Number of Benefitted Receivers (NBR) | | | | | | | | | | | | | | |
| R 15 | -- | MOT | 1 | 63 MOD | 65 | 65 | 2 | 0 | B (67) | NONE | 63 | 2 | 0 | 62 | 3 | 0 | 61 | 4 | 0 | 60 | 5 | 1 | 59 | 6 | 1 |
| R 17 | -- | REC | 1 | 64 M,ST6 | 65 | 66 | 1 | 1 | B (67) | A/E | 64 | 2 | *0* | 63 | 3 | *0* | 62 T | 4 | *0* | 63 D | 3 | *0* | 62 | 4 | *0* |
| R 17A | S210 R/W | MFR | 4 | 69 MOD | 70 | 71 | 1 | 1 | B (67) | A/E | 67 | 4 | *0* | 67 | 4 | *0* | **65 T,R** | **6** | *4* | 63 | 8 | *4* | 62 | 9 | *4* |
| R 18 W | S210 R/W | MFR | 3 | 68 MOD | 69 | 70 | 1 | 1 | B (67) | A/E | 68 | 2 | *0* | 68 | 2 | *0* | 66 T | 4 | *0* | **65 R** | **5** | *3* | 64 | 6 | *3* |
| R 18A W | S210 R/W | MFR | 7 | 69 MOD | 70 | 71 | 1 | 1 | B (67) | A/E | 69 | 2 | *0* | 69 | 2 | *0* | 67 T | 4 | *0* | **66 R** | **5** | *7* | 64 | 7 | *7* |
| R 19 | S210 R/W | MFR | 4 | 72 MOD | 73 | 74 | 1 | 1 | B (67) | A/E | 69 | 5 | *2* | **66 T,R** | **8** | *2* | 65 | 9 | *4* | 64 | 10 | *4* | 63 | 11 | *4* |
| R 20 * | S210 R/W | -- | -- | 72 M,ST7 | 73 | 75 | 1 | 2 | N/A | N/A | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| R 21 C | S210 R/W | MH | 14 | 74 MOD | 75 | 76 | 1 | 1 | B (67) | A/E | 71 | 5 | *10* | **69 T,R** | **7** | *10* | 67 | 9 | *10* | 66 | 10 | *14* | 66 | 10 | *14* |
| R 22 W | S181 R/W | MFR | 2 | 68 MOD | 69 | 70 | 1 | 1 | B (67) | A/E | -- | -- | -- | -- | -- | -- | -- | -- | -- | 67 | 3 | *0* | 67 | 3 | *0* |
| R 23 C | S181 R/W | SFR | 9 | 76 MOD | 77 | 78 | 1 | 1 | B (67) | A/E | 70 | 8 | *6* | **68 T,R** | **10** | *9* | 66 | 12 | *9* | 65 | 13 | *9* | 64 | 14 | *9* |
| R 24 | S181 R/W | MH | 28 | 74 M,ST5 | 76 | 76 | 2 | 0 | B (67) | A/E | 70 | 6 | *21* | **67 T,R** | **9** | *21* | 66 | 10 | *21* | 65 | 11 | *21* | 64 | 12 | *28* |
| R 25 | S181 R/W | SFR | 4 | 74 MOD | 76 | 77 | 2 | 1 | B (67) | A/E | 71 | 6 | *4* | **68 T,R** | **9** | *4* | 66 | 11 | *4* | 65 | 12 | *4* | 64 | 13 | *4* |
| R 26 W | S181 R/W | MFR | 8 | 70 MOD | 72 | 73 | 2 | 1 | B (67) | A/E | 71 | 2 | *0* | **68 T,R** | **5** | *8* | 67 | 6 | *8* | 66 | 7 | *8* | 65 | 8 | *8* |
| R 27 W | S181 R/W | MFR | 6 | 70 MOD | 72 | 73 | 1 | 1 | B (67) | A/E | 70 | 3 | *0* | **68 T,R** | **5** | *6* | 66 | 7 | *6* | 65 | 8 | *6* | 64 | 9 | *6* |
| R 28 | S257 Shoulder | SFR | 3 | 66 MOD | 67 | 67 | 1 | 0 | B (67) | A/E | 64 | 3 | *0* | 63 T | 4 | *0* | **62 R** | **5** | *3* | 61 | 6 | *3* | 61 | 6 | *3* |
| R 28A *** | S257 Shoulder | SFR | 3 | 61 MOD | 62 | 62 | 1 | 0 | B (67) | NONE | 60 | 2 | *0* | 60 T | 2 | *0* | 59 | 3 | *0* | 59 | 3 | *0* | 59 | 3 | *0* |
| R 29 C | S257 Shoulder | SFR | 9 | 66 M,ST8 | 67 | 67 | 1 | 0 | B (67) | A/E | 64 | 3 | *0* | 63 T | 4 | *0* | **61 R** | **6** | *9* | 60 | 7 | *9* | 59 | 8 | *9* |
| R 29A *** | S257 Shoulder | SFR | 9 | 54 MOD | 55 | 56 | 1 | 1 | B (67) | NONE | 54 | 2 | *0* | 53 T | 3 | *0* | 52 | 4 | *0* | 51 | 5 | *9* | 50 | 6 | *9* |

**Notes:**

1 - Leq(h) are A-weighted, peak hour noise levels in decibels.
2 - Land Use: SFR - single-family residence; MFR - multi-family residence; MH - mobile Home; MOT - motel/hotel; SCH - School; REC - recreational/park; REL - religious institution.
3 - M - Measured noise level; STxx or LTxx - measurement site number; INT - Interior; MOD - Modeled noise level using TNM.
4 - S = Substantial Increase (12 dBA or more); A/E = Approach or exceed NAC.
5 - Barrier height needed to meet requirements at adjacent receptor(s).
6 - Traffic noise from the freeway only; other local noise sources are not included.
C - Critical design receiver.
R - The minimum height to meet feasibility requirements of Caltrans' Noise Abatement Criteria.
W - Existing private property wall or soundwall.
* - Measurement or modeling purpose only: no outdoor use area.
D - The result is the effect of multiple diffraction caused by two barriers in series (TNM Technical Manual, Page 90, 1998).
T - Minimum height required to block the line-of-sight from the receptor to truck exhaust stacks.
H - Exterior modeling point for a motel: interior noise estimated using the modeled noise level at this point.
** - Non first row residences. *** - Beachfront frequent outdoor use area.

# Build Alternative - Outside Widening Option

| Receiver I.D. | Barrier I.D. and Location | Land Use[2] | Number of Dwelling Units | Existing Noise Level Leq(h), dBA[1,3] | Design Year Noise Level without Project Project Leq(h), dBA[1] | Design Year Noise Level with Project Leq(h), dBA[1] | Design Year Noise Level without Project Minus Existing Conditions Leq(h), dBA | Design Year Noise Level with Project minus No Project Conditions Leq(h), dBA | Activity Category (NAC) | Impact Type[4] | 8 feet Leq(h) | 8 feet I.L. | 8 feet NBR | 10 feet Leq(h) | 10 feet I.L. | 10 feet NBR | 12 feet Leq(h) | 12 feet I.L. | 12 feet NBR | 14 feet Leq(h) | 14 feet I.L. | 14 feet NBR | 16 feet Leq(h) | 16 feet I.L. | 16 feet NBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | State Route 101 South Coast HOV Future Worst Hour Noise Levels - Leq(h), dBA[1,6] | | | | | | Noise Prediction with Barrier, Barrier Insertion Loss (I.L.), and Number of Benefitted Receivers (NBR) | | | | | | | | | | | | | | |
| R 30 | S281 R/W & Shoulder | SFR | 17 | 68 MOD | 69 | 70 | 1 | 1 | B (67) | A/E | 65 | 5 | 17 | 64 | 6 | 17 | **62** T,R | **8** | 17 | 61 | 9 | 17 | 60 | 10 | 17 |
| R 30A *** | | SFR | 17 | 56 MOD | 57 | 58 | 1 | 1 | B (67) | NONE | 56 | 2 | 0 | 55 | 3 | 0 | 54 | 4 | 0 | 52 | 6 | 17 | 51 | 7 | 17 |
| R 31 C | | SFR | 7 | 69 MOD | 70 | 71 | 1 | 1 | B (67) | A/E | 66 | 5 | 7 | 65 | 6 | 7 | **63** T,R | **8** | 7 | 62 | 9 | 7 | 61 | 10 | 7 |
| R 31A ** | | SFR | 1 | 63 MOD | 64 | 65 | 1 | 1 | B (67) | NONE | 65 | 0 | 0 | 61 | 4 | 0 | **59** 5 | **6** | 1 | 58 | 7 | 1 | 57 | 8 | 1 |
| R 31B ** | | SFR | 7 | 62 MOD | 63 | 63 | 1 | 0 | B (67) | NONE | 60 | 3 | 0 | 60 | 3 | 0 | **58** 5 | **5** | 4 | 57 | 6 | 7 | 57 | 6 | 7 |
| R 31C ** | | SFR | 1 | 63 MOD | 64 | 65 | 1 | 1 | B (67) | NONE | 63 | 2 | 0 | 62 | 3 | 0 | 61 | 4 | 0 | 59 | 6 | 1 | 57 | 8 | 1 |
| R 32 K3,* | | -- | -- | 67 M,ST9 | 68 | 68 | 1 | 0 | N/A | N/A | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| R 32A K3 | | SFR | 11 | 65 MOD | 66 | 66 | 1 | 0 | B (67) | A/E | 63 | 3 | 0 | 63 | 3 | 0 | **61** T,R | **5** | 11 | 59 | 7 | 11 | 58 | 8 | 11 |
| R 32B K3,** | | SFR | 2 | 59 MOD | 60 | 61 | 1 | 1 | B (67) | NONE | 59 | 2 | 0 | 58 | 3 | 0 | **56** 5 | **5** | 2 | 54 | 7 | 2 | 53 | 8 | 2 |
| R 33 K4 | | SFR | 12 | 64 MOD | 65 | 66 | 1 | 1 | B (67) | A/E | 62 | 4 | 0 | 61 | 5 | 11 | **59** T,R | **7** | 11 | 58 | 8 | 12 | 57 | 9 | 12 |
| R 34 K4 | | SFR | 6 | 64 MOD | 66 | 66 | 2 | 0 | B (67) | A/E | 63 | 3 | 0 | 62 | 4 | 0 | **60** T,R | **6** | 6 | 59 | 7 | 6 | 58 | 8 | 6 |
| R 34A K4,** | | SFR | 1 | 59 MOD | 61 | 62 | 2 | 1 | B (67) | NONE | 60 | 2 | 0 | 60 | 2 | 0 | 59 | 3 | 0 | 57 | 5 | 1 | 56 | 6 | 1 |
| R 35A K4,** | | SFR | 2 | 59 MOD | 60 | 61 | 1 | 1 | B (67) | NONE | 59 | 2 | 0 | 59 | 2 | 0 | 57 | 4 | 0 | 55 | 6 | 2 | 55 | 6 | 2 |
| R 35 | | SFR | 9 | 68 M,ST10 | 69 | 69 | 1 | 0 | B (67) | A/E | 64 | 5 | 9 | 62 | 7 | 9 | **61** T,R | **8** | 9 | 60 | 9 | 9 | 59 | 10 | 9 |
| R 36 | -- | SFR | 3 | 63 MOD | 64 | 65 | 1 | 1 | B (67) | NONE | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| R 37 | | SFR | 3 | 59 M,ST11 | 60 | 61 | 1 | 1 | B (67) | NONE | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| R 38 | | SFR | 2 | 59 MOD | 61 | 62 | 2 | 1 | B (67) | NONE | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| R 39A C | S238 R/W | SFR | 1 | 64 MOD | 66 | 67 | 2 | 1 | B (67) | A/E | 65 | 2 | 0 | 65 | 2 | 0 | 63 | 4 | 0 | **62** T,R | **5** | 1 | 62 | 5 | 1 |
| R 39B | -- | SFR | 1 | 61 MOD | 63 | 63 | 2 | 0 | B (67) | NONE | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | | | | | | | | | | | | | 33 | | | 44 | | | 68 | | | 76 | | | 76 |

**Notes:**

1 - Leq(h) are A-weighted, peak hour noise levels in decibels.
2 - Land Use: SFR - single-family residence; MFR - multi-family residence; MH - mobile Home; MOT - motel/hotel; SCH - School; REC - recreational/park; REL - religious institution.
3 - M - Measured noise level; STxx or LTxx - measurement site number; INT - Interior; MOD - Modeled noise level using TNM.
4 - S = Substantial Increase (12 dBA or more); A/E = Approach or exceed NAC.
5 - Barrier height needed to meet requirements at adjacent receptor(s).
6 - Traffic noise from the freeway only; other local noise sources are not included.
C - Critical design receiver.
R - The minimum height to meet feasibility requirements of Caltrans' Noise Abatement Criteria.
T - Minimum height required to block the line-of-sight from the receptor to truck exhaust stacks.
W - Existing private property wall or soundwall.
H - Exterior modeling point for a motel: interior noise estimated using the modeled noise level at this point.
* - Measurement or modeling purpose only: no outdoor use area.
** - Non first row residences.
*** - Beachfront frequent outdoor use area.
K3 - A calibration factor of -3.0 dB is applied for this receptor and adjacent receptors with similar topographic features.
K4 - A calibration factor of -2.0 dB is applied for this receptor and adjacent receptors with similar topographic features.

# Build Alternative - Outside Widening Option

| Receiver I.D. | Barrier I.D. and Location | Land Use[2] | Number of Dwelling Units | Existing Noise Level Leq(h), dBA[1,3] | State Route 101 South Coast HOV Future Worst Hour Noise Levels - Leq(h), dBA[1,6] | | | | | | Noise Prediction with Barrier, Barrier Insertion Loss (I.L.), and Number of Benefitted Receivers (NBR) | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Design Year Noise Level without Project Leq(h), dBA[1] | Design Year Noise Level with Project Leq(h), dBA[1] | Design Year Noise Level without Project Minus Existing Conditions Leq(h), dBA | Design Year Noise Level with Project minus No Project Conditions Leq(h), dBA | Activity Category (NAC) | Impact Type[4] | 8 feet | | | 10 feet | | | 12 feet | | | 14 feet | | | 16 feet | | |
| | | | | | | | | | | | Leq(h) | I.L. | NBR | Leq(h) | I.L. | NBR | Leq(h) | I.L. | NBR | Leq(h) | I.L. | NBR | Leq(h) | I.L. | NBR |
| R 39 | | MFR | 8 | 69 MOD | 70 | 72 | 1 | 2 | B (67) | A/E | 68 | 4 | 0 | 68 | 4 | 0 | **66** R,5 | **6** | 8 | 65 | 7 | 8 | 65 | 7 | 8 |
| R 39C * | | -- | -- | 73 M,ST12 | 75 | 76 | 2 | 1 | B (67) | N/A | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| R 40 W | | SFR | 5 | 64 M,ST13 | 65 | 66 | 1 | 1 | B (67) | A/E | 63 | 3 | 0 | 62 | 4 | 0 | **60** T,R | **6** | 5 | 59 | 7 | 5 | 59 | 7 | 5 |
| R 41 C | S310 R/W | REL | 1 | 71 MOD | 72 | 74 | 1 | 2 | B (67) | A/E | 69 | 5 | 1 | 67 | 7 | 1 | **65** T,R | **9** | 1 | 64 | 10 | 1 | 63 | 11 | 1 |
| R 41A ** | | SFR | 1 | 63 MOD | 64 | 65 | 1 | 1 | B (67) | NONE | 63 | 2 | 0 | 63 | 2 | 0 | 61 | 4 | 0 | 60 | 5 | 1 | 59 | 6 | 1 |
| R 42 | | SFR | 3 | 69 MOD | 70 | 71 | 1 | 1 | B (67) | A/E | 66 | 5 | 1 | 65 T | 6 | 1 | **63** R,5 | **8** | 3 | 61 | 10 | 3 | 61 | 10 | 3 |
| R 42A W,** | | SFR | 1 | 64 MOD | 65 | 66 | 1 | 1 | B (67) | A/E | 64 | 2 | 0 | 63 | 3 | 0 | 62 | 4 | 0 | 62 | 4 | 0 | 62 | 4 | 0 |
| R 43 W | | SFR | 1 | 68 MOD | 69 | 70 | 1 | 1 | B (67) | A/E | 68 | 2 | 0 | 67 | 3 | 0 | 66 | 4 | 0 | 66 | 4 | 0 | 66 | 4 | 0 |
| R 43A K4,W | -- | SFR | 4 | 66 MOD | 67 | 69 | 1 | 2 | B (67) | A/E | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 67 | 2 | 0 |
| R 44 K4,W | | SFR | 9 | 66 M,ST14 | 68 | 69 | 2 | 1 | B (67) | A/E | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 68 | 1 | 0 |
| R 45 C, W | S334 R/W | SFR | 1 | 72 MOD | 73 | 74 | 1 | 1 | B (67) | A/E | 70 | 4 | 0 | 69 | 5 | 1 | **68** T,R | **6** | 1 | 68 | 6 | 1 | 68 | 6 | 1 |
| R 45A W | | SFR | 1 | 64 MOD | 65 | 66 | 1 | 1 | B (67) | A/E | 66 | 0 | 0 | 65 | 1 | 0 | 65 | 1 | 0 | 65 | 1 | 0 | 65 | 1 | 0 |
| R 46 | -- | SFR | 1 | 71 MOD | 72 | 73 | 1 | 1 | B (67) | A/E | 73 | 0 | 0 | 73 | 0 | 0 | 73 | 0 | 0 | 73 | 0 | 0 | 72 | 1 | 0 |
| R 47A | | SFR | 2 | 65 MOD | 66 | 68 | 1 | 2 | B (67) | A/E | 64 | 4 | 0 | 64 | 4 | 0 | 62 T | 6 | 2 | **62** R,5 | **6** | 2 | 61 | 7 | 2 |
| R 47 | | SFR | 4 | 65 M,ST15 | 66 | 68 | 1 | 2 | B (67) | A/E | 65 | 3 | 0 | 64 | 4 | 0 | 63 | 5 | 4 | **62** T,R | **6** | 4 | 61 | 7 | 4 |
| R 47B K6,** | | SFR | 3 | 57 MOD | 58 | 60 | 1 | 2 | B (67) | NONE | 59 | 1 | 0 | 58 | 2 | 0 | 58 | 2 | 0 | 58 | 2 | 0 | 57 | 3 | 0 |
| R 47C K6,** | | SFR | 3 | 59 MOD | 60 | 62 | 1 | 2 | B (67) | NONE | 61 | 1 | 0 | 61 | 1 | 0 | 59 | 3 | 0 | 58 | 4 | 0 | 57 | 5 | 3 |
| R 47D K6,** | | SFR | 3 | 56 M,ST15A | 57 | 58 | 1 | 1 | B (67) | NONE | 58 | 0 | 0 | 57 | 1 | 0 | 56 | 2 | 0 | 56 | 2 | 0 | 55 | 3 | 0 |
| R 48A | S374 R/W | SFR | 3 | 67 MOD | 68 | 70 | 1 | 2 | B (67) | A/E | 68 | 2 | 0 | 66 | 4 | 0 | 65 | 5 | 3 | **64** T,R | **6** | 3 | 64 | 6 | 3 |
| R 48 | | SFR | 2 | 67 MOD | 68 | 69 | 1 | 1 | B (67) | A/E | 69 | 0 | 0 | 68 | 1 | 0 | 67 | 2 | 0 | 66 | 3 | 0 | 65 | 4 | 0 |
| R 48B | | MFR | 4 | 63 MOD | 64 | 66 | 1 | 2 | B (67) | A/E | 66 | 0 | 0 | 65 | 1 | 0 | 65 | 1 | 0 | 64 | 2 | 0 | 64 | 2 | 0 |
| R 48C K6,** | | MFR | 6 | 56 MOD | 57 | 58 | 1 | 1 | B (67) | NONE | 58 | 0 | 0 | 58 | 0 | 0 | 57 | 1 | 0 | 57 | 1 | 0 | 56 | 2 | 0 |
| R 49A C | | REC | 3 | 71 MOD | 71 | 73 | 0 | 2 | B (67) | A/E | 71 | 2 | 0 | 69 | 4 | 0 | 68 | 5 | 3 | **66** T,R | **7** | 3 | 65 | 8 | 3 |
| R 49 | | REC | 1 | 70 MOD | 71 | 72 | 1 | 1 | B (67) | A/E | 72 | 0 | 0 | 71 | 1 | 0 | 70 | 2 | 0 | 69 | 3 | 0 | 69 | 3 | 0 |

**Notes:**

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2 - Land Use: SFR - single-family residence; MFR - multi-family residence; MH - mobile Home; MOT - motel/hotel; SCH - School; REC - recreational/park; REL - religious institution.
3 - M - Measured noise level; STxx or LTxx - measurement site number; INT - Interior; MOD - Modeled noise level using TNM.
4 - S = Substantial Increase (12 dBA or more); A/E = Approach or exceed NAC.
5 - Barrier height needed to meet requirements at adjacent receptor(s).
6 - Traffic noise from the freeway only; other local noise sources are not included.
C - Critical design receiver.
R - The minimum height to meet feasibility requirements of Caltrans' Noise Abatement Criteria.
W - Existing private property wall or soundwall.
* - Measurement or modeling purpose only: no outdoor use area.
T - Minimum height required to block the line-of-sight from the receptor to truck exhaust stacks.
H - Exterior modeling point for a motel: interior noise estimated using the modeled noise level at this point.
** - Non first row residences.
K5 - A calibration factor of +3.0 dB is applied for this receptor and adjacent receptors with similar topographic features.
K6 - A calibration factor of -2.5 dB is applied for this receptor and adjacent receptors with similar topographic features.

# Build Alternative - Outside Widening Option

| Receiver I.D. | Barrier I.D. and Location | Land Use[2] | Number of Dwelling Units | Existing Noise Level Leq(h), dBA[1,3] | State Route 101 South Coast HOV Future Worst Hour Noise Levels - Leq(h), dBA[1,6] | | | | | | Noise Prediction with Barrier, Barrier Insertion Loss (I.L.), and Number of Benefitted Receivers (NBR) | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Design Year Noise Level without Project Leq(h), dBA[1] | Design Year Noise Level with Project Leq(h), dBA[1] | Design Year Noise Level without Project Minus Existing Conditions Leq(h), dBA | Design Year Noise Level with Project minus No Project Conditions Leq(h), dBA | Activity Category (NAC) | Impact Type[4] | 8 feet | | | 10 feet | | | 12 feet | | | 14 feet | | | 16 feet | | |
| | | | | | | | | | | | Leq(h) | I.L. | NBR | Leq(h) | I.L. | NBR | Leq(h) | I.L. | NBR | Leq(h) | I.L. | NBR | Leq(h) | I.L. | NBR |
| R 50 | | SFR | 2 | 74 MOD | 75 | 76 | 1 | 1 | B (67) | A/E | 76 | 0 | 0 | 75 | 1 | 0 | 75 | 1 | 0 | 74 | 2 | 0 | 73 L | 3 | 0 |
| R 51 | | MOT | 2 | 72 MOD | 72 | 74 | 0 | 2 | B (67) | A/E | 67 | 7 | 2 | 66 T | 8 | 2 | 65 | 9 | 2 | 64 | 10 | 2 | **63 R,5** | **11** | 2 |
| R S1.1 | ** | SFR | 1 | 69 MOD | 70 | 71 | 1 | 1 | B (67) | A/E | 71 | 0 | 0 | 71 | 0 | 0 | 70 | 1 | 0 | 70 | 1 | 0 | 70 | 1 | 0 |
| R S1.2 | ** | SFR | 2 | 67 M,CS1 | 68 | 68 | 1 | 0 | B (67) | A/E | 68 | 0 | 0 | 67 | 1 | 0 | 67 | 1 | 0 | 67 | 1 | 0 | 66 | 2 | 0 |
| R S1.3 | ** | SFR | 2 | 62 MOD | 63 | 64 | 1 | 1 | B (67) | NONE | 63 | 1 | 0 | 62 | 2 | 0 | 62 | 2 | 0 | 61 | 3 | 0 | 60 | 4 | 0 |
| R S1.4 | ** | SFR | 1 | 66 MOD | 67 | 68 | 1 | 1 | B (67) | A/E | 67 | 1 | 0 | 66 | 2 | 0 | 65 | 3 | 0 | 64 | 4 | 0 | **63 R** | **5** | 1 |
| R S1.5 | KS1,** | SFR | 3 | 63 MOD | 63 | 65 | 0 | 2 | B (67) | NONE | 65 | 0 | 0 | 64 | 1 | 0 | 64 | 1 | 0 | 64 | 1 | 0 | 64 | 1 | 0 |
| R S1.6 | KS1,** | SFR | 2 | 60 M,CS2 | 61 | 62 | 1 | 1 | B (67) | NONE | 62 | 0 | 0 | 61 | 1 | 0 | 61 | 1 | 0 | 61 | 1 | 0 | 60 | 2 | 0 |
| R S1.7 | KS1,** | MFR | 4 | 61 MOD | 61 | 63 | 0 | 2 | B (67) | NONE | 62 | 1 | 0 | 61 | 2 | 0 | 61 | 2 | 0 | 60 | 3 | 0 | 60 | 3 | 0 |
| R S1.8 | KS1,** | SFR | 2 | 63 MOD | 63 | 65 | 0 | 2 | B (67) | NONE | 64 | 1 | 0 | 63 | 2 | 0 | 62 | 3 | 0 | 62 | 3 | 0 | 61 | 4 | 0 |
| R 52 | C | SFR | 6 | 72 M,ST16 | 73 | 74 | 1 | 1 | B (67) | A/E | 66 T | 8 | 6 | 65 | 9 | 6 | 64 | 10 | 6 | 63 | 11 | 6 | **62 R,5** | **12** | 6 |
| R S2.1 | ** | SFR | 1 | 66 MOD | 67 | 68 | 1 | 1 | B (67) | A/E | 66 | 2 | 0 | 65 | 3 | 0 | 65 | 3 | 0 | 64 | 4 | 0 | **63 R** | **5** | 1 |
| R S2.2 | ** | SFR | 1 | 67 MOD | 68 | 69 | 1 | 1 | B (67) | A/E | 67 | 2 | 0 | 66 | 3 | 0 | 66 | 3 | 0 | 65 | 4 | 0 | **64 R** | **5** | 1 |
| R S2.3 | ** | SFR | 2 | 63 M,CS3 | 64 | 65 | 1 | 1 | B (67) | NONE | 65 | 0 | 0 | 64 | 1 | 0 | 64 | 1 | 0 | 63 | 2 | 0 | 62 | 3 | 0 |
| R S2.4 | ** | SFR | 2 | 64 M,ST16A | 65 | 67 | 1 | 2 | B (67) | A/E | 65 | 2 | 0 | 64 | 3 | 0 | 63 | 4 | 0 | 62 | 5 | 2 | **62 R** | **5** | 2 |
| R S2.5 | KS2,** | SFR | 2 | 63 MOD | 64 | 65 | 1 | 1 | B (67) | NONE | 64 | 1 | 0 | 64 | 1 | 0 | 63 | 2 | 0 | 62 | 3 | 0 | 61 | 4 | 0 |
| R S2.6 | KS2,** | SFR | 2 | 64 MOD | 64 | 66 | 0 | 2 | B (67) | A/E | 65 | 1 | 0 | 64 | 2 | 0 | 63 | 3 | 0 | 63 | 3 | 0 | 62 | 4 | 0 |
| R S2.7 | KS2,** | SFR | 2 | 61 M,CS4 | 62 | 63 | 1 | 1 | B (67) | NONE | 62 | 1 | 0 | 62 | 1 | 0 | 61 | 2 | 0 | 61 | 2 | 0 | 60 | 3 | 0 |
| R 53 | | SFR | 2 | 70 MOD | 70 | 72 | 0 | 2 | B (67) | A/E | 66 T | 6 | 2 | 65 | 7 | 2 | 64 | 8 | 2 | 63 | 9 | 2 | **62 R,5** | **10** | 2 |
| R S3.1 | ** | SFR | 1 | 64 M,CS5 | 65 | 67 | 1 | 2 | B (67) | A/E | 63 | 4 | 0 | 62 | 5 | 1 | 61 | 6 | 1 | 59 | 8 | 1 | **59 R,5** | **8** | 1 |
| R S3.2 | ** | SFR | 1 | 66 MOD | 66 | 68 | 0 | 2 | B (67) | A/E | 66 | 2 | 0 | 65 | 3 | 0 | 64 | 4 | 0 | 63 | 5 | 1 | **63 R,5** | **5** | 1 |
| R S3.3 | ** | SFR | 1 | 66 MOD | 67 | 68 | 1 | 1 | B (67) | A/E | 66 | 2 | 0 | 65 | 3 | 0 | 64 | 4 | 0 | 63 | 5 | 1 | **63 R,5** | **5** | 1 |
| R S3.4 | ** | SFR | 3 | 60 MOD | 61 | 62 | 1 | 1 | B (67) | NONE | 61 | 1 | 0 | 60 | 2 | 0 | 59 | 3 | 0 | 59 | 3 | 0 | 58 | 4 | 0 |
| R S3.5 | ** | SFR | 1 | 60 M,CS6 | 60 | 62 | 0 | 2 | B (67) | NONE | 60 | 2 | 0 | 59 | 3 | 0 | 58 | 4 | 0 | 58 | 4 | 0 | **57 5** | **5** | 1 |
| R S3.6 | ** | SFR | 2 | 61 MOD | 62 | 63 | 1 | 1 | B (67) | NONE | 62 | 1 | 0 | 62 | 1 | 0 | 61 | 2 | 0 | 60 | 3 | 0 | 60 | 3 | 0 |
| R S3.7 | ** | MFR | 2 | 66 MOD | 67 | 68 | 1 | 1 | B (67) | A/E | 67 | 1 | 0 | 66 | 2 | 0 | 65 | 3 | 0 | 64 | 4 | 0 | **63 5** | **5** | 2 |

S392 R/W

**Notes:**

1 - Leq(h) are A-weighted, peak hour noise levels in decibels.
2 - Land Use: SFR - single-family residence; MFR - multi-family residence; MH - mobile Home; MOT - motel/hotel; SCH - School; REC - recreational/park; REL - religious institution.
3 - M - Measured noise level; STxx or LTxx - measurement site number; INT - Interior; MOD - Modeled noise level using TNM.
4 - S = Substantial Increase (12 dBA or more); A/E = Approach or exceed NAC.
5 - Barrier height needed to meet requirements at adjacent receptor(s).
6 - Traffic noise from the freeway only; other local noise sources are not included.
C - Critical design receiver.
R - The minimum height to meet feasibility requirements of Caltrans' Noise Abatement Criteria.
W - Existing private property wall or soundwall.
* - Measurement or modeling purpose only: no outdoor use area.
L - A soundwall taller than 16 ft would be required to block the line of sight to truck stack.
T - Minimum height required to block the line-of-sight from the receptor to truck exhaust stacks.
H - Exterior modeling point for a motel: interior noise estimated using the modeled noise level at this point.
** - Non first row residences.
KS1 - A calibration factor of -4.0 dB is applied for this receptor and adjacent receptors with similar topographic features.
KS2 - A calibration factor of -2.5 dB is applied for this receptor and adjacent receptors with similar topographic features.

# Build Alternative - Outside Widening Option

| Receiver I.D. | Barrier I.D. and Location | Land Use[2] | Number of Dwelling Units | Existing Noise Level Leq(h), dBA[1,3] | State Route 101 South Coast HOV Future Worst Hour Noise Levels - Leq(h), dBA[1,6] | | | | | | Noise Prediction with Barrier, Barrier Insertion Loss (I.L.), and Number of Benefitted Receivers (NBR) | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Design Year Noise Level without Project Leq(h), dBA[1] | Design Year Noise Level with Project Leq(h), dBA[1] | Design Year Noise Level without Project Minus Existing Conditions Leq(h), dBA | Design Year Noise Level with Project minus No Project Conditions Leq(h), dBA | Activity Category (NAC) | Impact Type[4] | 8 feet | | | 10 feet | | | 12 feet | | | 14 feet | | | 16 feet | | |
| | | | | | | | | | | | Leq(h) | I.L. | NBR | Leq(h) | I.L. | NBR | Leq(h) | I.L. | NBR | Leq(h) | I.L. | NBR | Leq(h) | I.L. | NBR |
| R 55 | S392 R/W | MFR | 7 | 67 MOD | 68 | 69 | 1 | 1 | B (67) | A/E | 66 | 3 | 0 | 65 | 4 | 0 | 63 | 6 | 7 | 62 T | 7 | 7 | **60 R,5** | **9** | 7 |
| R 56 W | | SFR | 2 | 62 MOD | 62 | 63 | 0 | 1 | B (67) | NONE | 61 | 2 | 0 | 60 | 3 | 0 | 59 | 4 | 0 | 58 | 5 | 2 | **58 5** | **5** | 2 |
| R S4.1 ** | | SCH | 3 | 66 M,ST17 | 66 | 68 | 0 | 2 | B (67) | A/E | 65 | 3 | 0 | 65 | 3 | 0 | 64 | 4 | 0 | 63 | 5 | 3 | **62 R,5** | **6** | 3 |
| R S4.2 ** | | SFR | 1 | 64 M,CS7 | 65 | 66 | 1 | 1 | B (67) | A/E | 65 | 1 | 0 | 64 | 2 | 0 | 62 | 4 | 0 | 61 | 5 | 1 | **60 R,5** | **6** | 1 |
| R S4.3 ** | | SFR | 1 | 64 MOD | 65 | 65 | 1 | 0 | B (67) | NONE | 64 | 1 | 0 | 63 | 2 | 0 | 62 | 3 | 0 | 61 | 4 | 0 | **60 5** | **5** | 1 |
| R S4.4 ** | | SFR | 1 | 64 MOD | 65 | 65 | 1 | 0 | B (67) | NONE | 63 | 2 | 0 | 63 | 2 | 0 | 62 | 3 | 0 | 61 | 4 | 0 | **59 5** | **6** | 1 |
| R S4.5 ** | | MFR | 3 | 65 MOD | 66 | 67 | 1 | 1 | B (67) | A/E | 66 | 1 | 0 | 65 | 2 | 0 | 65 | 2 | 0 | 64 | 3 | 0 | 63 | 4 | 0 |
| R S4.6 ** | | SFR | 1 | 66 M,CS8 | 66 | 68 | 0 | 2 | B (67) | A/E | 66 | 2 | 0 | 66 | 2 | 0 | 65 | 3 | 0 | 64 | 4 | 0 | 64 | 4 | 0 |
| R S4.7 ** | | MFR | 4 | 65 MOD | 66 | 67 | 1 | 1 | B (67) | A/E | 66 | 1 | 0 | 65 | 2 | 0 | 64 | 3 | 0 | 64 | 3 | 0 | 63 | 4 | 0 |
| R S4.8 ** | | SFR | 2 | 66 MOD | 67 | 68 | 1 | 1 | B (67) | A/E | 67 | 1 | 0 | 66 | 2 | 0 | 66 | 2 | 0 | 65 | 3 | 0 | 64 | 4 | 0 |
| R S4.9 ** | | MFR | 2 | 66 MOD | 67 | 68 | 1 | 1 | B (67) | A/E | 67 | 1 | 0 | 66 | 2 | 0 | 66 | 2 | 0 | 65 | 3 | 0 | **63 R** | **5** | 2 |
| R S4.10 ** | | SFR | 1 | 65 M,CS10 | 66 | 67 | 1 | 1 | B (67) | A/E | 66 | 1 | 0 | 65 | 2 | 0 | 65 | 2 | 0 | 63 | 4 | 0 | **62 R** | **5** | 1 |
| R 57 | S414 Shoulder | SFR | 4 | 68 MOD | 68 | 69 | 0 | 1 | B (67) | A/E | 65 | 4 | 0 | 64 | 5 | 2 | 62 T | 7 | 2 | 61 | 8 | 2 | **60 R,5** | **9** | 4 |
| R S5.1 ** | | SFR | 6 | 63 M,CS9 | 64 | 64 | 1 | 0 | B (67) | NONE | 63 | 1 | 0 | 62 | 2 | 0 | 61 | 3 | 0 | 60 | 4 | 0 | **59 5** | **5** | 6 |
| R S5.2 KS3,** | | SFR | 2 | 66 MOD | 67 | 67 | 1 | 0 | B (67) | A/E | 64 | 3 | 0 | 63 | 4 | 0 | 62 | 5 | 2 | 61 | 6 | 2 | **60 R,5** | **7** | 2 |
| R S5.3 KS3,** | | SFR | 1 | 62 MOD | 63 | 63 | 1 | 0 | B (67) | NONE | 60 | 3 | 0 | 59 | 4 | 0 | 59 | 4 | 0 | 57 | 6 | 1 | **56 5** | **7** | 1 |
| R S5.4 KS3,** | | SFR | 4 | 53 M,CS11 | 54 | 55 | 1 | 1 | B (67) | NONE | 52 | 3 | 0 | 52 | 3 | 0 | 50 | 5 | 4 | 49 | 6 | 4 | **49 5** | **6** | 4 |
| R S5.5 ** | | MFR | 5 | 66 MOD | 67 | 68 | 1 | 1 | B (67) | A/E | 66 | 2 | 0 | 66 | 2 | 0 | 65 | 3 | 0 | 64 | 4 | 0 | **63 R** | **5** | 5 |
| R S5.6 ** | | SFR | 2 | 66 MOD | 67 | 68 | 1 | 1 | B (67) | A/E | 66 | 2 | 0 | 66 | 2 | 0 | 65 | 3 | 0 | 64 | 4 | 0 | **63 R** | **5** | 2 |
| R S5.7 KS4,** | | SFR | 2 | 62 MOD | 63 | 64 | 1 | 1 | B (67) | NONE | 63 | 1 | 0 | 63 | 1 | 0 | 62 | 2 | 0 | 62 | 2 | 0 | 61 | 3 | 0 |
| R S5.8 KS4,** | | MFR | 2 | 62 MOD | 62 | 63 | 0 | 1 | B (67) | NONE | 61 | 2 | 0 | 61 | 2 | 0 | 60 | 3 | 0 | 59 | 4 | 0 | **58 5** | **5** | 2 |
| R S5.9 KS4,** | | SFR | 2 | 63 M,CS12 | 64 | 64 | 1 | 0 | B (67) | NONE | 61 | 3 | 0 | 60 | 4 | 0 | 60 | 4 | 0 | 58 | 6 | 2 | **57 5** | **7** | 2 |
| R S5.10 KS4,** | | SFR | 3 | 53 MOD | 54 | 55 | 1 | 1 | B (67) | NONE | 52 | 3 | 0 | 52 | 3 | 0 | 51 | 4 | 0 | 49 | 6 | 3 | **48 5** | **7** | 3 |

**Notes:**

1 - Leq(h) are A-weighted, peak hour noise levels in decibels.
2 - Land Use: SFR - single-family residence; MFR - multi-family residence; MH - mobile Home; MOT - motel/hotel; SCH - School; REC - recreational/park; REL - religious institution.
3 - M - Measured noise level; STxx or LTxx - measurement site number; INT - Interior; MOD - Modeled noise level using TNM.
4 - S = Substantial Increase (12 dBA or more); A/E = Approach or exceed NAC.
5 - Barrier height needed to meet requirements at adjacent receptor(s).
6 - Traffic noise from the freeway only; other local noise sources are not included.
C - Critical design receiver.
R - The minimum height to meet feasibility requirements of Caltrans' Noise Abatement Criteria.
W - Existing private property wall or soundwall.
* - Measurement or modeling purpose only: no outdoor use area.
L - A soundwall taller than 16 ft would be required to block the line of sight to truck stack.
T - Minimum height required to block the line-of-sight from the receptor to truck exhaust stacks.
H - Exterior modeling point for a motel: interior noise estimated using the modeled noise level at this point.
** - Non first row residences.
KS1 - A calibration factor of -2.5 dB is applied for this receptor and adjacent receptors with similar topographic features.
KS2 - A calibration factor of -2.0 dB is applied for this receptor and adjacent receptors with similar topographic features.

# Build Alternative - Outside Widening Option

| Receiver I.D. | Barrier I.D. and Location | Land Use[2] | Number of Dwelling Units | Existing Noise Level Leq(h), dBA[1,3] | State Route 101 South Coast HOV Future Worst Hour Noise Levels - Leq(h), dBA[1,6] | | | | | | Noise Prediction with Barrier, Barrier Insertion Loss (I.L.), and Number of Benefitted Receivers (NBR) | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Design Year Noise Level without Project Leq(h), dBA[1] | Design Year Noise Level with Project Leq(h), dBA[1] | Design Year Noise Level without Project Minus Existing Conditions Leq(h), dBA | Design Year Noise Level with Project minus No Project Conditions Leq(h), dBA | Activity Category (NAC) | Impact Type[4] | 8 feet | | | 10 feet | | | 12 feet | | | 14 feet | | | 16 feet | | |
| | | | | | | | | | | | Leq(h) | I.L. | NBR | Leq(h) | I.L. | NBR | Leq(h) | I.L. | NBR | Leq(h) | I.L. | NBR | Leq(h) | I.L. | NBR |
| R 58 C | S414 Shoulder | SFR | 4 | 72 M,ST20 | 73 | 73 | 1 | 0 | B (67) | A/E | 67 | 6 | 1 | 66 | 7 | 1 | 64 | 9 | 4 | 63 | 10 | 4 | **62 R,5** | **11** | 4 |
| R S6.1 ** | | MFR | 4 | 72 MOD | 73 | 73 | 1 | 0 | B (67) | A/E | 71 | 2 | 0 | 70 | 3 | 0 | 69 | 4 | 0 | 68 | 5 | 4 | **67 R,5** | **6** | 4 |
| R S6.2 ** | | SFR | 2 | 70 MOD | 71 | 72 | 1 | 1 | B (67) | A/E | 70 | 2 | 0 | 69 | 3 | 0 | 68 | 4 | 0 | 67 | 5 | 2 | **66 R,5** | **6** | 2 |
| R S6.3 ** | | SFR | 2 | 69 M,CS13 | 69 | 70 | 0 | 1 | B (67) | A/E | 69 | 1 | 0 | 68 | 2 | 0 | 68 | 2 | 0 | 66 | 4 | 0 | 66 | 4 | 0 |
| R S6.4 ** | | SFR | 2 | 69 MOD | 70 | 71 | 1 | 1 | B (67) | A/E | 70 | 1 | 0 | 69 | 2 | 0 | 68 | 3 | 0 | 67 | 4 | 0 | **66 R** | **5** | 2 |
| R S6.5 ** | | SFR | 1 | 67 MOD | 68 | 69 | 1 | 1 | B (67) | A/E | 68 | 1 | 0 | 67 | 2 | 0 | 67 | 2 | 0 | 66 | 3 | 0 | 65 | 4 | 0 |
| R S6.6 ** | | MFR | 3 | 60 MOD | 61 | 62 | 1 | 1 | B (67) | NONE | 61 | 1 | 0 | 60 | 2 | 0 | 60 | 2 | 0 | 59 | 3 | 0 | 58 | 4 | 0 |
| R S6.7 ** | | SFR | 1 | 67 MOD | 68 | 68 | 1 | 0 | B (67) | A/E | 64 | 4 | 0 | 63 | 5 | 1 | 63 | 5 | 1 | 61 | 7 | 1 | **60 R,5** | **8** | 1 |
| R S6.8 ** | | MFR | 2 | 68 MOD | 69 | 69 | 1 | 0 | B (67) | A/E | 66 | 3 | 0 | 64 | 5 | 2 | 64 | 5 | 2 | 62 | 7 | 2 | **61 R,5** | **8** | 2 |
| R S6.9 ** | | MFR | 2 | 67 M,CS15 | 68 | 69 | 1 | 1 | B (67) | A/E | 67 | 2 | 0 | 65 | 4 | 0 | 65 | 4 | 0 | 63 | 6 | 2 | **62 R,5** | **7** | 2 |
| R S6.10 ** | | SFR | 1 | 68 MOD | 69 | 70 | 1 | 1 | B (67) | A/E | 68 | 2 | 0 | 68 | 2 | 0 | 67 | 3 | 0 | 66 | 4 | 0 | **65 R** | **5** | 1 |
| R S6.11 ** | | SFR | 3 | 70 MOD | 71 | 72 | 1 | 1 | B (67) | A/E | 71 | 1 | 0 | 70 | 2 | 0 | 70 | 2 | 0 | 69 | 3 | 0 | 68 | 4 | 0 |
| R S6.12 ** | | SFR | 3 | 69 M,CS14 | 70 | 71 | 1 | 1 | B (67) | A/E | 70 | 1 | 0 | 70 | 1 | 0 | 69 | 2 | 0 | 68 | 3 | 0 | 67 | 4 | 0 |
| R S6.13 ** | | SFR | 1 | 68 MOD | 69 | 70 | 1 | 1 | B (67) | A/E | 69 | 1 | 0 | 68 | 2 | 0 | 68 | 2 | 0 | 67 | 3 | 0 | 66 | 4 | 0 |
| R S6.14 ** | | MFR | 3 | 63 MOD | 64 | 65 | 1 | 1 | B (67) | NONE | 65 | 0 | 0 | 64 | 1 | 0 | 64 | 1 | 0 | 63 | 2 | 0 | 62 | 3 | 0 |
| R S6.15 ** | | SFR | 3 | 68 MOD | 69 | 70 | 1 | 1 | B (67) | A/E | 69 | 1 | 0 | 69 | 1 | 0 | 68 | 2 | 0 | 68 | 2 | 0 | 67 | 3 | 0 |
| R 58A | S424 Shoulder | MFR | 2 | 67 MOD | 67 | 69 | 0 | 2 | B (67) | A/E | 66 | 3 | 0 | 65 | 4 | 0 | 64 | 5 | 1 | **62 R.5** | **7** | 1 | 61 | 8 | 2 |
| R 59 | | MOT | 1 | 70 MOD | 71 | 72 | 1 | 1 | N/A | N/A | 68 | 4 | -- | 67 | 5 | -- | 64 | 8 | -- | 63 | 9 | -- | 62 | 10 | -- |
| R 59 | | MOT | 1 | 50 MOD | 51 | 52 | 1 | 1 | E (52) | A/E | 48 | 4 | 0 | 47 | 5 | 1 | 44 | 8 | 1 | **43 R,5** | **9** | 1 | 42 | 10 | 1 |
| R 60 C | | MH | 7 | 74 MOD | 74 | 75 | 0 | 1 | B (67) | A/E | 74 | 1 | 0 | 72 | 3 | 0 | 71 | 4 | 0 | **69 R** | **6** | 7 | 67 L | 8 | 7 |
| R 61 | | MH | 1 | 73 MOD | 74 | 75 | 1 | 1 | B (67) | A/E | 74 | 1 | 0 | 73 | 2 | 0 | 72 | 3 | 0 | 71 | 4 | 0 | **69 R,L** | **6** | 1 |
| R 61A ** | | MH | 2 | 66 MOD | 66 | 67 | 0 | 1 | B (67) | A/E | 67 | 0 | 0 | 67 | 0 | 0 | 66 | 1 | 0 | 65 | 2 | 0 | 63 L | 4 | 0 |
| R 61B | | REC | 1 | 63 MOD | 64 | 65 | 1 | 1 | B (67) | NONE | 64 | 1 | 0 | 64 | 1 | 0 | 63 | 2 | 0 | 62 | 3 | 0 | 61 | 4 | 0 |
| R 62 K7 | S405 Shoulder | SFR | 3 | 54 MOD | 55 | 56 | 1 | 1 | B (67) | NONE | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| R 63 K7 | | SFR | 3 | 58 M,ST18 | 59 | 61 | 1 | 2 | B (67) | NONE | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| R 64 | | SFR | 5 | 58 MOD | 59 | 60 | 1 | 1 | B (67) | NONE | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| R 64A * | | SFR | 5 | 66 M,LT2 | 67 | 68 | 1 | 1 | N/A | N/A | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| R 65 C | | SFR | 2 | 66 MOD | 66 | 68 | 0 | 2 | B (67) | A/E | 64 | 4 | 0 | **63 T,R** | **5** | 1 | 62 | 6 | 1 | 62 | 6 | 1 | 61 | 7 | 2 |
| R 66 K8 | -- | REC | 4 | 61 M,ST19 | 62 | 63 | 1 | 1 | B (67) | NONE | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

**Notes:**

1 - Leq(h) are A-weighted, peak hour noise levels in decibels.
2 - Land Use: SFR - single-family residence; MFR - multi-family residence; MH - mobile Home; MOT - motel/hotel; SCH - School; REC - recreational/park; REL - religious institution.
3 - M - Measured noise level; STxx or LTxx - measurement site number; INT - Interior; MOD - Modeled noise level using TNM.
4 - S = Substantial Increase (12 dBA or more); A/E = Approach or exceed NAC.
5 - Barrier height needed to meet requirements at adjacent receptor(s).
6 - Traffic noise from the freeway only; other local noise sources are not included.

C - Critical design receiver.
R - The minimum height to meet feasibility requirements of Caltrans' Noise Abatement Criteria.
W - Existing private property wall or soundwall.
* - Measurement or modeling purpose only: no outdoor use area.
K7 - A calibration factor of -3.5 dB is applied for this receptor and adjacent receptors with similar topographic features.
K8 - A calibration factor of -2.5 dB is applied for this receptor and adjacent receptors with similar topographic features.
L - A soundwall taller than 16 ft would be required to block the line of sight to truck stack.
T - Minimum height required to block the line-of-sight from the receptor to truck exhaust stacks.
H - Exterior modeling point for a motel: interior noise estimated using the modeled noise level at this point.
** - Non first row residences.

## Build Alternative - Outside Lane Design

| Receiver I.D. | Barrier I.D. and Location | Land Use[2] | Number of Dwelling Units | Existing Noise Level Leq(h), dBA[1,3] | Design Year Noise Level without Project Leq(h), dBA[1] | Design Year Noise Level with Project Leq(h), dBA[1] | Design Year Noise Level without Project Minus Existing Conditions Leq(h), dBA | Design Year Noise Level with Project minus No Project Conditions Leq(h), dBA | Activity Category (NAC) | Impact Type[4] | State Route 101 South Coast HOV Future Worst Hour Noise Levels - Leq(h), dBA[1,6] — Noise Prediction with Barrier, Barrier Insertion Loss (I.L.), and Number of Benefitted Receivers (NBR) | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | 8 feet | | | 10 feet | | | 12 feet | | | 14 feet | | | 16 feet | | |
| | | | | | | | | | | | Leq(h) | I.L. | NBR | Leq(h) | I.L. | NBR | Leq(h) | I.L. | NBR | Leq(h) | I.L. | NBR | Leq(h) | I.L. | NBR |
| R 67 C | S446 Shoulder | SFR | 1 | 66 MOD | 68 | 69 | 2 | 1 | B (67) | A/E | 64 | 5 | 1 | 63 | 6 | 1 | **61** T,R | **8** | 1 | 61 | 8 | 1 | 60 | 9 | 1 |
| R 68A | S452 Shoulder | SFR | 1 | 64 MOD | 66 | 68 | 2 | 2 | B (67) | A/E | 64 | 4 | 0 | 63 | 5 | 1 | **60** T,R | **8** | 1 | 60 | 8 | 1 | 59 | 9 | 1 |
| R 68 | | SFR | 2 | 65 MOD | 66 | 69 | 1 | 3 | B (67) | A/E | 64 | 5 | 2 | 64 | 5 | 2 | **61** T,R | **8** | 2 | 60 | 9 | 2 | 60 | 9 | 2 |
| R 69 | | MFR | 8 | 65 MOD | 66 | 68 | 1 | 2 | B (67) | A/E | 64 | 4 | 0 | 64 | 4 | 0 | **61** T,R | **7** | 8 | 60 | 8 | 8 | 60 | 8 | 8 |
| R 70 C | | SFR | 3 | 67 MOD | 68 | 70 | 1 | 2 | B (67) | A/E | 65 | 5 | 1 | 64 | 6 | 1 | **62** T,R | **8** | 3 | 61 | 9 | 3 | 60 | 10 | 3 |
| R 70A | S464 Shoulder & R/W | SFR | 2 | 71 MOD | 73 | 73 | 2 | 0 | B (67) | A/E | 67 | 6 | 1 | 66 | 7 | 1 | **63** T,R | **10** | 2 | 62 | 11 | 2 | 61 | 12 | 2 |
| R 71 | | SFR | 3 | 74 M,ST21 | 75 | 76 | 1 | 1 | B (67) | A/E | 69 | 7 | 2 | 66 | 10 | 3 | **65** T,R | **11** | 3 | 64 | 12 | 3 | 63 | 13 | 3 |
| R 71A | | SFR | 1 | 70 MOD | 72 | 73 | 2 | 1 | B (67) | A/E | 68 | 5 | 1 | 67 T | 6 | 1 | **64** R,5 | **9** | 1 | 63 | 10 | 1 | 62 | 11 | 1 |
| R 72 C | | SFR | 3 | 74 MOD | 75 | 76 | 1 | 1 | B (67) | A/E | 70 | 6 | 2 | 68 | 8 | 2 | **66** T,R | **10** | 3 | 65 | 11 | 3 | 64 | 12 | 3 |
| R 73 | | SFR | 4 | 75 MOD | 76 | 76 | 1 | 0 | B (67) | A/E | 70 | 6 | 2 | **67** T,R | **9** | 4 | 67 | 9 | 4 | 66 | 10 | 4 | 65 | 11 | 4 |
| R 83 | S498 R/W | SFR | 1 | 69 MOD | 71 | 72 | 2 | 1 | B (67) | A/E | 68 | 4 | 0 | **66** T,R | **6** | 1 | 65 | 7 | 1 | 64 | 8 | 1 | 63 | 9 | 1 |
| R 84 C | | SFR | 6 | 73 M,ST24 | 75 | 76 | 2 | 1 | B (67) | A/E | 69 | 7 | 4 | **67** T,R | **9** | 4 | 66 | 10 | 6 | 65 | 11 | 6 | 65 | 11 | 6 |
| R 85 | | SFR | 9 | 70 MOD | 72 | 73 | 2 | 1 | B (67) | A/E | 67 | 6 | 5 | **65** T,R | **8** | 5 | 64 | 9 | 5 | 63 | 10 | 7 | 62 | 11 | 7 |
| R 86 | | SFR | 2 | 68 MOD | 69 | 71 | 1 | 2 | B (67) | A/E | 64 | 7 | 1 | **63** T,R | **8** | 1 | 63 | 8 | 1 | 62 | 9 | 1 | 61 | 10 | 2 |
| R 86A | | SFR | 2 | 62 MOD | 63 | 64 | 1 | 1 | B (67) | NONE | 61 | 3 | 0 | 61 | 3 | 0 | 61 | 3 | 0 | 60 | 4 | 0 | 60 | 4 | 0 |
| R 74 | S471 Shoulder | SFR | 1 | 59 MOD | 61 | 64 | 2 | 3 | B (67) | NONE | 62 | 2 | 0 | 61 | 3 | 0 | 61 | 3 | 0 | 61 | 3 | 0 | 61 | 3 | 0 |
| R 74B | | SFR | 1 | 70 MOD | 71 | 72 | 1 | 1 | B (67) | A/E | 68 T | 4 | 0 | **67** R | **5** | 1 | 66 | 6 | 1 | 66 | 6 | 1 | 66 | 6 | 1 |
| R 74A | | SFR | 2 | 63 MOD | 64 | 67 | 1 | 3 | B (67) | A/E | 64 | 3 | 0 | **61** T,R | **6** | 2 | 61 | 6 | 2 | 60 | 7 | 2 | 60 | 7 | 2 |
| R 75 C | | SFR | 5 | 71 MOD | 72 | 72 | 1 | 0 | B (67) | A/E | 67 | 5 | 5 | 66 | 6 | 5 | **64** T,R | **8** | 5 | 63 | 9 | 5 | 62 | 10 | 5 |
| R 76 K9 | | SFR | 4 | 64 M,ST22 | 65 | 66 | 1 | 1 | B (67) | A/E | 61 | 5 | 4 | 61 | 5 | 4 | **59** T,R | **7** | 4 | 57 | 9 | 4 | 57 | 9 | 4 |
| R 77 | | SFR | 3 | 67 MOD | 68 | 69 | 1 | 1 | B (67) | A/E | 65 | 4 | 0 | 64 | 5 | 2 | **61** T,R | **8** | 2 | 60 | 9 | 2 | 59 | 10 | 3 |
| R 77A | | SFR | 2 | 67 MOD | 68 | 68 | 1 | 0 | B (67) | A/E | 65 | 3 | 0 | 64 | 4 | 0 | 63 T | 5 | 2 | **62** R,5 | **6** | 2 | 60 | 8 | 2 |
| R 78 | | SFR | 2 | 63 MOD | 65 | 66 | 2 | 1 | B (67) | A/E | 65 | 1 | 0 | 63 | 3 | 0 | 62 T | 4 | 0 | **61** R | **5** | 2 | 60 | 6 | 2 |
| R 78A | | SFR | 1 | 62 MOD | 63 | 64 | 1 | 1 | B (67) | NONE | 64 | 0 | 0 | 63 | 1 | 0 | 63 | 1 | 0 | 62 | 2 | 0 | 62 | 2 | 0 |
| R 79 W | -- | SFR | 3 | 64 MOD | 65 | 67 | 1 | 2 | B (67) | A/E | -- | -- | -- | -- | -- | -- | -- | -- | -- | 65 | 2 | 0 | 64 | 3 | 0 |
| R 80 W | | SFR | 1 | 68 M,ST23 | 69 | 70 | 1 | 1 | B (67) | A/E | -- | -- | -- | -- | -- | -- | -- | -- | -- | 69 | 1 | 0 | 68 | 2 | 0 |

**Notes:**

1 - Leq(h) are A-weighted, peak hour noise levels in decibels.
2 - Land Use: SFR - single-family residence; MFR - multi-family residence; MH - mobile Home; MOT - motel/hotel; SCH - School; REC - recreational/park; REL - religious institution.
3 - M - Measured noise level; STxx or LTxx - measurement site number; INT - Interior; MOD - Modeled noise level using TNM.
4 - S = Substantial Increase (12 dBA or more); A/E = Approach or exceed NAC.
5 - Barrier height needed to meet requirements at adjacent receptor(s).
6 - Traffic noise from the freeway only; other local noise sources are not included.
C - Critical design receiver.
R - The minimum height to meet feasibility requirements of Caltrans' Noise Abatement Criteria.
T - Minimum height required to block the line-of-sight from the receptor to truck exhaust stacks.
W - Existing private property wall or soundwall.
H - Exterior modeling point for a motel: interior noise estimated using the modeled noise level at this point.
* - Measurement or modeling purpose only: no outdoor use area.
** - Non first row residences.
K9 - A calibration factor of -3.0 dB is applied for this receptor and adjacent receptors with topographic geographic features.

## Build Alternative - Outside Lane Design

| Receiver I.D. | Barrier I.D. and Location | Land Use[2] | Number of Dwelling Units | Existing Noise Level Leq(h), dBA[1,3] | State Route 101 South Coast HOV Future Worst Hour Noise Levels - Leq(h), dBA[1,6] | | | | | | Noise Prediction with Barrier, Barrier Insertion Loss (I.L.), and Number of Benefitted Receivers (NBR) | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Design Year Noise Level without Project Leq(h), dBA[1] | Design Year Noise Level with Project Leq(h), dBA[1] | Design Year Noise Level without Project Minus Existing Conditions Leq(h), dBA | Design Year Noise Level with Project minus No Project Conditions Leq(h), dBA | Activity Category (NAC) | Impact Type[4] | 8 feet | | | 10 feet | | | 12 feet | | | 14 feet | | | 16 feet | | |
| | | | | | | | | | | | Leq(h) | I.L. | NBR | Leq(h) | I.L. | NBR | Leq(h) | I.L. | NBR | Leq(h) | I.L. | NBR | Leq(h) | I.L. | NBR |
| R 81 C | S489 Private Property | SFR | 1 | 73 MOD | 74 | 74 | 1 | 0 | B (67) | A/E | 70 T | 4 | 0 | 69 | 5 | 1 | **69 R,5** | **5** | 1 | 69 | 5 | 1 | 68 | 6 | 1 |
| R 82 | | MFR | 3 | 67 MOD | 68 | 69 | 1 | 1 | B (67) | A/E | 66 | 3 | 0 | 65 T | 4 | 0 | **64 R** | **5** | 3 | 64 | 5 | 3 | 63 | 6 | 3 |
| R 82A | | MFR | 2 | 67 MOD | 68 | 68 | 1 | 0 | B (67) | A/E | 66 | 2 | 0 | 66 T | 2 | 0 | 65 | 3 | 0 | 65 | 3 | 0 | 65 | 3 | 0 |
| R 87B | S520 R/W | SFR | 1 | 62 MOD | 62 | 64 | 0 | 2 | B (67) | NONE | 61 | 3 | 0 | 61 | 3 | 0 | 60 | 4 | 0 | 60 | 4 | 0 | 60 | 4 | 0 |
| R 87A | | SFR | 1 | 63 MOD | 64 | 65 | 1 | 1 | B (67) | NONE | 61 | 4 | 0 | 61 | 4 | 0 | 60 | 5 | 1 | 60 | 5 | 1 | 60 | 5 | 1 |
| R 87 | | SFR | 1 | 66 M,ST26 | 66 | 68 | 0 | 2 | B (67) | A/E | 63 | 5 | 1 | **62 T,R** | **6** | 1 | 61 | 7 | 1 | 60 | 8 | 1 | 59 | 9 | 1 |
| R 88 C | | SFR | 6 | 73 MOD | 73 | 75 | 0 | 2 | B (67) | A/E | 68 | 7 | 5 | **66 T,R** | **9** | 5 | 64 | 11 | 5 | 63 | 12 | 5 | 62 | 13 | 5 |
| R 89 | | SFR | 4 | 74 MOD | 74 | 75 | 0 | 1 | B (67) | A/E | 69 | 6 | 3 | **67 T,R** | **8** | 3 | 65 | 10 | 4 | 64 | 11 | 4 | 63 | 12 | 4 |
| R 90 | | SFR | 5 | 70 MOD | 70 | 72 | 0 | 2 | B (67) | A/E | 66 | 6 | 3 | **64 T,R** | **8** | 3 | 63 | 9 | 3 | 63 | 9 | 3 | 62 | 10 | 5 |
| R 90A | | SFR | 4 | 66 MOD | 66 | 68 | 0 | 2 | B (67) | A/E | 63 | 5 | 4 | **62 T,R** | **6** | 4 | 61 | 7 | 4 | 61 | 7 | 4 | 60 | 8 | 4 |
| R 91 | | SFR | 2 | 60 MOD | 61 | 62 | 1 | 1 | B (67) | NONE | 58 | 4 | 0 | 58 | 4 | 0 | 58 | 4 | 0 | 57 | 5 | 1 | 57 | 5 | 1 |
| R 92 | S519 R/W | SFR | 4 | 63 MOD | 64 | 65 | 1 | 1 | B (67) | NONE | 62 | 3 | 0 | 62 T | 3 | 0 | 61 | 4 | 0 | 61 | 4 | 0 | 61 | 4 | 0 |
| R 92A | | MFR | 4 | 69 MOD | 70 | 71 | 1 | 1 | B (67) | A/E | 65 | 6 | 2 | 64 | 7 | 2 | **62 T,R** | **9** | 2 | 62 | 9 | 2 | 61 | 10 | 4 |
| R 93 C | | SFR | 5 | 73 MOD | 73 | 75 | 0 | 2 | B (67) | A/E | 68 | 7 | 3 | 66 T | 9 | 3 | **65 R,5** | **10** | 5 | 64 | 11 | 5 | 63 | 12 | 5 |
| R 94 | | SFR | 6 | 75 M,ST25 | 75 | 76 | 0 | 1 | B (67) | A/E | 70 | 6 | 4 | 68 | 8 | 4 | **67 T,R** | **9** | 4 | 65 | 11 | 6 | 65 | 11 | 6 |
| R 95 | | SFR | 3 | 72 MOD | 73 | 74 | 1 | 1 | B (67) | A/E | 66 T | 8 | 2 | **64 R,5** | **10** | 3 | 63 | 11 | 3 | 62 | 12 | 3 | 62 | 12 | 3 |
| R 96A | | SFR | 4 | 65 MOD | 65 | 67 | 0 | 2 | B (67) | A/E | 61 T | 6 | 2 | **61 R,5** | **6** | 2 | 60 | 7 | 4 | 60 | 7 | 4 | 59 | 8 | 4 |
| R 96 | | SFR | 5 | 63 MOD | 64 | 65 | 1 | 1 | B (67) | NONE | 61 | 4 | 0 | **60 5** | **5** | 3 | 59 | 6 | 5 | 59 | 6 | 5 | 58 | 7 | 5 |
| R 97 | | SFR | 3 | 63 M,LT3 | 64 | 65 | 1 | 1 | B (67) | NONE | 63 | 2 | 0 | 61 | 4 | 0 | **59 5** | **6** | 3 | 58 | 7 | 3 | 58 | 7 | 3 |
| R 97A | | SFR | 4 | 65 MOD | 66 | 68 | 1 | 2 | B (67) | A/E | 64 | 4 | 0 | 64 | 4 | 0 | 64 T | 4 | 0 | **63 R** | **5** | 1 | 63 | 5 | 1 |
| R 97B | | MFR | 1 | 69 MOD | 70 | 71 | 1 | 1 | B (67) | A/E | 70 | 1 | 0 | 70 | 1 | 0 | 69 | 2 | 0 | 69 | 2 | 0 | 69 | 2 | 0 |

**Notes:**

1 - Leq(h) are A-weighted, peak hour noise levels in decibels.
2 - Land Use: SFR - single-family residence; MFR - multi-family residence; MH - mobile Home; MOT - motel/hotel; SCH - School; REC - recreational/park; REL - religious institution.
3 - M - Measured noise level; STxx or LTxx - measurement site number; INT - Interior; MOD - Modeled noise level using TNM.
4 - S = Substantial Increase (12 dBA or more); A/E = Approach or exceed NAC.
5 - Barrier height needed to meet requirements at adjacent receptor(s).
6 - Traffic noise from the freeway only; other local noise sources are not included.
C - Critical design receiver.
R - The minimum height to meet feasibility requirements of Caltrans' Noise Abatement Criteria.
W - Existing private property wall or soundwall.
* - Measurement or modeling purpose only: no outdoor use area.
T - Minimum height required to block the line-of-sight from the receptor to truck exhaust stacks.
H - Exterior modeling point for a motel: interior noise estimated using the modeled noise level at this point.
** - Non first row residences.

## Build Alternative - Outside Lane Design

| Receiver I.D. | Barrier I.D. and Location | Land Use[2] | Number of Dwelling Units | Existing Noise Level Leq(h), dBA[1,3] | State Route 101 South Coast HOV Future Worst Hour Noise Levels - Leq(h), dBA[1,6] | | | | | | Noise Prediction with Barrier, Barrier Insertion Loss (I.L.), and Number of Benefitted Receivers (NBR) | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Design Year Noise Level without Project Leq(h), dBA[1] | Design Year Noise Level with Project Leq(h), dBA[1] | Design Year Noise Level without Project Minus Existing Conditions Leq(h), dBA | Design Year Noise Level with Project minus No Project Conditions Leq(h), dBA | Activity Category (NAC) | Impact Type[4] | 8 feet | | | 10 feet | | | 12 feet | | | 14 feet | | | 16 feet | | |
| | | | | | | | | | | | Leq(h) | I.L. | NBR | Leq(h) | I.L. | NBR | Leq(h) | I.L. | NBR | Leq(h) | I.L. | NBR | Leq(h) | I.L. | NBR |
| R 98 C | S535 R/W | SFR | 1 | 73 MOD | 74 | 76 | 1 | 2 | B (67) | A/E | 66 T | 10 | 1 | 65 | 11 | 1 | **64 R,5** | **12** | 1 | 62 | 14 | 1 | 62 | 14 | 1 |
| R 98A ** | | MFR | 3 | 66 MOD | 66 | 68 | 0 | 2 | B (67) | A/E | 65 T | 3 | 0 | 64 | 4 | 0 | **63 R** | **5** | 3 | 62 | 6 | 3 | 61 | 7 | 3 |
| R 99 W | | MFR | 2 | 68 M,ST27 | 69 | 70 | 1 | 1 | B (67) | A/E | 67 T | 3 | 0 | 66 | 4 | 0 | **65 R** | **5** | 2 | 63 | 7 | 2 | 62 | 8 | 2 |
| R 100A | S549 Shoulder | SFR | 2 | 65 MOD | 66 | 67 | 1 | 1 | B (67) | A/E | 62 | 5 | 1 | **61 T,R** | **6** | 1 | 60 | 7 | 1 | 60 | 7 | 1 | 59 | 8 | 1 |
| R 100 | | MFR | 8 | 65 MOD | 66 | 67 | 1 | 1 | B (67) | A/E | 62 | 5 | 7 | **62 T,R** | **5** | 7 | 61 | 6 | 7 | 61 | 6 | 7 | 60 | 7 | 7 |
| R 101 | | SFR | 2 | 65 MOD | 66 | 67 | 1 | 1 | B (67) | A/E | 63 | 4 | 0 | **60 T,R** | **7** | 2 | 60 | 7 | 2 | 59 | 8 | 2 | 58 | 9 | 2 |
| R 102 | | SFR | 5 | 67 M,ST28 | 67 | 69 | 0 | 2 | B (67) | A/E | 64 | 5 | 5 | 63 | 6 | 5 | **61 T,R** | **8** | 5 | 60 | 9 | 5 | 60 | 9 | 5 |
| R 103 C | | SFR | 6 | 69 MOD | 69 | 71 | 0 | 2 | B (67) | A/E | 66 | 5 | 5 | 65 | 6 | 5 | **63 T,R** | **8** | 6 | 62 | 9 | 6 | 62 | 9 | 6 |
| R 104 | -- | MOT | 1 | 62 MOD | 62 | 64 | 0 | 2 | B (67) | None | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

**Notes:**

1 - Leq(h) are A-weighted, peak hour noise levels in decibels.
2 - Land Use: SFR - single-family residence; MFR - multi-family residence; MH - mobile Home; MOT - motel/hotel; SCH - School; REC - recreational/park; REL - religious institution.
3 - M - Measured noise level; STxx or LTxx - measurement site number; INT - Interior; MOD - Modeled noise level using TNM.
4 - S = Substantial Increase (12 dBA or more); A/E = Approach or exceed NAC.
5 - Barrier height needed to meet requirements at adjacent receptor(s).
6 - Traffic noise from the freeway only; other local noise sources are not included.
C - Critical design receiver.
R - The minimum height to meet feasibility requirements of Caltrans' Noise Abatement Criteria.
W - Existing private property wall or soundwall.
* - Measurement or modeling purpose only: no outdoor use area.
T - Minimum height required to block the line-of-sight from the receptor to truck exhaust stacks.
H - Exterior modeling point for a motel: interior noise estimated using the modeled noise level at this point.
** - Non first row residences.

# **Appendix D** Top of Wall Tables for Feasible Barriers

# INSIDE WIDENING OPTION

## Build Alternative - Inside Widening Option

| Barrier No. | Receptor No. | Type[1] and No. of Benefited Residences | Barrier Location | SR-101 Barrier Station | Barrier Height, ft | Top of Barrier Elevation[2], ft |
|---|---|---|---|---|---|---|
| S90 | R1, R2 | 6 MH | R/W | 84+50 | 14 | 78.8 |
| | | | | 85+00 | 14 | 78.0 |
| | | | | 86+00 | 14 | 77.5 |
| | | | | 87+00 | 14 | 76.0 |
| | | | | 88+00 | 14 | 75.0 |
| | | | | 89+00 | 14 | 74.0 |
| | | | | 90+00 | 14 | 73.5 |
| | | | | 91+00 | 14 | 72.0 |
| | | | | 92+00 | 14 | 71.5 |
| | | | | 93+00 | 14 | 70.8 |
| | | | Approximate Length: 829 ft | | | |
| S98 Option to abate San Roque MPH | R3 - R3B | 17 MH 1 REC | R/W | 93+00 | 14 | 70.8 |
| | | | | 94+00 | 14 | 69.4 |
| | | | | 95+00 | 14 | 68.0 |
| | | | | 96+00 | 14 | 67.5 |
| | | | | 97+00 | 14 | 67.0 |
| | | | | 98+00 | 14 | 66.8 |
| | | | | 99+00 | 14 | 67.0 |
| | | | | 99+26 | 14 | 68.0 |
| | | | | 100+64 | 14 | 69.0 |
| | | | | 100+64 | 10 | 65.0 |
| | | | | 102+00 | 10 | 64.0 |
| | | | Approximate Length: 876 ft | | | |
| S158 | R4 - R6 R7A | 20 SFR 6 MFR | R/W Shoulder | 151+00 | 10 | 28.5 |
| | | | | 152+00 | 10 | 28.4 |
| | | | | 153+00 | 10 | 28.3 |
| | | | | 154+00 | 10 | 28.2 |
| | | | | 155+00 | 10 | 28.0 |
| | | | | 156+00 | 10 | 27.9 |
| | | | | 156+60 | 10 | 27.9 |
| | | | | 157+00 | 10 | 27.8 |
| | | | | 158+00 | 10 | 27.8 |
| | | | | 159+00 | 10 | 27.7 |
| | | | | 160+00 | 10 | 27.6 |
| | | | | 161+00 | 10 | 27.5 |
| | | | | 162+00 | 10 | 27.4 |
| | | | | 163+00 | 10 | 27.3 |
| | | | | 163+00 | 12 | 29.3 |
| | | | | 163+50 | 12 | 29.3 |
| | | | | 164+00 | 12 | 29.2 |
| | | | | 165+00 | 12 | 29.1 |
| | | | | 166+00 | 12 | 29.0 |
| | | | | 167+00 | 12 | 28.9 |
| | | | | 168+00 | 12 | 28.7 |
| | | | | 169+00 | 12 | 28.5 |
| | | | Approximate Length: 1801 ft | | | |

Notes:

1 - Land Use: SFR - single-family residence; MFR - multi-family residence; MH - mobile home; REC - recreational.

2 - The top of barrier elevation takes precedent over the barrier height.

