CAMPUS PARK PROJECT

APPENDIX E

PRELIMINARY NOISE ANALYSIS

SPA 03-008, GPA 03-004, R03-014, VTM 5338 RPL7,
S 07-030, S 07-031, LOG No. 03-02-059
State Clearinghouse No. 2005011092

for the

DRAFT FINAL SUBSEQUENT
ENVIRONMENTAL IMPACT REPORT

DECEMBER 3, 2010

FINAL ENVIRONMENTAL IMPACT REPORT
PRELIMINARY NOISE ANALYSIS
INFORMATION FOR THE READER

This document consists of the Preliminary Noise Analysis (Revised; Noise Analysis) for the Campus Park Project (Proposed Project or Project) and analyzes noise-related elements associated with construction and operation of the Project. Since circulation of the Project Draft Environmental Impact Report (EIR) and associated technical reports, refinements in Project description have been implemented in response to comments received.

The majority of Project refinements occur west of future Horse Ranch Creek Road and all of them would be south of proposed Harvest Glen Lane. The majority of the developed uses and their construction footprints (residential, office professional, recreational and commercial) remain the same as previously analyzed.

South of future Harvest Glen Lane and west of future Horse Ranch Creek Road, the Proposed Project has been refined to: (1) eliminate some development areas, (2) modify specifics of development detail in some areas, and (3) eliminate the potential for connection to an off-site future wastewater treatment plant (WTP) to be constructed by others. Specifics of road design improvements also vary.

Overall, primary design changes result in 325 fewer multi-family (MF) homes (a reduction of 41 percent), and an increase in the biological open space preserve of 20.7 acres (or 11 percent). See Figure A for a comparison of the Project evaluated in the Draft EIR with the current plan.

Project refinements relevant to this technical report are addressed below.

Relevant Refinements to Project Description

The Draft EIR included two MF residential areas (MF-1 and MF-4) west of future Horse Ranch Creek Road and north of SR 76. These areas were proposed to contain a total of 300 residential units sited on a total of 21.1 acres. Both have been eliminated and now would largely be in open space. Within the MF area east of future Horse Ranch Creek Road and north of future Harvest Glen Lane, Draft EIR MF-3 has been renamed MF-1. The style of housing in MF-2 has been changed to match that of new MF-1, dropping proposed density in MF-2 from 12.5 dwelling units (DU) per gross acre to 7.7 DU per gross acre.

A sewer lift or pump station and trail staging area would be moved from an isolated small Project parcel west of future Pankey Road and north of SR 76 to east of future Pankey Road, in the old area of MF-4.

Changes have been made to specific design of an off-site portion of Pala Mesa Drive, Pankey Road and on-site Pankey Place. With regard to Pala Mesa Drive/Pankey Road, modifications resulted from a request by the abutting Campus Park West Project to shift a portion of the alignment, and this shift has been worked out in coordination with the Department of Public

Works. For on-site Pankey Place, modifications are related to deletion of MF-4 on the south side of the road, and retention of open space.

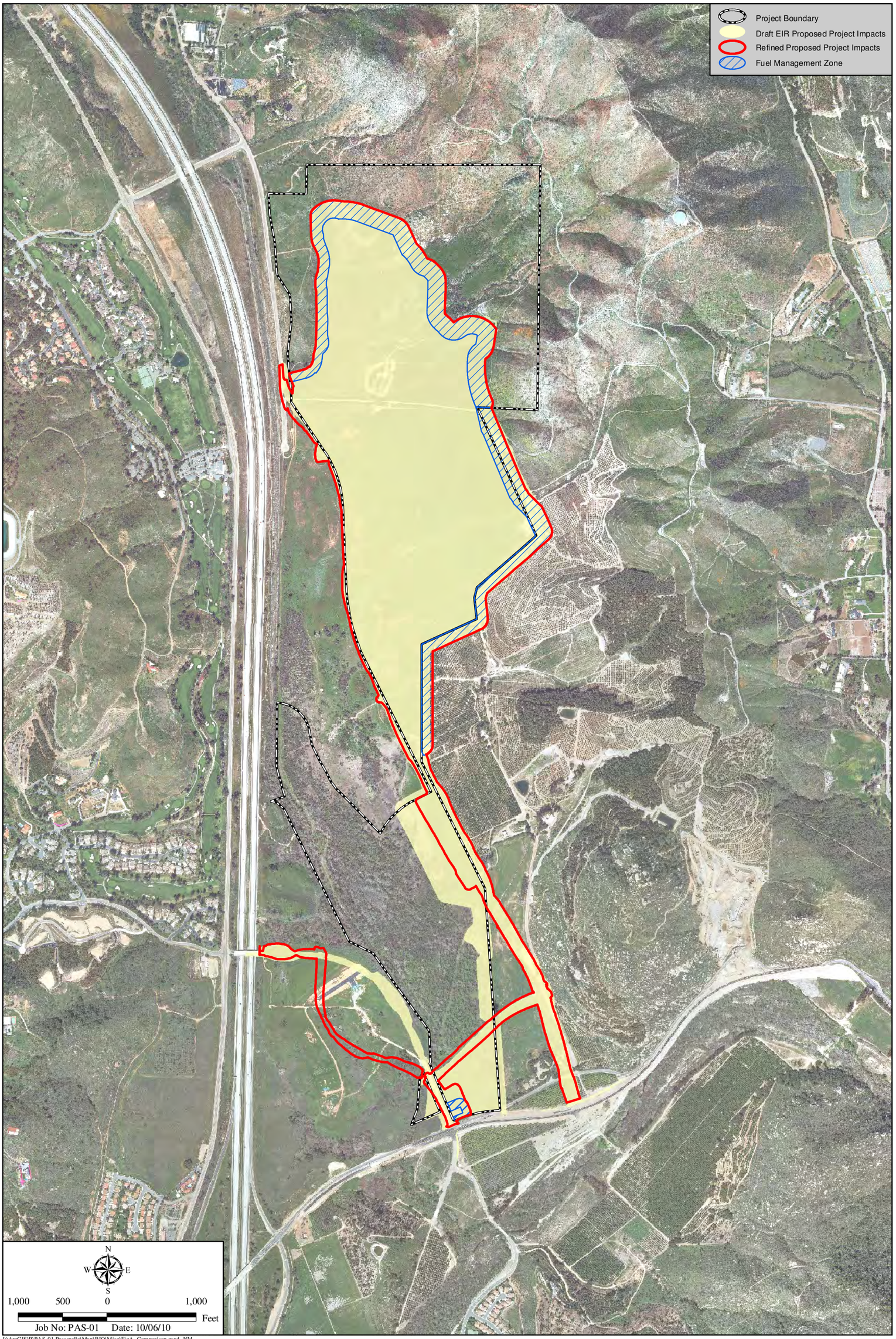
Technical Analysis Modifications Based on Project Description Refinements

As discussed in the Supplemental Noise Levels for the Updated Campus Park Planning Area Multi-Family 2 (PA MF-2) Site Plan in the County of San Diego (Attachment 1), the elimination of 325 MF residential units and implementation of the new PA MF-2 site plan would not change noise level conditions within the Project site. The new MF-2 plan still incorporates private use patio areas on the ground floor required to meet San Diego County's 60 A-weighted decibel (dBA) community noise equivalent level (CNEL) standard. The private outdoor use areas are virtually the same from the old site plan to the new proposed site plan. Therefore, impact and mitigation findings previously identified in the Noise Analysis for PA MF-2 remain valid. Potentially significant impacts to (and proposed mitigation for) the MF-4 residential area would be eliminated.

The Supplemental Property Line Noise Levels for the Updated Campus Park Sewer Pump/Lift Station in the County of San Diego (Attachment 2) supersedes the analysis circulated with the Draft EIR and analyzes potential noise impacts and property line noise level projections for the relocated and reconfigured sewer pump/lift station. Attachment 2 specifies sources and noise level estimates for the sewer pump/lift station, and determines that noise levels experienced at the trail staging area, biological open space, and residential and commercial lots would comply with all property line standards.

The analysis and conclusions presented in the Noise Analysis remain valid for all other noise impacts evaluated in that report. No change to environmental design considerations associated with the refined Project or significance conclusions reached in conformance with the California Environmental Quality Act would occur and no additional changes are required to the attached technical analysis.

Each of the above-cited and additional specific revisions are now included as part of the public record and will be before the Board of Supervisors during their consideration of the Project.



I:\ArcGIS\P\PAS-01 Passarelle\Map\BIO\Misc\FigA_Comparison.mxd -NM

Impact Comparison

CAMPUS PARK

HELIX

Figure A

Ldn Consulting, Inc.
446 Crestcourt Lane, Fallbrook CA 92028
www.ldnconsulting.net
phone 760-473-1253
fax 760-689-4943

September 23, 2010

Mr. David S. Davis
PASSERELLE, LLC
402 West Broadway, Suite 1320
San Diego, CA 92101

SUBJECT: Supplemental Noise Levels for the Updated Campus Park Planning Area Multi-Family 2 (PA MF-2) Site Plan in the County of San Diego

Dear Mr. Davis:

Ldn Consulting has reviewed and compared the original noise assessment and site plan for PA MF-2 of the Campus Park Project conducted by Urban Crossroads date March 12, 2009 with the new proposed PA MF-2 site plan. The new PA MF-2 site plan consists of a forty one (41) unit townhomes as opposed to 66 units. The new project site also includes a new design on the residential product type which still incorporates a patio as the private use area.

The proposed residential product type still incorporates patio areas on the ground floor as the private use that is required to meet the County's 60 dBA CNEL standard. The private outdoor use areas are virtually the same from the old site plan to the new proposed site plan. The proposed 10-foot high barrier is still valid and the noise level conditions have not changed. Therefore the requirements and mitigation findings identified in the project site noise report prepared by Urban Crossroads dated March 12, 2009 (Campus Park Preliminary Noise Analysis), which are in compliance with County of San Diego standards, would remain valid for the new project site and no additional mitigation is required. The proposed site plan along with the needed mitigation and the original site layout are attached for comparison.

Should you have any questions regarding the above conclusions, please do not hesitate to contact me at (760) 473-1253.

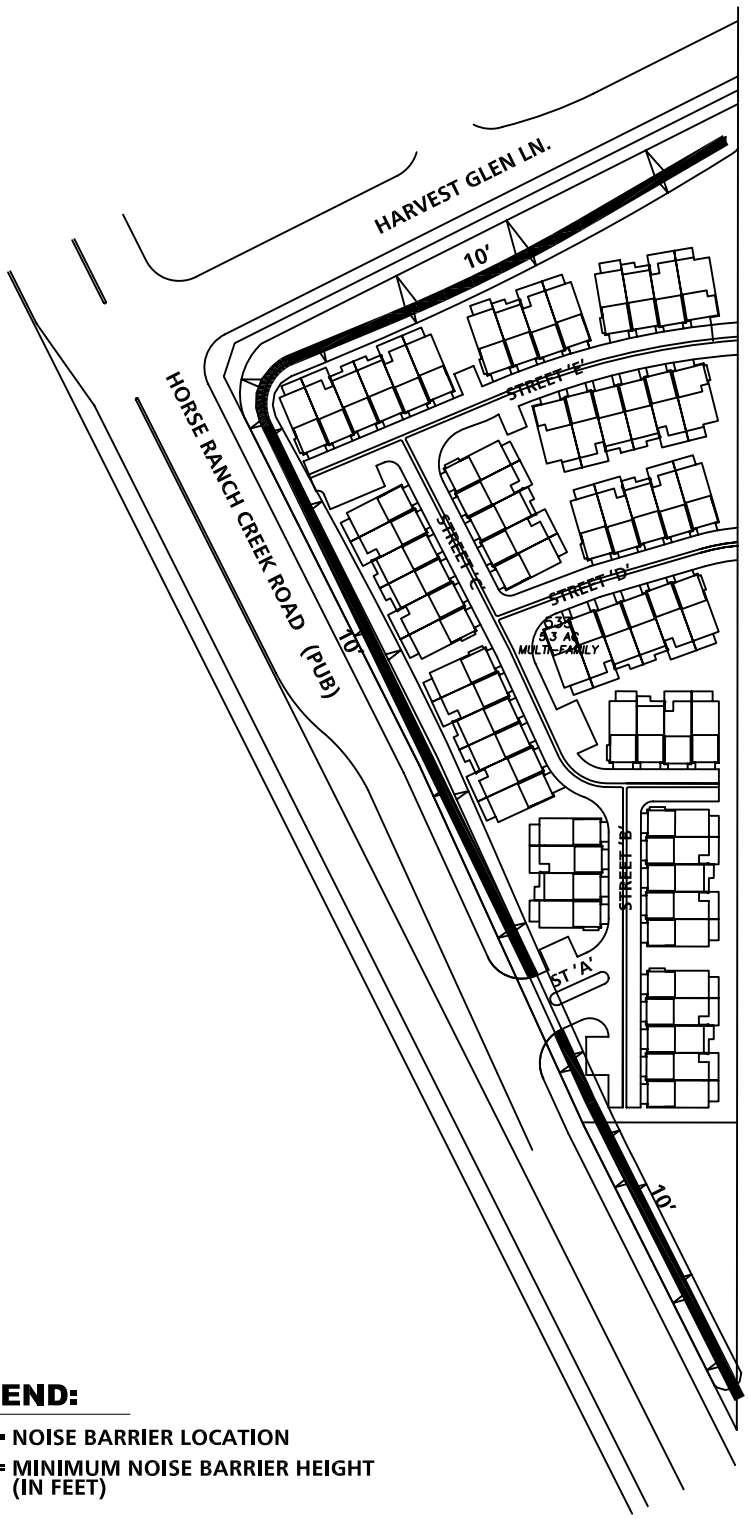
Sincerely,
Ldn Consulting, Inc.

Jeremy Louden
Principal and Officer of Ldn Consulting, Inc.

Attachments: Old PA MF-2 Noise Mitigation Plan (Urban Crossroads 3/12/09)
Revised PA MF-2 Site Plan and Mitigation (Ldn 9/23/10)

EXHIBIT 1-E

SUMMARY OF RECOMMENDATION
MULTI FAMILY 2



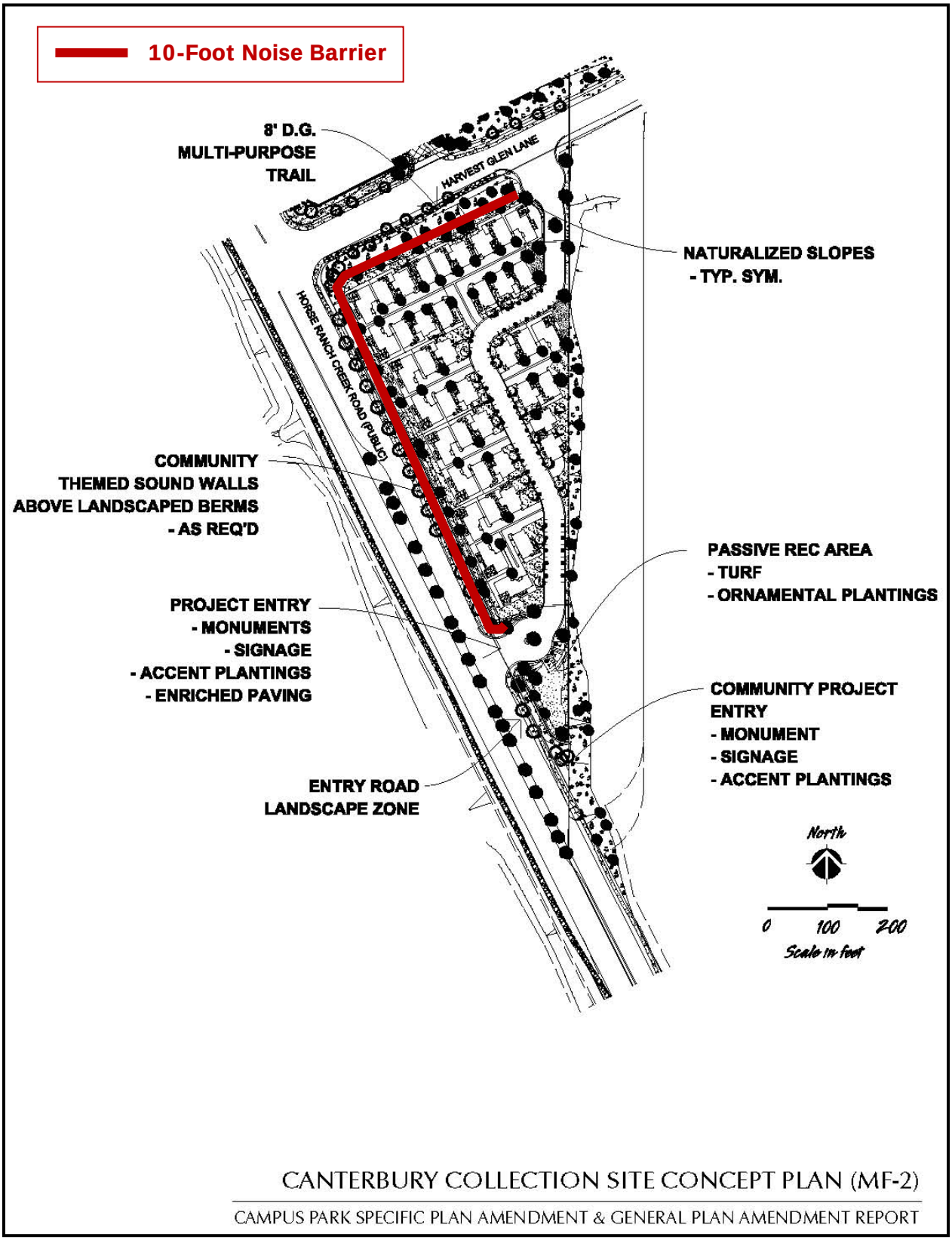
LEGEND:

▬ = NOISE BARRIER LOCATION

10' = MINIMUM NOISE BARRIER HEIGHT (IN FEET)

N

Exhibit 1: Updated PA MF-2 Site Plan and Noise Mitigation



Ldn Consulting, Inc.
446 Crestcourt Lane, Fallbrook CA 92028 phone 760-473-1253
www.ldnconsulting.net fax 760-689-4943

October 8, 2010

Mr. Dennis Campbell
Department of Planning and Land Use
County of San Diego
5201 Ruffin Road, Suite B
San Diego, CA 92123

SUBJECT: Supplemental Property Line Noise Levels for the Updated Campus Park Sewer Pump/Lift Station in the County of San Diego

Dear Mr. Campbell:

Ldn Consulting, Inc. (Ldn) has analyzed the noise levels from the proposed Campus Park Sewer Pump/Lift Station at the request of the County of San Diego DPLU for all property lines. The purpose of this analysis is to identify the anticipated noise levels at all property lines adjacent to and near the project's proposed sewer pump/lift station and compare them with the most restrictive noise standards. This report supersedes and replaces the previous assessment conducted by Ldn on April 26, 2010 for the pump station and the Urban Crossroads noise report on operational noise for the proposed sewer pump/lift station. The noise analysis and findings completed on March 12, 2009 in the Urban Crossroads noise report remain valid for all other noise impacts evaluated in that report.

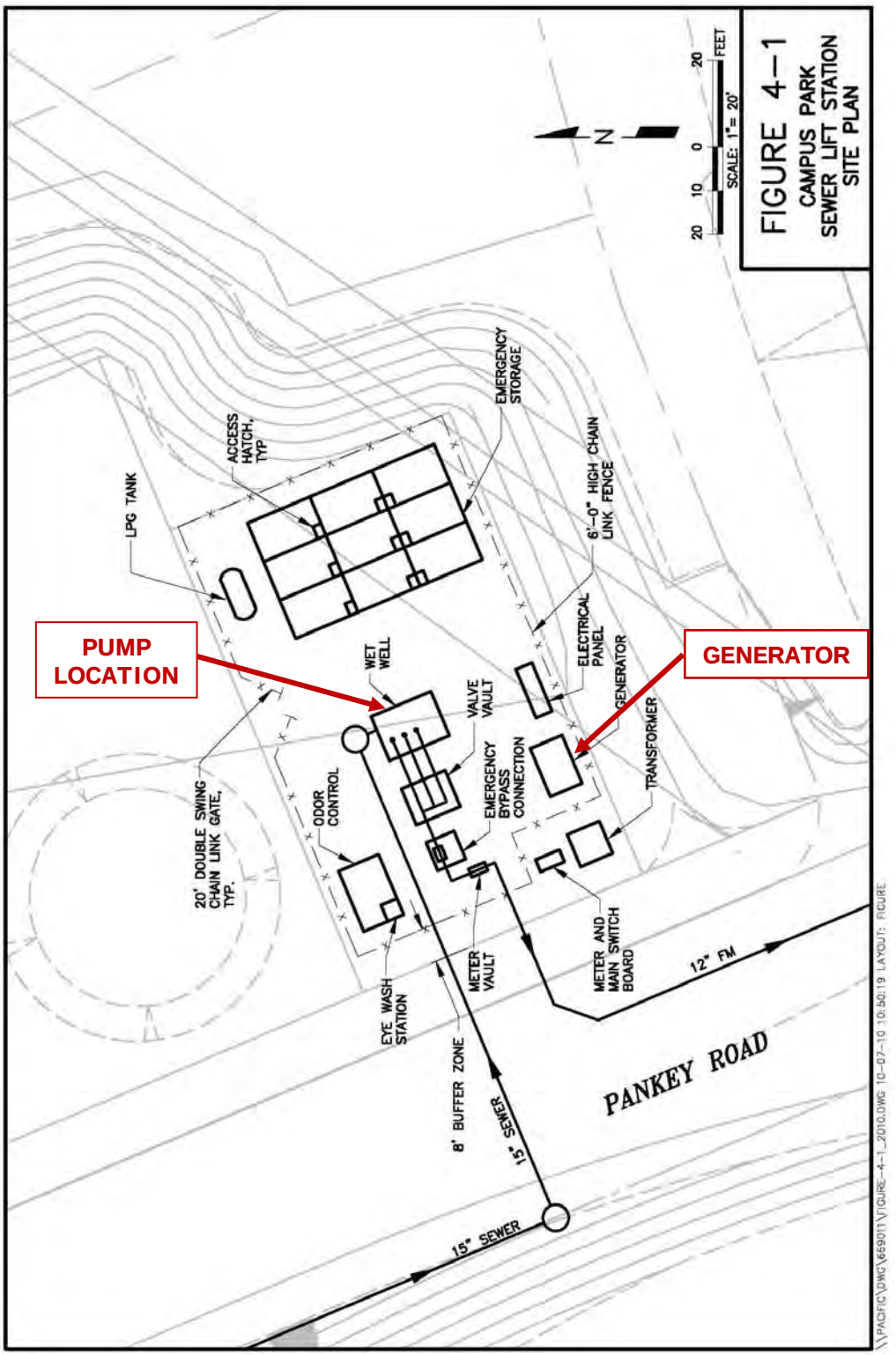
PROJECT DESCRIPTION

The Campus Park project proposes a mixed use of residential, commercial, office/professional, civil, and park uses. The development would include a total of 751 single- and multi-family homes, as well as a public active sports park, two neighborhood parks, recreational facilities, a Town Center, common area open space and biological open space preserves. The infrastructure necessary to support the development would include on- and off-site roadways, sewer lines, water lines, storm drains and an on-site sewer pump/lift station. The Project site is located north of State Route 76 (SR-76) and east of Interstate 15 in the Fallbrook area of north San Diego County. The focus of this letter is the proposed 0.2-acre sewer pump/lift station site that would be constructed in PA I-1 (Lot 558). The proposed sewer pump/lift station is located east of Pankey Road and south of Pankey Place in Planning Area (PA) I-1 (Lot 558). The site layout and equipment locations, is provided graphically in Figure 1 below.

Dennis Campbell
Department of Planning and Land Use
County of San Diego
5201 Ruffin Road, Suite B
San Diego, CA 92123

Ldn Consulting, Inc.
446 Crestcourt Lane, Fallbrook CA 92028
phone 760-473-1253
Fax 760-689-4943

Figure 1: Proposed Sewer Pump/Lift Station Site Plan



Ldn Consulting, Inc.
446 Crestcourt Lane, Fallbrook CA 92028
phone 760-473-1253
Fax 760-689-4943

Three structures would be constructed within PA I-1: (1) a lift station wet well for influent sewage and three submersible pumping units, (2) emergency storage to accommodate six hours of average daily sewage flow, and (3) a valve vault. A number of pump station elements would be located below grade including the pump station wet well, anticipated to be 33 feet deep with the top of the wet well set at finished grade, the emergency storage structure concrete vaults, and vaults with a liquid holding depth of 17 feet and are buried 3 feet so that only the access shafts would be at grade. Above-grade facilities would include an emergency bypass connection, and a back-up generator. In addition, the site would include an electrical panel, transformer, meter and main switch board, odor control system, and eye wash station.

APPLICABLE STANDARDS

The pump station and proposed use to the south across SR-76 are both zoned commercial. North of the proposed pump station site, across Pankey Place, is proposed as biological open space. Biological open space is also proposed across Pankey Road to the west and east of the pump station and an equestrian staging area is proposed to the north. Proposed residential uses are planned to the east and to the west across the biological open spaces.

The County of San Diego noise ordinance sets an exterior hourly noise limit for the worst case residential uses adjacent to the property of 50 dBA Leq for daytime hours of 7 a.m. to 10 p.m. and 45 dBA Leq during the noise sensitive nighttime hours of 10 p.m. to 7 a.m. Commercial uses have exterior noise limits of 60 dBA Leq for daytime hours of 7 a.m. to 10 p.m. and 55 dBA Leq during the noise sensitive nighttime hours of 10 p.m. to 7 a.m. The adjacent biological open space has an hourly standard of 60 dBA Leq both day and night. The County of San Diego does not have a standard for staging areas or parks; however cities in the County require a 70 dBA CNEL exterior level. The Federal Highway Administration (FHWA) and Caltrans Noise Abatement Criteria (NAC) require a 67 dBA Leq exterior noise level for parks (this would be the most restrictive). Therefore, the pump station must meet a 45 dBA Leq standard at the residential uses (across the biological open space areas), a 60 dBA Leq to the east and west at the habitat areas, 55 dBA Leq standard at the commercial use to the south across SR-76 and a 67 dBA Leq at the staging area use to the north (which is only open during the daytime hours).

OPERATIONAL LINE NOISE LEVELS

It was determined that the pumps needed for the sewer station operations are to be submerged below ground in a wet well. The station will require three 30-HP pumps, of which

Ldn Consulting, Inc.
446 Crestcourt Lane, Fallbrook CA 92028
phone 760-473-1253
Fax 760-689-4943

only two pumps would run at a time and the third would be on standby. Based on a similar underground pump station, the pumps would generate a noise level of 45 dBA at a distance of 15 feet from the access hatch (Harmony Grove Village – Pacific Noise Control, dated 7/24/06). Therefore, the submersible pumps would not generate noise impacts at the surrounding property lines and will easily meet the County of San Diego's most restrictive property line thresholds with no mitigation and no additional analysis is required for the submersible pumps.

Pump stations typically contain backup generators, which could generate unshielded noise levels that exceed the property line standards and therefore shielding or mitigation may be required. It was determined that a back-up generator of 80 kilowatts (KW) is need to power two of the 30 HP motors and controls if the main power supply is lost at the pump station. To assess the generator noise levels, typical outdoor sound levels were provided by the manufacturer (Kohler, Inc.). The noise ratings provided by Kohler indicated that an 80 KW generator will produce unmitigated noise levels of 70 dBA when measured at a distance of 23-feet in all directions when equipment with the manufacture's sound enclosure. The manufactures specifications are provided as an ***Attachment*** to this report.