## Build Alternative - Inside Widening Option

| Barrier No. | Receptor No. | Type[1] and No. of Benefited Residences | Barrier Location | SR-101 Barrier Station | Barrier Height, ft | Top of Barrier Elevation[2], ft |
|---|---|---|---|---|---|---|
| S174 | R11 - R13A | 12 SFR | R/W | 170+07 | 12 | 32.0 |
| | | | | 170+36 | 12 | 29.5 |
| | | | | 171+40 | 12 | 28.0 |
| | | | | 172+70 | 12 | 30.0 |
| | | | | 174+02 | 12 | 30.0 |
| | | | | 174+58 | 12 | 31.0 |
| | | | | 176+10 | 12 | 33.0 |
| | | | | 176+70 | 12 | 32.3 |
| | | | | 178+56 | 12 | 32.0 |
| | | | Approximate Length: 851 ft | | | |
| S181 | R23-R27 | 11 SFR<br>16 MFR<br>21 MH | R/W | 171+19 | 10 | 29.1 |
| | | | | 172+47 | 10 | 26.6 |
| | | | | 172+87 | 10 | 26.6 |
| | | | | 174+12 | 10 | 28.0 |
| | | | | 175+43 | 10 | 28.0 |
| | | | | 175+98 | 10 | 27.0 |
| | | | | 177+00 | 10 | 27.0 |
| | | | | 178+00 | 10 | 27.0 |
| | | | | 179+00 | 10 | 27.0 |
| | | | | 180+00 | 10 | 26.0 |
| | | | | 181+00 | 10 | 24.0 |
| | | | | 181+75 | 10 | 24.0 |
| | | | | 183+00 | 10 | 24.0 |
| | | | | 184+41 | 10 | 22.0 |
| | | | | 184+79 | 10 | 24.0 |
| | | | | 185+63 | 10 | 24.0 |
| | | | | 187+41 | 10 | 24.0 |
| | | | | 189+00 | 10 | 24.0 |
| | | | | 190+09 | 10 | 24.0 |
| | | | | 191+00 | 10 | 23.0 |
| | | | Approximate Length: 1982 ft | | | |
| S182 | R14 | 1 SFR | Shoulder | 179+50 | 16 | 34.7 |
| | | | | 181+00 | 16 | 33.8 |
| | | | | 183+00 | 16 | 32.6 |
| | | | | 183+50 | 16 | 32.3 |
| | | | | 184+00 | 16 | 32.1 |
| | | | Approximate Length: 450 ft | | | |

Notes:

1 - Land Use: SFR - single-family residence; MFR - multi-family residence; MH - mobile home.

2 - The top of barrier elevation takes precedent over the barrier height.

## Build Alternative - Inside Widening Option

| Barrier No. | Receptor No. | Type[1] and No. of Benefited Residences | Barrier Location | SR-101 Barrier Station | Barrier Height, ft | Top of Barrier Elevation[2], ft |
|---|---|---|---|---|---|---|
| S188 | R15, R17 | 1 REC<br>(1 frontage unit)<br>1 MOT<br>(1 frontage units) | R/W | 183+00 | 12 | 27.0 |
| | | | | 184+00 | 12 | 27.0 |
| | | | | 185+00 | 12 | 26.0 |
| | | | | 186+00 | 12 | 26.0 |
| | | | | 187+00 | 12 | 27.0 |
| | | | | 188+00 | 12 | 26.9 |
| | | | | 189+00 | 12 | 26.0 |
| | | | | 190+00 | 12 | 24.9 |
| | | | | 191+00 | 12 | 24.9 |
| | | | | 192+00 | 12 | 24.7 |
| | | | | 193+00 | 12 | 24.5 |
| | | | | 194+00 | 12 | 24.4 |
| | | | Approximate Length: 1104 ft | | | |
| S210 | R17A - R21 | 16 MFR<br>10 MH | R/W | 194+00 | 12 | 24.4 |
| | | | | 195+00 | 12 | 24.4 |
| | | | | 196+00 | 12 | 24.7 |
| | | | | 197+00 | 12 | 25.0 |
| | | | | 198+00 | 12 | 25.3 |
| | | | | 199+00 | 12 | 25.5 |
| | | | | 200+00 | 12 | 25.4 |
| | | | | 201+00 | 12 | 25.4 |
| | | | | 202+00 | 12 | 25.1 |
| | | | | 202+00 | 14 | 27.1 |
| | | | | 203+00 | 14 | 27.1 |
| | | | | 204+00 | 14 | 27.4 |
| | | | | 205+00 | 14 | 26.7 |
| | | | | 206+00 | 14 | 26.6 |
| | | | | 207+00 | 14 | 26.5 |
| | | | | 208+00 | 14 | 26.5 |
| | | | | 209+00 | 14 | 26.4 |
| | | | | 209+00 | 12 | 24.4 |
| | | | | 210+00 | 12 | 24.3 |
| | | | | 210+00 | 10 | 22.3 |
| | | | | 211+00 | 10 | 22.7 |
| | | | | 212+00 | 10 | 23.2 |
| | | | | 213+00 | 10 | 22.9 |
| | | | | 214+00 | 10 | 22.8 |
| | | | | 215+00 | 10 | 23.0 |
| | | | | 216+00 | 10 | 23.5 |
| | | | | 217+00 | 10 | 23.4 |
| | | | | 218+00 | 10 | 23.2 |
| | | | | 219+00 | 10 | 23.5 |
| | | | | 220+00 | 10 | 24.2 |
| | | | | 221+00 | 10 | 24.5 |
| | | | Approximate Length: 2710 ft | | | |

Notes:

1 - Land Use: MFR - multi-family residence; MH - mobile home; REC - recreational; MOT - motel/hotel.

2 - The top of barrier elevation takes precedent over the barrier height.

## Build Alternative - Inside Widening Option

| Barrier No. | Receptor No. | Type[1] and No. of Benefited Residences | Barrier Location | SR-101 Barrier Station | Barrier Height, ft | Top of Barrier Elevation[2], ft |
|---|---|---|---|---|---|---|
| S257 | R28, R29 | 12 SFR | Shoulder | 251+00 | 12 | 46.8 |
| | | | | 252+00 | 12 | 47.9 |
| | | | | 253+00 | 12 | 48.9 |
| | | | | 255+00 | 12 | 49.2 |
| | | | | 257+00 | 12 | 47.9 |
| | | | | 259+00 | 12 | 45.0 |
| | | | | 261+00 | 12 | 40.7 |
| | | | | 262+00 | 12 | 38.1 |
| | | | | 263+00 | 12 | 35.4 |
| | | | Approximate Length: 1200 ft | | | |
| S281 | R30 - R35 | 70 SFR | R/W Shoulder | 262+00 | 12 | 34.1 |
| | | | | 263+00 | 12 | 34.1 |
| | | | | 264+00 | 12 | 33.2 |
| | | | | 265+00 | 12 | 33.0 |
| | | | | 266+00 | 12 | 32.0 |
| | | | | 267+00 | 12 | 30.8 |
| | | | | 269+00 | 12 | 29.8 |
| | | | | 271+00 | 12 | 28.6 |
| | | | | 273+00 | 12 | 28.7 |
| | | | | 274+00 | 12 | 29.0 |
| | | | | 275+00 | 12 | 29.3 |
| | | | | 277+00 | 12 | 29.8 |
| | | | | 279+00 | 12 | 29.8 |
| | | | | 280+00 | 12 | 30.6 |
| | | | | 281+00 | 12 | 31.2 |
| | | | | 282+00 | 12 | 32.7 |
| | | | | 283+00 | 12 | 34.6 |
| | | | | 284+00 | 12 | 36.6 |
| | | | | 285+00 | 12 | 38.8 |
| | | | | 286+00 | 12 | 40.9 |
| | | | | 287+00 | 12 | 41.5 |
| | | | | 288+00 | 12 | 42.0 |
| | | | | 289+00 | 12 | 44.8 |
| | | | | 290+00 | 12 | 46.4 |
| | | | | 291+00 | 12 | 47.7 |
| | | | | 292+00 | 12 | 47.9 |
| | | | | 293+00 | 12 | 48.7 |
| | | | | 294+00 | 12 | 49.5 |
| | | | | 295+00 | 12 | 48.7 |
| | | | | 296+00 | 12 | 50.4 |
| | | | | 297+00 | 12 | 50.6 |
| | | | | 299+00 | 12 | 52.6 |
| | | | | 301+00 | 12 | 56.3 |
| | | | | 302+00 | 12 | 59.0 |
| | | | | 303+00 | 12 | 58.9 |
| | | | | 304+00 | 12 | 58.0 |
| | | | | 305+00 | 12 | 58.4 |
| | | | | 306+00 | 12 | 58.7 |
| | | | | 307+00 | 12 | 59.1 |
| | | | | 309+00 | 12 | 61.0 |
| | | | | 311+00 | 12 | 63.0 |
| | | | | 313+00 | 12 | 64.4 |
| | | | | 314+00 | 12 | 63.2 |
| | | | Approximate Length: 5133 ft | | | |

Notes:

1 - Land Use: SFR - single-family residence; MFR - multi-family residence; REL - religious institution.

2 - The top of barrier elevation takes precedent over the barrier height.

## Build Alternative - Inside Widening Option

| Barrier No. | Receptor No. | Type[1] and No. of Benefited Residences | Barrier Location | SR-101 Barrier Station | Barrier Height, ft | Top of Barrier Elevation[2], ft |
|---|---|---|---|---|---|---|
| S238 | R39A | 1 SFR | R/W | 231+00 | 14 | 31.6 |
| | | | | 232+00 | 14 | 32.2 |
| | | | | 233+00 | 14 | 32.5 |
| | | | | 234+00 | 14 | 32.7 |
| | | | | 235+00 | 14 | 33.6 |
| | | | | 236+00 | 14 | 33.8 |
| | | | | 237+00 | 14 | 34.0 |
| | | | | 239+00 | 14 | 34.6 |
| | | | | 241+00 | 14 | 34.6 |
| | | | | 242+00 | 14 | 34.2 |
| | | | Approximate Length: 1091 ft | | | |
| S310 | R39 - R42 | 8 MFR<br>9 SFR<br>1 REL<br>(1 frontage unit) | R/W | 305+00 | 12 | 60.8 |
| | | | | 306+00 | 12 | 62.0 |
| | | | | 307+00 | 12 | 63.5 |
| | | | | 308+00 | 12 | 64.0 |
| | | | | 309+00 | 12 | 65.0 |
| | | | | 310+00 | 12 | 66.0 |
| | | | | 311+00 | 12 | 66.0 |
| | | | | 312+00 | 12 | 66.0 |
| | | | | 313+00 | 12 | 66.0 |
| | | | | 314+00 | 12 | 66.0 |
| | | | | 315+00 | 12 | 65.0 |
| | | | | 316+00 | 12 | 65.0 |
| | | | | 317+50 | 12 | 64.0 |
| | | | Approximate Length: 1259 ft | | | |
| S334 | R45 | 1 SFR | R/W | 330+21 | 12 | 74.5 |
| | | | | 331+00 | 12 | 74.0 |
| | | | | 332+00 | 12 | 72.0 |
| | | | | 333+00 | 12 | 74.6 |
| | | | | 333+46 | 12 | 76.9 |
| | | | Approximate Length: 319 ft | | | |
| S374 | R47, R47A<br>R48A, R49A | 9 SFR<br>1 REC<br>(3 frontage units) | R/W | 367+00 | 14 | 104.7 |
| | | | | 368+00 | 14 | 104.0 |
| | | | | 369+00 | 14 | 103.8 |
| | | | | 370+00 | 14 | 103.3 |
| | | | | 371+00 | 14 | 103.0 |
| | | | | 372+00 | 14 | 102.5 |
| | | | | 373+00 | 14 | 101.9 |
| | | | | 374+00 | 14 | 101.5 |
| | | | | 375+00 | 14 | 101.3 |
| | | | | 376+00 | 14 | 100.5 |
| | | | | 377+00 | 14 | 99.8 |
| | | | | 378+00 | 14 | 96.7 |
| | | | | 379+00 | 14 | 93.0 |
| | | | | 380+00 | 14 | 88.0 |
| | | | Approximate Length: 1300 ft | | | |

Notes:

1 - Land Use: SFR - single-family residence; REC - recreational.

2 - The top of barrier elevation takes precedent over the barrier height.

## Build Alternative - Inside Widening Option

| Barrier No. | Receptor No. | Type[1] and No. of Benefited Residences | Barrier Location | SR-101 Barrier Station | Barrier Height, ft | Top of Barrier Elevation[2], ft |
|---|---|---|---|---|---|---|
| S392 | R51 - R53<br>R55, R56<br>RS1.4, RS2.1<br>RS2.2, RS2.4<br>RS3.1 - RS3.3<br>RS3.5, RS3.7<br>RS4.1 - RS4.4<br>RS4.10 | 19 SFR<br>11 MFR<br>1 MOT<br>(2 frontage units)<br>1 SCH<br>(3 frontage units)<br>1 REL<br>(1 frontage unit)<br>1 REC<br>(1 frontage unit) | R/W | 383+00 | 14 | 78.0 |
| | | | | 384+00 | 14 | 76.2 |
| | | | | 385+00 | 14 | 78.0 |
| | | | | 386+00 | 14 | 79.3 |
| | | | | 387+00 | 14 | 79.9 |
| | | | | 388+00 | 14 | 81.3 |
| | | | | 389+00 | 14 | 82.4 |
| | | | | 390+00 | 14 | 83.9 |
| | | | | 390+00 | 16 | 85.9 |
| | | | | 391+00 | 16 | 86.8 |
| | | | | 392+00 | 16 | 87.2 |
| | | | | 393+00 | 16 | 87.3 |
| | | | | 394+00 | 16 | 87.6 |
| | | | | 395+00 | 16 | 87.6 |
| | | | | 396+00 | 16 | 88.0 |
| | | | | 397+00 | 16 | 88.0 |
| | | | | 398+00 | 16 | 92.0 |
| | | | | 398+00 | 16 | 92.0 |
| | | | | 399+00 | 16 | 96.0 |
| | | | | 400+25 | 16 | 98.0 |
| | | | | 402+50 | 16 | 98.0 |
| | | | | 403+28 | 16 | 98.0 |
| | | | | 404+00 | 16 | 97.0 |
| | | | | 405+00 | 16 | 99.0 |
| | | | | 406+00 | 16 | 104.0 |
| | | | | 407+02 | 16 | 103.0 |
| | | | Approximate Length: 2408 ft | | | |
| S405 | R65 | 1 SFR | Shoulder | 403+00 | 10 | 87.0 |
| | | | | 404+00 | 10 | 89.8 |
| | | | | 405+00 | 10 | 92.7 |
| | | | | 406+00 | 10 | 95.6 |
| | | | | 407+00 | 10 | 97.6 |
| | | | | 408+00 | 10 | 99.6 |
| | | | | 409+00 | 10 | 101.0 |
| | | | | 410+00 | 10 | 102.3 |
| | | | | 410+33 | 10 | 102.5 |
| | | | | 410+47 | 10 | 102.6 |
| | | | | 411+00 | 10 | 102.9 |
| | | | | 412+00 | 10 | 103.4 |
| | | | Approximate Length: 900 ft | | | |
| S414 | R57, R58<br>RS5.1 - RS5.6<br>RS5.8 - RS5.10<br>RS6.1 - RS6.3<br>RS6.7 - RS6.10 | 34 SFR, 15 MFR | Shoulder | 406+50 | 16 | 106.0 |
| | | | | 407+00 | 16 | 107.2 |
| | | | | 408+00 | 16 | 109.2 |
| | | | | 409+00 | 16 | 110.6 |
| | | | | 410+00 | 16 | 112.6 |
| | | | | 411+00 | 16 | 112.5 |
| | | | | 412+00 | 16 | 112.5 |
| | | | | 413+00 | 16 | 112.6 |
| | | | | 414+00 | 16 | 113.1 |
| | | | | 415+00 | 16 | 113.5 |
| | | | | 416+00 | 16 | 113.2 |
| | | | | 417+00 | 16 | 114.0 |
| | | | | 417+00 | 16 | 114.0 |
| | | | | 418+00 | 16 | 114.6 |
| | | | | 419+00 | 16 | 115.6 |
| | | | | 420+00 | 16 | 116.5 |
| | | | | 420+77 | 16 | 119.1 |
| | | | Approximate Length: 1456 ft | | | |

Notes:

1 - Land Use: SFR - single-family residence; MFR - multi-family residence; SCH - school; MOT - motel/hotel; REC - recreational; REL - religious institution.

2 - The top of barrier elevation takes precedent over the barrier height.

## Build Alternative - Inside Widening Option

| Barrier No. | Receptor No. | Type[1] and No. of Benefited Residences | Barrier Location | SR-101 Barrier Station | Barrier Height, ft | Top of Barrier Elevation[2], ft |
|---|---|---|---|---|---|---|
| S424 | R58A - R61 | 1 MFR<br>1 MOT<br>(1 frontage unit)<br>8 MH | Bike Path Shoulder | 420+36 | 14 | 116.0 |
| | | | | 420+50 | 14 | 115.0 |
| | | | | 421+00 | 14 | 115.5 |
| | | | | 422+00 | 14 | 118.8 |
| | | | | 424+00 | 14 | 127.0 |
| | | | | 424+00 | 16 | 129.0 |
| | | | | 426+00 | 16 | 139.0 |
| | | | | 427+00 | 16 | 144.5 |
| | | | | 428+00 | 16 | 149.8 |
| | | | | 429+00 | 16 | 154.8 |
| | | | Approximate Length: 879 ft | | | |
| S446 | R67 | 1 SFR | Shoulder | 443+00 | 12 | 142.0 |
| | | | | 444+00 | 12 | 135.8 |
| | | | | 445+00 | 12 | 130.0 |
| | | | | 446+00 | 12 | 124.7 |
| | | | | 447+00 | 12 | 119.0 |
| | | | | 448+00 | 12 | 112.3 |
| | | | Approximate Length: 501 ft | | | |
| S452 | R68A - R70 | 6 SFR<br>8 MFR | Shoulder | 447+00 | 12 | 120.0 |
| | | | | 448+00 | 12 | 116.0 |
| | | | | 449+00 | 12 | 114.0 |
| | | | | 450+00 | 12 | 110.2 |
| | | | | 451+00 | 12 | 106.7 |
| | | | | 451+50 | 12 | 105.0 |
| | | | | 452+50 | 12 | 102.0 |
| | | | | 454+00 | 12 | 96.9 |
| | | | | 455+00 | 12 | 93.5 |
| | | | | 456+00 | 12 | 89.4 |
| | | | Approximate Length: 911 ft | | | |
| S464 | R70A,<br>R71A - R73 | 13 SFR | R/W Shoulder | 455+50 | 12 | 87.6 |
| | | | | 456+00 | 12 | 87.3 |
| | | | | 457+00 | 12 | 85.3 |
| | | | | 458+00 | 12 | 82.0 |
| | | | | 459+00 | 12 | 78.8 |
| | | | | 460+00 | 12 | 76.0 |
| | | | | 461+00 | 12 | 73.5 |
| | | | | 462+00 | 12 | 70.0 |
| | | | | 463+00 | 12 | 67.8 |
| | | | | 464+00 | 12 | 64.8 |
| | | | | 465+00 | 12 | 61.7 |
| | | | | 466+00 | 12 | 58.0 |
| | | | | 467+00 | 12 | 52.4 |
| | | | | 468+00 | 12 | 47.5 |
| | | | | 469+00 | 12 | 44.3 |
| | | | | 470+00 | 12 | 42.0 |
| | | | | 471+00 | 12 | 42.5 |
| | | | | 472+00 | 12 | 45.3 |
| | | | | 473+00 | 12 | 45.6 |
| | | | | 473+00 | 10 | 43.6 |
| | | | | 474+00 | 10 | 43.7 |
| | | | | 475+00 | 10 | 42.7 |
| | | | | 476+00 | 10 | 41.4 |
| | | | | 477+00 | 10 | 40.5 |
| | | | | 478+00 | 10 | 39.5 |
| | | | | 479+00 | 10 | 38.2 |
| | | | Approximate Length: 2350 ft | | | |

Notes:

1 - Land Use: SFR - single-family residence; MFR - multi-family residence; MOT - motel/hotel; MH - mobile home.

2 - The top of barrier elevation takes precedent over the barrier height.

## Build Alternative - Inside Widening Option

| Barrier No. | Receptor No. | Type[1] and No. of Benefited Residences | Barrier Location | SR-101 Barrier Station | Barrier Height, ft | Top of Barrier Elevation[2], ft |
|---|---|---|---|---|---|---|
| S471 | R74B - R78 | 16 SFR | Shoulder R/W | 461+35 | 8 | 69.5 |
| | | | | 462+00 | 8 | 65.6 |
| | | | | 463+00 | 8 | 63.0 |
| | | | | 464+00 | 8 | 60.3 |
| | | | | 465+00 | 8 | 57.0 |
| | | | | 466+00 | 8 | 53.7 |
| | | | | 466+00 | 12 | 57.7 |
| | | | | 467+00 | 12 | 52.8 |
| | | | | 468+00 | 12 | 47.9 |
| | | | | 469+00 | 12 | 45.2 |
| | | | | 470+00 | 12 | 42.4 |
| | | | | 471+00 | 12 | 42.2 |
| | | | | 472+00 | 12 | 42.0 |
| | | | | 473+00 | 12 | 42.5 |
| | | | | 474+00 | 12 | 42.5 |
| | | | | 475+00 | 12 | 42.9 |
| | | | | 476+00 | 12 | 41.0 |
| | | | | 476+00 | 14 | 43.0 |
| | | | | 477+00 | 14 | 42.8 |
| | | | | 478+00 | 14 | 41.9 |
| | | | | 479+00 | 14 | 39.9 |
| | | | | 480+00 | 14 | 38.3 |
| | | | | 481+00 | 14 | 37.0 |
| | | | Approximate Length: 1987 ft | | | |
| S489 | R81 - R82 | 1 SFR<br>3 MFR | Private Property | 486+53 | 12 | 34.4 |
| | | | | 487+00 | 12 | 34.0 |
| | | | | 488+00 | 12 | 34.0 |
| | | | | 489+00 | 12 | 36.0 |
| | | | | 489+50 | 12 | 36.0 |
| | | | | 490+13 | 12 | 37.0 |
| | | | Approximate Length: 375 ft | | | |
| S498 | R83 - R86A | 13 SFR | R/W | 483+00 | 10 | 35.0 |
| | | | | 484+00 | 10 | 34.8 |
| | | | | 485+00 | 10 | 34.3 |
| | | | | 486+00 | 10 | 34.0 |
| | | | | 487+00 | 10 | 33.7 |
| | | | | 488+00 | 10 | 34.2 |
| | | | | 489+00 | 10 | 35.5 |
| | | | | 490+00 | 10 | 37.0 |
| | | | | 491+00 | 10 | 38.0 |
| | | | | 492+00 | 10 | 38.7 |
| | | | | 493+00 | 10 | 40.2 |
| | | | | 494+00 | 10 | 41.4 |
| | | | | 495+00 | 10 | 43.0 |
| | | | | 496+00 | 10 | 45.0 |
| | | | | 497+00 | 10 | 45.7 |
| | | | | 498+00 | 10 | 47.0 |
| | | | | 499+00 | 10 | 48.0 |
| | | | | 500+00 | 10 | 49.0 |
| | | | | 501+00 | 10 | 50.0 |
| | | | | 502+00 | 10 | 50.0 |
| | | | | 503+00 | 10 | 52.8 |
| | | | | 504+20 | 10 | 55.0 |
| | | | | 504+90 | 10 | 56.0 |
| | | | | 505+69 | 10 | 57.8 |
| | | | Approximate Length: 2269 ft | | | |

Notes:

1 - Land Use: SFR - single-family residence; MFR - multi-family residence.

2 - The top of barrier elevation takes precedent over the barrier height.

## Build Alternative - Inside Widening Option

| Barrier No. | Receptor No. | Type[1] and No. of Benefited Residences | Barrier Location | SR-101 Barrier Station | Barrier Height, ft | Top of Barrier Elevation[2], ft |
|---|---|---|---|---|---|---|
| S519 | R92A - R97A | 23 SFR<br>2 MFR | R/W | 505+29 | 14 | 59.3 |
| | | | | 505+81 | 14 | 58.8 |
| | | | | 506+24 | 14 | 58.2 |
| | | | | 507+00 | 14 | 57.8 |
| | | | | 508+00 | 14 | 57.0 |
| | | | | 509+00 | 14 | 57.0 |
| | | | | 510+00 | 14 | 56.0 |
| | | | | 511+00 | 14 | 58.0 |
| | | | | 511+00 | 12 | 56.0 |
| | | | | 512+00 | 12 | 58.0 |
| | | | | 513+00 | 12 | 61.7 |
| | | | | 514+00 | 12 | 64.0 |
| | | | | 515+00 | 12 | 66.0 |
| | | | | 516+00 | 12 | 68.0 |
| | | | | 517+00 | 12 | 70.0 |
| | | | | 518+00 | 12 | 72.0 |
| | | | | 519+00 | 12 | 74.5 |
| | | | | 520+00 | 12 | 76.0 |
| | | | | 521+00 | 12 | 77.7 |
| | | | | 522+00 | 12 | 79.0 |
| | | | | 522+66 | 12 | 80.0 |
| | | | | 522+66 | 10 | 78.0 |
| | | | | 523+80 | 10 | 76.0 |
| | | | | 525+57 | 10 | 74.0 |
| | | | | 527+57 | 10 | 76.0 |
| | | | | 527+57 | 12 | 78.0 |
| | | | | 528+51 | 12 | 76.0 |
| | | | | 529+48 | 12 | 74.0 |
| | | | | 529+83 | 12 | 68.0 |
| | | | | 531+40 | 12 | 67.0 |
| | | | | 531+47 | 12 | 67.0 |
| | | | | 532+49 | 12 | 66.0 |
| | | | | 532+69 | 12 | 62.0 |
| | | | Approximate Length: 2740 ft | | | |
| S520 | R87<br>R88 - R90A | 16 SFR | R/W | 506+40 | 10 | 59.2 |
| | | | | 506+70 | 10 | 59.5 |
| | | | | 507+00 | 10 | 59.6 |
| | | | | 508+00 | 10 | 59.7 |
| | | | | 509+00 | 10 | 59.8 |
| | | | | 510+00 | 10 | 59.9 |
| | | | | 511+00 | 10 | 60.0 |
| | | | | 512+00 | 10 | 62.0 |
| | | | | 513+00 | 10 | 64.5 |
| | | | | 514+00 | 10 | 66.0 |
| | | | | 515+00 | 10 | 68.0 |
| | | | | 516+00 | 10 | 70.0 |
| | | | | 517+00 | 10 | 72.0 |
| | | | | 518+00 | 10 | 73.0 |
| | | | | 519+00 | 10 | 76.0 |
| | | | | 520+00 | 10 | 80.0 |
| | | | | 521+00 | 10 | 81.5 |
| | | | | 522+00 | 10 | 82.0 |
| | | | | 523+00 | 10 | 82.5 |
| | | | | 524+00 | 10 | 83.0 |
| | | | | 525+00 | 10 | 84.0 |
| | | | | 526+00 | 10 | 86.0 |
| | | | | 527+00 | 10 | 86.0 |
| | | | | 528+00 | 10 | 86.0 |
| | | | | 529+00 | 10 | 80.0 |
| | | | | 530+00 | 10 | 76.6 |
| | | | | 530+69 | 10 | 76.0 |
| | | | Approximate Length: 2532 ft | | | |

Notes:

1 - Land Use: SFR - single-family residence; MFR - multi-family residence; MOT - motel/hotel.

2 - The top of barrier elevation takes precedent over the barrier height.

## Build Alternative - Inside Widening Option

| Barrier No. | Receptor No. | Type[1] and No. of Benefited Residences | Barrier Location | SR-101 Barrier Station | Barrier Height, ft | Top of Barrier Elevation[2], ft |
|---|---|---|---|---|---|---|
| S535 | R98 - R99 | 2 SFR<br>4 MFR | R/W | 533+75 | 12 | 66.5 |
| | | | | 534+00 | 12 | 66.0 |
| | | | | 535+00 | 12 | 63.5 |
| | | | | 536+00 | 12 | 60.0 |
| | | | | 537+00 | 12 | 57.5 |
| | | | | 538+00 | 12 | 55.0 |
| | | | | 538+74 | 12 | 53.7 |
| | | | Approximate Length: 525 ft | | | |
| S549 | R100A - R103 | 14 SFR<br>7 MFR | Shoulder | 538+95 | 10 | 50.8 |
| | | | | 540+00 | 10 | 53.3 |
| | | | | 541+00 | 10 | 56.2 |
| | | | | 542+00 | 10 | 57.9 |
| | | | | 543+00 | 10 | 58.3 |
| | | | | 544+00 | 10 | 57.8 |
| | | | | 545+00 | 10 | 57.4 |
| | | | | 546+00 | 10 | 56.5 |
| | | | | 547+00 | 10 | 55.9 |
| | | | | 548+00 | 10 | 55.6 |
| | | | | 548+00 | 12 | 57.6 |
| | | | | 549+00 | 12 | 56.8 |
| | | | | 550+00 | 12 | 56.0 |
| | | | | 551+00 | 12 | 54.6 |
| | | | | 552+00 | 12 | 53.8 |
| | | | | 553+00 | 12 | 53.0 |
| | | | | 554+00 | 12 | 52.9 |
| | | | | 555+00 | 12 | 53.5 |
| | | | | 556+00 | 12 | 54.0 |
| | | | | 557+00 | 12 | 54.9 |
| | | | | 558+00 | 12 | 55.8 |
| | | | | 559+00 | 12 | 56.3 |
| | | | Approximate Length: 2075 ft | | | |

Notes:

1 - Land Use: SFR - single-family residence; MFR - multi-family residence; MOT - motel/hotel.

2 - The top of barrier elevation takes precedent over the barrier height.

# OUTSIDE WIDENING OPTION

## Build Alternative - Outside Widening Option

| Barrier No. | Receptor No. | Type[1] and No. of Benefited Residences | Barrier Location | SR-101 Barrier Station | Barrier Height, ft | Top of Barrier Elevation[2], ft |
|---|---|---|---|---|---|---|
| S90 | R1, R2 | 6 MH | R/W | 84+50 | 14 | 78.8 |
| | | | | 85+00 | 14 | 78.0 |
| | | | | 86+00 | 14 | 77.5 |
| | | | | 87+00 | 14 | 76.0 |
| | | | | 88+00 | 14 | 75.0 |
| | | | | 89+00 | 14 | 74.0 |
| | | | | 90+00 | 14 | 73.5 |
| | | | | 91+00 | 14 | 72.0 |
| | | | | 91+00 | 16 * | 74.0 |
| | | | | 92+00 | 16 * | 73.5 |
| | | | | 93+00 | 16 * | 72.8 |
| | | | Approximate Length: 829 ft | | | |
| S98 Option to abate San Roque MPH | R3 - R3B | 17 MH 1 REC | R/W | 93+00 | 16 | 72.8 |
| | | | | 94+00 | 16 | 71.4 |
| | | | | 94+00 | 14 | 69.4 |
| | | | | 95+00 | 14 | 68.0 |
| | | | | 96+00 | 14 | 67.5 |
| | | | | 97+00 | 14 | 67.0 |
| | | | | 98+00 | 14 | 66.8 |
| | | | | 99+00 | 14 | 67.0 |
| | | | | 99+26 | 14 | 68.0 |
| | | | | 100+64 | 14 | 69.0 |
| | | | | 100+64 | 10 | 65.0 |
| | | | | 102+00 | 10 | 64.0 |
| | | | Approximate Length: 876 ft | | | |
| S158 | R4 - R6 R7A | 20 SFR 6 MFR | R/W Shoulder | 151+00 | 10 | 28.5 |
| | | | | 152+00 | 10 | 28.4 |
| | | | | 153+00 | 10 | 28.3 |
| | | | | 154+00 | 10 | 28.2 |
| | | | | 155+00 | 10 | 28.0 |
| | | | | 156+00 | 10 | 27.9 |
| | | | | 156+60 | 10 | 27.9 |
| | | | | 157+00 | 10 | 27.8 |
| | | | | 158+00 | 10 | 27.8 |
| | | | | 159+00 | 10 | 27.7 |
| | | | | 160+00 | 10 | 27.6 |
| | | | | 161+00 | 10 | 27.5 |
| | | | | 162+00 | 10 | 27.4 |
| | | | | 163+00 | 10 | 27.3 |
| | | | | 163+00 | 12 | 29.3 |
| | | | | 163+50 | 12 | 29.3 |
| | | | | 164+00 | 12 | 29.2 |
| | | | | 165+00 | 12 | 29.1 |
| | | | | 166+00 | 12 | 29.0 |
| | | | | 167+00 | 12 | 28.9 |
| | | | | 168+00 | 12 | 28.7 |
| | | | | 169+00 | 12 | 28.5 |
| | | | Approximate Length: 1801 ft | | | |

Notes:

1 - Land Use: SFR - single-family residence; MFR - multi-family residence; MH - mobile home; REC - recreational.

2 - The top of barrier elevation takes precedent over the barrier height.

* - If noise abatement is only needed for Rancho Granada Mobile Home Park, S90 should stay 14 ft in this portion.

## Build Alternative - Outside Widening Option

| Barrier No. | Receptor No. | Type[1] and No. of Benefited Residences | Barrier Location | SR-101 Barrier Station | Barrier Height, ft | Top of Barrier Elevation[2], ft |
|---|---|---|---|---|---|---|
| S174 | R11 - R13A | 12 SFR | R/W | 170+07 | 12 | 32.0 |
| | | | | 170+36 | 12 | 29.5 |
| | | | | 171+40 | 12 | 28.0 |
| | | | | 172+70 | 12 | 30.0 |
| | | | | 174+02 | 12 | 30.0 |
| | | | | 174+58 | 12 | 31.0 |
| | | | | 176+10 | 12 | 33.0 |
| | | | | 176+70 | 12 | 32.3 |
| | | | | 178+56 | 12 | 32.0 |
| | | | Approximate Length: 851 ft | | | |
| S181 | R23 - R27 | 11 SFR<br>16 MFR<br>21 MH | R/W | 171+19 | 10 | 29.1 |
| | | | | 172+47 | 10 | 26.6 |
| | | | | 172+87 | 10 | 26.6 |
| | | | | 174+12 | 10 | 28.0 |
| | | | | 175+43 | 10 | 28.0 |
| | | | | 175+98 | 10 | 27.0 |
| | | | | 177+00 | 10 | 27.0 |
| | | | | 178+00 | 10 | 27.0 |
| | | | | 179+00 | 10 | 27.0 |
| | | | | 180+00 | 10 | 26.0 |
| | | | | 181+00 | 10 | 24.0 |
| | | | | 181+75 | 10 | 24.0 |
| | | | | 183+00 | 10 | 24.0 |
| | | | | 184+41 | 10 | 22.0 |
| | | | | 184+79 | 10 | 24.0 |
| | | | | 185+63 | 10 | 24.0 |
| | | | | 187+41 | 10 | 24.0 |
| | | | | 189+00 | 10 | 24.0 |
| | | | | 190+09 | 10 | 24.0 |
| | | | | 191+00 | 10 | 23.0 |
| | | | Approximate Length: 1982 ft | | | |

Notes:

1 - Land Use: SFR - single-family residence; MFR - multi-family residence; MH - mobile home.

2 - The top of barrier elevation takes precedent over the barrier height.

## Build Alternative - Outside Widening Option

| Barrier No. | Receptor No. | Type[1] and No. of Benefited Residences | Barrier Location | SR-101 Barrier Station | Barrier Height, ft | Top of Barrier Elevation[2], ft |
|---|---|---|---|---|---|---|
| S210 | R17A - R21 | 16 MFR<br>10 MH | R/W | 194+00 | 12 | 24.4 |
| | | | | 195+00 | 12 | 24.4 |
| | | | | 196+00 | 12 | 24.7 |
| | | | | 197+00 | 12 | 25.0 |
| | | | | 198+00 | 12 | 25.3 |
| | | | | 199+00 | 12 | 25.5 |
| | | | | 200+00 | 12 | 25.4 |
| | | | | 201+00 | 12 | 25.4 |
| | | | | 202+00 | 12 | 25.1 |
| | | | | 202+00 | 14 | 27.1 |
| | | | | 203+00 | 14 | 27.1 |
| | | | | 204+00 | 14 | 27.4 |
| | | | | 205+00 | 14 | 26.7 |
| | | | | 206+00 | 14 | 26.6 |
| | | | | 207+00 | 14 | 26.5 |
| | | | | 208+00 | 14 | 26.5 |
| | | | | 209+00 | 14 | 26.4 |
| | | | | 209+00 | 12 | 24.4 |
| | | | | 210+00 | 12 | 24.3 |
| | | | | 210+00 | 10 | 22.3 |
| | | | | 211+00 | 10 | 22.7 |
| | | | | 212+00 | 10 | 23.2 |
| | | | | 213+00 | 10 | 22.9 |
| | | | | 214+00 | 10 | 22.8 |
| | | | | 215+00 | 10 | 23.0 |
| | | | | 216+00 | 10 | 23.5 |
| | | | | 217+00 | 10 | 23.4 |
| | | | | 218+00 | 10 | 23.2 |
| | | | | 219+00 | 10 | 23.5 |
| | | | | 220+00 | 10 | 24.2 |
| | | | | 221+00 | 10 | 24.5 |
| | | | Approximate Length: 2710 ft | | | |

Notes:

1 - Land Use: SFR - single-family residence; MFR - multi-family residence; MOT - motel/hotel.

2 - The top of barrier elevation takes precedent over the barrier height.

## Build Alternative - Outside Widening Option

| Barrier No. | Receptor No. | Type[1] and No. of Benefited Residences | Barrier Location | SR-101 Barrier Station | Barrier Height, ft | Top of Barrier Elevation[2], ft |
|---|---|---|---|---|---|---|
| S257 | R28, R29 | 12 SFR | Shoulder | 251+00 | 12 | 46.8 |
| | | | | 252+00 | 12 | 47.9 |
| | | | | 253+00 | 12 | 48.9 |
| | | | | 255+00 | 12 | 49.2 |
| | | | | 257+00 | 12 | 47.9 |
| | | | | 259+00 | 12 | 45.0 |
| | | | | 261+00 | 12 | 40.7 |
| | | | | 262+00 | 12 | 38.1 |
| | | | | 263+00 | 12 | 35.4 |
| | | | Approximate Length: 1200 ft | | | |
| S281 | R30 - R34A R35 | 68 SFR | R/W Shoulder | 262+00 | 12 | 34.1 |
| | | | | 263+00 | 12 | 34.1 |
| | | | | 264+00 | 12 | 33.2 |
| | | | | 265+00 | 12 | 33.0 |
| | | | | 266+00 | 12 | 32.0 |
| | | | | 267+00 | 12 | 30.8 |
| | | | | 269+00 | 12 | 29.8 |
| | | | | 271+00 | 12 | 28.6 |
| | | | | 273+00 | 12 | 28.7 |
| | | | | 274+00 | 12 | 29.0 |
| | | | | 275+00 | 12 | 29.3 |
| | | | | 277+00 | 12 | 29.8 |
| | | | | 279+00 | 12 | 29.8 |
| | | | | 280+00 | 12 | 30.6 |
| | | | | 281+00 | 12 | 31.2 |
| | | | | 282+00 | 12 | 32.7 |
| | | | | 283+00 | 12 | 34.6 |
| | | | | 284+00 | 12 | 36.6 |
| | | | | 285+00 | 12 | 38.8 |
| | | | | 286+00 | 12 | 40.9 |
| | | | | 287+00 | 12 | 41.5 |
| | | | | 288+00 | 12 | 42.0 |
| | | | | 289+00 | 12 | 44.8 |
| | | | | 290+00 | 12 | 46.4 |
| | | | | 291+00 | 12 | 47.7 |
| | | | | 292+00 | 12 | 47.9 |
| | | | | 293+00 | 12 | 48.7 |
| | | | | 294+00 | 12 | 49.5 |
| | | | | 295+00 | 12 | 48.7 |
| | | | | 296+00 | 12 | 50.4 |
| | | | | 297+00 | 12 | 50.6 |
| | | | | 299+00 | 12 | 52.6 |
| | | | | 301+00 | 12 | 56.3 |
| | | | | 302+00 | 12 | 59.0 |
| | | | | 303+00 | 12 | 58.9 |
| | | | | 304+00 | 12 | 58.0 |
| | | | | 305+00 | 12 | 58.4 |
| | | | | 306+00 | 12 | 58.7 |
| | | | | 307+00 | 12 | 59.1 |
| | | | | 309+00 | 12 | 61.0 |
| | | | | 311+00 | 12 | 63.0 |
| | | | | 313+00 | 12 | 64.4 |
| | | | | 314+00 | 12 | 63.2 |
| | | | Approximate Length: 5133 ft | | | |

Notes:

1 - Land Use: SFR - single-family residence; MFR - multi-family residence; REL - religious institution.

2 - The top of barrier elevation takes precedent over the barrier height.

## Build Alternative - Outside Widening Option

| Barrier No. | Receptor No. | Type[1] and No. of Benefited Residences | Barrier Location | SR-101 Barrier Station | Barrier Height, ft | Top of Barrier Elevation[2], ft |
|---|---|---|---|---|---|---|
| S238 | R39A | 1 SFR | R/W | 231+00 | 14 | 31.6 |
| | | | | 232+00 | 14 | 32.2 |
| | | | | 233+00 | 14 | 32.5 |
| | | | | 234+00 | 14 | 32.7 |
| | | | | 235+00 | 14 | 33.6 |
| | | | | 236+00 | 14 | 33.8 |
| | | | | 237+00 | 14 | 34.0 |
| | | | | 239+00 | 14 | 34.6 |
| | | | | 241+00 | 14 | 34.6 |
| | | | | 242+00 | 14 | 34.2 |
| | | | Approximate Length: 1091 ft | | | |
| S310 | R39<br>R40 - R42 | 8 SFR<br>8 MFR<br>1 REL<br>(1 frontage unit) | R/W | 305+00 | 12 | 60.8 |
| | | | | 306+00 | 12 | 62.0 |
| | | | | 307+00 | 12 | 63.5 |
| | | | | 308+00 | 12 | 64.0 |
| | | | | 309+00 | 12 | 65.0 |
| | | | | 310+00 | 12 | 66.0 |
| | | | | 311+00 | 12 | 66.0 |
| | | | | 312+00 | 12 | 66.0 |
| | | | | 313+00 | 12 | 66.0 |
| | | | | 314+00 | 12 | 66.0 |
| | | | | 315+00 | 12 | 65.0 |
| | | | | 316+00 | 12 | 65.0 |
| | | | | 317+50 | 12 | 64.0 |
| | | | Approximate Length: 1259 ft | | | |
| S334 | R45 | 1 SFR | R/W | 330+21 | 12 | 74.5 |
| | | | | 331+00 | 12 | 74.0 |
| | | | | 332+00 | 12 | 72.0 |
| | | | | 333+00 | 12 | 74.6 |
| | | | | 333+46 | 12 | 76.9 |
| | | | Approximate Length: 319 ft | | | |
| S374 | R47, R47A<br>R48A, R49A | 9 SFR<br>1 REC<br>(3 frontage units) | R/W | 367+00 | 14 | 104.7 |
| | | | | 368+00 | 14 | 104.0 |
| | | | | 369+00 | 14 | 103.8 |
| | | | | 370+00 | 14 | 103.3 |
| | | | | 371+00 | 14 | 103.0 |
| | | | | 372+00 | 14 | 102.5 |
| | | | | 373+00 | 14 | 101.9 |
| | | | | 374+00 | 14 | 101.5 |
| | | | | 375+00 | 14 | 101.3 |
| | | | | 376+00 | 14 | 100.5 |
| | | | | 377+00 | 14 | 99.8 |
| | | | | 378+00 | 14 | 96.7 |
| | | | | 379+00 | 14 | 93.0 |
| | | | | 380+00 | 14 | 88.0 |
| | | | Approximate Length: 1300 ft | | | |

Notes:

1 - Land Use: SFR - single-family residence; REC - recreational; REL - religious institution.

2 - The top of barrier elevation takes precedent over the barrier height.

## Build Alternative - Outside Widening Option

| Barrier No. | Receptor No. | Type[1] and No. of Benefited Residences | Barrier Location | SR-101 Barrier Station | Barrier Height, ft | Top of Barrier Elevation[2], ft |
|---|---|---|---|---|---|---|
| S392 | R51 - R53<br>R55, R56<br>RS1.4, RS2.1<br>RS2.2, RS2.4<br>RS3.1 - RS3.3<br>RS3.5, RS3.7<br>RS 4.1 - RS4.4<br>RS4.9, RS4.10 | 19 SFR<br>13 MFR<br>1 MOT<br>(2 frontage units)<br>1 SCH<br>(3 frontage units)<br>1 REC<br>(1 frontage unit)<br>1 REL<br>(1 frontage unit) | R/W | 383+00 | 16 | 80.0 |
| | | | | 384+00 | 16 | 78.2 |
| | | | | 385+00 | 16 | 80.0 |
| | | | | 386+00 | 16 | 81.3 |
| | | | | 387+00 | 16 | 81.9 |
| | | | | 388+00 | 16 | 83.3 |
| | | | | 389+00 | 16 | 84.4 |
| | | | | 390+00 | 16 | 85.9 |
| | | | | 391+00 | 16 | 86.8 |
| | | | | 392+00 | 16 | 87.2 |
| | | | | 393+00 | 16 | 87.3 |
| | | | | 394+00 | 16 | 87.6 |
| | | | | 395+00 | 16 | 87.6 |
| | | | | 396+00 | 16 | 88.0 |
| | | | | 397+00 | 16 | 88.0 |
| | | | | 398+00 | 16 | 92.0 |
| | | | | 398+00 | 16 | 92.0 |
| | | | | 399+00 | 16 | 96.0 |
| | | | | 400+25 | 16 | 98.0 |
| | | | | 402+50 | 16 | 98.0 |
| | | | | 403+28 | 16 | 98.0 |
| | | | | 404+00 | 16 | 97.0 |
| | | | | 405+00 | 16 | 99.0 |
| | | | | 406+00 | 16 | 104.0 |
| | | | | 407+02 | 16 | 103.0 |
| | | | Approximate Length: 2408 ft | | | |
| S405 | R65 | 1 SFR | Shoulder | 403+00 | 10 | 87.0 |
| | | | | 404+00 | 10 | 89.8 |
| | | | | 405+00 | 10 | 92.7 |
| | | | | 406+00 | 10 | 95.6 |
| | | | | 407+00 | 10 | 97.6 |
| | | | | 408+00 | 10 | 99.6 |
| | | | | 409+00 | 10 | 101.0 |
| | | | | 410+00 | 10 | 102.3 |
| | | | | 410+33 | 10 | 102.5 |
| | | | | 410+47 | 10 | 102.6 |
| | | | | 411+00 | 10 | 102.9 |
| | | | | 412+00 | 10 | 103.4 |
| | | | Approximate Length: 900 ft | | | |
| S414 | R57 - R58A | 34 SFR<br>15 MFR | Shoulder | 406+50 | 16 | 106.0 |
| | | | | 407+00 | 16 | 107.2 |
| | | | | 408+00 | 16 | 109.2 |
| | | | | 409+00 | 16 | 110.6 |
| | | | | 410+00 | 16 | 112.6 |
| | | | | 411+00 | 16 | 112.5 |
| | | | | 412+00 | 16 | 112.5 |
| | | | | 413+00 | 16 | 112.6 |
| | | | | 414+00 | 16 | 113.1 |
| | | | | 415+00 | 16 | 113.5 |
| | | | | 416+00 | 16 | 113.2 |
| | | | | 417+00 | 16 | 114.0 |
| | | | | 418+00 | 16 | 114.6 |
| | | | | 419+00 | 16 | 115.6 |
| | | | | 420+00 | 16 | 116.5 |
| | | | | 420+77 | 16 | 119.1 |
| | | | Approximate Length: 1456 ft | | | |

Notes:

1 - Land Use: SFR - single-family residence; MFR - multi-family residence; SCH - school; MOT - motel/hotel; REC - recreational; REL - religious institution.

2 - The top of barrier elevation takes precedent over the barrier height.

## Build Alternative - Outside Widening Option

| Barrier No. | Receptor No. | Type[1] and No. of Benefited Residences | Barrier Location | SR-101 Barrier Station | Barrier Height, ft | Top of Barrier Elevation[2], ft |
|---|---|---|---|---|---|---|
| S424 | R58A<br>R59 - R61 | 1 MFR<br>1 MOT<br>(1 frontage unit)<br>8 MH | Bike Path Shoulder | 420+36 | 14 | 116.0 |
| | | | | 420+50 | 14 | 115.0 |
| | | | | 421+00 | 14 | 115.5 |
| | | | | 422+00 | 14 | 118.8 |
| | | | | 424+00 | 14 | 127.0 |
| | | | | 424+00 | 16 | 129.0 |
| | | | | 426+00 | 16 | 139.0 |
| | | | | 427+00 | 16 | 144.5 |
| | | | | 428+00 | 16 | 149.8 |
| | | | | 429+00 | 16 | 154.8 |
| | | | Approximate Length: 879 ft | | | |
| S446 | R67 | 1 SFR | Shoulder | 443+00 | 12 | 142.0 |
| | | | | 444+00 | 12 | 135.8 |
| | | | | 445+00 | 12 | 130.0 |
| | | | | 446+00 | 12 | 124.7 |
| | | | | 447+00 | 12 | 119.0 |
| | | | | 448+00 | 12 | 112.3 |
| | | | Approximate Length: 501 ft | | | |
| S452 | R68A - R70 | 6 SFR<br>8 MFR | Shoulder | 447+00 | 12 | 120.0 |
| | | | | 448+00 | 12 | 116.0 |
| | | | | 449+00 | 12 | 114.0 |
| | | | | 450+00 | 12 | 110.2 |
| | | | | 451+00 | 12 | 106.7 |
| | | | | 451+50 | 12 | 105.0 |
| | | | | 452+50 | 12 | 102.0 |
| | | | | 454+00 | 12 | 96.9 |
| | | | | 455+00 | 12 | 93.5 |
| | | | | 456+00 | 12 | 89.4 |
| | | | Approximate Length: 911ft | | | |
| S464 | R70A,<br>R71A - R73 | 13 SFR | R/W Shoulder | 455+50 | 12 | 87.6 |
| | | | | 456+00 | 12 | 87.3 |
| | | | | 457+00 | 12 | 85.3 |
| | | | | 458+00 | 12 | 82.0 |
| | | | | 459+00 | 12 | 78.8 |
| | | | | 460+00 | 12 | 76.0 |
| | | | | 461+00 | 12 | 73.5 |
| | | | | 462+00 | 12 | 70.0 |
| | | | | 463+00 | 12 | 67.8 |
| | | | | 464+00 | 12 | 64.8 |
| | | | | 465+00 | 12 | 61.7 |
| | | | | 466+00 | 12 | 58.0 |
| | | | | 467+00 | 12 | 52.4 |
| | | | | 468+00 | 12 | 47.5 |
| | | | | 469+00 | 12 | 44.3 |
| | | | | 470+00 | 12 | 42.0 |
| | | | | 471+00 | 12 | 42.5 |
| | | | | 472+00 | 12 | 45.3 |
| | | | | 473+00 | 12 | 45.6 |
| | | | | 473+00 | 10 | 43.6 |
| | | | | 474+00 | 10 | 43.7 |
| | | | | 475+00 | 10 | 42.7 |
| | | | | 476+00 | 10 | 41.4 |
| | | | | 477+00 | 10 | 40.5 |
| | | | | 478+00 | 10 | 39.5 |
| | | | | 479+00 | 10 | 38.2 |
| | | | Approximate Length: 2350 ft | | | |

Notes:

1 - Land Use: SFR - single-family residence; MFR - multi-family residence; MOT - motel/hotel; MH - mobile home.

2 - The top of barrier elevation takes precedent over the barrier height.

## Build Alternative - Outside Widening Option

| Barrier No. | Receptor No. | Type[1] and No. of Benefited Residences | Barrier Location | SR-101 Barrier Station | Barrier Height, ft | Top of Barrier Elevation[2], ft |
|---|---|---|---|---|---|---|
| S471 | R74B - R78 | 18 SFR | Shoulder R/W | 461+35 | 10 | 71.5 |
| | | | | 462+00 | 10 | 67.6 |
| | | | | 463+00 | 10 | 65.0 |
| | | | | 464+00 | 10 | 62.3 |
| | | | | 465+00 | 10 | 59.0 |
| | | | | 466+00 | 10 | 55.7 |
| | | | | 466+00 | 12 | 57.7 |
| | | | | 467+00 | 12 | 52.8 |
| | | | | 468+00 | 12 | 47.9 |
| | | | | 469+00 | 12 | 45.2 |
| | | | | 470+00 | 12 | 42.4 |
| | | | | 471+00 | 12 | 42.2 |
| | | | | 472+00 | 12 | 42.0 |
| | | | | 473+00 | 12 | 42.5 |
| | | | | 474+00 | 12 | 42.5 |
| | | | | 475+00 | 12 | 42.9 |
| | | | | 476+00 | 12 | 41.0 |
| | | | | 476+00 | 14 | 43.0 |
| | | | | 477+00 | 14 | 42.8 |
| | | | | 478+00 | 14 | 41.9 |
| | | | | 479+00 | 14 | 39.9 |
| | | | | 480+00 | 14 | 38.3 |
| | | | | 481+00 | 14 | 37.0 |
| | | | Approximate Length: 1987 ft | | | |
| S489 | R81 - R82 | 1 SFR<br>3 MFR | Private Property | 486+53 | 12 | 34.4 |
| | | | | 487+00 | 12 | 34.0 |
| | | | | 488+00 | 12 | 34.0 |
| | | | | 489+00 | 12 | 36.0 |
| | | | | 489+50 | 12 | 36.0 |
| | | | | 490+13 | 12 | 37.0 |
| | | | Approximate Length: 375 ft | | | |
| S498 | R83 - R86 | 13 SFR | R/W | 483+00 | 10 | 35.0 |
| | | | | 484+00 | 10 | 34.8 |
| | | | | 485+00 | 10 | 34.3 |
| | | | | 486+00 | 10 | 34.0 |
| | | | | 487+00 | 10 | 33.7 |
| | | | | 488+00 | 10 | 34.2 |
| | | | | 489+00 | 10 | 35.5 |
| | | | | 490+00 | 10 | 37.0 |
| | | | | 491+00 | 10 | 38.0 |
| | | | | 492+00 | 10 | 38.7 |
| | | | | 493+00 | 10 | 40.2 |
| | | | | 494+00 | 10 | 41.4 |
| | | | | 495+00 | 10 | 43.0 |
| | | | | 496+00 | 10 | 45.0 |
| | | | | 497+00 | 10 | 45.7 |
| | | | | 498+00 | 10 | 47.0 |
| | | | | 499+00 | 10 | 48.0 |
| | | | | 500+00 | 10 | 49.0 |
| | | | | 501+00 | 10 | 50.0 |
| | | | | 502+00 | 10 | 50.0 |
| | | | | 503+00 | 10 | 52.8 |
| | | | | 504+20 | 10 | 55.0 |
| | | | | 504+90 | 10 | 56.0 |
| | | | | 505+69 | 10 | 57.8 |
| | | | Approximate Length: 2269 ft | | | |

Notes:

1 - Land Use: SFR - single-family residence; MFR - multi-family residence.

2 - The top of barrier elevation takes precedent over the barrier height.

## Build Alternative - Outside Widening Option

| Barrier No. | Receptor No. | Type[1] and No. of Benefited Residences | Barrier Location | SR-101 Barrier Station | Barrier Height, ft | Top of Barrier Elevation[2], ft |
|---|---|---|---|---|---|---|
| S519 | R92A - R97A | 21 SFR<br>2 MFR | R/W | 505+29 | 12 | 57.3 |
| | | | | 505+81 | 12 | 56.8 |
| | | | | 506+24 | 12 | 56.2 |
| | | | | 507+00 | 12 | 55.8 |
| | | | | 508+00 | 12 | 55.0 |
| | | | | 509+00 | 12 | 55.0 |
| | | | | 510+00 | 12 | 54.0 |
| | | | | 511+00 | 12 | 56.0 |
| | | | | 511+00 | 12 | 56.0 |
| | | | | 512+00 | 12 | 58.0 |
| | | | | 513+00 | 12 | 61.7 |
| | | | | 514+00 | 12 | 64.0 |
| | | | | 515+00 | 12 | 66.0 |
| | | | | 516+00 | 12 | 68.0 |
| | | | | 517+00 | 12 | 70.0 |
| | | | | 518+00 | 12 | 72.0 |
| | | | | 519+00 | 12 | 74.5 |
| | | | | 520+00 | 12 | 76.0 |
| | | | | 521+00 | 12 | 77.7 |
| | | | | 522+00 | 12 | 79.0 |
| | | | | 522+66 | 12 | 80.0 |
| | | | | 522+66 | 10 | 78.0 |
| | | | | 523+80 | 10 | 76.0 |
| | | | | 525+57 | 10 | 74.0 |
| | | | | 527+57 | 10 | 76.0 |
| | | | | 527+57 | 12 | 78.0 |
| | | | | 528+51 | 12 | 76.0 |
| | | | | 529+48 | 12 | 74.0 |
| | | | | 529+48 | 14 | 76.0 |
| | | | | 529+83 | 14 | 70.0 |
| | | | | 531+40 | 14 | 69.0 |
| | | | | 531+47 | 14 | 69.0 |
| | | | | 532+49 | 14 | 68.0 |
| | | | | 532+69 | 14 | 64.0 |
| | | | Approximate Length: 2740 ft | | | |
| S520 | R87 - R90A | 16 SFR | R/W | 506+40 | 10 | 59.2 |
| | | | | 506+70 | 10 | 59.5 |
| | | | | 507+00 | 10 | 59.6 |
| | | | | 508+00 | 10 | 59.7 |
| | | | | 509+00 | 10 | 59.8 |
| | | | | 510+00 | 10 | 59.9 |
| | | | | 511+00 | 10 | 60.0 |
| | | | | 512+00 | 10 | 62.0 |
| | | | | 513+00 | 10 | 64.5 |
| | | | | 514+00 | 10 | 66.0 |
| | | | | 515+00 | 10 | 68.0 |
| | | | | 516+00 | 10 | 70.0 |
| | | | | 517+00 | 10 | 72.0 |
| | | | | 518+00 | 10 | 73.0 |
| | | | | 519+00 | 10 | 76.0 |
| | | | | 520+00 | 10 | 80.0 |
| | | | | 521+00 | 10 | 81.5 |
| | | | | 522+00 | 10 | 82.0 |
| | | | | 523+00 | 10 | 82.5 |
| | | | | 524+00 | 10 | 83.0 |
| | | | | 525+00 | 10 | 84.0 |
| | | | | 526+00 | 10 | 86.0 |
| | | | | 527+00 | 10 | 86.0 |
| | | | | 528+00 | 10 | 86.0 |
| | | | | 529+00 | 10 | 80.0 |
| | | | | 530+00 | 10 | 76.6 |
| | | | | 530+69 | 10 | 76.0 |
| | | | Approximate Length: 2532 ft | | | |

Notes:

1 - Land Use: SFR - single-family residence; MFR - multi-family residence; MOT - motel/hotel.

2 - The top of barrier elevation takes precedent over the barrier height.

## Build Alternative - Outside Widening Option

| Barrier No. | Receptor No. | Type[1] and No. of Benefited Residences | Barrier Location | SR-101 Barrier Station | Barrier Height, ft | Top of Barrier Elevation[2], ft |
|---|---|---|---|---|---|---|
| S535 | R98 - R99 | 2 SFR<br>4 MFR | R/W | 533+75 | 12 | 66.5 |
| | | | | 534+00 | 12 | 66.0 |
| | | | | 535+00 | 12 | 63.5 |
| | | | | 536+00 | 12 | 60.0 |
| | | | | 537+00 | 12 | 57.5 |
| | | | | 538+00 | 12 | 55.0 |
| | | | | 538+74 | 12 | 53.7 |
| | | | Approximate Length: 525 ft | | | |
| S549 | R100A - R103 | 14 SFR<br>7 MFR | Shoulder | 538+95 | 10 | 50.8 |
| | | | | 540+00 | 10 | 53.3 |
| | | | | 541+00 | 10 | 56.2 |
| | | | | 542+00 | 10 | 57.9 |
| | | | | 543+00 | 10 | 58.3 |
| | | | | 544+00 | 10 | 57.8 |
| | | | | 545+00 | 10 | 57.4 |
| | | | | 546+00 | 10 | 56.5 |
| | | | | 547+00 | 10 | 55.9 |
| | | | | 548+00 | 10 | 55.6 |
| | | | | 548+00 | 12 | 57.6 |
| | | | | 549+00 | 12 | 56.8 |
| | | | | 550+00 | 12 | 56.0 |
| | | | | 551+00 | 12 | 54.6 |
| | | | | 552+00 | 12 | 53.8 |
| | | | | 553+00 | 12 | 53.0 |
| | | | | 554+00 | 12 | 52.9 |
| | | | | 555+00 | 12 | 53.5 |
| | | | | 556+00 | 12 | 54.0 |
| | | | | 557+00 | 12 | 54.9 |
| | | | | 558+00 | 12 | 55.8 |
| | | | | 559+00 | 12 | 56.3 |
| | | | Approximate Length: 2075 ft | | | |

Notes:

1 - Land Use: SFR - single-family residence; MFR - multi-family residence; MOT - motel/hotel.

2 - The top of barrier elevation takes precedent over the barrier height.

# **Appendix E** Noise Barrier Reasonableness Analysis Worksheet

# INSIDE WIDENING OPTION

**BUILD ALTERNATIVE - INSIDE WIDENING OPTION**
**CALCULATION OF REASONABLE ALLOWANCE**

| | | | |
|---|---|---|---|
| Project: Highway 101 South Coast HOV Project | Project Location: | | Date: 03-02-2010 |
| | Santa Barbara County | | |
| Noise Barrier I.D. & Location: | S90 / R/W | | |
| Base Allowance (2008 Dollars) | | | **$31,000** |
| **1. Absolute Noise Levels** | check one | 72 dBA* | |
| 69 dBA or less | ☐ | Add $2,000 | |
| 70-74 dBA | ☑ | Add $4,000 | **$4,000** |
| 75-78 dBA | ☐ | Add $6,000 | |
| More than 78 dBA | ☐ | Add $8,000 | |
| **2."Build" VS Existing Noise Levels** | check one | 2 dBA* | |
| Less than 3 dBA | ☑ | Add $0 | **$0** |
| 3-7 dBA | ☐ | Add $2,000 | |
| 8-11 dBA | ☐ | Add $4,000 | |
| 12 dBA or more | ☐ | Add $6,000 | |
| **3. Achievable Noise Reduction** | check one | 6 dBA* | |
| 5 dBA | ☐ | Add $0 | |
| 6-8 dBA | ☑ | Add $2,000 | **$2,000** |
| 9-11 dBA | ☐ | Add $4,000 | |
| 12 dBA or more | ☐ | Add $6,000 | |
| **Either New Construction or Pre-1978?** | check one | | |
| YES on either one | ☑ | Add $10,000 | **$10,000** |
| NO on both | ☐ | Add $0 | |
| **Reasonable Allowance Per Residence** | | | **$47,000** |
| **Number of Benefited Residences** | | | **6** |
| **Total Unmodified Reasonable Allowance** | | | **$282,000** |

* at Critical Design Receiver

**BUILD ALTERNATIVE - INSIDE WIDENING OPTION**
**CALCULATION OF REASONABLE ALLOWANCE**

| | | | |
|---|---|---|---|
| Project: Highway 101 South Coast HOV Project | Project Location: | | Date: 03-02-2010 |
| | Santa Barbara County | | |
| Noise Barrier I.D. & Location: | S98 / R/W | | |
| Base Allowance (2008 Dollars) | | | **$31,000** |
| **1. Absolute Noise Levels** | check one | 72 dBA* | |
| 69 dBA or less | ☐ | Add $2,000 | |
| 70-74 dBA | ☑ | Add $4,000 | **$4,000** |
| 75-78 dBA | ☐ | Add $6,000 | |
| More than 78 dBA | ☐ | Add $8,000 | |
| **2."Build" VS Existing Noise Levels** | check one | 3 dBA* | |
| Less than 3 dBA | ☐ | Add $0 | |
| 3-7 dBA | ☑ | Add $2,000 | **$2,000** |
| 8-11 dBA | ☐ | Add $4,000 | |
| 12 dBA or more | ☐ | Add $6,000 | |
| **3. Achievable Noise Reduction** | check one | 7 dBA* | |
| 5 dBA | ☐ | Add $0 | |
| 6-8 dBA | ☑ | Add $2,000 | **$2,000** |
| 9-11 dBA | ☐ | Add $4,000 | |
| 12 dBA or more | ☐ | Add $6,000 | |
| **Either New Construction or Pre-1978?** | check one | | |
| YES on either one | ☑ | Add $10,000 | **$10,000** |
| NO on both | ☐ | Add $0 | |
| **Reasonable Allowance Per Residence** | | | **$49,000** |
| **Number of Benefited Residences** | | | **18** |
| **Total Unmodified Reasonable Allowance** | | | **$882,000** |

* at Critical Design Receiver

**BUILD ALTERNATIVE - INSIDE WIDENING OPTION**
**CALCULATION OF REASONABLE ALLOWANCE**

| | | | |
|---|---|---|---|
| Project: Highway 101 South Coast HOV Project | Project Location: | | Date: 03-02-2010 |
| | Santa Barbara County | | |
| Noise Barrier I.D. & Location: | S158 / R/W & Shoulder | | |
| Base Allowance (2008 Dollars) | | | **$31,000** |
| **1. Absolute Noise Levels** | check one | 74 dBA* | |
| 69 dBA or less | ☐ | Add $2,000 | |
| 70-74 dBA | ☑ | Add $4,000 | **$4,000** |
| 75-78 dBA | ☐ | Add $6,000 | |
| More than 78 dBA | ☐ | Add $8,000 | |
| **2."Build" VS Existing Noise Levels** | check one | 3 dBA* | |
| Less than 3 dBA | ☐ | Add $0 | |
| 3-7 dBA | ☑ | Add $2,000 | **$2,000** |
| 8-11 dBA | ☐ | Add $4,000 | |
| 12 dBA or more | ☐ | Add $6,000 | |
| **3. Achievable Noise Reduction** | check one | 11 dBA* | |
| 5 dBA | ☐ | Add $0 | |
| 6-8 dBA | ☐ | Add $2,000 | |
| 9-11 dBA | ☑ | Add $4,000 | **$4,000** |
| 12 dBA or more | ☐ | Add $6,000 | |
| **Either New Construction or Pre-1978?** | check one | | |
| YES on either one | ☑ | Add $10,000 | **$10,000** |
| NO on both | ☐ | Add $0 | |
| **Reasonable Allowance Per Residence** | | | **$51,000** |
| **Number of Benefited Residences**** | | | **26** |
| **Total Unmodified Reasonable Allowance** | | | **$1,326,000** |

* at Critical Design Receiver

** Number of benefited residences according to the feasible barrier that is comprised of various wall heights.

**BUILD ALTERNATIVE - INSIDE WIDENING OPTION**
**CALCULATION OF REASONABLE ALLOWANCE**

| | | | |
|---|---|---|---|
| Project: Highway 101 South Coast HOV Project | Project Location: | | Date: 03-02-2010 |
| | Santa Barbara County | | |
| Noise Barrier I.D. & Location: | S174 / R/W | | |
| Base Allowance (2008 Dollars) | | | **$31,000** |
| **1. Absolute Noise Levels** | check one | 75 dBA* | |
| 69 dBA or less | ☐ | Add $2,000 | |
| 70-74 dBA | ☐ | Add $4,000 | |
| 75-78 dBA | ☑ | Add $6,000 | **$6,000** |
| More than 78 dBA | ☐ | Add $8,000 | |
| **2."Build" VS Existing Noise Levels** | check one | 3 dBA* | |
| Less than 3 dBA | ☐ | Add $0 | |
| 3-7 dBA | ☑ | Add $2,000 | **$2,000** |
| 8-11 dBA | ☐ | Add $4,000 | |
| 12 dBA or more | ☐ | Add $6,000 | |
| **3. Achievable Noise Reduction** | check one | 11 dBA* | |
| 5 dBA | ☐ | Add $0 | |
| 6-8 dBA | ☐ | Add $2,000 | |
| 9-11 dBA | ☑ | Add $4,000 | **$4,000** |
| 12 dBA or more | ☐ | Add $6,000 | |
| **Either New Construction or Pre-1978?** | check one | | |
| YES on either one | ☑ | Add $10,000 | **$10,000** |
| NO on both | ☐ | Add $0 | |
| **Reasonable Allowance Per Residence** | | | **$53,000** |
| **Number of Benefited Residences** | | | **12** |
| **Total Unmodified Reasonable Allowance** | | | **$636,000** |

* at Critical Design Receiver

**BUILD ALTERNATIVE - INSIDE WIDENING OPTION**
**CALCULATION OF REASONABLE ALLOWANCE**

| | | | |
|---|---|---|---|
| Project: Highway 101 South Coast HOV Project | Project Location: | | Date: 03-02-2010 |
| | Santa Barbara County | | |
| Noise Barrier I.D. & Location: | S182 / Shoulder | | |
| Base Allowance (2008 Dollars) | | | **$31,000** |
| **1. Absolute Noise Levels** | check one | 66 dBA* | |
| 69 dBA or less | ☑ | Add $2,000 | **$2,000** |
| 70-74 dBA | ☐ | Add $4,000 | |
| 75-78 dBA | ☐ | Add $6,000 | |
| More than 78 dBA | ☐ | Add $8,000 | |
| **2."Build" VS Existing Noise Levels** | check one | 3 dBA* | |
| Less than 3 dBA | ☐ | Add $0 | |
| 3-7 dBA | ☑ | Add $2,000 | **$2,000** |
| 8-11 dBA | ☐ | Add $4,000 | |
| 12 dBA or more | ☐ | Add $6,000 | |
| **3. Achievable Noise Reduction** | check one | 5 dBA* | |
| 5 dBA | ☑ | Add $0 | **$0** |
| 6-8 dBA | ☐ | Add $2,000 | |
| 9-11 dBA | ☐ | Add $4,000 | |
| 12 dBA or more | ☐ | Add $6,000 | |
| **Either New Construction or Pre-1978?** | check one | | |
| YES on either one | ☑ | Add $10,000 | **$10,000** |
| NO on both | ☐ | Add $0 | |
| **Reasonable Allowance Per Residence** | | | **$45,000** |
| **Number of Benefited Residences** | | | **1** |
| **Total Unmodified Reasonable Allowance** | | | **$45,000** |

* at Critical Design Receiver

**BUILD ALTERNATIVE - INSIDE WIDENING OPTION**
**CALCULATION OF REASONABLE ALLOWANCE**

| | | | |
|---|---|---|---|
| Project: Highway 101 South Coast HOV Project | Project Location: Santa Barbara County | | Date: 03-02-2010 |
| Noise Barrier I.D. & Location: | S188 / R/W | | |
| Base Allowance (2008 Dollars) | | | **$31,000** |
| **1. Absolute Noise Levels** | check one | 66 dBA* | |
| 69 dBA or less | ☑ | Add $2,000 | **$2,000** |
| 70-74 dBA | ☐ | Add $4,000 | |
| 75-78 dBA | ☐ | Add $6,000 | |
| More than 78 dBA | ☐ | Add $8,000 | |
| **2."Build" VS Existing Noise Levels** | check one | 3 dBA* | |
| Less than 3 dBA | ☐ | Add $0 | |
| 3-7 dBA | ☑ | Add $2,000 | **$2,000** |
| 8-11 dBA | ☐ | Add $4,000 | |
| 12 dBA or more | ☐ | Add $6,000 | |
| **3. Achievable Noise Reduction** | check one | 5 dBA* | |
| 5 dBA | ☑ | Add $0 | **$0** |
| 6-8 dBA | ☐ | Add $2,000 | |
| 9-11 dBA | ☐ | Add $4,000 | |
| 12 dBA or more | ☐ | Add $6,000 | |
| **Either New Construction or Pre-1978?** | check one | | |
| YES on either one | ☐ | Add $10,000 | |
| NO on both | ☑ | Add $0 | **$0** |
| **Reasonable Allowance Per Residence** | | | **$35,000** |
| **Number of Benefited Residences** | | | **2** |
| **Total Unmodified Reasonable Allowance** | | | **$70,000** |

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**BUILD ALTERNATIVE - INSIDE WIDENING OPTION**
**CALCULATION OF REASONABLE ALLOWANCE**

| | | | |
|---|---|---|---|
| Project: Highway 101 South Coast HOV Project | Project Location: | | Date: 03-02-2010 |
| | Santa Barbara County | | |
| Noise Barrier I.D. & Location: | S210 / R/W | | |
| Base Allowance (2008 Dollars) | | | **$31,000** |
| **1. Absolute Noise Levels** | check one | 76 dBA* | |
| 69 dBA or less | ☐ | Add $2,000 | |
| 70-74 dBA | ☐ | Add $4,000 | |
| 75-78 dBA | ☑ | Add $6,000 | **$6,000** |
| More than 78 dBA | ☐ | Add $8,000 | |
| **2."Build" VS Existing Noise Levels** | check one | 2 dBA* | |
| Less than 3 dBA | ☑ | Add $0 | **$0** |
| 3-7 dBA | ☐ | Add $2,000 | |
| 8-11 dBA | ☐ | Add $4,000 | |
| 12 dBA or more | ☐ | Add $6,000 | |
| **3. Achievable Noise Reduction** | check one | 8 dBA* | |
| 5 dBA | ☐ | Add $0 | |
| 6-8 dBA | ☑ | Add $2,000 | **$2,000** |
| 9-11 dBA | ☐ | Add $4,000 | |
| 12 dBA or more | ☐ | Add $6,000 | |
| **Either New Construction or Pre-1978?** | check one | | |
| YES on either one | ☐ | Add $10,000 | |
| NO on both | ☑ | Add $0 | **$0** |
| **Reasonable Allowance Per Residence** | | | **$39,000** |
| **Number of Benefited Residences**** | | | **26** |
| **Total Unmodified Reasonable Allowance** | | | **$1,014,000** |

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** Number of benefited residences according to the feasible barrier that is comprised of various wall heights.

**BUILD ALTERNATIVE - INSIDE WIDENING OPTION**
**CALCULATION OF REASONABLE ALLOWANCE**

| | | | |
|---|---|---|---|
| Project: Highway 101 South Coast HOV Project | Project Location: Santa Barbara County | | Date: 03-02-2010 |
| Noise Barrier I.D. & Location: | S181 / R/W | | |
| Base Allowance (2008 Dollars) | | | **$31,000** |
| **1. Absolute Noise Levels** | check one | 78 dBA* | |
| 69 dBA or less | ☐ | Add $2,000 | |
| 70-74 dBA | ☐ | Add $4,000 | |
| 75-78 dBA | ☑ | Add $6,000 | **$6,000** |
| More than 78 dBA | ☐ | Add $8,000 | |
| **2."Build" VS Existing Noise Levels** | check one | 2 dBA* | |
| Less than 3 dBA | ☑ | Add $0 | **$0** |
| 3-7 dBA | ☐ | Add $2,000 | |
| 8-11 dBA | ☐ | Add $4,000 | |
| 12 dBA or more | ☐ | Add $6,000 | |
| **3. Achievable Noise Reduction** | check one | 10 dBA* | |
| 5 dBA | ☐ | Add $0 | |
| 6-8 dBA | ☐ | Add $2,000 | |
| 9-11 dBA | ☑ | Add $4,000 | **$4,000** |
| 12 dBA or more | ☐ | Add $6,000 | |
| **Either New Construction or Pre-1978?** | check one | | |
| YES on either one | ☐ | Add $10,000 | |
| NO on both | ☑ | Add $0 | **$0** |
| **Reasonable Allowance Per Residence** | | | **$41,000** |
| **Number of Benefited Residences** | | | **48** |
| **Total Unmodified Reasonable Allowance** | | | **$1,968,000** |

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**BUILD ALTERNATIVE - INSIDE WIDENING OPTION**
**CALCULATION OF REASONABLE ALLOWANCE**

| | | | |
|---|---|---|---|
| Project: Highway 101 South Coast HOV Project | Project Location: Santa Barbara County | | Date: 03-02-2010 |
| Noise Barrier I.D. & Location: | S238 / R/W | | |
| Base Allowance (2008 Dollars) | | | **$31,000** |
| **1. Absolute Noise Levels** | check one | 67 dBA* | |
| 69 dBA or less | ☑ | Add $2,000 | **$2,000** |
| 70-74 dBA | ☐ | Add $4,000 | |
| 75-78 dBA | ☐ | Add $6,000 | |
| More than 78 dBA | ☐ | Add $8,000 | |
| **2."Build" VS Existing Noise Levels** | check one | 3 dBA* | |
| Less than 3 dBA | ☐ | Add $0 | |
| 3-7 dBA | ☑ | Add $2,000 | **$2,000** |
| 8-11 dBA | ☐ | Add $4,000 | |
| 12 dBA or more | ☐ | Add $6,000 | |
| **3. Achievable Noise Reduction** | check one | 5 dBA* | |
| 5 dBA | ☑ | Add $0 | **$0** |
| 6-8 dBA | ☐ | Add $2,000 | |
| 9-11 dBA | ☐ | Add $4,000 | |
| 12 dBA or more | ☐ | Add $6,000 | |
| **Either New Construction or Pre-1978?** | check one | | |
| YES on either one | ☑ | Add $10,000 | **$10,000** |
| NO on both | ☐ | Add $0 | |
| **Reasonable Allowance Per Residence** | | | **$45,000** |
| **Number of Benefited Residences** | | | **1** |
| **Total Unmodified Reasonable Allowance** | | | **$45,000** |

* at Critical Design Receiver

**BUILD ALTERNATIVE - INSIDE WIDENING OPTION**
**CALCULATION OF REASONABLE ALLOWANCE**

| | | | |
|---|---|---|---|
| Project: Highway 101 South Coast HOV Project | Project Location: | | Date: 03-02-2010 |
| | Santa Barbara County | | |
| Noise Barrier I.D. & Location: | S257 / Shoulder | | |
| Base Allowance (2008 Dollars) | | | **$31,000** |
| **1. Absolute Noise Levels** | check one | 67 dBA* | |
| 69 dBA or less | ☑ | Add $2,000 | **$2,000** |
| 70-74 dBA | ☐ | Add $4,000 | |
| 75-78 dBA | ☐ | Add $6,000 | |
| More than 78 dBA | ☐ | Add $8,000 | |
| **2."Build" VS Existing Noise Levels** | check one | 1 dBA* | |
| Less than 3 dBA | ☑ | Add $0 | **$0** |
| 3-7 dBA | ☐ | Add $2,000 | |
| 8-11 dBA | ☐ | Add $4,000 | |
| 12 dBA or more | ☐ | Add $6,000 | |
| **3. Achievable Noise Reduction** | check one | 6 dBA* | |
| 5 dBA | ☐ | Add $0 | |
| 6-8 dBA | ☑ | Add $2,000 | **$2,000** |
| 9-11 dBA | ☐ | Add $4,000 | |
| 12 dBA or more | ☐ | Add $6,000 | |
| **Either New Construction or Pre-1978?** | check one | | |
| YES on either one | ☑ | Add $10,000 | **$10,000** |
| NO on both | ☐ | Add $0 | |
| **Reasonable Allowance Per Residence** | | | **$45,000** |
| **Number of Benefited Residences** | | | **12** |
| **Total Unmodified Reasonable Allowance** | | | **$540,000** |

* at Critical Design Receiver

**BUILD ALTERNATIVE - INSIDE WIDENING OPTION**
**CALCULATION OF REASONABLE ALLOWANCE**

| | | | |
|---|---|---|---|
| Project: Highway 101 South Coast HOV Project | Project Location: Santa Barbara County | | Date: 03-02-2010 |
| Noise Barrier I.D. & Location: | S281 / Shoulder & R/W | | |
| Base Allowance (2008 Dollars) | | | **$31,000** |
| **1. Absolute Noise Levels** | check one | 71 dBA* | |
| 69 dBA or less | ☐ | Add $2,000 | |
| 70-74 dBA | ☑ | Add $4,000 | **$4,000** |
| 75-78 dBA | ☐ | Add $6,000 | |
| More than 78 dBA | ☐ | Add $8,000 | |
| **2."Build" VS Existing Noise Levels** | check one | 2 dBA* | |
| Less than 3 dBA | ☑ | Add $0 | **$0** |
| 3-7 dBA | ☐ | Add $2,000 | |
| 8-11 dBA | ☐ | Add $4,000 | |
| 12 dBA or more | ☐ | Add $6,000 | |
| **3. Achievable Noise Reduction** | check one | 8 dBA* | |
| 5 dBA | ☐ | Add $0 | |
| 6-8 dBA | ☑ | Add $2,000 | **$2,000** |
| 9-11 dBA | ☐ | Add $4,000 | |
| 12 dBA or more | ☐ | Add $6,000 | |
| **Either New Construction or Pre-1978?** | check one | | |
| YES on either one | ☑ | Add $10,000 | **$10,000** |
| NO on both | ☐ | Add $0 | |
| **Reasonable Allowance Per Residence** | | | **$47,000** |
| **Number of Benefited Residences** | | | **70** |
| **Total Unmodified Reasonable Allowance** | | | **$3,290,000** |

* at Critical Design Receiver

**BUILD ALTERNATIVE - INSIDE WIDENING OPTION**
**CALCULATION OF REASONABLE ALLOWANCE**

| | | | |
|---|---|---|---|
| Project: Highway 101 South Coast HOV Project | Project Location: | | Date: 03-02-2010 |
| | Santa Barbara County | | |
| Noise Barrier I.D. & Location: | S310 / R/W | | |
| Base Allowance (2008 Dollars) | | | **$31,000** |
| **1. Absolute Noise Levels** | check one | 74 dBA* | |
| 69 dBA or less | ☐ | Add $2,000 | |
| 70-74 dBA | ☑ | Add $4,000 | **$4,000** |
| 75-78 dBA | ☐ | Add $6,000 | |
| More than 78 dBA | ☐ | Add $8,000 | |
| **2."Build" VS Existing Noise Levels** | check one | 3 dBA* | |
| Less than 3 dBA | ☐ | Add $0 | |
| 3-7 dBA | ☑ | Add $2,000 | **$2,000** |
| 8-11 dBA | ☐ | Add $4,000 | |
| 12 dBA or more | ☐ | Add $6,000 | |
| **3. Achievable Noise Reduction** | check one | 9 dBA* | |
| 5 dBA | ☐ | Add $0 | |
| 6-8 dBA | ☐ | Add $2,000 | |
| 9-11 dBA | ☑ | Add $4,000 | **$4,000** |
| 12 dBA or more | ☐ | Add $6,000 | |
| **Either New Construction or Pre-1978?** | check one | | |
| YES on either one | ☑ | Add $10,000 | **$10,000** |
| NO on both | ☐ | Add $0 | |
| **Reasonable Allowance Per Residence** | | | **$51,000** |
| **Number of Benefited Residences** | | | **18** |
| **Total Unmodified Reasonable Allowance** | | | **$918,000** |

* at Critical Design Receiver

**BUILD ALTERNATIVE - INSIDE WIDENING OPTION**
**CALCULATION OF REASONABLE ALLOWANCE**

| | | | |
|---|---|---|---|
| Project: Highway 101 South Coast HOV Project | Project Location: Santa Barbara County | | Date: 03-02-2010 |
| Noise Barrier I.D. & Location: | S334 / R/W | | |
| Base Allowance (2008 Dollars) | | | **$31,000** |
| **1. Absolute Noise Levels** | check one | 74 dBA* | |
| 69 dBA or less | ☐ | Add $2,000 | |
| 70-74 dBA | ☑ | Add $4,000 | **$4,000** |
| 75-78 dBA | ☐ | Add $6,000 | |
| More than 78 dBA | ☐ | Add $8,000 | |
| **2."Build" VS Existing Noise Levels** | check one | 2 dBA* | |
| Less than 3 dBA | ☑ | Add $0 | **$0** |
| 3-7 dBA | ☐ | Add $2,000 | |
| 8-11 dBA | ☐ | Add $4,000 | |
| 12 dBA or more | ☐ | Add $6,000 | |
| **3. Achievable Noise Reduction** | check one | 6 dBA* | |
| 5 dBA | ☐ | Add $0 | |
| 6-8 dBA | ☑ | Add $2,000 | **$2,000** |
| 9-11 dBA | ☐ | Add $4,000 | |
| 12 dBA or more | ☐ | Add $6,000 | |
| **Either New Construction or Pre-1978?** | check one | | |
| YES on either one | ☑ | Add $10,000 | **$10,000** |
| NO on both | ☐ | Add $0 | |
| **Reasonable Allowance Per Residence** | | | **$47,000** |
| **Number of Benefited Residences** | | | **1** |
| **Total Unmodified Reasonable Allowance** | | | **$47,000** |

* at Critical Design Receiver

**BUILD ALTERNATIVE - INSIDE WIDENING OPTION**
**CALCULATION OF REASONABLE ALLOWANCE**

| | | | |
|---|---|---|---|
| Project: Highway 101 South Coast HOV Project | Project Location: | | Date: 03-02-2010 |
| | Santa Barbara County | | |
| Noise Barrier I.D. & Location: | S374 / R/W | | |
| Base Allowance (2008 Dollars) | | | **$31,000** |
| **1. Absolute Noise Levels** | check one | 73 dBA* | |
| 69 dBA or less | ☐ | Add $2,000 | |
| 70-74 dBA | ☑ | Add $4,000 | **$4,000** |
| 75-78 dBA | ☐ | Add $6,000 | |
| More than 78 dBA | ☐ | Add $8,000 | |
| **2."Build" VS Existing Noise Levels** | check one | 2 dBA* | |
| Less than 3 dBA | ☑ | Add $0 | **$0** |
| 3-7 dBA | ☐ | Add $2,000 | |
| 8-11 dBA | ☐ | Add $4,000 | |
| 12 dBA or more | ☐ | Add $6,000 | |
| **3. Achievable Noise Reduction** | check one | 7 dBA* | |
| 5 dBA | ☐ | Add $0 | |
| 6-8 dBA | ☑ | Add $2,000 | **$2,000** |
| 9-11 dBA | ☐ | Add $4,000 | |
| 12 dBA or more | ☐ | Add $6,000 | |
| **Either New Construction or Pre-1978?** | check one | | |
| YES on either one | ☐ | Add $10,000 | |
| NO on both | ☑ | Add $0 | **$0** |
| **Reasonable Allowance Per Residence** | | | **$37,000** |
| **Number of Benefited Residences** | | | **12** |
| **Total Unmodified Reasonable Allowance** | | | **$444,000** |

* at Critical Design Receiver

**BUILD ALTERNATIVE - INSIDE WIDENING OPTION**
**CALCULATION OF REASONABLE ALLOWANCE**

| | | | |
|---|---|---|---|
| Project: Highway 101 South Coast HOV Project | Project Location: Santa Barbara County | | Date: 03-02-2010 |
| Noise Barrier I.D. & Location: | S392 / R/W | | |
| Base Allowance (2008 Dollars) | | | **$31,000** |
| **1. Absolute Noise Levels** | check one | 74 dBA* | |
| 69 dBA or less | ☐ | Add $2,000 | |
| 70-74 dBA | ☑ | Add $4,000 | **$4,000** |
| 75-78 dBA | ☐ | Add $6,000 | |
| More than 78 dBA | ☐ | Add $8,000 | |
| **2."Build" VS Existing Noise Levels** | check one | 2 dBA* | |
| Less than 3 dBA | ☑ | Add $0 | **$0** |
| 3-7 dBA | ☐ | Add $2,000 | |
| 8-11 dBA | ☐ | Add $4,000 | |
| 12 dBA or more | ☐ | Add $6,000 | |
| **3. Achievable Noise Reduction** | check one | 12 dBA* | |
| 5 dBA | ☐ | Add $0 | |
| 6-8 dBA | ☐ | Add $2,000 | |
| 9-11 dBA | ☐ | Add $4,000 | |
| 12 dBA or more | ☑ | Add $6,000 | **$6,000** |
| **Either New Construction or Pre-1978?** | check one | | |
| YES on either one | ☑ | Add $10,000 | **$10,000** |
| NO on both | ☐ | Add $0 | |
| **Reasonable Allowance Per Residence** | | | **$51,000** |
| **Number of Benefited Residences**** | | | **37** |
| **Total Unmodified Reasonable Allowance** | | | **$1,887,000** |

* at Critical Design Receiver

** Number of benefited residences according to the feasible barrier that is comprised of various wall heights.

**BUILD ALTERNATIVE - INSIDE WIDENING OPTION**
**CALCULATION OF REASONABLE ALLOWANCE**

| | | | |
|---|---|---|---|
| Project: Highway 101 South Coast HOV Project | Project Location: | | Date: 03-02-2010 |
| | Santa Barbara County | | |
| Noise Barrier I.D. & Location: | S405 / Shoulder | | |
| Base Allowance (2008 Dollars) | | | **$31,000** |
| **1. Absolute Noise Levels** | check one | 68 dBA* | |
| 69 dBA or less | ☑ | Add $2,000 | **$2,000** |
| 70-74 dBA | ☐ | Add $4,000 | |
| 75-78 dBA | ☐ | Add $6,000 | |
| More than 78 dBA | ☐ | Add $8,000 | |
| **2."Build" VS Existing Noise Levels** | check one | 2 dBA* | |
| Less than 3 dBA | ☑ | Add $0 | **$0** |
| 3-7 dBA | ☐ | Add $2,000 | |
| 8-11 dBA | ☐ | Add $4,000 | |
| 12 dBA or more | ☐ | Add $6,000 | |
| **3. Achievable Noise Reduction** | check one | 6 dBA* | |
| 5 dBA | ☐ | Add $0 | |
| 6-8 dBA | ☑ | Add $2,000 | **$2,000** |
| 9-11 dBA | ☐ | Add $4,000 | |
| 12 dBA or more | ☐ | Add $6,000 | |
| **Either New Construction or Pre-1978?** | check one | | |
| YES on either one | ☐ | Add $10,000 | |
| NO on both | ☑ | Add $0 | **$0** |
| **Reasonable Allowance Per Residence** | | | **$35,000** |
| **Number of Benefited Residences** | | | **1** |
| **Total Unmodified Reasonable Allowance** | | | **$35,000** |

* at Critical Design Receiver

**BUILD ALTERNATIVE - INSIDE WIDENING OPTION**
**CALCULATION OF REASONABLE ALLOWANCE**

| | | | |
|---|---|---|---|
| Project: Highway 101 South Coast HOV Project | Project Location: | | Date: 03-02-2010 |
| | Santa Barbara County | | |
| Noise Barrier I.D. & Location: | S414 / Shoulder | | |
| Base Allowance (2008 Dollars) | | | **$31,000** |
| **1. Absolute Noise Levels** | check one | 74 dBA* | |
| 69 dBA or less | ☐ | Add $2,000 | |
| 70-74 dBA | ☑ | Add $4,000 | **$4,000** |
| 75-78 dBA | ☐ | Add $6,000 | |
| More than 78 dBA | ☐ | Add $8,000 | |
| **2."Build" VS Existing Noise Levels** | check one | 2 dBA* | |
| Less than 3 dBA | ☑ | Add $0 | **$0** |
| 3-7 dBA | ☐ | Add $2,000 | |
| 8-11 dBA | ☐ | Add $4,000 | |
| 12 dBA or more | ☐ | Add $6,000 | |
| **3. Achievable Noise Reduction** | check one | 12 dBA* | |
| 5 dBA | ☐ | Add $0 | |
| 6-8 dBA | ☐ | Add $2,000 | |
| 9-11 dBA | ☐ | Add $4,000 | |
| 12 dBA or more | ☑ | Add $6,000 | **$6,000** |
| **Either New Construction or Pre-1978?** | check one | | |
| YES on either one | ☑ | Add $10,000 | **$10,000** |
| NO on both | ☐ | Add $0 | |
| **Reasonable Allowance Per Residence** | | | **$51,000** |
| **Number of Benefited Residences**** | | | **49** |
| **Total Unmodified Reasonable Allowance** | | | **$2,499,000** |

* at Critical Design Receiver

** Number of benefited residences according to the feasible barrier that is comprised of various wall heights.

**BUILD ALTERNATIVE - INSIDE WIDENING OPTION**
**CALCULATION OF REASONABLE ALLOWANCE**

| | | | |
|---|---|---|---|
| Project: Highway 101 South Coast HOV Project | Project Location: | | Date: 03-02-2010 |
| | Santa Barbara County | | |
| Noise Barrier I.D. & Location: | S424 / Shoulder | | |
| Base Allowance (2008 Dollars) | | | **$31,000** |
| **1. Absolute Noise Levels** | check one | 75 dBA* | |
| 69 dBA or less | ☐ | Add $2,000 | |
| 70-74 dBA | ☐ | Add $4,000 | |
| 75-78 dBA | ☑ | Add $6,000 | **$6,000** |
| More than 78 dBA | ☐ | Add $8,000 | |
| **2."Build" VS Existing Noise Levels** | check one | 1 dBA* | |
| Less than 3 dBA | ☑ | Add $0 | **$0** |
| 3-7 dBA | ☐ | Add $2,000 | |
| 8-11 dBA | ☐ | Add $4,000 | |
| 12 dBA or more | ☐ | Add $6,000 | |
| **3. Achievable Noise Reduction** | check one | 6 dBA* | |
| 5 dBA | ☐ | Add $0 | |
| 6-8 dBA | ☑ | Add $2,000 | **$2,000** |
| 9-11 dBA | ☐ | Add $4,000 | |
| 12 dBA or more | ☐ | Add $6,000 | |
| **Either New Construction or Pre-1978?** | check one | | |
| YES on either one | ☑ | Add $10,000 | **$10,000** |
| NO on both | ☐ | Add $0 | |
| **Reasonable Allowance Per Residence** | | | **$49,000** |
| **Number of Benefited Residences**** | | | **10** |
| **Total Unmodified Reasonable Allowance** | | | **$490,000** |

* at Critical Design Receiver

** Number of benefited residences according to the feasible barrier that is comprised of various wall heights.

**BUILD ALTERNATIVE - INSIDE WIDENING OPTION**
**CALCULATION OF REASONABLE ALLOWANCE**

| | | | |
|---|---|---|---|
| Project: Highway 101 South Coast HOV Project | Project Location: | | Date: 03-02-2010 |
| | Santa Barbara County | | |
| Noise Barrier I.D. & Location: | S446 / Shoulder | | |
| Base Allowance (2008 Dollars) | | | **$31,000** |
| **1. Absolute Noise Levels** | check one | 69 dBA* | |
| 69 dBA or less | ☑ | Add $2,000 | **$2,000** |
| 70-74 dBA | ☐ | Add $4,000 | |
| 75-78 dBA | ☐ | Add $6,000 | |
| More than 78 dBA | ☐ | Add $8,000 | |
| **2."Build" VS Existing Noise Levels** | check one | 3 dBA* | |
| Less than 3 dBA | ☐ | Add $0 | |
| 3-7 dBA | ☑ | Add $2,000 | **$2,000** |
| 8-11 dBA | ☐ | Add $4,000 | |
| 12 dBA or more | ☐ | Add $6,000 | |
| **3. Achievable Noise Reduction** | check one | 8 dBA* | |
| 5 dBA | ☐ | Add $0 | |
| 6-8 dBA | ☑ | Add $2,000 | **$2,000** |
| 9-11 dBA | ☐ | Add $4,000 | |
| 12 dBA or more | ☐ | Add $6,000 | |
| **Either New Construction or Pre-1978?** | check one | | |
| YES on either one | ☐ | Add $10,000 | |
| NO on both | ☑ | Add $0 | **$0** |
| **Reasonable Allowance Per Residence** | | | **$37,000** |
| **Number of Benefited Residences** | | | **1** |
| **Total Unmodified Reasonable Allowance** | | | **$37,000** |

* at Critical Design Receiver

**BUILD ALTERNATIVE - INSIDE WIDENING OPTION**
**CALCULATION OF REASONABLE ALLOWANCE**

| | | | |
|---|---|---|---|
| Project: Highway 101 South Coast HOV Project | Project Location: | | Date: 03-02-2010 |
| | Santa Barbara County | | |
| Noise Barrier I.D. & Location: | S452 / Shoulder | | |
| Base Allowance (2008 Dollars) | | | **$31,000** |
| **1. Absolute Noise Levels** | check one | 69 dBA* | |
| 69 dBA or less | ☑ | Add $2,000 | **$2,000** |
| 70-74 dBA | ☐ | Add $4,000 | |
| 75-78 dBA | ☐ | Add $6,000 | |
| More than 78 dBA | ☐ | Add $8,000 | |
| **2."Build" VS Existing Noise Levels** | check one | 2 dBA* | |
| Less than 3 dBA | ☑ | Add $0 | **$0** |
| 3-7 dBA | ☐ | Add $2,000 | |
| 8-11 dBA | ☐ | Add $4,000 | |
| 12 dBA or more | ☐ | Add $6,000 | |
| **3. Achievable Noise Reduction** | check one | 8 dBA* | |
| 5 dBA | ☐ | Add $0 | |
| 6-8 dBA | ☑ | Add $2,000 | **$2,000** |
| 9-11 dBA | ☐ | Add $4,000 | |
| 12 dBA or more | ☐ | Add $6,000 | |
| **Either New Construction or Pre-1978?** | check one | | |
| YES on either one | ☑ | Add $10,000 | **$10,000** |
| NO on both | ☐ | Add $0 | |
| **Reasonable Allowance Per Residence** | | | **$45,000** |
| **Number of Benefited Residences** | | | **14** |
| **Total Unmodified Reasonable Allowance** | | | **$630,000** |

* at Critical Design Receiver

**BUILD ALTERNATIVE - INSIDE WIDENING OPTION**
**CALCULATION OF REASONABLE ALLOWANCE**

| | | | |
|---|---|---|---|
| Project: Highway 101 South Coast HOV Project | Project Location: | | Date: 03-02-2010 |
| | Santa Barbara County | | |
| Noise Barrier I.D. & Location: | S464 / Shoulder & R/W | | |
| Base Allowance (2008 Dollars) | | | **$31,000** |
| **1. Absolute Noise Levels** | check one | 76 dBA* | |
| 69 dBA or less | ☐ | Add $2,000 | |
| 70-74 dBA | ☐ | Add $4,000 | |
| 75-78 dBA | ☑ | Add $6,000 | **$6,000** |
| More than 78 dBA | ☐ | Add $8,000 | |
| **2."Build" VS Existing Noise Levels** | check one | 2 dBA* | |
| Less than 3 dBA | ☑ | Add $0 | **$0** |
| 3-7 dBA | ☐ | Add $2,000 | |
| 8-11 dBA | ☐ | Add $4,000 | |
| 12 dBA or more | ☐ | Add $6,000 | |
| **3. Achievable Noise Reduction** | check one | 10 dBA* | |
| 5 dBA | ☐ | Add $0 | |
| 6-8 dBA | ☐ | Add $2,000 | |
| 9-11 dBA | ☑ | Add $4,000 | **$4,000** |
| 12 dBA or more | ☐ | Add $6,000 | |
| **Either New Construction or Pre-1978?** | check one | | |
| YES on either one | ☑ | Add $10,000 | **$10,000** |
| NO on both | ☐ | Add $0 | |
| **Reasonable Allowance Per Residence** | | | **$51,000** |
| **Number of Benefited Residences**** | | | **13** |
| **Total Unmodified Reasonable Allowance** | | | **$663,000** |

* at Critical Design Receiver

** Number of benefited residences according to the feasible barrier that is comprised of various wall heights.

**BUILD ALTERNATIVE - INSIDE WIDENING OPTION**
**CALCULATION OF REASONABLE ALLOWANCE**

| | | | |
|---|---|---|---|
| Project: Highway 101 South Coast HOV Project | Project Location: | | Date: 03-02-2010 |
| | Santa Barbara County | | |
| Noise Barrier I.D. & Location: | S471 / Shoulder | | |
| Base Allowance (2008 Dollars) | | | **$31,000** |
| **1. Absolute Noise Levels** | check one | 73 dBA* | |
| 69 dBA or less | ☐ | Add $2,000 | |
| 70-74 dBA | ☑ | Add $4,000 | **$4,000** |
| 75-78 dBA | ☐ | Add $6,000 | |
| More than 78 dBA | ☐ | Add $8,000 | |
| **2."Build" VS Existing Noise Levels** | check one | 2 dBA* | |
| Less than 3 dBA | ☑ | Add $0 | **$0** |
| 3-7 dBA | ☐ | Add $2,000 | |
| 8-11 dBA | ☐ | Add $4,000 | |
| 12 dBA or more | ☐ | Add $6,000 | |
| **3. Achievable Noise Reduction** | check one | 9 dBA* | |
| 5 dBA | ☐ | Add $0 | |
| 6-8 dBA | ☐ | Add $2,000 | |
| 9-11 dBA | ☑ | Add $4,000 | **$4,000** |
| 12 dBA or more | ☐ | Add $6,000 | |
| **Either New Construction or Pre-1978?** | check one | | |
| YES on either one | ☑ | Add $10,000 | **$10,000** |
| NO on both | ☐ | Add $0 | |
| **Reasonable Allowance Per Residence** | | | **$49,000** |
| **Number of Benefited Residences**** | | | **16** |
| **Total Unmodified Reasonable Allowance** | | | **$784,000** |

* at Critical Design Receiver

** Number of benefited residences according to the feasible barrier that is comprised of various wall heights.

**BUILD ALTERNATIVE - INSIDE WIDENING OPTION**
**CALCULATION OF REASONABLE ALLOWANCE**

| | | | |
|---|---|---|---|
| Project: Highway 101 South Coast HOV Project | Project Location: | | Date: 03-02-2010 |
| | Santa Barbara County | | |
| Noise Barrier I.D. & Location: | S489 / Private Property | | |
| Base Allowance (2008 Dollars) | | | **$31,000** |
| **1. Absolute Noise Levels** | check one | 74 dBA* | |
| 69 dBA or less | ☐ | Add $2,000 | |
| 70-74 dBA | ☑ | Add $4,000 | **$4,000** |
| 75-78 dBA | ☐ | Add $6,000 | |
| More than 78 dBA | ☐ | Add $8,000 | |
| **2."Build" VS Existing Noise Levels** | check one | 1 dBA* | |
| Less than 3 dBA | ☑ | Add $0 | **$0** |
| 3-7 dBA | ☐ | Add $2,000 | |
| 8-11 dBA | ☐ | Add $4,000 | |
| 12 dBA or more | ☐ | Add $6,000 | |
| **3. Achievable Noise Reduction** | check one | 5 dBA* | |
| 5 dBA | ☑ | Add $0 | **$0** |
| 6-8 dBA | ☐ | Add $2,000 | |
| 9-11 dBA | ☐ | Add $4,000 | |
| 12 dBA or more | ☐ | Add $6,000 | |
| **Either New Construction or Pre-1978?** | check one | | |
| YES on either one | ☐ | Add $10,000 | |
| NO on both | ☑ | Add $0 | **$0** |
| **Reasonable Allowance Per Residence** | | | **$35,000** |
| **Number of Benefited Residences** | | | **4** |
| **Total Unmodified Reasonable Allowance** | | | **$140,000** |

* at Critical Design Receiver

**BUILD ALTERNATIVE - INSIDE WIDENING OPTION**
**CALCULATION OF REASONABLE ALLOWANCE**

| | | | |
|---|---|---|---|
| Project: Highway 101 South Coast HOV Project | Project Location: | | Date: 03-02-2010 |
| | Santa Barbara County | | |
| Noise Barrier I.D. & Location: | S498 / Shoulder | | |
| Base Allowance (2008 Dollars) | | | **$31,000** |
| **1. Absolute Noise Levels** | check one | 76 dBA* | |
| 69 dBA or less | ☐ | Add $2,000 | |
| 70-74 dBA | ☐ | Add $4,000 | |
| 75-78 dBA | ☑ | Add $6,000 | **$6,000** |
| More than 78 dBA | ☐ | Add $8,000 | |
| **2."Build" VS Existing Noise Levels** | check one | 3 dBA* | |
| Less than 3 dBA | ☐ | Add $0 | |
| 3-7 dBA | ☑ | Add $2,000 | **$2,000** |
| 8-11 dBA | ☐ | Add $4,000 | |
| 12 dBA or more | ☐ | Add $6,000 | |
| **3. Achievable Noise Reduction** | check one | 9 dBA* | |
| 5 dBA | ☐ | Add $0 | |
| 6-8 dBA | ☐ | Add $2,000 | |
| 9-11 dBA | ☑ | Add $4,000 | **$4,000** |
| 12 dBA or more | ☐ | Add $6,000 | |
| **Either New Construction or Pre-1978?** | check one | | |
| YES on either one | ☑ | Add $10,000 | **$10,000** |
| NO on both | ☐ | Add $0 | |
| **Reasonable Allowance Per Residence** | | | **$53,000** |
| **Number of Benefited Residences** | | | **11** |
| **Total Unmodified Reasonable Allowance** | | | **$583,000** |

* at Critical Design Receiver

**BUILD ALTERNATIVE - INSIDE WIDENING OPTION**
**CALCULATION OF REASONABLE ALLOWANCE**

| | | | |
|---|---|---|---|
| Project: Highway 101 South Coast HOV Project | Project Location: | | Date: 03-02-2010 |
| | Santa Barbara County | | |
| Noise Barrier I.D. & Location: | S520 / R/W | | |
| Base Allowance (2008 Dollars) | | | **$31,000** |
| **1. Absolute Noise Levels** | check one | 75 dBA* | |
| 69 dBA or less | ☐ | Add $2,000 | |
| 70-74 dBA | ☐ | Add $4,000 | |
| 75-78 dBA | ☑ | Add $6,000 | **$6,000** |
| More than 78 dBA | ☐ | Add $8,000 | |
| **2."Build" VS Existing Noise Levels** | check one | 2 dBA* | |
| Less than 3 dBA | ☑ | Add $0 | **$0** |
| 3-7 dBA | ☐ | Add $2,000 | |
| 8-11 dBA | ☐ | Add $4,000 | |
| 12 dBA or more | ☐ | Add $6,000 | |
| **3. Achievable Noise Reduction** | check one | 10 dBA* | |
| 5 dBA | ☐ | Add $0 | |
| 6-8 dBA | ☐ | Add $2,000 | |
| 9-11 dBA | ☑ | Add $4,000 | **$4,000** |
| 12 dBA or more | ☐ | Add $6,000 | |
| **Either New Construction or Pre-1978?** | check one | | |
| YES on either one | ☑ | Add $10,000 | **$10,000** |
| NO on both | ☐ | Add $0 | |
| **Reasonable Allowance Per Residence** | | | **$51,000** |
| **Number of Benefited Residences** | | | **16** |
| **Total Unmodified Reasonable Allowance** | | | **$816,000** |

* at Critical Design Receiver

**BUILD ALTERNATIVE - INSIDE WIDENING OPTION**
**CALCULATION OF REASONABLE ALLOWANCE**

| | | | |
|---|---|---|---|
| Project: Highway 101 South Coast HOV Project | Project Location: | | Date: 03-02-2010 |
| | Santa Barbara County | | |
| Noise Barrier I.D. & Location: | S519 / R/W | | |
| Base Allowance (2008 Dollars) | | | **$31,000** |
| **1. Absolute Noise Levels** | check one | 75 dBA* | |
| 69 dBA or less | ☐ | Add $2,000 | |
| 70-74 dBA | ☐ | Add $4,000 | |
| 75-78 dBA | ☑ | Add $6,000 | **$6,000** |
| More than 78 dBA | ☐ | Add $8,000 | |
| **2."Build" VS Existing Noise Levels** | check one | 2 dBA* | |
| Less than 3 dBA | ☑ | Add $0 | **$0** |
| 3-7 dBA | ☐ | Add $2,000 | |
| 8-11 dBA | ☐ | Add $4,000 | |
| 12 dBA or more | ☐ | Add $6,000 | |
| **3. Achievable Noise Reduction** | check one | 10 dBA* | |
| 5 dBA | ☐ | Add $0 | |
| 6-8 dBA | ☐ | Add $2,000 | |
| 9-11 dBA | ☑ | Add $4,000 | **$4,000** |
| 12 dBA or more | ☐ | Add $6,000 | |
| **Either New Construction or Pre-1978?** | check one | | |
| YES on either one | ☑ | Add $10,000 | **$10,000** |
| NO on both | ☐ | Add $0 | |
| **Reasonable Allowance Per Residence** | | | **$51,000** |
| **Number of Benefited Residences**** | | | **25** |
| **Total Unmodified Reasonable Allowance** | | | **$1,275,000** |

* at Critical Design Receiver

** Number of benefited residences according to the feasible barrier that is comprised of various wall heights.

**BUILD ALTERNATIVE - INSIDE WIDENING OPTION**
**CALCULATION OF REASONABLE ALLOWANCE**

| | | | |
|---|---|---|---|
| Project: Highway 101 South Coast HOV Project | Project Location: | | Date: 03-02-2010 |
| | Santa Barbara County | | |
| Noise Barrier I.D. & Location: | S535 / R/W | | |
| Base Allowance (2008 Dollars) | | | **$31,000** |
| **1. Absolute Noise Levels** | check one | 76 dBA* | |
| 69 dBA or less | ☐ | Add $2,000 | |
| 70-74 dBA | ☐ | Add $4,000 | |
| 75-78 dBA | ☑ | Add $6,000 | **$6,000** |
| More than 78 dBA | ☐ | Add $8,000 | |
| **2."Build" VS Existing Noise Levels** | check one | 3 dBA* | |
| Less than 3 dBA | ☐ | Add $0 | |
| 3-7 dBA | ☑ | Add $2,000 | **$2,000** |
| 8-11 dBA | ☐ | Add $4,000 | |
| 12 dBA or more | ☐ | Add $6,000 | |
| **3. Achievable Noise Reduction** | check one | 10 dBA* | |
| 5 dBA | ☐ | Add $0 | |
| 6-8 dBA | ☐ | Add $2,000 | |
| 9-11 dBA | ☑ | Add $4,000 | **$4,000** |
| 12 dBA or more | ☐ | Add $6,000 | |
| **Either New Construction or Pre-1978?** | check one | | |
| YES on either one | ☐ | Add $10,000 | |
| NO on both | ☑ | Add $0 | **$0** |
| **Reasonable Allowance Per Residence** | | | **$43,000** |
| **Number of Benefited Residences** | | | **6** |
| **Total Unmodified Reasonable Allowance** | | | **$258,000** |

* at Critical Design Receiver

**BUILD ALTERNATIVE - INSIDE WIDENING OPTION**
**CALCULATION OF REASONABLE ALLOWANCE**

| | | | |
|---|---|---|---|
| Project: Highway 101 South Coast HOV Project | Project Location: | | Date: 03-02-2010 |
| | Santa Barbara County | | |
| Noise Barrier I.D. & Location: | S549 / Shoulder | | |
| Base Allowance (2008 Dollars) | | | **$31,000** |
| **1. Absolute Noise Levels** | check one | 70 dBA* | |
| 69 dBA or less | ☐ | Add $2,000 | |
| 70-74 dBA | ☑ | Add $4,000 | **$4,000** |
| 75-78 dBA | ☐ | Add $6,000 | |
| More than 78 dBA | ☐ | Add $8,000 | |
| **2."Build" VS Existing Noise Levels** | check one | 1 dBA* | |
| Less than 3 dBA | ☑ | Add $0 | **$0** |
| 3-7 dBA | ☐ | Add $2,000 | |
| 8-11 dBA | ☐ | Add $4,000 | |
| 12 dBA or more | ☐ | Add $6,000 | |
| **3. Achievable Noise Reduction** | check one | 7 dBA* | |
| 5 dBA | ☐ | Add $0 | |
| 6-8 dBA | ☑ | Add $2,000 | **$2,000** |
| 9-11 dBA | ☐ | Add $4,000 | |
| 12 dBA or more | ☐ | Add $6,000 | |
| **Either New Construction or Pre-1978?** | check one | | |
| YES on either one | ☑ | Add $10,000 | **$10,000** |
| NO on both | ☐ | Add $0 | |
| **Reasonable Allowance Per Residence** | | | **$47,000** |
| **Number of Benefited Residences**** | | | **21** |
| **Total Unmodified Reasonable Allowance** | | | **$987,000** |

* at Critical Design Receiver

** Number of benefited residences according to the feasible barrier that is comprised of various wall heights.

# OUTSIDE WIDENING OPTION

**BUILD ALTERNATIVE - OUTSIDE WIDENING OPTION**
**CALCULATION OF REASONABLE ALLOWANCE**

| | | | |
|---|---|---|---|
| Project: Highway 101 South Coast HOV Project | Project Location: | | Date: 03-02-2010 |
| | Santa Barbara County | | |
| Noise Barrier I.D. & Location: | S90 / R/W | | |
| Base Allowance (2008 Dollars) | | | **$31,000** |
| **1. Absolute Noise Levels** | check one | 73 dBA* | |
| 69 dBA or less | ☐ | Add $2,000 | |
| 70-74 dBA | ☑ | Add $4,000 | **$4,000** |
| 75-78 dBA | ☐ | Add $6,000 | |
| More than 78 dBA | ☐ | Add $8,000 | |
| **2."Build" VS Existing Noise Levels** | check one | 3 dBA* | |
| Less than 3 dBA | ☐ | Add $0 | |
| 3-7 dBA | ☑ | Add $2,000 | **$2,000** |
| 8-11 dBA | ☐ | Add $4,000 | |
| 12 dBA or more | ☐ | Add $6,000 | |
| **3. Achievable Noise Reduction** | check one | 6 dBA* | |
| 5 dBA | ☐ | Add $0 | |
| 6-8 dBA | ☑ | Add $2,000 | **$2,000** |
| 9-11 dBA | ☐ | Add $4,000 | |
| 12 dBA or more | ☐ | Add $6,000 | |
| **Either New Construction or Pre-1978?** | check one | | |
| YES on either one | ☑ | Add $10,000 | **$10,000** |
| NO on both | ☐ | Add $0 | |
| **Reasonable Allowance Per Residence** | | | **$49,000** |
| **Number of Benefited Residences** | | | **6** |
| **Total Unmodified Reasonable Allowance** | | | **$294,000** |

* at Critical Design Receiver

**BUILD ALTERNATIVE - OUTSIDE WIDENING OPTION**
**CALCULATION OF REASONABLE ALLOWANCE**

| | | | |
|---|---|---|---|
| Project: Highway 101 South Coast HOV Project | Project Location: Santa Barbara County | | Date: 03-02-2010 |
| Noise Barrier I.D. & Location: | S98 / R/W | | |
| Base Allowance (2008 Dollars) | | | **$31,000** |
| **1. Absolute Noise Levels** | check one | 72 dBA* | |
| 69 dBA or less | ☐ | Add $2,000 | |
| 70-74 dBA | ☑ | Add $4,000 | **$4,000** |
| 75-78 dBA | ☐ | Add $6,000 | |
| More than 78 dBA | ☐ | Add $8,000 | |
| **2."Build" VS Existing Noise Levels** | check one | 3 dBA* | |
| Less than 3 dBA | ☐ | Add $0 | |
| 3-7 dBA | ☑ | Add $2,000 | **$2,000** |
| 8-11 dBA | ☐ | Add $4,000 | |
| 12 dBA or more | ☐ | Add $6,000 | |
| **3. Achievable Noise Reduction** | check one | 7 dBA* | |
| 5 dBA | ☐ | Add $0 | |
| 6-8 dBA | ☑ | Add $2,000 | **$2,000** |
| 9-11 dBA | ☐ | Add $4,000 | |
| 12 dBA or more | ☐ | Add $6,000 | |
| **Either New Construction or Pre-1978?** | check one | | |
| YES on either one | ☑ | Add $10,000 | **$10,000** |
| NO on both | ☐ | Add $0 | |
| **Reasonable Allowance Per Residence** | | | **$49,000** |
| **Number of Benefited Residences** | | | **18** |
| **Total Unmodified Reasonable Allowance** | | | **$882,000** |

* at Critical Design Receiver

**BUILD ALTERNATIVE - OUTSIDE WIDENING OPTION**
**CALCULATION OF REASONABLE ALLOWANCE**

| | | | |
|---|---|---|---|
| Project: Highway 101 South Coast HOV Project | Project Location: | | Date: 03-02-2010 |
| | Santa Barbara County | | |
| Noise Barrier I.D. & Location: | S158 / R/W & Shoulder | | |
| Base Allowance (2008 Dollars) | | | **$31,000** |
| **1. Absolute Noise Levels** | check one | 74 dBA* | |
| 69 dBA or less | ☐ | Add $2,000 | |
| 70-74 dBA | ☑ | Add $4,000 | **$4,000** |
| 75-78 dBA | ☐ | Add $6,000 | |
| More than 78 dBA | ☐ | Add $8,000 | |
| **2."Build" VS Existing Noise Levels** | check one | 3 dBA* | |
| Less than 3 dBA | ☐ | Add $0 | |
| 3-7 dBA | ☑ | Add $2,000 | **$2,000** |
| 8-11 dBA | ☐ | Add $4,000 | |
| 12 dBA or more | ☐ | Add $6,000 | |
| **3. Achievable Noise Reduction** | check one | 11 dBA* | |
| 5 dBA | ☐ | Add $0 | |
| 6-8 dBA | ☐ | Add $2,000 | |
| 9-11 dBA | ☑ | Add $4,000 | **$4,000** |
| 12 dBA or more | ☐ | Add $6,000 | |
| **Either New Construction or Pre-1978?** | check one | | |
| YES on either one | ☑ | Add $10,000 | **$10,000** |
| NO on both | ☐ | Add $0 | |
| **Reasonable Allowance Per Residence** | | | **$51,000** |
| **Number of Benefited Residences**** | | | **26** |
| **Total Unmodified Reasonable Allowance** | | | **$1,326,000** |

* at Critical Design Receiver

** Number of benefited residences according to the feasible barrier that is comprised of various wall heights.

**BUILD ALTERNATIVE - OUTSIDE WIDENING OPTION**
**CALCULATION OF REASONABLE ALLOWANCE**

| | | | |
|---|---|---|---|
| Project: Highway 101 South Coast HOV Project | Project Location: Santa Barbara County | | Date: 03-02-2010 |
| Noise Barrier I.D. & Location: | S174 / R/W | | |
| Base Allowance (2008 Dollars) | | | **$31,000** |
| **1. Absolute Noise Levels** | check one | 75 dBA* | |
| 69 dBA or less | ☐ | Add $2,000 | |
| 70-74 dBA | ☐ | Add $4,000 | |
| 75-78 dBA | ☑ | Add $6,000 | **$6,000** |
| More than 78 dBA | ☐ | Add $8,000 | |
| **2."Build" VS Existing Noise Levels** | check one | 3 dBA* | |
| Less than 3 dBA | ☐ | Add $0 | |
| 3-7 dBA | ☑ | Add $2,000 | **$2,000** |
| 8-11 dBA | ☐ | Add $4,000 | |
| 12 dBA or more | ☐ | Add $6,000 | |
| **3. Achievable Noise Reduction** | check one | 10 dBA* | |
| 5 dBA | ☐ | Add $0 | |
| 6-8 dBA | ☐ | Add $2,000 | |
| 9-11 dBA | ☑ | Add $4,000 | **$4,000** |
| 12 dBA or more | ☐ | Add $6,000 | |
| **Either New Construction or Pre-1978?** | check one | | |
| YES on either one | ☑ | Add $10,000 | **$10,000** |
| NO on both | ☐ | Add $0 | |
| **Reasonable Allowance Per Residence** | | | **$53,000** |
| **Number of Benefited Residences** | | | **12** |
| **Total Unmodified Reasonable Allowance** | | | **$636,000** |

* at Critical Design Receiver

**BUILD ALTERNATIVE - OUTSIDE WIDENING OPTION**
**CALCULATION OF REASONABLE ALLOWANCE**

| | | | |
|---|---|---|---|
| Project: Highway 101 South Coast HOV Project | Project Location: Santa Barbara County | | Date: 03-02-2010 |
| Noise Barrier I.D. & Location: | S210 / R/W | | |
| Base Allowance (2008 Dollars) | | | **$31,000** |
| **1. Absolute Noise Levels** | check one | 76 dBA* | |
| 69 dBA or less | ☐ | Add $2,000 | |
| 70-74 dBA | ☐ | Add $4,000 | |
| 75-78 dBA | ☑ | Add $6,000 | **$6,000** |
| More than 78 dBA | ☐ | Add $8,000 | |
| **2."Build" VS Existing Noise Levels** | check one | 2 dBA* | |
| Less than 3 dBA | ☑ | Add $0 | **$0** |
| 3-7 dBA | ☐ | Add $2,000 | |
| 8-11 dBA | ☐ | Add $4,000 | |
| 12 dBA or more | ☐ | Add $6,000 | |
| **3. Achievable Noise Reduction** | check one | 7 dBA* | |
| 5 dBA | ☐ | Add $0 | |
| 6-8 dBA | ☑ | Add $2,000 | **$2,000** |
| 9-11 dBA | ☐ | Add $4,000 | |
| 12 dBA or more | ☐ | Add $6,000 | |
| **Either New Construction or Pre-1978?** | check one | | |
| YES on either one | ☐ | Add $10,000 | |
| NO on both | ☑ | Add $0 | **$0** |
| **Reasonable Allowance Per Residence** | | | **$39,000** |
| **Number of Benefited Residences**** | | | **26** |
| **Total Unmodified Reasonable Allowance** | | | **$1,014,000** |

* at Critical Design Receiver

** Number of benefited residences according to the feasible barrier that is comprised of various wall heights.

**BUILD ALTERNATIVE - OUTSIDE WIDENING OPTION**
**CALCULATION OF REASONABLE ALLOWANCE**

| | | | |
|---|---|---|---|
| Project: Highway 101 South Coast HOV Project | Project Location: Santa Barbara County | | Date: 03-02-2010 |
| Noise Barrier I.D. & Location: | S181 / R/W | | |
| Base Allowance (2008 Dollars) | | | **$31,000** |
| **1. Absolute Noise Levels** | check one | 78 dBA* | |
| 69 dBA or less | ☐ | Add $2,000 | |
| 70-74 dBA | ☐ | Add $4,000 | |
| 75-78 dBA | ☑ | Add $6,000 | **$6,000** |
| More than 78 dBA | ☐ | Add $8,000 | |
| **2."Build" VS Existing Noise Levels** | check one | 2 dBA* | |
| Less than 3 dBA | ☑ | Add $0 | **$0** |
| 3-7 dBA | ☐ | Add $2,000 | |
| 8-11 dBA | ☐ | Add $4,000 | |
| 12 dBA or more | ☐ | Add $6,000 | |
| **3. Achievable Noise Reduction** | check one | 10 dBA* | |
| 5 dBA | ☐ | Add $0 | |
| 6-8 dBA | ☐ | Add $2,000 | |
| 9-11 dBA | ☑ | Add $4,000 | **$4,000** |
| 12 dBA or more | ☐ | Add $6,000 | |
| **Either New Construction or Pre-1978?** | check one | | |
| YES on either one | ☐ | Add $10,000 | |
| NO on both | ☑ | Add $0 | **$0** |
| **Reasonable Allowance Per Residence** | | | **$41,000** |
| **Number of Benefited Residences** | | | **48** |
| **Total Unmodified Reasonable Allowance** | | | **$1,968,000** |

* at Critical Design Receiver

**BUILD ALTERNATIVE - OUTSIDE WIDENING OPTION**
**CALCULATION OF REASONABLE ALLOWANCE**

| | | | |
|---|---|---|---|
| Project: Highway 101 South Coast HOV Project | Project Location: Santa Barbara County | | Date: 03-02-2010 |
| Noise Barrier I.D. & Location: | S238 / R/W | | |
| Base Allowance (2008 Dollars) | | | **$31,000** |
| **1. Absolute Noise Levels** | check one | 67 dBA* | |
| 69 dBA or less | ☑ | Add $2,000 | **$2,000** |
| 70-74 dBA | ☐ | Add $4,000 | |
| 75-78 dBA | ☐ | Add $6,000 | |
| More than 78 dBA | ☐ | Add $8,000 | |
| **2."Build" VS Existing Noise Levels** | check one | 3 dBA* | |
| Less than 3 dBA | ☐ | Add $0 | |
| 3-7 dBA | ☑ | Add $2,000 | **$2,000** |
| 8-11 dBA | ☐ | Add $4,000 | |
| 12 dBA or more | ☐ | Add $6,000 | |
| **3. Achievable Noise Reduction** | check one | 5 dBA* | |
| 5 dBA | ☑ | Add $0 | **$0** |
| 6-8 dBA | ☐ | Add $2,000 | |
| 9-11 dBA | ☐ | Add $4,000 | |
| 12 dBA or more | ☐ | Add $6,000 | |
| **Either New Construction or Pre-1978?** | check one | | |
| YES on either one | ☑ | Add $10,000 | **$10,000** |
| NO on both | ☐ | Add $0 | |
| **Reasonable Allowance Per Residence** | | | **$45,000** |
| **Number of Benefited Residences** | | | **1** |
| **Total Unmodified Reasonable Allowance** | | | **$45,000** |

* at Critical Design Receiver

**BUILD ALTERNATIVE - OUTSIDE WIDENING OPTION**
**CALCULATION OF REASONABLE ALLOWANCE**

| | | | |
|---|---|---|---|
| Project: Highway 101 South Coast HOV Project | Project Location: Santa Barbara County | | Date: 03-02-2010 |
| Noise Barrier I.D. & Location: | S257 / Shoulder | | |
| Base Allowance (2008 Dollars) | | | **$31,000** |
| **1. Absolute Noise Levels** | check one | 67 dBA* | |
| 69 dBA or less | ☑ | Add $2,000 | **$2,000** |
| 70-74 dBA | ☐ | Add $4,000 | |
| 75-78 dBA | ☐ | Add $6,000 | |
| More than 78 dBA | ☐ | Add $8,000 | |
| **2."Build" VS Existing Noise Levels** | check one | 1 dBA* | |
| Less than 3 dBA | ☑ | Add $0 | **$0** |
| 3-7 dBA | ☐ | Add $2,000 | |
| 8-11 dBA | ☐ | Add $4,000 | |
| 12 dBA or more | ☐ | Add $6,000 | |
| **3. Achievable Noise Reduction** | check one | 6 dBA* | |
| 5 dBA | ☐ | Add $0 | |
| 6-8 dBA | ☑ | Add $2,000 | **$2,000** |
| 9-11 dBA | ☐ | Add $4,000 | |
| 12 dBA or more | ☐ | Add $6,000 | |
| **Either New Construction or Pre-1978?** | check one | | |
| YES on either one | ☑ | Add $10,000 | **$10,000** |
| NO on both | ☐ | Add $0 | |
| **Reasonable Allowance Per Residence** | | | **$45,000** |
| **Number of Benefited Residences** | | | **12** |
| **Total Unmodified Reasonable Allowance** | | | **$540,000** |

* at Critical Design Receiver

**BUILD ALTERNATIVE - OUTSIDE WIDENING OPTION**
**CALCULATION OF REASONABLE ALLOWANCE**

| | | | |
|---|---|---|---|
| Project: Highway 101 South Coast HOV Project | Project Location: Santa Barbara County | | Date: 03-02-2010 |
| Noise Barrier I.D. & Location: | S281 / Shoulder & R/W | | |
| Base Allowance (2008 Dollars) | | | **$31,000** |
| **1. Absolute Noise Levels** | check one | 71 dBA* | |
| 69 dBA or less | ☐ | Add $2,000 | |
| 70-74 dBA | ☑ | Add $4,000 | **$4,000** |
| 75-78 dBA | ☐ | Add $6,000 | |
| More than 78 dBA | ☐ | Add $8,000 | |
| **2."Build" VS Existing Noise Levels** | check one | 2 dBA* | |
| Less than 3 dBA | ☑ | Add $0 | **$0** |
| 3-7 dBA | ☐ | Add $2,000 | |
| 8-11 dBA | ☐ | Add $4,000 | |
| 12 dBA or more | ☐ | Add $6,000 | |
| **3. Achievable Noise Reduction** | check one | 8 dBA* | |
| 5 dBA | ☐ | Add $0 | |
| 6-8 dBA | ☑ | Add $2,000 | **$2,000** |
| 9-11 dBA | ☐ | Add $4,000 | |
| 12 dBA or more | ☐ | Add $6,000 | |
| **Either New Construction or Pre-1978?** | check one | | |
| YES on either one | ☑ | Add $10,000 | **$10,000** |
| NO on both | ☐ | Add $0 | |
| **Reasonable Allowance Per Residence** | | | **$47,000** |
| **Number of Benefited Residences** | | | **68** |
| **Total Unmodified Reasonable Allowance** | | | **$3,196,000** |

* at Critical Design Receiver

**BUILD ALTERNATIVE - OUTSIDE WIDENING OPTION**
**CALCULATION OF REASONABLE ALLOWANCE**

| | | | |
|---|---|---|---|
| Project: Highway 101 South Coast HOV Project | Project Location: Santa Barbara County | | Date: 03-02-2010 |
| Noise Barrier I.D. & Location: | S310 / R/W | | |
| Base Allowance (2008 Dollars) | | | **$31,000** |
| **1. Absolute Noise Levels** | check one | 74 dBA* | |
| 69 dBA or less | ☐ | Add $2,000 | |
| 70-74 dBA | ☑ | Add $4,000 | **$4,000** |
| 75-78 dBA | ☐ | Add $6,000 | |
| More than 78 dBA | ☐ | Add $8,000 | |
| **2."Build" VS Existing Noise Levels** | check one | 3 dBA* | |
| Less than 3 dBA | ☐ | Add $0 | |
| 3-7 dBA | ☑ | Add $2,000 | **$2,000** |
| 8-11 dBA | ☐ | Add $4,000 | |
| 12 dBA or more | ☐ | Add $6,000 | |
| **3. Achievable Noise Reduction** | check one | 9 dBA* | |
| 5 dBA | ☐ | Add $0 | |
| 6-8 dBA | ☐ | Add $2,000 | |
| 9-11 dBA | ☑ | Add $4,000 | **$4,000** |
| 12 dBA or more | ☐ | Add $6,000 | |
| **Either New Construction or Pre-1978?** | check one | | |
| YES on either one | ☑ | Add $10,000 | **$10,000** |
| NO on both | ☐ | Add $0 | |
| **Reasonable Allowance Per Residence** | | | **$51,000** |
| **Number of Benefited Residences** | | | **17** |
| **Total Unmodified Reasonable Allowance** | | | **$867,000** |

* at Critical Design Receiver

**BUILD ALTERNATIVE - OUTSIDE WIDENING OPTION**
**CALCULATION OF REASONABLE ALLOWANCE**

| | | | |
|---|---|---|---|
| Project: Highway 101 South Coast HOV Project | Project Location: Santa Barbara County | | Date: 03-02-2010 |
| Noise Barrier I.D. & Location: | S334 / R/W | | |
| Base Allowance (2008 Dollars) | | | **$31,000** |
| **1. Absolute Noise Levels** | check one | 74 dBA* | |
| 69 dBA or less | ☐ | Add $2,000 | |
| 70-74 dBA | ☑ | Add $4,000 | **$4,000** |
| 75-78 dBA | ☐ | Add $6,000 | |
| More than 78 dBA | ☐ | Add $8,000 | |
| **2."Build" VS Existing Noise Levels** | check one | 2 dBA* | |
| Less than 3 dBA | ☑ | Add $0 | **$0** |
| 3-7 dBA | ☐ | Add $2,000 | |
| 8-11 dBA | ☐ | Add $4,000 | |
| 12 dBA or more | ☐ | Add $6,000 | |
| **3. Achievable Noise Reduction** | check one | 6 dBA* | |
| 5 dBA | ☐ | Add $0 | |
| 6-8 dBA | ☑ | Add $2,000 | **$2,000** |
| 9-11 dBA | ☐ | Add $4,000 | |
| 12 dBA or more | ☐ | Add $6,000 | |
| **Either New Construction or Pre-1978?** | check one | | |
| YES on either one | ☑ | Add $10,000 | **$10,000** |
| NO on both | ☐ | Add $0 | |
| **Reasonable Allowance Per Residence** | | | **$47,000** |
| **Number of Benefited Residences** | | | **1** |
| **Total Unmodified Reasonable Allowance** | | | **$47,000** |

* at Critical Design Receiver

**BUILD ALTERNATIVE - OUTSIDE WIDENING OPTION**
**CALCULATION OF REASONABLE ALLOWANCE**

| | | | |
|---|---|---|---|
| Project: Highway 101 South Coast HOV Project | Project Location: Santa Barbara County | | Date: 03-02-2010 |
| Noise Barrier I.D. & Location: | S374 / R/W | | |
| Base Allowance (2008 Dollars) | | | **$31,000** |
| **1. Absolute Noise Levels** | check one | 73 dBA* | |
| 69 dBA or less | ☐ | Add $2,000 | |
| 70-74 dBA | ☑ | Add $4,000 | **$4,000** |
| 75-78 dBA | ☐ | Add $6,000 | |
| More than 78 dBA | ☐ | Add $8,000 | |
| **2."Build" VS Existing Noise Levels** | check one | 2 dBA* | |
| Less than 3 dBA | ☑ | Add $0 | **$0** |
| 3-7 dBA | ☐ | Add $2,000 | |
| 8-11 dBA | ☐ | Add $4,000 | |
| 12 dBA or more | ☐ | Add $6,000 | |
| **3. Achievable Noise Reduction** | check one | 7 dBA* | |
| 5 dBA | ☐ | Add $0 | |
| 6-8 dBA | ☑ | Add $2,000 | **$2,000** |
| 9-11 dBA | ☐ | Add $4,000 | |
| 12 dBA or more | ☐ | Add $6,000 | |
| **Either New Construction or Pre-1978?** | check one | | |
| YES on either one | ☐ | Add $10,000 | |
| NO on both | ☑ | Add $0 | **$0** |
| **Reasonable Allowance Per Residence** | | | **$37,000** |
| **Number of Benefited Residences** | | | **12** |
| **Total Unmodified Reasonable Allowance** | | | **$444,000** |

* at Critical Design Receiver

**BUILD ALTERNATIVE - OUTSIDE WIDENING OPTION**
**CALCULATION OF REASONABLE ALLOWANCE**

| | | | |
|---|---|---|---|
| Project: Highway 101 South Coast HOV Project | Project Location: | | Date: 03-02-2010 |
| | Santa Barbara County | | |
| Noise Barrier I.D. & Location: | S392 / R/W | | |
| Base Allowance (2008 Dollars) | | | **$31,000** |
| **1. Absolute Noise Levels** | check one | 74 dBA* | |
| 69 dBA or less | ☐ | Add $2,000 | |
| 70-74 dBA | ☑ | Add $4,000 | **$4,000** |
| 75-78 dBA | ☐ | Add $6,000 | |
| More than 78 dBA | ☐ | Add $8,000 | |
| **2."Build" VS Existing Noise Levels** | check one | 2 dBA* | |
| Less than 3 dBA | ☑ | Add $0 | **$0** |
| 3-7 dBA | ☐ | Add $2,000 | |
| 8-11 dBA | ☐ | Add $4,000 | |
| 12 dBA or more | ☐ | Add $6,000 | |
| **3. Achievable Noise Reduction** | check one | 12 dBA* | |
| 5 dBA | ☐ | Add $0 | |
| 6-8 dBA | ☐ | Add $2,000 | |
| 9-11 dBA | ☐ | Add $4,000 | |
| 12 dBA or more | ☑ | Add $6,000 | **$6,000** |
| **Either New Construction or Pre-1978?** | check one | | |
| YES on either one | ☑ | Add $10,000 | **$10,000** |
| NO on both | ☐ | Add $0 | |
| **Reasonable Allowance Per Residence** | | | **$51,000** |
| **Number of Benefited Residences** | | | **39** |
| **Total Unmodified Reasonable Allowance** | | | **$1,989,000** |

* at Critical Design Receiver

**BUILD ALTERNATIVE - OUTSIDE WIDENING OPTION**
**CALCULATION OF REASONABLE ALLOWANCE**

| | | | |
|---|---|---|---|
| Project: Highway 101 South Coast HOV Project | Project Location: | | Date: 03-02-2010 |
| | Santa Barbara County | | |
| Noise Barrier I.D. & Location: | S405 / Shoulder | | |
| Base Allowance (2008 Dollars) | | | **$31,000** |
| **1. Absolute Noise Levels** | check one | 68 dBA* | |
| 69 dBA or less | ☑ | Add $2,000 | **$2,000** |
| 70-74 dBA | ☐ | Add $4,000 | |
| 75-78 dBA | ☐ | Add $6,000 | |
| More than 78 dBA | ☐ | Add $8,000 | |
| **2."Build" VS Existing Noise Levels** | check one | 2 dBA* | |
| Less than 3 dBA | ☑ | Add $0 | **$0** |
| 3-7 dBA | ☐ | Add $2,000 | |
| 8-11 dBA | ☐ | Add $4,000 | |
| 12 dBA or more | ☐ | Add $6,000 | |
| **3. Achievable Noise Reduction** | check one | 5 dBA* | |
| 5 dBA | ☑ | Add $0 | **$0** |
| 6-8 dBA | ☐ | Add $2,000 | |
| 9-11 dBA | ☐ | Add $4,000 | |
| 12 dBA or more | ☐ | Add $6,000 | |
| **Either New Construction or Pre-1978?** | check one | | |
| YES on either one | ☐ | Add $10,000 | |
| NO on both | ☑ | Add $0 | **$0** |
| **Reasonable Allowance Per Residence** | | | **$33,000** |
| **Number of Benefited Residences** | | | **1** |
| **Total Unmodified Reasonable Allowance** | | | **$33,000** |

* at Critical Design Receiver

**BUILD ALTERNATIVE - OUTSIDE WIDENING OPTION**
**CALCULATION OF REASONABLE ALLOWANCE**

| | | | |
|---|---|---|---|
| Project: Highway 101 South Coast HOV Project | Project Location: Santa Barbara County | | Date: 03-02-2010 |
| Noise Barrier I.D. & Location: | S414 / Shoulder | | |
| Base Allowance (2008 Dollars) | | | **$31,000** |
| **1. Absolute Noise Levels** | check one | 73 dBA* | |
| 69 dBA or less | ☐ | Add $2,000 | |
| 70-74 dBA | ☑ | Add $4,000 | **$4,000** |
| 75-78 dBA | ☐ | Add $6,000 | |
| More than 78 dBA | ☐ | Add $8,000 | |
| **2."Build" VS Existing Noise Levels** | check one | 1 dBA* | |
| Less than 3 dBA | ☑ | Add $0 | **$0** |
| 3-7 dBA | ☐ | Add $2,000 | |
| 8-11 dBA | ☐ | Add $4,000 | |
| 12 dBA or more | ☐ | Add $6,000 | |
| **3. Achievable Noise Reduction** | check one | 11 dBA* | |
| 5 dBA | ☐ | Add $0 | |
| 6-8 dBA | ☐ | Add $2,000 | |
| 9-11 dBA | ☑ | Add $4,000 | **$4,000** |
| 12 dBA or more | ☐ | Add $6,000 | |
| **Either New Construction or Pre-1978?** | check one | | |
| YES on either one | ☑ | Add $10,000 | **$10,000** |
| NO on both | ☐ | Add $0 | |
| **Reasonable Allowance Per Residence** | | | **$49,000** |
| **Number of Benefited Residences** | | | **49** |
| **Total Unmodified Reasonable Allowance** | | | **$2,401,000** |

* at Critical Design Receiver

**BUILD ALTERNATIVE - OUTSIDE WIDENING OPTION**
**CALCULATION OF REASONABLE ALLOWANCE**

| | | | |
|---|---|---|---|
| Project: Highway 101 South Coast HOV Project | Project Location: Santa Barbara County | | Date: 03-02-2010 |
| Noise Barrier I.D. & Location: | S424 / Shoulder | | |
| Base Allowance (2008 Dollars) | | | **$31,000** |
| **1. Absolute Noise Levels** | check one | 75 dBA* | |
| 69 dBA or less | ☐ | Add $2,000 | |
| 70-74 dBA | ☐ | Add $4,000 | |
| 75-78 dBA | ☑ | Add $6,000 | **$6,000** |
| More than 78 dBA | ☐ | Add $8,000 | |
| **2."Build" VS Existing Noise Levels** | check one | 1 dBA* | |
| Less than 3 dBA | ☑ | Add $0 | **$0** |
| 3-7 dBA | ☐ | Add $2,000 | |
| 8-11 dBA | ☐ | Add $4,000 | |
| 12 dBA or more | ☐ | Add $6,000 | |
| **3. Achievable Noise Reduction** | check one | 6 dBA* | |
| 5 dBA | ☐ | Add $0 | |
| 6-8 dBA | ☑ | Add $2,000 | **$2,000** |
| 9-11 dBA | ☐ | Add $4,000 | |
| 12 dBA or more | ☐ | Add $6,000 | |
| **Either New Construction or Pre-1978?** | check one | | |
| YES on either one | ☑ | Add $10,000 | **$10,000** |
| NO on both | ☐ | Add $0 | |
| **Reasonable Allowance Per Residence** | | | **$49,000** |
| **Number of Benefited Residences**** | | | **10** |
| **Total Unmodified Reasonable Allowance** | | | **$490,000** |

* at Critical Design Receiver

** Number of benefited residences according to the feasible barrier that is comprised of various wall heights.

**BUILD ALTERNATIVE - OUTSIDE WIDENING OPTION**
**CALCULATION OF REASONABLE ALLOWANCE**

| | | | |
|---|---|---|---|
| Project: Highway 101 South Coast HOV Project | Project Location: | | Date: 03-02-2010 |
| | Santa Barbara County | | |
| Noise Barrier I.D. & Location: | S446 / Shoulder | | |
| Base Allowance (2008 Dollars) | | | **$31,000** |
| **1. Absolute Noise Levels** | check one | 69 dBA* | |
| 69 dBA or less | ☑ | Add $2,000 | **$2,000** |
| 70-74 dBA | ☐ | Add $4,000 | |
| 75-78 dBA | ☐ | Add $6,000 | |
| More than 78 dBA | ☐ | Add $8,000 | |
| **2."Build" VS Existing Noise Levels** | check one | 3 dBA* | |
| Less than 3 dBA | ☐ | Add $0 | |
| 3-7 dBA | ☑ | Add $2,000 | **$2,000** |
| 8-11 dBA | ☐ | Add $4,000 | |
| 12 dBA or more | ☐ | Add $6,000 | |
| **3. Achievable Noise Reduction** | check one | 8 dBA* | |
| 5 dBA | ☐ | Add $0 | |
| 6-8 dBA | ☑ | Add $2,000 | **$2,000** |
| 9-11 dBA | ☐ | Add $4,000 | |
| 12 dBA or more | ☐ | Add $6,000 | |
| **Either New Construction or Pre-1978?** | check one | | |
| YES on either one | ☐ | Add $10,000 | |
| NO on both | ☑ | Add $0 | **$0** |
| **Reasonable Allowance Per Residence** | | | **$37,000** |
| **Number of Benefited Residences** | | | **1** |
| **Total Unmodified Reasonable Allowance** | | | **$37,000** |

* at Critical Design Receiver

**BUILD ALTERNATIVE - OUTSIDE WIDENING OPTION**
**CALCULATION OF REASONABLE ALLOWANCE**

| | | | |
|---|---|---|---|
| Project: Highway 101 South Coast HOV Project | Project Location: Santa Barbara County | | Date: 03-02-2010 |
| Noise Barrier I.D. & Location: | S452 / Shoulder | | |
| Base Allowance (2008 Dollars) | | | **$31,000** |
| **1. Absolute Noise Levels** | check one | 70 dBA* | |
| 69 dBA or less | ☐ | Add $2,000 | |
| 70-74 dBA | ☑ | Add $4,000 | **$4,000** |
| 75-78 dBA | ☐ | Add $6,000 | |
| More than 78 dBA | ☐ | Add $8,000 | |
| **2."Build" VS Existing Noise Levels** | check one | 3 dBA* | |
| Less than 3 dBA | ☐ | Add $0 | |
| 3-7 dBA | ☑ | Add $2,000 | **$2,000** |
| 8-11 dBA | ☐ | Add $4,000 | |
| 12 dBA or more | ☐ | Add $6,000 | |
| **3. Achievable Noise Reduction** | check one | 8 dBA* | |
| 5 dBA | ☐ | Add $0 | |
| 6-8 dBA | ☑ | Add $2,000 | **$2,000** |
| 9-11 dBA | ☐ | Add $4,000 | |
| 12 dBA or more | ☐ | Add $6,000 | |
| **Either New Construction or Pre-1978?** | check one | | |
| YES on either one | ☑ | Add $10,000 | **$10,000** |
| NO on both | ☐ | Add $0 | |
| **Reasonable Allowance Per Residence** | | | **$49,000** |
| **Number of Benefited Residences** | | | **14** |
| **Total Unmodified Reasonable Allowance** | | | **$686,000** |

* at Critical Design Receiver

**BUILD ALTERNATIVE - OUTSIDE WIDENING OPTION**
**CALCULATION OF REASONABLE ALLOWANCE**

| | | | |
|---|---|---|---|
| Project: Highway 101 South Coast HOV Project | Project Location: | | Date: 03-02-2010 |
| | Santa Barbara County | | |
| Noise Barrier I.D. & Location: | S464 / Shoulder & R/W | | |
| Base Allowance (2008 Dollars) | | | **$31,000** |
| **1. Absolute Noise Levels** | check one | 76 dBA* | |
| 69 dBA or less | ☐ | Add $2,000 | |
| 70-74 dBA | ☐ | Add $4,000 | |
| 75-78 dBA | ☑ | Add $6,000 | **$6,000** |
| More than 78 dBA | ☐ | Add $8,000 | |
| **2."Build" VS Existing Noise Levels** | check one | 2 dBA* | |
| Less than 3 dBA | ☑ | Add $0 | **$0** |
| 3-7 dBA | ☐ | Add $2,000 | |
| 8-11 dBA | ☐ | Add $4,000 | |
| 12 dBA or more | ☐ | Add $6,000 | |
| **3. Achievable Noise Reduction** | check one | 10 dBA* | |
| 5 dBA | ☐ | Add $0 | |
| 6-8 dBA | ☐ | Add $2,000 | |
| 9-11 dBA | ☑ | Add $4,000 | **$4,000** |
| 12 dBA or more | ☐ | Add $6,000 | |
| **Either New Construction or Pre-1978?** | check one | | |
| YES on either one | ☑ | Add $10,000 | **$10,000** |
| NO on both | ☐ | Add $0 | |
| **Reasonable Allowance Per Residence** | | | **$51,000** |
| **Number of Benefited Residences**** | | | **13** |
| **Total Unmodified Reasonable Allowance** | | | **$663,000** |

* at Critical Design Receiver

** Number of benefited residences according to the feasible barrier that is comprised of various wall heights.

**BUILD ALTERNATIVE - OUTSIDE WIDENING OPTION**
**CALCULATION OF REASONABLE ALLOWANCE**

| | | | |
|---|---|---|---|
| Project: Highway 101 South Coast HOV Project | Project Location: | | Date: 03-02-2010 |
| | Santa Barbara County | | |
| Noise Barrier I.D. & Location: | S471 / Shoulder | | |
| Base Allowance (2008 Dollars) | | | **$31,000** |
| **1. Absolute Noise Levels** | check one | 72 dBA* | |
| 69 dBA or less | ☐ | Add $2,000 | |
| 70-74 dBA | ☑ | Add $4,000 | **$4,000** |
| 75-78 dBA | ☐ | Add $6,000 | |
| More than 78 dBA | ☐ | Add $8,000 | |
| **2."Build" VS Existing Noise Levels** | check one | 1 dBA* | |
| Less than 3 dBA | ☑ | Add $0 | **$0** |
| 3-7 dBA | ☐ | Add $2,000 | |
| 8-11 dBA | ☐ | Add $4,000 | |
| 12 dBA or more | ☐ | Add $6,000 | |
| **3. Achievable Noise Reduction** | check one | 8 dBA* | |
| 5 dBA | ☐ | Add $0 | |
| 6-8 dBA | ☑ | Add $2,000 | **$2,000** |
| 9-11 dBA | ☐ | Add $4,000 | |
| 12 dBA or more | ☐ | Add $6,000 | |
| **Either New Construction or Pre-1978?** | check one | | |
| YES on either one | ☑ | Add $10,000 | **$10,000** |
| NO on both | ☐ | Add $0 | |
| **Reasonable Allowance Per Residence** | | | **$47,000** |
| **Number of Benefited Residences**** | | | **18** |
| **Total Unmodified Reasonable Allowance** | | | **$846,000** |