Sound from a localized source (a point-source) radiates uniformly outward as it travels away from the source. The sound level attenuates or drops-off at a rate of 6 dBA for each doubling of distance. A drop-off rate of 6 dBA per doubling of distance was used for the back-up generator to the property lines using a point-source noise modeling program. The generator noise levels were modeled to each adjacent property line and to the nearest proposed residential uses to the east and west. The modeling does not take into account any reduction from topography or proposed barriers on-site or at the proposed residences. This would be considered a worst-case assessment to determine if any additional mitigation or noise reductions will be needed in the form of barriers. The site orientation, equipment locations and distances to the property lines can be seen in Figure 2 below along with the existing or proposed property uses.

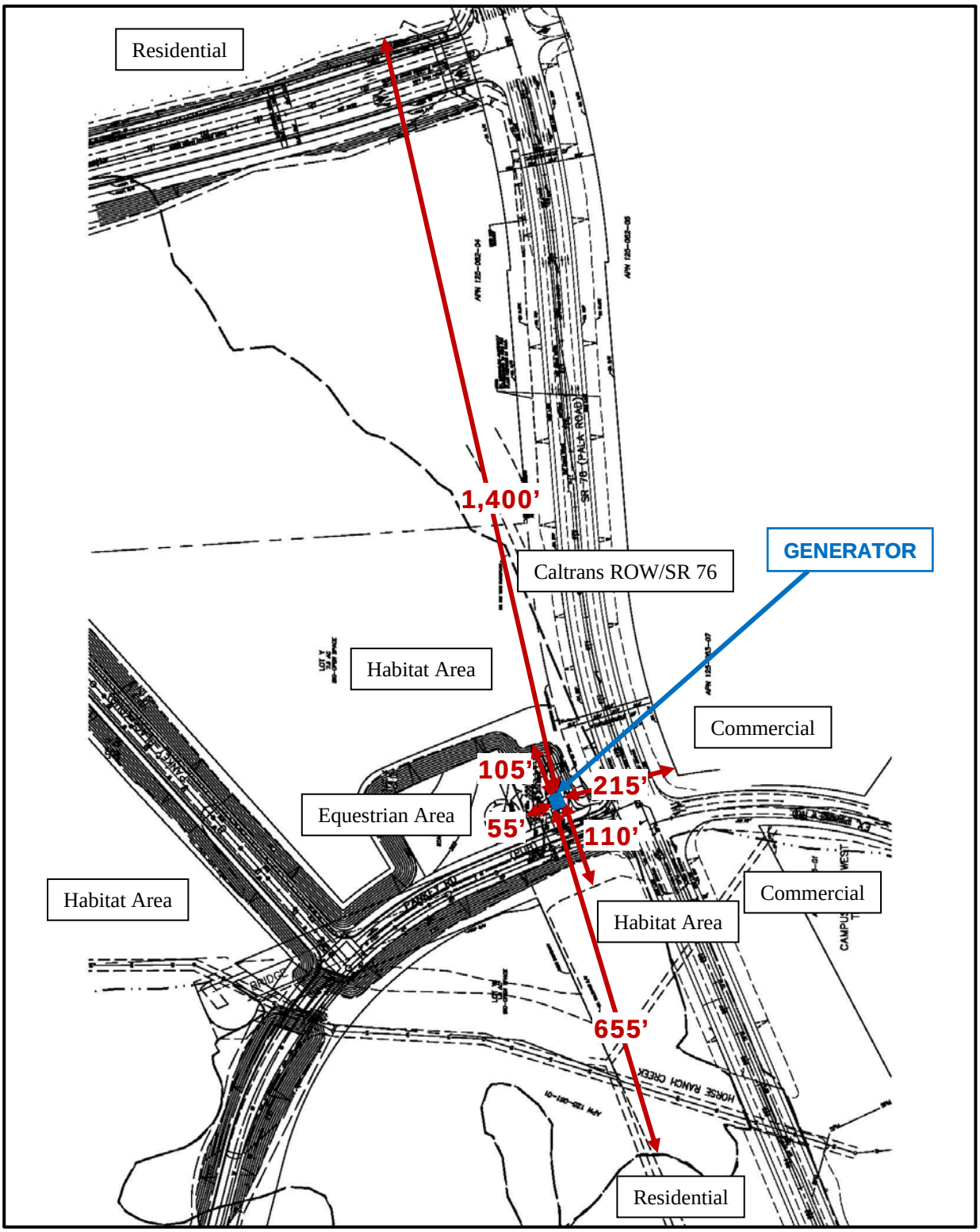
PROPERTY LINE NOISE LEVEL PREDICTIONS

The results from of the modeling for all adjacent property lines are presented in Table 1 below. Additionally, the anticipated noise levels at the proposed residential uses further to the west and east are also provided in Table 1 along with the relevant noise standards. As can be seen in Table 1 the proposed pump station operations are anticipated to comply with all the property line standards. Therefore, no impacts are anticipated and no mitigation is required.

Dennis Campbell
Department of Planning and Land Use
County of San Diego
5201 Ruffin Road, Suite B
San Diego, CA 92123

Ldn Consulting, Inc.
446 Crestcourt Lane, Fallbrook CA 92028
phone 760-473-1253
Fax 760-689-4943

Figure 2: Sewer Pump/Lift Station Orientation



Dennis Campbell
Department of Planning and Land Use
County of San Diego
5201 Ruffin Road, Suite B
San Diego, CA 92123

Ldn Consulting, Inc.
446 Crestcourt Lane, Fallbrook CA 92028
phone 760-473-1253
Fax 760-689-4943

Table 1: Property Line Noise Levels with Sound Enclosure

Property Line	Source Level Equivalent @ 23 Feet (dBA)	Distance to Property Line (Feet)	Noise Reduction due to distance (dBA)	Resultant Noise Level @ Property Line (dBA Leq)	Property Line Standard	Complies with Property Line Standard
Biological (east)	70.0*	105	-13.2	56.8	60	Yes
Commercial (south)		215	-19.4	50.6	55	Yes
Park (north)		55	-7.6	62.4	67	Yes
Biological (west)		110	-13.6	56.4	60	Yes
Residential (west)		655	-29.1	40.9	45	Yes
Residential (east)		1,400	-35.7	34.3	45	Yes

* Manufactures sound level with provided sound enclosure.

CONCLUSIONS

The generator must be equipped with the manufactures sound enclosure to decrease the noise levels to 70 dBA at 23-feet to comply with the property line standards. Once the water pump station facility is fully operational Certification Testing is required as part of the project conditions to demonstrate compliance with the County Noise Ordinance. If you have any questions, please contact me directly at (760) 473-1253.

Sincerely,
Ldn Consulting, Inc.

Jeremy Louden
Principal

Attachment: Kohler 80 KW Generator Specifications

URBAN
CROSSROADS

5411 Avenida Encinas, Suite 100
Carlsbad, CA 92008

Prepared by:

Jeremy Louden
Allison Stalker
TyJ Arambulo

Prepared for:

Mr. David S. Davis
PASSERELLE, LLC
402 West Broadway, Suite 1320
San Diego, CA 92101

CAMPUS PARK
PRELIMINARY NOISE ANALYSIS (Revised)
COUNTY OF SAN DIEGO, CALIFORNIA

March 12, 2009 (Revised)

JN: 04346-14
BL:JL:AS:ao

TABLE OF CONTENTS

SECTION			PAGE
1.0	EXECUTIVE SUMMARY		1-1
	1.1	Off-Site Transportation Noise Analysis	1-1
	1.2	On-Site Noise Analysis	1-2
	1.3	Construction Noise Analysis	1-13
	1.4	Pump Station Analysis	1-14
2.0	INTRODUCTION		2-1
	2.1	Purpose of Report	2-1
	2.2	Site Location	2-1
	2.3	Proposed Project	2-1
	2.4	Project Phasing	2-3
3.0	NOISE FUNDAMENTALS		3-1
	3.1	Noise Descriptors	3-1
	3.2	Traffic Noise Prediction	3-2
	3.3	Noise Control	3-2
	3.4	Ground Absorption	3-2
	3.5	Noise Barrier Attenuation	3-3
4.0	SAN DIEGO NOISE STANDARDS		4-1
	4.1	FHWA & NAC Criteria	4-1
	4.2	Noise Element Criteria	4-1
	4.3	Noise Ordinance Criteria	4-2
5.0	NOISE LEVEL MEASUREMENTS		5-1
	5.1	Measurement Procedure and Criteria	5-1
	5.2	Noise Measurement Locations	5-1
	5.3	Noise Measurement Results	5-3
6.0	METHODS AND PROCEDURES		6-1
	6.1	FHWA Traffic Noise Prediction Model	6-1
	6.2	Sound 32 Model Setup	6-2
	6.3	Traffic Noise Prediction Model Inputs	6-3
	6.4	Sound32 Modeled Scenarios	6-3
7.0	OFF-SITE NOISE ANALYSIS		7-1
	7.1	FHWA Traffic Noise Prediction Model	7-1
	7.2	Traffic Noise Prediction Model Inputs	7-1
	7.3	Traffic Noise Contours	7-4
	7.4	Project Traffic Noise Level Contributions	7-6
	7.5	Off-Site Transportation Related Project Noise Impact Analysis	7-6

8.0 ON-SITE NOISE ANALYSIS 8-1
8.1 Existing Conditions 8-1
8.2 Traffic Noise Contours 8-3
8.3 Buildout Scenario Exterior Noise Analysis 8-3
8.4 Buildout Scenario Exterior Noise Analysis-Northern Single Family 8-5
8.5 Buildout Scenario Exterior Noise Analysis-Southern Single Family 8-5
8.6 Buildout Scenario Exterior Noise Analysis-Multi-Family 1 8-16
8.7 Buildout Scenario Exterior Noise Analysis-Multi-Family 2 8-16
8.8 Buildout Scenario Exterior Noise Analysis-Multi-Family 3 8-16
8.9 Buildout Scenario Exterior Noise Analysis-Multi-Family 4 8-23
8.10 Buildout Scenario Exterior Noise Analysis-Other Sensitive Use Areas 8-23
8.11 Noise Control Barrier Construction Materials 8-33

9.0 SHORT-TERM CONSTRUCTION NOISE IMPACT 9-1
9.1 Construction Related Noise Levels 9-3
9.2 Grading Activities Noise Level Impact Analysis 9-3
9.3 Biological Impacts 9-7

10.0 SEWER PUMP STATION 10-1
10.1 Pump Station Noise Impact 10-1

11.0 PROJECT ALTERNATIVES 11-1
11.1 Existing General Plan Alternative 11-1
11.2 Single Family Alternative 11-1
11.3 Biological Reduced Footprint Alternative 11-2
11.4 GPA 2020 Draft Land Use Map Alternative 11-2
11.5 GPA 2020 Board Referral Map Alternative 11-3

APPENDICES

APPLICABLE NOISE STANDARDS ..... A

STUDY AREA PHOTOS..... B

NOISE CONTOUR MODEL INPUTS AND CALCULATIONS C

EXTERIOR ANALYSIS PREDICTION MODEL
INPUTS AND CALCULATIONS FOR EXISTING CONDITIONS..... D

EXTERIOR ANALYSIS PREDICTION MODEL
INPUTS AND CALCULATIONS FOR BUILDOUT CONDITIONS ..... E

LIST OF EXHIBITS

EXHIBIT		PAGE
1-A	OVERALL SUMMARY OF RECOMMENDATIONS	1-3
1-B	SUMMARY OF RECOMMENDATIONS NORTHERN SINGLE FAMILY	1-4
1-C	SUMMARY OF RECOMMENDATIONS SOUTHERN SINGLE FAMILY	1-6
1-D	SUMMARY OF RECOMMENDATIONS MULTI-FAMILY 1	1-7
1-E	SUMMARY OF RECOMMENDATIONS MULTI-FAMILY 2	1-8
1-F	SUMMARY OF RECOMMENDATIONS MULTI-FAMILY 3	1-9
1-G	SUMMARY OF RECOMMENDATIONS MULTI-FAMILY 4	1-11
1-H	SUMMARY OF RECOMMENDATIONS HOA RECREATIONAL FACILITY (POOL)	1-12
2-A	LOCATION MAP	2-2
2-B	SITE PLAN	2-4
5-A	NOISE MONITORING LOCATIONS	5-2
8-A	NOISE CONTOURS	8-4
8-B	MODELED OBSERVER LOCATIONS NORTHERN SINGLE FAMILY	8-6
8-C	MODELED OBSERVER LOCATIONS SOUTHERN SINGLE FAMILY	8-11
8-D	MODELED OBSERVER LOCATIONS MULTI-FAMILY 1	8-17
8-E	MODELED OBSERVER LOCATIONS MULTI-FAMILY 2	8-20
8-F	MODELED OBSERVER LOCATIONS MULTI-FAMILY 3	8-24
8-G	MODELED OBSERVER LOCATIONS MULTI-FAMILY 47	8-27
8-H	MODELED OBSERVER LOCATIONS OTHER SENSITIVE USES	8-31
10-A	PUMP STATION SITE PLAN	10-2

LIST OF TABLES

TABLE		PAGE
5-1	EXISTING NOISE LEVEL MEASUREMENTS	5-4
6-1	ROADWAY PARAMETERS	6-4
6-2	HOURLY TRAFFIC FLOW DISTRIBUTION	6-5
7-1	ROADWAY PARAMETERS	7-2
7-2	AVERAGE DAILY TRAFFIC	7-3
7-3	SEGMENT ANALYSIS HOURLY TRAFFIC FLOW DISTRIBUTION	7-5
7-4	EXISTING CONDITIONS NOISE CONTOURS	7-7
7-5	EXISTING WITH PROJECT CONDITIONS NOISE CONTOURS	7-8
7-6	EXISTING CUMULATIVE WITHOUT PROJECT CONDITIONS NOISE CONTOURS	7-9
7-7	EXISTING CUMULATIVE WITH PROJECT CONDITIONS NOISE CONTOURS	7-10
7-8	EXISTING YEAR PROJECT CONTRIBUTIONS	7-11
7-9	CUMULATIVE YEAR PROJECT CONTRIBUTIONS	7-13
8-1	EXISTING NOISE LEVELS (MODELED)	8-2
8-2	NORTHERN SINGLE FAMILY BUILDOUT CONDITIONS EXTERIOR NOISE LEVELS (dBA CNEL)	8-7
8-3	NORTHERN SINGLE FAMILY BUILDOUT CONDITIONS BUILDING FAÇADE LEVELS (dBA CNEL)	8-9
8-4	SOUTHERN SINGLE FAMILY BUILDOUT CONDITIONS EXTERIOR NOISE LEVELS (dBA CNEL)	8-12
8-5	SOUTHERN SINGLE FAMILY BUILDOUT CONDITIONS BUILDING FAÇADE LEVELS (dBA CNEL)	8-14
8-6	MULTI-FAMILY 1 BUILDOUT CONDITIONS EXTERIOR NOISE LEVELS (dBA CNEL)	8-18

8-7 MULTI-FAMILY 1 BUILDOUT CONDITIONS
BUILDING FAÇADE LEVELS (dBA CNEL)..... 8-19

8-8 MULTI-FAMILY 2 BUILDOUT CONDITIONS
EXTERIOR NOISE LEVELS (dBA CNEL)..... 8-21

8-9 MULTI-FAMILY 2 BUILDOUT CONDITIONS
BUILDING FAÇADE LEVELS (dBA CNEL)..... 8-22

8-10 MULTI-FAMILY 3 BUILDOUT CONDITIONS
EXTERIOR NOISE LEVELS (dBA CNEL)..... 8-25

8-11 MULTI-FAMILY 3 BUILDOUT CONDITIONS
BUILDING FAÇADE LEVELS (dBA CNEL)..... 8-26

8-12 MULTI-FAMILY 4 BUILDOUT CONDITIONS
EXTERIOR NOISE LEVELS (dBA CNEL)..... 8-28

8-13 MULTI-FAMILY 4 BUILDOUT CONDITIONS
BUILDING FAÇADE LEVELS (dBA CNEL)..... 8-29

8-14 OTHER SENSITIVE USES BUILDOUT CONDITIONS
EXTERIOR NOISE LEVELS (dBA CNEL) 8-32

9-1 CONSTRUCTION EQUIPMENT NOISE LEVELS..... 9-2

9-2 CUMULATIVE CONSTRUCTION NOISE LEVELS..... 9-4

9-3 CUMULATIVE CONSTRUCTION NOISE
LEVELS WITH BLASTING EQUIPMENT 9-6

CAMPUS PARK
PRELIMINARY NOISE STUDY
COUNTY OF SAN DIEGO, CALIFORNIA

1.0 EXECUTIVE SUMMARY

This noise study has been completed to determine the noise impacts associated with the development of the proposed Campus Park Project. The project proposes a mixed use of residential, commercial, office/professional, civil, and park uses. The development would include a total of 1,076 single- and multi-family homes, as well as a public active sports park, two neighborhood parks, homeowner's association (HOA) recreational facilities, office professional use, Town Center, common area open space (fuel modification zones and manufactured slopes), and biological open space preserves. The infrastructure necessary to support the development would include on- and off-site roadways, sewer lines, water lines, an on-site sewer pump station and storm drains, as well as support for non-vehicular modes of transportation via bikeways and pedestrian paths. The Project site is located north of State Route 76 and east of Interstate 15 in the Fallbrook area of San Diego County.

The purpose of this noise assessment is to evaluate the noise impacts for the project study area and to recommend noise mitigation measures, if necessary, to minimize the potential project impacts. Preliminary exterior and interior noise requirements for tentative tract map approval are presented in this report.

1.1 Off-Site Transportation Noise Analysis

The project creates an increase of more than 3.0 dBA CNEL along Stewart Canyon Road, but does not increase the existing noise levels above the 60 dBA CNEL County threshold to noise sensitive areas. Cumulative roadway noise impacts would be considered significant if the project raises the existing with cumulative noise level by 1 dBA or greater. There are cumulative impacts of more than 1.0 dBA CNEL on Pankey Road between SR-76 and Dulin Road, on Stewart Canyon

Road between Old Highway 395 and Horse Ranch Creek Road and along Pala Road (SR76) between Pankey Road and Horse Ranch Creek Road. However, there are no existing rear yards or other noise sensitive land uses located adjacent to these segments. The segment of Stewart Canyon Road passes under Interstate 15 and lies mostly in Caltrans right of way. Therefore, the project's impacts are considered to be less than significant. The results of this analysis show that the proposed project's noise level contributions will not result in significant impacts to the existing or future sensitive noise receptors identified in the project study area.

1.2 On-Site Noise Analysis

The results of this analysis indicate that the future vehicle noise from Interstate 15, Horse Ranch Creek Road, Pala Mesa Drive, Pankey Place and State Route 76 (SR-76) are the principal sources of community noise that will impact the site. The County of San Diego has a 60 dBA CNEL noise standard for sensitive outdoor use areas. Based on the future buildout traffic projections, the proposed site will experience unmitigated exterior noise levels in excess of the County of San Diego 60 dBA CNEL noise standards for transportation related noise impacts. Exhibit 1-A shows all mitigation needed for each area of the project site.

To minimize traffic noise impacts, the project should provide the following noise mitigation measures summarized below:

Northern Single Family

Noise-affected outdoor areas in the northern single family area of the project site require 9-foot noise barriers along the property boundaries of lots 285 through 301. Exhibit 1-B shows the mitigation and barrier heights required to bring future noise levels in the northern single family portion of the project site to the County of San Diego 60 dBA CNEL exterior noise level standards for residential developments.

EXHIBIT 1-A

OVERALL SUMMARY OF RECOMMENDATIONS

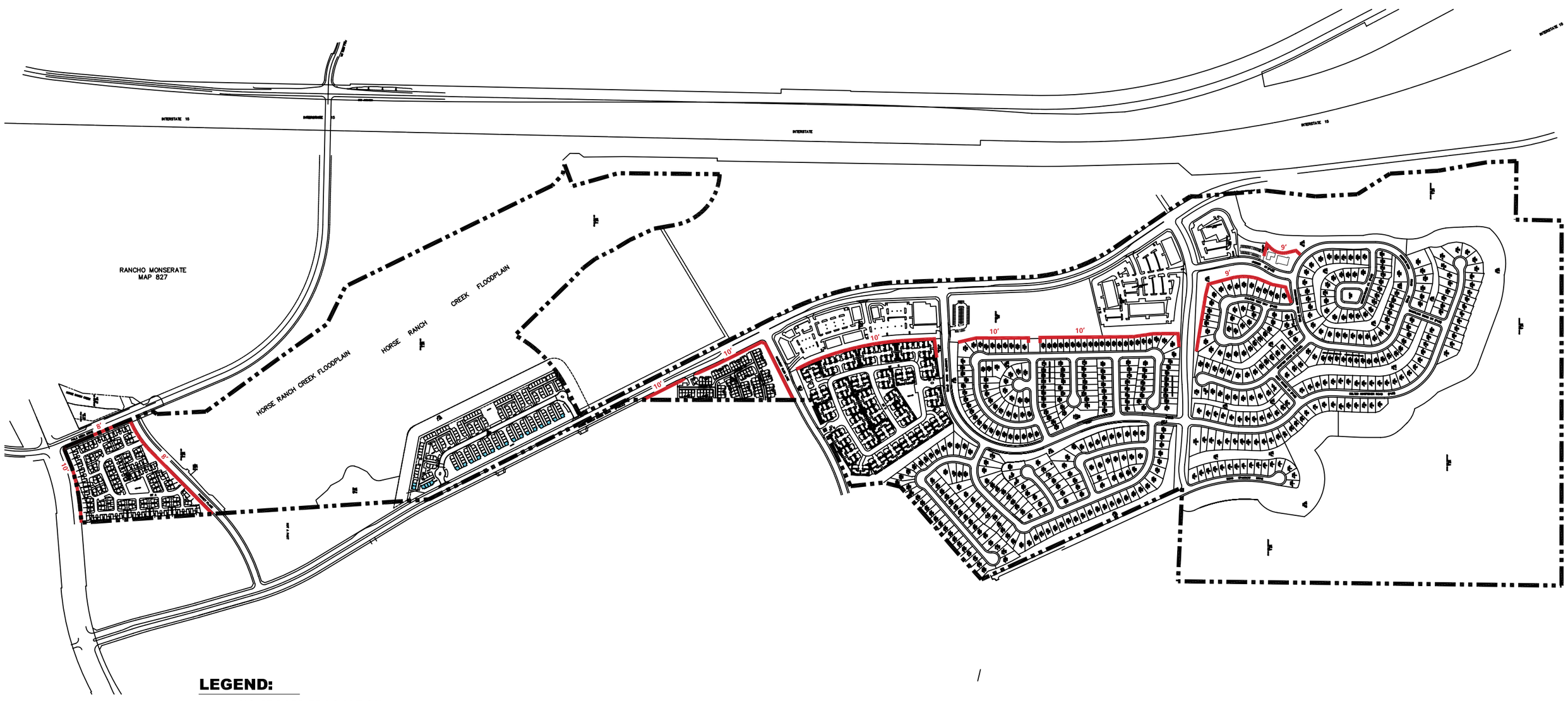
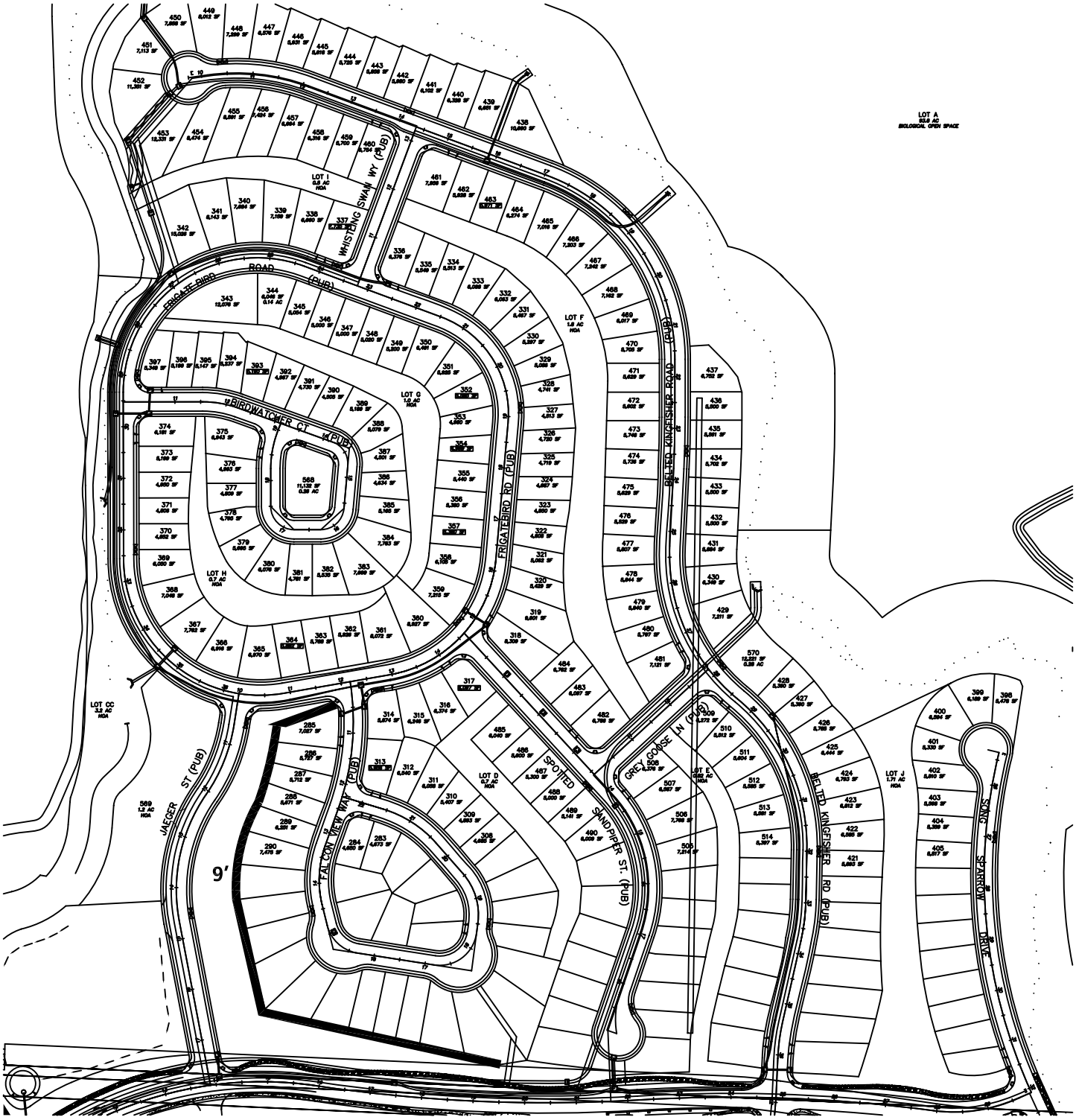


EXHIBIT 1-B

SUMMARY OF RECOMMENDATION
NORTHERN SINGLE FAMILY



LEGEND:

= NOISE BARRIER LOCATION

9' = MINIMUM NOISE BARRIER HEIGHT (IN FEET)

N

URBAN CROSSROADS

Southern Single Family

Noise-affected outdoor areas in the northern single family area of the project site require 10-foot noise barriers along the property boundaries of lots 21 through 52. Exhibit 1-C shows the mitigation and barrier heights required to bring future noise levels in the southern single family portion of the project site to the County of San Diego 60 dBA CNEL exterior noise level standards for residential developments.

Multi-Family 1

Multi-Family 1 (MF-1) does not include private use areas on the first floor; however balconies are located on the second floor of all units. Noise-affected outdoor balconies of the MF-1 planning area require 6-foot-high noise barriers along the perimeters on units that have unmitigated noise levels above 60 dBA CNEL. Exhibit 1-D shows the units requiring mitigation and the barrier heights necessary to bring future noise levels of MF-1 to the County of San Diego 60 dBA CNEL exterior noise level standards for residential developments.