* at Critical Design Receiver

** Number of benefited residences according to the feasible barrier that is comprised of various wall heights.

**BUILD ALTERNATIVE - OUTSIDE WIDENING OPTION**
**CALCULATION OF REASONABLE ALLOWANCE**

| | | | |
|---|---|---|---|
| Project: Highway 101 South Coast HOV Project | Project Location: | | Date: 03-02-2010 |
| | Santa Barbara County | | |
| Noise Barrier I.D. & Location: | S489 / Private Property | | |
| Base Allowance (2008 Dollars) | | | **$31,000** |
| **1. Absolute Noise Levels** | check one | 74 dBA* | |
| 69 dBA or less | ☐ | Add $2,000 | |
| 70-74 dBA | ☑ | Add $4,000 | **$4,000** |
| 75-78 dBA | ☐ | Add $6,000 | |
| More than 78 dBA | ☐ | Add $8,000 | |
| **2."Build" VS Existing Noise Levels** | check one | 1 dBA* | |
| Less than 3 dBA | ☑ | Add $0 | **$0** |
| 3-7 dBA | ☐ | Add $2,000 | |
| 8-11 dBA | ☐ | Add $4,000 | |
| 12 dBA or more | ☐ | Add $6,000 | |
| **3. Achievable Noise Reduction** | check one | 5 dBA* | |
| 5 dBA | ☑ | Add $0 | **$0** |
| 6-8 dBA | ☐ | Add $2,000 | |
| 9-11 dBA | ☐ | Add $4,000 | |
| 12 dBA or more | ☐ | Add $6,000 | |
| **Either New Construction or Pre-1978?** | check one | | |
| YES on either one | ☐ | Add $10,000 | |
| NO on both | ☑ | Add $0 | **$0** |
| **Reasonable Allowance Per Residence** | | | **$35,000** |
| **Number of Benefited Residences** | | | **4** |
| **Total Unmodified Reasonable Allowance** | | | **$140,000** |

* at Critical Design Receiver

**BUILD ALTERNATIVE - OUTSIDE WIDENING OPTION**
**CALCULATION OF REASONABLE ALLOWANCE**

| | | | |
|---|---|---|---|
| Project: Highway 101 South Coast HOV Project | Project Location: Santa Barbara County | | Date: 03-02-2010 |
| Noise Barrier I.D. & Location: | S498 / R/W | | |
| Base Allowance (2008 Dollars) | | | **$31,000** |
| **1. Absolute Noise Levels** | check one | 76 dBA* | |
| 69 dBA or less | ☐ | Add $2,000 | |
| 70-74 dBA | ☐ | Add $4,000 | |
| 75-78 dBA | ☑ | Add $6,000 | **$6,000** |
| More than 78 dBA | ☐ | Add $8,000 | |
| **2."Build" VS Existing Noise Levels** | check one | 3 dBA* | |
| Less than 3 dBA | ☐ | Add $0 | |
| 3-7 dBA | ☑ | Add $2,000 | **$2,000** |
| 8-11 dBA | ☐ | Add $4,000 | |
| 12 dBA or more | ☐ | Add $6,000 | |
| **3. Achievable Noise Reduction** | check one | 9 dBA* | |
| 5 dBA | ☐ | Add $0 | |
| 6-8 dBA | ☐ | Add $2,000 | |
| 9-11 dBA | ☑ | Add $4,000 | **$4,000** |
| 12 dBA or more | ☐ | Add $6,000 | |
| **Either New Construction or Pre-1978?** | check one | | |
| YES on either one | ☑ | Add $10,000 | **$10,000** |
| NO on both | ☐ | Add $0 | |
| **Reasonable Allowance Per Residence** | | | **$53,000** |
| **Number of Benefited Residences** | | | **11** |
| **Total Unmodified Reasonable Allowance** | | | **$583,000** |

* at Critical Design Receiver

**BUILD ALTERNATIVE - OUTSIDE WIDENING OPTION**
**CALCULATION OF REASONABLE ALLOWANCE**

| | | | |
|---|---|---|---|
| Project: Highway 101 South Coast HOV Project | Project Location: Santa Barbara County | | Date: 03-02-2010 |
| Noise Barrier I.D. & Location: | S520 / R/W | | |
| Base Allowance (2008 Dollars) | | | **$31,000** |
| **1. Absolute Noise Levels** | check one | 75 dBA* | |
| 69 dBA or less | ☐ | Add $2,000 | |
| 70-74 dBA | ☐ | Add $4,000 | |
| 75-78 dBA | ☑ | Add $6,000 | **$6,000** |
| More than 78 dBA | ☐ | Add $8,000 | |
| **2."Build" VS Existing Noise Levels** | check one | 2 dBA* | |
| Less than 3 dBA | ☑ | Add $0 | **$0** |
| 3-7 dBA | ☐ | Add $2,000 | |
| 8-11 dBA | ☐ | Add $4,000 | |
| 12 dBA or more | ☐ | Add $6,000 | |
| **3. Achievable Noise Reduction** | check one | 9 dBA* | |
| 5 dBA | ☐ | Add $0 | |
| 6-8 dBA | ☐ | Add $2,000 | |
| 9-11 dBA | ☑ | Add $4,000 | **$4,000** |
| 12 dBA or more | ☐ | Add $6,000 | |
| **Either New Construction or Pre-1978?** | check one | | |
| YES on either one | ☑ | Add $10,000 | **$10,000** |
| NO on both | ☐ | Add $0 | |
| **Reasonable Allowance Per Residence** | | | **$51,000** |
| **Number of Benefited Residences** | | | **16** |
| **Total Unmodified Reasonable Allowance** | | | **$816,000** |

* at Critical Design Receiver

**BUILD ALTERNATIVE - OUTSIDE WIDENING OPTION**
**CALCULATION OF REASONABLE ALLOWANCE**

| | | | |
|---|---|---|---|
| Project: Highway 101 South Coast HOV Project | Project Location: | | Date: 03-02-2010 |
| | Santa Barbara County | | |
| Noise Barrier I.D. & Location: | S519 / R/W | | |
| Base Allowance (2008 Dollars) | | | **$31,000** |
| **1. Absolute Noise Levels** | check one | 75 dBA* | |
| 69 dBA or less | ☐ | Add $2,000 | |
| 70-74 dBA | ☐ | Add $4,000 | |
| 75-78 dBA | ☑ | Add $6,000 | **$6,000** |
| More than 78 dBA | ☐ | Add $8,000 | |
| **2."Build" VS Existing Noise Levels** | check one | 2 dBA* | |
| Less than 3 dBA | ☑ | Add $0 | **$0** |
| 3-7 dBA | ☐ | Add $2,000 | |
| 8-11 dBA | ☐ | Add $4,000 | |
| 12 dBA or more | ☐ | Add $6,000 | |
| **3. Achievable Noise Reduction** | check one | 10 dBA* | |
| 5 dBA | ☐ | Add $0 | |
| 6-8 dBA | ☐ | Add $2,000 | |
| 9-11 dBA | ☑ | Add $4,000 | **$4,000** |
| 12 dBA or more | ☐ | Add $6,000 | |
| **Either New Construction or Pre-1978?** | check one | | |
| YES on either one | ☑ | Add $10,000 | **$10,000** |
| NO on both | ☐ | Add $0 | |
| **Reasonable Allowance Per Residence** | | | **$51,000** |
| **Number of Benefited Residences**** | | | **23** |
| **Total Unmodified Reasonable Allowance** | | | **$1,173,000** |

* at Critical Design Receiver

** Number of benefited residences according to the feasible barrier that is comprised of various wall heights.

**BUILD ALTERNATIVE - OUTSIDE WIDENING OPTION**
**CALCULATION OF REASONABLE ALLOWANCE**

| | | | |
|---|---|---|---|
| Project: Highway 101 South Coast HOV Project | Project Location: | | Date: 03-02-2010 |
| | Santa Barbara County | | |
| Noise Barrier I.D. & Location: | S535 / R/W | | |
| Base Allowance (2008 Dollars) | | | **$31,000** |
| **1. Absolute Noise Levels** | check one | 76 dBA* | |
| 69 dBA or less | ☐ | Add $2,000 | |
| 70-74 dBA | ☐ | Add $4,000 | |
| 75-78 dBA | ☑ | Add $6,000 | **$6,000** |
| More than 78 dBA | ☐ | Add $8,000 | |
| **2."Build" VS Existing Noise Levels** | check one | 3 dBA* | |
| Less than 3 dBA | ☐ | Add $0 | |
| 3-7 dBA | ☑ | Add $2,000 | **$2,000** |
| 8-11 dBA | ☐ | Add $4,000 | |
| 12 dBA or more | ☐ | Add $6,000 | |
| **3. Achievable Noise Reduction** | check one | 12 dBA* | |
| 5 dBA | ☐ | Add $0 | |
| 6-8 dBA | ☐ | Add $2,000 | |
| 9-11 dBA | ☐ | Add $4,000 | |
| 12 dBA or more | ☑ | Add $6,000 | **$6,000** |
| **Either New Construction or Pre-1978?** | check one | | |
| YES on either one | ☐ | Add $10,000 | |
| NO on both | ☑ | Add $0 | **$0** |
| **Reasonable Allowance Per Residence** | | | **$45,000** |
| **Number of Benefited Residences** | | | **6** |
| **Total Unmodified Reasonable Allowance** | | | **$270,000** |

* at Critical Design Receiver

**BUILD ALTERNATIVE - OUTSIDE WIDENING OPTION**
**CALCULATION OF REASONABLE ALLOWANCE**

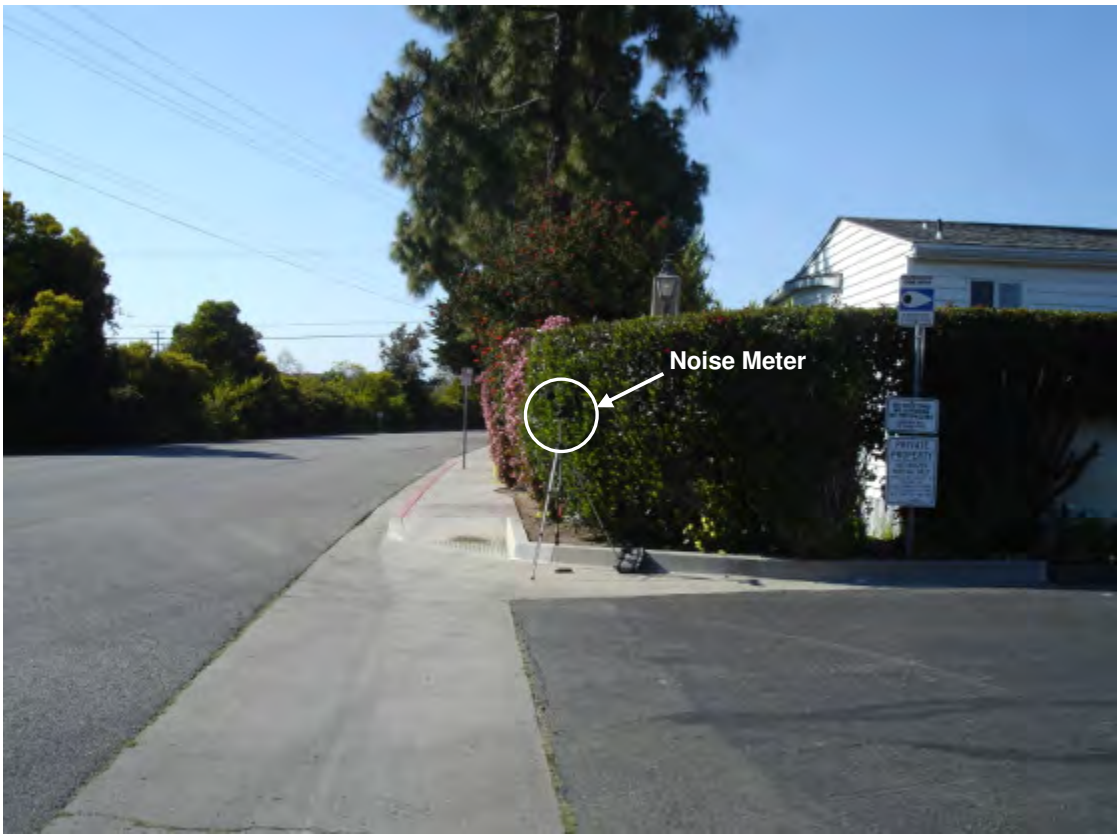
| | | | |
|---|---|---|---|
| Project: Highway 101 South Coast HOV Project | Project Location: Santa Barbara County | | Date: 03-02-2010 |
| Noise Barrier I.D. & Location: | S549 / Shoulder | | |
| Base Allowance (2008 Dollars) | | | **$31,000** |
| **1. Absolute Noise Levels** | check one | 71 dBA* | |
| 69 dBA or less | ☐ | Add $2,000 | |
| 70-74 dBA | ☑ | Add $4,000 | **$4,000** |
| 75-78 dBA | ☐ | Add $6,000 | |
| More than 78 dBA | ☐ | Add $8,000 | |
| **2."Build" VS Existing Noise Levels** | check one | 2 dBA* | |
| Less than 3 dBA | ☑ | Add $0 | **$0** |
| 3-7 dBA | ☐ | Add $2,000 | |
| 8-11 dBA | ☐ | Add $4,000 | |
| 12 dBA or more | ☐ | Add $6,000 | |
| **3. Achievable Noise Reduction** | check one | 8 dBA* | |
| 5 dBA | ☐ | Add $0 | |
| 6-8 dBA | ☑ | Add $2,000 | **$2,000** |
| 9-11 dBA | ☐ | Add $4,000 | |
| 12 dBA or more | ☐ | Add $6,000 | |
| **Either New Construction or Pre-1978?** | check one | | |
| YES on either one | ☑ | Add $10,000 | **$10,000** |
| NO on both | ☐ | Add $0 | |
| **Reasonable Allowance Per Residence** | | | **$47,000** |
| **Number of Benefited Residences**** | | | **21** |
| **Total Unmodified Reasonable Allowance** | | | **$987,000** |

* at Critical Design Receiver

** Number of benefited residences according to the feasible barrier that is comprised of various wall heights.

# **Appendix F** Supplemental Data

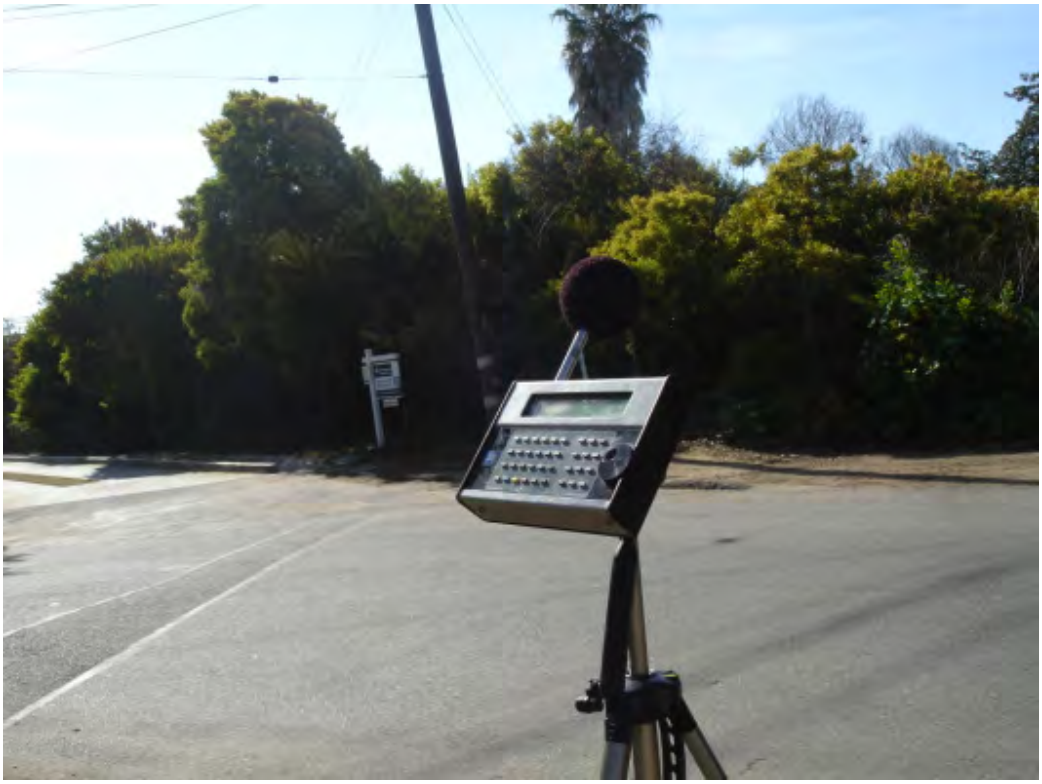
# MEASUREMENT SITE PHOTOGRAPHS




**SHORT-TERM MEASUREMENT SITE ST1**

**SHORT-TERM MEASUREMENT SITE ST2**

**SHORT-TERM MEASUREMENT SITE ST3**



**SHORT-TERM MEASUREMENT SITE ST4**

**SHORT-TERM MEASUREMENT SITE ST5**

**SHORT-TERM MEASUREMENT SITE ST6**

**SHORT-TERM MEASUREMENT SITE ST7**

**SHORT-TERM MEASUREMENT SITE ST8**

**SHORT-TERM MEASUREMENT SITE ST9**

**SHORT-TERM MEASUREMENT SITE ST10**

**SHORT-TERM MEASUREMENT SITE ST11**

**SHORT-TERM MEASUREMENT SITE ST12**

**SHORT-TERM MEASUREMENT SITE ST13**

**SHORT-TERM MEASUREMENT SITE ST14**

**SHORT-TERM MEASUREMENT SITE ST15**

**SHORT-TERM MEASUREMENT SITE ST15A**

**SHORT-TERM MEASUREMENT SITE ST16**

**SHORT-TERM MEASUREMENT SITE ST16A**

**SHORT-TERM MEASUREMENT SITE ST17**

**SHORT-TERM MEASUREMENT SITE ST18**

**SHORT-TERM MEASUREMENT SITE ST19**

**SHORT-TERM MEASUREMENT SITE ST120**

**SHORT-TERM MEASUREMENT SITE ST21**

**SHORT-TERM MEASUREMENT SITE ST22**

**SHORT-TERM MEASUREMENT SITE ST23**

**SHORT-TERM MEASUREMENT SITE ST24**

**SHORT-TERM MEASUREMENT SITE ST25**

**SHORT-TERM MEASUREMENT SITE ST26**

**SHORT-TERM MEASUREMENT SITE ST27**

**SHORT-TERM MEASUREMENT SITE ST28**

**SHORT-TERM MEASUREMENT SITE CS1**

**SHORT-TERM MEASUREMENT SITE CS2**

**SHORT-TERM MEASUREMENT SITE CS3**

**SHORT-TERM MEASUREMENT SITE CS4**

**SHORT-TERM MEASUREMENT SITE CS5**

**SHORT-TERM MEASUREMENT SITE CS6**

**SHORT-TERM MEASUREMENT SITE CS7**

**SHORT-TERM MEASUREMENT SITE CS8**

**SHORT-TERM MEASUREMENT SITE CS9**

**SHORT-TERM MEASUREMENT SITE CS10**

**SHORT-TERM MEASUREMENT SITE CS11**

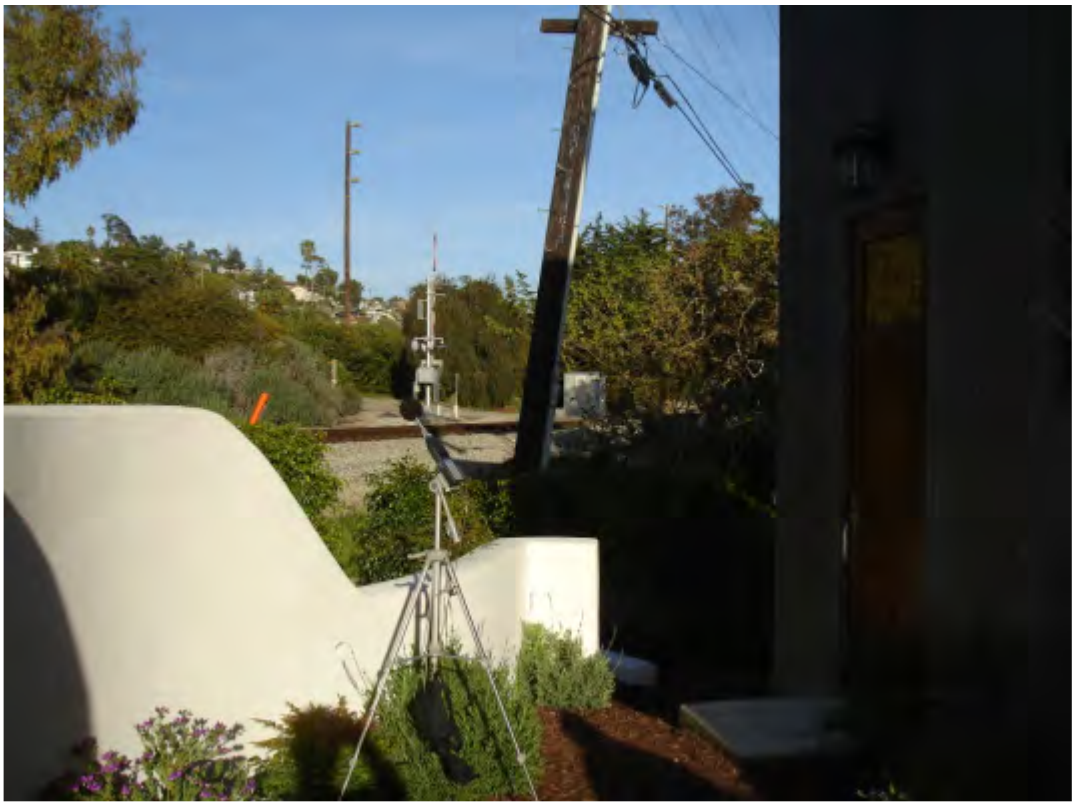
**SHORT-TERM MEASUREMENT SITE CS12**

**SHORT-TERM MEASUREMENT SITE CS13**

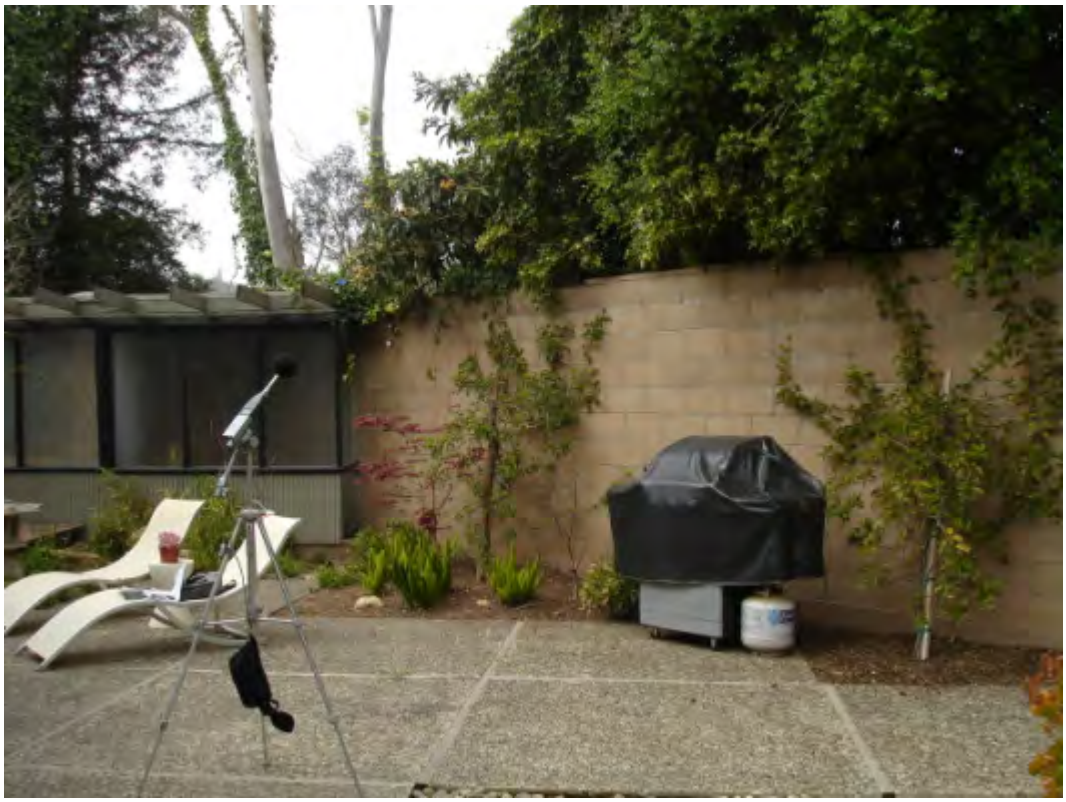
**SHORT-TERM MEASUREMENT SITE CS14**

**SHORT-TERM MEASUREMENT SITE CS15**

**SHORT-TERM MEASUREMENT SITE LT1**



**SHORT-TERM MEASUREMENT SITE LT2**



**SHORT-TERM MEASUREMENT SITE LT3**

# FIELD SURVEY FORM
# SHORT-TERM MEASUREMENT SITES

# FIELD SURVEY FORM

| | | | |
|---|---|---|---|
| PROJECT: Highway 101 HOV Project | | ENGINEER: Philip Jo / Jabra | DATE: 3/16/09 |
| MEASUREMENT ADDRESS: 5750 Via Real (Rancho Granada MHP) | CITY: Carpinteria | ☒ Single-Family ☐ Multi-Family ☐ Recreational ☐ Commercial | SITE NO.: ST 1 |

| SOUND LEVEL METER: | MICROPHONE: | PRE AMP: | NOTES: |
|---|---|---|---|
| ☒ LD-870 ☐ LD-820 | ☒ WIND SCREEN | ☒ LD-900 | SYSTEM PWR: ☐ BAT ☒ AC |
| ☐ LD-824 ☐ LD-812 | ☒ NON-POLAR ☐ POLARIZED | ☐ LD-828 | (observations at start of measurement) |
| ☐ LD-2900 ☐ _____ | ☒ 1/2-INCH ☐ FREEFIELD | ☐ _____ | TEMP: 65.5 °F R.H.: 46 % |
| SERIAL #: 0496 | ☐ 1-INCH ☐ RANDOM | SERIAL #: 2270 | WIND SPEED: Calm MPH |
| | SERIAL #: 2029 | | FROM (DIR): _____ |

| CALIBRATOR: | Freq, Hz. | CALIBRATION RECORD: Input, dB / Reading, dB / Offset, dB / Time |
|---|---|---|
| ☒ LD CA250 | ☒ 250 | Before 114, 114, 220, 13:58 |
| ☐ _____ | ☐ 1000 | After 114, 114, –, 16:09 |
| S/N 2127 | ☐ _____ | |

SKIES: clear

CAMERA _____

PHOTO NOs. 26 –

METER SETTINGS:
☒ A-WTD ☐ LINEAR ☒ SLOW ☐ 1/1 OCT ☒ INTERVALS 20 - MINUTE
☐ C-WTD ☐ IMPULSE ☐ FAST ☐ 1/3 OCT ☐ $L_N$ PERCENTILE VALUES

NOTES:
- The Freeway is similar level relative to M. location
- Local traffic on Via Real (~40 mph)

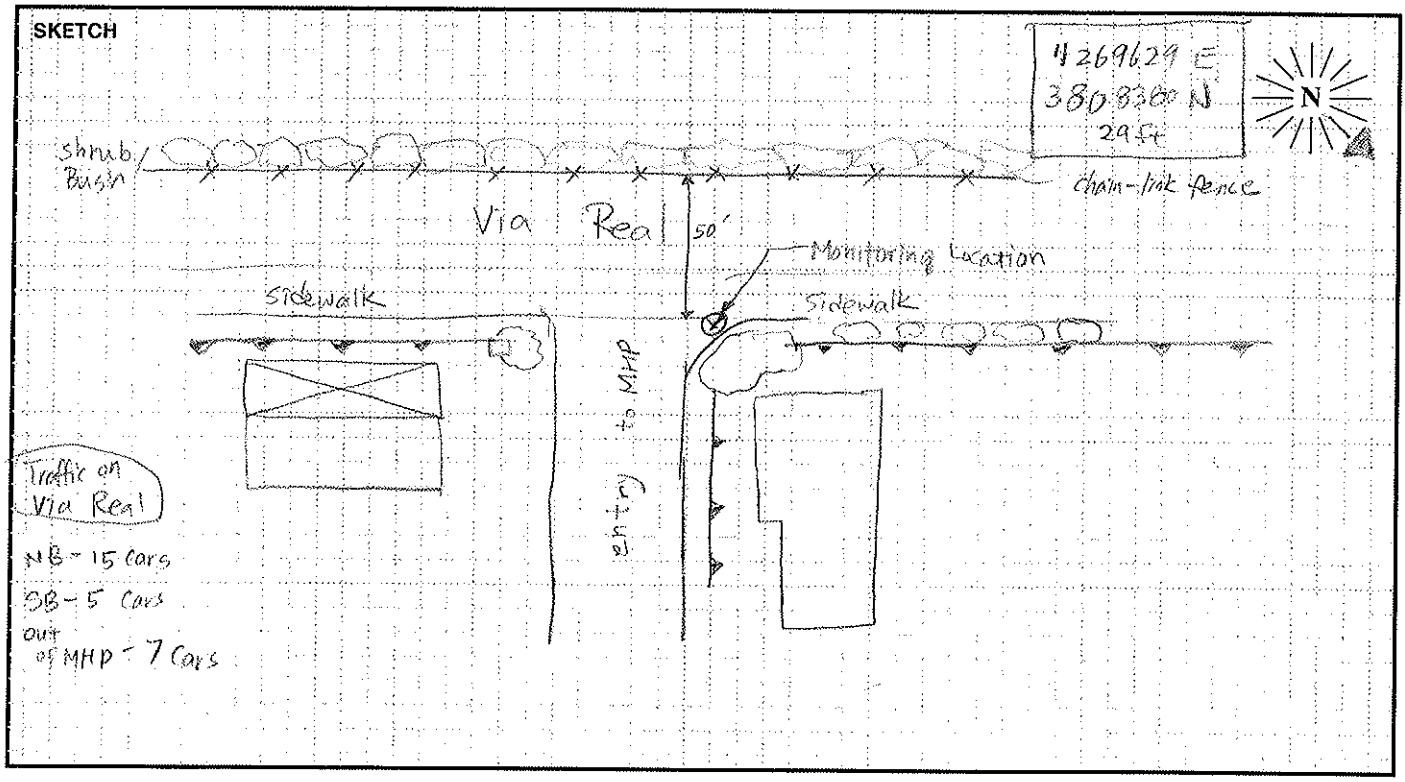
Dist. to Center of Nearest Lane _____ ☐ Video ☐ Radar

Counts: AT MT HT

MEAS. TYPE: ☐ Long Term ☒ Short Term

| DATE | START TIME | STOP TIME | $L_{MIN}$ | $L_{99}$ | $L_{90}$ | $L_{50}$ | $L_{25}$ | $L_{10}$ | $L_{01}$ | $L_{MAX}$ | $L_{EQ}$ | NOTES: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3/16/09 | 15:47 | 16:07 | 61.8 | 63.9 | 67.6 | 71.3 | 72.8 | 74.1 | 76.6 | 83.9 | 71.8 | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |

SKETCH




PARSONS

# FIELD SURVEY FORM

| | | | |
|---|---|---|---|
| PROJECT: Highway 101 HOV Project | | ENGINEER: Philip Jo / Jabra | DATE: 3/17/09 |
| MEASUREMENT ADDRESS: (Village Gardens) 4692 Carpinteria Ave. #26 | CITY: Carpinteria | ☒ Single-Family ☐ Multi-Family ☐ Recreational ☐ Commercial | SITE NO.: ST2 |

| SOUND LEVEL METER: | MICROPHONE: | PRE AMP: | NOTES: |
|---|---|---|---|
| ☒ LD-870 ☐ LD-820 | ☒ WIND SCREEN | ☒ LD-900 | SYSTEM PWR: ☒ BAT ☐ AC |
| ☐ LD-824 ☐ LD-812 | ☒ NON-POLAR ☐ POLARIZED | ☐ LD-828 | (observations at start of measurement) |
| ☐ LD-2900 ☐ _____ | ☒ 1/2-INCH ☐ FREEFIELD | ☐ _____ | TEMP: 73.2 °F R.H.: 42 % |
| SERIAL #: 0496 | ☐ 1-INCH ☐ RANDOM | SERIAL #: 2270 | WIND SPEED: 1.2 MPH |
| | SERIAL #: 2029 | | FROM (DIR): _____ |

| CALIBRATOR: | | CALIBRATION RECORD: Input, dB / Reading, dB / Offset, dB / Time |
|---|---|---|
| ☒ LD CA250 | Freq, Hz. ☒ 250 | Before 114 / 114 / 21.4 / 15:15 |
| ☐ _____ | ☐ 1000 | After 114 / 113.9 / -0.1 / 15:56 |
| S/N 2480 | ☐ _____ | |

| METER SETTINGS: | | | | | |
|---|---|---|---|---|---|
| ☒ A-WTD | ☐ LINEAR | ☒ SLOW | ☐ 1/1 OCT | ☒ INTERVALS 20 - MINUTE | SKIES: clear |
| ☐ C-WTD | ☐ IMPULSE | ☐ FAST | ☐ 1/3 OCT | ☐ $L_N$ PERCENTILE VALUES | CAMERA _____ |
| | | | | | PHOTO NOs. 72-74 |

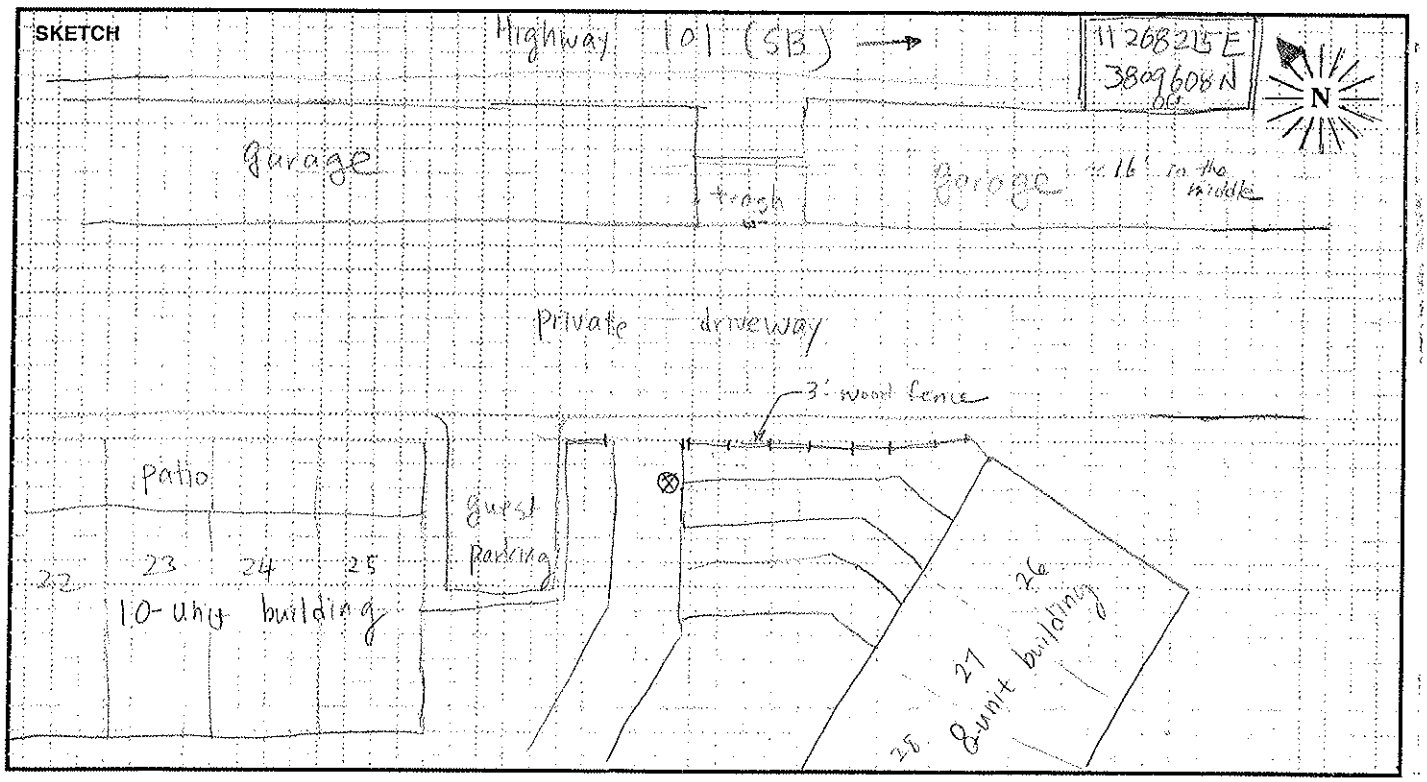
NOTES:

Dist. to Center of Nearest Lane _____ ☐ Video ☐ Radar Counts AT MT HT

MEAS. TYPE: ☐ Long Term ☒ Short Term

| DATE | START TIME | STOP TIME | $L_{MIN}$ | $L_{99}$ | $L_{90}$ | $L_{50}$ | $L_{25}$ | $L_{10}$ | $L_{01}$ | $L_{MAX}$ | $L_{EQ}$ | NOTES: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3/17/09 | 15:34 | 15:54 | 53.5 | 56.4 | 60.3 | 63.0 | 64.1 | 65.1 | 67.7 | 70.2 | 63.2 | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |

SKETCH




PARSONS

# FIELD SURVEY FORM

| | | |
|---|---|---|
| PROJECT: Highway 101 HOV Project | ENGINEER: Philip Jo/ | DATE: 3/17/09 |
| MEASUREMENT ADDRESS: 1311 Chaney Avenue | CITY: Carpinteria | ☒ Single-Family ☐ Multi-Family ☐ Recreational ☐ Commercial — SITE NO.: ST3 |

| SOUND LEVEL METER: | MICROPHONE: | PRE AMP: |
|---|---|---|
| ☒ LD-870 ☐ LD-820 | ☒ NON-POLAR ☐ POLARIZED | ☒ LD-900 |
| ☐ LD-824 ☐ LD-812 | ☒ 1/2-INCH ☐ FREEFIELD | ☐ LD-828 |
| ☐ LD-2900 ☐ _____ | ☐ 1-INCH ☐ RANDOM | ☐ _____ |
| SERIAL #: 0496 | SERIAL #: 2029 ☒ WIND SCREEN | SERIAL #: 2270 |

**CALIBRATOR:** ☒ LD CA250 ☐ _____ S/N 2480

Freq, Hz.: ☒ 250 ☐ 1000 ☐ _____

**CALIBRATION RECORD:** Input, dB / Reading, dB / Offset, dB / Time

Before 114, 114, 21.4, 13:43

After 114, 113.7, -0.3, 14:55

**METER SETTINGS:**
☒ A-WTD ☐ LINEAR ☒ SLOW ☐ 1/1 OCT ☒ INTERVALS 20 - MINUTE
☐ C-WTD ☐ IMPULSE ☐ FAST ☐ 1/3 OCT ☐ $L_N$ PERCENTILE VALUES

**NOTES:**
SYSTEM PWR: ☐ BAT ☒ AC
(observations at start of measurement)
TEMP: 69.6 °F R.H.: 51 %
WIND SPEED: Calm MPH
FROM (DIR): _____
SKIES: clear
CAMERA _____
PHOTO NOs. 66-71

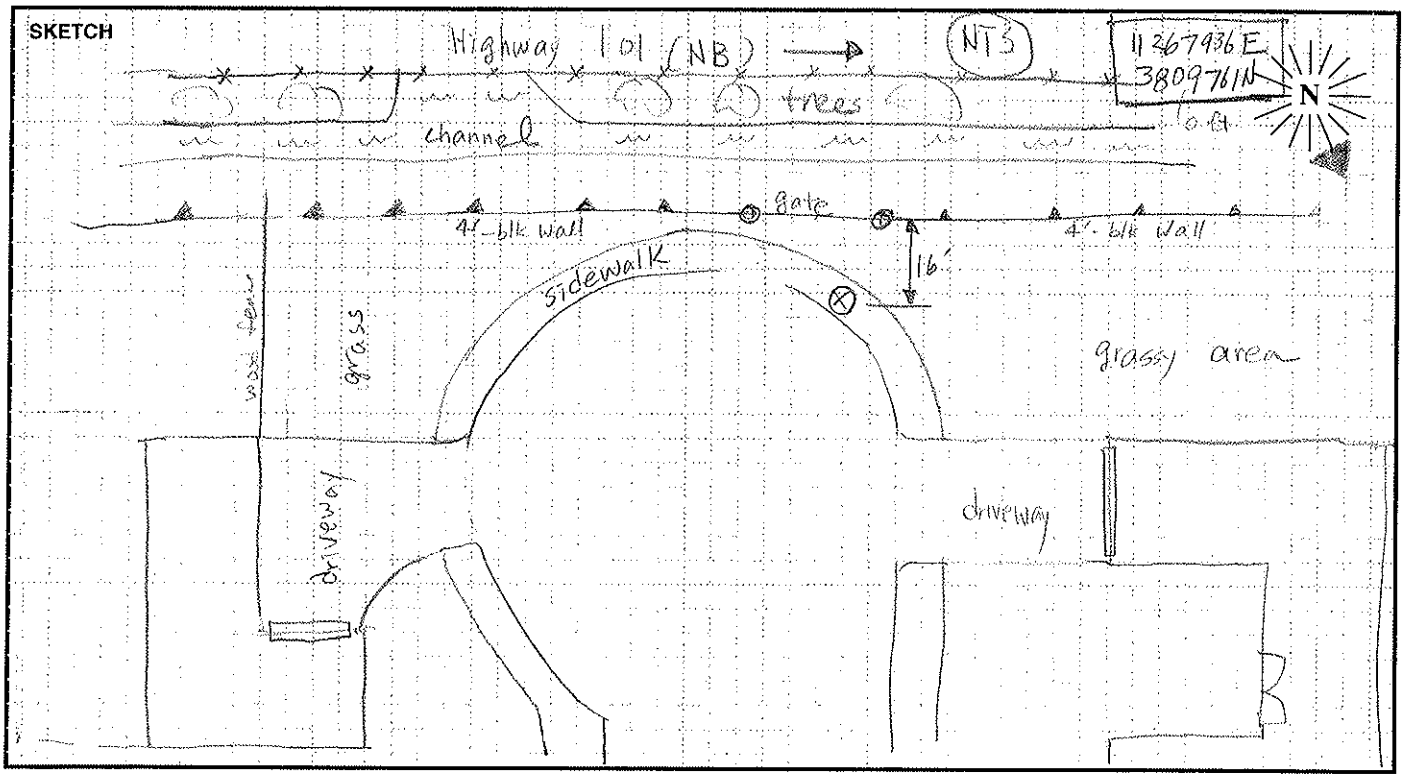
**NOTES:**
- traffic clearly visible above 4' wall

Dist. to Center of Nearest Lane _____ ☐ Video ☐ Radar Counts AT MT HT

MEAS. TYPE: ☐ Long Term ☒ Short Term

| DATE | START TIME | STOP TIME | $L_{MIN}$ | $L_{99}$ | $L_{90}$ | $L_{50}$ | $L_{25}$ | $L_{10}$ | $L_{01}$ | $L_{MAX}$ | $L_{EQ}$ | NOTES: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3/17/09 | 14:34 | 14:54 | 58.7 | 60.6 | 65.3 | 69.3 | 70.8 | 71.8 | 74.0 | 77.0 | 69.6 | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |

**SKETCH**




PARSONS

# FIELD SURVEY FORM

| | | | |
|---|---|---|---|
| PROJECT: Highway 101 HOV Project | | ENGINEER: Philip Jo / Jabra | DATE: 3/17/09 |
| MEASUREMENT ADDRESS: 1245 Cramer Circle | CITY: Carpinteria | ☒ Single-Family ☐ Multi-Family ☐ Recreational ☐ Commercial | SITE NO.: ST4 |

| SOUND LEVEL METER: | MICROPHONE: | PRE AMP: | NOTES: |
|---|---|---|---|
| ☒ LD-870 ☐ LD-820 ☐ LD-824 ☐ LD-812 ☐ LD-2900 ☐ _____ | ☒ WIND SCREEN ☒ NON-POLAR ☐ POLARIZED ☒ 1/2-INCH ☐ FREEFIELD ☐ 1-INCH ☐ RANDOM | ☒ LD-900 ☐ LD-828 ☐ _____ | SYSTEM PWR: ☐ BAT ☐ AC (observations at start of measurement) TEMP: 64.9 °F R.H.: 57 % WIND SPEED: calm MPH FROM (DIR): _____ SKIES: clear CAMERA _____ PHOTO NOs. -45 |
| SERIAL #: 0496 | SERIAL #: 2029 | SERIAL #: 2270 | |

**CALIBRATOR:** ☒ LD CA250 ☐ _____ S/N 2480

Freq, Hz.: ☒ 250 ☐ 1000 ☐ _____

**CALIBRATION RECORD:** Input, dB / Reading, dB / Offset, dB / Time

Before 114, 114, 21.6, 9:17

After 114, 113.9, -0.1, 9:57

**METER SETTINGS:** ☒ A-WTD ☐ LINEAR ☒ SLOW ☐ 1/1 OCT ☒ INTERVALS 20 - MINUTE ☐ C-WTD ☐ IMPULSE ☐ FAST ☐ 1/3 OCT ☐ $L_N$ PERCENTILE VALUES

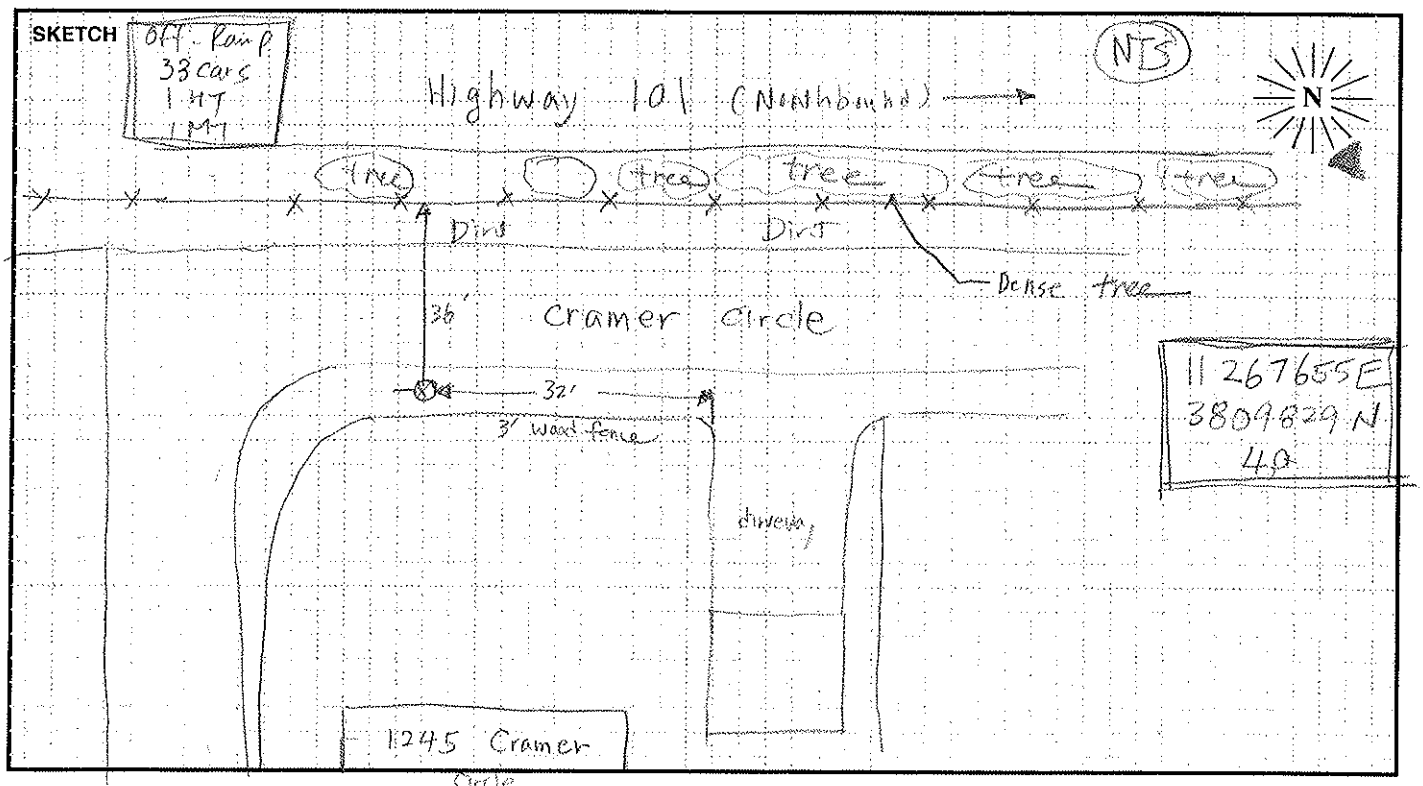
NOTES:

Dist. to Center of Nearest Lane _____ ☐ Video ☐ Radar Counts AT MT HT

MEAS. TYPE: ☐ Long Term ☐ Short Term

| DATE | START TIME | STOP TIME | $L_{MIN}$ | $L_{99}$ | $L_{90}$ | $L_{50}$ | $L_{25}$ | $L_{10}$ | $L_{01}$ | $L_{MAX}$ | $L_{EQ}$ | NOTES: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3/17/09 | 9:35 | 9:55 | 59.4 | 62.7 | 66.0 | 68.7 | 70.0 | 71.3 | 73.7 | 79.3 | 69.2 | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |

SKETCH




PARSONS

# FIELD SURVEY FORM

| | | | |
|---|---|---|---|
| PROJECT: Highway 101 HOV Project | | ENGINEER: Philip Jo / Jabra (MH) | DATE: 3/17/09 |
| MEASUREMENT ADDRESS: Sea Breeze MHP 4400 Carpinteria Ave #40 | CITY: Carpinteria | ☒ Single-Family ☐ Multi-Family ☐ Recreational ☐ Commercial | SITE NO.: ST5 |

**SOUND LEVEL METER:** ☒ LD-870 ☐ LD-820 ☐ LD-824 ☐ LD-812 ☐ LD-2900 ☐ _____
SERIAL #: 0496

**MICROPHONE:** ☒ WIND SCREEN ☒ NON-POLAR ☐ POLARIZED ☒ 1/2-INCH ☐ FREEFIELD ☐ 1-INCH ☐ RANDOM
SERIAL #: 2029

**PRE AMP:** ☒ LD-900 ☐ LD-828 ☐ _____
SERIAL #: 2270

**CALIBRATOR:** ☒ LD CA250 ☐ _____ S/N 2127
Freq, Hz.: ☒ 250 ☐ 1000 ☐ _____

**CALIBRATION RECORD:** Input, dB / Reading, dB / Offset, dB / Time
Before 114, 114, 214, 8:34
After 114, 114.2, -.2, 9:01

**METER SETTINGS:** ☒ A-WTD ☐ LINEAR ☒ SLOW ☐ 1/1 OCT ☒ INTERVALS 20 - MINUTE
☐ C-WTD ☐ IMPULSE ☐ FAST ☐ 1/3 OCT ☐ $L_N$ PERCENTILE VALUES

**NOTES:**
SYSTEM PWR: ☐ BAT ☐ AC
(observations at start of measurement)
TEMP: 65.8 °F R.H.: 46.2 %
WIND SPEED: calm MPH
FROM (DIR): _____
SKIES: clear
CAMERA _____
PHOTO NOs. 33-40

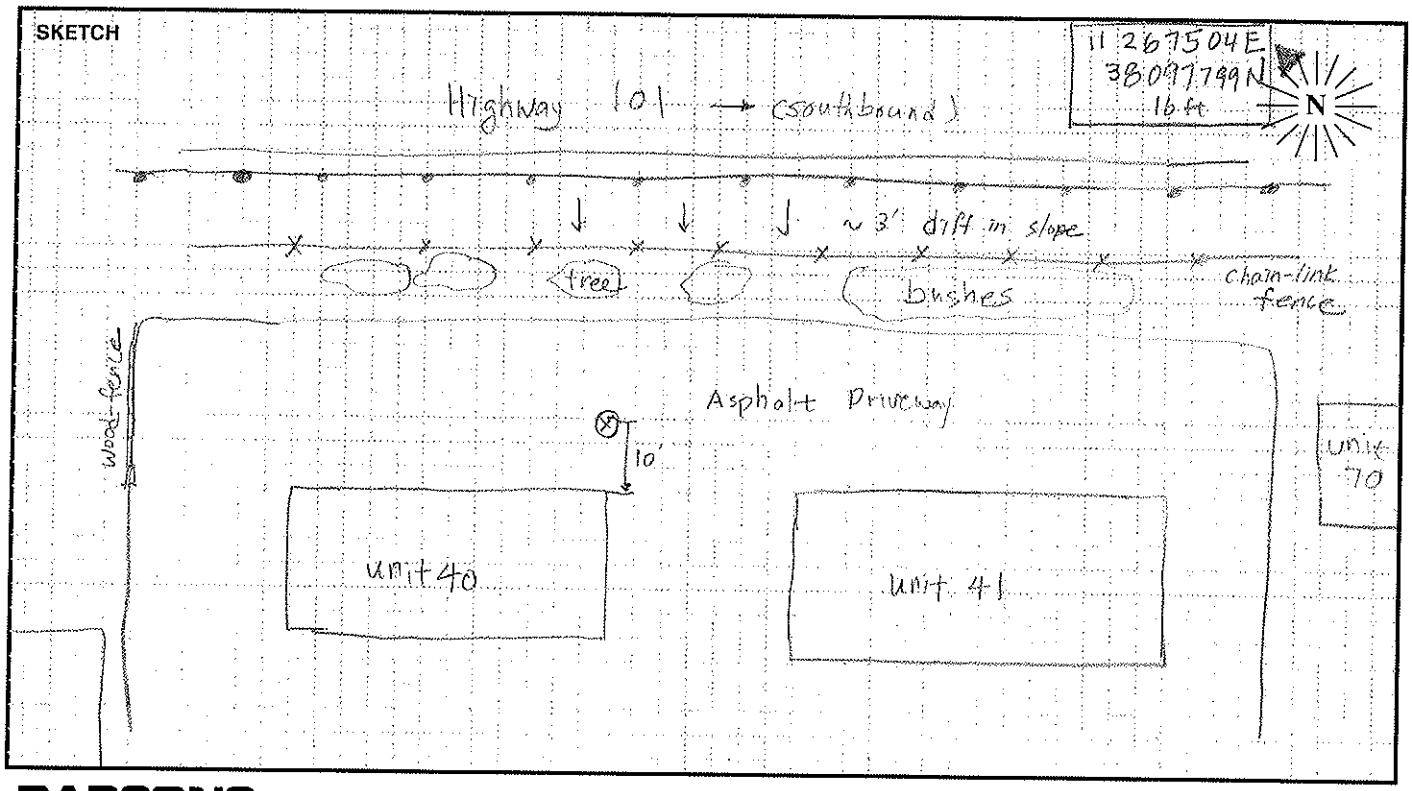
**NOTES:**
guardrail on the shoulder
- clearly visible Hwy 101
~65 mph

Dist. to Center of Nearest Lane _____ ☐ Video ☐ Radar Counts AT MT HT

**MEAS. TYPE:** ☐ Long Term ☒ Short Term

| DATE | START TIME | STOP TIME | $L_{MIN}$ | $L_{99}$ | $L_{90}$ | $L_{50}$ | $L_{25}$ | $L_{10}$ | $L_{01}$ | $L_{MAX}$ | $L_{EQ}$ | NOTES: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3/17/09 | 8:40 | 9:00 | 55.5 | 61.5 | 66.7 | 71.0 | 73.1 | 74.7 | 77.4 | 78.9 | 71.8 | Heavy trucks make "thump" noise due to pot holes. |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |

**SKETCH**




PARSONS

# FIELD SURVEY FORM

| | | | |
|---|---|---|---|
| PROJECT: Highway 101 HOV Project | | ENGINEER: Philip Jo / Jabra | DATE: 3/18/09 |
| MEASUREMENT ADDRESS: 440 Via Real (BBQ area) | CITY: Carpinteria | ☐ Single-Family ☒ Multi-Family ☐ Recreational ☐ Commercial | SITE NO.: ST6 |

| SOUND LEVEL METER: | MICROPHONE: | PRE AMP: | NOTES: |
|---|---|---|---|
| ☒ LD-870 ☐ LD-820 | ☒ NON-POLAR ☐ POLARIZED | ☒ LD-900 | SYSTEM PWR: ☒ BAT ☐ AC |
| ☐ LD-824 ☐ LD-812 | ☒ 1/2-INCH ☐ FREEFIELD | ☐ LD-828 | (observations at start of measurement) |
| ☐ LD-2900 ☐ _____ | ☐ 1-INCH ☐ RANDOM | ☐ _____ | |
| SERIAL #: 0496 | SERIAL #: 2029 | SERIAL #: 2270 | TEMP: 56.4 °F R.H.: 77 % |

| CALIBRATOR: | | CALIBRATION RECORD: | NOTES: |
|---|---|---|---|
| ☒ LD CA250 | Freq, Hz. ☒ 250 | Input, dB / Reading, dB / Offset, dB / Time | WIND SPEED: calm MPH |
| ☐ _____ | ☐ 1000 | Before 114 / 114 / 21.8 / 8:14 | FROM (DIR): _____ |
| S/N 2480 | ☐ _____ | After 114 / 114.1 / 0.1 / 10:37 | SKIES: clear |

METER SETTINGS: ☒ A-WTD ☐ LINEAR ☒ SLOW ☐ 1/1 OCT ☒ INTERVALS 20 - MINUTE ☐ C-WTD ☐ IMPULSE ☐ FAST ☐ 1/3 OCT ☐ $L_N$ PERCENTILE VALUES

CAMERA _____

PHOTO NOs. 79-84

NOTES:
traffic on Via Real
NB: 55 cars, 3 MT, 1 HT
SB: 48 cars, 3 MT, 1 HT

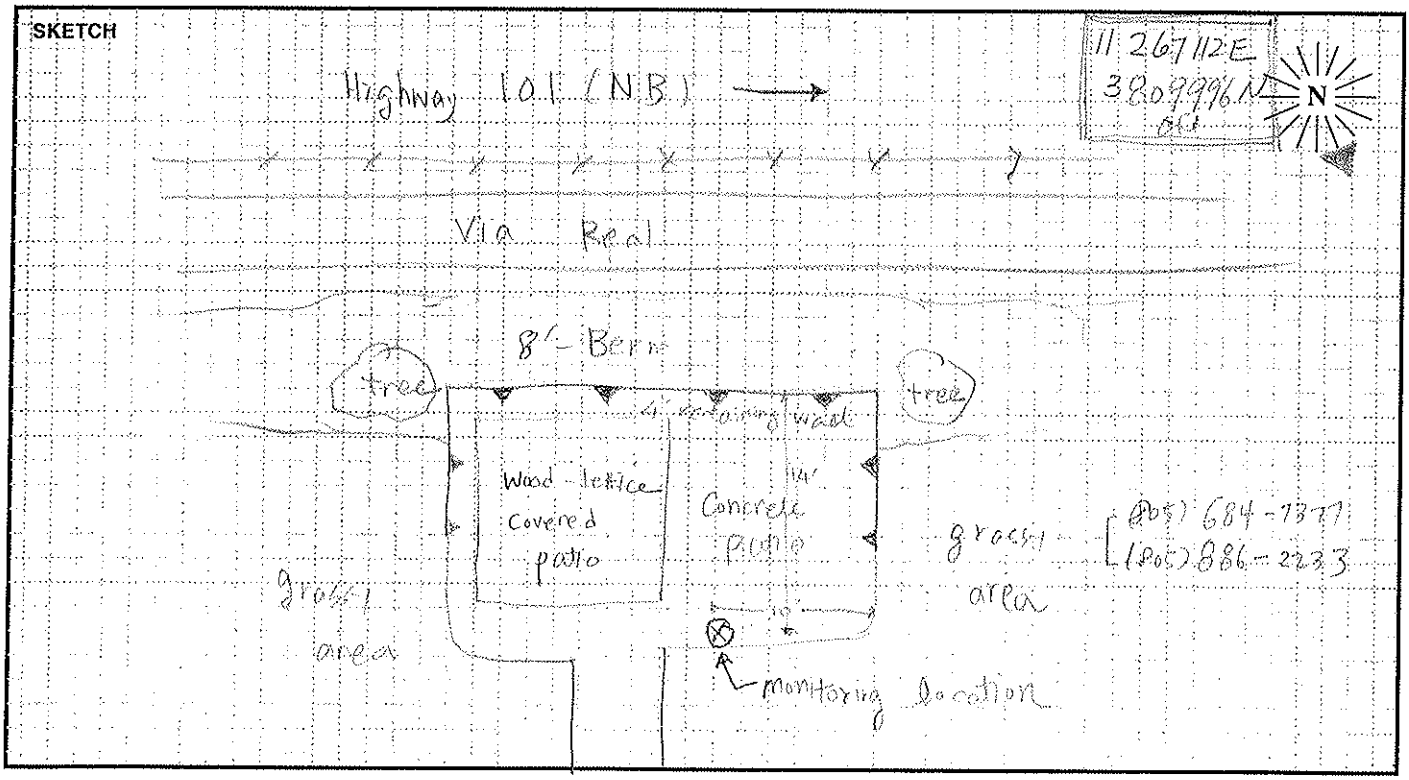
Dist. to Center of Nearest Lane _____ ☐ Video ☐ Radar

Counts AT MT HT

MEAS. TYPE: ☐ Long Term ☒ Short Term

| DATE | START TIME | STOP TIME | $L_{MIN}$ | $L_{99}$ | $L_{90}$ | $L_{50}$ | $L_{25}$ | $L_{10}$ | $L_{01}$ | $L_{MAX}$ | $L_{EQ}$ | NOTES: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3/18/09 | 8:20 | 8:40 | 58.3 | 59.3 | 61.0 | 63.2 | 64.2 | 64.9 | 66.7 | 67.9 | 63.3 | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |

SKETCH




PARSONS

# FIELD SURVEY FORM

| | | | |
|---|---|---|---|
| PROJECT: Highway 101 HOV Project | | ENGINEER: Philip Jo / Jabra (MH) | DATE: 3/17/09 |
| MEASUREMENT ADDRESS: 3950 Via Real (THE SANDPIPER) MHP | CITY: Carpinteria | ☑ Single-Family ☐ Multi-Family ☐ Recreational ☐ Commercial | SITE NO.: ST7 |

| SOUND LEVEL METER: | MICROPHONE: ☑ WIND SCREEN | PRE AMP: | NOTES: |
|---|---|---|---|
| ☑ LD-870 ☐ LD-820 | ☑ NON-POLAR ☐ POLARIZED | ☑ LD-900 | SYSTEM PWR: ☑ BAT ☐ AC |
| ☐ LD-824 ☐ LD-812 | ☑ 1/2-INCH ☐ FREEFIELD | ☐ LD-828 | (observations at start of measurement) |
| ☐ LD-2900 ☐ _____ | ☐ 1-INCH ☐ RANDOM | ☐ _____ | |
| SERIAL #: 0496 | SERIAL #: 2029 | SERIAL #: 2270 | TEMP: 70.5 ºF R.H.: 50 % |

| CALIBRATOR: | | CALIBRATION RECORD: Input, dB / Reading, dB / Offset, dB / Time | |
|---|---|---|---|
| ☑ LD CA250 | Freq, Hz. | | WIND SPEED: Calm MPH |
| ☐ _____ | ☑ 250 | Before 114, 114, 21.4, 13:43 | FROM (DIR): _____ |
| S/N 2480 | ☐ 1000 | After 114, 113.7, -0.3, 14.55 | SKIES: clear |
| | ☐ _____ | | |

METER SETTINGS:
☑ A-WTD ☐ LINEAR ☑ SLOW ☐ 1/1 OCT ☑ INTERVALS 20 - MINUTE
☐ C-WTD ☐ IMPULSE ☐ FAST ☐ 1/3 OCT ☐ $L_N$ PERCENTILE VALUES

CAMERA _____
PHOTO NOs. 64-67

NOTES: Heavy traffic on Via Real
NB: 28 cars, 4 MT
SB: 44 cars, 3 MT

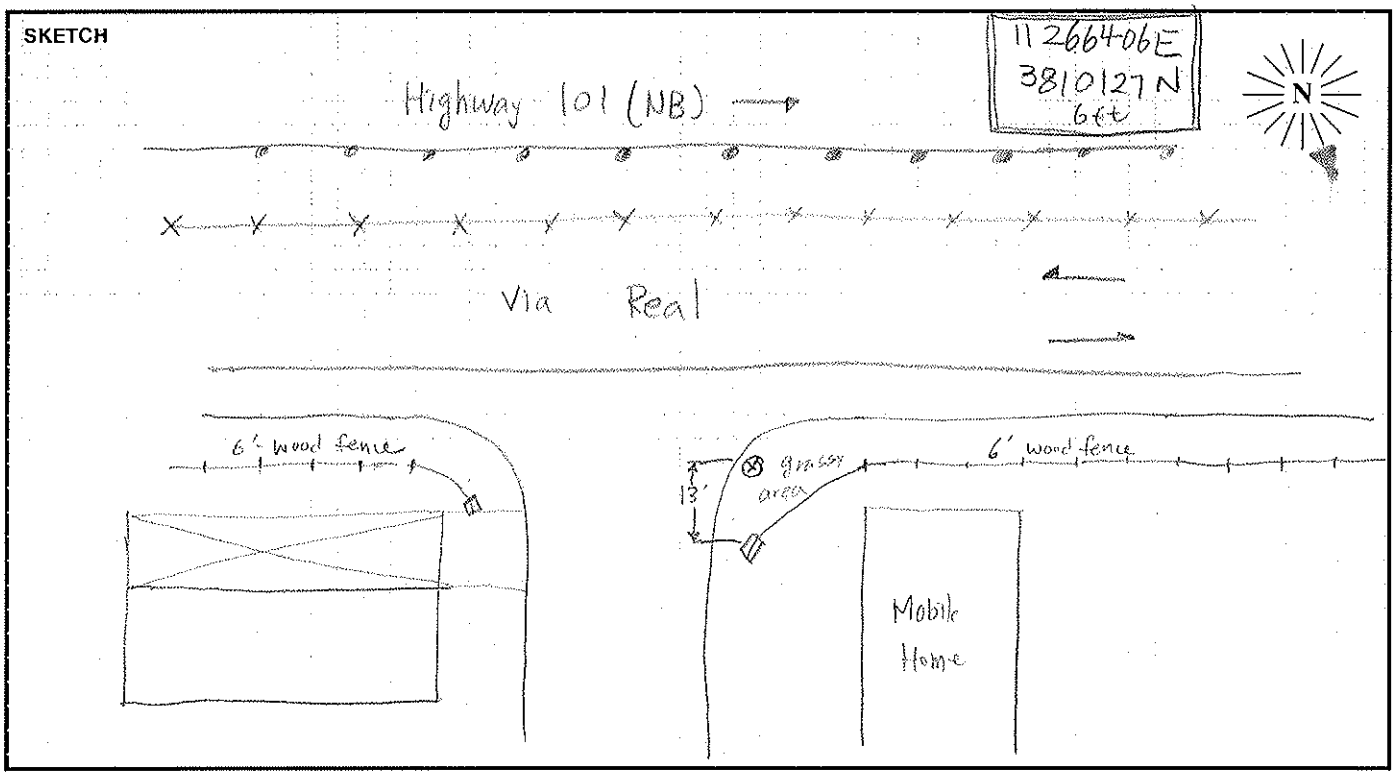
Dist. to Center of Nearest Lane _____ ☐ Video ☐ Radar

| Counts AT | MT | HT |
|---|---|---|
| | | |

MEAS. TYPE: ☐ Long Term ☑ Short Term

| DATE | START TIME | STOP TIME | $L_{MIN}$ | $L_{99}$ | $L_{90}$ | $L_{50}$ | $L_{25}$ | $L_{10}$ | $L_{01}$ | $L_{MAX}$ | $L_{EQ}$ | NOTES: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3/17/09 | 13:46 | 14:06 | 59.9 | 62.2 | 66.4 | 70.1 | 71.7 | 73.7 | 80 | 84 | 71.4 | ~84 = Motorcycle on Via Real NBA |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |

SKETCH




PARSONS

# FIELD SURVEY FORM

| | | | |
|---|---|---|---|
| PROJECT: Highway 101 HOV Project | | ENGINEER: Philip Jo / Jabra | DATE: 3/18/09 |
| MEASUREMENT ADDRESS: 3579 Padaro LN | CITY: Carpinteria | ☒ Single-Family ☐ Multi-Family ☐ Recreational ☐ Commercial | SITE NO.: ST8 |

| SOUND LEVEL METER: | MICROPHONE: | PRE AMP: | NOTES: |
|---|---|---|---|
| ☒ LD-870 ☐ LD-820 ☐ LD-824 ☐ LD-812 ☐ LD-2900 ☐ _____ | ☒ WIND SCREEN ☒ NON-POLAR ☐ POLARIZED ☒ 1/2-INCH ☐ FREEFIELD ☐ 1-INCH ☐ RANDOM | ☒ LD-900 ☐ LD-828 ☐ _____ | SYSTEM PWR: ☐ BAT ☒ AC (observations at start of measurement) |
| SERIAL #: 0496 | SERIAL #: 2029 | SERIAL #: 2270 | TEMP: 71.8 ºF R.H.: 40 % |

| CALIBRATOR: | | CALIBRATION RECORD: Input, dB / Reading, dB / Offset, dB / Time | |
|---|---|---|---|
| ☒ LD CA250 ☐ _____ S/N 24810 | Freq, Hz. ☐ 250 ☐ 1000 ☐ _____ | Before 114, 114, 21.8, 8:14 After 114, 114.1, 0.1, 10:37 | WIND SPEED: calm MPH; FROM (DIR): _____; SKIES: clear |

| METER SETTINGS: | | | | | | CAMERA _____ |
|---|---|---|---|---|---|---|
| ☒ A-WTD | ☐ LINEAR | ☒ SLOW | ☐ 1/1 OCT | ☒ INTERVALS 20 - MINUTE | | PHOTO NOs. 85-91 |
| ☐ C-WTD | ☐ IMPULSE | ☐ FAST | ☐ 1/3 OCT | ☐ $L_N$ PERCENTILE VALUES | | |

NOTES: traffic on Padaro LN 16 cars & 1 MT

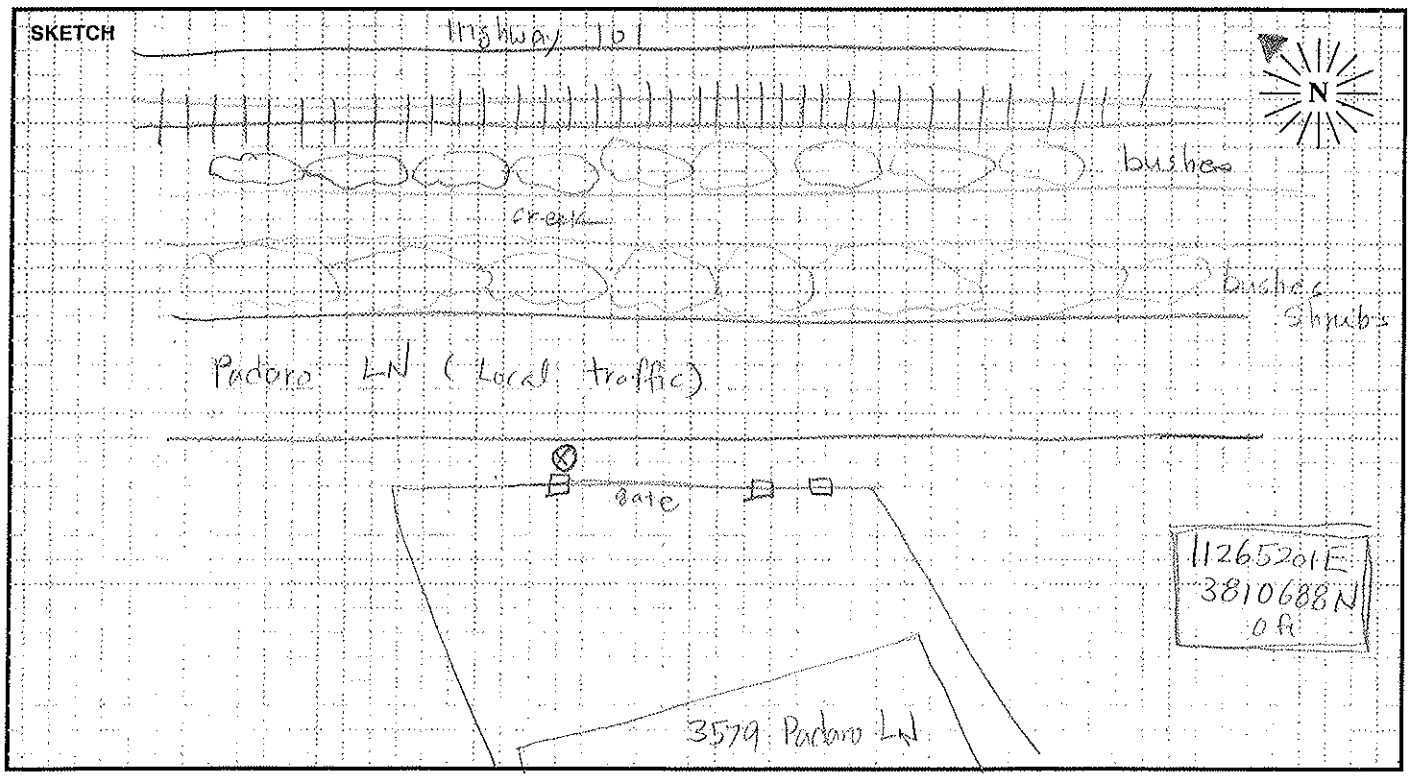
Dist. to Center of Nearest Lane _____ ☐ Video ☐ Radar

Counts: AT MT HT

MEAS. TYPE: ☐ Long Term ☒ Short Term

| DATE | START TIME | STOP TIME | $L_{MIN}$ | $L_{99}$ | $L_{90}$ | $L_{50}$ | $L_{25}$ | $L_{10}$ | $L_{01}$ | $L_{MAX}$ | $L_{EQ}$ | NOTES: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3/18/09 | 9:36 | 9:56 | 57.5 | 58.8 | 60.6 | 63.6 | 65.0 | 66.9 | 73.0 | 78.3 | 64.9 | |
| | 9:31 | 9:35 | 56.1 | 56.6 | 60.0 | 62.8 | 65.0 | 71.1 | 92.0 | 97.5 | 77.1 | train horn ~ 97.5 Discarded |
| | | | | | | | | | | | | |

SKETCH




PARSONS

# FIELD SURVEY FORM

| | | | |
|---|---|---|---|
| PROJECT: Highway 101 HOV Project | | ENGINEER: Philip Jo | DATE: 3/18/09 |
| MEASUREMENT ADDRESS: 3393-3395 Padaro LN | CITY: Carpinteria | ☒ Single-Family ☐ Multi-Family ☐ Recreational ☐ Commercial | SITE NO.: ST9 |

| SOUND LEVEL METER: | MICROPHONE: | PRE AMP: | NOTES: |
|---|---|---|---|
| ☒ LD-870 ☐ LD-820 ☐ LD-824 ☐ LD-812 ☐ LD-2900 ☐ _____ | ☒ WIND SCREEN ☒ NON-POLAR ☐ POLARIZED ☒ 1/2-INCH ☐ FREEFIELD ☐ 1-INCH ☐ RANDOM | ☒ LD-900 ☐ LD-828 ☐ _____ | SYSTEM PWR: ☒ BAT ☐ AC (observations at start of measurement) |
| SERIAL #: 0496 | SERIAL #: 2029 | SERIAL #: 2270 | TEMP: 64.4 °F R.H.: 68 % |

| CALIBRATOR: | | CALIBRATION RECORD: Input, dB / Reading, dB / Offset, dB / Time | |
|---|---|---|---|
| ☒ LD CA250 ☐ _____ S/N 2480 | Freq, Hz. ☒ 250 ☐ 1000 ☐ _____ | Before 114, 114, 21.8, 8:14 After 114, 114.1, 0.1, 10:37 | WIND SPEED: calm MPH FROM (DIR): _____ SKIES: clear |

METER SETTINGS: ☒ A-WTD ☐ LINEAR ☒ SLOW ☐ 1/1 OCT ☒ INTERVALS 20 - MINUTE ☐ C-WTD ☐ IMPULSE ☐ FAST ☐ 1/3 OCT ☐ $L_N$ PERCENTILE VALUES

CAMERA _____ PHOTO NOs. 92-95

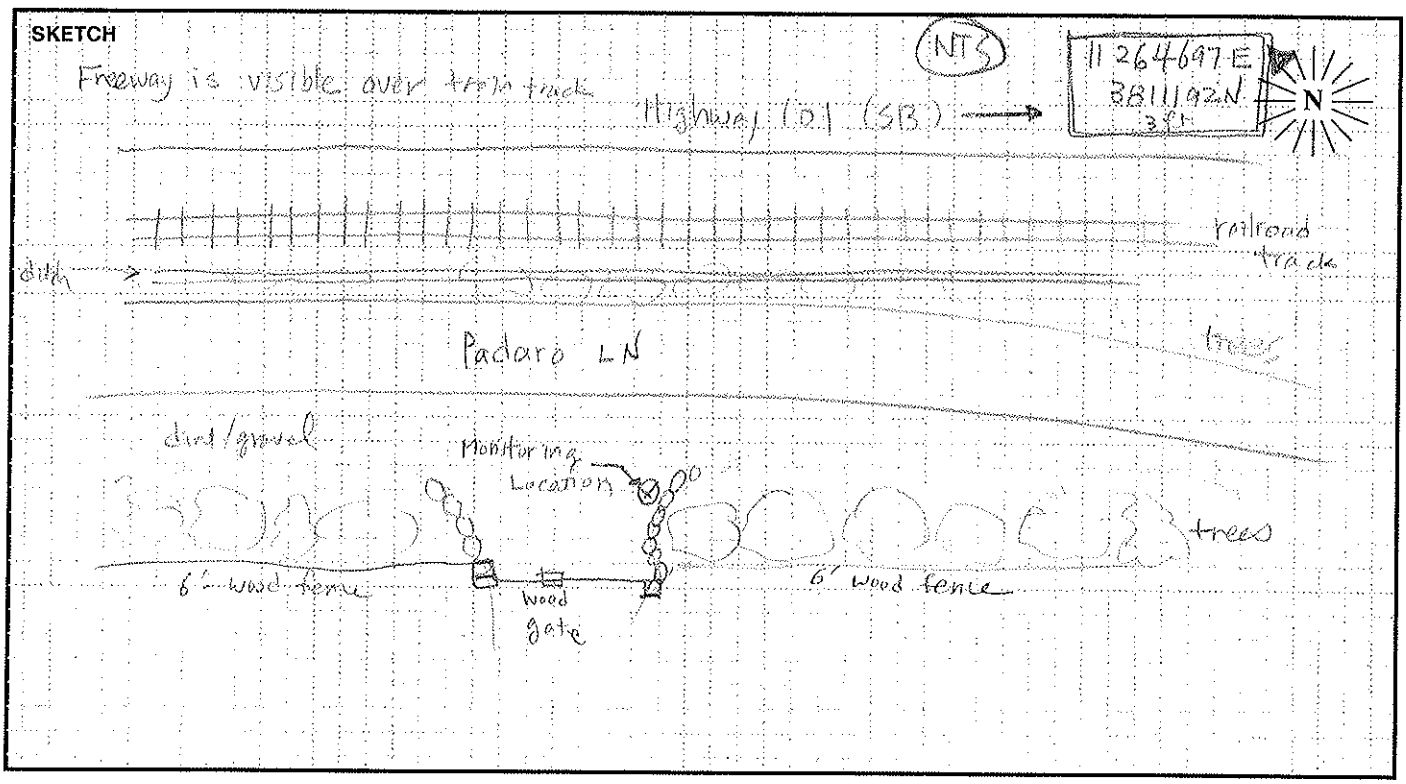
NOTES: 10 car on Padaro LN

Dist. to Center of Nearest Lane _____ ☐ Video ☐ Radar Counts AT MT HT

MEAS. TYPE: ☐ Long Term ☒ Short Term

| DATE | START TIME | STOP TIME | $L_{MIN}$ | $L_{99}$ | $L_{90}$ | $L_{50}$ | $L_{25}$ | $L_{10}$ | $L_{01}$ | $L_{MAX}$ | $L_{EQ}$ | NOTES: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3/18/09 | 10:16 | 10:36 | 59.3 | 60.2 | 61.9 | 64.5 | 65.9 | 67.3 | 69.8 | 78.6 | 65.3 | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |

SKETCH




PARSONS

# FIELD SURVEY FORM

| | | | |
|---|---|---|---|
| PROJECT: Highway 101 HOV Project | | ENGINEER: Philip Jo / Jabra | DATE: 3/18/09 |
| MEASUREMENT ADDRESS: 3201 Beach Club Road | CITY: Carpinteria | ☒ Single-Family ☐ Multi-Family ☐ Recreational ☐ Commercial | SITE NO.: ST10 |

**SOUND LEVEL METER:** ☒ LD-870 ☐ LD-820 ☐ LD-824 ☐ LD-812 ☐ LD-2900 ☐ _____
SERIAL #: 0496

**MICROPHONE:** ☒ NON-POLAR ☐ POLARIZED ☒ 1/2-INCH ☐ FREEFIELD ☐ 1-INCH ☐ RANDOM ☒ WIND SCREEN
SERIAL #: 2029

**PRE AMP:** ☒ LD-900 ☐ LD-828 ☐ _____
SERIAL #: 2270

**CALIBRATOR:** ☒ LD CA250 ☐ _____
S/N 2480
Freq, Hz.: ☒ 250 ☐ 1000 ☐ _____

**CALIBRATION RECORD:** Input, dB / Reading, dB / Offset, dB / Time
Before 114 / 114 / 21.4 / 13:44
After 114 / _____ / _____ / _____

**METER SETTINGS:** ☒ A-WTD ☐ C-WTD ☐ LINEAR ☐ IMPULSE ☒ SLOW ☐ FAST ☐ 1/1 OCT ☐ 1/3 OCT ☒ INTERVALS 20 - MINUTE ☐ $L_N$ PERCENTILE VALUES

**NOTES:**
SYSTEM PWR: ☒ BAT ☐ AC
(observations at start of measurement)
TEMP: 75.4 °F R.H.: 33 %
WIND SPEED: calm MPH
FROM (DIR): _____
SKIES: clear
CAMERA _____
PHOTO NOs. 101-104

**NOTES:** Traffic on Padaro
32 Cars
1 MT

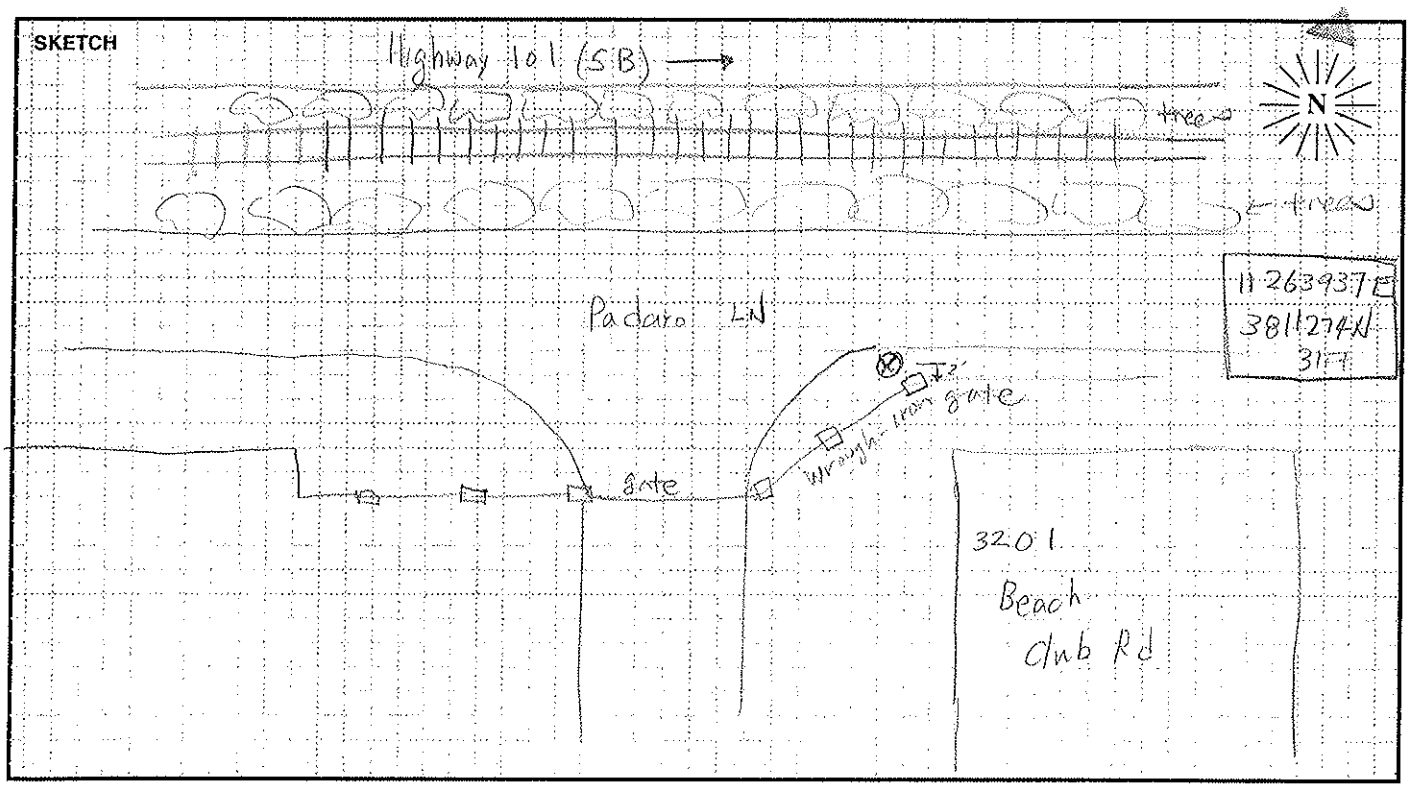
Dist. to Center of Nearest Lane _____ ☐ Video ☐ Radar

Counts: AT MT HT

**MEAS. TYPE:** ☐ Long Term ☒ Short Term

| DATE | START TIME | STOP TIME | $L_{MIN}$ | $L_{99}$ | $L_{90}$ | $L_{50}$ | $L_{25}$ | $L_{10}$ | $L_{01}$ | $L_{MAX}$ | $L_{EQ}$ | NOTES: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3/18/09 | 13:46 | 14:06 | 54.3 | 57.3 | 61.1 | 64.9 | 66.5 | 68.2 | 73.4 | 79.8 | 66.0 | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |

**SKETCH**




PARSONS

# FIELD SURVEY FORM

| | | | |
|---|---|---|---|
| PROJECT: Highway 101 HOV Project | | ENGINEER: Philip Jo / Jabra | DATE: 3/16/09 |
| MEASUREMENT ADDRESS: 3111 Padaro Ln | CITY: Carpinteria | ☒ Single-Family ☐ Multi-Family ☐ Recreational ☐ Commercial | SITE NO.: ST11 |

| SOUND LEVEL METER: | MICROPHONE: ☒ WIND SCREEN | PRE AMP: | NOTES: |
|---|---|---|---|
| ☒ LD-870 ☐ LD-820 | ☒ NON-POLAR ☐ POLARIZED | ☐ LD-900 | SYSTEM PWR: ☐ BAT ☐ AC |
| ☐ LD-824 ☐ LD-812 | ☒ 1/2-INCH ☐ FREEFIELD | ☐ LD-828 | (observations at start of measurement) |
| ☐ LD-2900 ☐ _____ | ☐ 1-INCH ☐ RANDOM | ☐ _____ | |
| SERIAL #: 0496 | SERIAL #: 2029 | SERIAL #: 2270 | TEMP: 66.7 °F R.H.: 58 % |

| CALIBRATOR: | | CALIBRATION RECORD: Input, dB / Reading, dB / Offset, dB / Time | |
|---|---|---|---|
| ☒ LD CA250 | Freq, Hz. ☒ 250 | Before 114, 114, 21.4, 10:45 | WIND SPEED: Calm MPH |
| ☐ _____ | ☐ 1000 | | FROM (DIR): _____ |
| S/N 2127 | ☐ _____ | After 114, 114, -0.4, 12:36 | SKIES: clear |

| METER SETTINGS: | | | | | |
|---|---|---|---|---|---|
| ☒ A-WTD | ☐ LINEAR | ☒ SLOW | ☐ 1/1 OCT | ☒ INTERVALS 20 - MINUTE | CAMERA _____ |
| ☐ C-WTD | ☐ IMPULSE | ☐ FAST | ☐ 1/3 OCT | ☐ $L_N$ PERCENTILE VALUES | PHOTO NOs. 1-10 |

NOTES:

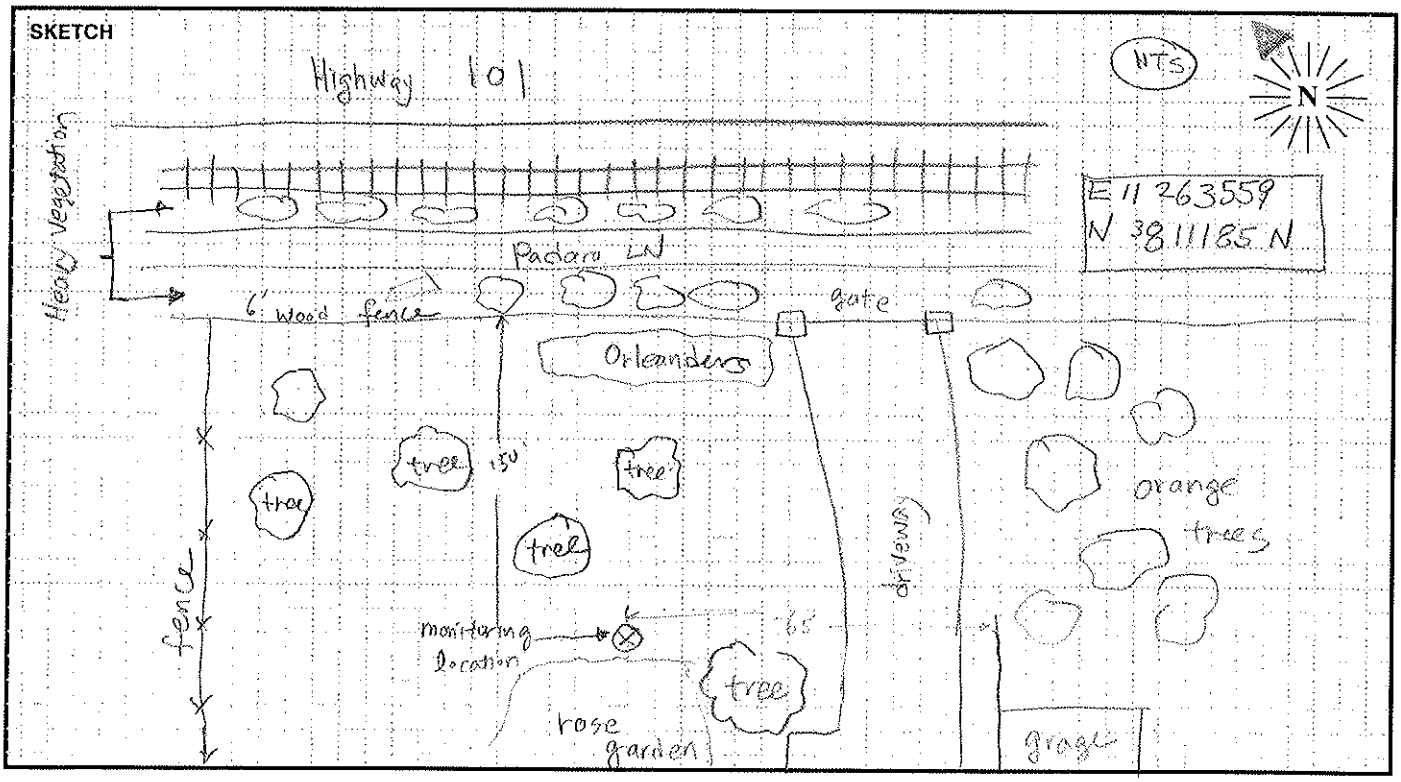
Dist. to Center of Nearest Lane _____ ☐ Video ☐ Radar

Counts: AT MT HT

MEAS. TYPE: ☐ Long Term ☒ Short Term

| DATE | START TIME | STOP TIME | $L_{MIN}$ | $L_{99}$ | $L_{90}$ | $L_{50}$ | $L_{25}$ | $L_{10}$ | $L_{01}$ | $L_{MAX}$ | $L_{EQ}$ | NOTES: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3/16 | 11:00 | 11:20 | 50.2 | 51.8 | 54.8 | 57.2 | 58.4 | 59.4 | 61.0 | 61.8 | 57.4 | Southbound visible through bushes |
| | | | | | | | | | | | | - no major terrain features |
| | | | | | | | | | | | | |

SKETCH




PARSONS

# FIELD SURVEY FORM

| | | |
|---|---|---|
| PROJECT: Highway 101 HOV Project | ENGINEER: Philip Jol Jabra | DATE: 3/16/09 |
| MEASUREMENT ADDRESS: 3250 Via Real | CITY: Carpinteria | ☒ Single-Family ☐ Multi-Family ☐ Recreational ☐ Commercial | SITE NO.: ST12 |

| SOUND LEVEL METER: | MICROPHONE: ☒ WIND SCREEN | PRE AMP: | NOTES: |
|---|---|---|---|
| ☒ LD-870 ☐ LD-820 | ☐ NON-POLAR ☐ POLARIZED | ☒ LD-900 | SYSTEM PWR: ☐ BAT ☐ AC |
| ☐ LD-824 ☐ LD-812 | ☒ 1/2-INCH ☐ FREEFIELD | ☐ LD-828 | (observations at start of measurement) |
| ☐ LD-2900 ☐ _____ | ☐ 1-INCH ☐ RANDOM | ☐ _____ | |
| SERIAL #: 0496 | SERIAL #: 2029 | SERIAL #: 2270 | TEMP: 66 °F R.H.: 57 % |

| CALIBRATOR: | | CALIBRATION RECORD: Input, dB / Reading, dB / Offset, dB / Time | |
|---|---|---|---|
| ☒ LD CA250 | Freq, Hz. | | WIND SPEED: Calm MPH |
| ☐ _____ | ☐ 250 | Before 114 / 114 / 22.0 / 13:58 | FROM (DIR): _____ |
| S/N 2127 | ☐ 1000 | | SKIES: clear |
| | ☐ _____ | After ___ / ___ / ___ / ___ | |

METER SETTINGS:
☒ A-WTD ☐ LINEAR ☒ SLOW ☐ 1/1 OCT ☒ INTERVALS 20 - MINUTE
☐ C-WTD ☐ IMPULSE ☐ FAST ☐ 1/3 OCT ☐ $L_N$ PERCENTILE VALUES

CAMERA _____
PHOTO NOs. _____

NOTES:

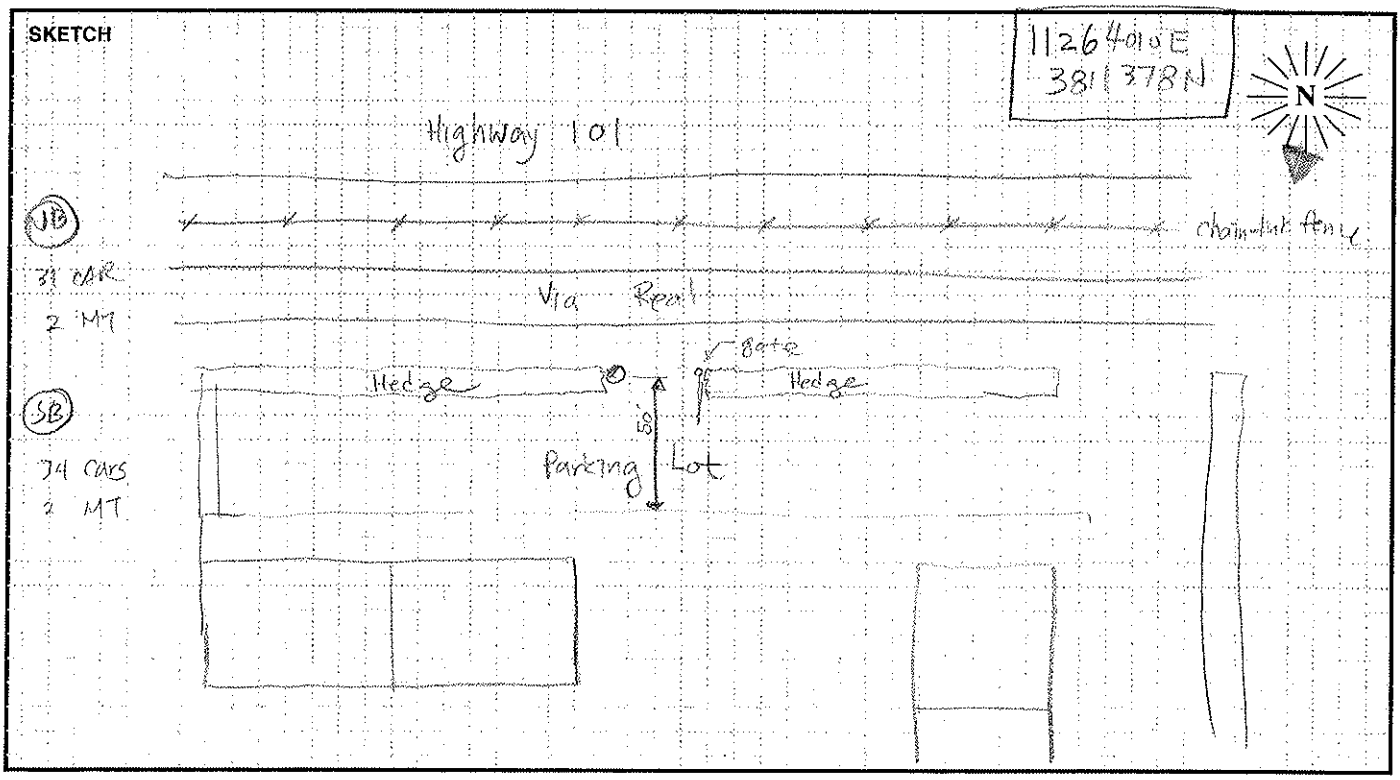
Dist. to Center of Nearest Lane _____ ☐ Video ☐ Radar

Counts: AT MT HT

MEAS. TYPE: ☐ Long Term ☒ Short Term

| DATE | START TIME | STOP TIME | $L_{MIN}$ | $L_{99}$ | $L_{90}$ | $L_{50}$ | $L_{25}$ | $L_{10}$ | $L_{01}$ | $L_{MAX}$ | $L_{EQ}$ | NOTES: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3/16 | 14:05 | 14:25 | 62.9 | 64.2 | 67.8 | 71.7 | 73.6 | 75.6 | 78.9 | 87.0 | 72.9 | 83 - Motor cycle<br>74 - helicopter |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |

SKETCH




PARSONS

# FIELD SURVEY FORM

| | | | |
|---|---|---|---|
| PROJECT: Highway 101 HOV Project | | ENGINEER: Philip Jo / Jabra | DATE: 3/16/09 |
| MEASUREMENT ADDRESS: 130 Morgan Ln | CITY: Carpinteria | ☒ Single-Family ☐ Multi-Family ☐ Recreational ☐ Commercial | SITE NO.: ST13 |

| SOUND LEVEL METER: | MICROPHONE: | PRE AMP: | NOTES: |
|---|---|---|---|
| ☒ LD-870 ☐ LD-820 | ☒ WIND SCREEN | ☒ LD-900 | SYSTEM PWR: ☒ BAT ☐ AC |
| ☐ LD-824 ☐ LD-812 | ☒ NON-POLAR ☐ POLARIZED | ☐ LD-828 | (observations at start of measurement) |
| ☐ LD-2900 ☐ _____ | ☒ 1/2-INCH ☐ FREEFIELD | ☐ _____ | TEMP: 66.3 °F R.H.: 57 % |
| SERIAL #: 0496 | ☐ 1-INCH ☐ RANDOM | SERIAL #: 2270 | WIND SPEED: Calm MPH |
| | SERIAL #: 2029 | | FROM (DIR): _____ |

**CALIBRATOR:** ☒ LD CA250 ☐ _____ S/N 2127

Freq, Hz.: ☒ 250 ☐ 1000 ☐ _____

**CALIBRATION RECORD:** Input, dB / Reading, dB / Offset, dB / Time

Before 114, 114, 21.4, 10:45

After 114, 113.6, -0.4, 12:36

SKIES: clear

CAMERA _____

PHOTO NOs. 11-18

**METER SETTINGS:**

☒ A-WTD ☐ LINEAR ☒ SLOW ☐ 1/1 OCT ☒ INTERVALS 20 - MINUTE

☐ C-WTD ☐ IMPULSE ☐ FAST ☐ 1/3 OCT ☐ $L_N$ PERCENTILE VALUES

NOTES:

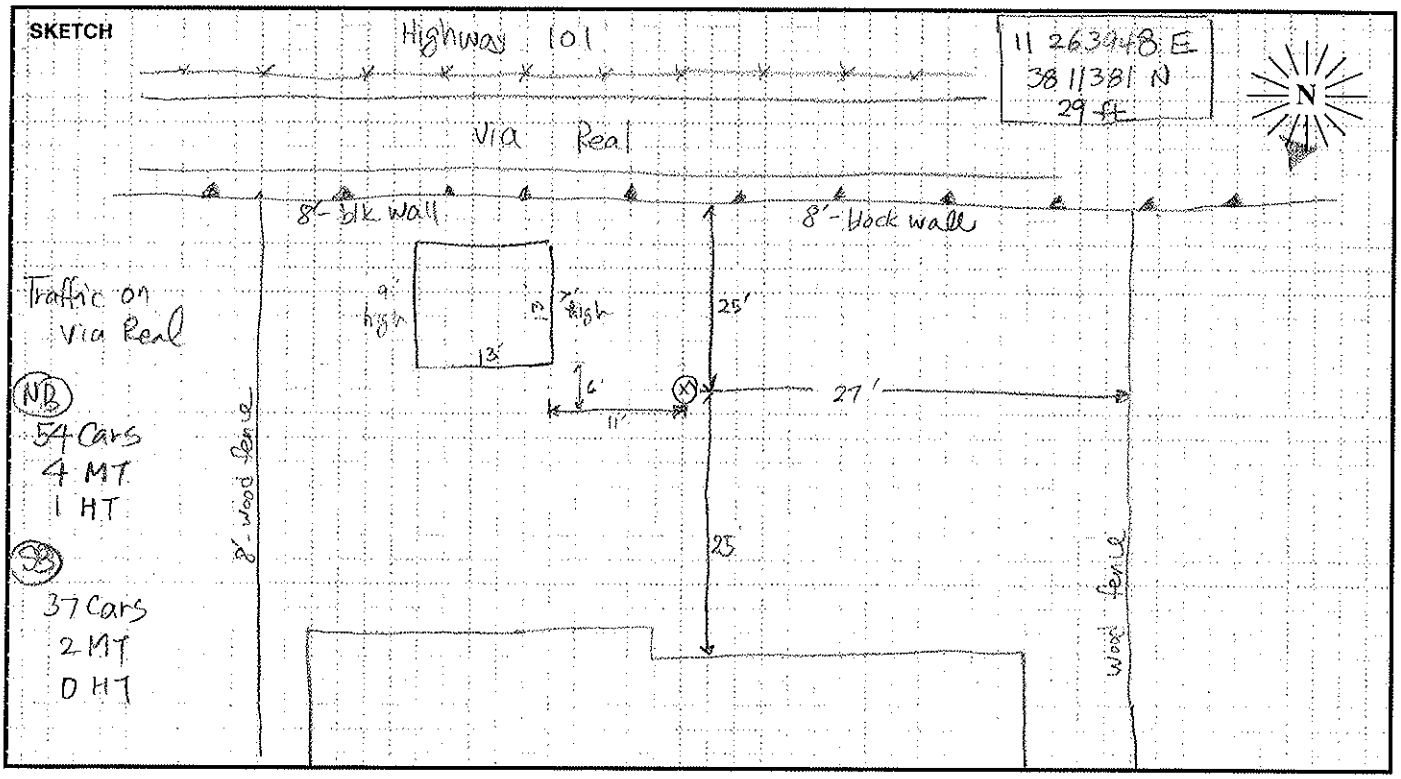
Dist. to Center of Nearest Lane _____ ☐ Video ☐ Radar

Counts: AT MT HT

MEAS. TYPE: ☐ Long Term ☒ Short Term

| DATE | START TIME | STOP TIME | $L_{MIN}$ | $L_{99}$ | $L_{90}$ | $L_{50}$ | $L_{25}$ | $L_{10}$ | $L_{01}$ | $L_{MAX}$ | $L_{EQ}$ | NOTES: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3/16 | 12:10 | 12:30 | 54.0 | 55.4 | 59.3 | 62.4 | 63.7 | 64.8 | 67.3 | 70.0 | 62.8 | Helicopter flyon - 62 dBA |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |

SKETCH




PARSONS

# FIELD SURVEY FORM

| | | |
|---|---|---|
| PROJECT: Highway 101 HOV Project | ENGINEER: Philip Jo / Jabra | DATE: 3/18/09 |
| MEASUREMENT ADDRESS: 3095 Via Real | CITY: Carpinteria | ☒ Single-Family ☐ Multi-Family ☐ Recreational ☐ Commercial — SITE NO.: ST14 |

**SOUND LEVEL METER:** ☒ LD-870 ☐ LD-820 ☐ LD-824 ☐ LD-812 ☐ LD-2900 ☐ _____
SERIAL #: 0496

**MICROPHONE:** ☒ WIND SCREEN ☒ NON-POLAR ☐ POLARIZED ☒ 1/2-INCH ☐ FREEFIELD ☐ 1-INCH ☐ RANDOM
SERIAL #: 2029

**PRE AMP:** ☒ LD-900 ☐ LD-828 ☐ _____
SERIAL #: 2270

**NOTES:**

SYSTEM PWR: ☒ BAT ☐ AC

(observations at start of measurement)

TEMP: 67.2 °F R.H.: 67 %

WIND SPEED: _____ MPH

FROM (DIR): _____

SKIES: _____

CAMERA _____

PHOTO NOs. 96-100

**CALIBRATOR:** ☒ LD CA250 ☐ _____ S/N 2980

Freq, Hz.: ☒ 250 ☐ 1000 ☐ _____

**CALIBRATION RECORD:** Input, dB / Reading, dB / Offset, dB / Time

Before 114 / 114 / 21.8 / 8.14

After 114 / 114.1 / 0.1 / 11.46

**METER SETTINGS:** ☒ A-WTD ☐ C-WTD ☐ LINEAR ☐ IMPULSE ☒ SLOW ☐ FAST ☐ 1/1 OCT ☐ 1/3 OCT ☒ INTERVALS 20 - MINUTE ☐ $L_N$ PERCENTILE VALUES

**NOTES:**

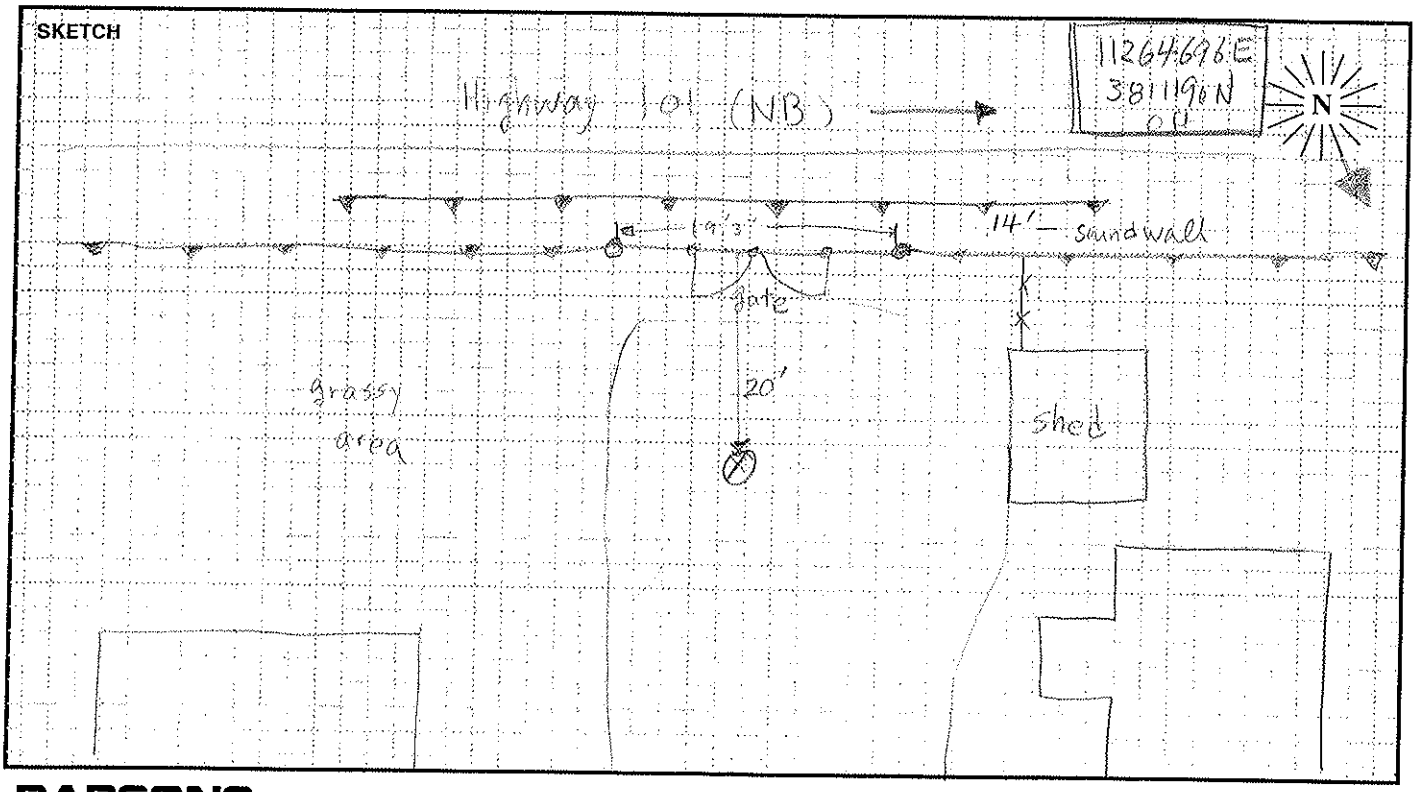
Dist. to Center of Nearest Lane _____ ☐ Video ☐ Radar

Counts AT MT HT

**MEAS. TYPE:** ☐ Long Term ☒ Short Term

| DATE | START TIME | STOP TIME | $L_{MIN}$ | $L_{99}$ | $L_{90}$ | $L_{50}$ | $L_{25}$ | $L_{10}$ | $L_{01}$ | $L_{MAX}$ | $L_{EQ}$ | NOTES: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3/18/09 | 11:26 | 11:46 | 56.2 | 57.3 | 60.0 | 64.4 | 65.4 | 66.8 | 68.9 | 78.1 | 65.0 | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |

**SKETCH**




PARSONS

# FIELD SURVEY FORM

| | | | |
|---|---|---|---|
| PROJECT: Highway 101 HOV Project | | ENGINEER: Philip Jo / Jabra | DATE: 3/18/09 |
| MEASUREMENT ADDRESS: 2637 Marguerite Way | CITY: Summerland | ☒ Single-Family ☐ Multi-Family ☐ Recreational ☐ Commercial | SITE NO.: ST5 |

| SOUND LEVEL METER: | MICROPHONE: | PRE AMP: | NOTES: |
|---|---|---|---|
| ☒ LD-870 ☐ LD-820 | ☒ NON-POLAR ☐ POLARIZED | ☒ LD-900 | SYSTEM PWR: ☐ BAT ☐ AC |
| ☐ LD-824 ☐ LD-812 | ☒ 1/2-INCH ☐ FREEFIELD | ☐ LD-828 | (observations at start of measurement) |
| ☐ LD-2900 ☐ _____ | ☐ 1-INCH ☐ RANDOM | ☐ _____ | |
| SERIAL #: 0496 | SERIAL #: 2029 | SERIAL #: 2270 | TEMP: 75.8 °F R.H.: 31 % |

| CALIBRATOR: | | CALIBRATION RECORD: Input, dB / Reading, dB / Offset, dB / Time | |
|---|---|---|---|
| ☒ LD CA250 | Freq, Hz. ☒ 250 | Before | 114, 114, 21.4, 13:44 |
| ☐ _____ | ☐ 1000 | After | 114, 113.7, -0.3, 15:33 |
| S/N 2480 | ☐ _____ | | |

| METER SETTINGS: | | | | | |
|---|---|---|---|---|---|
| ☒ A-WTD | ☐ LINEAR | ☒ SLOW | ☐ 1/1 OCT | ☒ INTERVALS 20 - MINUTE | WIND SPEED: 0.2 MPH |
| ☐ C-WTD | ☐ IMPULSE | ☐ FAST | ☐ 1/3 OCT | ☐ $L_N$ PERCENTILE VALUES | FROM (DIR): _____ |
| | | | | | SKIES: clear |
| | | | | | CAMERA _____ |
| | | | | | PHOTO NOs. 110-116 |

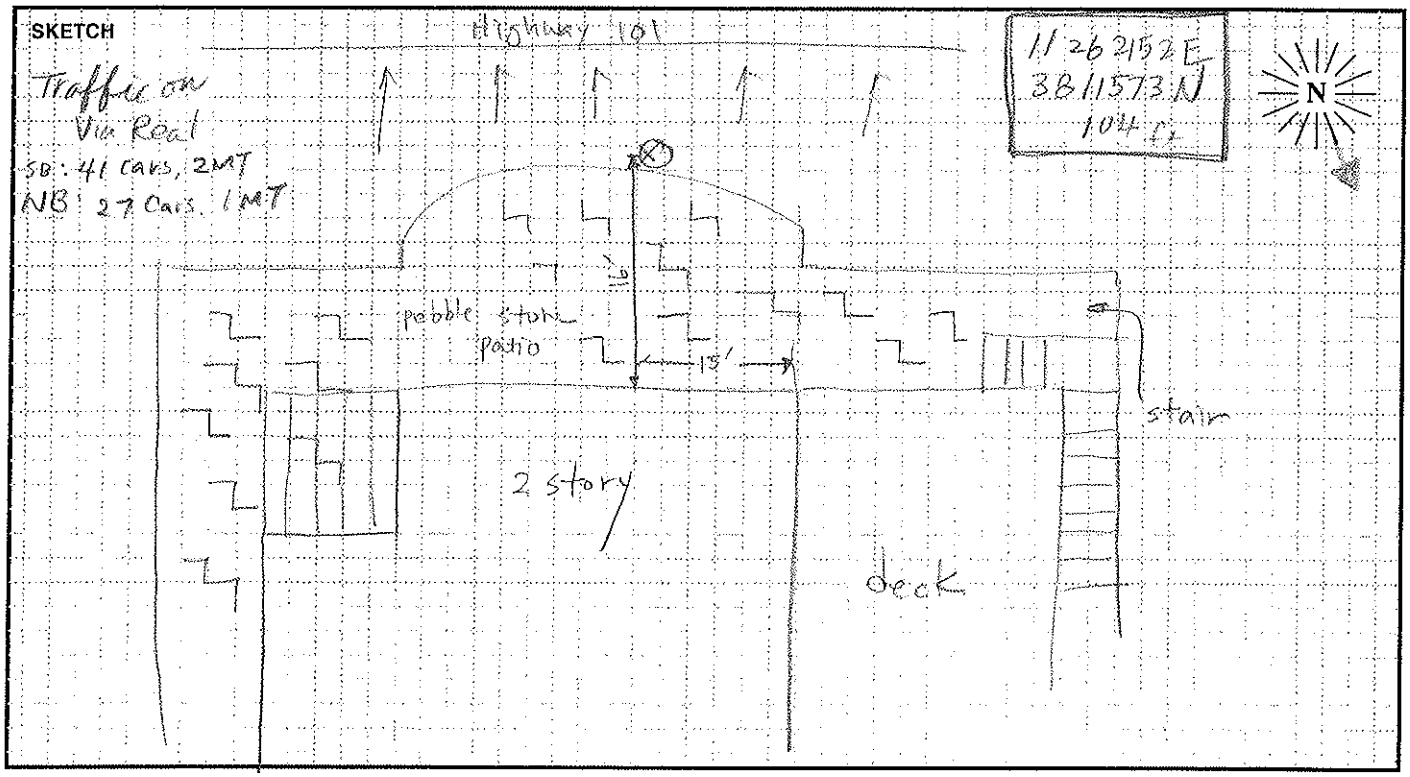
NOTES: ~SW on R/W block line of sight to HWY 101

Dist. to Center of Nearest Lane _____ ☐ Video ☐ Radar Counts AT MT HT

MEAS. TYPE: ☐ Long Term ☒ Short Term

| DATE | START TIME | STOP TIME | $L_{MIN}$ | $L_{99}$ | $L_{90}$ | $L_{50}$ | $L_{25}$ | $L_{10}$ | $L_{01}$ | $L_{MAX}$ | $L_{EQ}$ | NOTES: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3/18/09 | 14:41 | 15:00 | 53.1 | 57.2 | 60.7 | 63.4 | 64.7 | 65.8 | 67.3 | 68.3 | 62.7 | |
| 3/18/09 | 15:00 | 15:20 | 55.5 | 57.6 | 61.0 | 63.4 | 64.6 | 65.7 | 68.1 | 82.8 | 64.4 | ← Calibration & horn noise |
| | | | | | | | | | | | | |

SKETCH




PARSONS

# FIELD SURVEY FORM

| | | | |
|---|---|---|---|
| PROJECT: Highway 101 HOV Project | | ENGINEER: Philip Jo / Jabra | DATE: 3/18/09 |
| MEASUREMENT ADDRESS: 2631 Freesia Drive | CITY: Summerland | ☒ Single-Family ☐ Multi-Family ☐ Recreational ☐ Commercial | SITE NO.: 15A |

| SOUND LEVEL METER: | MICROPHONE: | PRE AMP: | NOTES: |
|---|---|---|---|
| ☒ LD-870 ☐ LD-820 | ☒ WIND SCREEN | ☒ LD-900 | SYSTEM PWR: ☒ BAT ☐ AC |
| ☐ LD-824 ☐ LD-812 | ☒ NON-POLAR ☐ POLARIZED | ☐ LD-828 | (observations at start of measurement) |
| ☐ LD-2900 ☐ _____ | ☒ 1/2-INCH ☐ FREEFIELD | ☐ _____ | TEMP: _____ ºF R.H.: _____ % |
| SERIAL #: 0555 | ☒ 1-INCH ☐ RANDOM | SERIAL #: 1399 | WIND SPEED: _____ MPH |
| | SERIAL #: 2141 | | FROM (DIR): _____ |

| CALIBRATOR: | | CALIBRATION RECORD: Input, dB / Reading, dB / Offset, dB / Time | |
|---|---|---|---|
| ☒ LD CA250 | Freq, Hz. | | SKIES: _____ |
| ☐ _____ | ☒ 250 | Before 114, 114, 22.2, 14:48 | CAMERA _____ |
| S/N 2480 | ☐ 1000 | After 114, 113.9, -0.1, 15:22 | PHOTO NOs. 105-109 |
| | ☐ _____ | | |

METER SETTINGS:
☒ A-WTD ☐ LINEAR ☒ SLOW ☐ 1/1 OCT ☒ INTERVALS 20 - MINUTE
☐ C-WTD ☐ IMPULSE ☐ FAST ☐ 1/3 OCT ☐ $L_N$ PERCENTILE VALUES

NOTES:

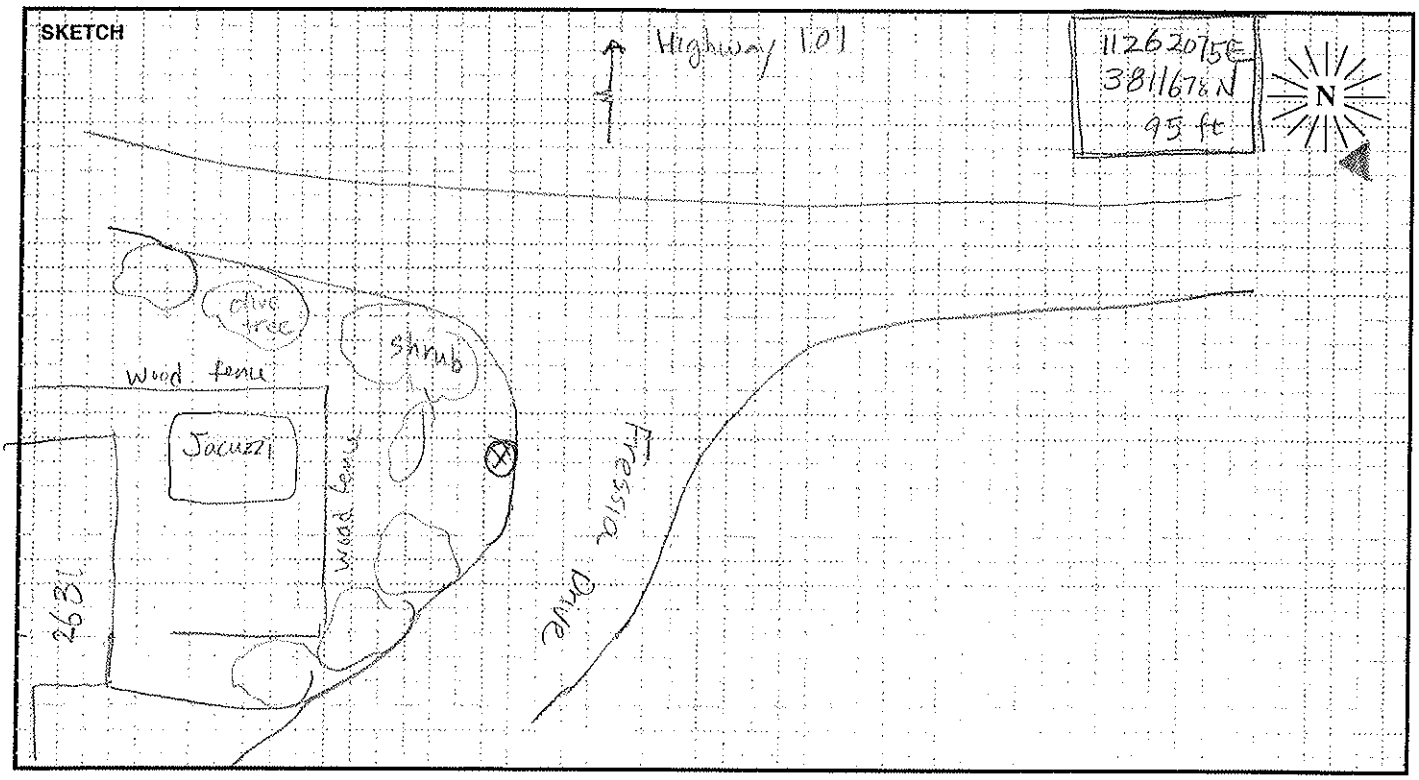
Dist. to Center of Nearest Lane _____ ☐ Video ☐ Radar

Counts: AT MT HT

MEAS. TYPE: ☐ Long Term ☒ Short Term

| DATE | START TIME | STOP TIME | $L_{MIN}$ | $L_{99}$ | $L_{90}$ | $L_{50}$ | $L_{25}$ | $L_{10}$ | $L_{01}$ | $L_{MAX}$ | $L_{EQ}$ | NOTES: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3/18/09 | 15:00 | 15:20 | 48.1 | 48.3 | 49.7 | 51.5 | 52.5 | 53.7 | 61.5 | 69.1 | 53.0 | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |

SKETCH




PARSONS

# FIELD SURVEY FORM

| | | | |
|---|---|---|---|
| PROJECT: Highway 101 HOV Project | | ENGINEER: Philip Jo/ Jabra | DATE: 3/19/09 |
| MEASUREMENT ADDRESS: 2484 Lillie Ave | CITY: Summerland | ☒ Single-Family ☐ Multi-Family ☐ Recreational ☐ Commercial | SITE NO.: ST16 |

| SOUND LEVEL METER: | MICROPHONE: ☒ WIND SCREEN | PRE AMP: | NOTES: |
|---|---|---|---|
| ☒ LD-870 ☐ LD-820 ☐ LD-824 ☐ LD-812 ☐ LD-2900 ☐ _____ | ☒ NON-POLAR ☐ POLARIZED ☒ 1/2-INCH ☐ FREEFIELD ☐ 1-INCH ☐ RANDOM | ☒ LD-900 ☐ LD-828 ☐ _____ | SYSTEM PWR: ☒ BAT ☐ AC |
| SERIAL #: 0496 | SERIAL #: 2029 | SERIAL #: 2270 | (observations at start of measurement) TEMP: 55.7 °F R.H.: 90 % |

| CALIBRATOR: | | CALIBRATION RECORD: | NOTES: |
|---|---|---|---|
| ☒ LD CA250 ☐ _____ S/N 2480 | Freq, Hz. ☒ 250 ☐ 1000 ☐ _____ | Input, dB / Reading, dB / Offset, dB / Time<br>Before 114, 114, 21.7, 7:51<br>After 114, 114, 0.0, 10:18 | WIND SPEED: Calm MPH<br>FROM (DIR): _____<br>SKIES: overcast |

| METER SETTINGS: | | | | | NOTES: |
|---|---|---|---|---|---|
| ☒ A-WTD ☐ C-WTD | ☐ LINEAR ☐ IMPULSE | ☒ SLOW ☐ FAST | ☐ 1/1 OCT ☐ 1/3 OCT | ☒ INTERVALS 20 - MINUTE ☐ $L_N$ PERCENTILE VALUES | CAMERA _____<br>PHOTO NOs. 117-120 |

NOTES: Traffic on Lillie Ave
NB: 63 cars, 2MT
SB: 42 cars, 1MT

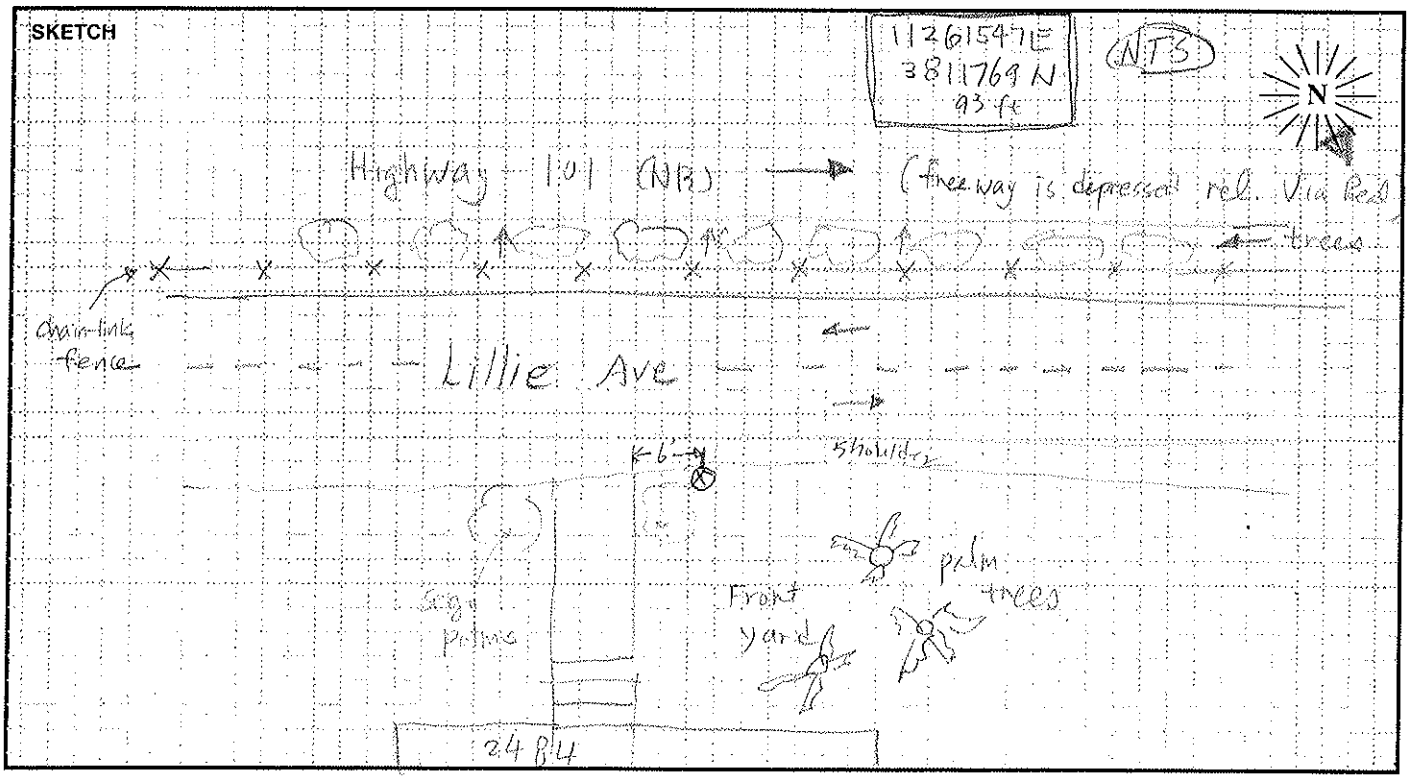
Dist. to Center of Nearest Lane _____ ☐ Video ☐ Radar

MEAS. TYPE: ☐ Long Term ☒ Short Term

| DATE | START TIME | STOP TIME | $L_{MIN}$ | $L_{99}$ | $L_{90}$ | $L_{50}$ | $L_{25}$ | $L_{10}$ | $L_{01}$ | $L_{MAX}$ | $L_{EQ}$ | NOTES: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3/19/09 | 8:02 | 8:22 | 62.7 | 64.8 | 66.5 | 69.2 | 71.1 | 73.3 | 76.8 | 81.8 | 70.5 | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |

Counts: AT MT HT

SKETCH




PARSONS

# FIELD SURVEY FORM

| | | | |
|---|---|---|---|
| PROJECT: Highway 101 HOV Project | | ENGINEER: Philip Jo/ Jabra | DATE: 3/19/09 |
| MEASUREMENT ADDRESS: 2474 Varley Street | CITY: Summerland | ☒ Single-Family ☐ Multi-Family ☐ Recreational ☐ Commercial | SITE NO.: ST16A |

| SOUND LEVEL METER: | MICROPHONE: | PRE AMP: | NOTES: |
|---|---|---|---|
| ☒ LD-870 ☐ LD-820 ☐ LD-824 ☐ LD-812 ☐ LD-2900 ☐ _____ | ☒ WIND SCREEN ☒ NON-POLAR ☐ POLARIZED ☒ 1/2-INCH ☐ FREEFIELD ☐ 1-INCH ☐ RANDOM | ☒ LD-900 ☐ LD-828 ☐ _____ | SYSTEM PWR: ☒ BAT ☐ AC (observations at start of measurement) |
| SERIAL #: 0496 | SERIAL #: 2029 | SERIAL #: 2270 | TEMP: 57 °F R.H.: 93 % |

| CALIBRATOR: | | CALIBRATION RECORD: Input, dB / Reading, dB / Offset, dB / Time | |
|---|---|---|---|
| ☒ LD CA250 ☐ _____ S/N 2480 | Freq, Hz. ☒ 250 ☐ 1000 ☐ _____ | Before 114, 114, 21.7, 7:51 | WIND SPEED: calm MPH |
| | | After 114, 114, 0.0, 10:18 | FROM (DIR): _____ |
| | | | SKIES: overcast |

| METER SETTINGS: | | | | | NOTES: |
|---|---|---|---|---|---|
| ☒ A-WTD ☐ C-WTD | ☐ LINEAR ☐ IMPULSE | ☒ SLOW ☐ FAST | ☐ 1/1 OCT ☐ 1/3 OCT | ☒ INTERVALS 20 - MINUTE ☐ $L_N$ PERCENTILE VALUES | CAMERA _____ PHOTO NOs. 121-123 |

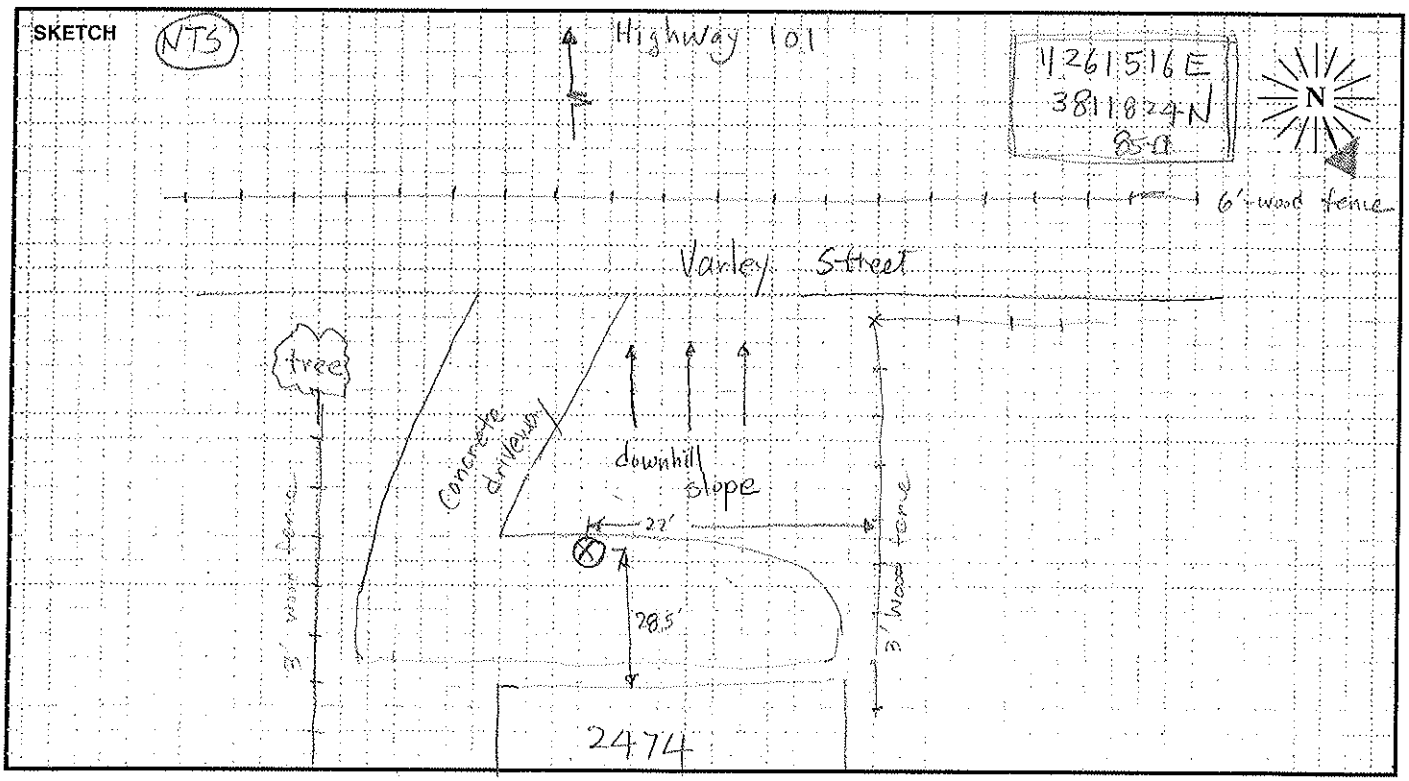
NOTES:
Traffic on Via Real
NB 24 cars, 3MT
SB 24 cars, 1MT

Dist. to Center of Nearest Lane _____ ☐ Video ☐ Radar Counts AT MT HT

MEAS. TYPE: ☐ Long Term ☒ Short Term

| DATE | START TIME | STOP TIME | $L_{MIN}$ | $L_{99}$ | $L_{90}$ | $L_{50}$ | $L_{25}$ | $L_{10}$ | $L_{01}$ | $L_{MAX}$ | $L_{EQ}$ | NOTES: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3/19/09 | 8:35 | 8:55 | 56.3 | 57.2 | 58.6 | 61.0 | 62.4 | 63.5 | 65.5 | 66.8 | 61.4 | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |

SKETCH (NTS)




PARSONS

# FIELD SURVEY FORM

| | | |
|---|---|---|
| PROJECT: Highway 101 HOV Project | ENGINEER: Philip Jo/ Jabra | DATE: 3/18/09 |
| MEASUREMENT ADDRESS: Summerland School | CITY: Summerland | ☐ Single-Family ☐ Multi-Family ☐ Recreational ☐ Commercial — SITE NO.: ST17 |

| SOUND LEVEL METER: | MICROPHONE: | PRE AMP: | NOTES: |
|---|---|---|---|
| ☒ LD-870 ☐ LD-820 ☐ LD-824 ☐ LD-812 ☐ LD-2900 ☐ _____ | ☒ WIND SCREEN ☒ NON-POLAR ☐ POLARIZED ☒ 1/2-INCH ☐ FREEFIELD ☐ 1-INCH ☐ RANDOM | ☒ LD-900 ☐ LD-828 ☐ _____ | SYSTEM PWR: ☒ BAT ☐ AC |
| SERIAL #: 0496 | SERIAL #: 2029 | SERIAL #: 2270 | (observations at start of measurement) |

TEMP: 76.7 °F R.H.: 40 %

WIND SPEED: Calm MPH

FROM (DIR): _____

SKIES: clear

CAMERA _____

PHOTO NOs. _____

**CALIBRATOR:** ☒ LD CA250 ☐ _____ S/N 2480

Freq, Hz.: ☒ 250 ☐ 1000 ☐ _____

**CALIBRATION RECORD:** Input, dB / Reading, dB / Offset, dB / Time

Before 114, 114, 21.5, 16:24

After 114, 114, 0.0, 16:55

**METER SETTINGS:**
☒ A-WTD ☐ LINEAR ☒ SLOW ☐ 1/1 OCT ☒ INTERVALS 20 - MINUTE
☐ C-WTD ☐ IMPULSE ☐ FAST ☐ 1/3 OCT ☐ $L_N$ PERCENTILE VALUES

NOTES: traffic on Valencia Rd
CARS & 1 HT

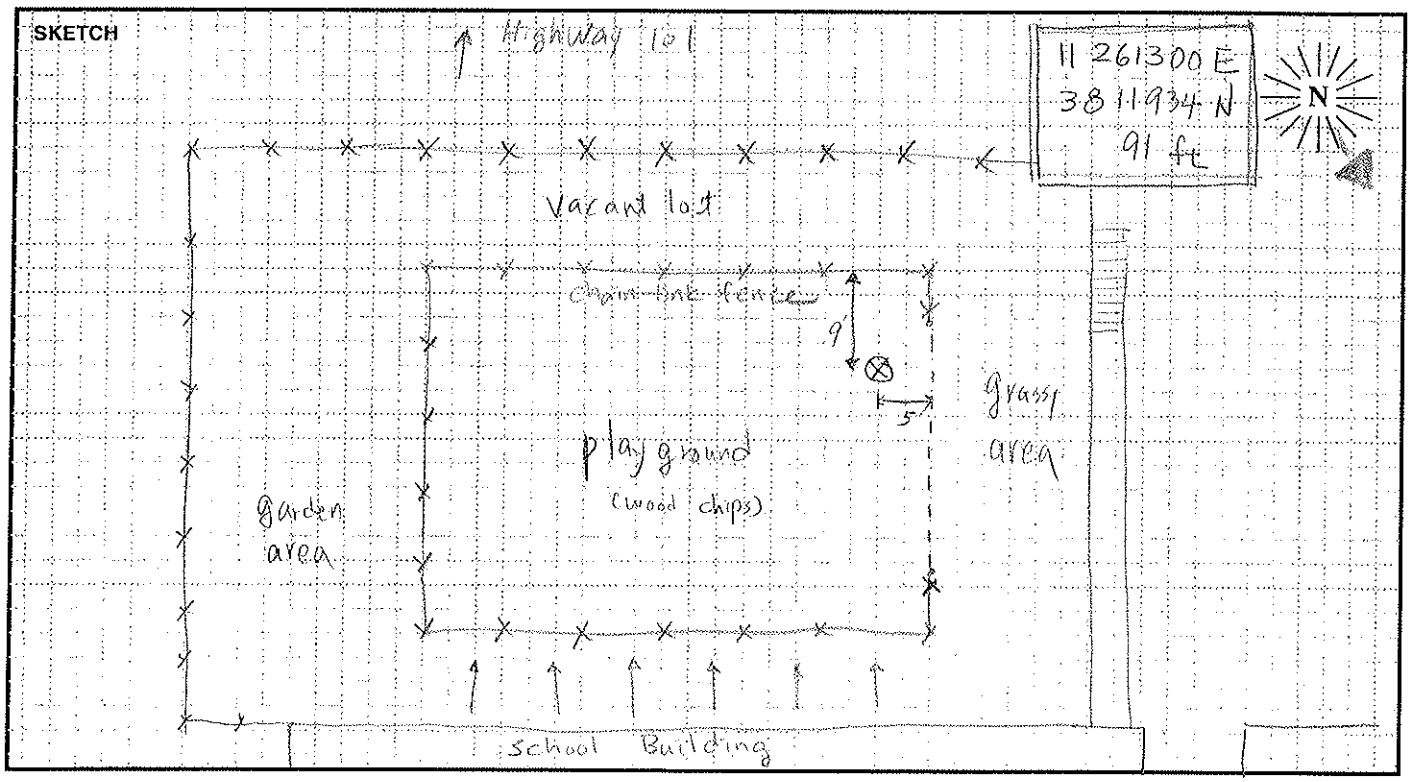
Dist. to Center of Nearest Lane _____ ☐ Video ☐ Radar

Counts: AT MT HT

MEAS. TYPE: ☐ Long Term ☒ Short Term

| DATE | START TIME | STOP TIME | $L_{MIN}$ | $L_{99}$ | $L_{90}$ | $L_{50}$ | $L_{25}$ | $L_{10}$ | $L_{01}$ | $L_{MAX}$ | $L_{EQ}$ | NOTES: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3/18/09 | 16:34 | 16:54 | 58.9 | 59.4 | 61.0 | 63.1 | 64.1 | 65.6 | 67.8 | 68.9 | 63.5 | ~74 HT downhill w/ Jake break |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |

SKETCH




PARSONS

# FIELD SURVEY FORM

| | | | |
|---|---|---|---|
| PROJECT: Highway 101 HOV Project | | ENGINEER: Philip Jo / Jabra | DATE: 3/17/09 |
| MEASUREMENT ADDRESS: 2385 Finney St East | CITY: Summerland | ☒ Single-Family ☐ Multi-Family ☐ Recreational ☐ Commercial | SITE NO.: ST 18 |

| SOUND LEVEL METER: | MICROPHONE: | PRE AMP: | NOTES: |
|---|---|---|---|
| ☒ LD-870 ☐ LD-820 | ☒ WIND SCREEN | ☒ LD-900 | SYSTEM PWR: ☐ BAT ☒ AC |
| ☐ LD-824 ☐ LD-812 | ☒ NON-POLAR ☐ POLARIZED | ☐ LD-828 | (observations at start of measurement) |
| ☐ LD-2900 ☐ _____ | ☒ 1/2-INCH ☐ FREEFIELD | ☐ _____ | TEMP: 66.2°F R.H.: 68 % |
| SERIAL #: 0496 | ☐ 1-INCH ☐ RANDOM | SERIAL #: 2270 | WIND SPEED: Calm MPH |
| | SERIAL #: 2029 | | FROM (DIR): _____ |

**CALIBRATOR:** ☒ LD CA250 ☐ _____ S/N 2480

Freq, Hz.: ☒ 250 ☐ 1000 ☐ _____

**CALIBRATION RECORD:** Input, dB / Reading, dB / Offset, dB / Time

Before 114, 114, 21.6, 10:41

After 114, 114.3, 0.3, 11:08

SKIES: clear

CAMERA _____

PHOTO NOs. 46-53

**METER SETTINGS:**
☒ A-WTD ☐ LINEAR ☒ SLOW ☐ 1/1 OCT ☒ INTERVALS 20 - MINUTE
☐ C-WTD ☐ IMPULSE ☐ FAST ☐ 1/3 OCT ☐ $L_N$ PERCENTILE VALUES

NOTES:

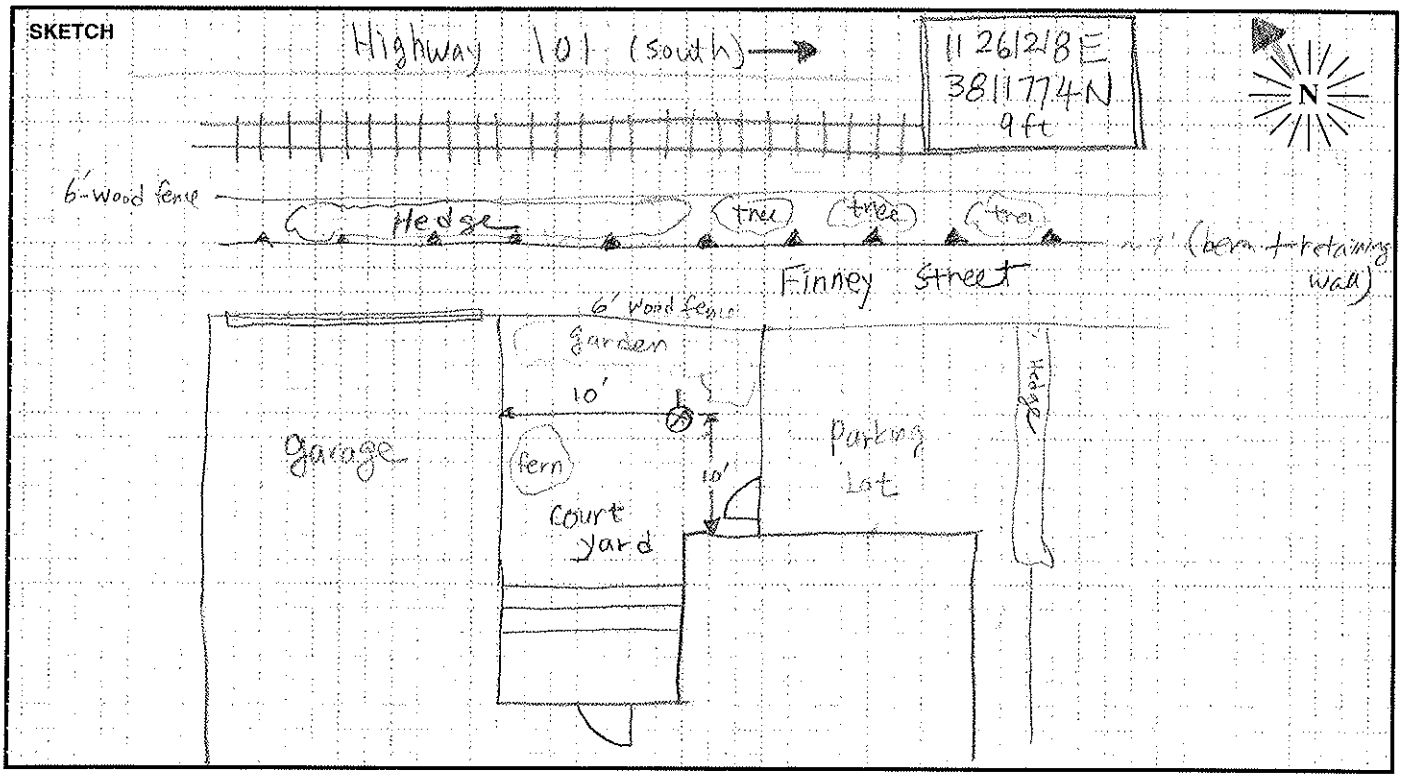
Dist. to Center of Nearest Lane _____ ☐ Video ☐ Radar