Multi-Family 2

Noise-affected outdoor areas of the Multi-Family 2 (MF-2) planning area require 10-foot-high noise barriers along the portions of the project site facing the surrounding roadways. Exhibit 1-E shows the mitigation and barrier heights required to bring future noise levels of MF-2 to the County of San Diego 60 dBA CNEL exterior noise level standards for residential developments.

Multi-Family 3

Noise-affected outdoor areas of the Multi-Family 3 (MF-3) planning area require 10-foot-high noise barriers along the portions of the project site facing Horse Ranch Creek Road. Exhibit 1-F shows the mitigation and barrier heights required to bring future noise levels of MF-3 to the County of San Diego 60 dBA CNEL exterior noise level standards for residential developments.

EXHIBIT 1-C

SUMMARY OF RECOMMENDATION
SOUTHERN SINGLE FAMILY

LEGEND:

= NOISE BARRIER LOCATION

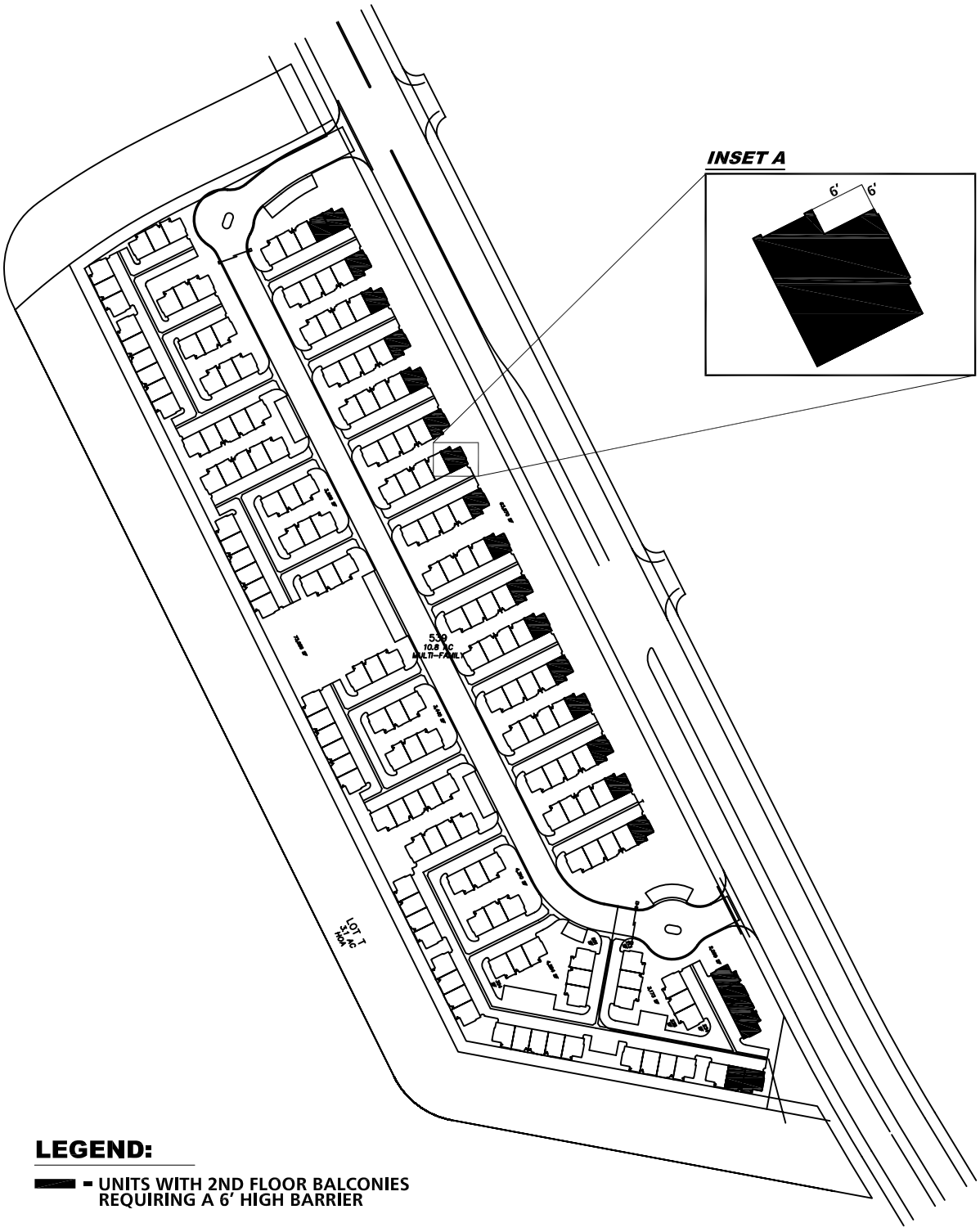
10' = MINIMUM NOISE BARRIER HEIGHT (IN FEET)

N

URBAN CROSSROADS

EXHIBIT 1-D

SUMMARY OF RECOMMENDATION
MULTI FAMILY 1



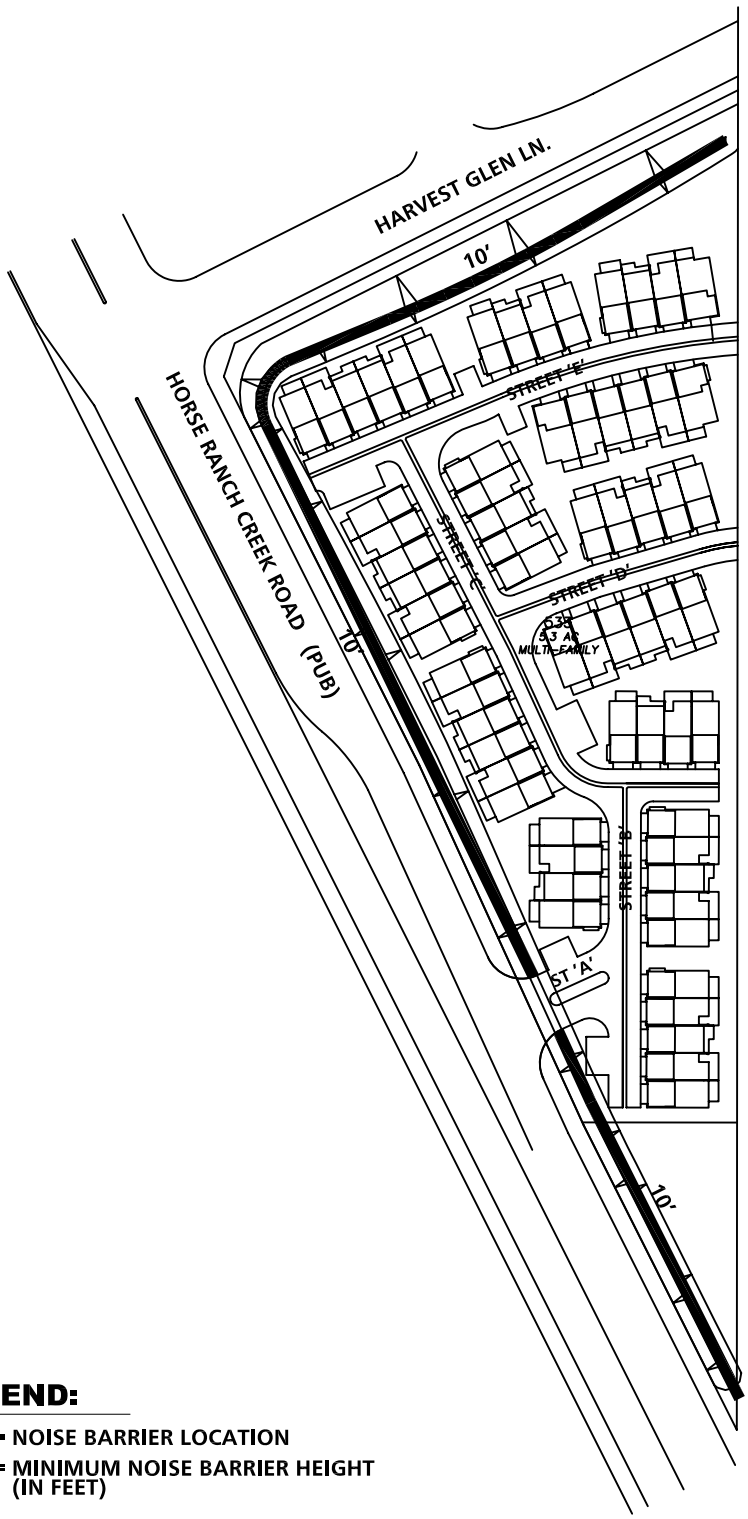
LEGEND:

▬ = UNITS WITH 2ND FLOOR BALCONIES REQUIRING A 6' HIGH BARRIER

N

EXHIBIT 1-E

SUMMARY OF RECOMMENDATION
MULTI FAMILY 2



LEGEND:

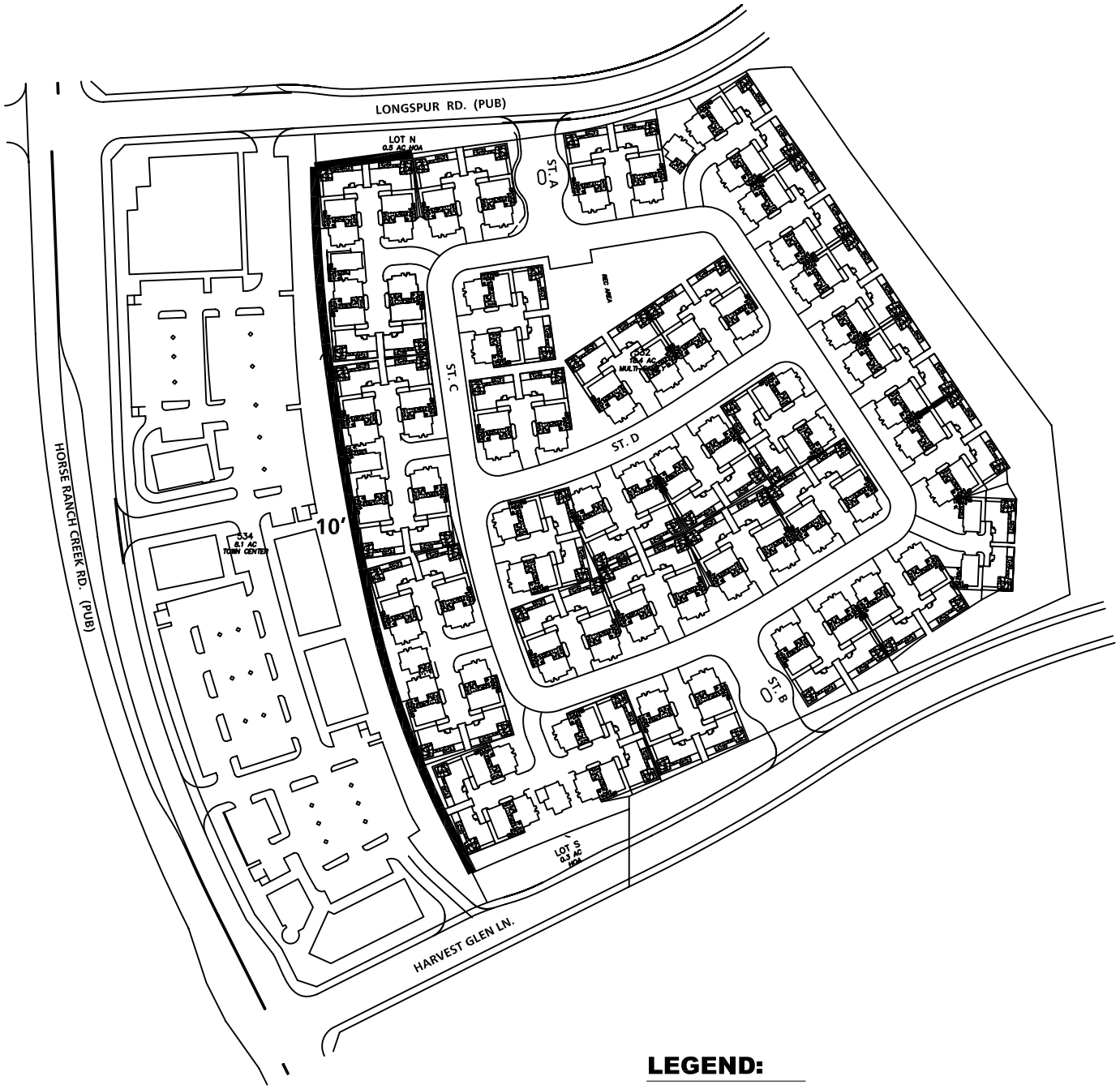
▬ = NOISE BARRIER LOCATION

10' = MINIMUM NOISE BARRIER HEIGHT (IN FEET)

N

EXHIBIT 1-F

SUMMARY OF RECOMMENDATION
MULTI FAMILY 3



LEGEND:

▬ = NOISE BARRIER LOCATION

10' = MINIMUM NOISE BARRIER HEIGHT (IN FEET)

N

Multi-Family 4

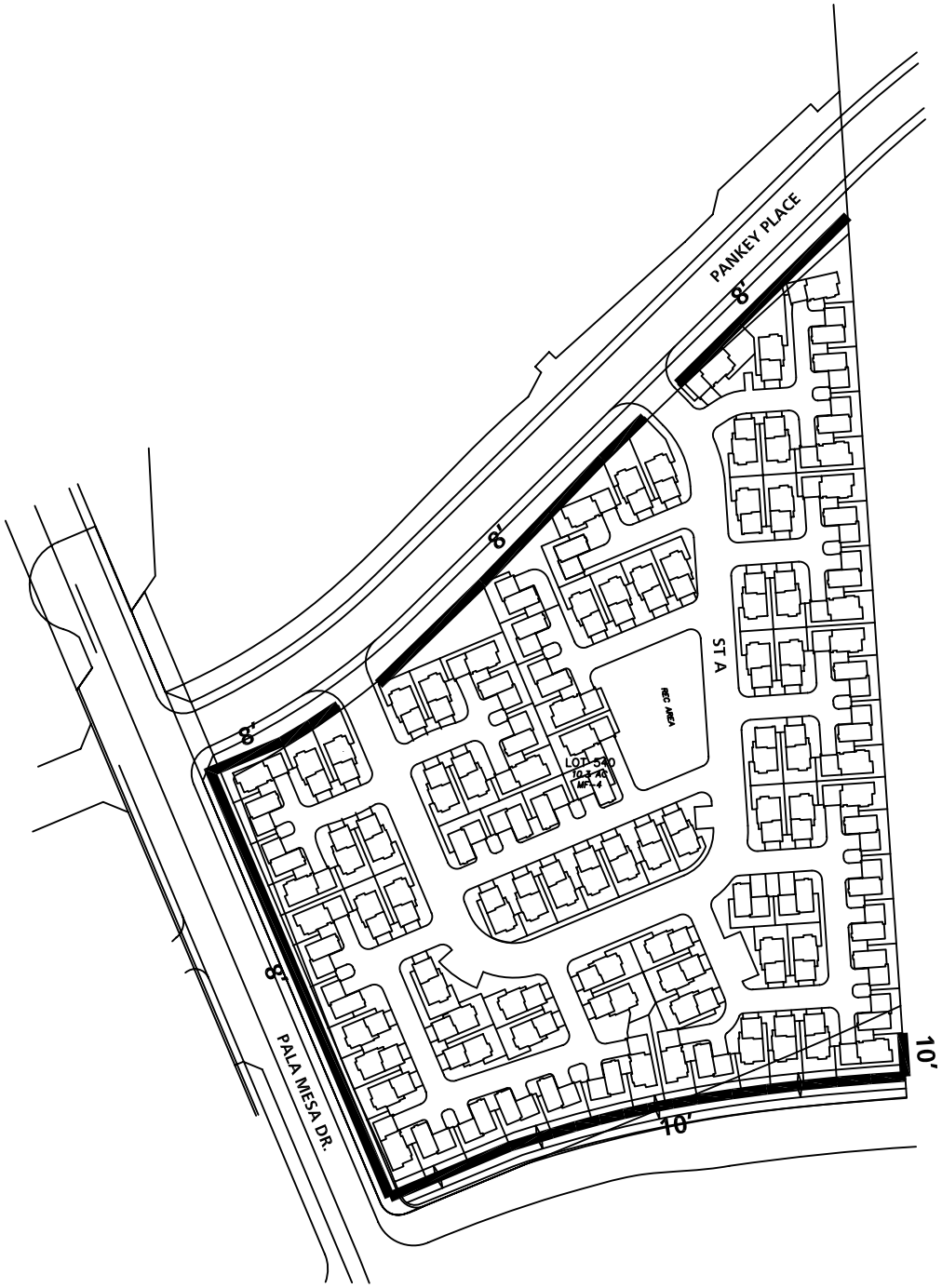
Noise-affected outdoor areas of the Multi-Family 4 (MF-4) planning area require barriers ranging in height from 8 to 10 feet along the portions of the project site facing Horse Ranch Creek Road, Pankey Place and SR-76. Exhibit 1-G shows the mitigation and barrier heights required to bring future noise levels of MF-4 to the County of San Diego 60 dBA CNEL exterior noise level standards for residential developments.

Other Sensitive Uses

The project proposes a HOA recreational facility (pool), five parks, three rec areas and one sports complex. The two parks and three rec areas will meet the County of San Diego 60 dBA CNEL exterior noise level standard with the mitigation provided for other areas of the project site, i.e. the single family homes and multi-family homes. No additional mitigation is required at the parks or rec areas. The HOA recreational facility (pool) will require a 9-foot-high noise barrier along the western portion of the site. Exhibit 1-H shows the mitigation and barrier heights required to bring future noise levels of the HOA recreational facility (pool) to the County of San Diego 60 dBA CNEL exterior noise level standard. The project proposes a sports complex consisting of baseball and soccer fields. Noise levels at the sports complex exceed the County of San Diego 60 dBA CNEL standard; however placement of a barrier is not sufficient to mitigate these noise levels. The County of San Diego does not have a standard for these types of complexes; however cities in the County require a 70 dBA CNEL exterior level. The Federal Highway Administration (FHWA) and Caltrans Noise Abatement Criteria (NAC) require a 67 dBA Leq(h) exterior noise level for parks and sport areas that cannot be feasibly mitigated. Noise levels at the proposed sports complex may be as high as 65.6 dBA CNEL, and will therefore meet the FHWA and NAC standards without further mitigation.

EXHIBIT 1-G

SUMMARY OF RECOMMENDATION
MULTI FAMILY 4



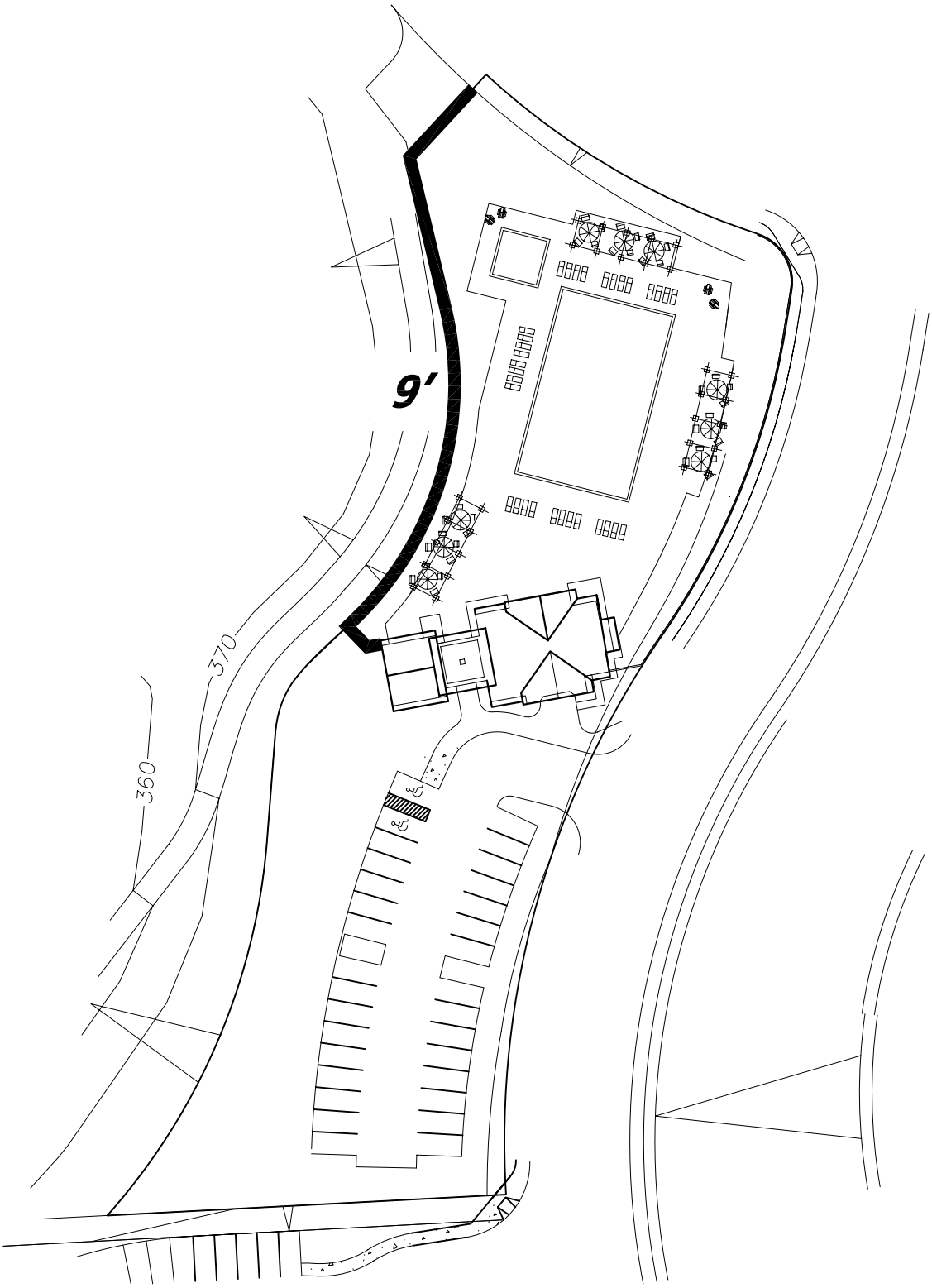
LEGEND:

- ▬ = NOISE BARRIER LOCATION
- 8' = MINIMUM NOISE BARRIER HEIGHT (IN FEET)

N

EXHIBIT 1-H

SUMMARY OF RECOMMENDATION
HOA RECREATIONAL FACILITY (POOL)



LEGEND:

▬ = NOISE BARRIER LOCATION

9' = MINIMUM NOISE BARRIER HEIGHT (IN FEET)

N

All aforementioned barriers may be constructed of a wall/glass combination. The barriers must be of solid construction with a minimum glass thickness of ¼ inch and should contain no gaps.

Interior Noise Mitigation

- Provide a "windows closed" condition requiring a means of mechanical ventilation (e.g. air conditioning) for the second and third floors of all single and multi family homes on the project site.
- To minimize the potential interior noise impacts, the second and third floors of all single and multi family homes on the project site should be provided with weather-stripped solid core exterior doors and exterior wall/roof assembles should be free of cut outs and openings.
- Provide upgraded windows for the second and third floors of all single and multi family homes on the project site.

A final noise study for the second and third floors of all single and multi family homes on the project site should be prepared prior to obtaining building permits for the project. This report would finalize the noise requirements based upon actual building design specifications. Preliminary exterior and interior noise requirements for tentative tract map approval are presented in this report.

1.3 Construction Noise Analysis

Results of the analysis indicate that the project will meet the County of San Diego 75 dBA CNEL standard for grading activities at all project property lines. If any grading equipment is to be operated within 375 feet of any property line, impacts may occur. If any grading and drilling equipment is to be operated within 450 feet of any property line, impacts may also occur. It is recommended that a specific mitigation plan based upon the location of the construction equipment be identified by a County certified acoustical engineer. If impacts are anticipated,

the proposed project applicant should install a temporary noise barrier along any property line or adjacent to any existing on-site residence. The mitigation plan would determine the height and location of a temporary barrier, if one is necessary. In past experiences, the height of these noise barriers can range from 8 to 12 feet in height.

If the construction equipment for any of the phases is located within 2,100 feet or construction and drilling equipment is located within 2,600 feet of any identified sensitive habitat, it is recommended that a specific mitigation plan based upon the location of the identified habitat and corresponding construction schedule be identified by a County certified acoustical engineer. This mitigation plan would determine the height and location of a temporary barrier, if one is necessary. The height of this barrier would be based on the topography in the area, the location of the habitat and also the location of the equipment. The biological mitigation plan should include noise monitoring prior to and during the beginning of the nesting/breeding season by the acoustical engineer in coordination with the Project Biologist to ensure compliance with applicable standards.

1.4 Pump Station Analysis

In order to reduce noise levels, the pump station should be enclosed in a concrete structure. The noise producing equipment at the pump station is located approximately 145 feet from the adjacent residential property line, located across Pala Mesa Drive. Utilizing a drop-off rate of 6 dBA per doubling of distance, the above ground pump station would produce worse-case noise level of 42.8 dBA equivalent noise level (Leq) at the distance of 145 feet. With the incorporation of the concrete enclosure, no mitigation is required to reduce noise levels to below the applicable 50 dBA standard. Sound level certification measurements of the pump station activities should be conducted at the nearest property line once the pump stations are fully operational to ensure compliance with the County's noise ordinance.

Pump stations typically contain backup generators that must be located in a cinder block building which utilizes acoustical louvers in order to decrease the noise level to the adjacent property lines. The louvers must be placed on the vent openings on the southern side of the building. The sides of the building facing east, north and west are required to be completely free of any openings or ventilation in order to reduce levels at the residential and biological use areas. Sound level measurements of the backup generators should be conducted at the nearest property line once the pump stations are fully operational to ensure compliance with the County's noise ordinance.

2.0 INTRODUCTION

2.1 Purpose of Report

This noise study outlines the project, provides basic information regarding the fundamentals of traffic noise, describes local noise guidelines, provides the study methods and procedures for traffic noise and construction noise analysis, and evaluates the future exterior and interior noise environments due to on-site and off-site noise impacts.

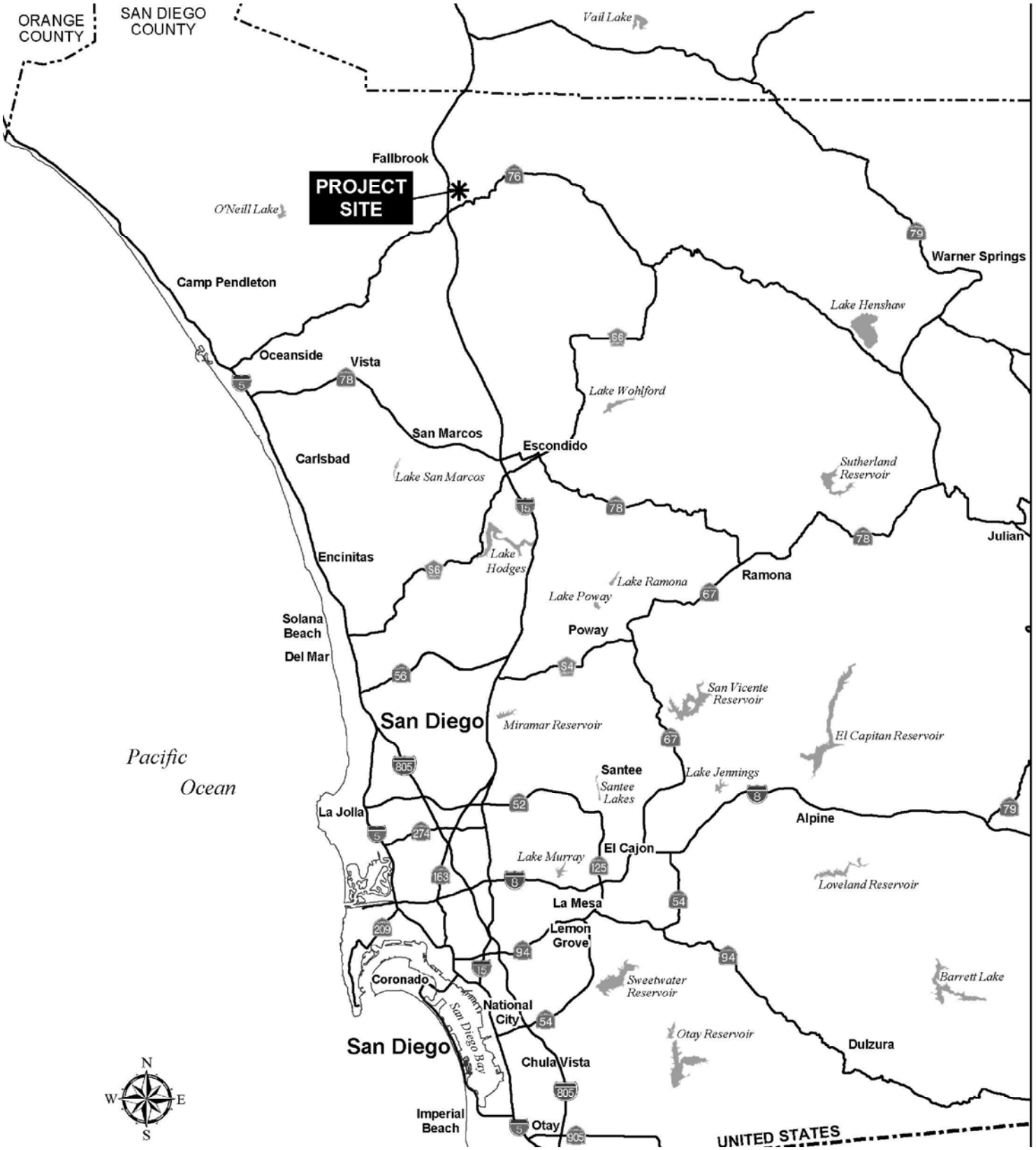
2.2 Site Location

The project site is located in northern San Diego County in the community of Fallbrook, approximately 46 miles northwest of downtown San Diego, north of the cities of Escondido and San Marcos and south of the city of Temecula in Riverside County, as shown in Exhibit 2-A. The San Luis Rey River runs south of the project site, Interstate 15 borders a portion of the site to the west. Surrounding lands to the east and northwest are currently undeveloped or planned to be developed. The Meadowood Development is located just north of SR-76, ¼ mile east of I-15, adjacent to Campus Park Project. This development is primarily residential and no impacts from the Meadowood Development onto the Campus Park Project are anticipated. Rosemary's Mountain/Paloma Aggregates Quarry is located on the north side of SR-76, 1.25 miles east of I-15. The project is proposed as an aggregate rock quarry and processing plant for concrete and asphalt. This project is located more than 2,500 feet from the Campus Park Project; therefore no impacts are anticipated from Rosemary's Mountain/Paloma Aggregates Quarry to the Campus Park Project.

2.3 Proposed Project

The project proposes a mixed use of residential, commercial, office/professional, civil, and park uses. The development would include a total of 1,076 single- and

LOCATION MAP



multi-family homes, as well as a public active sports park, two neighborhood parks, homeowner's association (HOA) recreational facilities, office professional use, Town Center, common area open space (fuel modification zones and manufactured slopes), and biological open space preserves. The infrastructure necessary to support the development would include on- and off-site roadways, sewer lines, water lines, an on-site sewer pump station and storm drains, as well as support for non-vehicular modes of transportation via bikeways and pedestrian paths. The site plan is provided as Exhibit 2-B.

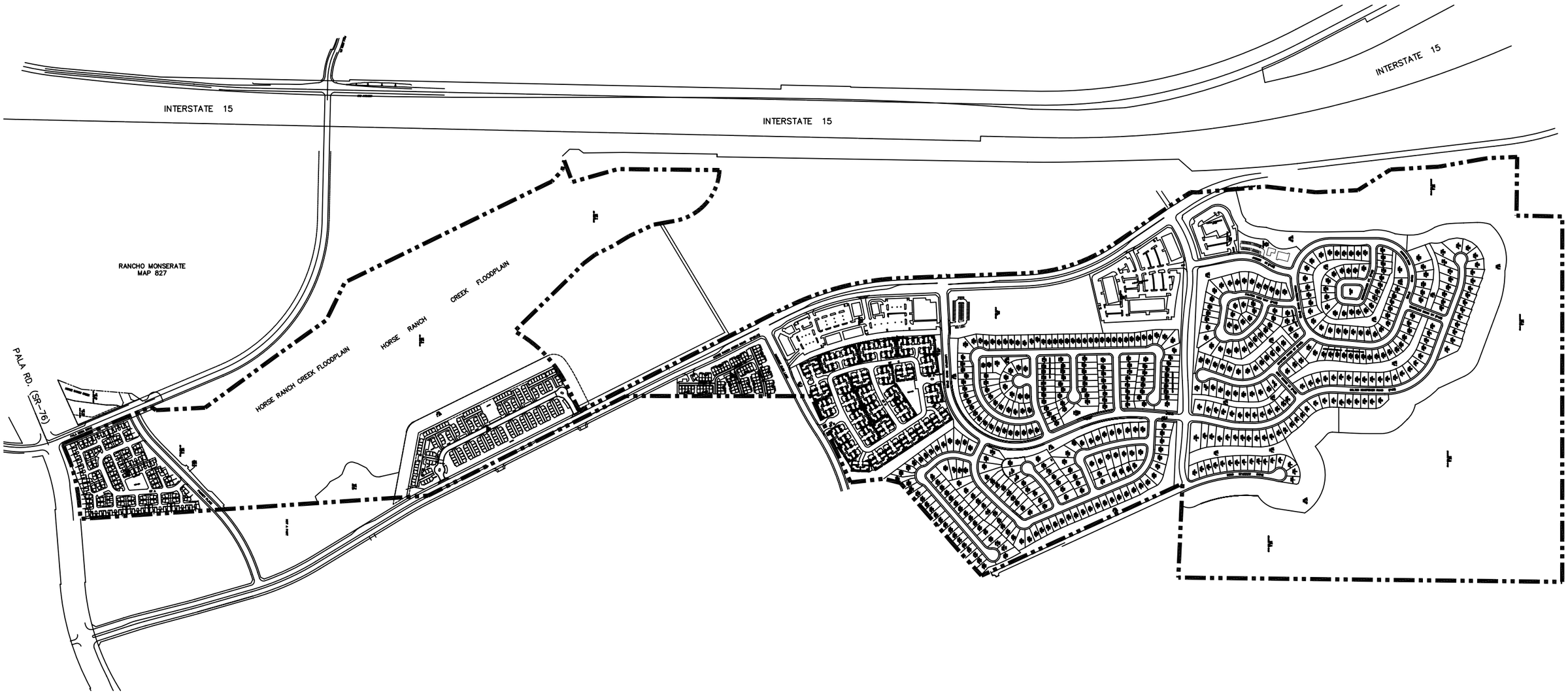
2.4 Project Phasing

The project will be developed in six phases and graded in two phases. For the purposes of this analysis, the following land use assumptions were evaluated:

- Phase 1:
  - 285 single-family residential dwelling units
  - 189 multi-family residential dwelling units
  - 1.2-acre of park uses
  - 0.1 acre Sewer Pump Station
  - 23.8 acres of Major Roads
  - 203.2 acres of open space
- Phase 2:
  - 258 multi-family residential dwelling units
- Phase 3:
  - 248 single-family residential dwelling units
  - 108 multi-family residential dwelling units
  - 0.3-acre neighborhood park
- Phase 4:
  - 1.2-acre neighborhood park
- Phase 5:
  - 10.9 acres of professional office space
- Phase 6:
  - 8.1-acre Town Center
  - 8.5-acre Active Sports Park

EXHIBIT 2-B

SITE PLAN



N

3.0 NOISE FUNDAMENTALS

Noise has been simply defined as "unwanted sound". Sound becomes unwanted when it interferes with normal activities, when it causes actual physical harm or when it has adverse effects on health. Noise is measured on a logarithmic scale of sound pressure level known as a decibel (dB). A-weighted decibels (dBA) approximate the subjective response of the human ear to broad frequency noise source by discriminating against very low and very high frequencies of the audible spectrum. They are adjusted to reflect only those frequencies which are audible to the human ear.

3.1 Noise Descriptors

Equivalent sound levels are not measured directly but are calculated from sound pressure levels typically measured in A-weighted decibels (dBA). The equivalent sound level (Leq) represents a steady state sound level containing the same total energy as a time varying signal over a given sample period. The peak hour Leq is the noise metric used by Caltrans for all traffic noise impact analysis.

The Community Noise Equivalent Level (CNEL) is the weighted average of the intensity of a sound, with corrections for time of day, and averaged over 24 hours. The time of day corrections require the addition of five decibels to sound levels in the evening from 7 p.m. to 10 p.m., and the addition of ten decibels to sound levels at night between 10 p.m. to 7 a.m. These additions are made to the sound levels at these time periods because during the evening and night hours, with the decrease in overall amount and loudness of noise generated, when compared to daytime hours, there is an increased sensitivity to sounds. For this reason the sound appears louder and it is weighted accordingly. The County of San Diego relies on the CNEL noise standard to assess transportation related impacts on noise sensitive land uses.

3.2 Traffic Noise Prediction

The level of traffic noise depends on the three primary factors: (1) the volume of the traffic, (2) the speed of the traffic, and (3) the number of trucks in the flow of traffic. Generally, the loudness of traffic noise is increased by heavier traffic volumes, higher speeds and greater number of trucks. Vehicle noise is a combination of the noise produced by the engine, exhaust and tires.

Because of the logarithmic nature of traffic noise levels, a doubling of the traffic noise (acoustic energy) results in a noise level increase 3 dBA. Based on the FHWA community noise assessment criteria this change is “barely perceptible”. In other words, doubling the traffic volume (assuming that the speed and truck mix do not change) results in a noise increase of 3 dBA. The truck mix on a given roadway also has a significant effect on community noise levels. As the number of heavy trucks increases and becomes a larger percentage of the vehicle mix, adjacent noise levels increase.

3.3 Noise Control

Noise control is the process of obtaining an acceptable noise environment for a particular observation point or receiver by controlling the noise source, transmission path, receiver or all three. This concept is known as the source-path-receiver concept. In general, noise control measures can be applied to any and all of these three elements and a noise barrier is most effective when placed close to the noise source or receiver.

3.4 Ground Absorption

To account for the ground-effect attenuation (absorption), two types of site conditions are commonly used in traffic noise models, soft site and hard site

conditions. Soft site conditions account for the sound propagation loss over natural surfaces such as normal earth and ground vegetation. A drop-off rate of 4.5 dBA per doubling of distance is typically observed over soft ground with landscaping, as compared with a 3.0 dBA drop-off rate over hard ground such as asphalt, concrete, stone and very hard packed earth. To predict the future noise environment, soft site conditions were used in this analysis based on the topography in the site area.

3.5 Noise Barrier Attenuation

Effective noise barriers can significantly reduce noise levels, cutting the loudness of traffic noise in half. Noise barriers however, do have limitations. For a noise barrier to work, it must be high enough and long enough to block the view of a road. Noise barriers do very little good for homes on a hillside overlooking a road or for building which rise above the barrier. A noise barrier can typically achieve a 5 decibel noise level reduction when it is tall enough to break the line-of-sight.

4.0 SAN DIEGO COUNTY NOISE STANDARDS

The County of San Diego addresses two separate types of noise sources through the California Environmental Quality Act (CEQA) process: (1) mobile, and (2) stationary. In the context of this noise analysis, the transportation noise levels associated with the proposed Campus Park Project are regulated by Policy 4b of the County of San Diego Noise Element in the General Plan. Operational and construction noise levels are governed by the County of San Diego Noise Ordinance Sections 36.404 and 36.409, respectively. The relevant sections of the noise element, noise ordinance and FHWA standards are summarized below and provided as Appendix "A".

4.1 FHWA & NAC Criteria

The County of San Diego does not have a standard for outdoor sports complexes consisting of athletic fields; however cities in the County require a 70 dBA CNEL exterior level at these types of locations. The Federal Highway Administration (FHWA) and Caltrans Noise Abatement Criteria (NAC) require a 67 dBA Leq(h) exterior noise level for parks and sport areas, as shown in Appendix "A".

4.2 Noise Element Criteria

The County of San Diego has adopted interior and exterior noise standards as part of the County's Noise Element of the General Plan for assessing the compatibility of land uses with transportation related noise impacts. For assessing noise impacts to sensitive residential land uses, the County requires an exterior noise level of 60 dBA CNEL or less for outdoor living areas and an interior noise standard of 45 dBA CNEL.

Off-site project impacts describe the off-site transportation-related noise associated with the development of the project. Noise level increases and

impacts attributable to development of the proposed project are estimated by comparing the “with-project” traffic volume to the “without-project” traffic volume. CEQA acknowledges that changes in noise levels greater than 3 dBA are often identified as "barely perceptible," while changes of 5 dBA are "readily perceptible." In the range of 1 dBA to 3 dBA, people who are very sensitive to noise may perceive a slight change in noise level.

In laboratory testing situations, humans are able to detect noise level changes of slightly less than 1 dBA. However, in a community situation, the noise exposure is extended over a long time period, and changes in noise levels occur over years rather than the immediate comparison made in a laboratory situation. Therefore, the level at which changes in community noise levels become discernible is likely to be some value greater than 1 dBA, and 3 dBA appears to be appropriate for most people. For purposes of this study, noise impacts are considered significant if the project raises the noise levels above the County of San Diego 60 dBA CNEL standard, except if the existing noise level without project is 58 dBA or greater, a 3 dBA increase is allowed per County Standards.

4.3 Noise Ordinance Criteria

Section 36.404 of the County of San Diego noise ordinance provides performance standards and noise control guidelines for determining and mitigating non-transportation, or stationary, noise source impacts to residential properties. The purpose of the noise ordinance is to protect, create and maintain an environment free from noise and vibration that may jeopardize the health or welfare, or degrade the quality of life.

According to the stationary source exterior noise standards, no person shall operate any source of sound at any location within the County or allow the creation of any noise on a property which causes the noise levels to exceed the exterior noise limits at the property boundary within all non-industrial zones. The noise ordinance sets

an exterior noise limit for residential land uses adjacent to the property of 50 dBA Leq for daytime hours of 7 a.m. to 10 p.m. and 45 dBA Leq during the noise sensitive nighttime hours of 10 p.m. to 7 a.m.

Section 36.409 of the County of San Diego ordinance controls construction equipment noise. Except for emergency work, it shall be unlawful for any person, including the County of San Diego, to operate construction equipment at any construction site, except as outlined in subsections (a) and (b) below:

(a) It shall be unlawful for any person to operate construction equipment between the hours of 7 p.m. of any day and 7 a.m. of the following day.

(b) It shall be unlawful for any person to operate construction equipment on Sundays, and days appointed by the President, Governor, or the Board of Supervisors for a public fast, Thanksgiving, or holiday, but a person may operate construction equipment on the above-specified days between the hours of 10 a.m. and 5 p.m. at his residence or for the purpose of constructing a residence for himself, provided that the average sound level does not exceed 75 decibels during the period of operation and that the operation of construction equipment is not carried out for profit or livelihood.

(c) It shall be unlawful to operate any construction equipment so as to cause at or beyond the property line of any property upon which a legal dwelling unit is located an average sound level greater than 75 decibels between the hours of 7 a.m. and 7 p.m. For temporary activities, the County considers the 75 decibel (A) average to be based on a period of eight hours.

Section 36.410 of the County Ordinance sets the sound level limitations on impulsive noise. In addition to the general limitations on sound levels in section 36.404, the following additional sound level limitations shall apply:

(a) Except for emergency work or work on a public road project, no person shall produce or cause to be produced an impulsive noise that exceeds the maximum sound level shown in Table 36.410A, when measured at the boundary line of or on any occupied property for 25 percent of the minutes in the measurement period, as described in subsection (c) below. The maximum sound level depends on the use being made of the occupied property. The uses in Table 36.410A are as described in the County Zoning Ordinance.

(b) Except for emergency work, no person working on a public road project shall produce or cause to be produced an impulsive noise that exceeds the maximum sound level shown in Table 36.410B, when measured at the boundary line of or on any occupied property for 25 percent of the minutes in the measurement period, as described in subsection (b) below. The maximum sound level depends on the use being made of the occupied property. The uses in Table 36.410B are as described in the County Zoning Ordinance.

(c) The minimum measurement period for any measurements conducted under this section shall be one hour. During the measurement period a measurement shall be conducted every minute from a fixed location on an occupied property. The measurements shall measure the maximum sound level during each minute of the measurement period. If the sound level caused by construction equipment or the producer of the impulsive noise, exceeds the maximum sound level for any portion of any minute it will deemed that the maximum sound level was exceeded during that minute.

In 1991, the U.S. Fish and Wildlife Service (USFWS) recommended that noise levels not exceed 60 dBA or ambient conditions, whichever is greater, to protect the Coastal California Gnatcatcher and other bird species. The County of San Diego has adopted this standard for all sensitive species. Therefore, the 60 dBA Leq, or ambient, will be used as the noise criteria to assess noise impacts on sensitive wildlife both on and off site.

5.0 NOISE LEVEL MEASUREMENTS

To determine the existing noise level environment and to assess potential noise impacts, measurements were taken at several locations on the project site. The noise measurements were recorded by Urban Crossroads, Inc. on April 23, 2007. Appendix "B" includes study area photos.

5.1 Measurement Procedure and Criteria

Noise measurements were taken using a Quest NoisePro DL precision sound level meter, programmed, in "slow" mode, to record noise levels in "A" weighted form. The sound level meter and microphone were mounted on a tripod, five feet above the ground and equipped with a windscreen during all measurements. The sound level meter was calibrated before and after the monitoring using a Quest calibrator, Model QC-10.

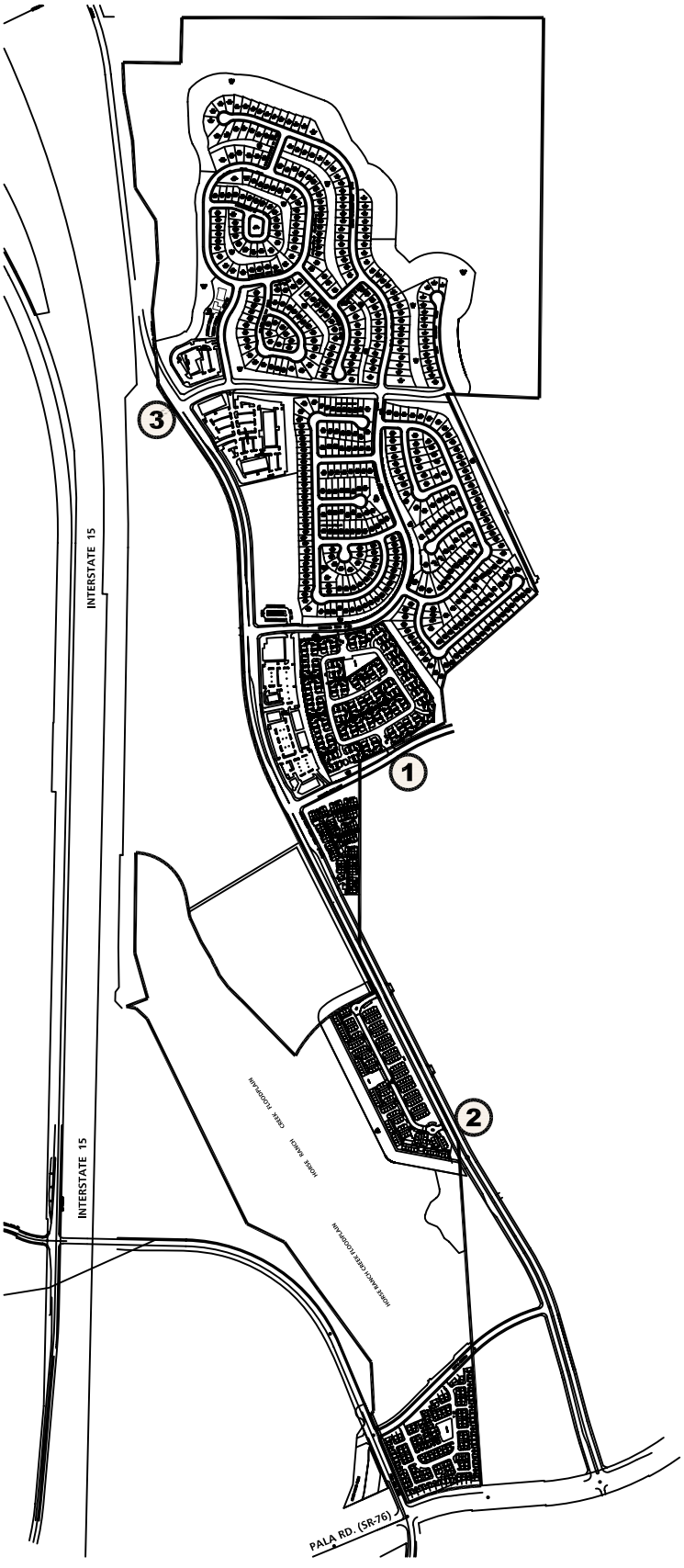
5.2 Noise Measurement Locations

Noise monitoring locations were selected based on their respective impact potential based upon the proposed site plan and near the primarily noise source (location of the proposed uses and Interstate 15). The site is currently composed of vacant land and one single-family residence.

Monitoring location 1 was located approximately 2,150 ft from the centerline of Interstate 15. Monitoring location 2 was located approximately 2,500 feet from the centerline of Interstate 15, along the proposed location of Horse Ranch Creek Road. Monitoring location 3 was located approximately 325 feet from the centerline of Interstate 15. The noise monitoring locations are provided in Exhibit 5-A.

EXHIBIT 5-A

NOISE MONITORING LOCATIONS



LEGEND:

(1) = NOISE MONITORING LOCATIONS

N

Campus Park, San Diego County, California - 04346: 5-A

URBAN CROSSROADS

5.3 Noise Measurement Results

The results of the noise level measurements are presented in Table 5-1. The noise measurements were monitored for a minimum time period of 30 minutes. The existing ambient Leq noise levels measured in the area of the project site during the afternoon hour were found to be 54.8 dBA Leq at monitoring location 1, 54.9 dBA Leq at monitoring location 2 and 71.1 dBA Leq at monitoring location 3. The project site has one single-family residence and non-commercial cattle ranching. The existing noise levels in the project area consist primarily of vehicle traffic from Interstate 15 and noise from the aforementioned cattle ranch operations on the project site.

TABLE 5-1

EXISTING (AMBIENT) NOISE LEVEL MEASUREMENTS[1]

OBSERVER LOCATION[2]	DESCRIPTION	TIME OF MEASUREMENT	PRIMARY NOISE SOURCE	MEASURED NOISE LEVELS (dBA Leq)
1	2,150 feet from the centerline of Interstate 15	4:19 PM	Vehicle noise from Interstate 15	54.8
2	2,500 feet from the centerline of Interstate 15	4:19 PM	Vehicle noise from Interstate 15	54.9
3	325 feet from the centerline of Interstate 15	4:19 PM	Vehicle noise from Interstate 15	71.1

[1] Noise measurement taken for a minumum period of 30 minutes by Urban Crossroads Inc on April 23, 2007.

[2] See Exhibit 5-A for the location of the monitoring site, and Appendix "B" for Study Area Photos.

6.0 METHODS AND PROCEDURES

The following section outlines the methods and procedures used to model and analyze the future noise environment.

6.1 FHWA Traffic Noise Prediction Model

The expected roadway noise impact from Campus Park was projected using Sound32, Caltrans' version of the FHWA's STAMINA 2.0/OPTIMA Traffic Noise Prediction Model. Sound32 is a peak hour Leq based traffic noise prediction model. The results of this analysis are based on the Caltrans *Highway Design Manual* California Vehicle Noise Emission Levels (Calveno Curves). These curves more accurately reflect motor vehicle noise characteristics in the project area, and use of the Calveno curves is required by Section 1103.1 of the *Highway Design Manual*. The key input parameters, which determine the projected impact of vehicular traffic noise, include the lane travel speed, the percentages of automobiles, medium trucks and heavy trucks in the roadway volume, the site conditions ("hard" or "soft") and the peak hour traffic volumes. To predict the future noise environment, soft site conditions were used in this analysis for first floor observers based on the topography in the site area. Hard site conditions were used for all second and third floor observers.

Since the Sound32 traffic noise model calculates the peak hour Leq dBA noise level, it is necessary to convert the results into CNEL values. The Leq to CNEL calculations are based on a typical vehicle distribution of over a twenty-four hour period with the appropriate noise penalties for the evening and nighttime periods. For the purpose of this analysis 80% of all vehicles were assigned during the daytime hours of 7 a.m. to 7 p.m., 7% during the evening hours of 7 p.m. to 10 p.m. and 13% during the nighttime hours of 10 p.m. to 7 a.m. Section N-2231 of the Caltrans Technical Noise Supplement outlines the procedures to calculate the CNEL values using the peak hour Leq.

6.2 Sound 32 Model Setup

To obtain the necessary coordinate information required by the Sound32 traffic noise prediction model, input data was taken using the grading plans. The preliminary grading plans provided by Landmark Consulting received May of 2008 were used to identify the relationship between the roadway centerline elevation, the pad elevation and the centerline distance to the noise barrier, the backyard observer and at the building façade to predict the future noise environment. For modeling purposes, traffic was consolidated into a single lane located along the centerline of the roadways. Lane consolidation is considered an acceptable practice since the amount of error introduced by this simplification is negligible. The lanes were then subdivided into a series of contiguous segments for analysis. The nodes points on each road segment were then manually assigned an elevation using either the roadway centerline elevation or the elevation provided on the vertical roadway profile.

For the purpose of this analysis, the roadway segments extend a minimum of 500 feet beyond any observer location. A calibration factor was used for all receptors located behind a row of proposed buildings for all modeled areas. Typically, three decibels of attenuation is allowed for the first row of buildings when they block 40 to 65% of the line of sight to the noise source, and three to five decibels of attenuation is allowed when the buildings obstruct more than 65% of the line of sight (*Source: CALTRANS Technical Noise Supplement Section N-5515)*. A conservative factor of 3 dBA was taken into account for the appropriate buildings on the proposed project site. No grade correction (according to Caltrans Policy TAN-02-01 dated January 17, 2002) were included as part of the Sound32 traffic noise prediction model analysis.

To assess the study noise impacts with the development of the proposed project the outdoor observers located in Noise Sensitive Areas (NSA) were placed five (5) feet above the pad elevation and approximately ten (10) feet from the top of slope.

All first floor observers were placed five (5) feet above the proposed finished floor elevation at the building façade with all second and third floor observers located fifteen (15) and twenty-five (25) feet above the proposed finished floor elevation, respectively.

6.3 Traffic Noise Prediction Model Inputs

The roadway parameters including the average daily traffic volumes and vehicle speeds used for this study are presented in Table 6-1. To assess the peak hour traffic noise conditions, 10% of the ADT was used for all the study area roadways. Table 6-2 presents the hourly traffic flow distribution (vehicle mix) used for this analysis. The vehicle mix provides the hourly distribution percentages of automobile, medium trucks and heavy trucks for input into the FHWA Model. The future traffic noise model utilizes previously accepted vehicle mixes provided in the noise analysis completed by Pacific Noise Control on October 12, 2005 of 96% Autos, 2% Medium Trucks and 2% Heavy Trucks for all internal project roads and 90% Autos, 3% Medium Trucks and 7% Heavy Trucks for Interstate 15. During the aforementioned noise monitoring, a video camera was placed next to monitoring location 3 to verify the vehicle mix along Interstate 15.