Counts: AT MT HT

MEAS. TYPE: ☐ Long Term ☒ Short Term

| DATE | START TIME | STOP TIME | $L_{MIN}$ | $L_{99}$ | $L_{90}$ | $L_{50}$ | $L_{25}$ | $L_{10}$ | $L_{01}$ | $L_{MAX}$ | $L_{EQ}$ | NOTES: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3/17/09 | 10:45 | 11:05 | 47.6 | 48.9 | 52.2 | 55.9 | 57.9 | 59.8 | 63.9 | 67.8 | 57.1 | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |

SKETCH




PARSONS

# FIELD SURVEY FORM

| | | | |
|---|---|---|---|
| PROJECT: Highway 101 Hov Project | | ENGINEER: Philip Jo / Jabra | DATE: 3/17/09 |
| MEASUREMENT ADDRESS: Lookout Park | CITY: Summerland | ☐ Single-Family ☐ Multi-Family ☒ Recreational ☐ Commercial | SITE NO.: ST19 |

| SOUND LEVEL METER: | MICROPHONE: ☒ WIND SCREEN | PRE AMP: | NOTES: |
|---|---|---|---|
| ☒ LD-870 ☐ LD-820 | ☒ NON-POLAR ☐ POLARIZED | ☒ LD-900 | SYSTEM PWR: ☐ BAT ☐ AC |
| ☐ LD-824 ☐ LD-812 | ☒ 1/2-INCH ☐ FREEFIELD | ☐ LD-828 | (observations at start of measurement) |
| ☐ LD-2900 ☐ _____ | ☐ 1-INCH ☐ RANDOM | ☐ _____ | |
| SERIAL #: 0496 | SERIAL #: 2029 | SERIAL #: 2270 | TEMP: 66.2 °F R.H.: 63 % |

| CALIBRATOR: | | CALIBRATION RECORD: Input, dB / Reading, dB / Offset, dB / Time | |
|---|---|---|---|
| ☒ LD CA250 | Freq, Hz. | | WIND SPEED: Calm MPH |
| ☐ _____ | ☐ 250 | Before 114 / 114 / 21.6 / 10:41 | FROM (DIR): _____ |
| S/N 2480 | ☐ 1000 | After 114 / 114 / — / 12:07 | SKIES: clear |
| | ☐ _____ | | |

METER SETTINGS:
☐ A-WTD ☐ LINEAR ☐ SLOW ☐ 1/1 OCT ☐ INTERVALS 20 - MINUTE
☐ C-WTD ☐ IMPULSE ☐ FAST ☐ 1/3 OCT ☐ $L_N$ PERCENTILE VALUES

CAMERA _____
PHOTO NOs. 54-63

NOTES:

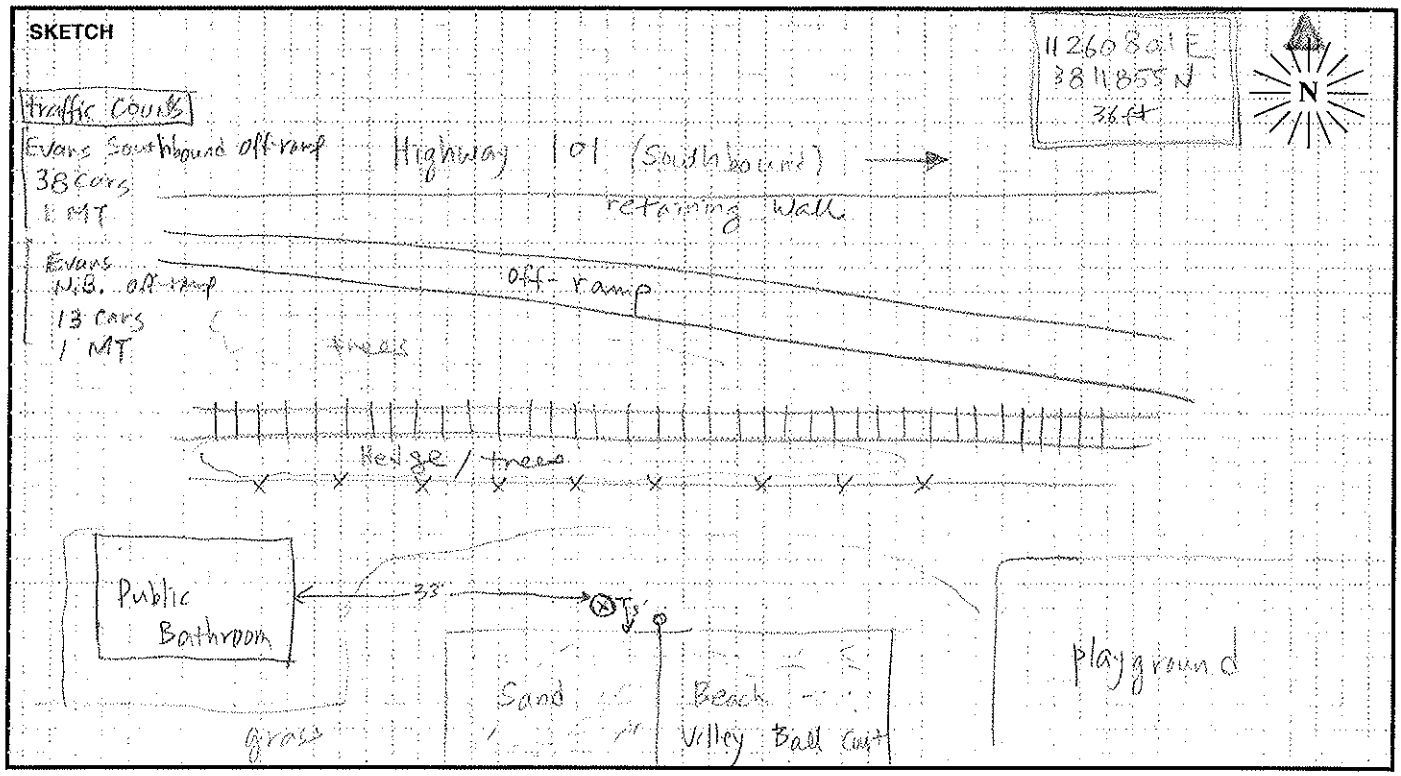
Dist. to Center of Nearest Lane _____ ☐ Video ☐ Radar

Counts: AT MT HT

MEAS. TYPE: ☐ Long Term ☒ Short Term

| DATE | START TIME | STOP TIME | $L_{MIN}$ | $L_{99}$ | $L_{90}$ | $L_{50}$ | $L_{25}$ | $L_{10}$ | $L_{01}$ | $L_{MAX}$ | $L_{EQ}$ | NOTES: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3/17 | 11:43 | 12:03 | 51.6 | 53.2 | 55.8 | 59.1 | 60.8 | 62.4 | 64.9 | 69.6 | 59.8 | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |

SKETCH




PARSONS

# FIELD SURVEY FORM

| | | | |
|---|---|---|---|
| PROJECT: Highway 101 HOV Project | | ENGINEER: Philip To / Jabra | DATE: 3/19/09 |
| MEASUREMENT ADDRESS: 2230 Hardinge Street | CITY: Summerland | ☒ Single-Family ☐ Multi-Family ☐ Recreational ☐ Commercial | SITE NO.: ST20 |

| SOUND LEVEL METER: | MICROPHONE: | PRE AMP: | NOTES: |
|---|---|---|---|
| ☒ LD-870 ☐ LD-820 ☐ LD-824 ☐ LD-812 ☐ LD-2900 ☐ _____ | ☒ WIND SCREEN ☐ NON-POLAR ☐ POLARIZED ☒ 1/2-INCH ☐ FREEFIELD ☐ 1-INCH ☐ RANDOM | ☒ LD-900 ☐ LD-828 ☐ _____ | SYSTEM PWR: ☒ BAT ☐ AC (observations at start of measurement) |
| SERIAL #: 0496 | SERIAL #: 2029 | SERIAL #: 2270 | TEMP: 58.2 °F R.H.: 86 % |

| CALIBRATOR: | | CALIBRATION RECORD: Input, dB / Reading, dB / Offset, dB / Time | |
|---|---|---|---|
| ☒ LD CA250 ☐ _____ S/N 2480 | Freq, Hz. ☒ 250 ☐ 1000 ☐ _____ | Before 114, 114, 21.7, 7:51 After 114, 114, 0.0, 10:18 | WIND SPEED: Calm MPH; FROM (DIR): _____; SKIES: overcast |

METER SETTINGS: ☒ A-WTD ☐ LINEAR ☐ SLOW ☐ 1/1 OCT ☒ INTERVALS 20 - MINUTE; ☐ C-WTD ☐ IMPULSE ☐ FAST ☐ 1/3 OCT ☐ $L_N$ PERCENTILE VALUES

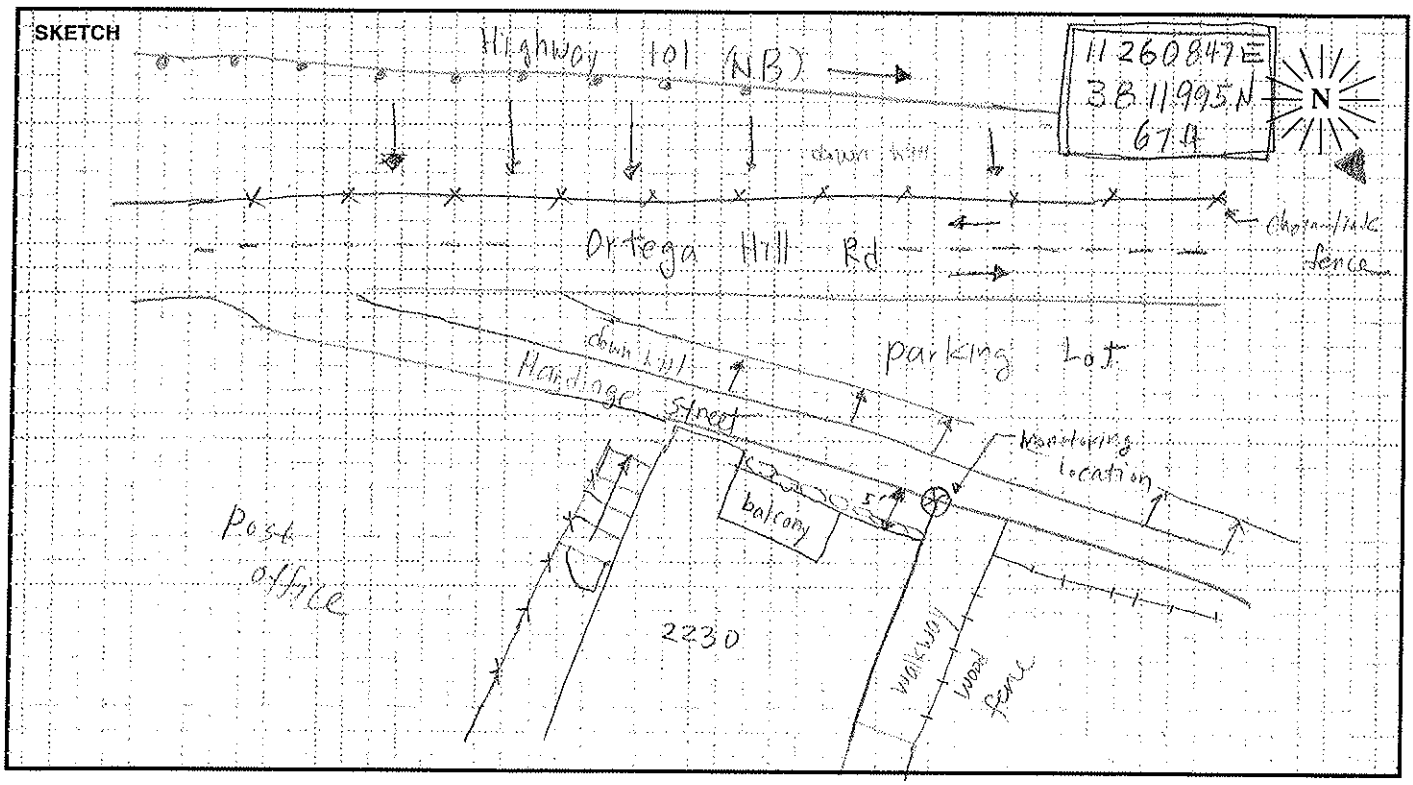
CAMERA _____ PHOTO NOs. 124-129

NOTES: Dist. to Center of Nearest Lane _____ ☐ Video ☐ Radar Counts AT MT HT

MEAS. TYPE: ☐ Long Term ☒ Short Term

| DATE | START TIME | STOP TIME | $L_{MIN}$ | $L_{99}$ | $L_{90}$ | $L_{50}$ | $L_{25}$ | $L_{10}$ | $L_{01}$ | $L_{MAX}$ | $L_{EQ}$ | NOTES: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3/19/09 | 9:25 | 9:45 | 60.9 | 62.2 | 66.1 | 70.0 | 71.4 | 72.8 | 75.1 | 77.5 | 70.4 | ~7.6 train horn/opposite side of HWY |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |

SKETCH




PARSONS

# FIELD SURVEY FORM

| | | | |
|---|---|---|---|
| PROJECT: Highway 101 HOV Project | | ENGINEER: Philip Jo / Jabra | DATE: 3/19/09 |
| MEASUREMENT ADDRESS: 100 Arroqui Street | CITY: Santa Barbara | ☒ Single-Family ☐ Multi-Family ☐ Recreational ☐ Commercial | SITE NO.: ST21 |

| SOUND LEVEL METER: | MICROPHONE: | PRE AMP: | NOTES: |
|---|---|---|---|
| ☒ LD-870 ☐ LD-820 ☐ LD-824 ☐ LD-812 ☐ LD-2900 ☐ _____ | ☒ WIND SCREEN ☒ NON-POLAR ☐ POLARIZED ☒ 1/2-INCH ☐ FREEFIELD ☐ 1-INCH ☐ RANDOM | ☒ LD-900 ☐ LD-828 ☐ _____ | SYSTEM PWR: ☒ BAT ☐ AC (observations at start of measurement) |
| SERIAL #: 0496 | SERIAL #: 2029 | SERIAL #: 2270 | TEMP: 59.8 °F R.H.: 82 % |

| CALIBRATOR: | | CALIBRATION RECORD: Input, dB / Reading, dB / Offset, dB / Time | |
|---|---|---|---|
| ☒ LD CA250 ☐ _____ S/N 2480 | Freq, Hz. ☒ 250 ☐ 1000 ☐ _____ | Before 114, 114, 21.7, 7:51 After 114, 113.9, -0.1, 11:27 | WIND SPEED: calm MPH; FROM (DIR): _____; SKIES: Overcast |

| METER SETTINGS: | | | | | |
|---|---|---|---|---|---|
| ☒ A-WTD | ☐ LINEAR | ☒ SLOW | ☐ 1/1 OCT | ☒ INTERVALS 20 - MINUTE | CAMERA _____ |
| ☐ C-WTD | ☐ IMPULSE | ☐ FAST | ☐ 1/3 OCT | ☐ $L_N$ PERCENTILE VALUES | PHOTO NOs. 130-135 |

NOTES:
Traffic on Jameson
NB: 13 cars, 2MT
SB: 18 cars, 2MT

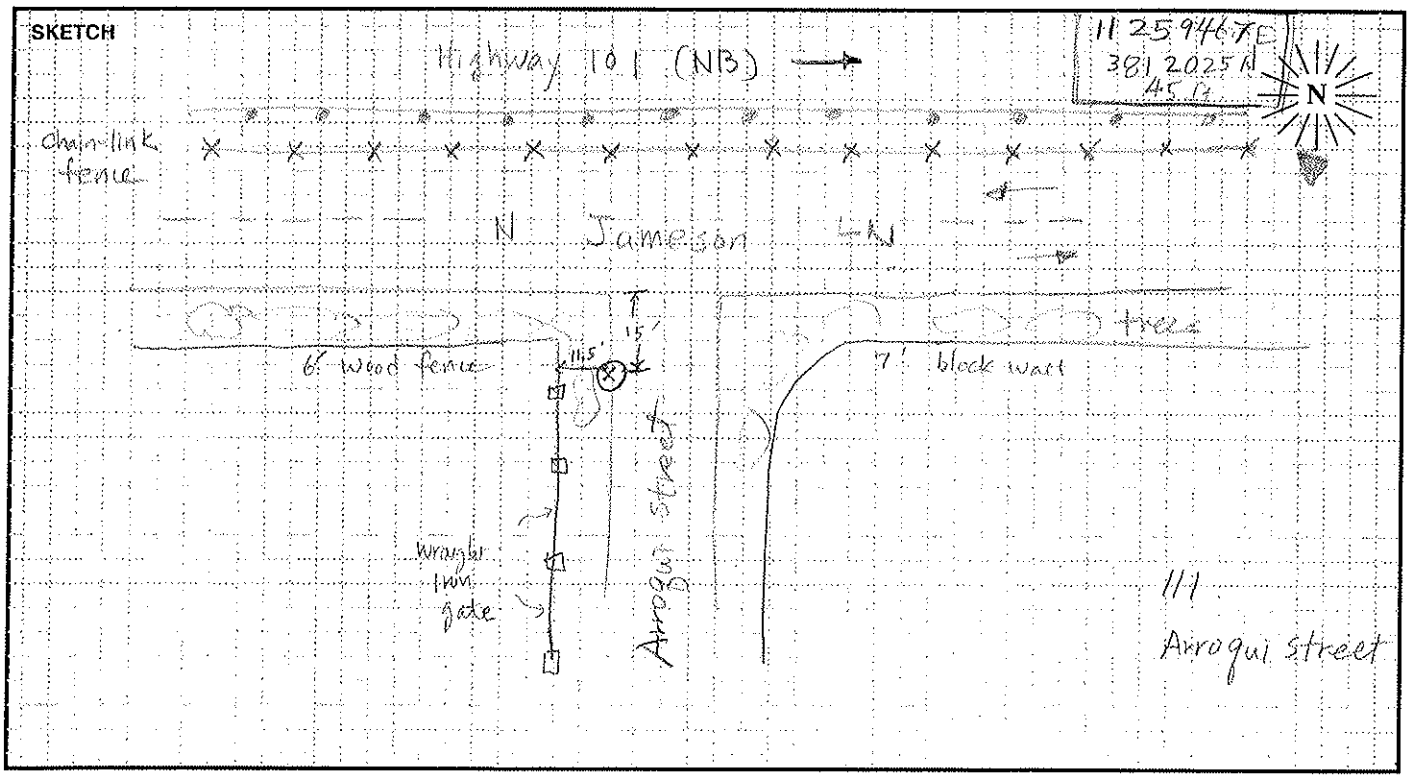
Dist. to Center of Nearest Lane _____ ☐ Video ☐ Radar

Counts: AT MT HT

MEAS. TYPE: ☐ Long Term ☒ Short Term

| DATE | START TIME | STOP TIME | $L_{MIN}$ | $L_{99}$ | $L_{90}$ | $L_{50}$ | $L_{25}$ | $L_{10}$ | $L_{01}$ | $L_{MAX}$ | $L_{EQ}$ | NOTES: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3/19/09 | 10:22 | 10:42 | 58.5 | 62.8 | 66.6 | 70.8 | 72.4 | 73.7 | 76.4 | 79.3 | 71.3 | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |

SKETCH




PARSONS

# FIELD SURVEY FORM

| | | | |
|---|---|---|---|
| PROJECT: Highway 101 HOV Project | | ENGINEER: Philip Jo / Jabra | DATE: 3/19/09 |
| MEASUREMENT ADDRESS: 1755 Fernald Point LN | CITY: Santa Barbara | ☒ Single-Family ☐ Multi-Family ☐ Recreational ☐ Commercial | SITE NO.: ST 22 |

| SOUND LEVEL METER: | MICROPHONE: | PRE AMP: | NOTES: |
|---|---|---|---|
| ☒ LD-870 ☐ LD-820 | ☒ NON-POLAR ☐ POLARIZED | ☒ LD-900 | SYSTEM PWR: ☒ BAT ☐ AC |
| ☐ LD-824 ☐ LD-812 | ☒ 1/2-INCH ☐ FREEFIELD | ☐ LD-828 | (observations at start of measurement) |
| ☐ LD-2900 ☐ _____ | ☐ 1-INCH ☐ RANDOM | ☐ _____ | |
| SERIAL #: 0496 | SERIAL #: 2029 | SERIAL #: 2270 | TEMP: 60 °F R.H.: 78 % |

| CALIBRATOR: | | CALIBRATION RECORD: Input, dB / Reading, dB / Offset, dB / Time | |
|---|---|---|---|
| ☒ LD CA250 | Freq, Hz. ☒ 250 | Before 114, 114, 21.7, 7:51 | WIND SPEED: calm MPH |
| ☐ _____ | ☐ 1000 | | FROM (DIR): _____ |
| S/N 2480 | ☐ _____ | After 114, 113.9, -0.1, 11.27 | SKIES: overcast |

| METER SETTINGS: | | | | | |
|---|---|---|---|---|---|
| ☒ A-WTD | ☐ LINEAR | ☒ SLOW | ☐ 1/1 OCT | ☒ INTERVALS 20 - MINUTE | CAMERA _____ |
| ☐ C-WTD | ☐ IMPULSE | ☐ FAST | ☒ 1/3 OCT | ☐ $L_N$ PERCENTILE VALUES | PHOTO NOs. 136-142 |

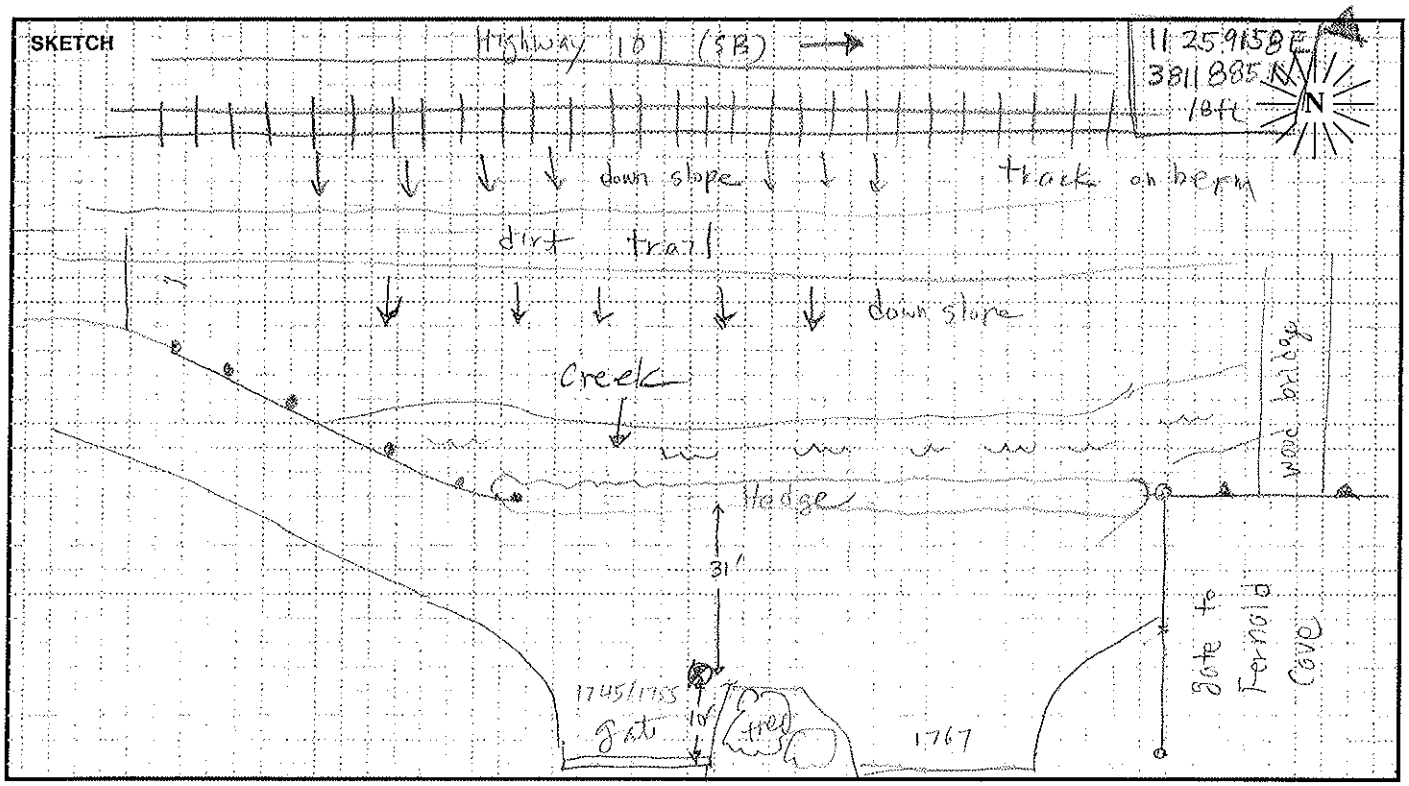
NOTES:

Dist. to Center of Nearest Lane _____ ☐ Video ☐ Radar Counts AT MT HT

MEAS. TYPE: ☐ Long Term ☒ Short Term

| DATE | START TIME | STOP TIME | $L_{MIN}$ | $L_{99}$ | $L_{90}$ | $L_{50}$ | $L_{25}$ | $L_{10}$ | $L_{01}$ | $L_{MAX}$ | $L_{EQ}$ | NOTES: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3/19/09 | 11:04 | 11:24 | 54.4 | 56.8 | 60.0 | 62.5 | 63.6 | 64.5 | 66.5 | 68.3 | 62.7 | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |

SKETCH




PARSONS

# FIELD SURVEY FORM

| | | | |
|---|---|---|---|
| PROJECT: Highway 101 HOV Project | | ENGINEER: Philip Jo / Jobra | DATE: 3/20/09 |
| MEASUREMENT ADDRESS: 1637 Positipo LN | CITY: Santa Barbara | ☒ Single-Family ☐ Multi-Family ☐ Recreational ☐ Commercial | SITE NO.: ST23 |

| SOUND LEVEL METER: | MICROPHONE: | PRE AMP: | NOTES: |
|---|---|---|---|
| ☒ LD-870 ☐ LD-820 | ☒ NON-POLAR ☐ POLARIZED | ☒ LD-900 | SYSTEM PWR: ☒ BAT ☐ AC |
| ☐ LD-824 ☐ LD-812 | ☒ 1/2-INCH ☐ FREEFIELD | ☐ LD-828 | (observations at start of measurement) |
| ☐ LD-2900 ☐ _____ | ☐ 1-INCH ☐ RANDOM | ☐ _____ | |
| SERIAL #: 0496 | SERIAL #: 2029 | SERIAL #: 2270 | TEMP: 54.9 °F R.H.: 90 % |

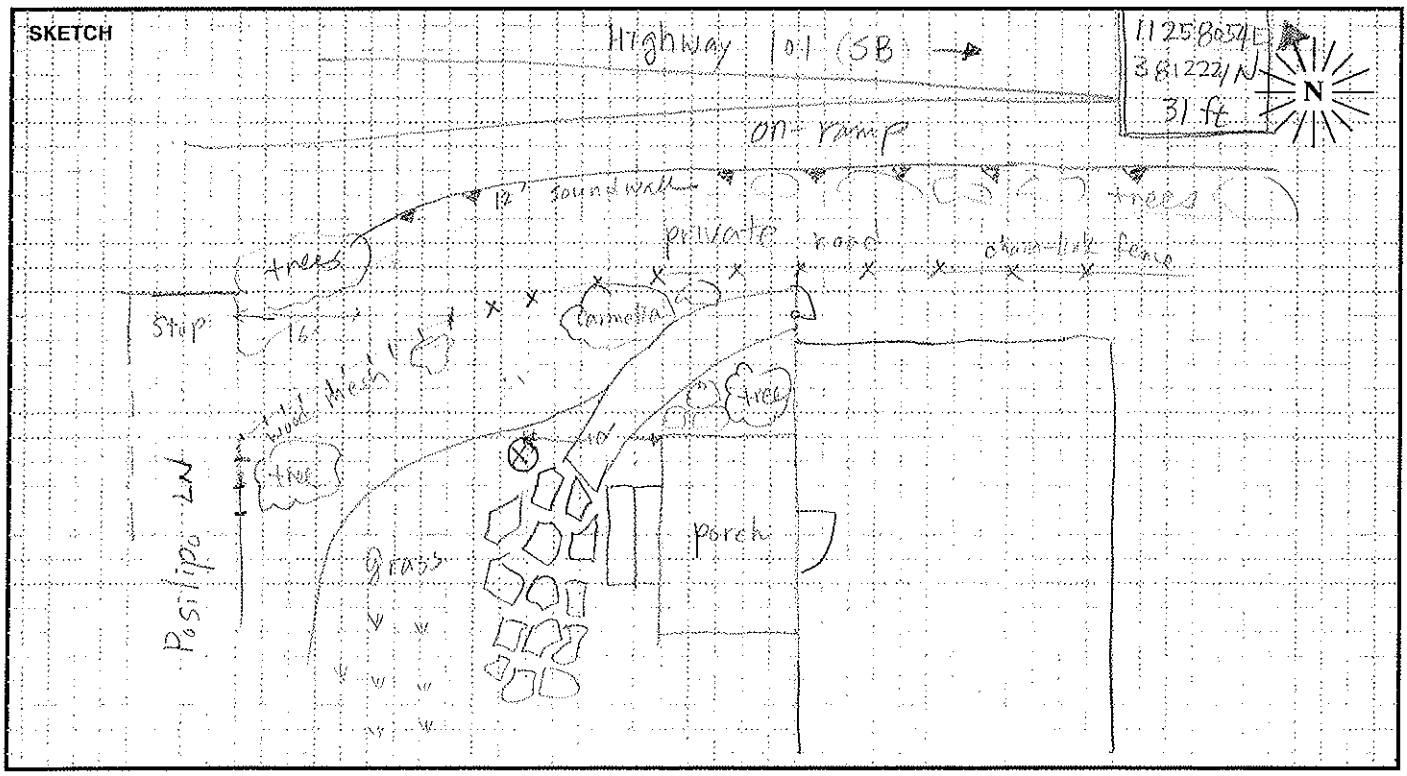
| CALIBRATOR: | | CALIBRATION RECORD: | NOTES: |
|---|---|---|---|
| ☒ LD CA250 | Freq, Hz. ☒ 250 | Input, dB / Reading, dB / Offset, dB / Time | WIND SPEED: calm MPH |
| ☐ _____ | ☐ 1000 | Before 114, 114, 21.8, 9:22 | FROM (DIR): _____ |
| S/N 2480 | ☐ _____ | After 114, 113.9, -0.1, 11:52 | SKIES: overcast |

| METER SETTINGS: | | | | | NOTES: |
|---|---|---|---|---|---|
| ☐ A-WTD | ☐ LINEAR | ☒ SLOW | ☐ 1/1 OCT | ☒ INTERVALS 20 - MINUTE | CAMERA _____ |
| ☐ C-WTD | ☐ IMPULSE | ☐ FAST | ☐ 1/3 OCT | ☐ $L_N$ PERCENTILE VALUES | PHOTO NOs. 168 - 173 |

| NOTES: | Dist. to Center of Nearest Lane | ☐ Video ☐ Radar | Counts AT | MT | HT | MEAS. TYPE: |
|---|---|---|---|---|---|---|
| Traffic on on ramp 21 cars only | _____ | | | | | ☐ Long Term ☒ Short Term |

| DATE | START TIME | STOP TIME | $L_{MIN}$ | $L_{99}$ | $L_{90}$ | $L_{50}$ | $L_{25}$ | $L_{10}$ | $L_{01}$ | $L_{MAX}$ | $L_{EQ}$ | NOTES: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3/20/09 | 10:26 | 10:38 | 58.5 | 59.5 | 62.2 | 65.8 | 67.4 | 68.9 | 81.1 | 97.7 | 72.9 | stopped due to train w/ horn @ 8.c |
| | 10.40 | 11:00 | 58.1 | 59.0 | 62.0 | 65.3 | 66.6 | 67.8 | 70.5 | 72.0 | 65.6 | |
| | | | | | | | | | | | | |

SKETCH




PARSONS

# FIELD SURVEY FORM

| | | | |
|---|---|---|---|
| PROJECT: Highway 101 HOV Project | | ENGINEER: Philip Jo/ Jabra | DATE: 3/19/09 |
| MEASUREMENT ADDRESS: 102 Hixon Road | CITY: Santa Barbara | ☒ Single-Family ☐ Multi-Family ☐ Recreational ☐ Commercial | SITE NO.: ST24 |

| SOUND LEVEL METER: | MICROPHONE: | PRE AMP: |
|---|---|---|
| ☒ LD-870 ☐ LD-820 ☐ LD-824 ☐ LD-812 ☐ LD-2900 ☐ _____ | ☒ WIND SCREEN ☒ NON-POLAR ☐ POLARIZED ☒ 1/2-INCH ☐ FREEFIELD ☐ 1-INCH ☐ RANDOM | ☒ LD-900 ☐ LD-828 ☐ _____ |
| SERIAL #: 0496 | SERIAL #: 2029 | SERIAL #: 2270 |

NOTES:

SYSTEM PWR: ☒ BAT ☐ AC

(observations at start of measurement)

TEMP: 61.1 °F R.H.: 54.6 %

WIND SPEED: calm MPH

FROM (DIR): _____

SKIES: mostly cloudy

CAMERA _____

PHOTO NOs. 143-147

CALIBRATOR: ☒ LD CA250 ☐ _____ S/N 2480

Freq, Hz.: ☒ 250 ☐ 1000 ☐ _____

CALIBRATION RECORD: Input, dB / Reading, dB / Offset, dB / Time

Before 114, 114, 21.7, 7:51

After 114, 113.9, -0.1, 12:13

METER SETTINGS:
☒ A-WTD ☐ LINEAR ☒ SLOW ☐ 1/1 OCT ☒ INTERVALS 20 - MINUTE
☐ C-WTD ☐ IMPULSE ☐ FAST ☒ 1/3 OCT ☐ $L_N$ PERCENTILE VALUES

NOTES: Traffic on Jameson
NB: 35 cars
SB: 29 cars

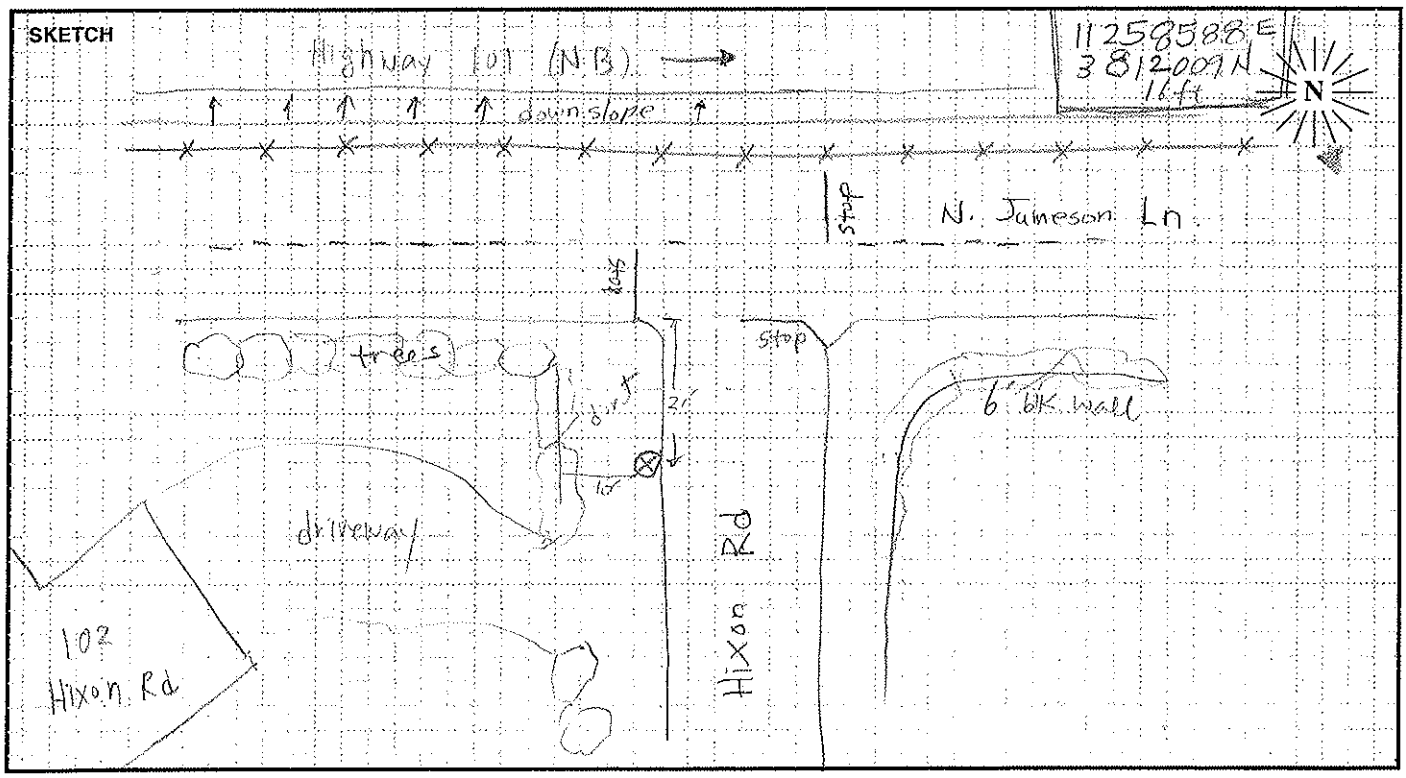
Dist. to Center of Nearest Lane _____ ☐ Video ☐ Radar

Counts: AT MT HT

MEAS. TYPE: ☐ Long Term ☒ Short Term

| DATE | START TIME | STOP TIME | $L_{MIN}$ | $L_{99}$ | $L_{90}$ | $L_{50}$ | $L_{25}$ | $L_{10}$ | $L_{01}$ | $L_{MAX}$ | $L_{EQ}$ | NOTES: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3/19/09 | 11:49 | 12:09 | 59.6 | 62.9 | 66.7 | 70.5 | 71.8 | 73.1 | 76.5 | 85.8 | 71.1 | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |

SKETCH




PARSONS

# FIELD SURVEY FORM

| | | | |
|---|---|---|---|
| PROJECT: Highway 101 HOV Project | | ENGINEER: Philip Jo / Jabra | DATE: 3/19/09 |
| MEASUREMENT ADDRESS: 1411 S. Jameson LN | CITY: Montecito | ☒ Single-Family ☐ Multi-Family ☐ Recreational ☐ Commercial | SITE NO.: ST25 |

| SOUND LEVEL METER: | MICROPHONE: ☒ WIND SCREEN | PRE AMP: | NOTES: |
|---|---|---|---|
| ☒ LD-870 ☐ LD-820 ☐ LD-824 ☐ LD-812 ☐ LD-2900 ☐ _____ | ☒ NON-POLAR ☐ POLARIZED ☒ 1/2-INCH ☐ FREEFIELD ☐ 1-INCH ☐ RANDOM | ☒ LD-900 ☐ LD-828 ☐ _____ | SYSTEM PWR: ☒ BAT ☐ AC (observations at start of measurement) |
| SERIAL #: 0496 | SERIAL #: 2029 | SERIAL #: 2270 | TEMP: 61.3 °F R.H.: 78 % |

| CALIBRATOR: | | CALIBRATION RECORD: Input, dB / Reading, dB / Offset, dB / Time | |
|---|---|---|---|
| ☒ LD CA250 ☐ _____ S/N 2480 | Freq, Hz. ☒ 250 ☐ 1000 ☐ _____ | Before 114, 114, 21.7, 7:51 After 114, 113.9, -0.1, 16:04 | WIND SPEED: Calm MPH; FROM (DIR): _____; SKIES: Mostly cloudy; CAMERA _____; PHOTO NOs. 151-153 |

METER SETTINGS:
☒ A-WTD ☐ LINEAR ☒ SLOW ☐ 1/1 OCT ☒ INTERVALS 20 - MINUTE
☐ C-WTD ☐ IMPULSE ☐ FAST ☐ 1/3 OCT ☐ $L_N$ PERCENTILE VALUES

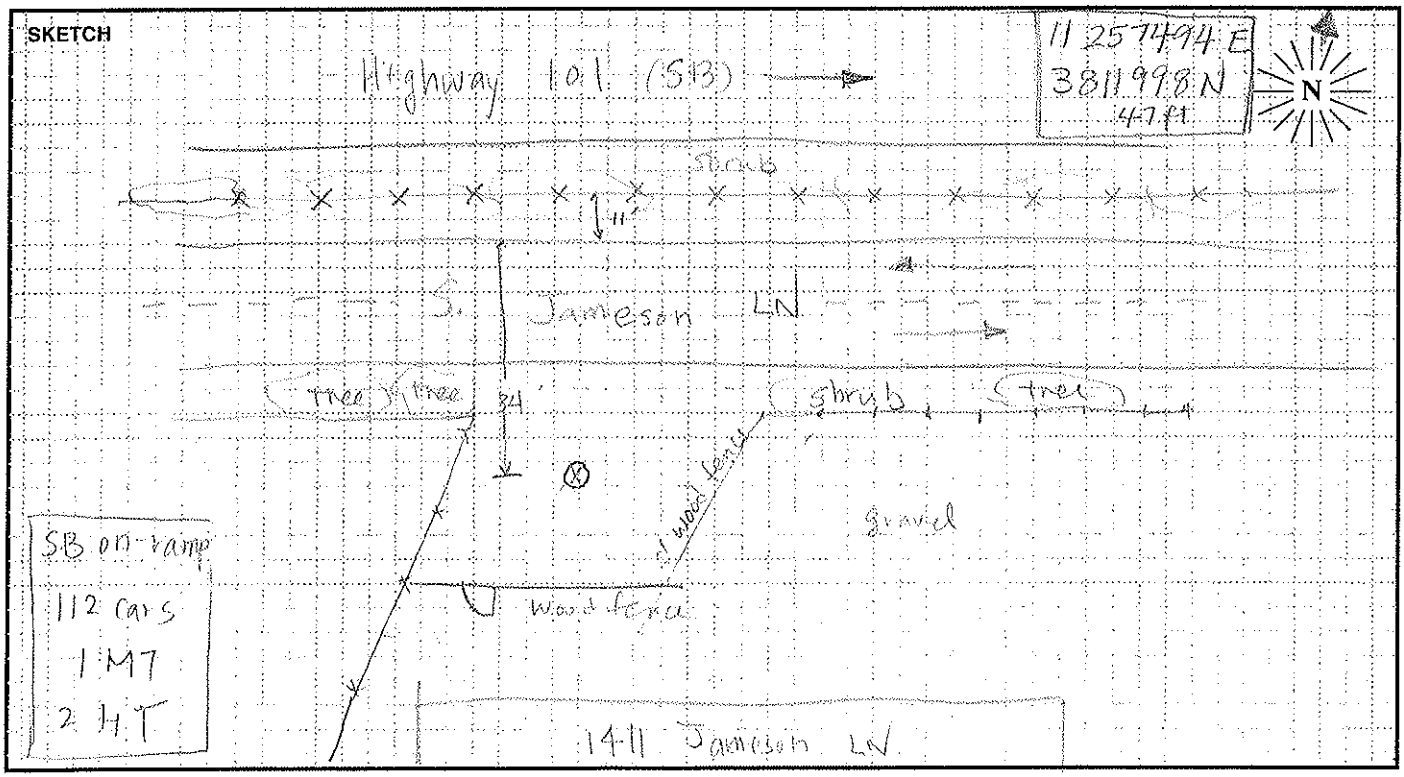
NOTES: Traffic on Jameson NB: 2 cars, 1 MT SB: 11 cars, 1 MT

Dist. to Center of Nearest Lane _____ ☐ Video ☐ Radar Counts AT MT HT

MEAS. TYPE: ☐ Long Term ☒ Short Term

| DATE | START TIME | STOP TIME | $L_{MIN}$ | $L_{99}$ | $L_{90}$ | $L_{50}$ | $L_{25}$ | $L_{10}$ | $L_{01}$ | $L_{MAX}$ | $L_{EQ}$ | NOTES: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3/19/09 | 14:40 | 14:50 | 65.2 | 66.6 | 70.8 | 73.9 | 75.0 | 76.1 | 79.3 | 80.9 | 74.2 | ←stopped due to battery failure |
| 3/19/09 | 15:4[illegible] | [illegible]:00 | 65.9 | 67.1 | 71.0 | 73.8 | 74.9 | 75.9 | 79.8 | 91.6 | 74.5 | [illegible] Harley on SB |
| | | | | | | | | | | | | |

SKETCH




PARSONS

# FIELD SURVEY FORM

| | | | |
|---|---|---|---|
| PROJECT: Highway 1 HOV Project | | ENGINEER: Philip Jo / Jabra | DATE: 3/20/09 |
| MEASUREMENT ADDRESS: 106 La Vereda Rd | CITY: Santa Barbara | ☒ Single-Family ☐ Multi-Family ☐ Recreational ☐ Commercial | SITE NO.: ST26 |

| SOUND LEVEL METER: | MICROPHONE: | PRE AMP: | NOTES: |
|---|---|---|---|
| ☒ LD-870 ☐ LD-820 ☐ LD-824 ☐ LD-812 ☐ LD-2900 ☐ _____ | ☒ WIND SCREEN ☒ NON-POLAR ☐ POLARIZED ☒ 1/2-INCH ☐ FREEFIELD ☐ 1-INCH ☐ RANDOM | ☒ LD-900 ☐ LD-828 ☐ _____ | SYSTEM PWR: ☒ BAT ☐ AC (observations at start of measurement) |
| SERIAL #: 0496 | SERIAL #: 2029 | SERIAL #: 2270 | TEMP: 55.7 °F R.H.: 92 % |

| CALIBRATOR: | | CALIBRATION RECORD: Input, dB / Reading, dB / Offset, dB / Time | |
|---|---|---|---|
| ☒ LD CA250 ☐ _____ S/N 2480 | Freq, Hz. ☐ 250 ☐ 1000 ☐ _____ | Before 114, 114, 21.8, 9:22 After 114, 113.9, -0.1, 11:52 | WIND SPEED: Calm MPH; FROM (DIR): _____; SKIES: overcast |

| METER SETTINGS: | | | | | |
|---|---|---|---|---|---|
| ☒ A-WTD | ☐ LINEAR | ☒ SLOW | ☐ 1/1 OCT | ☒ INTERVALS 20 - MINUTE | CAMERA _____ |
| ☐ C-WTD | ☐ IMPULSE | ☐ FAST | ☐ 1/3 OCT | ☐ $L_N$ PERCENTILE VALUES | PHOTO NOs. 157-167 |

NOTES: NB on-Ramp traffic 101 cars 4 MT 0 HT

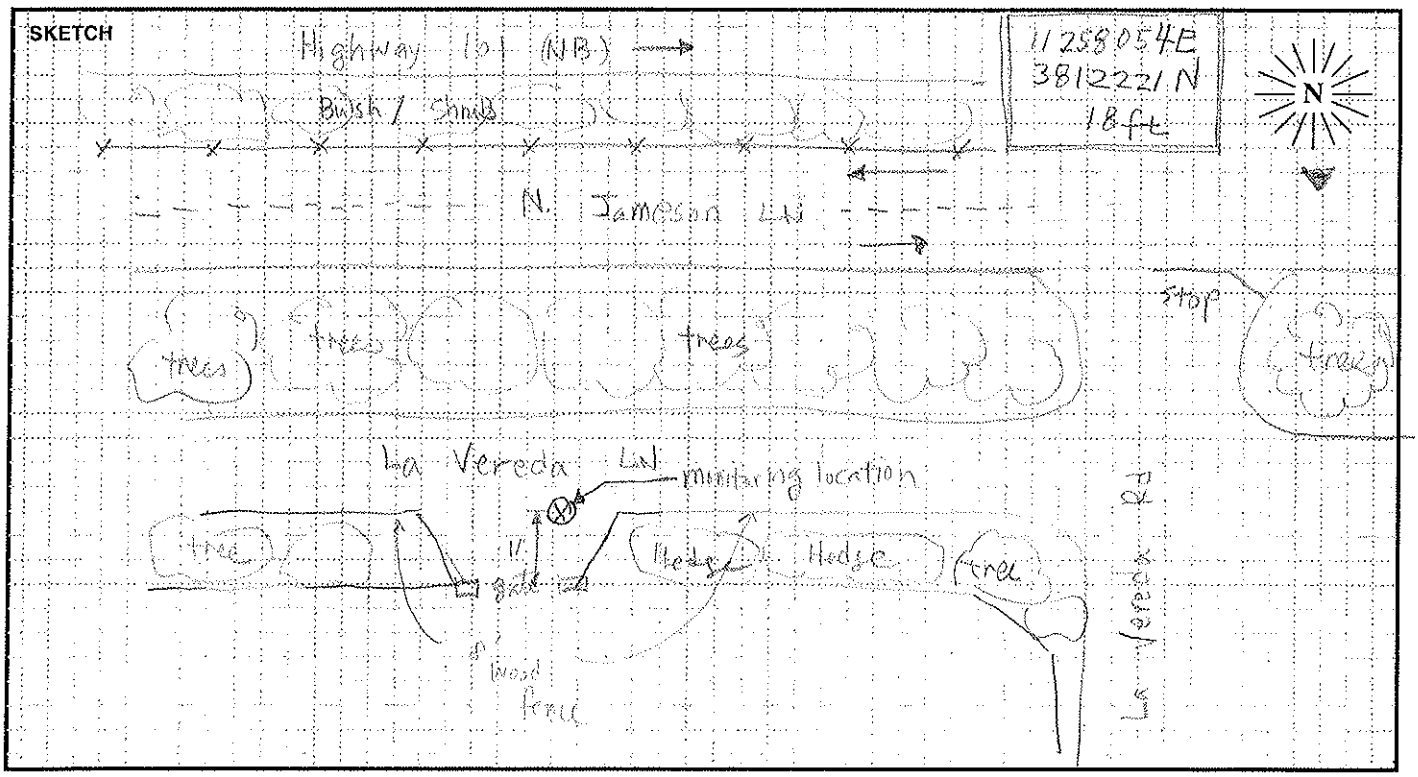
Dist. to Center of Nearest Lane _____ ☐ Video ☐ Radar

Counts: AT MT HT

MEAS. TYPE: ☐ Long Term ☒ Short Term

| DATE | START TIME | STOP TIME | $L_{MIN}$ | $L_{99}$ | $L_{90}$ | $L_{50}$ | $L_{25}$ | $L_{10}$ | $L_{01}$ | $L_{MAX}$ | $L_{EQ}$ | NOTES: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3/20/09 | 9.30 | 9.50 | 59.9 | 61.0 | 63.3 | 65.4 | 66.4 | 67.1 | 68.2 | 69.3 | 65.5 | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |

SKETCH




PARSONS

# FIELD SURVEY FORM

| | | | |
|---|---|---|---|
| PROJECT: Highway 101 HOV Project | | ENGINEER: Philip Jo / Jabra | DATE: 3/20/09 |
| MEASUREMENT ADDRESS: 1278 | CITY: Santa Barbara | ☒ Single-Family ☐ Multi-Family ☐ Recreational ☐ Commercial | SITE NO.: ST27 |

| SOUND LEVEL METER: | MICROPHONE: | PRE AMP: | NOTES: |
|---|---|---|---|
| ☒ LD-870 ☐ LD-820 ☐ LD-824 ☐ LD-812 ☐ LD-2900 ☐ _____ | ☒ WIND SCREEN ☒ NON-POLAR ☐ POLARIZED ☒ 1/2-INCH ☐ FREEFIELD ☐ 1-INCH ☐ RANDOM | ☒ LD-900 ☐ LD-828 ☐ _____ | SYSTEM PWR: ☒ BAT ☐ AC (observations at start of measurement) |
| SERIAL #: 0496 | SERIAL #: 2029 | SERIAL #: 2270 | TEMP: 58.2 °F R.H.: 83 % |

| CALIBRATOR: | | CALIBRATION RECORD: Input, dB / Reading, dB / Offset, dB / Time | |
|---|---|---|---|
| ☒ LD CA250 ☐ _____ S/N _____ | Freq, Hz. ☐ 250 ☐ 1000 ☐ _____ | Before 114, 114, 21.8, 9.22 After 114, 113.9, -0.1, 13.57 | WIND SPEED: Calm MPH FROM (DIR): _____ SKIES: _____ |

METER SETTINGS:
☐ A-WTD ☐ LINEAR ☒ SLOW ☐ 1/1 OCT ☐ INTERVALS 20 - MINUTE
☐ C-WTD ☐ IMPULSE ☐ FAST ☐ 1/3 OCT ☐ $L_N$ PERCENTILE VALUES

CAMERA Overcast
PHOTO NOs. 181-186

NOTES: off ramp traffic
76 cars
3 HT

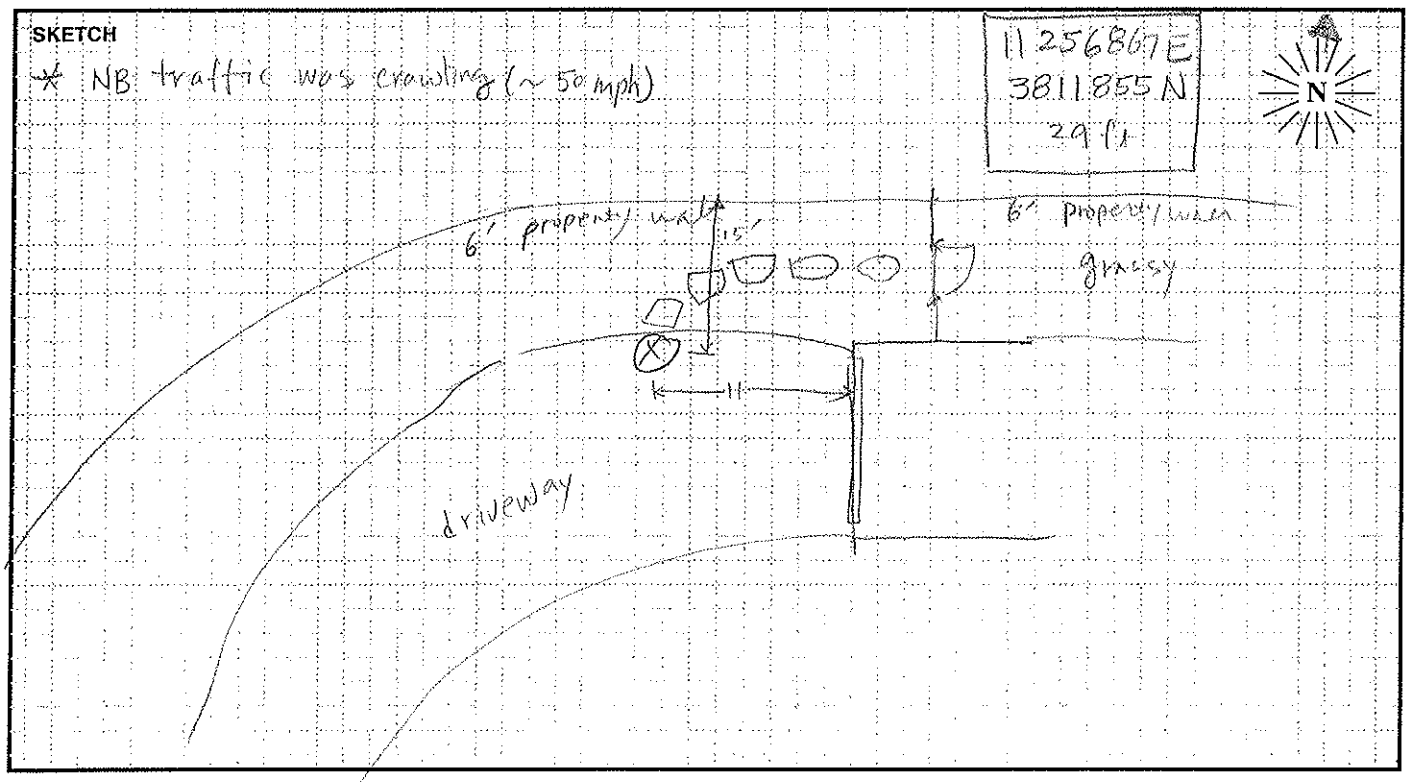
Dist. to Center of Nearest Lane _____ ☐ Video ☐ Radar

Counts: AT MT HT

MEAS. TYPE: ☐ Long Term ☒ Short Term

| DATE | START TIME | STOP TIME | $L_{MIN}$ | $L_{99}$ | $L_{90}$ | $L_{50}$ | $L_{25}$ | $L_{10}$ | $L_{01}$ | $L_{MAX}$ | $L_{EQ}$ | NOTES: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3/20/09 | 13:33 | 13:53 | 61.3 | 63.5 | 65.7 | 67.6 | 68.6 | 69.7 | 72.0 | 74.6 | 67.9 | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |

SKETCH




PARSONS

# FIELD SURVEY FORM

| | | | |
|---|---|---|---|
| PROJECT: Highway 101 HOV Project | | ENGINEER: Philip Jo / Jabra | DATE: 3/20/09 |
| MEASUREMENT ADDRESS: 1154 Hill Road | CITY: Santa Barbara | ☒ Single-Family ☐ Multi-Family ☐ Recreational ☐ Commercial | SITE NO.: ST28 |

| SOUND LEVEL METER: | MICROPHONE: | PRE AMP: | NOTES: |
|---|---|---|---|
| ☒ LD-870 ☐ LD-820 ☐ LD-824 ☐ LD-812 ☐ LD-2900 ☐ _____ | ☒ WIND SCREEN ☒ NON-POLAR ☐ POLARIZED ☒ 1/2-INCH ☐ FREEFIELD ☐ 1-INCH ☐ RANDOM | ☒ LD-900 ☐ LD-828 ☐ _____ | SYSTEM PWR: ☒ BAT ☐ AC (observations at start of measurement) |
| SERIAL #: 0496 | SERIAL #: 2029 | SERIAL #: 2270 | TEMP: 57.7 °F R.H.: 91 % |

| CALIBRATOR: | | CALIBRATION RECORD: Input, dB / Reading, dB / Offset, dB / Time | |
|---|---|---|---|
| ☒ LD CA250 ☐ _____ S/N 0480 | Freq, Hz. ☒ 250 ☐ 1000 ☐ _____ | Before 114, 114, 21.8, 9:22 After 114, 113.9, -0.1, 11:52 | WIND SPEED: calm MPH; FROM (DIR): _____; SKIES: overcast |

METER SETTINGS: ☒ A-WTD ☐ LINEAR ☒ SLOW ☐ 1/1 OCT ☒ INTERVALS 20 - MINUTE; ☐ C-WTD ☐ IMPULSE ☐ FAST ☐ 1/3 OCT ☐ $L_N$ PERCENTILE VALUES

CAMERA _____ PHOTO NOs. 174-177

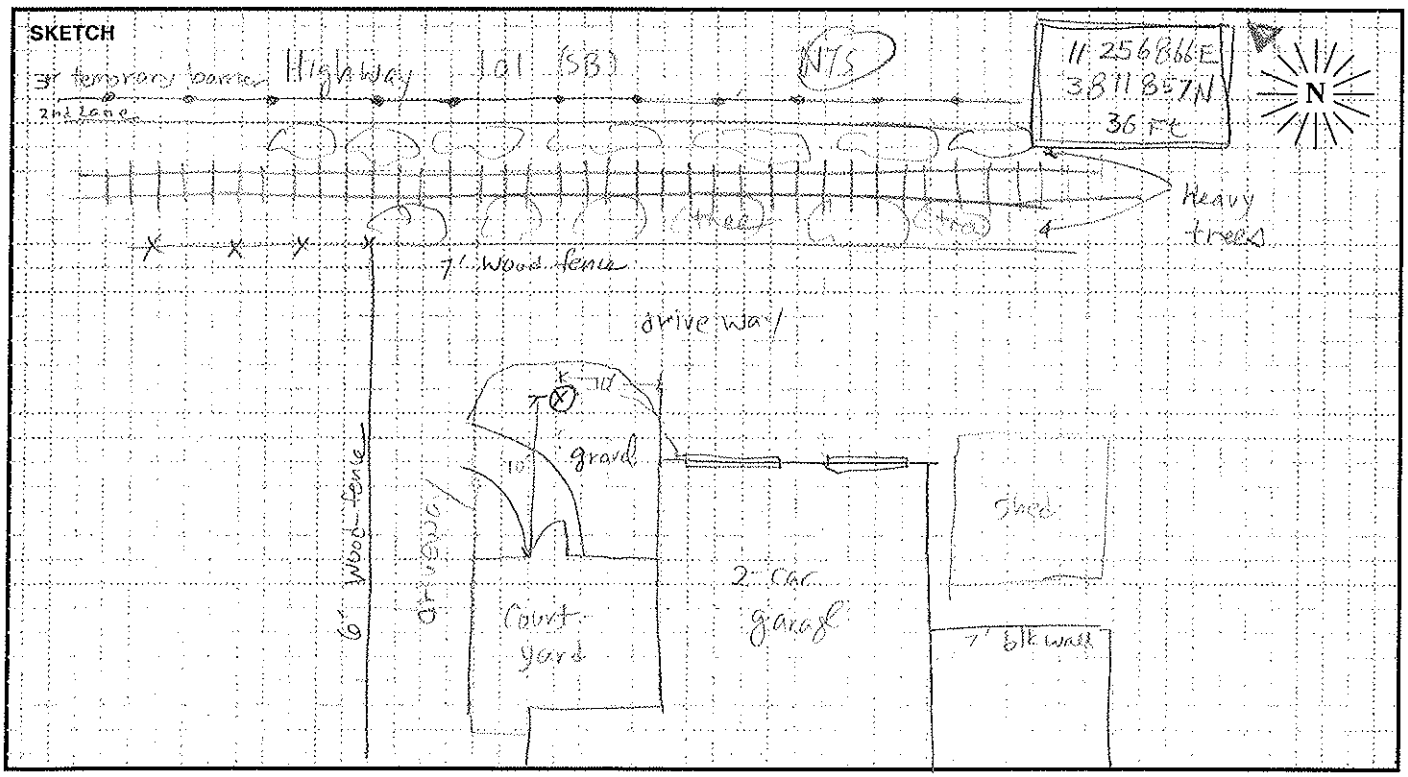
NOTES: Highway 101 is slightly elevated relative to ST28.

Dist. to Center of Nearest Lane _____ ☐ Video ☐ Radar Counts AT MT HT

MEAS. TYPE: ☐ Long Term ☒ Short Term

| DATE | START TIME | STOP TIME | $L_{MIN}$ | $L_{99}$ | $L_{90}$ | $L_{50}$ | $L_{25}$ | $L_{10}$ | $L_{01}$ | $L_{MAX}$ | $L_{EQ}$ | NOTES: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3/20/09 | 11:30 | 11:50 | 57.9 | 59.6 | 62.6 | 64.8 | 65.9 | 67.5 | 71.6 | 73.9 | 65.5 | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |

SKETCH




PARSONS

# FIELD SURVEY FORM

PROJECT: HWY 101 HOV

ENGINEER: Philip Jo / Ibrahim Abdullah

DATE: 9/22/09

MEASUREMENT ADDRESS: 2540 Varley Street

CITY: Summerland

☒ Single-Family ☐ Multi-Family ☐ Recreational ☐ Commercial

SITE NO.: CS1

SOUND LEVEL METER: ☐ LD-870 ☐ LD-820 ☐ LD-824 ☒ LD-812 ☐ LD-2900 ☐ _____

SERIAL #: 0659

MICROPHONE: ☒ WIND SCREEN ☒ NON-POLAR ☐ POLARIZED ☒ 1/2-INCH ☐ FREEFIELD ☐ 1-INCH ☐ RANDOM

SERIAL #: 3378

PRE AMP: ☐ LD-900 ☒ LD-828 ☐ _____

SERIAL #: 1901

NOTES:

SYSTEM PWR: ☐ BAT ☐ AC

(observations at start of measurement)

TEMP: 77 °F R.H.: 52 %

WIND SPEED: _____ MPH

FROM (DIR): _____

SKIES: clear sky

CAMERA _____

PHOTO NOs. 16, 17, 18

CALIBRATOR: ☐ LD CA250 ☒ CAL200 S/N 2924

Freq, Hz.: ☐ 250 ☒ 1000 ☐ _____

CALIBRATION RECORD: Input, dB / Reading, dB / Offset, dB / Time

Before 114, 114, 0.0, 14:31

After 114, 114, 0.0, 10:26

METER SETTINGS: ☒ A-WTD ☐ C-WTD ☐ LINEAR ☐ IMPULSE ☒ SLOW ☐ FAST ☐ 1/1 OCT ☐ 1/3 OCT ☒ INTERVALS 20 - MINUTE ☐ $L_N$ PERCENTILE VALUES

NOTES: Deck overlooking HWY 101 & ocean partially

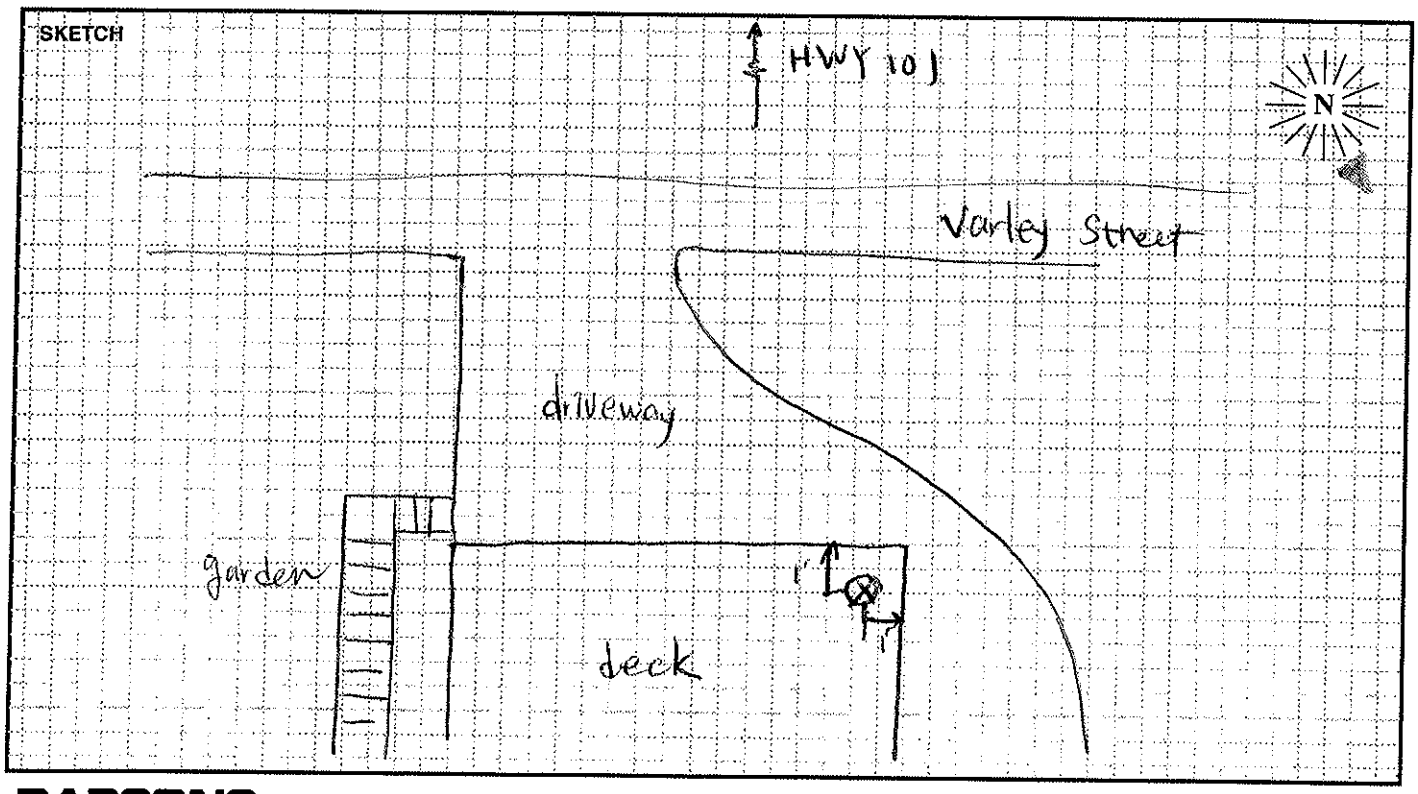
Dist. to Center of Nearest Lane _____ ☐ Video ☐ Radar

Counts: AT MT HT

MEAS. TYPE: ☐ Long Term ☒ Short Term

| DATE | START TIME | STOP TIME | $L_{MIN}$ | $L_{99}$ | $L_{90}$ | $L_{50}$ | $L_{25}$ | $L_{10}$ | $L_{01}$ | $L_{MAX}$ | $L_{EQ}$ | NOTES: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 9/22/09 | 15:00 | 15:20 | 57.9 | 59.1 | | 63.5 | | 66.8 | 70.6 | 73.0 | 64.5 | |
| cal → 9/22/09 | 15:20 | 15:40 | 56.8 | 59.9 | | 64.2 | | 66.0 | 68.8 | 70.0 | 64.5 | |
| | | | | | | | | | | | | |

SKETCH




PARSONS

# FIELD SURVEY FORM

| | | | |
|---|---|---|---|
| PROJECT: HWY 101 HOV | | ENGINEER: Philip Jo / Ibrahim Abdallah | DATE: 9/22/09 |
| MEASUREMENT ADDRESS: 2542 Banner Avenue | CITY: Summerland | ☒ Single-Family ☐ Multi-Family ☐ Recreational ☐ Commercial | SITE NO.: C52 |

**SOUND LEVEL METER:** ☐ LD-870 ☒ LD-820 ☐ LD-824 ☐ LD-812 ☐ LD-2900 ☐ _____
SERIAL #: 1177

**MICROPHONE:** ☒ WIND SCREEN ☐ NON-POLAR ☒ POLARIZED ☒ 1/2-INCH ☐ FREEFIELD ☐ 1-INCH ☐ RANDOM
SERIAL #: 16967

**PRE AMP:** ☒ LD-900 ☒ LD-828 ☐ _____
SERIAL #: 7629

**NOTES:**

SYSTEM PWR: ☐ BAT ☐ AC

(observations at start of measurement)

TEMP: 75.8 °F R.H.: 52 %

WIND SPEED: _____ MPH

FROM (DIR): _____

SKIES: clear

CAMERA _____

PHOTO NOs. 13, 14, 15

**CALIBRATOR:** ☐ LD CA250 ☒ CAL200 S/N _____

Freq, Hz. ☐ 250 ☒ 1000 ☐ _____

**CALIBRATION RECORD:** Input, dB / Reading, dB / Offset, dB / Time

Before 114, 114, 0.0, 15:16

After 114, 114.2, 0.2, 10:10

**METER SETTINGS:** ☒ A-WTD ☐ C-WTD ☐ LINEAR ☐ IMPULSE ☒ SLOW ☐ FAST ☐ 1/1 OCT ☐ 1/3 OCT ☒ INTERVALS 20 - MINUTE ☐ $L_N$ PERCENTILE VALUES

NOTES:

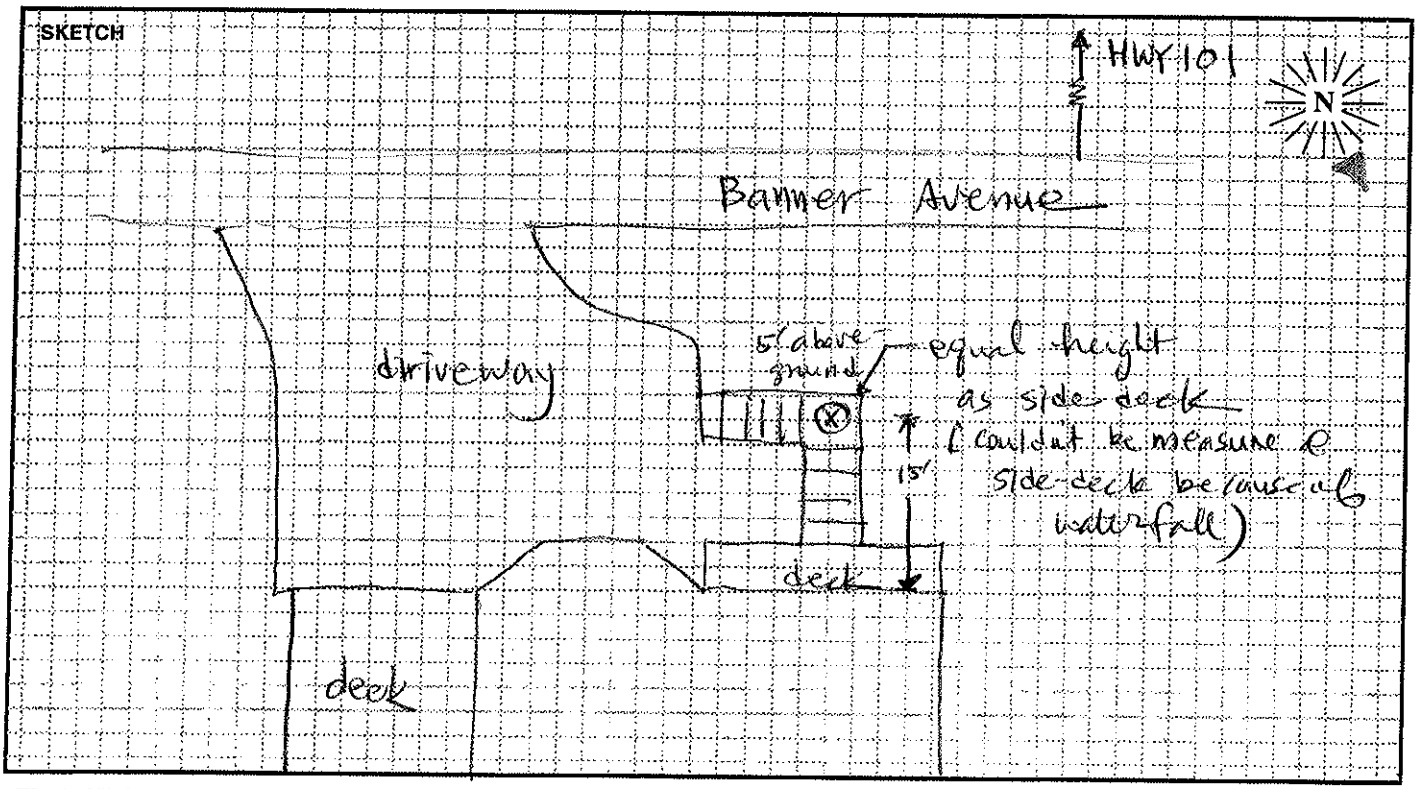
Dist. to Center of Nearest Lane _____ ☐ Video ☐ Radar