6.4 Sound32 Modeled Scenarios

A combination of future vehicle noise from Interstate 15, Pala Mesa Drive, Horse Ranch Creek Road, Pankey Place and SR-76 is the principal source of community noise that will impact the site. The Buildout scenario includes the future Year 2030 traffic volume forecasts from the Traffic Impact Analysis prepared by LOS Engineering (February 2009). Horse Ranch Creek Road will have roadway classifications of light collector and boulevard. Pala Mesa Drive and Pankey Place will have roadway classifications of light collector. SR-76 has a roadway classification of major. Estimated traffic speeds of 40 mph for boulevards, 45 mph for light collectors and 55 mph for majors were used based on the County of San Diego Department of Public Works Public Road Standards. A traffic speed of 65 mph was used for Interstate 15.

TABLE 6-1

ROADWAY PARAMETERS

ROADWAY	CONDITION	(ADT)[1]	PEAK HOUR TRAFFIC VOLUMES[2]			MODELED VEHICLE SPEED
			AUTOS	MEDIUM TRUCKS	HEAVY TRUCKS	
I-15 FREEWAY FROM MISSION AVE TO SR-76 (NORTH BOUND)	EXISTING	60,500	5,398 [3]	64 [3]	144 [3]	65
	BUILDOUT	125,500	11,295	377	879	65
I-15 FREEWAY FROM MISSION AVE TO SR-76 (SOUTH BOUND)	EXISTING	60,500	2,952 [3]	60 [3]	50 [3]	65
	BUILDOUT	125,500	11,295	377	879	65
HORSE RANCH CREEK ROAD (STEWART CANYON RD. TO BALTIMORE ORIOLE ROAD)	BUILDOUT	7,900	758	16	16	45
HORSE RANCH CREEK ROAD (BALTIMORE ORIOLE TO LONGSPUR ROAD)	BUILDOUT	11,400	1,094	23	23	40
HORSE RANCH CREEK ROAD (LONGSPUR ROAD TO HARVEST GLEN LANE)	BUILDOUT	16,000	1,536	32	32	40
HORSE RANCH CREEK ROAD (HARVEST GLEN LANE TO INTERSECTION)	BUILDOUT	20,800	1,997	42	42	40
HORSE RANCH CREEK ROAD (INTERSECTION TO PARK/SCHOOL)	BUILDOUT	22,600	2,170	45	45	40
HORSE RANCH CREEK ROAD (PARK/SCHOOL TO STREET R/PANKEY PLACE)	BUILDOUT	22,800	2,189	46	46	40
HORSE RANCH CREEK ROAD (STREET R/PANKEY PLACE TO SR-76)	BUILDOUT	13,600	1,306	27	27	40
PALA MESA DRIVE (OLD HIGHWAY 395 TO STREET R)	BUILDOUT	7,500	720	15	15	45
PANKEY PLACE (PALA MESA DRIVE TO HORSE RANCH CREEK ROAD)	BUILDOUT	10,300	989	21	21	45
SR-76 (PANKEY ROAD TO HORSE RANCH CREEK ROAD)	BUILDOUT	32,000	3,072	64	64	55

[1] Average Daily Traffic (ADT) for buildout condition was based on the Traffic Impact Analysis performed by LOS Engineering on February 2, 2009

[2] Worst case scenario assuming 10% of the ADT.

[3] Existing peak hour traffic volumes were based on the video-taped traffic count observed by Urban Crossroads Inc. on April 23, 2007

TABLE 6-2

HOURLY TRAFFIC FLOW DISTRIBUTION[1]

MOTOR-VEHICLE TYPE	DAYTIME (7 AM TO 7 PM)	EVENING (7 PM TO 10 PM)	NIGHT (10 PM TO 7 AM)	TOTAL % TRAFFIC FLOW
I-15 FREEWAY				
Automobiles	80.0%	7.0%	13.0%	90.00%
Medium Trucks	80.0%	7.0%	13.0%	3.00%
Heavy Trucks	80.0%	7.0%	13.0%	7.00%
ALL OTHER ROADS				
Automobiles	80.0%	7.0%	13.0%	96.00%
Medium Trucks	80.0%	7.0%	13.0%	2.00%
Heavy Trucks	80.0%	7.0%	13.0%	2.00%

[1] Vehicle mix for all roads used on previously accepted noise analysis provided by Pacific Noise Control on October 12, 2005

7.0 OFF-SITE NOISE ANALYSIS

The following section outlines the methods and procedures used to model and analyze the future off-site traffic noise environment.

7.1 FHWA Traffic Noise Prediction Model

The projected roadway noise impacts from vehicular traffic were projected using a computer program that replicates the Federal Highway Administration (FHWA) Traffic Noise Prediction Model- FHWA-RD-77-108 (the "FHWA Model"). The FHWA Model arrives at a predicted noise level through a series of adjustments to the Reference Energy Mean Emission Level (REMEL). Adjustments are then made to the REMEL to account for: the roadway classification (e.g., collector, secondary, major or arterial), the roadway active width (i.e., the distance between the center of the outermost travel lanes on each side of the roadway), the total average daily traffic (ADT), the travel speed, the percentages of automobiles, medium trucks, and heavy trucks in the traffic volume, the roadway grade, the angle of view (e.g., whether the roadway view is blocked), the site conditions ("hard" or "soft" relates to the absorption of the ground, pavement, or landscaping), and the percentage of total ADT which flows each hour throughout a 24-hour period.

7.2 Traffic Noise Prediction Model Inputs

Tables 7-1 and 7-2 present the FHWA Traffic Noise Prediction Model roadway parameters used in this analysis. Soft site conditions were used to develop noise contours and analyze noise impacts to the project site. Soft site conditions account for the sound propagation loss over natural surfaces such as normal earth and ground vegetation. Based on our experience, soft site conditions better reflect the predicted noise levels. In addition, Caltrans' research has shown that the use of soft site conditions is more appropriate for the application of the FHWA traffic noise prediction model used in this analysis.

TABLE 7-1

ROADWAY PARAMETERS

ROADWAY	SEGMENT	ROADWAY CLASSIFICATION[1]	VEHICLE SPEED (MPH)	SITE CONDITIONS
Old Highway 395	East Mission Road/ Reche Road	Collector	55	Soft
Old Highway 395	Reche Road/ Stewart Canyon Road	Collector	55	Soft
Old Highway 395	Stewart Canyon Road/ Tecalote Lane	Collector	55	Soft
Old Highway 395	Tecalote Lane/ Pala Mesa Drive	Collector	55	Soft
Old Highway 395	Pala Mesa Drive/ Pala Road (SR 76)	Collector	55	Soft
Old Highway 395	Pala Road (SR 76)/ Dulin Road	Collector	55	Soft
Old Highway 395	Dulin Road/ West Lilac Road	Rural Collector	40	Soft
Reche Road	Green Canyon/ Live Oak Park Road	Rural Collector	40	Soft
Reche Road	Live Oak Park Road/ Gird Road	Rural Collector	40	Soft
Reche Road	Gird Road/ Wilt Road	Rural Collector	40	Soft
Reche Road	Wilt Road/ Tecalote Road	Rural Collector	40	Soft
Reche Road	Tecalote Road/ Old Highway 395	Rural Collector	40	Soft
Pala Road (SR76)	Via Monserate/ Gird Road	Prime Arterial	65	Soft
Pala Road (SR76)	Gird Road/ Sage Road	Prime Arterial	65	Soft
Pala Road (SR76)	Sage Road/ Old Highway 395	Prime Arterial	65	Soft
Pala Road (SR76)	Old Highway 395/ I-15 SB Ramps	Prime Arterial	65	Soft
Pala Road (SR76)	I-15 NB Ramps/ Pankey Road	Major	55	Soft
Pala Road (SR76)	Pankey Road/ Horse Ranch Creek Road	Major	55	Soft
Pala Road (SR76)	Horse Ranch Creek Road/Rice Canyon Road	Major	55	Soft
Pala Road (SR76)	Rice Canyon Road/ Couser Canyon Road	Major	55	Soft
Pala Road (SR76)	Couser Canyon Road/ Pala Mission	Major	55	Soft
Dulin Road	Old Highway 395/ Pankey Road	Light Collector	40	Soft
Pankey Road	Street R/ Pala Road (SR 76)	Collector	55	Soft
Pankey Road	Pala Road (SR 76)/ Dulin Road	Light Collector	40	Soft
Stewart Canyon Road	Old Highway 395/ Horse Ranch Creek Road	Light Collector	40	Soft

1 According to the Traffic Impact Analysis prepared by LOS Engineering on February 2, 2009

TABLE 7-2

AVERAGE DAILY TRAFFIC[1]

ROADWAY	SEGMENT	AVERAGE DAILY TRAFFIC			
		EXISTING	EXISTING WITH PROJECT	EXISTING CUMULATIVE	EXISTING CUMULATIVE WITH PROJECT
Old Highway 395	East Mission Road/ Reche Road	5,155	7,735	17,320	19,900
Old Highway 395	Reche Road/ Stewart Canyon Road	5,646	9,023	19,923	23,300
Old Highway 395	Stewart Canyon Road/ Tecalote Lane	6,405	7,119	16,886	17,600
Old Highway 395	Tecalote Lane/ Pala Mesa Drive	6,603	7,420	18,583	19,400
Old Highway 395	Pala Mesa Drive/ Pala Road (SR 76)	8,302	9,492	19,710	20,900
Old Highway 395	Pala Road (SR 76)/ Dulin Road	6,668	7,067	14,401	14,800
Old Highway 395	Dulin Road/ West Lilac Road	4,163	4,658	16,705	17,200
Reche Road	Green Canyon/ Live Oak Park Road	10,162	10,760	13,202	13,800
Reche Road	Live Oak Park Road/ Gird Road	10,380	11,081	11,399	12,100
Reche Road	Gird Road/ Wilt Road	8,301	9,002	8,899	9,600
Reche Road	Wilt Road/ Tecalote Road	7,814	8,515	8,199	8,900
Reche Road	Tecalote Road/ Old Highway 395	7,420	8,218	9,802	10,600
Pala Road (SR76)	Via Monserate/ Gird Road	22,025	23,421	42,904	44,300
Pala Road (SR76)	Gird Road/ Sage Road	20,957	22,353	35,304	36,700
Pala Road (SR76)	Sage Road/ Old Highway 395	20,817	22,213	37,704	39,100
Pala Road (SR76)	Old Highway 395/ I-15 SB Ramps	24,579	25,184	38,895	39,500
Pala Road (SR76)	I-15 NB Ramps/ Pankey Road	9,569	15,538	29,412	32,500
Pala Road (SR76)	Pankey Road/ Horse Ranch Creek Road	9,439	15,634	24,105	30,300
Pala Road (SR76)	Horse Ranch Creek Road/Rice Canyon Road	9,439	10,642	32,497	33,700
Pala Road (SR76)	Rice Canyon Road/ Couser Canyon Road	9,041	10,141	31,200	32,300
Pala Road (SR76)	Couser Canyon Road/ Pala Mission	8,558	9,349	26,009	26,800
Dulin Road	Old Highway 395/ Pankey Road	5,770	6,478	6,992	7,700
Pankey Road	Street R/ Pala Road (SR 76)	10	483	8,140	8,622
Pankey Road	Pala Road (SR 76)/ Dulin Road	936	1,644	8,312	11,948
Stewart Canyon Road	Old Highway 395/ Horse Ranch Creek Road	590	3,549	5,035	7,994

1 According to the Traffic Impact Analysis prepared by LOS Engineering on February 2, 2009.

The average daily traffic volumes used for the on-site analysis in this study are presented in Table 7-2. The traffic volumes were obtained from the Traffic Impact Analysis prepared by LOS Engineering (February 2009).

Table 7-3 presents the hourly traffic flow distributions (vehicle mix) used for this analysis. The future traffic noise model utilizes a vehicle mix of 96% Autos, 2% Medium Trucks and 2% Heavy Trucks for all analyzed roads. The vehicle mix provides the hourly distribution percentages of automobile, medium trucks and heavy trucks for input into the FHWA Model.

7.3 Traffic Noise Contours

To assess the off-site noise level impacts associated with development of the proposed Campus Park Development noise contours were developed for the following traffic scenarios:

Existing: This scenario refers to the existing present-day noise conditions, without construction of the proposed project.

Existing with project: This scenario refers to the existing present-day noise conditions, with construction of the proposed project. This corresponds to the completion of the project's buildout.

Near Term With / Without Project: This scenario refers to the background noise conditions for near term conditions with and without the proposed project. This corresponds to the completion of the project's buildout plus a "buffer" to include additional future cumulative developments as identified in the Campus Park Traffic Impact Analysis.

Noise contours represent the distance to noise levels of a constant value and are measured from the center of the roadway. CNEL noise contours are determined below for the 55, 60, 65 and 70 dBA noise levels. The noise contours calculations are included in Appendix "C".

TABLE 7-3

SEGMENT ANALYSIS HOURLY TRAFFIC FLOW DISTRIBUTION

MOTOR-VEHICLE TYPE	DAYTIME (7 AM TO 7 PM)	EVENING (7 PM TO 10 PM)	NIGHT (10 PM TO 7 AM)	TOTAL % TRAFFIC FLOW
Automobiles	80.0%	7.0%	13.0%	96.00%
Medium Trucks	80.0%	7.0%	13.0%	2.00%
Heavy Trucks	80.0%	7.0%	13.0%	2.00%

The distance from the centerline of the roadway to the CNEL contours for roadways in the proposed project's vicinity are presented in Tables 7-4 through 7-7. The noise contours do not take into account the effect of any existing noise barriers or topography that may affect ambient noise levels.

7.4 Project Traffic Noise Level Contributions

Table 7-8 presents the comparison of the Existing Year with and without project noise levels shown in Tables 7-4 and 7-5. The roadway noise impacts will increase from 0.1 dBA CNEL to 7.8 dBA CNEL with the development of the proposed project. Table 7-9 presents a comparison of the Cumulative Year with and without project noise levels shown in Tables 7-6 and 7-7. The roadway noise impacts will increase from 0.1 dBA CNEL to 2.0 dBA CNEL with the development of the proposed project and the addition of the proposed cumulative projects.

7.5 Off-Site Transportation Related Project Noise Impact Analysis

Section 4 discussed the significance criteria. Roadway noise impacts would be considered significant if the project raises the noise levels above the County of San Diego 60 dBA CNEL standard, except if the existing noise level without project is 58 dBA or greater, a 3 dBA increase is allowed up to the maximum permitted by the Federal Highway Administration Standards.

The project creates a direct increase of more than 3.0 dBA CNEL along Stewart Canyon Road as can be seen in Table 7-8, but does not increase the existing noise levels above the 60 dBA CNEL County threshold to noise sensitive areas.

The County of San Diego requires that the “cumulative without project” and the “cumulative with project” scenarios are compared to determine if significant impacts occur. Project generated cumulative roadway noise impacts would be considered significant if the project raises the “cumulative without project” noise level

TABLE 7-4

EXISTING CONDITIONS NOISE CONTOURS

ROAD	SEGMENT	CNEL AT 100 FEET (dBA)	DISTANCE TO CONTOUR (FEET)			
			70 dBA CNEL	65 dBA CNEL	60 dBA CNEL	55 dBA CNEL
Old Highway 395	East Mission Road/ Reche Road	62.2	33	71	154	331
Old Highway 395	Reche Road/ Stewart Canyon Road	62.6	35	76	163	351
Old Highway 395	Stewart Canyon Road/ Tecalote Lane	63.1	38	82	177	382
Old Highway 395	Tecalote Lane/ Pala Mesa Drive	63.2	39	84	181	390
Old Highway 395	Pala Mesa Drive/ Pala Road (SR 76)	64.2	45	98	211	454
Old Highway 395	Pala Road (SR 76)/ Dulin Road	63.3	39	85	182	393
Old Highway 395	Dulin Road/ West Lilac Road	58.1	18	38	82	176
Reche Road	Green Canyon/ Live Oak Park Road	61.9	32	69	148	319
Reche Road	Live Oak Park Road/ Gird Road	62.0	32	70	150	323
Reche Road	Gird Road/ Wilt Road	61.0	28	60	129	278
Reche Road	Wilt Road/ Tecalote Road	60.8	27	58	124	267
Reche Road	Tecalote Road/ Old Highway 395	60.6	26	56	120	258
Pala Road (SR76)	Via Monserate/ Gird Road	70.5	118	255	550	1,184
Pala Road (SR76)	Gird Road/ Sage Road	70.3	115	247	532	1,146
Pala Road (SR76)	Sage Road/ Old Highway 395	70.2	114	246	529	1,141
Pala Road (SR76)	Old Highway 395/ I-15 SB Ramps	71.0	127	275	592	1,274
Pala Road (SR76)	I-15 NB Ramps/ Pankey Road	64.9	50	108	232	500
Pala Road (SR76)	Pankey Road/ Horse Ranch Creek Road	64.8	50	107	230	496
Pala Road (SR76)	Horse Ranch Creek Road/Rice Canyon Road	64.8	50	107	230	496
Pala Road (SR76)	Rice Canyon Road/ Couser Canyon Road	64.6	48	104	224	482
Pala Road (SR76)	Couser Canyon Road/ Pala Mission	64.4	46	100	216	465
Dulin Road	Old Highway 395/ Pankey Road	59.5	22	47	101	218
Pankey Road	Street R/ Pala Road (SR 76)	DOES NOT EXIST				
Pankey Road	Pala Road (SR 76)/ Dulin Road	51.6	6	14	30	65
Stewart Canyon Road	Old Highway 395/ Horse Ranch Creek Road	49.6	5	10	22	48

TABLE 7-5

EXISTING WITH PROJECT CONDITIONS NOISE CONTOURS

ROAD	SEGMENT	CNEL AT 100 FEET (dBA)	DISTANCE TO CONTOUR (FEET)			
			70 dBA CNEL	65 dBA CNEL	60 dBA CNEL	55 dBA CNEL
Old Highway 395	East Mission Road/ Reche Road	63.9	43	93	201	434
Old Highway 395	Reche Road/ Stewart Canyon Road	64.6	48	104	223	480
Old Highway 395	Stewart Canyon Road/ Tecalote Lane	63.6	41	88	190	410
Old Highway 395	Tecalote Lane/ Pala Mesa Drive	63.8	42	91	196	422
Old Highway 395	Pala Mesa Drive/ Pala Road (SR 76)	64.8	50	107	231	497
Old Highway 395	Pala Road (SR 76)/ Dulin Road	63.5	41	88	189	408
Old Highway 395	Dulin Road/ West Lilac Road	58.5	19	41	88	189
Reche Road	Green Canyon/ Live Oak Park Road	62.2	33	71	154	331
Reche Road	Live Oak Park Road/ Gird Road	62.3	34	73	157	337
Reche Road	Gird Road/ Wilt Road	61.4	29	63	136	294
Reche Road	Wilt Road/ Tecalote Road	61.2	28	61	131	283
Reche Road	Tecalote Road/ Old Highway 395	61.0	28	60	128	277
Pala Road (SR76)	Via Monserate/ Gird Road	70.7	123	266	573	1,234
Pala Road (SR76)	Gird Road/ Sage Road	70.5	120	258	555	1,196
Pala Road (SR76)	Sage Road/ Old Highway 395	70.5	119	257	553	1,191
Pala Road (SR76)	Old Highway 395/ I-15 SB Ramps	71.1	130	279	601	1,295
Pala Road (SR76)	I-15 NB Ramps/ Pankey Road	67.0	69	149	321	691
Pala Road (SR76)	Pankey Road/ Horse Ranch Creek Road	67.0	69	150	322	694
Pala Road (SR76)	Horse Ranch Creek Road/Rice Canyon Road	65.3	54	116	249	537
Pala Road (SR76)	Rice Canyon Road/ Couser Canyon Road	65.1	52	112	241	520
Pala Road (SR76)	Couser Canyon Road/ Pala Mission	64.8	49	106	229	493
Dulin Road	Old Highway 395/ Pankey Road	60.0	24	51	110	236
Pankey Road	Street R/ Pala Road (SR 76)	51.9	7	15	32	68
Pankey Road	Pala Road (SR 76)/ Dulin Road	54.0	9	20	44	95
Stewart Canyon Road	Old Highway 395/ Horse Ranch Creek Road	57.4	16	34	73	158

TABLE 7-6

EXISTING + CUMULATIVE CONDITIONS NOISE CONTOURS

ROAD	SEGMENT	CNEL AT 100 FEET (dBA)	DISTANCE TO CONTOUR (FEET)			
			70 dBA CNEL	65 dBA CNEL	60 dBA CNEL	55 dBA CNEL
Old Highway 395	East Mission Road/ Reche Road	67.4	74	160	344	742
Old Highway 395	Reche Road/ Stewart Canyon Road	68.0	81	176	378	815
Old Highway 395	Stewart Canyon Road/ Tecalote Lane	67.3	73	157	339	730
Old Highway 395	Tecalote Lane/ Pala Mesa Drive	67.7	78	168	361	778
Old Highway 395	Pala Mesa Drive/ Pala Road (SR 76)	68.0	81	174	375	809
Old Highway 395	Pala Road (SR 76)/ Dulin Road	66.6	66	141	305	656
Old Highway 395	Dulin Road/ West Lilac Road	64.1	44	96	206	444
Reche Road	Green Canyon/ Live Oak Park Road	63.1	38	82	176	379
Reche Road	Live Oak Park Road/ Gird Road	62.4	34	74	160	344
Reche Road	Gird Road/ Wilt Road	61.4	29	63	135	292
Reche Road	Wilt Road/ Tecalote Road	61.0	28	59	128	276
Reche Road	Tecalote Road/ Old Highway 395	61.8	31	67	144	311
Pala Road (SR76)	Via Monserate/ Gird Road	73.4	185	398	858	1,847
Pala Road (SR76)	Gird Road/ Sage Road	72.5	162	350	753	1,622
Pala Road (SR76)	Sage Road/ Old Highway 395	72.8	170	365	787	1,695
Pala Road (SR76)	Old Highway 395/ I-15 SB Ramps	73.0	173	373	803	1,731
Pala Road (SR76)	I-15 NB Ramps/ Pankey Road	69.7	106	228	491	1,058
Pala Road (SR76)	Pankey Road/ Horse Ranch Creek Road	68.9	93	200	430	926
Pala Road (SR76)	Horse Ranch Creek Road/Rice Canyon Road	70.2	113	244	525	1,131
Pala Road (SR76)	Rice Canyon Road/ Couser Canyon Road	70.0	110	237	511	1,100
Pala Road (SR76)	Couser Canyon Road/ Pala Mission	69.2	97	210	452	975
Dulin Road	Old Highway 395/ Pankey Road	60.3	25	53	115	248
Pankey Road	Street R/ Pala Road (SR 76)	64.2	45	97	208	449
Pankey Road	Pala Road (SR 76)/ Dulin Road	61.1	28	60	129	279
Stewart Canyon Road	Old Highway 395/ Horse Ranch Creek Road	58.9	20	43	93	199

TABLE 7-7

EXISTING + CUMULATIVE WITH PROJECT CONDITIONS NOISE CONTOURS

ROAD	SEGMENT	CNEL AT 100 FEET (dBA)	DISTANCE TO CONTOUR (FEET)			
			70 dBA CNEL	65 dBA CNEL	60 dBA CNEL	55 dBA CNEL
Old Highway 395	East Mission Road/ Reche Road	68.0	81	175	378	814
Old Highway 395	Reche Road/ Stewart Canyon Road	68.7	90	195	420	904
Old Highway 395	Stewart Canyon Road/ Tecalote Lane	67.5	75	162	348	750
Old Highway 395	Tecalote Lane/ Pala Mesa Drive	67.9	80	172	371	800
Old Highway 395	Pala Mesa Drive/ Pala Road (SR 76)	68.3	84	181	390	841
Old Highway 395	Pala Road (SR 76)/ Dulin Road	66.8	67	144	310	668
Old Highway 395	Dulin Road/ West Lilac Road	64.2	45	97	210	452
Reche Road	Green Canyon/ Live Oak Park Road	63.3	39	84	181	391
Reche Road	Live Oak Park Road/ Gird Road	62.7	36	77	166	358
Reche Road	Gird Road/ Wilt Road	61.7	31	66	142	307
Reche Road	Wilt Road/ Tecalote Road	61.4	29	63	135	292
Reche Road	Tecalote Road/ Old Highway 395	62.1	33	71	152	328
Pala Road (SR76)	Via Monserate/ Gird Road	73.5	189	407	876	1,887
Pala Road (SR76)	Gird Road/ Sage Road	72.7	166	359	773	1,665
Pala Road (SR76)	Sage Road/ Old Highway 395	73.0	174	374	806	1,737
Pala Road (SR76)	Old Highway 395/ I-15 SB Ramps	73.0	175	377	812	1,748
Pala Road (SR76)	I-15 NB Ramps/ Pankey Road	70.2	113	244	525	1,131
Pala Road (SR76)	Pankey Road/ Horse Ranch Creek Road	69.9	108	232	501	1,079
Pala Road (SR76)	Horse Ranch Creek Road/Rice Canyon Road	70.3	116	250	538	1,158
Pala Road (SR76)	Rice Canyon Road/ Couser Canyon Road	70.2	113	243	523	1,126
Pala Road (SR76)	Couser Canyon Road/ Pala Mission	69.3	99	214	462	994
Dulin Road	Old Highway 395/ Pankey Road	60.7	26	57	123	265
Pankey Road	Street R/ Pala Road (SR 76)	64.4	47	100	216	466
Pankey Road	Pala Road (SR 76)/ Dulin Road	62.6	35	76	165	355
Stewart Canyon Road	Old Highway 395/ Horse Ranch Creek Road	60.9	27	58	126	271

TABLE 7-8

EXISTING YEAR PROJECT CONTRIBUTIONS

ROAD	SEGMENT	DISTANCE TO 60 dBA CNEL CONTOUR			CNEL AT 100 FEET (dBA)		
		NO PROJECT	WITH PROJECT	PROJECT INCREASE	NO PROJECT	WITH PROJECT	PROJECT CONTRIBUTION
Old Highway 395	East Mission Road/ Reche Road	154	201	47	62.2	63.9	1.8
Old Highway 395	Reche Road/ Stewart Canyon Road	163	223	60	62.6	64.6	2.0
Old Highway 395	Stewart Canyon Road/ Tecalote Lane	177	190	13	63.1	63.6	0.5
Old Highway 395	Tecalote Lane/ Pala Mesa Drive	181	196	15	63.2	63.8	0.5
Old Highway 395	Pala Mesa Drive/ Pala Road (SR 76)	211	231	20	64.2	64.8	0.6
Old Highway 395	Pala Road (SR 76)/ Dulin Road	182	189	7	63.3	63.5	0.3
Old Highway 395	Dulin Road/ West Lilac Road	82	88	6	58.1	58.5	0.5
Reche Road	Green Canyon/ Live Oak Park Road	148	154	6	61.9	62.2	0.2
Reche Road	Live Oak Park Road/ Gird Road	150	157	7	62.0	62.3	0.3
Reche Road	Gird Road/ Wilt Road	129	136	7	61.0	61.4	0.4
Reche Road	Wilt Road/ Tecalote Road	124	131	7	60.8	61.2	0.4
Reche Road	Tecalote Road/ Old Highway 395	120	128	8	60.6	61.0	0.4
Pala Road (SR76)	Via Monserate/ Gird Road	550	573	23	70.5	70.7	0.3
Pala Road (SR76)	Gird Road/ Sage Road	532	555	23	70.3	70.5	0.3
Pala Road (SR76)	Sage Road/ Old Highway 395	529	553	24	70.2	70.5	0.3
Pala Road (SR76)	Old Highway 395/ I-15 SB Ramps	592	601	9	71.0	71.1	0.1
Pala Road (SR76)	I-15 NB Ramps/ Pankey Road	232	321	89	64.9	67.0	2.1
Pala Road (SR76)	Pankey Road/ Horse Ranch Creek Road	230	322	92	64.8	67.0	2.2
Pala Road (SR76)	Horse Ranch Creek Road/Rice Canyon Road	230	249	19	64.8	65.3	0.5
Pala Road (SR76)	Rice Canyon Road/ Couser Canyon Road	224	241	17	64.6	65.1	0.5
Pala Road (SR76)	Couser Canyon Road/ Pala Mission	216	229	13	64.4	64.8	0.4
Dulin Road	Old Highway 395/ Pankey Road	101	110	9	59.5	60.0	0.5
Pankey Road	Street R/ Pala Road (SR 76)	DNE	32	-	DNE	51.9	-
Pankey Road	Pala Road (SR 76)/ Dulin Road	30	44	14	51.6	54.0	2.4
Stewart Canyon Road	Old Highway 395/ Horse Ranch Creek Road	22	73	51	49.6	57.4	**7.8**

by 1 dBA or greater. There are cumulative impacts of more than 1.0 dBA CNEL, as can be seen in Table 7-9, on Pankey Road between SR-76 and Dulin Road, on Stewart Canyon Road between Old Highway 395 and Horse Ranch Creek Road and along Pala Road (SR76) between Pankey Road and Horse Ranch Creek Road. However, there are no existing rear yards or other noise sensitive land uses located adjacent to these segments. The proposed residential units, as part of this project, along Pala Road (SR76) are being mitigated to County's 60 dBA CNEL standard in the future conditions. The segment of Stewart Canyon Road passes under Interstate 15 and lies mostly in Caltrans right of way. Therefore, the project's impacts are considered to be less than significant. The proposed project's contributions to off-site roadway noise increases will not cause any significant impacts to any existing sensitive noise receptors.

TABLE 7-9

CUMULATIVE YEAR PROJECT CONTRIBUTIONS

ROAD	SEGMENT	DISTANCE TO 60 dBA CNEL CONTOUR			CNEL AT 100 FEET (dBA)		
		CUMULATIVE NO PROJECT	CUMULATIVE WITH PROJECT	PROJECT INCREASE	CUMULATIVE NO PROJECT	CUMULATIVE WITH PROJECT	PROJECT CONTRIBUTION
Old Highway 395	East Mission Road/ Reche Road	344	378	34	67.4	68.0	0.6
Old Highway 395	Reche Road/ Stewart Canyon Road	378	420	42	68.0	68.7	0.7
Old Highway 395	Stewart Canyon Road/ Tecalote Lane	339	348	9	67.3	67.5	0.2
Old Highway 395	Tecalote Lane/ Pala Mesa Drive	361	371	10	67.7	67.9	0.2
Old Highway 395	Pala Mesa Drive/ Pala Road (SR 76)	375	390	15	68.0	68.3	0.3
Old Highway 395	Pala Road (SR 76)/ Dulin Road	305	310	5	66.6	66.8	0.1
Old Highway 395	Dulin Road/ West Lilac Road	206	210	4	64.1	64.2	0.1
Reche Road	Green Canyon/ Live Oak Park Road	176	181	5	63.1	63.3	0.2
Reche Road	Live Oak Park Road/ Gird Road	160	166	6	62.4	62.7	0.3
Reche Road	Gird Road/ Wilt Road	135	142	7	61.4	61.7	0.3
Reche Road	Wilt Road/ Tecalote Road	128	135	7	61.0	61.4	0.4
Reche Road	Tecalote Road/ Old Highway 395	144	152	8	61.8	62.1	0.3
Pala Road (SR76)	Via Monserate/ Gird Road	858	876	18	73.4	73.5	0.1
Pala Road (SR76)	Gird Road/ Sage Road	753	773	20	72.5	72.7	0.2
Pala Road (SR76)	Sage Road/ Old Highway 395	787	806	19	72.8	73.0	0.2
Pala Road (SR76)	Old Highway 395/ I-15 SB Ramps	803	812	9	73.0	73.0	0.1
Pala Road (SR76)	I-15 NB Ramps/ Pankey Road	491	525	34	69.7	70.2	0.4
Pala Road (SR76)	Pankey Road/ Horse Ranch Creek Road	430	501	71	68.9	69.9	**1.0**
Pala Road (SR76)	Horse Ranch Creek Road/Rice Canyon Road	525	538	13	70.2	70.3	0.2
Pala Road (SR76)	Rice Canyon Road/ Couser Canyon Road	511	523	12	70.0	70.2	0.2
Pala Road (SR76)	Couser Canyon Road/ Pala Mission	452	462	10	69.2	69.3	0.1
Dulin Road	Old Highway 395/ Pankey Road	115	123	8	60.3	60.7	0.4
Pankey Road	Street R/ Pala Road (SR 76)	208	216	8	64.2	64.4	0.2
Pankey Road	Pala Road (SR 76)/ Dulin Road	129	165	36	61.1	62.6	**1.6**
Stewart Canyon Road	Old Highway 395/ Horse Ranch Creek Road	93	126	33	58.9	60.9	**2.0**

8.0 ON-SITE NOISE ANALYSIS

Using the FHWA traffic noise prediction model and the input parameters described in Section 6 of this report, calculations of the expected future noise impacts were completed. An analysis has been performed to determine the acoustical shielding which may be used to reduce the expected roadway noise impact for the affected outdoor usable areas. Key input data for these barrier performance equations include the relative source-barrier-receiver horizontal separations, the relative source-barrier-receiver vertical separations, the typical noise source spectra and the barrier transmission loss. The exterior noise levels were analyzed for existing and buildout conditions.

8.1 Existing Conditions

Section N-5440 of the Caltrans Technical Noise Supplement provides detailed procedures for calibrating the Sound32 traffic noise prediction model to actual noise level measurements. The comparison is made to ensure the predicted traffic noise levels accurately reflect the actual measured noise levels. Section N-5460 suggests that model calibration should not be performed when calculated and measured noise levels agree within 1 dBA. Differences of 3.0 to 4.0 dBA may routinely be calibrated.

The modeled existing noise levels are shown on Table 8-1. Monitoring Locations were modeled to compare with the noise monitoring locations presented in Table 5-1. The model is under-predicting the noise levels by up to 2.8 dBA when using soft-site conditions. This is due to the fact that the project site consists of non-commercial cattle. Activities associated with the cattle increase the ambient noise level. Because it is impossible to model the effect of the cattle, soft-site conditions were incorporated in all modeled scenarios. The calibration factor based on the noise measurement data described in Chapter 5 was not included as part of the buildout analysis. The model input parameters for calibration can be seen in Appendix “D”.

TABLE 8-1

EXISTING NOISE LEVELS (MODELED)

RECEPTOR	RECEPTOR DESCRIPTION	dBA Leq	dBA CNEL
1	Monitoring Location 1	53.9	54.0
2	Monitoring Location 2	52.1	52.2
3	Monitoring Location 3	69.4	69.5

[1] Noise monitoring locations included in the model for existing conditions to compare with the measured noise results presented in Table 5-1.

8.2 Traffic Noise Contours

Noise contours are lines that drawn around a noise source indicating a constant or equal level of noise exposure. Noise contour boundaries are generally used as a planning tool to assess the need for additional analysis.

The noise contour boundaries were developed for unmitigated future Buildout conditions. No barriers or proposed topography was included as part of the noise contour analysis. The Sound32 traffic noise prediction model was used to calculate a reference noise level for observers perpendicular to the analyzed roadways. Exhibit 8-A provides the location of the first and second floor 75 CNEL noise contour boundary from Interstate 15 and the 60 dBA CNEL contour boundary from the combined roadways. The 75 dBA CNEL contour boundary from Horse Ranch Creek Road is located within the public right-of-way and is not shown on Exhibit 8-A.

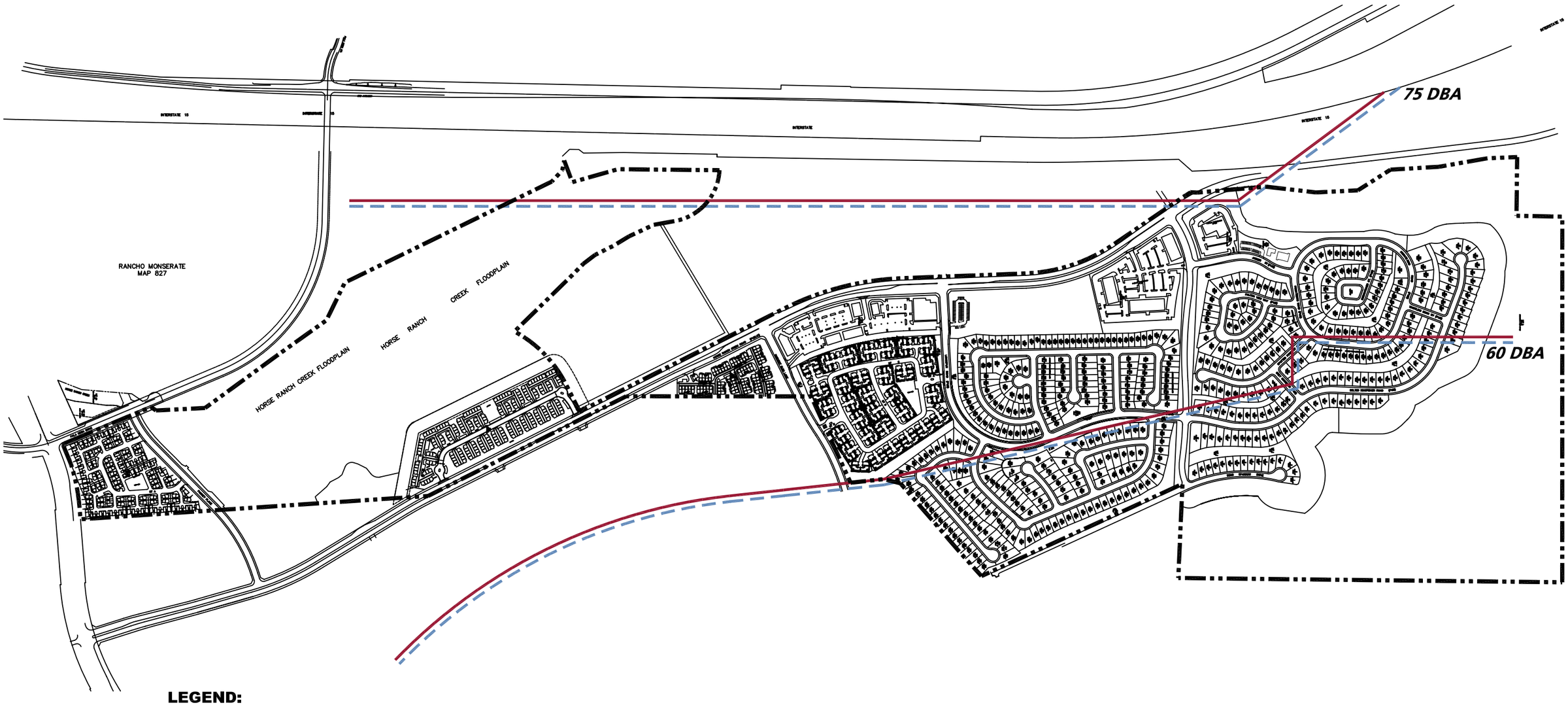
The contours suggest that sensitive use areas of lots on the project site will exceed the County of San Diego 60 dBA CNEL exterior noise standard. Based on this finding, additional detailed exterior noise analysis was performed for each parcel which incorporated the proposed topography and determined necessary mitigation.

8.3 Buildout Scenario Exterior Noise Analysis

The buildout analysis was modeled assuming future Year 2030 traffic volumes along Interstate 15, Pala Mesa Drive, Horse Ranch Creek Road, Pankey Place and SR-76. Horse Ranch Creek Road will have roadway classifications of light collector and boulevard. Pala Mesa Drive and Pankey Place will have roadway classifications of light collector. SR-76 has a roadway classification of major. Estimated traffic speeds of 40 mph for boulevards, 45 mph for light collectors and 55 mph for majors were used based on the County of San Diego Department of Public Works Public Road Standards. A traffic speed of 65 mph was used for Interstate 15. The analysis was divided into seven separate areas of the proposed project site. These areas include the northern single family lots, the southern single family lots, multi-family areas 1, 2, 3 and 4 and other sensitive use areas (i.e. parks and rec areas). Each area will be discussed in the following sections:

EXHIBIT 8-A

FUTURE OR 2030 BUILDOUT UNMITIGATED CONTOURS



LEGEND:

= FIRST FLOOR CONTOUR

= SECOND FLOOR CONTOUR

N

8.4 Buildout Scenario Exterior Noise Analysis- Northern Single Family

Noise-affected outdoor areas on the northern portion of the single family homes require 9-foot-high noise barriers along the property rear yard boundaries of lots 285 through 301. The barriers must be constructed of a non-gapping material and placed at the top of slope. Exhibit 1-B shows the mitigation and barrier heights required to bring future noise levels to the County of San Diego 60 dBA CNEL exterior noise level standard for the proposed outdoor use areas of the northern portion of single family homes

Modeled observer locations are presented in Exhibit 8-B. The results of the mitigated outdoor use areas are shown in Table 8-2. The building façade levels for all floors are provided in Table 8-3.

8.5 Buildout Scenario Exterior Noise Analysis- Southern Single Family

Noise-affected outdoor areas on the southern portion of the single family homes require 10-foot-high noise barriers along the property rear yard boundaries of lots 21 through 52. The barriers must be constructed of a non-gapping material and placed at the top of slope. Exhibit 1-C shows the mitigation and barrier heights required to bring future noise levels to the County of San Diego 60 dBA CNEL exterior noise level standard for the proposed outdoor use areas of the southern portion of single family homes

Modeled observer locations are presented in Exhibit 8-C. The results of the mitigated outdoor use areas are shown in Table 8-4. The building façade levels for all floors are provided in Table 8-5.

EXHIBIT 8-B

MODELED OBSERVER LOCATIONS
NORTHERN SINGLE FAMILY

LEGEND:

(1) = MODELED OBSERVER LOCATIONS

N

URBAN CROSSROADS

Campus Park, San Diego County, California - 04346: 8-B

TABLE 8-2

NORTHERN SINGLE FAMILY BUILDOUT CONDITIONS EXTERIOR NOISE LEVELS (dBA CNEL)

RECEPTOR	UNMITIGATED GROUND FLOOR EXTERIOR NOISE LEVEL	MITIGATED GROUND FLOOR EXTERIOR NOISE LEVEL	BARRIER HEIGHT (IN FEET)[1]
1	54.2	54.2	0.0
2	54.7	54.7	0.0
3	57.8	57.8	0.0
4	59.4	59.4	0.0
5	55.7	55.7	0.0
6	56.9	56.9	0.0
7	57.7	57.7	0.0
8	57.9	57.9	0.0
9	61.9	59.0	9.0
10	63.1	60.3	9.0
11	63.9	60.4	9.0
12	64.6	59.4	9.0
13	63.5	60.4	9.0
14	60.8	60.3	0.0
15	60.2	60.1	0.0
16	60.2	60.1	0.0
17	59.2	59.2	0.0
18	58.2	58.2	0.0
19	56.7	56.7	0.0
20	56.7	56.7	0.0
21	55.3	55.3	0.0
22	56.4	56.4	0.0
23	56.8	56.8	0.0
24	57.0	57.0	0.0
25	57.7	57.7	0.0
26	58.0	58.0	0.0

TABLE 8-2

NORTHERN SINGLE FAMILY BUILDOUT CONDITIONS EXTERIOR NOISE LEVELS (dBA CNEL)

RECEPTOR	UNMITIGATED GROUND FLOOR EXTERIOR NOISE LEVEL	MITIGATED GROUND FLOOR EXTERIOR NOISE LEVEL	BARRIER HEIGHT (IN FEET)[1]
27	58.8	58.4	0.0
28	58.4	58.4	0.0
29	58.8	58.0	0.0
30	59.0	58.9	0.0
31	60.0	59.8	0.0
32	57.7	57.7	0.0
33	58.1	57.8	0.0
34	57.5	57.4	0.0
35	57.4	57.1	0.0
36	56.3	56.2	0.0
37	57.4	57.2	0.0
38	57.0	56.9	0.0

[1] Barrier height in feet above pad or roadway elevation, whichever is greater to achieve maximum insertion loss.

TABLE 8-3

NORTHERN SINGLE FAMILY BUILDOUT CONDITIONS BUILDING FAÇADE LEVELS (dBA CNEL)

RECEPTOR	MITIGATED FIRST FLOOR FACADE NOISE LEVEL	SECOND FLOOR WITH BARRIERS FACADE NOISE LEVEL
1	54.2	59.1
2	54.7	59.5
3	57.8	62.1
4	59.4	63.8
5	55.7	59.9
6	56.9	60.6
7	57.7	60.7
8	57.9	60.9
9	59.0	66.0
10	60.3	67.5
11	60.4	68.6
12	59.4	69.7
13	60.4	68.2
14	60.3	64.8
15	60.1	64.4
16	60.1	64.1
17	59.2	63.7
18	58.2	63.2
19	56.7	61.2
20	56.7	61.8
21	55.3	60.3
22	56.4	61.6
23	56.8	61.3
24	57.0	62.4
25	57.7	61.8
26	58.0	62.9

TABLE 8-3

NORTHERN SINGLE FAMILY BUILDOUT CONDITIONS BUILDING FAÇADE LEVELS (dBA CNEL)

RECEPTOR	MITIGATED FIRST FLOOR FACADE NOISE LEVEL	SECOND FLOOR WITH BARRIERS FACADE NOISE LEVEL
27	58.4	61.7
28	58.4	63.1
29	58.0	62.3
30	58.9	63.7
31	59.8	65.0
32	57.7	63.8
33	57.8	62.9
34	57.4	63.0
35	57.1	61.8
36	56.2	61.3
37	57.2	61.5
38	56.9	56.9

EXHIBIT 8-C

MODELED OBSERVER LOCATIONS
SOUTHERN SINGLE FAMILY

LEGEND:

(1) = MODELED OBSERVER LOCATIONS

N

Campus Park, San Diego County, California - 04346: 8-C

URBAN CROSSROADS

TABLE 8-4

SOUTHERN SINGLE FAMILY BUILDOUT CONDITIONS EXTERIOR NOISE LEVELS (dBA CNEL)

RECEPTOR	UNMITIGATED GROUND FLOOR EXTERIOR NOISE LEVEL	MITIGATED GROUND FLOOR EXTERIOR NOISE LEVEL	BARRIER HEIGHT (IN FEET)[1]
1	62.9	58.2	10.0
2	63.2	58.5	10.0
3	63.5	59.9	10.0
4	63.5	59.0	10.0
5	63.5	60.0	10.0
6	58.8	58.8	0.0
7	59.4	59.4	0.0
8	59.9	59.8	0.0
9	58.0	57.6	0.0
10	57.4	56.9	0.0
11	58.0	57.6	0.0
12	59.7	59.3	0.0
13	58.9	58.4	0.0
14	60.7	59.4	0.0
15	58.6	58.5	0.0
16	58.9	58.8	0.0
17	60.0	59.9	0.0
18	57.9	57.6	0.0
19	59.5	59.5	0.0
20	58.5	58.5	0.0
21	59.2	59.2	0.0
22	58.4	58.3	0.0
23	59.2	59.1	0.0
24	58.0	57.9	0.0
25	57.5	57.4	0.0
26	58.3	58.3	0.0

TABLE 8-4

SOUTHERN SINGLE FAMILY BUILDOUT CONDITIONS EXTERIOR NOISE LEVELS (dBA CNEL)

RECEPTOR	UNMITIGATED GROUND FLOOR EXTERIOR NOISE LEVEL	MITIGATED GROUND FLOOR EXTERIOR NOISE LEVEL	BARRIER HEIGHT (IN FEET)[1]
27	57.7	57.6	0.0
28	57.7	57.7	0.0
29	56.4	56.4	0.0
30	56.5	56.5	0.0
31	56.9	56.7	0.0
32	57.2	57.2	0.0
33	57.5	57.4	0.0
34	59.1	59.1	0.0

[1] Barrier height in feet above pad or roadway elevation, whichever is greater to achieve maximum insertion loss.

TABLE 8-5

SOUTHERN SINGLE FAMILY BUILDOUT CONDITIONS BUILDING FAÇADE LEVELS (dBA CNEL)

RECEPTOR	MITIGATED FIRST FLOOR FACADE NOISE LEVEL	SECOND FLOOR WITH BARRIERS FACADE NOISE LEVEL
1	58.2	68.0
2	58.5	68.3
3	59.9	68.5
4	59.0	68.2
5	60.0	68.4
6	58.8	64.0
7	59.4	64.5
8	59.8	64.8
9	57.6	62.4
10	56.9	61.4
11	57.6	62.4
12	59.3	63.9
13	58.4	63.2
14	59.4	63.5
15	58.5	63.0
16	58.8	63.3
17	59.9	64.6
18	57.6	62.3
19	59.5	64.6
20	58.5	63.5
21	59.2	64.0
22	58.3	63.2
23	59.1	64.1
24	57.9	62.9
25	57.4	62.4
26	58.3	63.4

TABLE 8-5

SOUTHERN SINGLE FAMILY BUILDOUT CONDITIONS BUILDING FAÇADE LEVELS (dBA CNEL)

RECEPTOR	MITIGATED FIRST FLOOR FACADE NOISE LEVEL	SECOND FLOOR WITH BARRIERS FACADE NOISE LEVEL
27	57.6	62.9
28	57.7	63.0
29	56.4	61.7
30	56.5	61.6
31	56.7	61.4
32	57.2	62.4
33	57.4	62.7
34	59.1	64.1

8.6 Buildout Scenario Exterior Noise Analysis- Multi-Family 1

Multi-Family 1 (MF-1) does not include private use areas on the first floor, however balconies are located on the second floor of all units. Noise-affected outdoor balconies of the MF-1 planning area require 6-foot-high noise barriers along the perimeters on units that have unmitigated noise levels above 60 dBA CNEL. The barriers must be constructed of a non-gapping material and placed at the top of slope. Exhibit 1-D shows the units requiring mitigation and the barrier heights necessary to bring future noise levels of MF-1 to the County of San Diego 60 dBA CNEL exterior noise level standard for the proposed outdoor use areas of the MF-1 planning area.

Modeled observer locations are presented in Exhibit 8-D. The results of the mitigated outdoor use areas are shown in Table 8-6. The building façade levels for all floors are provided in Table 8-7.

8.7 Buildout Scenario Exterior Noise Analysis- Multi-Family 2

Noise-affected outdoor areas of the Multi-Family 2 (MF-2) planning area require 10-foot-high noise barriers along the portions of the project site facing the surrounding roadways. The barriers must be constructed of a non-gapping material and placed at the top of slope. Exhibit 1-E shows the mitigation and barrier heights required to bring future noise levels to the County of San Diego 60 dBA CNEL exterior noise level standard for the proposed outdoor use areas of the MF-2 planning area.

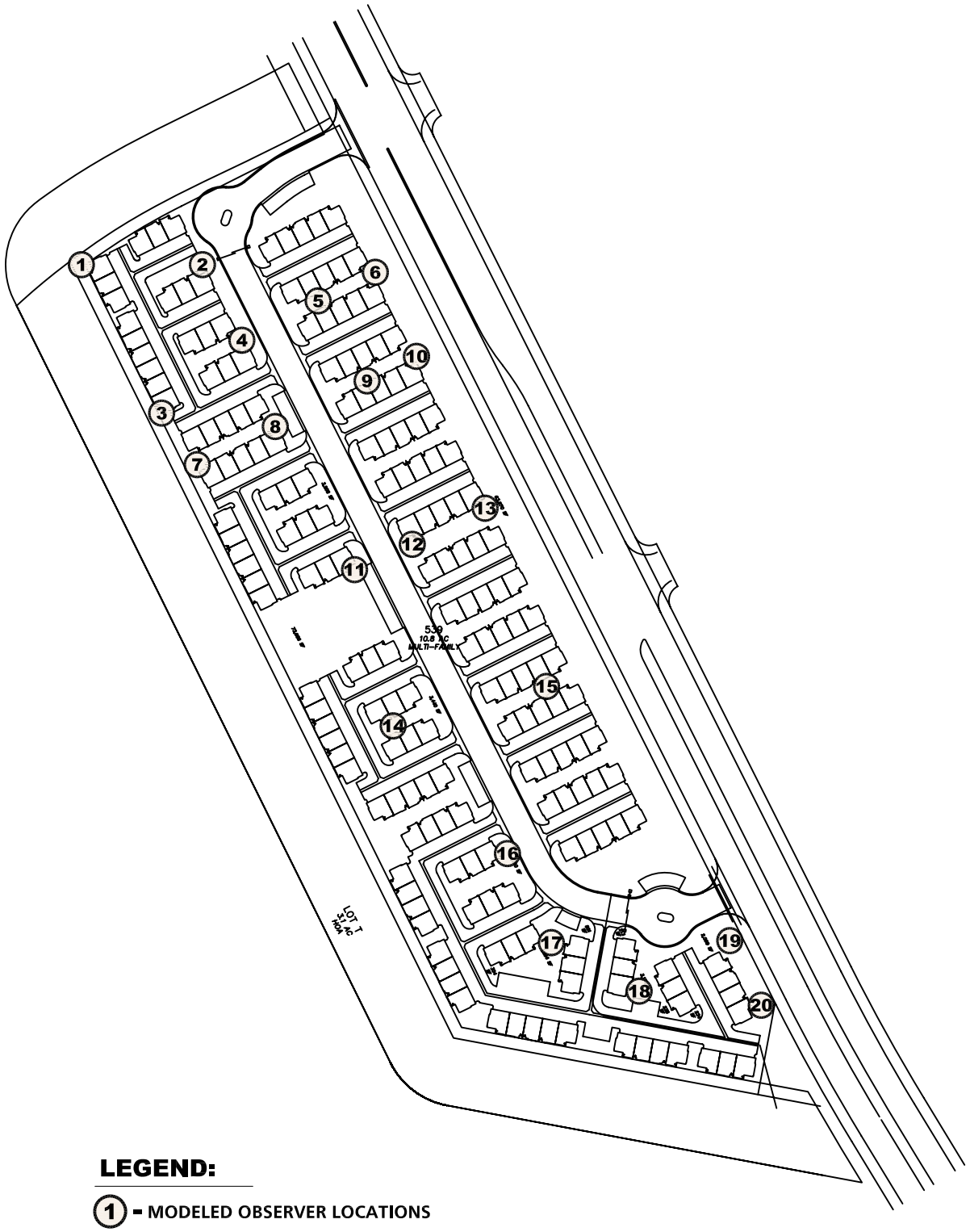
Modeled observer locations are presented in Exhibit 8-E. The results of the mitigated outdoor use areas are shown in Table 8-8. The building façade levels for all floors are provided in Table 8-9.