Counts AT MT HT

MEAS. TYPE: ☐ Long Term ☒ Short Term

| DATE | START TIME | STOP TIME | $L_{MIN}$ | $L_{99}$ | $L_{90}$ | $L_{50}$ | $L_{25}$ | $L_{10}$ | $L_{01}$ | $L_{MAX}$ | $L_{EQ}$ | NOTES: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 9/22/09 | 15:20 | 15:40 | 54.0 | 55.9 | 57.5 | 59.3 | 60.1 | 61.0 | 64.2 | 66.4 | 59.6 | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |

SKETCH




PARSONS

# FIELD SURVEY FORM

| | | | |
|---|---|---|---|
| PROJECT: HWY 101 HOV | | ENGINEER: Philip J. / Ibrahim Abdullah | DATE: 9/22/09 |
| MEASUREMENT ADDRESS: 2485 Banner | CITY: Summerland | ☒ Single-Family ☐ Multi-Family ☐ Recreational ☐ Commercial | SITE NO.: C53 |

**SOUND LEVEL METER:** ☐ LD-870 ☐ LD-820 ☐ LD-824 ☒ LD-812 ☐ LD-2900 ☐ 0659
SERIAL #: 0659

**MICROPHONE:** ☒ WIND SCREEN ☐ NON-POLAR ☐ POLARIZED ☐ 1/2-INCH ☐ FREEFIELD ☐ 1-INCH ☐ RANDOM
SERIAL #: 3378

**PRE AMP:** ☐ LD-900 ☒ LD-828 ☐ #
SERIAL #: 1901

**CALIBRATOR:** ☐ LD CA250 ☒ CAL200 S/N 2924
Freq, Hz.: ☐ 250 ☒ 1000 ☐ ____

**CALIBRATION RECORD:** Input, dB / Reading, dB / Offset, dB / Time
Before 114, 114, 7.4, 11:14
After 114, 113.8, -0.2, 14:29

**METER SETTINGS:** ☒ A-WTD ☐ LINEAR ☒ SLOW ☐ 1/1 OCT ☐ INTERVALS 20 - MINUTE
☐ C-WTD ☐ IMPULSE ☐ FAST ☐ 1/3 OCT ☐ $L_N$ PERCENTILE VALUES

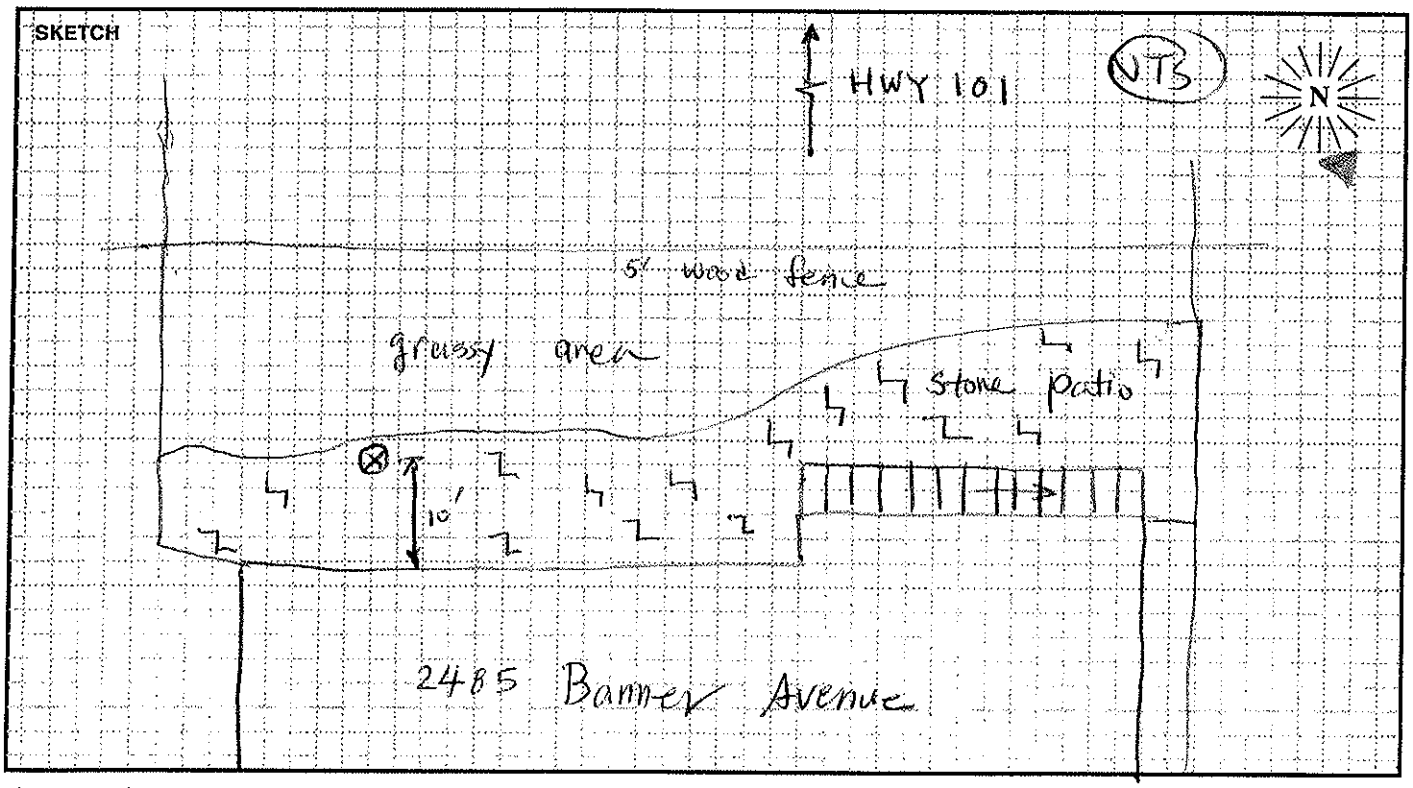
**NOTES:**
SYSTEM PWR: ☒ BAT ☐ AC
(observations at start of measurement)
TEMP: 70 °F R.H.: 70 %
WIND SPEED: 0.2 MPH
FROM (DIR): ____
SKIES: overcast
CAMERA ____
PHOTO NOs. 1, 2, 3

**NOTES:**
Dist. to Center of Nearest Lane ____ ☐ Video ☐ Radar
Counts: AT MT HT

**MEAS. TYPE:** ☐ Long Term ☒ Short Term

| DATE | START TIME | STOP TIME | $L_{MIN}$ | $L_{99}$ | $L_{90}$ | $L_{50}$ | $L_{25}$ | $L_{10}$ | $L_{01}$ | $L_{MAX}$ | $L_{EQ}$ | NOTES: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 9/22 | 11:40 | 12:00 | 55.1 | 56.2 | | 60.4 | | 62.3 | | 67.6 | 60.6 | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |

**SKETCH**




PARSONS

# FIELD SURVEY FORM

| | | | |
|---|---|---|---|
| PROJECT: HWY 101 HOV | | ENGINEER: Philip E / Ibrahim Abdallah | DATE: 9/22/09 |
| MEASUREMENT ADDRESS: 144 Temple Street | CITY: Summerland | ☒ Single-Family ☐ Multi-Family ☐ Recreational ☐ Commercial | SITE NO.: CS4 |

| SOUND LEVEL METER: | MICROPHONE: | PRE AMP: | NOTES: |
|---|---|---|---|
| ☐ LD-870 ☒ LD-820 | ☒ WIND SCREEN | ☐ LD-900 | SYSTEM PWR: ☒ BAT ☐ AC |
| ☐ LD-824 ☐ LD-812 | ☐ NON-POLAR ☐ POLARIZED | ☒ LD-828 | (observations at start of measurement) |
| ☐ LD-2900 ☐ ____ | ☐ 1/2-INCH ☐ FREEFIELD | ☐ 1629 | TEMP: 69.8 °F R.H.: 70 % |
| SERIAL #: 1177 | ☐ 1-INCH ☐ RANDOM | | WIND SPEED: calm MPH |
| | SERIAL #: 16967 | SERIAL #: | FROM (DIR): ____ |

| CALIBRATOR: | | CALIBRATION RECORD: | |
|---|---|---|---|
| ☐ LD CA250 | Freq, Hz. | Input, dB / Reading, dB / Offset, dB / Time | |
| ☒ CAL200 | ☐ 250 | Before | 114, 114, 8.5, 11:35 |
| S/N 2924 | ☒ 1000 | After | 114, 113.9, -0.1, 15:13 |
| | ☐ ____ | | |

| METER SETTINGS: | | | | | | |
|---|---|---|---|---|---|---|
| ☒ A-WTD | ☐ LINEAR | ☒ SLOW | ☐ 1/1 OCT | ☒ INTERVALS 20 - MINUTE | SKIES: overcast | |
| ☐ C-WTD | ☐ IMPULSE | ☐ FAST | ☐ 1/3 OCT | ☐ $L_N$ PERCENTILE VALUES | CAMERA ____ | |
| | | | | | PHOTO NOs. 4, 5, 6 | |

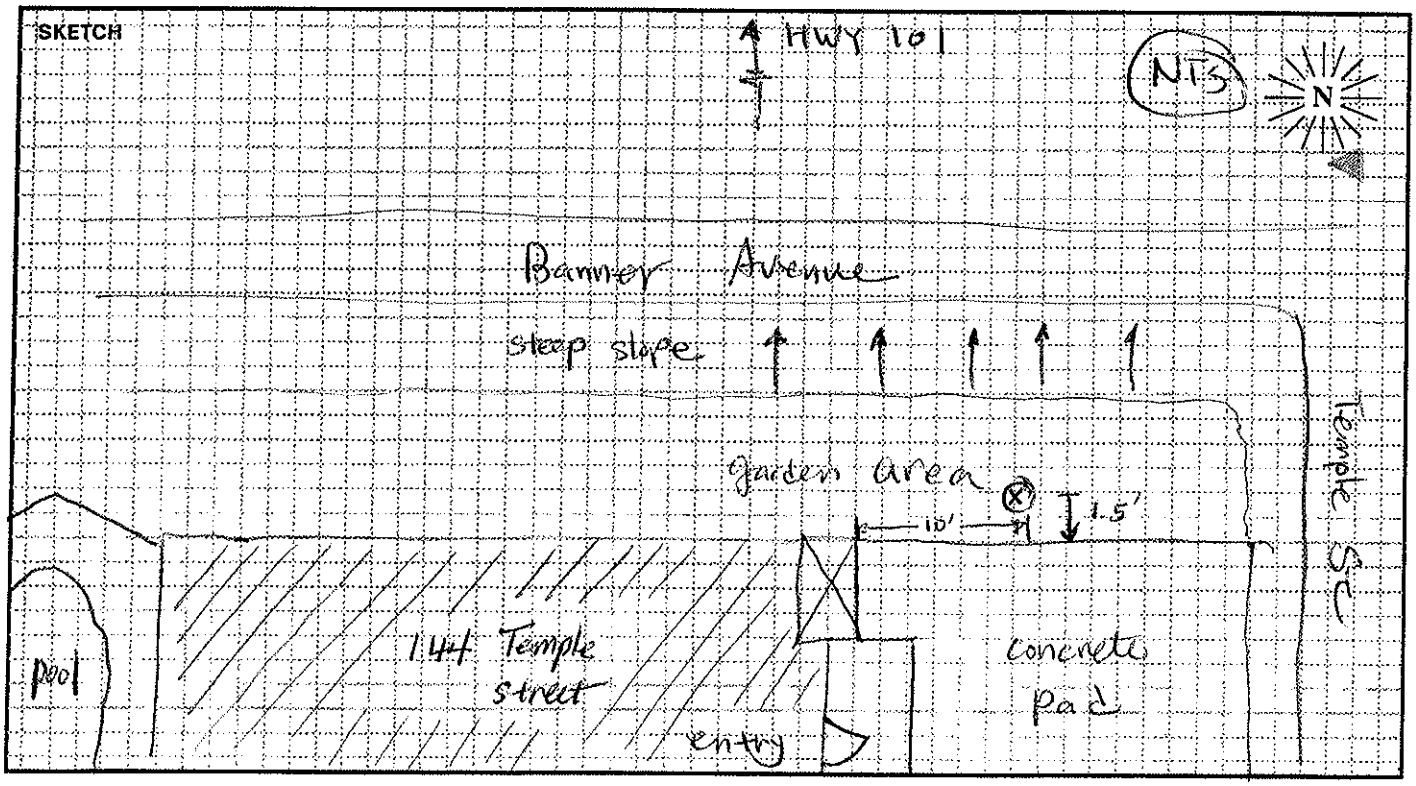
NOTES: HWY 101 is partially visible from monitoring spot.

Dist. to Center of Nearest Lane ____ ☐ Video ☐ Radar Counts AT MT HT

MEAS. TYPE: ☐ Long Term ☒ Short Term

| DATE | START TIME | STOP TIME | $L_{MIN}$ | $L_{99}$ | $L_{90}$ | $L_{50}$ | $L_{25}$ | $L_{10}$ | $L_{01}$ | $L_{MAX}$ | $L_{EQ}$ | NOTES: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 9/22 | 11:40 | 12:00 | 54.4 | 55.4 | 57.4 | 60.0 | 61.2 | 62.2 | 64.0 | 69.3 | 60.3 | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |

SKETCH




PARSONS

# FIELD SURVEY FORM

| | | | |
|---|---|---|---|
| PROJECT: HWY 101 HOV | | ENGINEER: Philip Jo / Ibrahim Abdullah | DATE: 9/22/09 |
| MEASUREMENT ADDRESS: 2440 Varley Street | CITY: Summerland | ☒ Single-Family ☐ Multi-Family ☐ Recreational ☐ Commercial | SITE NO.: CS5 |

| SOUND LEVEL METER: | MICROPHONE: | PRE AMP: | NOTES: |
|---|---|---|---|
| ☐ LD-870 ☐ LD-820 | ☒ WIND SCREEN | ☐ LD-900 | SYSTEM PWR: ☒ BAT ☐ AC |
| ☐ LD-824 ☒ LD-812 | ☒ NON-POLAR ☐ POLARIZED | ☒ LD-828 | (observations at start of measurement) |
| ☐ LD-2900 ☐ _____ | ☒ 1/2-INCH ☐ FREEFIELD | ☐ _____ | TEMP: _____ ºF R.H.: _____ % |
| SERIAL #: 0659 | ☐ 1-INCH ☐ RANDOM | SERIAL #: 1901 | WIND SPEED: _____ MPH |
| | SERIAL #: 3378 | | FROM (DIR): _____ |

| CALIBRATOR: | Freq, Hz. | CALIBRATION RECORD: Input, dB / Reading, dB / Offset, dB / Time |
|---|---|---|
| ☐ LD CA250 | ☐ 250 | Before 114, 114, 7.4, 11:14 |
| ☒ CAL200 | ☒ 1000 | After 114, 113.8, -0.2, 14:29 |
| S/N 2924 | ☐ _____ | |

METER SETTINGS:
☒ A-WTD ☐ LINEAR ☒ SLOW ☐ 1/1 OCT ☒ INTERVALS 20 - MINUTE
☐ C-WTD ☐ IMPULSE ☐ FAST ☐ 1/3 OCT ☐ $L_N$ PERCENTILE VALUES

CAMERA _____
PHOTO NOs. 7, 8, 9

NOTES:

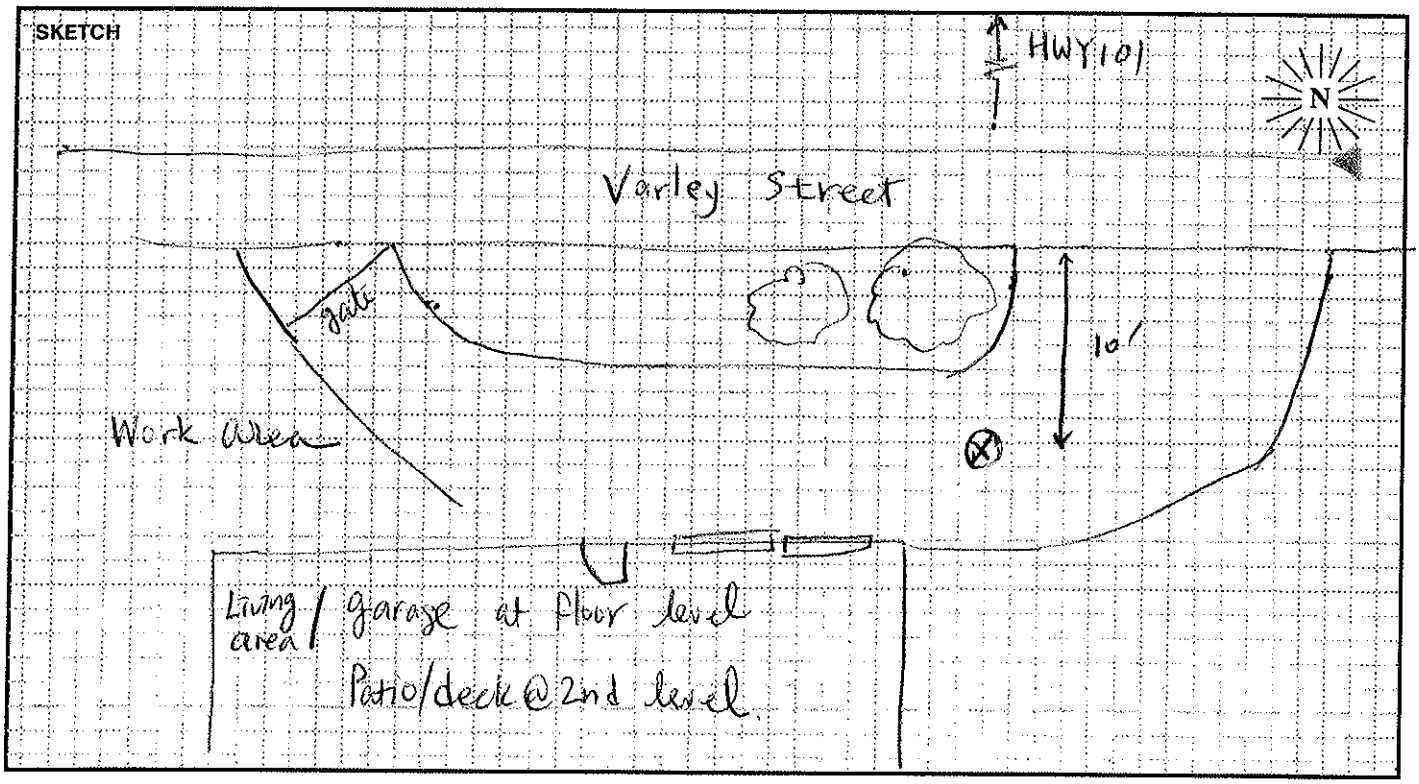
Dist. to Center of Nearest Lane _____ ☐ Video ☐ Radar

Counts: AT MT HT

MEAS. TYPE: ☐ Long Term ☒ Short Term

| DATE | START TIME | STOP TIME | $L_{MIN}$ | $L_{99}$ | $L_{90}$ | $L_{50}$ | $L_{25}$ | $L_{10}$ | $L_{01}$ | $L_{MAX}$ | $L_{EQ}$ | NOTES: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 9/22/09 | 12:40 | 13:00 | 55.1 | 56.2 | | 60.4 | | 62.3 | | 67.6 | 60.6 | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |

SKETCH




PARSONS

# FIELD SURVEY FORM

| | | | |
|---|---|---|---|
| PROJECT: Highway 101 HOV | | ENGINEER: Philip Jo / Ibrahim Abdullah | DATE: 9/22/09 |
| MEASUREMENT ADDRESS: 2432 Banner Avenue | CITY: Summerland | ☒ Single-Family ☐ Multi-Family ☐ Recreational ☐ Commercial | SITE NO.: CS6 |

| | | | |
|---|---|---|---|
| SOUND LEVEL METER: ☐ LD-870 ☒ LD-820 ☐ LD-824 ☐ LD-812 ☐ LD-2900 ☐ _____ | MICROPHONE: ☒ WIND SCREEN ☐ NON-POLAR ☒ POLARIZED ☒ 1/2-INCH ☐ FREEFIELD ☐ 1-INCH ☐ RANDOM | PRE AMP: ☐ LD-900 ☒ LD-828 ☐ _____ | NOTES: |
| SERIAL #: 1177 | SERIAL #: 16967 | SERIAL #: 1629 | SYSTEM PWR: ☐ BAT ☐ AC (observations at start of measurement) TEMP: 76.8 °F R.H.: 56 % |

| | | |
|---|---|---|
| CALIBRATOR: ☐ LD CA250 ☒ CAL200 S/N 2924 | Freq, Hz. ☐ 250 ☒ 1000 ☐ _____ | CALIBRATION RECORD: Input, dB / Reading, dB / Offset, dB / Time<br>Before 114, 114, 8.5, 11:35<br>After 114, 113.9, -0.1, 15:13 |

WIND SPEED: Calm MPH
FROM (DIR): _____
SKIES: _____
CAMERA _____
PHOTO NOs. 10, 11, 12

METER SETTINGS:
☒ A-WTD ☐ LINEAR ☒ SLOW ☐ 1/1 OCT ☒ INTERVALS 20 - MINUTE
☐ C-WTD ☐ IMPULSE ☐ FAST ☐ 1/3 OCT ☐ $L_N$ PERCENTILE VALUES

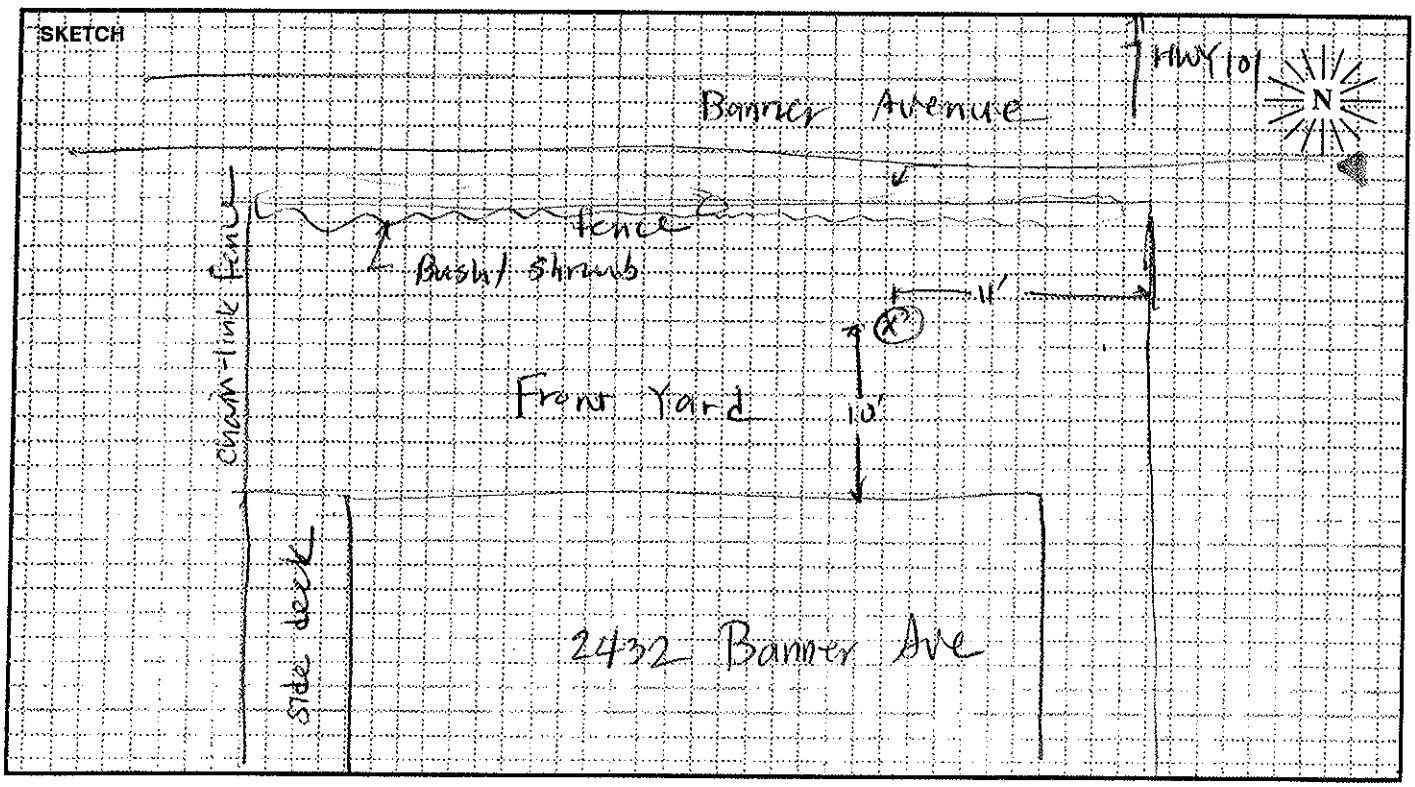
NOTES: House is vacant/foreclosed

Dist. to Center of Nearest Lane _____ ☐ Video ☐ Radar Counts AT MT HT

MEAS. TYPE: ☐ Long Term ☒ Short Term

| DATE | START TIME | STOP TIME | $L_{MIN}$ | $L_{99}$ | $L_{90}$ | $L_{50}$ | $L_{25}$ | $L_{10}$ | $L_{01}$ | $L_{MAX}$ | $L_{EQ}$ | NOTES: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 9/22/09 | 12:40 | 13:00 | 54.4 | 55.4 | 57.4 | 60.0 | 61.2 | 62.2 | 64.0 | 69.3 | 60.3 | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |

SKETCH




PARSONS

# FIELD SURVEY FORM

| | | | |
|---|---|---|---|
| PROJECT: HWY 101 HOV | | ENGINEER: Philip Jo / Ibrahim Abdallah | DATE: 9/22/09 |
| MEASUREMENT ADDRESS: 136 Colville Street (sidewalk) | CITY: Summerland | ☒ Single-Family ☐ Multi-Family ☐ Recreational ☐ Commercial | SITE NO.: S7 |

| SOUND LEVEL METER: | MICROPHONE: | PRE AMP: | NOTES: |
|---|---|---|---|
| ☐ LD-870 ☐ LD-820 | ☒ WIND SCREEN | ☐ LD-900 | SYSTEM PWR: ☒ BAT ☐ AC |
| ☐ LD-824 ☒ LD-812 | ☒ NON-POLAR ☐ POLARIZED | ☒ LD-828 | (observations at start of measurement) |
| ☐ LD-2900 ☐ _____ | ☒ 1/2-INCH ☐ FREEFIELD | ☐ _____ | TEMP: 75.7 ºF R.H.: 61 % |
| SERIAL #: 0659 | ☐ 1-INCH ☐ RANDOM | SERIAL #: 1901 | WIND SPEED: _____ MPH |
| | SERIAL #: 3378 | | FROM (DIR): _____ |

**CALIBRATOR:**
☐ LD CA250
☒ CAL200
S/N 2924

Freq, Hz.: ☐ 250 ☒ 1000 ☐ _____

**CALIBRATION RECORD:**

| | Input, dB | Reading, dB | Offset, dB | Time |
|---|---|---|---|---|
| Before | 114 | 114 | 7.7 | 14:31 |
| After | 114 | 114 | 0.0 | 10:26 |

SKIES: clear sky

CAMERA _____

PHOTO NOs. 19, 20, 21

**METER SETTINGS:**
☒ A-WTD ☐ LINEAR ☒ SLOW ☐ 1/1 OCT ☒ INTERVALS 20 - MINUTE
☐ C-WTD ☐ IMPULSE ☐ FAST ☐ 1/3 OCT ☐ $L_N$ PERCENTILE VALUES

NOTES: * HWY 101 Partially visible

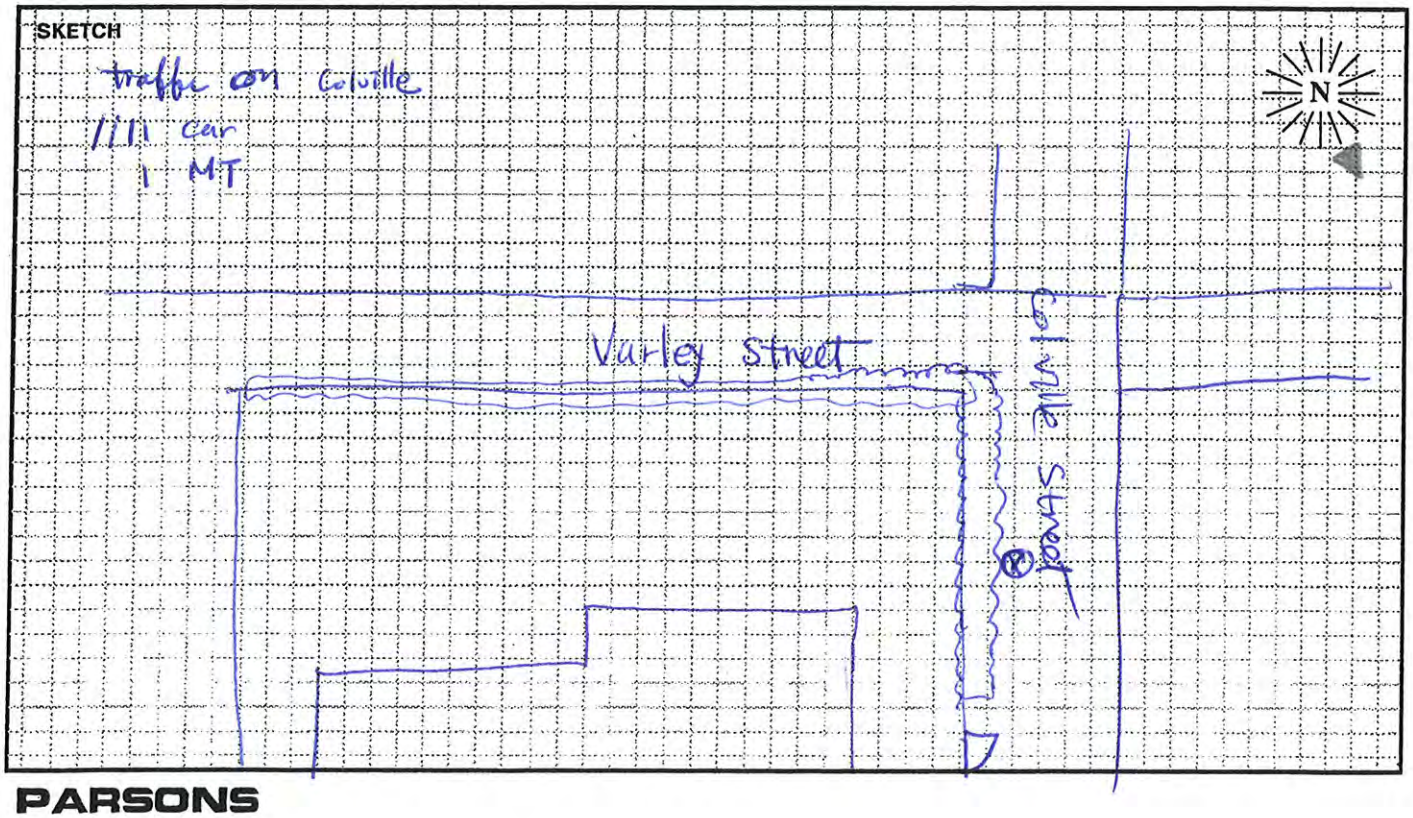
Dist. to Center of Nearest Lane _____ ☐ Video ☐ Radar

Counts: AT MT HT

MEAS. TYPE: ☐ Long Term ☒ Short Term

| DATE | START TIME | STOP TIME | $L_{MIN}$ | $L_{99}$ | $L_{90}$ | $L_{50}$ | $L_{25}$ | $L_{10}$ | $L_{01}$ | $L_{MAX}$ | $L_{EQ}$ | NOTES: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 9/22/09 | 17:00 | 17:20 | 57.9 | 59.1 | | 63.5 | | 66.8 | 70.6 | 73.0 | 64.5 | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |

SKETCH




PARSONS

# FIELD SURVEY FORM

| | | | |
|---|---|---|---|
| PROJECT: HWY 101 HOV | | ENGINEER: Philip Jo / Ibrahim Abdallah | DATE: 9/22/09 |
| MEASUREMENT ADDRESS: 2386 Banner Avenue | CITY: Summerland | ☒ Single-Family ☐ Multi-Family ☐ Recreational ☐ Commercial | SITE NO.: C58 |

**SOUND LEVEL METER:** ☐ LD-870 ☒ LD-820 ☐ LD-824 ☐ LD-812 ☐ LD-2900 ☐ _____
SERIAL #: 1177

**MICROPHONE:** ☒ WIND SCREEN ☐ NON-POLAR ☒ POLARIZED ☒ 1/2-INCH ☐ FREEFIELD ☐ 1-INCH ☐ RANDOM
SERIAL #: 16967

**PRE AMP:** ☐ LD-900 ☒ LD-828 ☐ _____
SERIAL #: 1629

**NOTES:**
SYSTEM PWR: ☒ BAT ☐ AC
(observations at start of measurement)
TEMP: 75.7 ºF R.H.: 61 %
WIND SPEED: _____ MPH
FROM (DIR): _____
SKIES: clear
CAMERA _____
PHOTO NOs. 22, 23, 24

**CALIBRATOR:** ☐ LD CA250 ☒ CAL200 S/N _____
Freq, Hz.: ☐ 250 ☒ 1000 ☐ _____

**CALIBRATION RECORD:** Input, dB / Reading, dB / Offset, dB / Time
Before 114, 114, 8.8, 15:16
After 114, 114.2, 0.2, 10:10

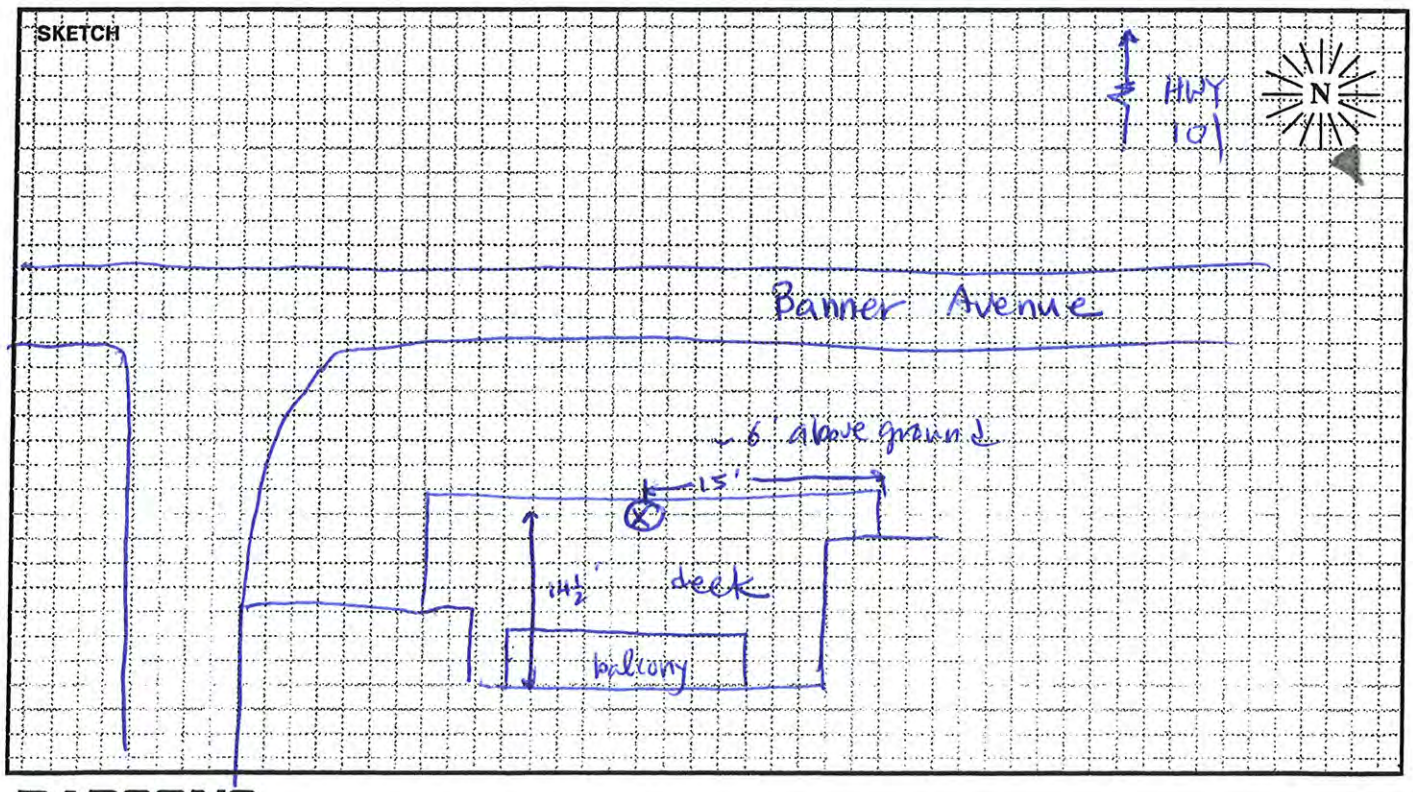
**METER SETTINGS:** ☒ A-WTD ☐ LINEAR ☒ SLOW ☐ 1/1 OCT ☒ INTERVALS 20 - MINUTE
☐ C-WTD ☐ IMPULSE ☐ FAST ☐ 1/3 OCT ☐ $L_N$ PERCENTILE VALUES

**NOTES:** clear view to freeway
Dist. to Center of Nearest Lane _____ ☐ Video ☐ Radar Counts AT MT HT

**MEAS. TYPE:** ☐ Long Term ☒ Short Term

| DATE | START TIME | STOP TIME | $L_{MIN}$ | $L_{99}$ | $L_{90}$ | $L_{50}$ | $L_{25}$ | $L_{10}$ | $L_{01}$ | $L_{MAX}$ | $L_{EQ}$ | NOTES: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 9/22/09 | 17:00 | 17:20 | 60.1 | 61.2 | 62.7 | 64.6 | 65.6 | 66.5 | 67.8 | 71.4 | 64.8 | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |

**SKETCH**




PARSONS

# FIELD SURVEY FORM

| | | | |
|---|---|---|---|
| PROJECT: HWY 101 HOV | | ENGINEER: Philip Jo / Ibrahim Abdallah | DATE: 9/23/09 |
| MEASUREMENT ADDRESS: 2314 Varley Street | CITY: Summerland | ☒ Single-Family ☐ Multi-Family ☐ Recreational ☐ Commercial | SITE NO.: C59 |

| SOUND LEVEL METER: | MICROPHONE: | PRE AMP: | NOTES: |
|---|---|---|---|
| ☐ LD-870 ☐ LD-820 | ☒ WIND SCREEN | ☐ LD-900 | SYSTEM PWR: ☐ BAT ☐ AC |
| ☐ LD-824 ☒ LD-812 | ☒ NON-POLAR ☐ POLARIZED | ☒ LD-828 | (observations at start of measurement) |
| ☐ LD-2900 ☐ _____ | ☒ 1/2-INCH ☐ FREEFIELD | ☐ _____ | TEMP: 80 °F R.H.: 57 % |
| SERIAL #: 0659 | ☐ 1-INCH ☐ RANDOM | SERIAL #: 1901 | WIND SPEED: calm MPH |
| | SERIAL #: 3378 | | FROM (DIR): _____ |

| CALIBRATOR: | Freq, Hz. | CALIBRATION RECORD: Input, dB / Reading, dB / Offset, dB / Time | |
|---|---|---|---|
| ☐ LD CA250 | ☐ 250 | Before | 114, 114, 7.6, 10:28 |
| ☒ CAL200 | ☒ 1000 | After | 114, 114, 0.0, 13:09 |
| S/N 2924 | ☐ _____ | | |

SKIES: clear

CAMERA _____

PHOTO NOs. 100, 101, 102

METER SETTINGS:
☒ A-WTD ☐ LINEAR ☒ SLOW ☐ 1/1 OCT ☒ INTERVALS 20 - MINUTE
☐ C-WTD ☐ IMPULSE ☐ FAST ☐ 1/3 OCT ☐ $L_N$ PERCENTILE VALUES

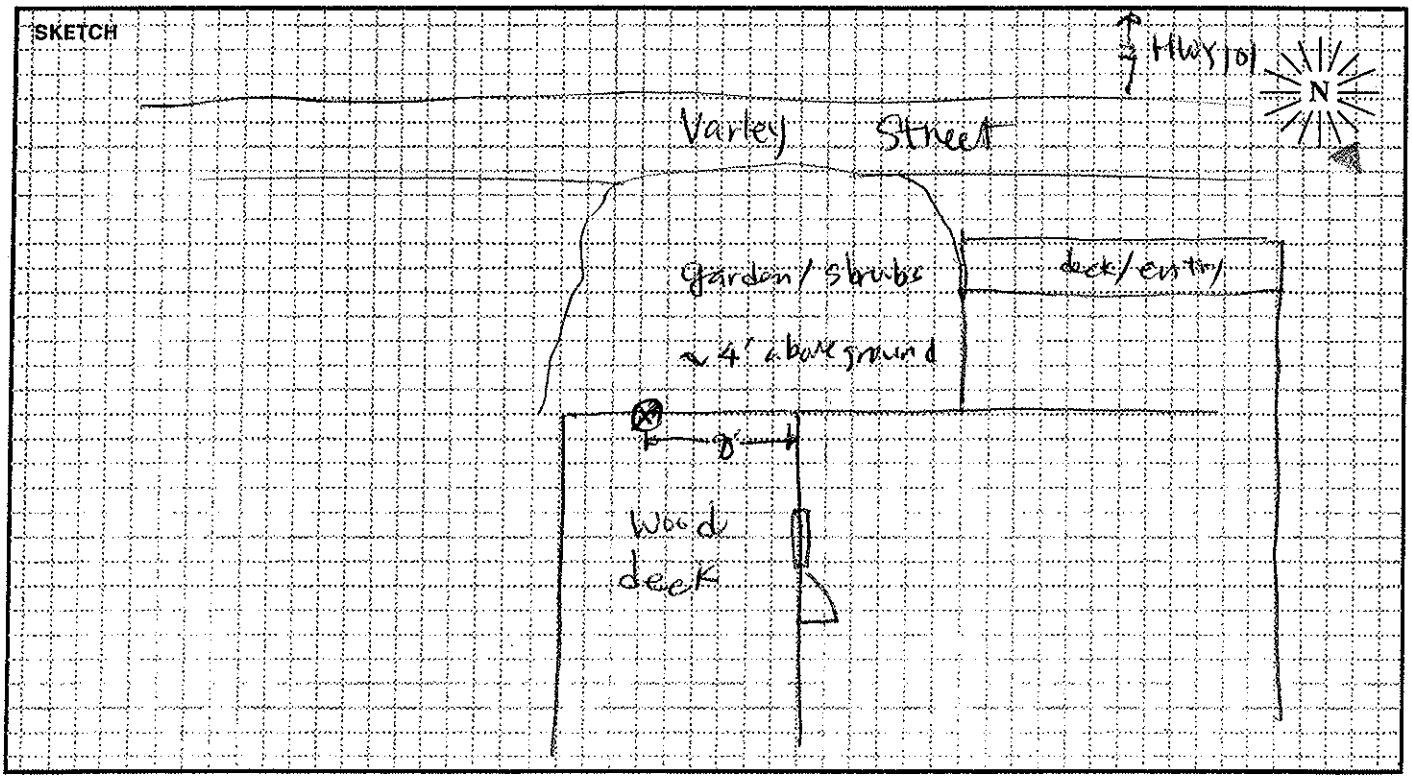
NOTES: clear view to HWY 101 & the ocean

Dist. to Center of Nearest Lane _____ ☐ Video ☐ Radar Counts AT MT HT

MEAS. TYPE: ☐ Long Term ☒ Short Term

| DATE | START TIME | STOP TIME | $L_{MIN}$ | $L_{99}$ | $L_{90}$ | $L_{50}$ | $L_{25}$ | $L_{10}$ | $L_{01}$ | $L_{MAX}$ | $L_{EQ}$ | NOTES: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 9/23/09 | 12:20 | 12:40 | 55.1 | 58.1 | | 63.2 | | 65.9 | 68.8 | 73.5 | 63.8 | train pass by w/ horn |
| 9/23/09 | 12:40 | 13:00 | 54.4 | 57.3 | | 62.9 | | 65.3 | 67.0 | 70.0 | 63.2 | |
| | | | | | | | | | | | | |

SKETCH




PARSONS

# FIELD SURVEY FORM

| | | | |
|---|---|---|---|
| PROJECT: HWY 101 HOV | | ENGINEER: Philip Jo / Ibrahim Abdallah | DATE: 9/23/09 |
| MEASUREMENT ADDRESS: 2336 Banner Avenue | CITY: Summerland | ☒ Single-Family ☐ Multi-Family ☐ Recreational ☐ Commercial | SITE NO.: CS10 |

| SOUND LEVEL METER: | MICROPHONE: ☒ WIND SCREEN | PRE AMP: | NOTES: |
|---|---|---|---|
| ☐ LD-870 ☒ LD-820 | ☐ NON-POLAR ☐ POLARIZED | ☐ LD-900 | SYSTEM PWR: ☒ BAT ☐ AC |
| ☐ LD-824 ☐ LD-812 | ☐ 1/2-INCH ☐ FREEFIELD | ☒ LD-828 | (observations at start of measurement) |
| ☐ LD-2900 ☐ _____ | ☐ 1-INCH ☐ RANDOM | ☐ _____ | TEMP: 80 °F R.H.: 57 % |
| SERIAL #: 1177 | SERIAL #: 16967 | SERIAL #: 1629 | WIND SPEED: Calm MPH |

| CALIBRATOR: | | CALIBRATION RECORD: Input, dB / Reading, dB / Offset, dB / Time | |
|---|---|---|---|
| ☐ LD CA250 | Freq, Hz. | | FROM (DIR): _____ |
| ☒ CAL200 | ☐ 250 | Before 114, 114, 8.6, 10:10 | SKIES: clear sky |
| S/N 2924 | ☒ 1000 | After 114, 113.7, -0.3, 13:01 | |
| | ☐ _____ | | |

| METER SETTINGS: | | | | | |
|---|---|---|---|---|---|
| ☒ A-WTD | ☐ LINEAR | ☒ SLOW | ☐ 1/1 OCT | ☒ INTERVALS 20 - MINUTE | CAMERA _____ |
| ☐ C-WTD | ☐ IMPULSE | ☐ FAST | ☐ 1/3 OCT | ☐ $L_N$ PERCENTILE VALUES | PHOTO NOs. 96, 97, 98, 99 |

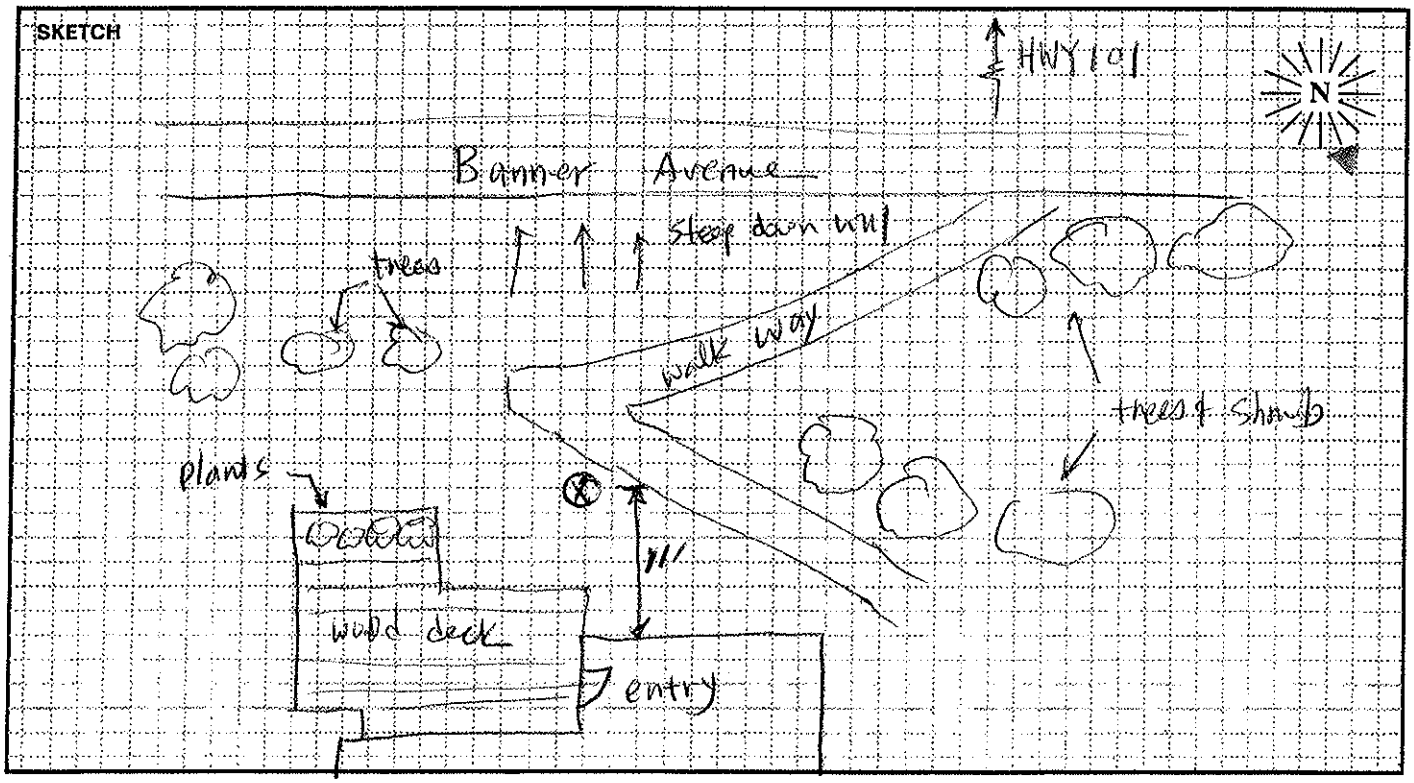
NOTES: HWY Partially visible

Dist. to Center of Nearest Lane _____ ☐ Video ☐ Radar Counts AT MT HT

MEAS. TYPE: ☐ Long Term ☒ Short Term

| DATE | START TIME | STOP TIME | $L_{MIN}$ | $L_{99}$ | $L_{90}$ | $L_{50}$ | $L_{25}$ | $L_{10}$ | $L_{01}$ | $L_{MAX}$ | $L_{EQ}$ | NOTES: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 9/23/09 | 12:20 | 12:40 | 54.0 | 56.1 | 58.0 | 60.8 | 62.2 | 63.4 | 69.1 | 76.8 | 61.8 | train ~~whistle~~ horns |
| 9/23/09 | 12:40 | 13:00 | 55.4 | 57.6 | 60.2 | 63.3 | 64.4 | 65.5 | 67.9 | 78.3 | 63.6 | |
| | | | | | | | | | | | | |

SKETCH




PARSONS

# FIELD SURVEY FORM

| | | | |
|---|---|---|---|
| PROJECT: Highway 101 HOV | | ENGINEER: Philip Jo / Ibrahim Abdallah | DATE: 9/23/09 |
| MEASUREMENT ADDRESS: 2260 Varley Street | CITY: Summerland | ☒ Single-Family ☐ Multi-Family ☐ Recreational ☐ Commercial | SITE NO.: CS11 |

| SOUND LEVEL METER: | MICROPHONE: | PRE AMP: | NOTES: |
|---|---|---|---|
| ☐ LD-870 ☐ LD-820 | ☒ WIND SCREEN | ☐ LD-900 | SYSTEM PWR: ☒ BAT ☐ AC |
| ☐ LD-824 ☒ LD-812 | ☒ NON-POLAR ☐ POLARIZED | ☒ LD-828 | (observations at start of measurement) |
| ☐ LD-2900 ☐ _____ | ☒ 1/2-INCH ☐ FREEFIELD | ☐ _____ | TEMP: _____ ºF R.H.: _____ % |
| SERIAL #: 0659 | ☐ 1-INCH ☐ RANDOM | SERIAL #: 1901 | WIND SPEED: calm MPH |
| | SERIAL #: 3378 | | FROM (DIR): _____ |

| CALIBRATOR: | Freq, Hz. | CALIBRATION RECORD: Input, dB / Reading, dB / Offset, dB / Time |
|---|---|---|
| ☐ LD CA250 | ☐ 250 | Before 114, 114, 7.6, 10:28 |
| ☒ CAL 200 | ☒ 1000 | After 114, 114, 0.0, 13:09 |
| S/N 2924 | ☐ _____ | |

SKIES: clear

CAMERA _____

PHOTO NOs. 103, 104, 105

METER SETTINGS:
☒ A-WTD ☐ LINEAR ☒ SLOW ☐ 1/1 OCT ☒ INTERVALS 20 - MINUTE
☐ C-WTD ☐ IMPULSE ☐ FAST ☐ 1/3 OCT ☐ $L_N$ PERCENTILE VALUES

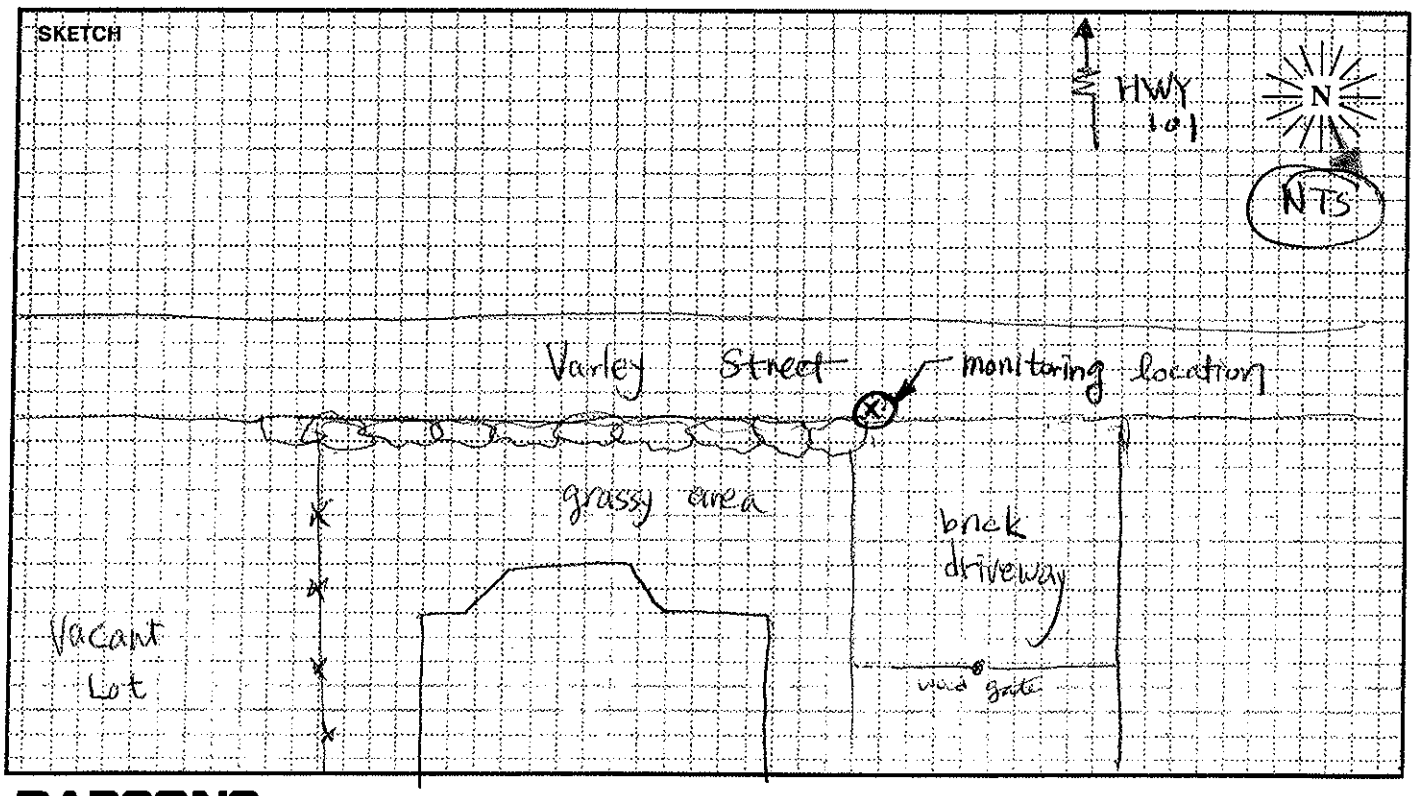
NOTES: Buildings in front of the subject blocking view/noise to HWY 101

Dist. to Center of Nearest Lane _____ ☐ Video ☐ Radar Counts AT MT HT

MEAS. TYPE: ☐ Long Term ☒ Short Term

| | DATE | START TIME | STOP TIME | $L_{MIN}$ | $L_{99}$ | $L_{90}$ | $L_{50}$ | $L_{25}$ | $L_{10}$ | $L_{01}$ | $L_{MAX}$ | $L_{EQ}$ | NOTES: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| cal → | 9/23/09 | 10:40 | 11:00 | 46.9 | 48.1 | | 51.9 | | 54.5 | 57.2 | 65.5 | 52.5 | 2 cars |
| | 9/23/09 | 11:00 | 11:20 | 47.8 | 48.3 | | 52.5 | | 55.7 | 64.6 | 68.5 | 54.5 | 6 cars & train pass-by w/ horn |
| cal → | 9/23/09 | 11:20 | 11:40 | 46.2 | 47.1 | | 52.1 | | 54.9 | 58.4 | 62.2 | 52.8 | |

SKETCH




PARSONS

# FIELD SURVEY FORM

| | | | |
|---|---|---|---|
| PROJECT: HWY 101 HOV | | ENGINEER: Philip Jo / Ibrahim Abdullah | DATE: 9/22/09 |
| MEASUREMENT ADDRESS: 2280 Banner Avenue | CITY: Summerland | ☒ Single-Family ☐ Multi-Family ☐ Recreational ☐ Commercial | SITE NO.: CS12 |

| SOUND LEVEL METER: | MICROPHONE: | PRE AMP: | NOTES: |
|---|---|---|---|
| ☐ LD-870 ☒ LD-820 | ☐ NON-POLAR ☐ POLARIZED | ☐ LD-900 | SYSTEM PWR: ☒ BAT ☐ AC |
| ☐ LD-824 ☐ LD-812 | ☐ 1/2-INCH ☐ FREEFIELD | ☒ LD-828 | (observations at start of measurement) |
| ☐ LD-2900 ☐ _____ | ☐ 1-INCH ☐ RANDOM | ☐ _____ | TEMP: 76.4 °F R.H.: 63 % |
| SERIAL #: 1177 | SERIAL #: 16967 | SERIAL #: 1629 | WIND SPEED: Calm MPH |

| CALIBRATOR: | | CALIBRATION RECORD: Input, dB / Reading, dB / Offset, dB / Time | |
|---|---|---|---|
| ☐ LD CA250 | Freq, Hz. | | FROM (DIR): _____ |
| ☒ CAL200 | ☐ 250 | Before 114, 114, 8.6, 10:10 | SKIES: _____ |
| S/N _____ | ☐ 1000 | After 114, 113.7, -0.3, 13:01 | |
| | ☐ _____ | | |

METER SETTINGS:
☒ A-WTD ☐ LINEAR ☒ SLOW ☐ 1/1 OCT ☒ INTERVALS 20 - MINUTE
☐ C-WTD ☐ IMPULSE ☐ FAST ☐ 1/3 OCT ☐ $L_N$ PERCENTILE VALUES

CAMERA _____
PHOTO NOs. 94, 95

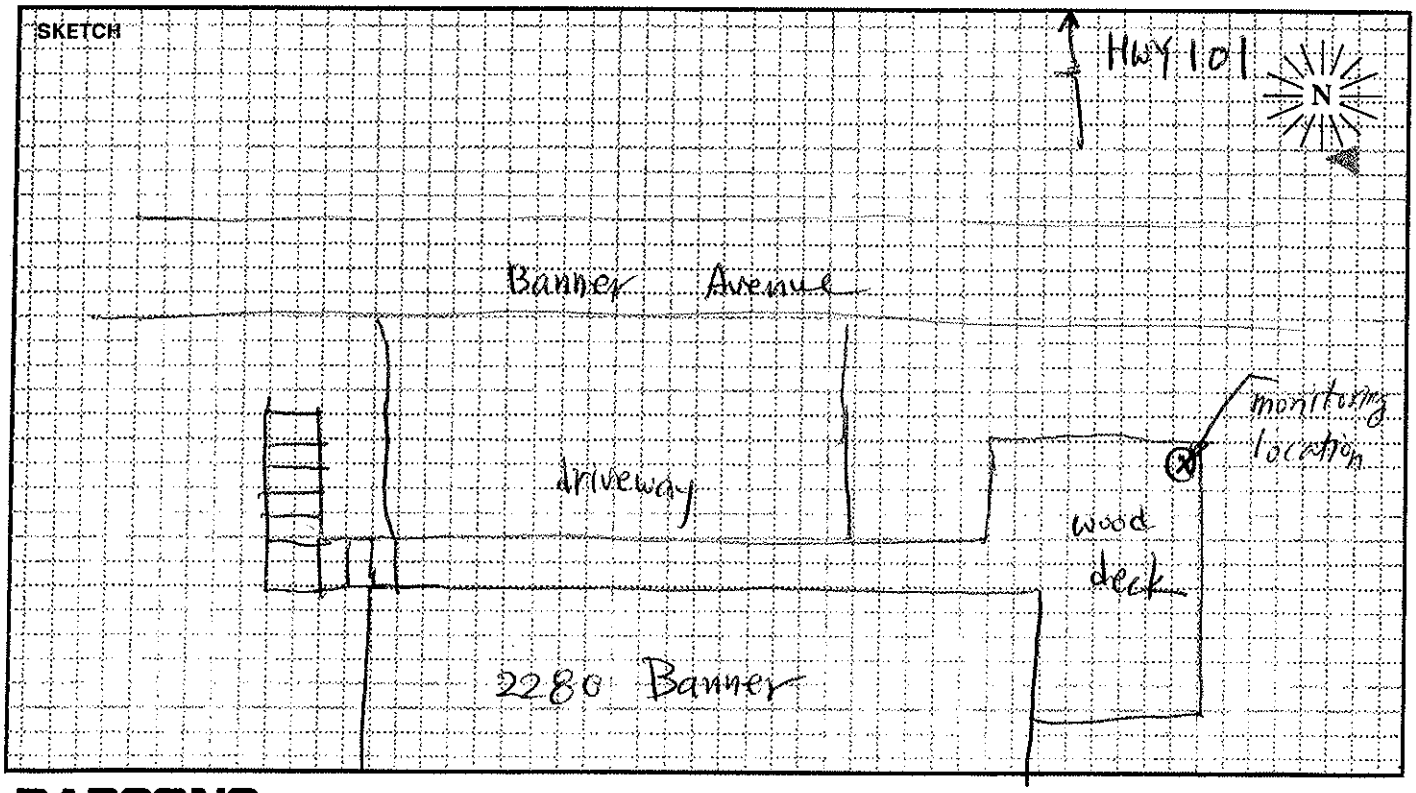
NOTES: Clear view to Hwy 101 & the ocean

Dist. to Center of Nearest Lane _____ ☐ Video ☐ Radar Counts AT MT HT

MEAS. TYPE: ☐ Long Term ☒ Short Term

| | DATE | START TIME | STOP TIME | $L_{MIN}$ | $L_{99}$ | $L_{90}$ | $L_{50}$ | $L_{25}$ | $L_{10}$ | $L_{01}$ | $L_{MAX}$ | $L_{EQ}$ | NOTES: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| cal → | 9/23/09 | 10:40 | 11:00 | 55.9 | 56.4 | 58.2 | 60.8 | 61.9 | 62.9 | 65.8 | 67.1 | 61.1 | |
| | | 11:00 | 11:20 | 55.8 | 56.6 | 58.8 | 62.3 | 60.7 | 63.7 | 74.5 | 80.4 | 63.3 | train pass-by w/ horn |
| cal → | | 11:20 | 11:40 | 54.1 | 55.7 | 57.9 | 60.9 | 62.3 | 63.5 | 65.8 | 68.1 | 61.3 | |

SKETCH




PARSONS

# FIELD SURVEY FORM

| | | | |
|---|---|---|---|
| PROJECT: HWY 101 HOV | | ENGINEER: Philip Jo / Ibrahim Abdullah | DATE: 9/23/09 |
| MEASUREMENT ADDRESS: 2190 Hardinge Avenue | CITY: Summerland | ☒ Single-Family ☐ Multi-Family ☐ Recreational ☐ Commercial | SITE NO.: CS13 |

| SOUND LEVEL METER: | MICROPHONE: | PRE AMP: | NOTES: |
|---|---|---|---|
| ☐ LD-870 ☐ LD-820 | ☒ WIND SCREEN | ☐ LD-900 | SYSTEM PWR: ☒ BAT ☐ AC |
| ☐ LD-824 ☒ LD-812 | ☒ NON-POLAR ☐ POLARIZED | ☒ LD-828 | (observations at start of measurement) |
| ☐ LD-2900 ☐ _____ | ☒ 1/2-INCH ☐ FREEFIELD | ☐ _____ | TEMP: 83 °F R.H.: 55 % |
| SERIAL #: 0659 | ☐ 1-INCH ☐ RANDOM | SERIAL #: 1901 | WIND SPEED: Calm MPH |
| | SERIAL #: 3378 | | FROM (DIR): _____ |

| CALIBRATOR: | | CALIBRATION RECORD: | |
|---|---|---|---|
| ☐ LD CA250 | Freq, Hz. | Input, dB / Reading, dB / Offset, dB / Time | |
| ☒ CAL 200 | ☐ 250 | Before | 114, 114, 7.6, 15:09 |
| S/N 2924 | ☒ 1000 | After | 114, 114.1, 0.1, 17:24 |
| | ☐ _____ | | |

SKIES: clear

CAMERA _____

PHOTO NOs. 106, 107, 108

METER SETTINGS:
☒ A-WTD ☐ LINEAR ☒ SLOW ☐ 1/1 OCT ☒ INTERVALS 20 - MINUTE
☐ C-WTD ☐ IMPULSE ☐ FAST ☐ 1/3 OCT ☐ $L_N$ PERCENTILE VALUES

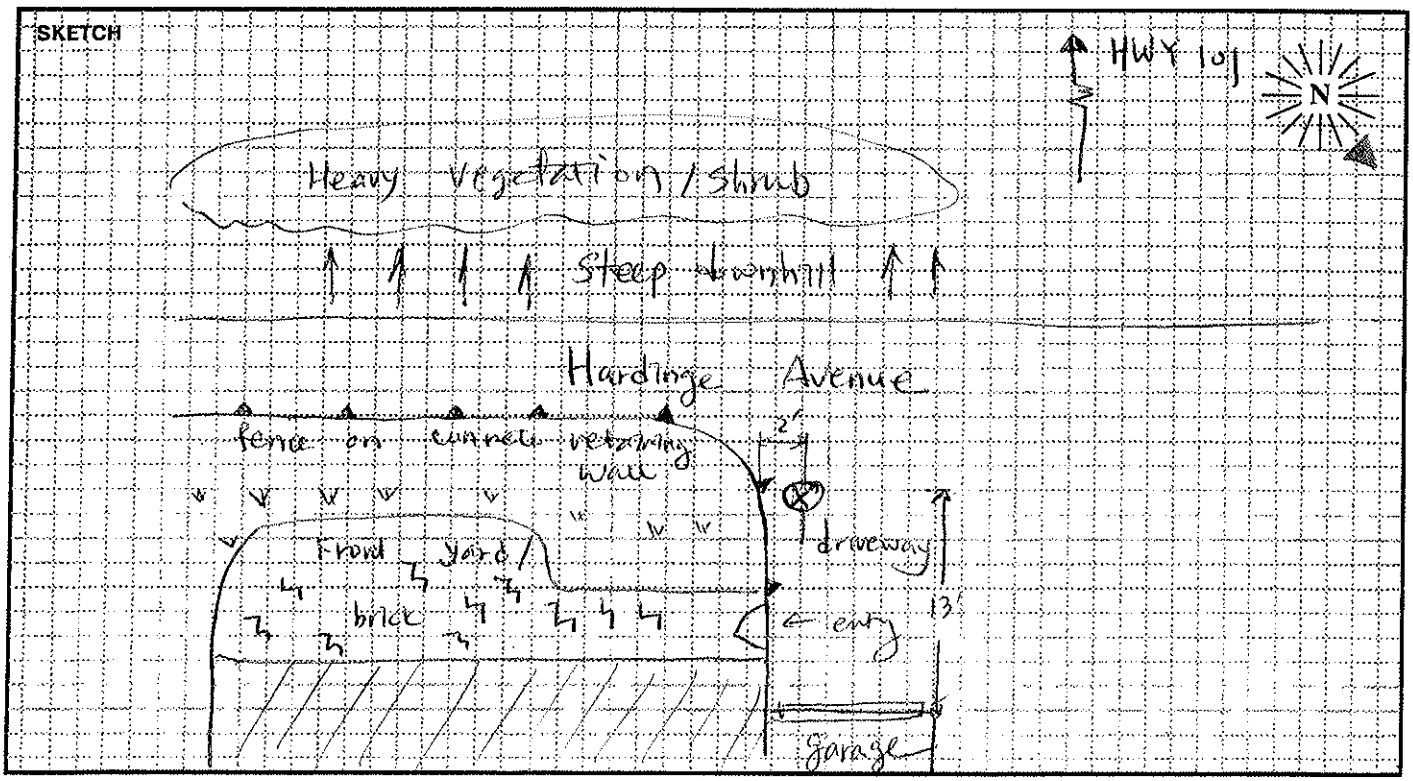
NOTES: clearly visible HWY 101 from the measuring spot

Dist. to Center of Nearest Lane _____ ☐ Video ☐ Radar Counts AT MT HT

MEAS. TYPE: ☐ Long Term ☒ Short Term

| DATE | START TIME | STOP TIME | $L_{MIN}$ | $L_{99}$ | $L_{90}$ | $L_{50}$ | $L_{25}$ | $L_{10}$ | $L_{01}$ | $L_{MAX}$ | $L_{EQ}$ | NOTES: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 9/23/09 | 15:20 | 15:40 | 60.1 | 61.5 | | 67.1 | | 69.4 | 71.4 | 72.2 | 67.4 | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |

SKETCH




PARSONS

# FIELD SURVEY FORM

| | | | |
|---|---|---|---|
| PROJECT: HWY 101 HOV | | ENGINEER: Philip Jo / Ibrahim Abdallah | DATE: 9/23/09 |
| MEASUREMENT ADDRESS: 2187 Little Avenue | CITY: Summerland | ☒ Single-Family ☐ Multi-Family ☐ Recreational ☐ Commercial | SITE NO.: C514 |

| SOUND LEVEL METER: | MICROPHONE: | PRE AMP: | NOTES: |
|---|---|---|---|
| ☐ LD-870 ☒ LD-820 | ☒ NON-POLAR ☐ POLARIZED | ☐ LD-900 | SYSTEM PWR: ☐ BAT ☐ AC |
| ☐ LD-824 ☐ LD-812 | ☒ 1/2-INCH ☐ FREEFIELD | ☒ LD-828 | (observations at start of measurement) |
| ☐ LD-2900 ☐ _____ | ☐ 1-INCH ☐ RANDOM | ☐ _____ | |
| SERIAL #: 1177 | SERIAL #: 16967 | SERIAL #: 1629 | TEMP: 79 °F R.H.: 51 % |

| CALIBRATOR: | | CALIBRATION RECORD: Input, dB / Reading, dB / Offset, dB / Time | |
|---|---|---|---|
| ☐ LD CA250 | Freq, Hz. | | WIND SPEED: calm MPH |
| ☒ CAL200 | ☐ 250 | Before 114, 114, 8.6, 10:10 | FROM (DIR): _____ |
| S/N 2924 | ☒ 1000 | After 114, 113.8, -0.2, 15:52 | SKIES: clear |
| | ☐ _____ | | |

METER SETTINGS:
☒ A-WTD ☐ LINEAR ☒ SLOW ☐ 1/1 OCT ☐ INTERVALS 20 - MINUTE
☐ C-WTD ☐ IMPULSE ☐ FAST ☐ 1/3 OCT ☐ $L_N$ PERCENTILE VALUES

CAMERA _____

PHOTO NOs. 119, 120, 121, 122, 123

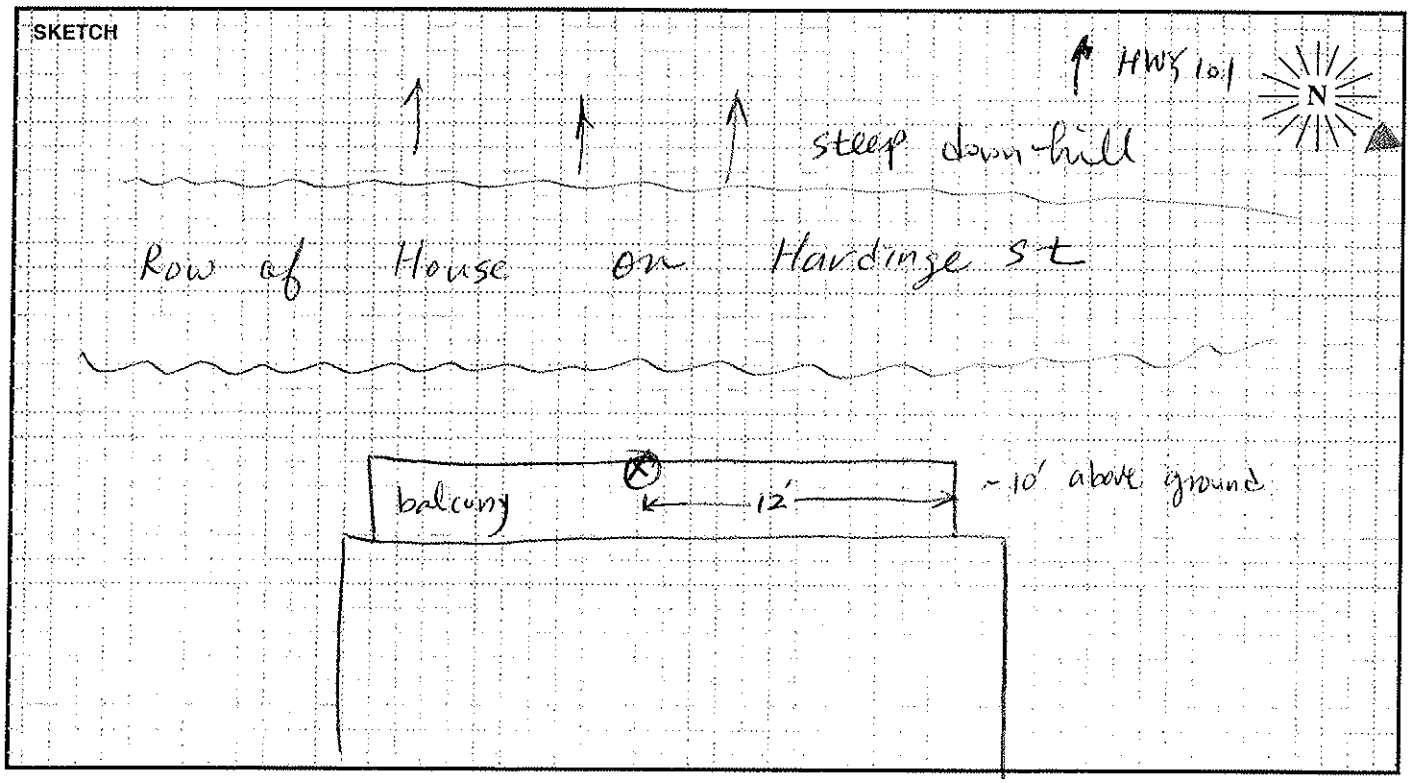
NOTES: overlooking Hwy 101 & Beach

Dist. to Center of Nearest Lane _____ ☐ Video ☐ Radar Counts AT MT HT

MEAS. TYPE: ☐ Long Term ☒ Short Term

| DATE | START TIME | STOP TIME | $L_{MIN}$ | $L_{99}$ | $L_{90}$ | $L_{50}$ | $L_{25}$ | $L_{10}$ | $L_{01}$ | $L_{MAX}$ | $L_{EQ}$ | NOTES: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 9/23/09 | 15:00 | 15:20 | 65.7 | 66.3 | 68.0 | 70.0 | 71.1 | 71.9 | 75.2 | 78.6 | 70.3 | |
| cal → 9/23/09 | 15:00 | 15:40 | 64.9 | 65.7 | 68.0 | 70.2 | 71.2 | 71.9 | 73.5 | 74.3 | 70.3 | |
| | | | | | | | | | | | | |

SKETCH




PARSONS

# FIELD SURVEY FORM

| | | | |
|---|---|---|---|
| PROJECT: HWY 101 HOV | | ENGINEER: Philip Jo / Ibrahim Abdullah | DATE: 9/23/09 |
| MEASUREMENT ADDRESS: 2220 Little Avenue #A | CITY: Summerland | ☒ Single-Family ☐ Multi-Family ☐ Recreational ☐ Commercial | SITE NO.: CS15 |

| SOUND LEVEL METER: | MICROPHONE: | PRE AMP: | NOTES: |
|---|---|---|---|
| ☐ LD-870 ☐ LD-820 | ☒ WIND SCREEN | ☐ LD-900 | SYSTEM PWR: ☒ BAT ☐ AC |
| ☐ LD-824 ☒ LD-812 | ☒ NON-POLAR ☐ POLARIZED | ☒ LD-828 | (observations at start of measurement) |
| ☐ LD-2900 ☐ _____ | ☒ 1/2-INCH ☐ FREEFIELD | ☐ _____ | TEMP: 74.5 °F R.H.: 68 % |
| SERIAL #: 0659 | ☐ 1-INCH ☐ RANDOM | SERIAL #: 1901 | WIND SPEED: 0.5 MPH |
| | SERIAL #: 3378 | | |

| CALIBRATOR: | | CALIBRATION RECORD: Input, dB / Reading, dB / Offset, dB / Time |
|---|---|---|
| ☐ LD CA250 | Freq, Hz. | |
| ☒ CAL200 | ☐ 250 | Before 114, 114, 7.6, 15:09 |
| S/N 2924 | ☒ 1000 | After 114, 114.1, 0.1, 17:24 |
| | ☐ _____ | |

FROM (DIR): _____

SKIES: clear

CAMERA _____

PHOTO NOs. 127 ~ 130

METER SETTINGS:
☒ A-WTD ☐ LINEAR ☒ SLOW ☐ 1/1 OCT ☒ INTERVALS 20 - MINUTE
☐ C-WTD ☐ IMPULSE ☐ FAST ☐ 1/3 OCT ☐ $L_N$ PERCENTILE VALUES

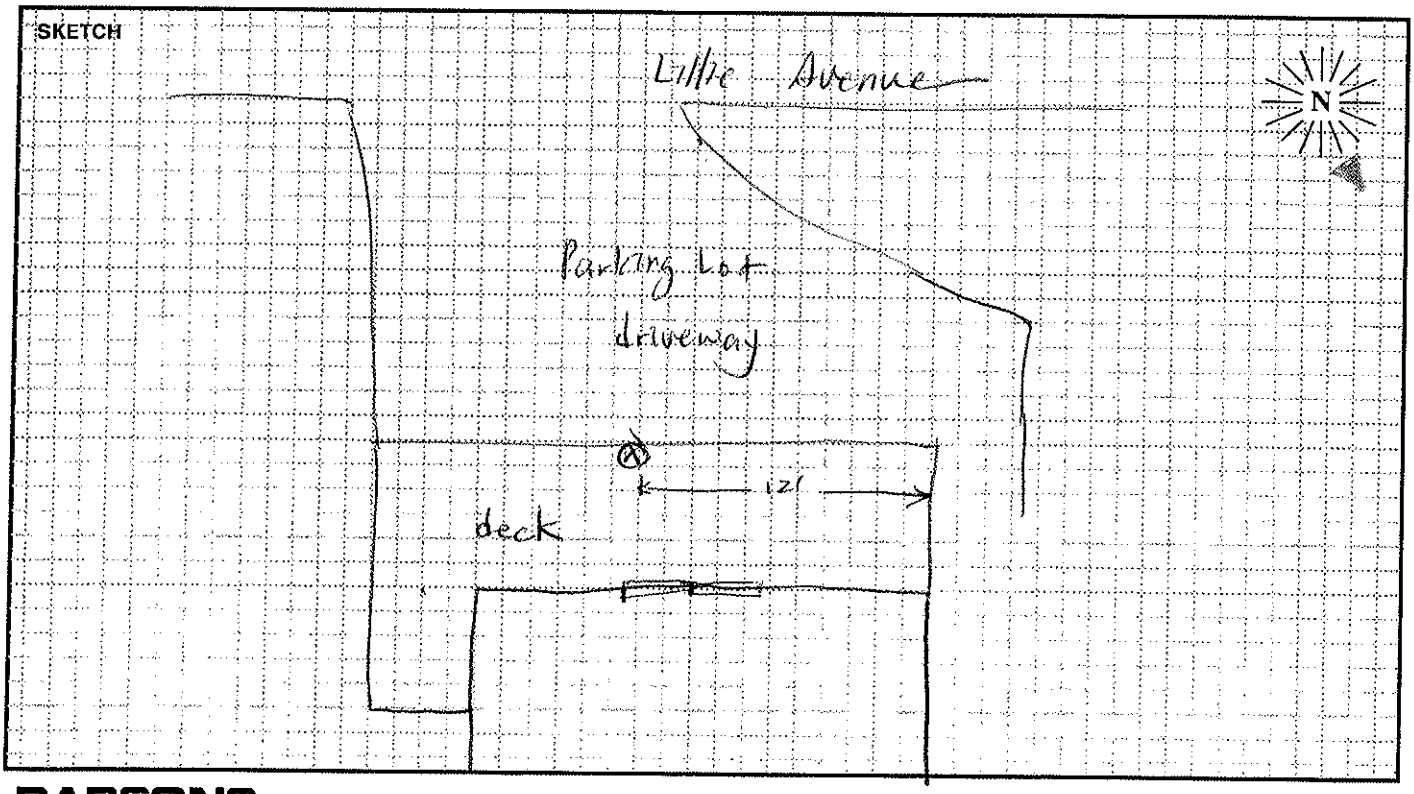
NOTES: HWY 101 visible mostly from the measurement spot

Dist. to Center of Nearest Lane _____ ☐ Video ☐ Radar Counts AT MT HT

MEAS. TYPE: ☐ Long Term ☒ Short Term

| DATE | START TIME | STOP TIME | $L_{MIN}$ | $L_{99}$ | $L_{90}$ | $L_{50}$ | $L_{25}$ | $L_{10}$ | $L_{01}$ | $L_{MAX}$ | $L_{EQ}$ | NOTES: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 9/23/09 | 5:00 PM | 5:25 PM | 61.2 | 61.7 | | 65.6 | | 67.8 | 72.5 | 75.5 | 66.2 | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |

SKETCH




PARSONS

# FIELD SURVEY FORM
# LONG-TERM MEASUREMENT SITES

# FIELD SURVEY FORM

| | | | |
|---|---|---|---|
| PROJECT: Highway 101 HOV Project | | ENGINEER: Philipson/Jabra | DATE: 3/16/09 |
| MEASUREMENT ADDRESS: 1317 Sterling Ln | CITY: Carpinteria | ☒ Single-Family ☐ Multi-Family ☐ Recreational ☐ Commercial | SITE NO.: LT1 |

| SOUND LEVEL METER: | MICROPHONE: | PRE AMP: | NOTES: |
|---|---|---|---|
| ☐ LD-870 ☒ LD-820 | ☐ NON-POLAR ☒ POLARIZED | ☐ LD-900 | SYSTEM PWR: ☒ BAT ☐ AC |
| ☐ LD-824 ☐ LD-812 | ☒ 1/2-INCH ☐ FREEFIELD | ☒ LD-828 | (observations at start of measurement) |
| ☐ LD-2900 ☐ _____ | ☐ 1-INCH ☐ RANDOM | ☐ _____ | TEMP: 64.2 °F R.H.: 56 % |
| SERIAL #: 1177 | SERIAL #: 16967 | SERIAL #: 1629 | WIND SPEED: calm MPH |

| CALIBRATOR: | | CALIBRATION RECORD: Input, dB / Reading, dB / Offset, dB / Time | |
|---|---|---|---|
| ☒ LD CA250 | Freq, Hz. | | FROM (DIR): _____ |
| ☐ _____ | ☒ 250 | Before 114 / 114 / 8.2 / 16:35 | SKIES: clear |
| S/N 2127 | ☐ 1000 | After 114 / 113.9 / -0.1 / 16:52 | CAMERA _____ |
| | ☐ _____ | | PHOTO NOs. 31-32 |

| METER SETTINGS: | | | | | |
|---|---|---|---|---|---|
| ☒ A-WTD | ☐ LINEAR | ☒ SLOW | ☐ 1/1 OCT | ☒ INTERVALS 20 - MINUTE | |
| ☐ C-WTD | ☐ IMPULSE | ☐ FAST | ☐ 1/3 OCT | ☐ $L_N$ PERCENTILE VALUES | |

NOTES:

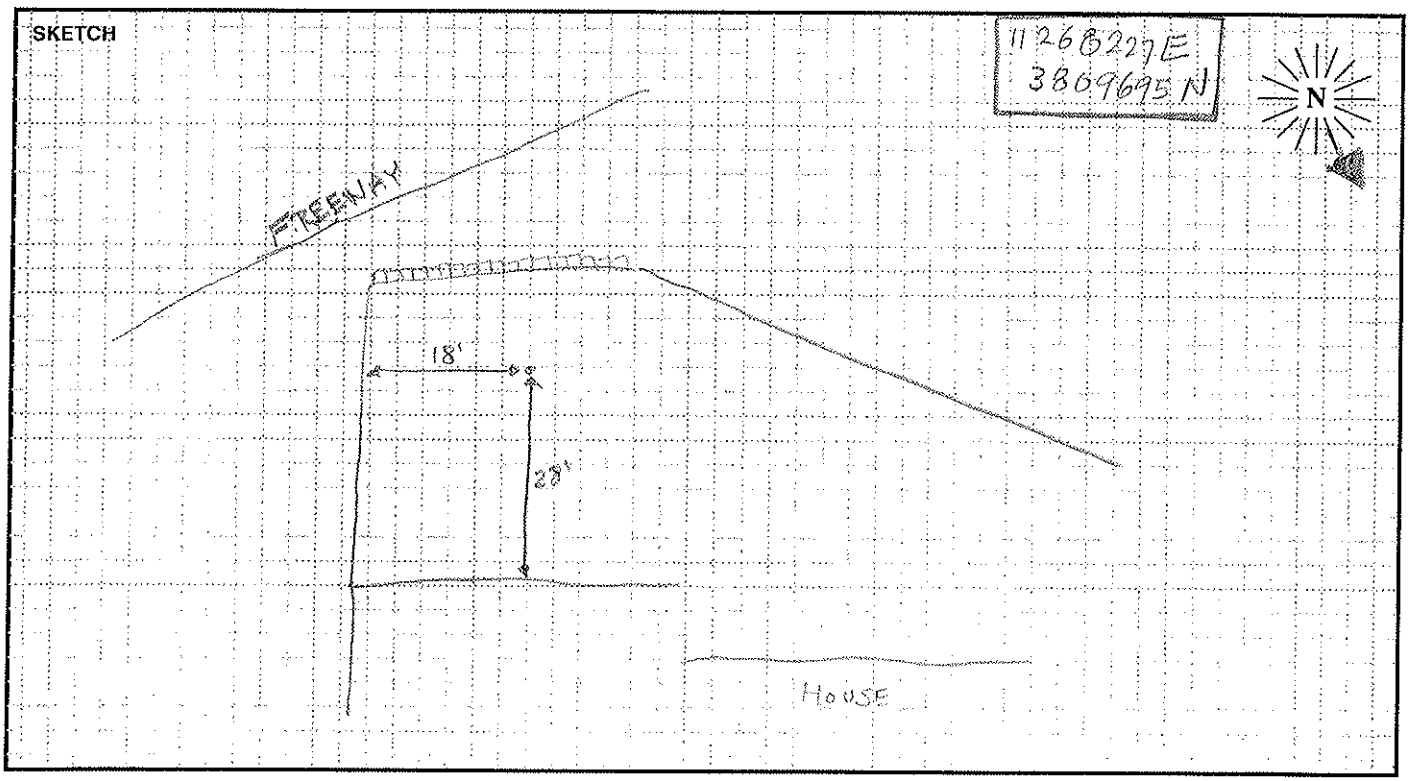
Dist. to Center of Nearest Lane _____ ☐ Video ☐ Radar

Counts AT MT HT

MEAS. TYPE: ☒ Long Term ☐ Short Term

| DATE | START TIME | STOP TIME | $L_{MIN}$ | $L_{99}$ | $L_{90}$ | $L_{50}$ | $L_{25}$ | $L_{10}$ | $L_{01}$ | $L_{MAX}$ | $L_{EQ}$ | NOTES: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3/16/09 | 16:55 | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |

SKETCH

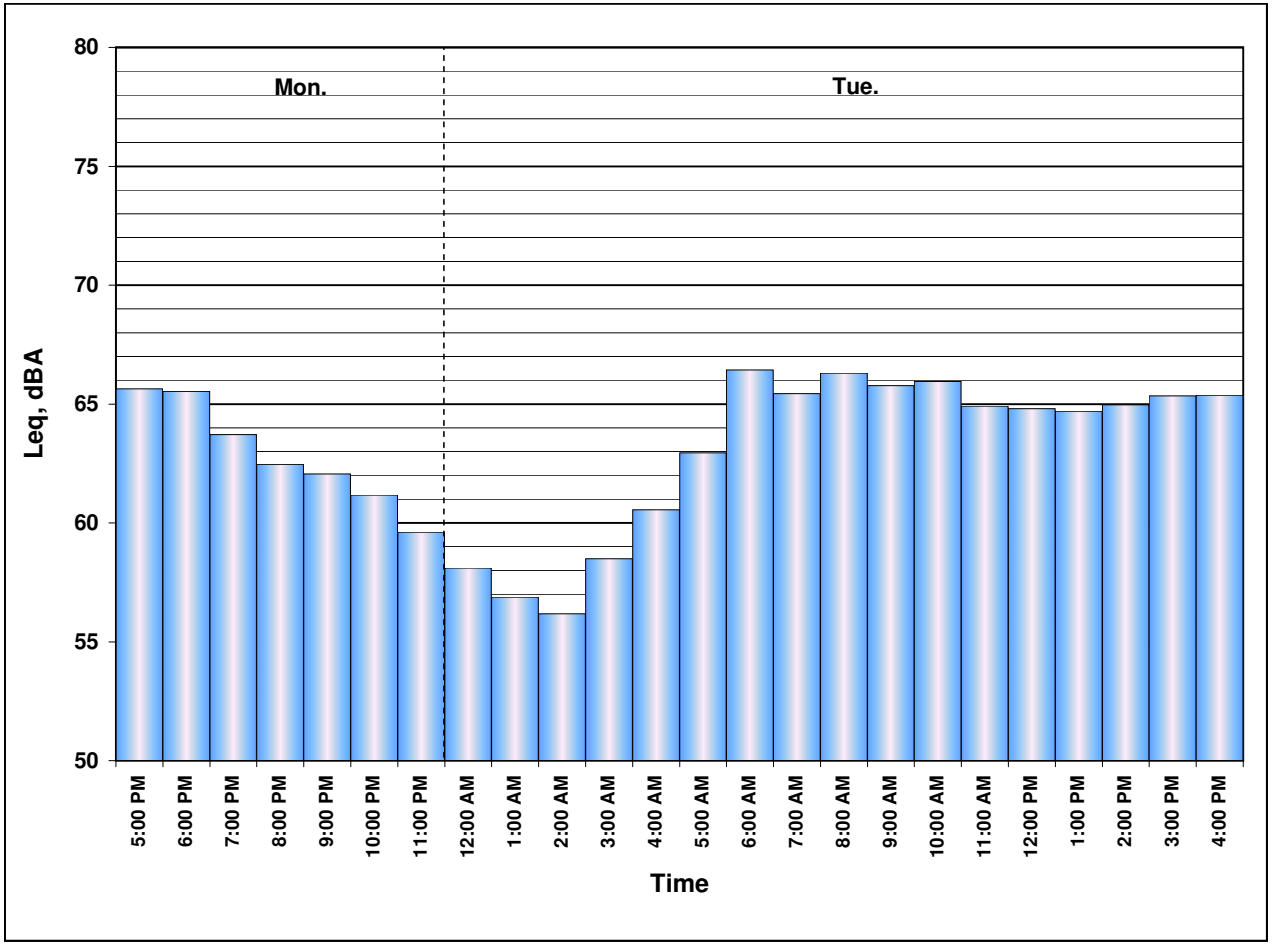



PARSONS

# Site LT1 Hourly Noise Levels, $L_{eq}(h)$

**Location:** 1317 Sterling Lane, Carpinteria, CA
**Position:** Backyard
**Sources:** Traffic on Highway 101
**Date:** 03/16/09 - 03/17/09 **Notes:** See attached Noise Measurement Form.

| TIME | 3/16-3/17 $L_{eq(h)}$ dBA |
|---|---|
| 05:00 - 06:00 PM | 66 |
| 06:00 - 07:00 PM | 66 |
| 07:00 - 08:00 PM | 64 |
| 08:00 - 09:00 PM | 62 |
| 09:00 - 10:00 PM | 62 |
| 10:00 - 11:00 PM | 61 |
| 11:00 - 12:00 AM | 60 |
| 12:00 - 01:00 AM | 58 |
| 01:00 - 02:00 AM | 57 |
| 02:00 - 03:00 AM | 56 |
| 03:00 - 04:00 AM | 58 |
| 04:00 - 05:00 AM | 61 |
| 05:00 - 06:00 AM | 63 |
| 06:00 - 07:00 AM | 66 |
| 07:00 - 08:00 AM | 65 |
| 08:00 - 09:00 AM | 66 |
| 09:00 - 10:00 AM | 66 |
| 10:00 - 11:00 AM | 66 |
| 11:00 - 12:00 PM | 65 |
| 12:00 - 01:00 PM | 65 |
| 01:00 - 02:00 PM | 65 |
| 02:00 - 03:00 PM | 65 |
| 03:00 - 04:00 PM | 65 |
| 04:00 - 05:00 PM | 65 |



# FIELD SURVEY FORM

| | | |
|---|---|---|
| PROJECT: Highway 101 HOV Project | ENGINEER: Philip Jol Jabra | DATE: 3/17/09 |
| MEASUREMENT ADDRESS: 2350 Finney St | CITY: Summerland | ☒ Single-Family ☐ Multi-Family ☐ Recreational ☐ Commercial | SITE NO.: LT2 |

**SOUND LEVEL METER:** ☐ LD-870 ☒ LD-820 ☐ LD-824 ☐ LD-812 ☐ LD-2900 ☐ _____
SERIAL #: 1177

**MICROPHONE:** ☐ WIND SCREEN ☐ NON-POLAR ☒ POLARIZED ☒ 1/2-INCH ☐ FREEFIELD ☐ 1-INCH ☐ RANDOM
SERIAL #: 16967

**PRE AMP:** ☐ LD-900 ☒ LD-828 ☐ _____
SERIAL #: 1629

**CALIBRATOR:** ☒ LD CA250 ☐ _____ S/N 2127
Freq, Hz. ☒ 250 ☐ 1000 ☐ _____

**CALIBRATION RECORD:** Input, dB / Reading, dB / Offset, dB / Time
Before 114 / 114 / 8.2 / 17:35
After ___ / ___ / ___ / ___

**METER SETTINGS:** ☒ A-WTD ☐ LINEAR ☒ SLOW ☐ 1/1 OCT ☒ INTERVALS 20 - MINUTE
☐ C-WTD ☐ IMPULSE ☐ FAST ☐ 1/3 OCT ☐ $L_N$ PERCENTILE VALUES

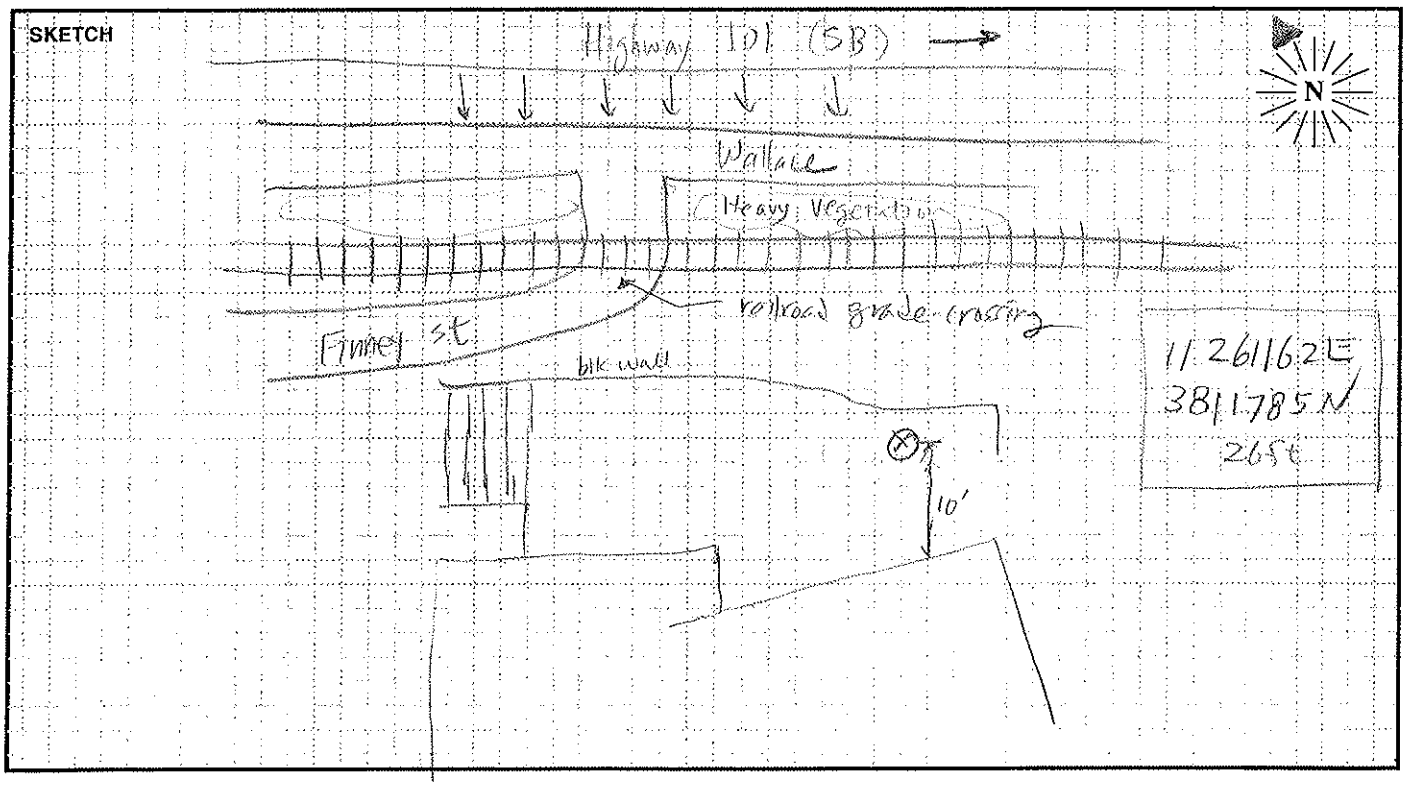
**NOTES:**
SYSTEM PWR: ☒ BAT ☐ AC
(observations at start of measurement)
TEMP: ____ °F R.H.: ____ %
WIND SPEED: ____ MPH
FROM (DIR): ____
SKIES: ____
CAMERA ____
PHOTO NOs. 75-78

**NOTES:** Dist. to Center of Nearest Lane _____ ☐ Video ☐ Radar Counts AT MT HT

**MEAS. TYPE:** ☒ Long Term ☐ Short Term

| DATE | START TIME | STOP TIME | $L_{MIN}$ | $L_{99}$ | $L_{90}$ | $L_{50}$ | $L_{25}$ | $L_{10}$ | $L_{01}$ | $L_{MAX}$ | $L_{EQ}$ | NOTES: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3/17/09 | 17:39 | | | | | | | | | | | Horn ~106; Amtrak/NB/ 1 loco 8 cars 17:40 |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |

**SKETCH**

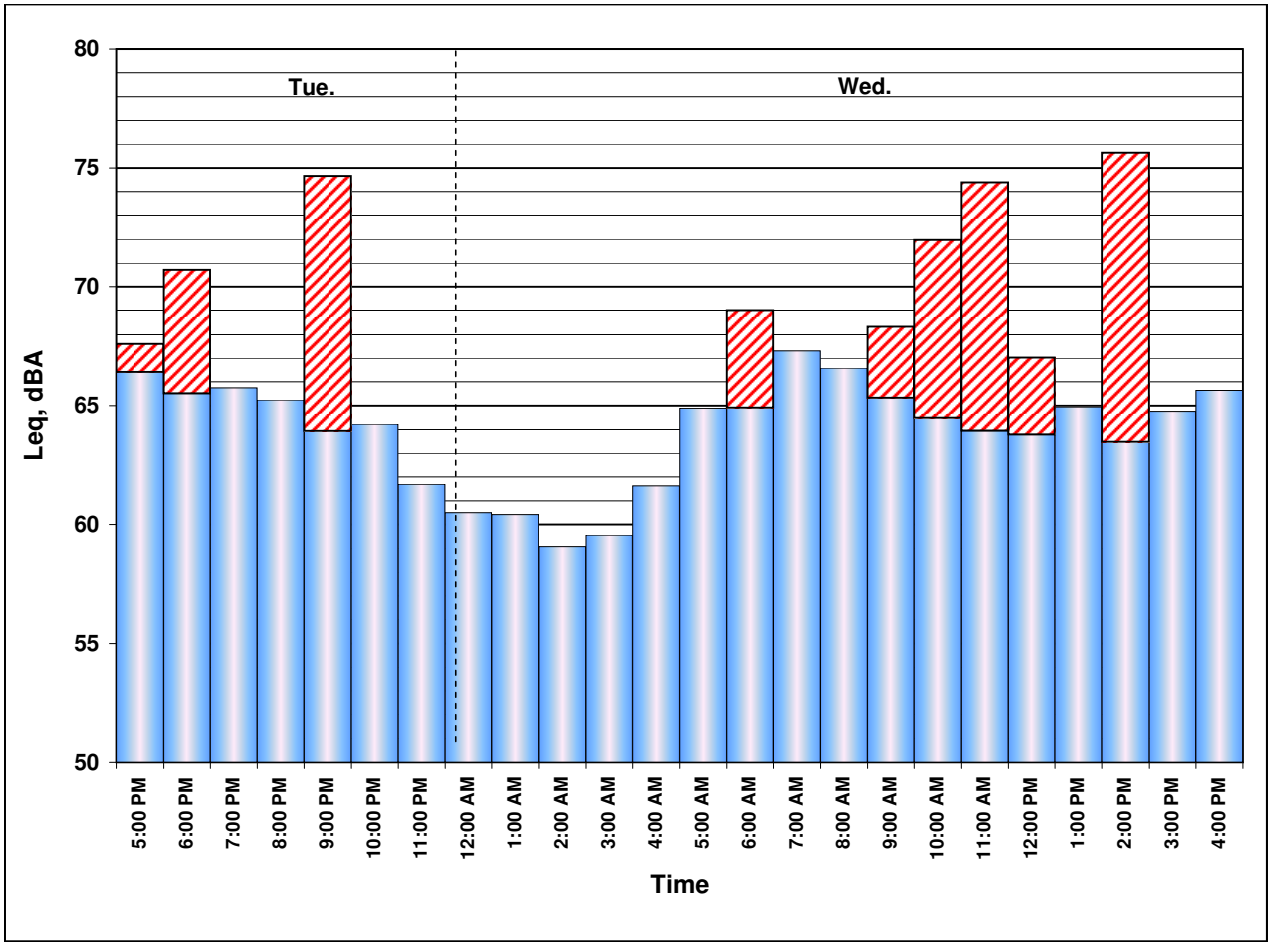



PARSONS

# Site LT2 Hourly Noise Levels, $L_{eq}(h)$

**Location:** 2350 Finney Street, Summerland, CA
**Position:** Front Yard
**Sources:** Traffic on Highway 101 and Train
**Date:** 03/17/09 - 03/18/09 **Notes:** See attached Noise Measurement Form.

| TIME | 3/17-3/18 $L_{eq(h)}$ dBA |
|---|---|
| 05:00 - 06:00 PM | 66 |
| 06:00 - 07:00 PM | 66 |
| 07:00 - 08:00 PM | 66 |
| 08:00 - 09:00 PM | 65 |
| 09:00 - 10:00 PM | 64 |
| 10:00 - 11:00 PM | 64 |
| 11:00 - 12:00 AM | 62 |
| 12:00 - 01:00 AM | 61 |
| 01:00 - 02:00 AM | 60 |
| 02:00 - 03:00 AM | 59 |
| 03:00 - 04:00 AM | 60 |
| 04:00 - 05:00 AM | 62 |
| 05:00 - 06:00 AM | 65 |
| 06:00 - 07:00 AM | 65 |
| 07:00 - 08:00 AM | 67 |
| 08:00 - 09:00 AM | 67 |
| 09:00 - 10:00 AM | 65 |
| 10:00 - 11:00 AM | 64 |
| 11:00 - 12:00 PM | 64 |
| 12:00 - 01:00 PM | 64 |
| 01:00 - 02:00 PM | 65 |
| 02:00 - 03:00 PM | 63 |
| 03:00 - 04:00 PM | 65 |
| 04:00 - 05:00 PM | 66 |




: Elevated noise level due to horn noise.

# FIELD SURVEY FORM

| | | | |
|---|---|---|---|
| PROJECT: Highway 101 HOV Project | | ENGINEER: Philip Jo / Jabra | DATE: 3/19/09 |
| MEASUREMENT ADDRESS: 1344 / 1342 Virginia Rd | CITY: Santa Barbara | ☐ Single-Family ☐ Multi-Family ☐ Recreational ☐ Commercial | SITE NO.: LT3 |

| SOUND LEVEL METER: | MICROPHONE: | PRE AMP: | NOTES: |
|---|---|---|---|
| ☐ LD-870 ☒ LD-820 | ☐ WIND SCREEN | ☐ LD-900 | SYSTEM PWR: ☒ BAT ☐ AC |
| ☐ LD-824 ☐ LD-812 | ☐ NON-POLAR ☑ POLARIZED | ☒ LD-828 | (observations at start of measurement) |
| ☐ LD-2900 ☐ _____ | ☒ 1/2-INCH ☐ FREEFIELD | ☐ _____ | TEMP: _____ °F R.H.: _____ % |
| SERIAL #: 1177 | ☐ 1-INCH ☐ RANDOM | | WIND SPEED: _____ MPH |
| | SERIAL #: 16967 | SERIAL #: 1629 | FROM (DIR): _____ |

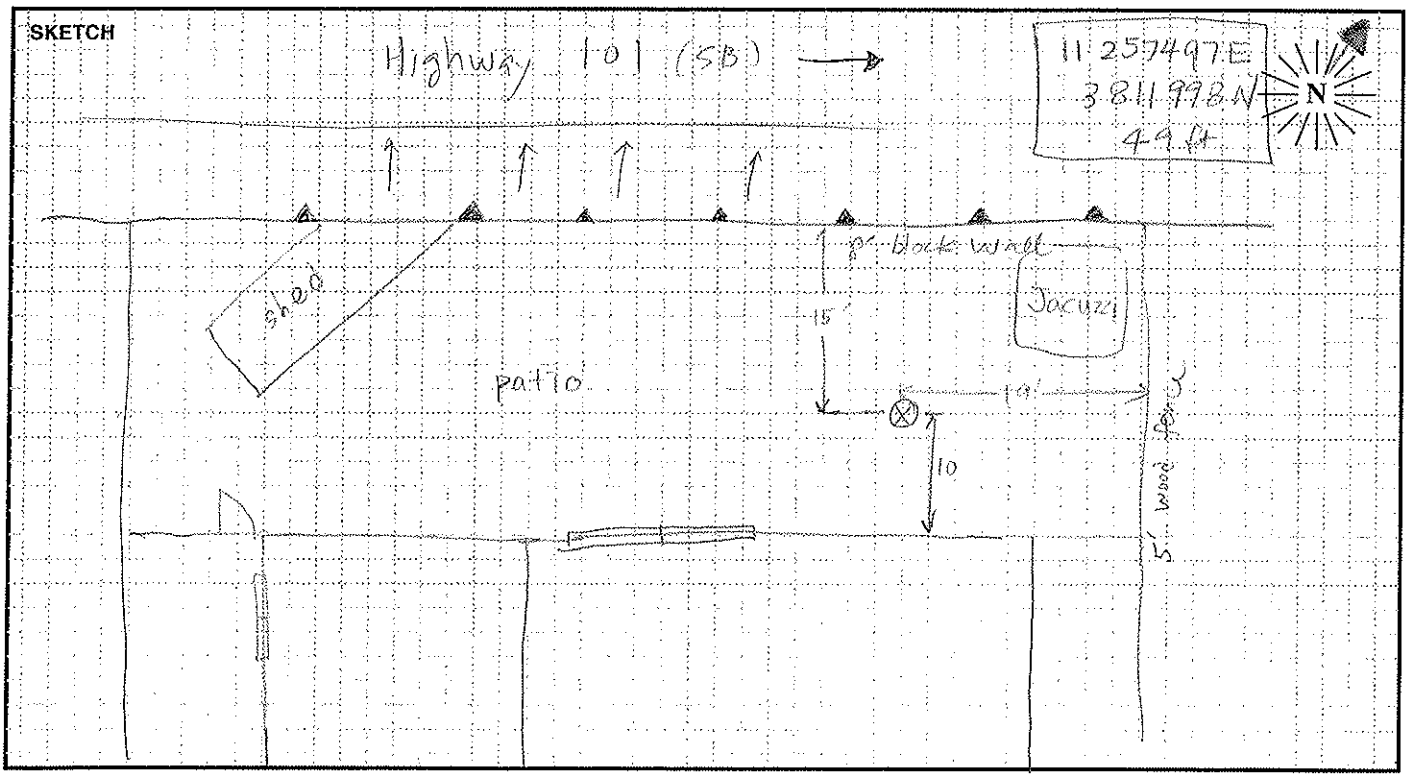
| CALIBRATOR: | | CALIBRATION RECORD: Input, dB / Reading, dB / Offset, dB / Time | |
|---|---|---|---|
| ☒ LD CA250 | Freq, Hz. | Before | 114, 114, 8.0, 13:54 |
| ☐ _____ | ☒ 250 | After | 114, 113.9, -0.1, 14:33 |
| S/N 2127 | ☐ 1000 | | |
| | ☐ _____ | | |

| METER SETTINGS: | | | | | |
|---|---|---|---|---|---|
| ☒ A-WTD | ☐ LINEAR | ☐ SLOW | ☐ 1/1 OCT | ☒ INTERVALS 90 - MINUTE | SKIES: Mostly cloudy |
| ☐ C-WTD | ☐ IMPULSE | ☐ FAST | ☐ 1/3 OCT | ☐ $L_N$ PERCENTILE VALUES | CAMERA _____ |
| | | | | | PHOTO NOs. 148 - 150 |

| NOTES: | Dist. to Center of Nearest Lane _____ | ☐ Video ☐ Radar | Counts AT MT HT | MEAS. TYPE: ☒ Long Term ☐ Short Term |
|---|---|---|---|---|

| DATE | START TIME | STOP TIME | $L_{MIN}$ | $L_{99}$ | $L_{90}$ | $L_{50}$ | $L_{25}$ | $L_{10}$ | $L_{01}$ | $L_{MAX}$ | $L_{EQ}$ | NOTES: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3/19/09 | 2:09 | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |

SKETCH

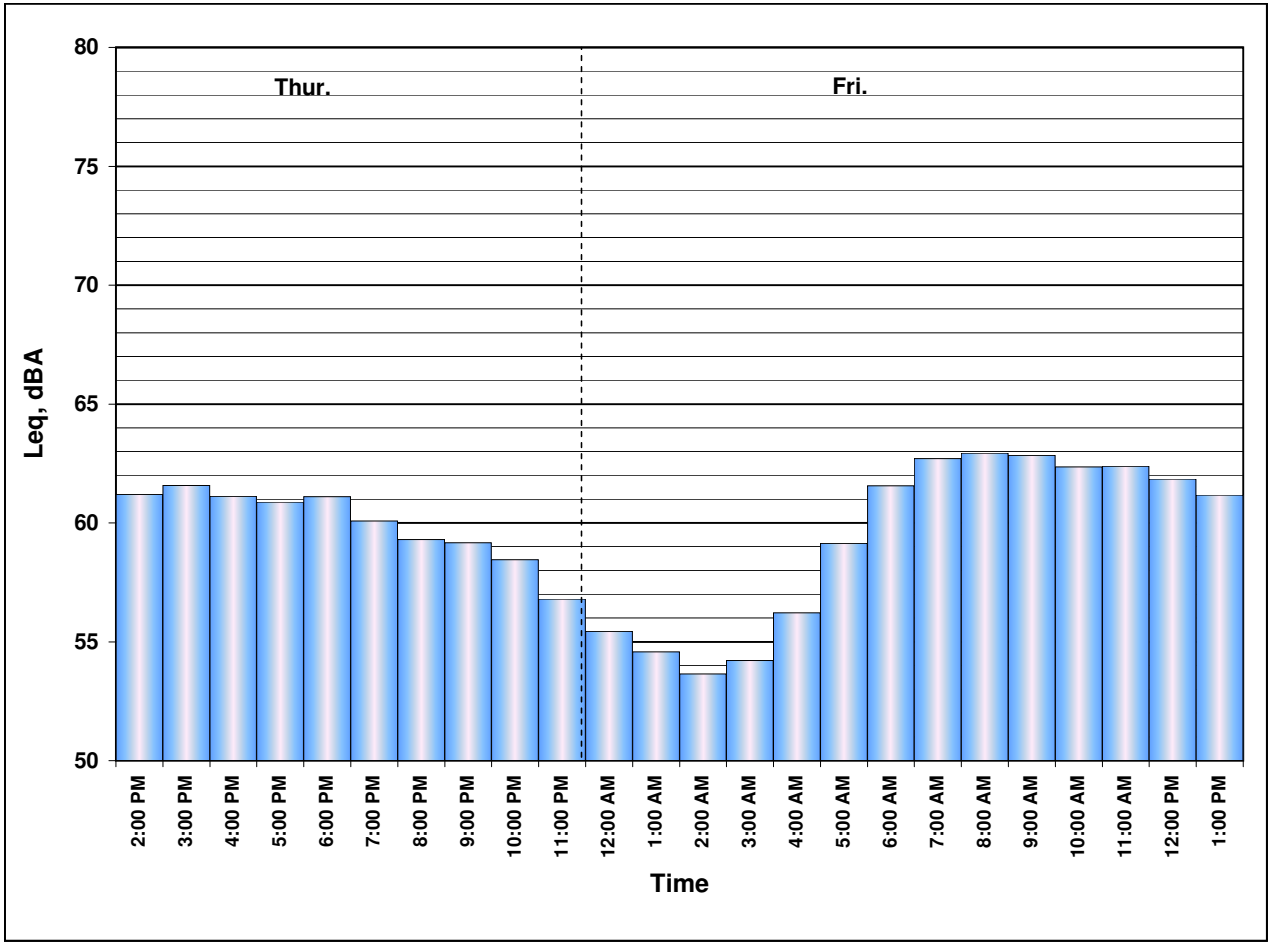



PARSONS

# Site LT3 Hourly Noise Levels, $L_{eq}(h)$

**Location:** 1340/1342 Virginia Road, Santa Barbara, CA
**Position:** Backard
**Sources:** Traffic on Highway 101
**Date:** 03/19/09 - 03/20/09 **Notes:** See attached Noise Measurement Form.

| TIME | 3/19-3/20 $L_{eq(h)}$ dBA |
|---|---|
| 02:00 - 03:00 PM | 61 |
| 03:00 - 04:00 PM | 62 |
| 04:00 - 05:00 PM | 61 |
| 05:00 - 06:00 PM | 61 |
| 06:00 - 07:00 PM | 61 |
| 07:00 - 08:00 PM | 60 |
| 08:00 - 09:00 PM | 59 |
| 09:00 - 10:00 PM | 59 |
| 10:00 - 11:00 PM | 58 |
| 11:00 - 12:00 AM | 57 |
| 12:00 - 01:00 AM | 55 |
| 01:00 - 02:00 AM | 55 |
| 02:00 - 03:00 AM | 54 |
| 03:00 - 04:00 AM | 54 |
| 04:00 - 05:00 AM | 56 |
| 05:00 - 06:00 AM | 59 |
| 06:00 - 07:00 AM | 62 |
| 07:00 - 08:00 AM | 63 |
| 08:00 - 09:00 AM | 63 |
| 09:00 - 10:00 AM | 63 |
| 10:00 - 11:00 AM | 62 |
| 11:00 - 12:00 PM | 62 |
| 12:00 - 01:00 PM | 62 |
| 01:00 - 02:00 PM | 61 |



# **Appendix G** Street Addresses for Modeled Noise Receivers

| RECEIVER NUMBER | LOCATION or ADDRESS | TYPE of DEVELOPMENT[2] | YEAR BUILT | NUMBER of UNITS REPRESENTED |
|---|---|---|---|---|
| R 1 | 5750 Via Real Unit # 200, Carpinteria | MH | 1976 | 1 |
| R 1A* | 5750 Via Real Unit # 315, Carpinteria | MH | 1970 | -- |
| R 2 | 5750 Via Real Unit # 312, Carpinteria | MH | 1994 | 5 |
| R 3 | 5700 Via Real Unit # 3, Carpinteria | MH | 1966 | 11 |
| R 3A | 5700 Via Real, Carpinteria | REC | 1963 | 1 |
| R 3B | 5700 Via Real Unit # 16, Carpinteria | MH | 1964 | 6 |
| R 3C | 5700 Via Real Unit # 55, Carpinteria | MH | 1963 | 2 |
| R 4 | 1314 Sterling Ave, Carpinteria | SFR | 1962 | 2 |
| R 4A | 1317 Streling Ave, Carpinteria | SFR | 1962 | 2 |
| R 5 | 1311 Post St, Carpinteria | SFR | 1964 | 12 |
| R 6 | 1311 Chaney Ave, Carpinteria | SFR | 1964 | 4 |
| R 7 | 1301 Santa Ynez Ave, Carpinteria valley Water District | MFR | 1988 | 5 |
| R 7A | 1300 Dahlia Court, Carpinteria | MFR | To be built | 6 |
| R 8 | 4692 Carpinteria Ave Apt# 25, Carpinteria | MFR | 1996 | 16 |
| R 9 | 4646 Carpinteria Ave, Carpinteria | MFR | 2008 | 14 |
| R 10 | 4558 Carpinteria Ave, Carpinteria (Best Westren) | MOT | 1985 | 2 |
| R 11 | 1240 Cramer Cir, Carpinteria | SFR | 1995 | 2 |
| R 12 | 1245 Cramer Cir, Carpinteria | SFR | 1971 | 6 |
| R 13 | 1362 Cramer Cir, Carpinteria | SFR | 1976 | 2 |
| R 13A | 1360 Cramer Cir, Carpinteria | SFR | 1969 | 3 |
| R 14 | 1299 Santa Monica Rd, Carpinteria | SFR | 1880 | 1 |
| R 15 | 4200 Via Real, Carpinteria (Motel 6) | MOT | 1982 | 1 |
| R 17 | 4140 Via Real, Carpinteria | REC | 1984 | 1 |
| R 17A | 4096 Via Real, Carpinteria | MFR | To be built | 4 |
| R 18 | 1210 Franciscan CT Unit# 3, Carpinteria | MFR | 1985 | 3 |
| R 18A | 1211 Franciscan CT Unit# 1, Carpinteria | MFR | 1985 | 7 |
| R 19 | 3970 Via Real, Carpinteria | MFR | 1925 | 4 |
| R 20* | 3950 Via Real Unit # 281, Carpinteria | N/A | N/A | -- |
| R 21 | 3950 Via Real Unit # 276, Carpinteria | MH | Post 1978** | 14 |
| R 22 | 4530 Carpinteria Ave, Carpinteria | MFR | 1974 | 2 |
| R 23 | 1097 Cramer Rd, Carpinteria | SFR | 1955** | 9 |
| R 24 | 4400 Carpinteria Ave Unit #40, Carpinteria | MH | Post 1978** | 28 |
| R 25 | 1041 Plum St, Carpinteria | SFR | 1955 | 4 |
| R 26 | 4240 Carpinteria Ave Apt # 3 | MFR | 1989 | 8 |
| R 27 | 4228 Carpinteria Ave APT # 5 | MFR | 1989 | 6 |
| R 28 | 3611 Padaro Ln, Carpinteria | SFR | 1965 | 3 |
| R 28A | 3605 Padaro Ln, Carpinteria | SFR | 1959 | 3 |
| R 29 | 3579 Padaro Ln, Carpinteria | SFR | 1976 | 9 |
| R 29A | 3579 Padaro Ln, Carpinteria | SFR | 1976 | 9 |
| R 30 | 3545 Padaro Ln, Carpinteria | SFR | 1928 | 17 |
| R 30A | 3545 Padaro Ln, Carpinteria | SFR | 1928 | 17 |
| R 31 | 3487 Padaro Ln, Carpinteria | SFR | 1983 | 7 |
| R 31A | 3485-1/2 Padaro Ln, Carpinteria | SFR | 1935 | 1 |
| R 31B | 3477 Padaro Ln, Carpinteria | SFR | 1960 | 7 |
| R 31C | 3445 Padaro Ln, Carpinteria | SFR | 1964 | 1 |
| R 32* | 3393 Padaro Ln, Carpinteria | SFR | 1960** | -- |
| R 32A | 3393 Padaro Ln, Carpinteria | SFR | 1960 | 11 |
| R 32B | 3393 Padaro Ln, Carpinteria | SFR | 1960 | 2 |
| R 33 | 3333 Padaro Ln, Carpinteria | SFR | 2001 | 12 |

Notes:

1 - $L_{eq(h)}$ are A-weighted, peak hour noise levels in decibels.

2 - Land Use: SFR - single-family residence; MFR - multi-family residence; MH - mobile home; REC - recreational area; MOT - Hotel/Motel.

*- This site was chosen as monitoring purpose only. No noise sensitive use in this area.

**- Year-built was not available in public records; thus, it was estimated by comparing the receptor to adjacent buildings with public records.

| RECEIVER NUMBER | LOCATION or ADDRESS | TYPE of DEVELOPMENT[2] | YEAR BUILT | NUMBER of UNITS REPRESENTED |
|---|---|---|---|---|
| R 34 | 3271 Padaro Ln, Carpinteria | SFR | 1954 | 6 |
| R 34A | 3261 Padaro Ln, Carpinteria | SFR | 1925 | 1 |
| R 35A | 3231 Beach Club Rd, Carpinteria | SFR | 2003 | 2 |
| R 35 | 3201 Padaro Ln, Carpinteria | SFR | 1958 | 9 |
| R 36 | 3191 Padaro Ln, Carpinteria | SFR | 1920 | 3 |
| R 37 | 3111 Padaro Ln, Carpinteria | SFR | 1920** | 3 |
| R 38 | 3001 Padaro Ln, Carpinteria | SFR | 1920 | 2 |
| R 39A | 3802 Via Real, Carpinteria | SFR | 1958** | 1 |
| R 39B | 3498 Via Real, Carpinteria | SFR | 1958** | 1 |
| R 39 | 3250 Via Real, Carpinteria | MFR | 1958** | 8 |
| R 39C* | 3250 Via Real, Carpinteria | N/A | N/A | -- |
| R 40 | 130 Morgan Ln, Carpinteria | SFR | 1986 | 5 |
| R 41 | 3208 Via Real, Carpinteria | REL | 1960** | 1 |
| R 41A | 135 Sentar Rd., Carpinteria | SFR | 1960 | 1 |
| R 42 | 3194 Via Real, Carpinteria | SFR | 1947 | 3 |
| R 42A | 3150 Via Real, Carpinteria | SFR | 1949 | 1 |
| R 43 | 3146 Via Real, Carpinteria | SFR | 1989 | 1 |
| R 43A | 3121 Via Real, Carpinteria | SFR | 1961 | 4 |
| R 44 | 3095 Via Real, Carpinteria | SFR | 1925 | 9 |
| R 45 | 114 Toro Canyon Rd, Capinteria | SFR | 1944 | 1 |
| R 45A | 3026 Via Real, Carpinteria | SFR | 1925 | 1 |
| R 46 | 2950 Via Real, Carpinteria | SFR | 1890 | 1 |
| R 47A | 2641 Marguerite Way., Summerland | SFR | 2000 | 2 |
| R 47 | 2637 Marguerite Way., Summerland | SFR | 2000 | 4 |
| R 47B | 2643 Freesia Dr, Summerland | SFR | 2001 | 3 |
| R 47C | 2633 Freesia Dr, Summerland | SFR | 2001 | 3 |
| R 47D | 2631 Freesia Dr, Summerland | SFR | 2001 | 3 |
| R 48A | 2627 Caspia Ln, Summerland | SFR | 2001 | 3 |
| R 48 | 2623 Caspia Ln, Summerland | SFR | 2001 | 2 |
| R 48B | 2617 Caspia Ln, Summerland | MFR | 2002 | 4 |
| R 48C | 2620 Caspia Ln, Summerland | MFR | 2002 | 6 |
| R 49A | OceanView Park | REC | N/A | 3 |
| R 49 | OceanView Park | REC | N/A | 1 |
| R 50 | 2549 Varley St, Summerland | SFR | 1950 | 2 |
| R 51 | 2520 Lillie Ave, Summerland (Inn of Summerhill) | MOT | 1950** | 2 |
| R S1.1 | 130 Colby St, Summerland | SFR | 1949 | 1 |
| R S1.2 | 2540 Varley St, Summerland | SFR | 1987 | 2 |
| R S1.3 | 2529 Banner Ave, Summerland | SFR | 1880 | 2 |
| R S1.4 | 2521 Banner Ave, Summerland | SFR | 1988 | 1 |
| R S1.5 | 2566 Banner Ave #1, Summerland | SFR | 1991 | 3 |
| R S1.6 | 2542 Banner Ave, Summerland | SFR | 1987 | 2 |
| R S1.7 | 2526 Banner Ave, Summerland | MFR | 1974 | 4 |
| R S1.8 | 144 Olive St, Summerland | SFR | 1974** | 2 |
| R 52 | 2484 Lillie Ave, Summerland | SFR | 1890 | 6 |
| R S2.1 | 2496 Varley St, Summerland | SFR | 1987 | 1 |
| R S2.2 | 2490 Varley St, Summerland | SFR | 1986 | 1 |
| R S2.3 | 2485 Banner Ave, Summerland | SFR | 1900 | 2 |
| R S2.4 | 2474 Varley St, Summerland | SFR | 1994 | 2 |
| R S2.5 | 2496 Banner Ave, Summerland | SFR | 1900 | 2 |
| R S2.6 | 2470 Banner Ave, Summerland | SFR | 1955 | 2 |

Notes:

1 - $L_{eq(h)}$ are A-weighted, peak hour noise levels in decibels.

2 - Land Use: SFR - single-family residence; MFR - multi-family residence; REC - recreational area; REL - religious institution; MOT - Hotel/Motel.

*- This site was chosen as monitoring purpose only. No noise sensitive use in this area.

**- Year-built was not available in public records; thus, it was estimated by comparing the receptor to adjacent buildings with public records.

| RECEIVER NUMBER | LOCATION or ADDRESS | TYPE of DEVELOPMENT[2] | YEAR BUILT | NUMBER of UNITS REPRESENTED |
|---|---|---|---|---|
| R S2.7 | 2454 Banner Ave, Summerland | SFR | 1955 | 2 |
| R 53 | 2440 Lillie Ave, Summerland | SFR | 1921 | 2 |
| R S3.1 | 2440 Varley St, Summerland | SFR | 1880 | 1 |
| R S3.2 | 2423 Banner Ave, Summerland | SFR | 1999 | 1 |
| R S3.3 | 130 Valencia Road, Summerland | SFR | 1895 | 1 |
| R S3.4 | 2448 Banner Ave, Summerland | SFR | 1990 | 3 |
| R S3.5 | 2432 Banner Ave, Summerland | SFR | 1962 | 1 |
| R S3.6 | 2429 Shelby St, Summerland | SFR | 1962** | 2 |
| R S3.7 | 2410 Banner Ave, Summerland | MFR | 1962** | 2 |
| R 55 | 2440 Lillie Ave, Summerland | MFR | 1921 | 7 |
| R 56 | 2335 Varley St, Summerland | SFR | 1925 | 2 |
| R S4.1 | 135 Valencia Rd, Summerland | SCH | N/A | 3 |
| R S4.2 | 136 Colville St, Summerland | SFR | 1906 | 1 |
| R S4.3 | 2340 Varley St, Summerland | SFR | 1900 | 1 |
| R S4.4 | 2330 Varley St, Summerland | SFR | 1900 | 1 |
| R S4.5 | 2390 Banner Ave, Summerland | MFR | 1986** | 3 |
| R S4.6 | 2386 Banner Ave, Summerland | SFR | 1986 | 1 |
| R S4.7 | 2378 Banner Ave #4, Summerland | MFR | 1988 | 4 |
| R S4.8 | 2355 Shelby St, Summerland | SFR | 1915** | 2 |
| R S4.9 | 2347 Shelby St, Summerland | MFR | 1988** | 2 |
| R S4.10 | 2336 Banner Ave, Summerland | SFR | 1915 | 1 |
| R 57 | 2264 Lillie Ave, Summerland | SFR | 1915** | 4 |
| R S5.1 | 2314 Varley St, Summerland | SFR | 1900 | 6 |
| R S5.2 | 2296 Varley St, Summerland | SFR | 1900 | 2 |
| R S5.3 | 2280 Varley St, Summerland | SFR | 1994 | 1 |
| R S5.4 | 2260 Varley St, Summerland | SFR | 1900 | 4 |
| R S5.5 | 2320 Banner Ave, Summerland | MFR | 1955** | 5 |
| R S5.6 | 2311 Shelby St, Summerland | SFR | 1955 | 2 |
| R S5.7 | 2294 Banner Ave, Summerland | SFR | 1890 | 2 |
| R S5.8 | 2282 Banner Ave, Summerland | MFR | 1956** | 2 |
| R S5.9 | 2280 Banner Ave, Summerland | SFR | 1956 | 2 |
| R S5.10 | 2210 Banner Ave, Summerland | SFR | 1953 | 3 |
| R 58 | 2230 Hardinge St, Summerland | SFR | 1900 | 4 |
| R S6.1 | 2236 Lillie Ave #C, Summerland | MFR | 1900 | 4 |
| R S6.2 | 2196 Hardinge St, Summerland | SFR | 1957 | 2 |
| R S6.3 | 2190 Hardinge St, Summerland | SFR | 1957 | 2 |
| R S6.4 | 2186 Hardinge St, Summerland | SFR | 1961 | 2 |
| R S6.5 | 2174 Hardinge St, Summerland | SFR | 1962 | 1 |
| R S6.6 | 2160 Hardinge St, Summerland | MFR | 1962** | 3 |
| R S6.7 | 2236 Lillie Ave, Summerland | SFR | 1900 | 1 |
| R S6.8 | 2228 Lillie Ave, Summerland | MFR | 1977** | 2 |
| R S6.9 | 2220 Lillie Ave, Summerland | MFR | 1977 | 2 |
| R S6.10 | 2210 Lillie Ave, Summerland | SFR | 1910 | 1 |
| R S6.11 | 2195 Lillie Ave, Summerland | SFR | 1971** | 3 |
| R S6.12 | 2187 Lillie Ave, Summerland | SFR | 1971 | 3 |
| R S6.13 | 2173 Lillie Ave, Summerland | SFR | 1961 | 1 |
| R S6.14 | 2161 Lillie Ave, Summerland | MFR | Post 1978** | 3 |
| R S6.15 | 2180 Lillie Ave, Summerland | SFR | 1992 | 3 |
| R 58A | 2176 Ortega Hill Road, Summerland | SFR | 1957 | 2 |
| R 59 | Summerland Inn | MOT | Pre 1978** | 1 |
| R 60 | 2155 Ortega Hill Road #24, Summerland | MH | Pre 1978 | 7 |

Notes:

1 - $L_{eq(h)}$ are A-weighted, peak hour noise levels in decibels.

2 - Land Use: SFR - single-family residence; MFR - multi-family residence; MH - mobile home; SCH - school.

*- This site was chosen as monitoring purpose only. No noise sensitive use in this area.

**- Year-built was not available in public records; thus, it was estimated by comparing the receptor to adjacent buildings with public records.

| RECEIVER NUMBER | LOCATION or ADDRESS | TYPE of DEVELOPMENT[2] | YEAR BUILT | NUMBER of UNITS REPRESENTED |
|---|---|---|---|---|
| R 61 | 2155 Ortega Hill Road #20, Summerland | MH | Pre 1978 | 1 |
| R 61A | 2155 Ortega Hill Road #19, Summerland | MH | Pre 1978 | 2 |
| R 61B | Mobile Home Park Community Pool | REC | N/A | 1 |
| R 62 | 2425 Finney St, Summerland | SFR | 1988 | 3 |
| R 63 | 2385 Finney St, Summerland | SFR | 1986 | 3 |
| R 64 | 2350 Finney St, Summerland | SFR | 2008 | 5 |
| R 64A* | 2351 Finney St, Summerland | SFR | 2009 | 5 |
| R 65 | 2311 Finney St, Summerland | SFR | 1986 | 2 |
| R 66 | 2297 Finney St, Summerland | REC | N/A | 4 |
| R 67 | 2010 Creekside Rd, Summerland | SFR | 2005 | 1 |
| R 68A | 129 Sheffield Dr, Summerland | SFR | 1866 | 1 |
| R 68 | 1960 N. Jameson Ln, Santa Barbara | SFR | 1963** | 2 |
| R 69 | 1930 N. Jameson Lane Unit C., Santa Barbara | MFR | 1973 | 8 |
| R 70 | 126 Loureyro Rd, Santa Barbara | SFR | 1920 | 3 |
| R 70A | 127 Loureyro Rd, Santa Barbara | SFR | 1920** | 2 |
| R 71* | 100 Arroqui Rd, Santa Barbara | SFR | 1963 | 3 |
| R 71A | 1790 N. Jameson Ln, Santa Barbara | SFR | 1922 | 1 |
| R 72 | 1790 N. Jameson Ln, Santa Barbara | SFR | 1922 | 3 |
| R 73 | 24 La Vuelta Rd, Santa Barbara | SFR | 1952 | 4 |
| R 74 | 1849 Fernald Point Ln, Santa Barbara | SFR | 1973** | 1 |
| R 74B | 1821 Fernald Point Ln, Santa Barbara | SFR | 1973 | 1 |
| R 74A | 1813 Fernald Point Ln, Santa Barbara | SFR | 1973 | 2 |
| R 75 | 1807 Fernald Point Ln, Santa Barbara | SFR | 1958 | 5 |
| R 76 | 1755 Fernald Point Ln, Santa Barbara | SFR | 2005 | 4 |
| R 77 | 1727 Fernald Point Ln, Santa Barbara | SFR | 1919 | 3 |
| R 77A | 1705 Fernald Point Ln, Santa Barbara | SFR | 1920** | 2 |
| R 78 | 1685 Fernald Point Ln, Santa Barbara | SFR | 1920 | 2 |
| R 78A | 1665 Fernald Point Ln, Santa Barbara | SFR | 1955 | 1 |
| R 79 | 1645 Posilipo Ln, Santa Barbara | SFR | 1951 | 3 |
| R 80 | 1637 Posilipo Ln, Santa Barbara | SFR | 1912 | 1 |
| R 81 | 1635 Posilipo Ln, Santa Barbara | SFR | 1900 | 1 |
| R 82 | 1647 Posilipo Lane APT#D, Santa Barbara | MFR | 1991 | 3 |
| R 82A | 1647 Posilipo Lane APT#F, Santa Barbara | MFR | 1991 | 2 |
| R 83 | 1630 N. Jameson Lane #A., Santa Barbara | SFR | 1916 | 1 |
| R 84 | 102 Hixon Rd, Santa Barbara | SFR | 1912 | 6 |
| R 85 | 1550 N Jameson Ln, Santa Barbara | SFR | 1953 | 9 |
| R 86 | 109 Miramar Ave, Santa Barbara | SFR | 1917 | 2 |
| R 86A | 100 Miramar Ave, Santa Barbara | SFR | 1909 | 2 |
| R 87B | 104 La Vereda Rd, Santa Barbara | SFR | 1948 | 1 |
| R 87A | 1469 La Vereda Rd, Santa Barbara | SFR | 1948 | 1 |
| R 87 | 106 La Vereda Rd, Santa Barbara | SFR | 1949 | 1 |
| R 88 | 1424 La Vereda Ln, Santa Barbara | SFR | 1922 | 6 |
| R 89 | 1410 N. Jameson Ln, Santa Barbara | SFR | 1960 | 4 |
| R 90 | 1371 Santa Clara Way., Santa Barbara | SFR | 1956 | 5 |
| R 90A | 1333 Santa Clara Way., Santa Barbara | SFR | 1955 | 4 |
| R 91 | 110 Olive Mill Rd, Santa Barbara | SFR | 1957 | 2 |
| R 92 | 97 Eucalyptus Ln, Santa Barbara | SFR | 1949 | 4 |
| R 92A | 105 Humphrey Rd., Santa Barbara | MFR | 1949** | 4 |

Notes:

1 - Leq(h) are A-weighted, peak hour noise levels in decibels.

2 - Land Use: SFR - single-family residence; MFR - multi-family residence; MH - mobile home; REC - recreational area.

*- This site was chosen as monitoring purpose only. No noise sensitive use in this area.

**- Year-built was not available in public records; thus, it was estimated by comparing the receptor to adjacent buildings with public records.

| RECEIVER NUMBER | LOCATION or ADDRESS | TYPE of DEVELOPMENT[2] | YEAR BUILT | NUMBER of UNITS REPRESENTED |
|---|---|---|---|---|
| R 93 | 1447 S. Jameson Ln, Santa Barbara | SFR | 1949** | 5 |
| R 94 | 1411 S. Jameson Ln, Santa Barbara | SFR | 1927 | 6 |
| R 95 | 1394 Danielson Rd, Santa Barbara | SFR | 1946 | 3 |
| R 96A | 1390 Virginia Rd, Santa Barbara | SFR | 1942 | 4 |
| R 96 | 1360 Virginia Rd, Santa Barbara | SFR | 1942** | 5 |
| R 97 | 1342 Virginia Rd, Santa Barbara | SFR | 1962 | 3 |
| R 97A | 1315 Virginia Rd, Santa Barbara | SFR | 1950** | 4 |
| R 97B | 92 Olive Mill Road #3., Santa Barbara | MFR | 1950 | 1 |
| R 98 | 75 Olive Mill Rd, Santa Barbara | SFR | 1925 | 1 |
| R 98A | 1288 Spring Rd #1, Santa Barbara | MFR | 1984 | 3 |
| R 99 | 1278 Spring Rd, Santa Barbara | MFR | 1992 | 2 |
| R 100A | 73 Depot Rd, Santa Barbara | SFR | 1950** | 2 |
| R 100 | 87 Depot Road #4, Santa Barbara | MFR | 1990 | 8 |
| R 101 | 1170 Hill Rd, Santa Barbara | SFR | 1920 | 2 |
| R 102 | 1154 Hill Rd, Santa Barbara | SFR | 1987 | 5 |
| R 103 | 70 Butterfly Ln, Santa Barbara | SFR | 1958** | 6 |
| R 104 | 1295 Coast Village Rd, Santa Barbara (Montecito Inn) | MOT | Pre 1978 | 1 |

Notes:

1 - $L_{eq(h)}$ are A-weighted, peak hour noise levels in decibels.

2 - Land Use: SFR - single-family residence; MFR - multi-family residence; MOT - Hotel/Motel.

*- This site was chosen as monitoring purpose only. No noise sensitive use in this area.

**- Year-built was not available in public records; thus, it was estimated by comparing the receptor to adjacent buildings with public records.

# **Appendix H** Sound Wall Comparison for Build Alternatives

## Table H - Sound Wall Comparison for Build Alternatives

| Feasible Soundwall | State Route 101 Station Number | | Direction | Inside Widening Minimum Height[1] (ft) | Outside Widening Minimum Height[1] (ft) | Wall Heights by Alternatives[2] | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | from | to | | | | Alt 1 | Height (ft) | Alt 2 | Height (ft) | Alt 3 | Height (ft) |
| S90 | 84+50 | 91+00 | NB | 14 | 14 | in | 14 | in | 14 | in | 14 |
| | 91+00 | 93+00 | NB | 14 | 16 | in | 14 | in | 14 | in | 14 |
| S98 | 93+00 | 94+00 | NB | 14 | 16 | in | 14 | in | 14 | in | 14 |
| | 94+00 | 100+50 | NB | 14 | 14 | in | 14 | in | 14 | in | 14 |
| | 100+50 | 102+00 | NB | 10 | 10 | trans | 10 | trans | 10 | in | 10 |
| S158 | 151+00 | 157+00 | NB | 10 | 10 | in | 10 | out | 10 | in | 10 |
| | 157+00 | 163+00 | NB | 10 | 10 | in | 10 | out | 10 | in | 10 |
| | 163+00 | 165+00 | NB | 12 | 12 | in | 12 | trans | 12 | in | 12 |
| | 165+00 | 169+00 | NB | 12 | 12 | in | 12 | trans | 12 | in | 12 |
| S174 | 170+00 | 178+50 | NB | 12 | 12 | in | 12 | trans | 12 | in | 12 |
| S182 | 177+50 | 184+00 | NB | 16 | N/A | in | 16 | out | n/a | in | 16 |
| S181 | 171+00 | 178+50 | SB | 10 | 10 | in | 10 | trans | 10 | in | 10 |
| | 178+50 | 191+00 | SB | 10 | 10 | in | 10 | out | 10 | in | 10 |
| S188 | 183+00 | 189+00 | NB | 12 | N/A | in | 12 | out | n/a | in | 12 |
| | 189+00 | 191+00 | NB | 12 | N/A | in | 12 | out | n/a | in | 12 |
| | 191+00 | 194+00 | NB | 12 | N/A | in | 12 | out | n/a | in | 12 |
| S210 | 194+00 | 195+00 | NB | 12 | 12 | in | 12 | out | 12 | in | 12 |
| | 195+00 | 202+00 | NB | 12 | 12 | in | 12 | out | 12 | in | 12 |
| | 202+00 | 209+00 | NB | 14 | 14 | in | 14 | out | 14 | in | 14 |
| | 209+00 | 210+00 | NB | 12 | 12 | in | 12 | out | 12 | in | 12 |
| | 210+00 | 221+00 | NB | 10 | 10 | in | 10 | out | 10 | in | 10 |
| S238 | 231+00 | 239+00 | NB | 14 | 14 | in | 14 | trans | 14 | in | 14 |
| | 231+00 | 242+00 | NB | 14 | 14 | in | 14 | in | 14 | in | 14 |
| S257 | 251+00 | 263+00 | SB | 12 | 12 | out | 12 | out | 12 | in | 12 |
| S281 | 262+00 | 271+00 | SB | 12 | 12 | in | 12 | in | 12 | in | 12 |
| | 271+00 | 279+00 | SB | 12 | 12 | in | 12 | in | 12 | in | 12 |
| | 279+00 | 286+00 | SB | 12 | 12 | in | 12 | trans | 12 | in | 12 |
| | 286+00 | 304+00 | SB | 12 | 12 | in | 12 | trans | 12 | in | 12 |
| | 304+00 | 314+00 | SB | 12 | 12 | in | 12 | out | 12 | in | 12 |
| S310 | 305+00 | 317+50 | NB | 12 | 12 | in | 12 | out | 12 | in | 12 |
| S334 | 330+20 | 333+50 | NB | 12 | 12 | in | 12 | trans | 12 | in | 12 |
| S374 | 367+00 | 380+00 | NB | 14 | 14 | in | 14 | out | 14 | in | 14 |
| S392 | 383+00 | 390+00 | NB | 14 | 16 | in | 14 | out | 16 | in | 14 |
| | 390+00 | 407+00 | NB | 16 | 16 | in | 16 | out | 16 | in | 16 |
| S405 | 403+00 | 407+00 | SB | 10 | 10 | in | 10 | trans | 10 | in | 10 |
| | 407+00 | 412+00 | SB | 10 | 10 | in | 10 | trans | 10 | in | 10 |
| S414 | 406+50 | 414+00 | NB | 16 | 16 | in | 16 | in | 16 | in | 16 |
| | 414+00 | 420+50 | NB | 16 | 16 | in | 16 | in | 16 | in | 16 |
| S424 | 420+25 | 424+00 | NB | 14 | 14 | in | 14 | in | 14 | in | 14 |
| | 424+00 | 429+00 | NB | 16 | 16 | in | 16 | in | 16 | in | 16 |
| S446 | 443+00 | 448+00 | NB | 12 | 12 | in | 12 | in | 12 | in | 12 |
| S452 | 447+00 | 456+00 | NB | 12 | 12 | in | 12 | in | 12 | in | 12 |
| S464 | 455+50 | 473+00 | NB | 12 | 12 | in | 12 | in | 12 | in | 12 |
| | 473+00 | 479+00 | NB | 10 | 10 | in | 10 | in | 10 | in | 10 |
| S471 | 461+50 | 466+00 | SB | 8 | 10 | in | 8 | in | 8 | in | 8 |
| | 461+50 | 476+00 | SB | 12 | 12 | in | 12 | in | 12 | in | 12 |
| | 476+00 | 481+00 | SB | 14 | 14 | in | 14 | in | 14 | in | 14 |
| S489 | 486+50 | 490+00 | SB | 12 | 12 | in | 12 | in | 12 | in | 12 |

**Notes:**

1 - Feasible sound wall heights according to the traffic noise analysis in the noise study report.

2 - Sound wall heights for different design alternatives.

## Table H - Sound Wall Comparison for Build Alternatives

| Feasible Soundwall | State Route 101 Station Number | | Direction | Inside Widening Minimum Height[1] (ft) | Outside Widening Minimum Height[1] (ft) | Wall Heights by Alternatives[2] | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | from | to | | | | Alt 1 | Height (ft) | Alt 2 | Height (ft) | Alt 3 | Height (ft) |
| S498 | 483+00 | 505+50 | NB | 10 | 10 | in | 10 | in | 10 | in | 10 |
| S519 | 505+50 | 511+00 | SB | 14 | 12 | in | 14 | in | 14 | in | 14 |
| | 511+00 | 522+75 | SB | 12 | 12 | in | 12 | in | 12 | in | 12 |
| | 522+75 | 527+50 | SB | 10 | 10 | in | 10 | in | 10 | in | 10 |
| | 527+50 | 529+50 | SB | 12 | 12 | in | 12 | in | 12 | in | 12 |
| | 529+50 | 533+00 | SB | 12 | 14 | in | 12 | in | 12 | in | 12 |
| S520 | 506+25 | 531+00 | NB | 10 | 10 | in | 10 | in | 10 | in | 10 |
| S535 | 533+75 | 538+75 | SB | 12 | 12 | trans | 12 | trans | 12 | trans | 12 |
| S549 | 538+75 | 548+00 | SB | 10 | 10 | trans | 10 | trans | 10 | trans | 10 |
| | 548+00 | 559+00 | SB | 12 | 12 | trans | 12 | trans | 12 | trans | 12 |

**Notes:**

1 - Feasible sound wall heights according to the traffic noise analysis in the noise study report.

2 - Sound wall heights for different design alternatives.

# **Appendix I** Computer Noise Modeling Files (CD-ROM)