8.8 Buildout Scenario Exterior Noise Analysis- Multi-Family 3

Noise-affected outdoor areas of the Multi-Family 3 (MF-3) planning area require 10-foot-high noise barriers along the portions of the project site facing Horse Ranch Creek Road. The barriers must be constructed of a non-gapping material and

EXHIBIT 8-D

MODELED OBSERVER LOCATIONS
MULTI FAMILY 1



LEGEND:

(1) = MODELED OBSERVER LOCATIONS

N

URBAN CROSSROADS

TABLE 8-6

MULTI-FAMILY 1 BUILDOUT CONDITIONS EXTERIOR NOISE LEVELS (dBA CNEL)

RECEPTOR	UNMITIGATED SECOND FLOOR EXTERIOR NOISE LEVEL	MITIGATED SECOND FLOOR EXTERIOR NOISE LEVEL	BARRIER HEIGHT (IN FEET)[1]
1	60.1	60.1	0.0
2	59.8	59.8	0.0
3	60.1	60.1	0.0
4	59.9	59.9	0.0
5	54.8	54.8	0.0
6	64.0	59.2	6.0
7	59.9	59.9	0.0
8	59.8	59.9	0.0
9	59.0	59.0	0.0
10	65.0	60.0	6.0
11	59.9	59.9	0.0
12	59.9	59.9	0.0
13	64.1	58.6	6.0
14	59.4	59.4	0.0
15	58.3	58.2	0.0
16	59.4	59.4	0.0
17	59.3	59.3	0.0
18	60.0	59.9	0.0
19	60.5	60.4	6.0
20	66.3	60.3	6.0

[1] Barrier located on the second floor balconies as shown in Exhibit 1-D

TABLE 8-7

MULTI-FAMILY 1 BUILDOUT CONDITIONS BUILDING FAÇADE LEVELS (dBA CNEL)

RECEPTOR	MITIGATED FIRST SECOND FACADE NOISE LEVEL	THIRD FLOOR WITH BARRIERS FACADE NOISE LEVEL
1	60.1	64.8
2	59.8	64.3
3	60.1	64.2
4	59.9	64.3
5	54.8	57.2
6	59.2	66.4
7	59.9	64.2
8	59.9	64.3
9	59.0	63.1
10	60.0	67.4
11	59.9	64.3
12	59.9	64.2
13	58.6	66.1
14	59.4	63.7
15	58.2	62.1
16	59.4	63.7
17	59.3	63.6
18	59.9	64.8
19	60.4	68.2
20	60.3	68.1

EXHIBIT 8-E

MODELED OBSERVER LOCATIONS
MULTI FAMILY 2

LEGEND:

(1) = MODELED OBSERVER LOCATIONS

N

Campus Park, San Diego County, California - 04346: 8-E

URBAN CROSSROADS

TABLE 8-8

MULTI-FAMILY 2 BUILDOUT CONDITIONS EXTERIOR NOISE LEVELS (dBA CNEL)

RECEPTOR	UNMITIGATED GROUND FLOOR EXTERIOR NOISE LEVEL	MITIGATED GROUND FLOOR EXTERIOR NOISE LEVEL	BARRIER HEIGHT (IN FEET)[1]
1	66.3	59.7	10.0
2	63.7	59.3	10.0
3	62.6	58.9	10.0
4	62.0	58.8	10.0
5	61.5	58.9	10.0
6	61.0	59.3	10.0
7	67.0	59.6	10.0
8	55.5	55.1	0.0
9	60.1	59.3	0.0
10	66.9	59.7	10.0
11	54.4	54.2	0.0
12	59.2	58.3	0.0
13	66.9	59.3	10.0
14	61.6	58.9	0.0
15	60.7	59.5	0.0
16	66.9	59.2	10.0
17	61.3	59.2	0.0
18	52.6	52.3	0.0
19	67.1	60.3	10.0
20	53.0	52.6	0.0
21	53.9	53.1	0.0
22	56.3	53.8	0.0

[1] Barrier height in feet above pad or roadway elevation, whichever is greater to achieve maximum insertion loss.

TABLE 8-9

MULTI-FAMILY 2 BUILDOUT CONDITIONS BUILDING FAÇADE LEVELS (dBA CNEL)

RECEPTOR	MITIGATED FIRST FLOOR FACADE NOISE LEVEL	SECOND FLOOR WITH BARRIERS FACADE NOISE LEVEL
1	59.7	67.7
2	59.3	66.5
3	58.9	66.0
4	58.8	65.8
5	58.9	65.5
6	59.3	65.1
7	59.6	67.7
8	55.1	59.1
9	59.3	63.9
10	59.7	67.3
11	54.2	56.7
12	58.3	63.0
13	59.3	66.9
14	58.9	63.1
15	59.5	63.7
16	59.2	66.7
17	59.2	63.3
18	52.3	53.7
19	60.3	57.2
20	52.6	54.2
21	53.1	55.4
22	53.8	56.4

placed at the top of slope. Exhibit 1-F shows the mitigation and barrier heights required to bring future noise levels to the County of San Diego 60 dBA CNEL exterior noise level standard for the proposed outdoor use areas of the MF-3 planning area.

Modeled observer locations are presented in Exhibit 8-F. The results of the mitigated outdoor use areas are shown in Table 8-10. The building façade levels for all floors are provided in Table 8-11.

8.9 Buildout Scenario Exterior Noise Analysis- Multi-Family 4

Noise-affected outdoor areas of the Multi-Family 4 (MF-4) planning area require barriers ranging in height from 8 to 10 feet along the portions of the project site facing Horse Ranch Creek Road, Pankey Place and SR-76. The barriers must be constructed of a non-gapping material and placed at the top of slope. Exhibit 1-G shows the mitigation and barrier heights required to bring future noise levels to the County of San Diego 60 dBA CNEL exterior noise level standard for the proposed outdoor use areas of the MF-4 planning area.

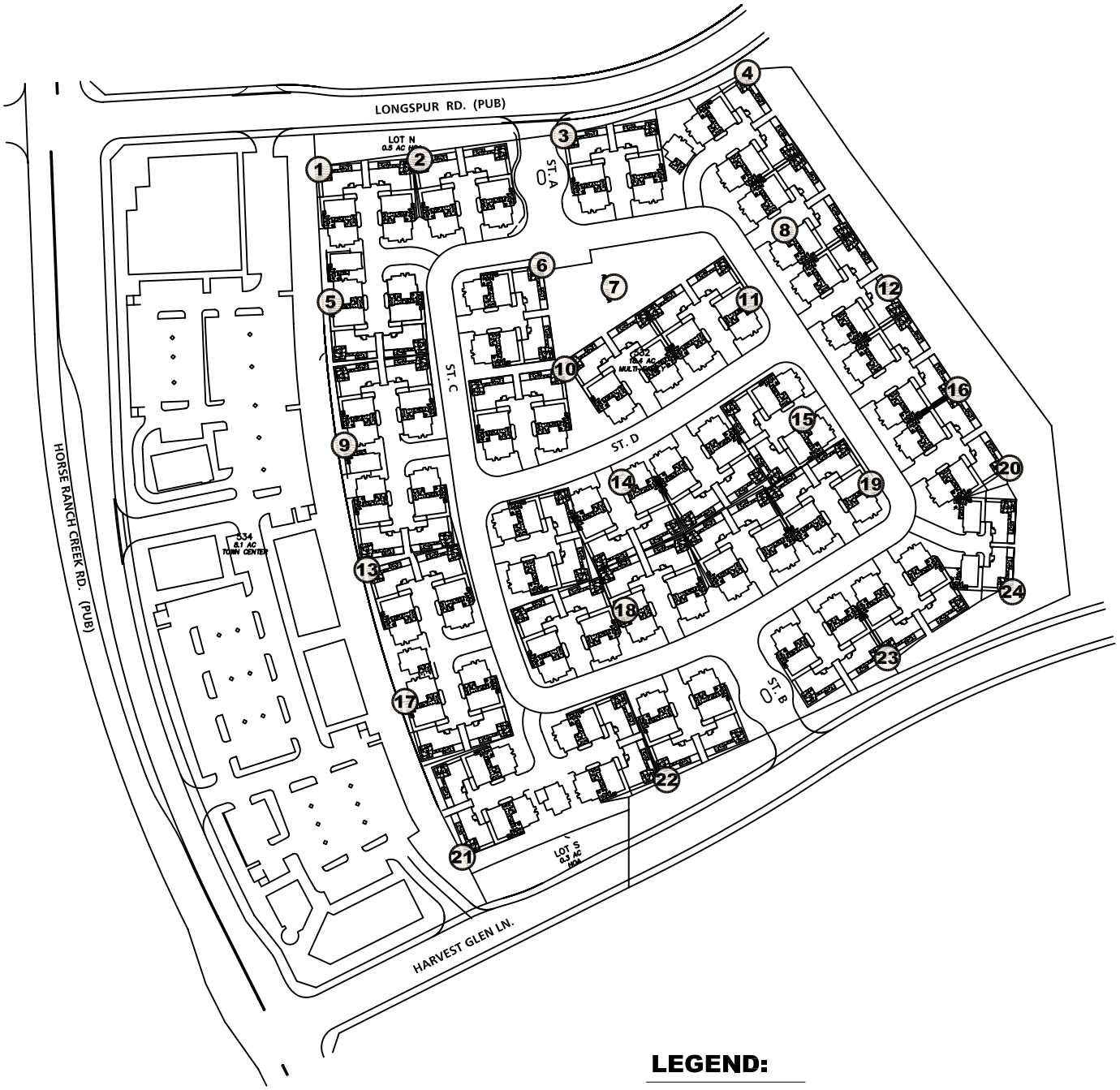
Modeled observer locations are presented in Exhibit 8-G. The results of the mitigated outdoor use areas are shown in Table 8-12. The building façade levels for all floors are provided in Table 8-13.

8.10 Buildout Scenario Exterior Noise Analysis- Other Sensitive Use Areas

The project proposes a HOA recreational facility (pool), two parks, three rec areas and one sports complex. The two parks and three rec areas will meet the County of San Diego 60 dBA CNEL exterior noise level standard with the mitigation provided for other areas of the project site, i.e. the single family homes and multi-family homes. No additional mitigation is required at the parks or rec areas. The HOA recreational facility (pool) will require a 9-foot-high noise barrier along the western portion of the site. The barrier must be constructed of a non-gapping

EXHIBIT 8-F

MODELED OBSERVER LOCATIONS
MULTI FAMILY 3



LEGEND:

(1) = MODELED OBSERVER LOCATIONS

N

URBAN CROSSROADS

TABLE 8-10

MULTI-FAMILY 3 BUILDOUT CONDITIONS EXTERIOR NOISE LEVELS (dBA CNEL)

RECEPTOR	UNMITIGATED GROUND FLOOR EXTERIOR NOISE LEVEL	MITIGATED GROUND FLOOR EXTERIOR NOISE LEVEL	BARRIER HEIGHT (IN FEET)[1]
1	63.6	59.1	10.0
2	59.7	59.1	10.0
3	58.5	58.4	0.0
4	57.4	57.3	0.0
5	63.4	59.8	10.0
6	58.8	58.4	0.0
7	58.2	58.0	0.0
8	57.1	57.0	0.0
9	63.3	59.5	10.0
10	58.6	58.1	0.0
11	57.3	57.1	0.0
12	56.5	56.4	0.0
13	63.1	59.5	10.0
14	58.0	57.8	0.0
15	56.9	56.8	0.0
16	56.0	55.9	0.0
17	62.9	59.6	10.0
18	57.7	57.4	0.0
19	56.5	56.4	0.0
20	55.8	55.7	0.0
21	62.6	59.5	10.0
22	57.9	57.7	0.0
23	56.4	56.3	0.0
24	55.8	55.7	0.0

[1] Barrier height in feet above pad or roadway elevation, whichever is greater to achieve maximum insertion loss.

TABLE 8-11

MULTI-FAMILY 3 BUILDOUT CONDITIONS BUILDING FAÇADE LEVELS (dBA CNEL)

RECEPTOR	MITIGATED FIRST FLOOR FACADE NOISE LEVEL	SECOND FLOOR WITH BARRIERS FACADE NOISE LEVEL
1	59.1	68.3
2	59.1	64.2
3	58.4	63.2
4	57.3	62.1
5	59.8	68.2
6	58.4	63.2
7	58.0	62.8
8	57.0	61.9
9	59.5	67.7
10	58.1	62.8
11	57.1	61.9
12	56.4	61.3
13	59.5	67.4
14	57.8	62.5
15	56.8	61.5
16	55.9	60.8
17	59.6	67.3
18	57.4	62.2
19	56.4	61.1
20	55.7	60.6
21	59.5	67.3
22	57.7	62.5
23	56.3	61.3
24	55.7	60.4

EXHIBIT 8-G

MODELED OBSERVER LOCATIONS
MULTI FAMILY 4

LEGEND:

(1) = MODELED OBSERVER LOCATIONS

N

TABLE 8-12

MULTI-FAMILY 4 BUILDOUT CONDITIONS EXTERIOR NOISE LEVELS (dBA CNEL)

RECEPTOR	UNMITIGATED GROUND FLOOR EXTERIOR NOISE LEVEL	MITIGATED GROUND FLOOR EXTERIOR NOISE LEVEL	BARRIER HEIGHT (IN FEET)[1]
1	67.6	60.1	8.0
2	65.4	60.3	8.0
3	64.0	60.0	8.0
4	64.4	59.1	8.0
5	64.9	60.2	8.0
6	65.7	59.7	8.0
7	67.1	59.4	8.0
8	61.8	59.2	0.0
9	61.1	59.0	0.0
10	60.4	58.8	0.0
11	60.2	58.7	0.0
12	60.0	58.7	0.0
13	67.2	59.4	8.0
14	61.6	59.6	0.0
15	61.8	59.4	0.0
16	61.1	59.2	0.0
17	66.9	59.0	8.0
18	61.9	58.6	0.0
19	61.0	58.2	0.0
20	60.5	58.0	0.0
21	70.4	60.3	8.0
22	67.2	59.2	10.0
23	66.7	58.5	10.0
24	66.9	59.9	10.0
25	67.4	60.0	10.0

[1] Barrier height in feet above pad or roadway elevation, whichever is greater to achieve maximum insertion loss.

TABLE 8-13

MULTI-FAMILY 4 BUILDOUT CONDITIONS BUILDING FAÇADE LEVELS (dBA CNEL)

RECEPTOR	MITIGATED FIRST FLOOR FACADE NOISE LEVEL	SECOND FLOOR WITH BARRIERS FACADE NOISE LEVEL
1	60.1	69.2
2	60.3	67.4
3	60.0	65.4
4	59.1	66.7
5	60.2	67.2
6	59.7	67.8
7	59.4	68.9
8	59.2	62.3
9	59.0	62.3
10	58.8	62.1
11	58.7	62.1
12	58.7	62.2
13	59.4	68.0
14	59.6	62.6
15	59.4	62.8
16	59.2	61.2
17	59.0	69.0
18	58.6	62.4
19	58.2	62.1
20	58.0	62.1
21	60.3	71.0
22	59.2	67.9
23	58.5	68.3
24	59.9	72.0
25	60.0	72.8

material and placed at the top of slope. Exhibit 1-H shows the mitigation and barrier height required to bring future noise levels to the County of San Diego 60 dBA CNEL exterior noise level standard for the proposed outdoor use areas of the HOA recreational facility (pool).

The project proposes a sports complex consisting of baseball and soccer fields. Noise levels at the sports complex exceed the County of San Diego 60 dBA CNEL standard; however placement of a barrier is not sufficient to mitigate these noise levels. The County of San Diego does not have a standard for these types of complexes; however cities in the County require a 70 dBA CNEL exterior level. The Federal Highway Administration (FHWA) and Caltrans Noise Abatement Criteria (NAC) require a 67 dBA Leq(h) exterior noise level for parks and sport areas that cannot be feasibly mitigated. Noise levels at the proposed sports complex may be as high as 66.4 dBA CNEL, and will therefore meet the FHWA and NAC standards without further mitigation.

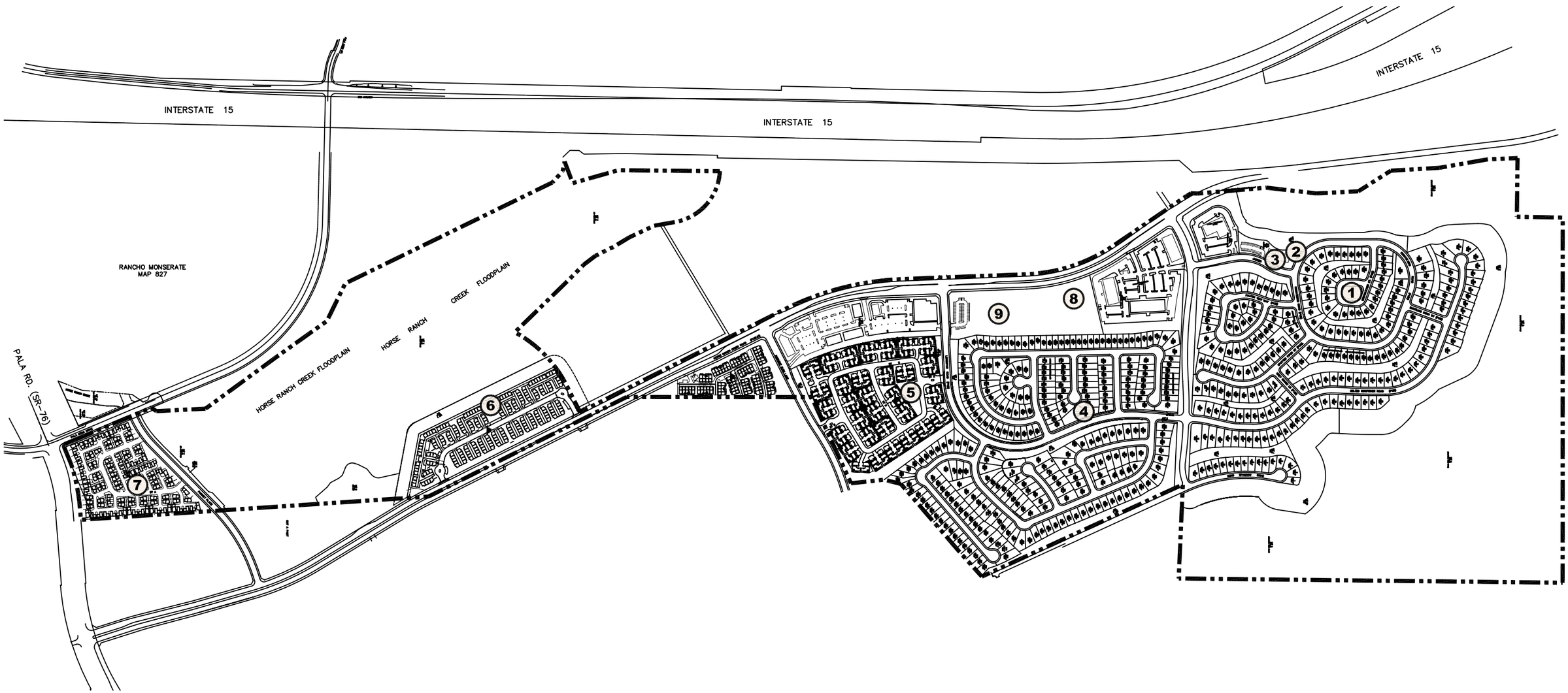
Modeled observer locations are presented in Exhibit 8-H. The results of the mitigated outdoor use areas are shown in Table 8-14. The Sound32 input and output decks for future year 2030 conditions for all seven analyzed areas are provided in Appendix “E”.

Exterior noise levels at the second and third floors of all single and multi family homes were found to be above the General Plan Noise Element Standard, of 60 dBA CNEL. Therefore, interior mitigation for these lots is required to obtain an interior level of 45 dBA CNEL. It should be noted; interior noise levels can easily be obtained with typical building construction methods and the follow recommendations:

- Provide a “windows closed” condition requiring a means of mechanical ventilation for the second and third floors of all single and multi family homes .
- Provide upgraded windows for the second and third floors of all single and multi family homes.

EXHIBIT 8-H

MODELED OBSERVER LOCATIONS
OTHER SENSITIVE USES



LEGEND:

(1) = MODELED OBSERVER LOCATIONS

N

TABLE 8-14

OTHER SENSITIVE USES BUILDOUT CONDITIONS EXTERIOR NOISE LEVELS (dBA CNEL)

RECEPTOR NUMBER	RECEPTOR LOCATION	UNMITIGATED GROUND FLOOR EXTERIOR NOISE LEVEL	MITIGATED GROUND FLOOR EXTERIOR NOISE LEVEL	BARRIER HEIGHT (IN FEET)[1]
1	PARK	58.3	58.3	0.0
2	POOL	61.7	59.8	9.0
3	POOL	58.4	58.4	0.0
4	PARK	60.3	60.3	0.0
5	REC AREA	58.2	58.2	0.0
6	REC AREA	59.6	59.6	0.0
7	REC AREA	59.0	59.0	0.0
8	SPORTS COMPLEX	65.6	65.6	0.0
9	SPORTS COMPLEX	65.5	65.5	0.0

[1] Barrier height in feet above pad or roadway elevation, whichever is greater to achieve maximum insertion loss.

A final noise study shall be prepared prior to obtaining building permits for the second and third floors of all single and multi family homes. This report would finalize the noise requirements based upon precise grading plans and actual building design specifications.

8.11 Noise Control Barrier Construction Materials

The designed noise screening may only be accomplished if the barriers weight is at least 3.5 pounds per square foot of face area and have no decorative cutouts or line-of-site openings between shielded areas and the roadways. The recommended noise control barrier may be constructed using one of the following alternative materials:

1. Masonry block;
2. Stucco veneer over wood framing (or foam core), or 1 inch thick tongue and groove wood of sufficient weight per square foot;
3. Glass (1/4 inch thick), or other transparent material with sufficient weight per square foot;
4. Earthen berm;
5. Any combination of these construction materials.

Barriers must utilize ¼ thick glass or an equivalent transparent material to meet the required noise mitigations measures. The recommended barrier must present a solid face from top to bottom. Unnecessary openings or decorative cutouts should not be made. All gaps (except for weep holes) should be filled grout or caulking.

9.0 SHORT-TERM CONSTRUCTION NOISE IMPACTS

Construction noise represents a short-term impact on the ambient noise levels. Noise generated by construction equipment, including trucks, graders, bulldozers and scrapers can reach high levels. Grading and blasting activities typically represent one of the highest potential sources for noise impacts. The most effective method of controlling construction noise is through local control of construction hours and by limiting the hours of construction to normal weekday working hours. The proposed project will be graded in two main phases. Phase I will include the southerly portions of the site, and Phase II will include the northerly portions of the site. Construction will begin on Phase I prior to the completion of grading for Phase II, and occupancy in the residential lots on the project site is anticipated prior to the completion of grading for the entire project. Therefore, on-site mitigation may be required during the construction of Phase II. All construction activities may only take place during the time period stated in Section 36.409 of the County of San Diego Noise Ordinance, i.e. 7:00 AM to 7:00 PM Monday through Saturday. This time limit includes the queuing of trucks inside and outside the site and the warming up and idling of any engines and equipment.

According to the project applicant, a total of two D-6 dozers, two D-8 dozers, six D-9 dozers, four 834 rubber-tire dozers, twelve 657 scrapers, two 16-6 blades, eight water trucks and four dump trucks during grading activities will be required to complete the proposed grading operations. According to the project applicant, the project grading operations are anticipated to last two years. In the event that blasting is required one hoe ram and two rock drills will be utilized to complete the proposed grading operations. Excess rock and grading debris will be utilized on site across the northern portion of the proposed single-family units where blasting is likely to occur. No rock-crushing will be performed on site for this project. The noise levels utilized in this analysis are shown in Table 9-1.

TABLE 9-1

CONSTRUCTION EQUIPMENT NOISE LEVELS

EQUIPMENT TYPE	SOURCE LEVEL AT 50 FEET (dBA) [1]
Dozer - D6 Cat	75
Dozer - D8 Cat	78
Dozer - D9 Cat	82
834 Rubber Tire Dozer	75
657 Scrapers	75
16-6 Blades	70
Water Truck	70
Dump Truck	75
Rock Drill	85
Hoe Ram	85

1 Reference Levels Provided by Environmental Protection Agency (EPA), 1971.

9.1 Construction Related Noise Levels

The U.S. Environmental Protection Agency (U.S. EPA) has compiled data regarding the noise generating characteristics of specific types of construction equipment. Noise levels generated by heavy construction equipment can range from approximately 60 dBA to noise levels in excess of 100 dBA when measured at 50 feet. However, these noise levels diminish rapidly with distance from the construction site at a rate of approximately 6 dBA per doubling of distance. For example, a noise level of 68 dBA measured at 50 feet from the noise source to the receptor would be reduced to 62 dBA at 100 feet from the source to the receptor, and would be further reduced to 56 dBA at 200 feet from the source to the receptor.

9.2 Grading Activities Noise Level Impact Analysis

Using a point-source noise prediction model, calculations of the expected construction noise impacts were completed. Key input data for these barrier performance equations include the relative source to receiver horizontal separations, the relative source to receiver vertical separations, the typical noise source spectra and any barrier transmission loss.

The proposed project will be graded in two main phases. Construction will begin on Phase I prior to the completion of grading for Phase II, and occupancy in the residential lots on the project site is anticipated prior to the completion of grading for the entire project. Therefore, on-site mitigation may be required during the construction of Phase II. If all the equipment were placed in a centroid location, it would have a cumulative noise level of 92.7 dBA at 50 feet. Utilizing a 6 dBA reduction per doubling of distance, at distances further than 375 feet from any property line, the noise levels will comply with the County of San Diego's 75 dBA standard as shown in Table 9-2. All equipment is expected to be spread out around the project site and no impacts are anticipated.

TABLE 9-2

CUMULATIVE CONSTRUCTION NOISE LEVELS

EQUIPMENT TYPE	QUANTITY	TIME OF OPERATION (HOURS)	SOURCE LEVEL AT 50 FEET (dBA) [1]	CUMULATIVE LEVEL AT 50 FEET (dBA)
Dozer - D6 Cat	2	8	75	78.0
Dozer - D8 Cat	2	8	78	81.0
Dozer - D9 Cat	6	8	82	89.8
834 Rubber Tire Dozer	4	8	75	81.0
657 Scrapers	12	8	75	85.8
16-6 Blades	2	8	70	73.0
Water Truck	8	8	70	79.0
Dump Truck	4	8	75	81.0
		CUMULATIVE LEVELS AT 50 FEET (dBA)		92.7
		DISTANCE TO PROPERTY LINE		375
		NOISE REDUCTION DUE TO DISTANCE		-17.5
		PROPERTY LINE NOISE LEVEL		**75.2**

[1] Reference Levels Provided by Environmental Protection Agency (EPA), 1971.

The two rock drills and single hoe ram would be moved around the northern portion of the proposed single-family units on an as needed basis dependent upon site characteristics. The use of two rock drills and a hoe ram in addition to all other proposed equipment is provided separately. If all the equipment were placed in a centroid location of the northern portion of the proposed single-family units, it would have a cumulative noise level of 94.5 dBA at 50 feet. Utilizing a 6 dBA reduction per doubling of distance, at distances further than 450 feet from any property line, the noise levels will comply with the County of San Diego's 75 dBA standard as shown in Table 9-3. Blasting will occur on an as-needed basis across the northern portion of the proposed single-family units and may only take place two times each day. No existing sensitive receptors are located within 450-feet of the possible blasting areas; therefore no noise or vibration impacts are anticipated. The blasting contractor should conduct a pre-blast survey to determine if any sensitive uses need to be monitored during blasting operations.

In the unlikely event that all grading equipment is staged within 375 feet of any property line or any existing on-site noise sensitive land use, it is recommended that a specific mitigation plan based upon the location of the construction equipment be identified by a County certified acoustical engineer. In the unlikely event that all grading equipment and all drilling and blasting equipment is staged within 450 feet of any property line or any existing on-site noise sensitive land use, it is recommended that a specific mitigation plan based upon the location of the construction equipment be identified by a County certified acoustical engineer. If impacts are anticipated, the project applicant should install a temporary noise barrier along any property line where the impacts could occur. The mitigation plan would determine the height and location of a temporary barrier, if one is necessary. The height of this noise barrier can range from 8 to 12 feet in height. The proposed noise barrier will need to be of solid non-gapping wood construction to comply with the County of San Diego's 75 dBA standard and noise ordinance criteria for construction operations.

TABLE 9-3

CUMULATIVE CONSTRUCTION NOISE LEVELS WITH BLASTING EQUIPMENT

EQUIPMENT TYPE	QUANTITY	TIME OF OPERATION (HOURS)	SOURCE LEVEL AT 50 FEET (dBA) [1]	CUMULATIVE LEVEL AT 50 FEET (dBA)
Dozer - D6 Cat	2	8	75	78.0
Dozer - D8 Cat	2	8	78	81.0
Dozer - D9 Cat	6	8	82	89.8
834 Rubber Tire Dozer	4	8	75	81.0
657 Scrapers	12	8	75	85.8
16-6 Blades	2	8	70	73.0
Water Truck	8	8	70	79.0
Dump Truck	4	8	75	81.0
Rock Drill	2	8	85	88.0
Hoe Ram	1	8	85	85.0
		CUMULATIVE LEVELS AT 50 FEET (dBA)		94.5
		DISTANCE TO PROPERTY LINE		450
		NOISE REDUCTION DUE TO DISTANCE		-19.1
		PROPERTY LINE NOISE LEVEL		**75.4**

[1] Reference Levels Provided by Environmental Protection Agency (EPA), 1971.

9.3 Biological Impacts

In 1991, the U.S. Fish and Wildlife Service (USFWS) recommended that hourly noise levels not exceed 60 dBA Leq or ambient conditions, whichever is greater, to protect the Gnatcatcher and other bird species. The County of San Diego has adopted this standard for all sensitive species. Therefore, the 60 dBA Leq or ambient will be used as the noise criteria to assess noise impacts on sensitive wildlife both on and off site. Construction activities may occur during a sensitive habitat nesting/breeding season for both phases. If construction activities occur during any of the phases within 2,100 feet of a sensitive habitat location the noise level may be above 60 dBA Leq and impacts could occur. If construction activities and drilling and blasting activities occur during any of the phases within 2,600 feet of a sensitive habitat location the noise level may be above 60 dBA Leq and impacts could occur. As a design measure the proposed project applicant may be required to install a temporary noise barrier along any property line where the construction equipment is located within 2,100 feet or construction and drilling equipment is located within 2,600 feet. The proposed noise barrier will need to be of solid non-gapping wood construction to comply with the County of San Diego's 60 dBA standard for sensitive habitats.

During the grading of each phase, if the construction equipment is located within 2,100 feet or construction and drilling equipment is located within 2,600 feet of any sensitive habitat, it is recommended that a specific mitigation plan based upon the location of the identified habitat and corresponding construction schedule be identified by a County certified acoustical engineer. This mitigation plan would determine the height and location of a temporary barrier, if one is necessary. The height of this barrier would be based on the topography in the area, the location of the habitat and also the location of the equipment. The biological mitigation plan should include noise monitoring prior to and during the beginning of the nesting/breeding season by the acoustical engineer in coordination with the Project Biologist to ensure compliance with applicable standards.

10.0 SEWER PUMP STATION

The proposed Campus Park Development also includes a 0.8 acre sewer pump station. The pump station is proposed to be located in Lot 541, west of Pala Mesa Drive and north of Pala Road (SR-76). A site plan of the proposed pump station is provided in Exhibit 10-A. The noise levels associated with the operation of the sewer pump station will be based on a previous study (Harmony Grove Village – Pacific Noise Control, dated 7/24/06).

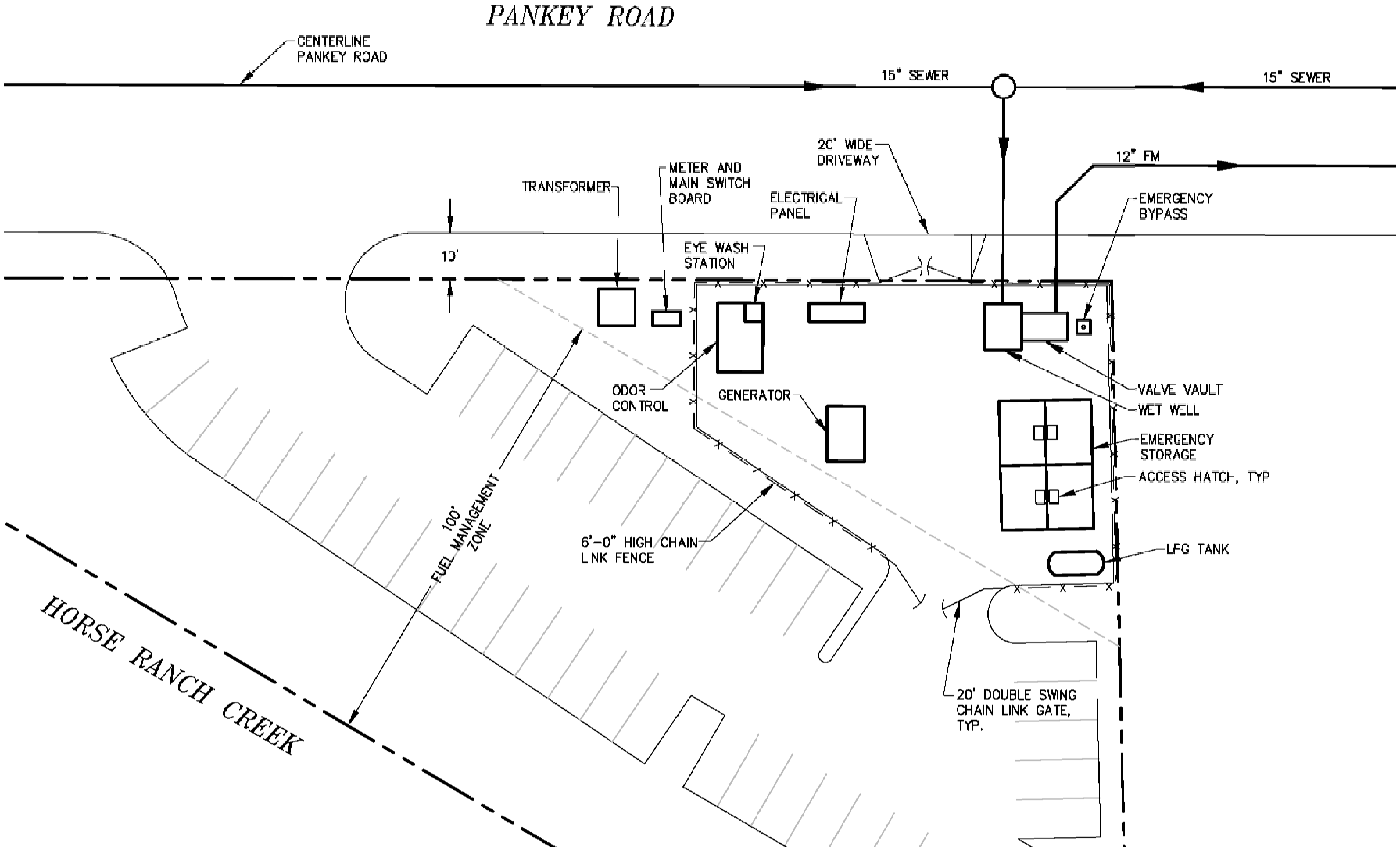
The pump station and uses to the south are both zoned commercial. Residential uses occur to the east and biological open space to the north and west. The County of San Diego noise ordinance sets an exterior noise limit for the worse case residential uses adjacent to the property of 50 dBA Leq for daytime hours of 7 a.m. to 10 p.m. and 45 dBA Leq during the noise sensitive nighttime hours of 10 p.m. to 7 a.m. Commercial uses have exterior noise limits of 60 dBA Leq for daytime hours of 7 a.m. to 10 p.m. and 55 dBA Leq during the noise sensitive nighttime hours of 10 p.m. to 7 a.m. The adjacent biological open space has an hourly standard of 60 dBA Leq. The sound level limit at a location on a boundary between two zoning districts is the arithmetic mean of the respective limits for the two districts. Therefore, the pump station must meet a 50 dBA Leq standard (arithmetic mean between 45 dBA and 55 dBA).

10.1 Pump Station Noise Impacts

The pump station is proposed as an above ground station. In order to reduce noise levels, the pump station should be enclosed in a concrete structure. Measurements were taken of a similar above-ground pump station by Urban Crossroads on October 7, 2004. The enclosed pump station measured a worse-case noise level of 58.1 dBA Leq at a distance of 25 feet at the location of the ventilation (louvers). The noise producing equipment at the pump station is located approximately 145 feet from the adjacent residential property line, located across Pala Mesa Drive. Utilizing a drop-off rate of 6 dBA per doubling of distance, the above ground pump station would produce worse-case noise level of 42.8 dBA Leq at the distance of 145 feet. In order to minimize

EXHIBIT 10-A

SEWER PUMP STATION SITE PLAN



noise levels, the ventilation on the pump station should be located on the side of the building farthest from any property boundary. With the incorporation of the concrete enclosure, the project will meet the 50 dBA Leq limit without mitigation. In addition, the project also meets the most restrictive limit of 45 dBA Leq. Sound level certification measurements of the pump station activities should be conducted at the nearest property line once the pump stations are fully operational to ensure compliance with the County's noise ordinance.

Pump stations typically contain backup generators, which could generate 79 dBA Leq at 50 feet from the source if the generators are above ground. The generators must be located in a cinder block building which utilizes acoustical louvers in order to decrease the noise level to the adjacent property lines. The louvers must be placed on the vent openings on the southern side of the building. The sides of the building facing east, north and west are required to be completely free of any openings or ventilation in order to reduce levels at the residential and biological use areas. Sound level measurements of the backup generators should be conducted at the nearest property line once the pump stations are fully operational to ensure compliance with the County's noise ordinance.

11.0 PROJECT ALTERNATIVES

The following provides a description of the Campus Park Project alternatives and an analysis of the noise issues that may occur with the development of each alternative.

11.1 Existing General Plan Alternative

The Existing General Plan Alternative would include 63 single-family dwelling units, 825,000 square feet of office space, a 1,150,000 square foot industrial park, and 0.6 acres of neighborhood park.

Implementation of the Existing General Plan Alternative may result in an increase in noise impacts, as compared to the Proposed Project. Noise impacts under the Existing General Plan Alternative may increase because the alternative land uses would result in the generation of more vehicular traffic. The anticipated increase in traffic would be small, and sound barriers similar to those required for the Proposed Project would be expected to lower noise impacts to less than significant levels. This alternative may increase off-site noise impacts due to the increase in the generation of vehicular traffic and additional analysis would be required to determine off-site impacts.

11.2 Single Family Alternative

The Single Family Alternative would include 531 single-family dwelling units, a 62,000 square foot town center, 150,000 square feet of professional office space, 2.6 acres of neighborhood parks and an 8.5 acre sports complex.

Implementation of the Single Family Alternative would result in a decrease in noise impacts, as compared to the Proposed Project. Noise impacts under the Single Family Alternative would decrease because the alternative land uses would result in the generation of less vehicular traffic. The anticipated decrease in traffic would be small, and sound barriers similar to or less than those required

for the Proposed Project would be expected to lower noise impacts to less than significant levels. Noise impacts associated with the Single Family Alternative would be mitigated to less than significant, as with the Proposed Project.

11.3 Biological Reduced Footprint Alternative

The Biological Reduced Footprint Alternative would include 390 single-family dwelling units, 255 multi-family dwelling units, a 62,000 square foot town center, 116,000 square feet of professional office space, 1.1 acres of neighborhood parks and an 8.5 acre sports complex.

Implementation of the Biological Reduced Footprint Alternative would result in a decrease in noise impacts, as compared to the Proposed Project. Noise impacts under the Biological Reduced Footprint Alternative would decrease because the alternative land uses would result in the generation of less vehicular traffic. The anticipated decrease in traffic would be small, and sound barriers similar to or less than those required for the Proposed Project would be expected to lower noise impacts to less than significant levels. Noise impacts associated with the Biological Reduced Footprint Alternative would be mitigated to less than significant, as with the proposed Project.

11.4 GPA 2020 Draft Land Use Map Alternative

The GPA 2020 Draft Land Use Map Alternative would include 248 single-family dwelling units, 1,059 multi-family dwelling units, an 188,000 square foot town center, 34,000 square feet of professional office space, 2.1 acres of neighborhood parks and an 8.5 acre sports complex.

Implementation of the GPA 2020 Draft Land Use Map Alternative may result in an increase in noise impacts, as compared to the Proposed Project. Noise impacts under the GPA 2020 Draft Land Use Map Alternative may increase because the alternative land uses would result in the generation of more

vehicular traffic. The anticipated increase in traffic could be significant, and sound barriers similar to or greater in height than those required for the Proposed Project would be expected to lower noise impacts to less than significant levels. This alternative will increase off-site noise impacts due to the increase in the generation of vehicular traffic and additional analysis would be required to determine if these impacts would be significant.

11.5 GPA 2020 Board Referral Map Alternative

The GPA 2020 Board Referral Map Alternative would include 404 single-family dwelling units, 258 multi-family dwelling units, an 188,000 square foot town center, 34,000 square feet of professional office space, 2.6 acres of neighborhood parks and an 8.5 acre sports complex.

Implementation of the GPA 2020 Board Referral Map Alternative may result in an increase in noise impacts, as compared to the Proposed Project. Noise impacts under the GPA 2020 Board Referral Map Alternative may increase because the alternative land uses would result in the generation of more vehicular traffic. The anticipated increase in traffic could be significant, and sound barriers similar to or greater in height than those required for the Proposed Project would be expected to lower noise impacts to less than significant levels. This alternative will increase off-site noise impacts due to the increase in the generation of vehicular traffic and additional analysis would be required to determine if these impacts would be significant.

APPENDIX A

APPLICABLE NOISE STANDARDS

CHAPTER 4. NOISE ABATEMENT AND CONTROL

SEC. 36.401. PURPOSE.

Disturbing, excessive or offensive noise interferes with a person's right to enjoy life and property and is detrimental to the public health and safety. Every person is entitled to an environment free of annoying and harmful noise. The purpose of this chapter is to regulate noise in the unincorporated area of the County to promote the public health, comfort and convenience of the County's inhabitants and its visitors.

SEC. 36.402. DEFINITIONS.

The following definitions shall apply to this chapter:

(a) "Ambient noise level" means the composite of existing noise from all sources at a given location and time. Ambient noise is sometimes referred to as background noise.

(b) "Average sound level" means the level in decibels of the mean-square A-weighted sound pressure during a stated time period, with reference to the square of the standard reference sound pressure of 20 micropascals. The "average sound level" is equivalent to the industry standard L_{EQ}.

(c) "A-weighted sound level" means the sound level in decibels as measured on a sound level meter using the A-weighting network. The A-weighting network is the network for measuring sound that most closely resembles what the human ear hears. Sound measured using the A-weighting network is designated dBA.

(d) "Construction equipment" means tool, machinery or equipment including "special construction equipment" defined in the Vehicle Code, used in a construction operation on any construction site.

(e) "Container" means any receptacle, regardless of contents, manufactured from wood, metal, plastic, paper or any other material including but not limited to any barrel, basket, box, crate, tub, bottle, can or refuse container.

(f) "Decibel" means a unit for measuring the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure, which is 20 micropascals.

(g) "Disturbing, excessive or offensive noise" means any sound or noise that:

(1) Endangers the health or safety of any person.
(2) Causes discomfort or annoyance to a person of normal sensitivity.

(h) "Emergency work" means work: (1) necessary to restore property to a safe condition following a public calamity, (2) required to protect a person or property from injury or damage or (3) by a public or private utility to restore utility service.

(i) "Impulsive noise" means a single noise event or a series of single noise events, which causes a high peak noise level of short duration (one second or less), measured at a specific location. Examples include, but are not limited to, a gun shot, an explosion or a noise generated by construction equipment.

(j) "Maximum sound level" means the highest sound level reached when measuring noise with a sound level meter using the A-weighting network and slow time weighting. The "maximum sound level" is equivalent to the industry standard known as L_{MAX}.

(k) "Motor vehicle" means any self-propelled vehicle as defined in the Vehicle Code and includes a mini-bike and a go-cart.

(l) "Noise control officer" means the County Director of the Department of Planning and Land Use or a person appointed or retained by the Director to perform this function.

(m) "Occupied property" means property on which there is a building for which a certificate of occupancy has been issued.

(n) "Off-road recreational vehicle" means a motor vehicle that is being operated other than on a public or private roadway, whether or not the vehicle was designed or intended for off-road use and may include but is not limited to a motorcycle, go-cart, camper, dune buggy, ATV, racecar, automobile, SUV, pick-up truck or truck. A piece of farm equipment or a motor vehicle being used for an agricultural, military, fire, emergency or law enforcement use or by a public or private utility for work on utilities is not an "off-road recreational vehicle."

(o) "Plainly audible" means any sound that can be detected by a person using his or her unaided hearing faculties. As an example, if the sound source under investigation is a portable or personal vehicular sound amplification or reproduction device, the detection of the rhythmic base component of music is sufficient to verify plainly audible sound. The noise control officer need not determine the title, specific words or the artist performing the music.

(p) "Powered model vehicle" means a model airplane, model boat or model vehicle of any type or size not designed for carrying persons or property and which may be propelled other than by manpower or wind power.

(q) "Sound amplifying equipment" means any machine or device used to amplify music, the human voice or any sound and does not include a standard automobile radio when used and heard only by the occupants of the vehicle in which it is installed.

(r) "Sound level" means the weighted sound pressure level obtained using a sound level meter and frequency weighting network as provided in the American National Standards Institute specifications for sound level meters. As used in this chapter, "sound level" means the same as "noise level."

(s) "Sound level meter" means an instrument for the measurement of sound levels, which meets or exceeds the requirements pertinent for a type 1 or type 2 meter in the American National Standards Institute specifications for sound level meters, ANSI S1.4-1983 or its latest revision.

(t) "Sound truck" means a "vehicle," as that term is defined in the Vehicle Code that has or uses sound amplifying equipment.

(u) "Time weighted average sound level" means the combination of sound pressure levels that measure the cumulative exposure to sound over a given period.

SEC. 36.403. SOUND LEVEL MEASUREMENT.

(a) A sound level measurement made pursuant to this chapter shall be measured with a sound level meter using the A-weighting and "slow" response.

(b) Each measurement shall be conducted at the boundary line of the property on which the noise source is located or any place on the affected property, but no closer than five feet from the noise source.

(c) The sound level meter shall be calibrated and adjusted by means of an acoustical calibrator of the coupler-type to assure meter accuracy within the tolerances in the American National Standards Institute specifications for sound level meters, ANSI S1.4-1983 or its latest revision. The sound level meter shall be used as provided in the manufacturer's instructions.

SEC. 36.404. GENERAL SOUND LEVEL LIMITS.

(a) Except as provided in section 36.409 of this chapter, it shall be unlawful for any person to cause or allow the creation of any noise, which exceeds the applicable limits in Table 36.404 when the one-hour average sound level is measured at the property line of the property on which the noise is produced or at any location on a property that is receiving the noise.

TABLE 36.404
SOUND LEVEL STANDARDS IN DECIBELS (dB)

ZONE	TIME	APPLICABLE LIMIT ONE-HOUR AVERAGE SOUND LEVEL (dB)
(1) RS, RD, RR, RMH, A70, A72, S80, S81, S87, S90, S92 and RV and RU with a density of less than 11 dwelling units per acre.	7 a.m. to 10 p.m. 10 p.m. to 7 a.m.	50 45
(2) RRO, RC, RM, S86, V5 and RV and RU with a density of 11 or more dwelling units per acre.	7 a.m. to 10 p.m. 10 p.m. to 7 a.m.	55 50
(3) S94, V4 and all commercial zones.	7 a.m. to 10 p.m. 10 p.m. to 7 a.m.	60 55
(4) V1, V2 V1, V2 V1 V2 V3	7 a.m. to 7 p.m. 7 p.m. to 10 p.m. 10 p.m. to 7 a.m. 10 p.m. to 7 a.m. 7 a.m. to 10 p.m. 10 p.m. to 7 a.m.	60 55 55 50 70 65
(5) M50, M52 and M54	Anytime	70
(6) S82, M56 and M58.	Anytime	75
(7) S88 (see subsection (c) below)		

(b) Where a noise study has been conducted and the noise mitigation measures recommended by that study have been made conditions of approval of a Major Use Permit, which authorizes the noise-generating use or activity and the decision making body approving the Major Use Permit determined that those mitigation measures reduce potential noise impacts to a level below significance, implementation and compliance with those noise mitigation measures shall constitute compliance with subsection (a) above.

(c) S88 zones are Specific Planning Areas which allow different uses. The sound level limits in Table 36.404 above that apply in an S88 zone depend on the use being made of the property. The limits in Table 36.404, subsection (1) apply to property with a residential, agricultural or civic use. The limits in subsection (3) apply to property with a commercial use. The limits in subsection (5) apply to property with an industrial use that would only be allowed in an M50, M52 or M54 zone. The limits in subsection (6) apply to all property with an extractive use or a use that would only be allowed in an M56 or M58 zone.

(d) If the measured ambient noise level exceeds the applicable limit in Table 36.404, the allowable one-hour average sound level shall be the one-hour average ambient noise level, plus three decibels. The ambient noise level shall be measured when the alleged noise violation source is not operating.

(e) The sound level limit at a location on a boundary between two zones is the arithmetic mean of the respective limits for the two zones. The one-hour average sound level limit applicable to extractive industries, however, including but not limited to borrow pits and mines, shall be 75 decibels at the property line regardless of the zone in which the extractive industry is located.

(f) A fixed-location public utility distribution or transmission facility located on or adjacent to a property line shall be subject to the sound level limits of this section measured at or beyond six feet from the boundary of the easement upon which the facility is located.

SEC. 36.405. REPAIRING, REBUILDING OR TESTING MOTOR VEHICLES.

It shall be unlawful for any person to repair, rebuild or test any motor vehicle in such a manner as to cause a disturbing, excessive or offensive noise as defined in section 36.402 of this chapter.

SEC. 36.406. POWERED MODEL VEHICLES.

It shall be unlawful for any person to operate a powered model vehicle between 9 p.m. and 7 a.m. A powered model vehicle operated in a County park shall meet the daytime sound level standards for an RS zone measured at a point 100 feet from the park property line or 100 feet from where the model vehicle is being operated, whichever is less.

SEC. 36.407. REFUSE VEHICLES & PARKING LOT SWEEPERS.

No person shall operate or allow to be operated, a refuse compacting, processing, or collection vehicle or a parking lot sweeper between the hours of 10 p.m. to 6 a.m., in or within 100 feet of a residential zone.

SEC. 36.408. HOURS OF OPERATION OF CONSTRUCTION EQUIPMENT.

Except for emergency work, it shall be unlawful for any person to operate or cause to be operated, construction equipment:

(a) Between7 p.m. and 7 a.m.

(b) On a Sunday or a holiday. For purposes of this section, a holiday means January 1st, the last Monday in May, July 4th, the first Monday in September, December 25th and any day appointed by the President as a special national holiday or the Governor of the State as a special State holiday. A person may, however, operate construction equipment on a Sunday or holiday between the hours of 10 a.m. and 5 p.m. at the person's residence or for the purpose of constructing a residence for himself or herself, provided that the operation of construction equipment is not carried out for financial consideration or other consideration of any kind and does not violate the limitations in sections 36.409 and 36.410.

SEC. 36.409. SOUND LEVEL LIMITATIONS ON CONSTRUCTION EQUIPMENT.

Except for emergency work, it shall be unlawful for any person to operate construction equipment or cause construction equipment to be operated, where the time weighted average sound level exceeds 75 decibels for more than eight hours during any 24-hour period, when measured at the boundary line of or on any occupied property. The sound levels shall be corrected for time duration in accordance with the following table:

TABLE 36.409.
DECIBEL ALLOWANCES FOR PERIODS
WITHIN A 24-HOUR PERIOD

TOTAL DURATION	DECIBEL LEVEL ALLOWANCE	TOTAL DECIBEL LEVEL
Up to 15 minutes	+15	90
Up to 30 minutes	+12	87
Up to 1 hour	+9	84
Up to 2 hours	+6	81
Up to 4 hours	+3	78
Up to 8 hours	0	75
Up to 10 hours	-1	74
Up to 12 hours	-2	73

SEC. 36.410. SOUND LEVEL LIMITATIONS ON IMPULSIVE NOISE.

In addition to the general limitations on sound levels in section 36.404, the following additional sound level limitations shall apply:

(a) Except for emergency work or work on a public road project, no person shall produce or cause to be produced an impulsive noise that exceeds the maximum sound level shown in Table 36.410A, when measured at the boundary line of or on any occupied property for 25 percent of the minutes in the measurement period, as described in subsection (c) below. The maximum sound level depends on the use being made of the occupied property. The uses in Table 36.410A are as described in the County Zoning Ordinance.

TABLE 36.410A.
MAXIMUM SOUND LEVEL (IMPULSIVE) MEASURED AT OCCUPIED PROPERTY IN DB(A)

OCCUPIED PROPERTY USE	dB(A)
Residential, village zoning or civic use	82
Agricultural, commercial or industrial use	85

(b) Except for emergency work, no person working on a public road project shall produce or cause to be produced an impulsive noise that exceeds the maximum sound level shown in Table 36.410B, when measured at the boundary line of or on any occupied property for 25 percent of the minutes in the measurement period, as described in subsection (b) below. The maximum sound level depends on the use being made of the occupied property. The uses in Table 36.410B are as described in the County Zoning Ordinance.

TABLE 36.410B.
MAXIMUM SOUND LEVEL (IMPULSIVE) MEASURED AT OCCUPIED PROPERTY IN DB(A) (PUBLIC ROAD PROJECT)

OCCUPIED PROPERTY USE	**dB(A)**
Residential, village zoning or civic use	85
Agricultural, commercial or industrial use	90

(c) The minimum measurement period for any measurements conducted under this section shall be one hour. During the measurement period a measurement shall be conducted every minute from a fixed location on an occupied property. The measurements shall measure the maximum sound level during each minute of the measurement period. If the sound level caused by construction equipment or the producer of the impulsive noise, exceeds the maximum sound level for any portion of any minute it will deemed that the maximum sound level was exceeded during that minute.

SEC. 36.411. CONTAINERS AND CONSTRUCTION MATERIAL.

It shall be unlawful for any person to handle, transport, or cause to be handled or transported in any public place, any container or any construction material in such a way as to create a disturbing, excessive or offensive noise as defined in section 36.402 of this chapter.

SEC. 36.412. SIGNAL DEVICE FOR FOOD TRUCKS.

No person shall operate or cause to have operated or used any sound signal device other than sound-amplification equipment attached to a motor vehicle wagon or manually propelled cart from which food or any other items are sold which emits a sound signal more frequently than once every ten minutes in any one street block and with a duration of more than ten seconds for any single emission. The sound level of this sound signal shall not exceed 90 decibels at 50 feet from the point of the noise source.

SEC. 36.413. MULTIPLE FAMILY DWELLING UNITS.

Notwithstanding any other provision of this chapter it shall be unlawful for a person to create, maintain or cause to be maintained any sound within the interior of a multiple family dwelling unit which causes the noises level to exceed the limits set forth below in another dwelling unit:

TABLE 36.413
ALLOWABLE INTERIOR NOISE LEVEL

Type of Land Use	Hours		Allowable Interior Noise Level (dBA)	
		No Time	1 min in 1 hour	5 min in 1 hour
Multifamily	10 pm- 7 am	> 45	40	35
Residential	7 am-10 pm	> 55	50	35

(> greater than)
(less than or equal to)

SEC. 36.414. GENERAL NOISE PROHIBITIONS.

In addition to the general limitations on sound levels in section 36.404, the following additional prohibitions shall apply:

(a It shall be unlawful for a person to make, continue or cause to be made or continued a disturbing, excessive or offensive noise.

(b) The characteristics and conditions which should be considered in determining whether a violation of this section has been committed include, but are not limited to, the following:

(1) The level of noise.

(2) Whether the nature of the noise is usual or unusual.

(3) Whether the origin of the noise is natural or unnatural

(4) The ambient noise level.

(5) The proximity of the noise to a place where someone sleeps.

(6) The nature and zoning of the area within which the noise emanates and where it is received.

(7) The time of day the noise occurs.

(8) The duration of the noise.

(9) Whether the noise is recurrent, intermittent or constant.

(10) Whether the noise is produced by a commercial or noncommercial activity.

(c) The following acts, among others, are declared to be disturbing, excessive and offensive noises that violate this chapter and are unlawful:

(1) Unnecessarily using or operating or allowing another person to use or operate a vehicle horn, signaling device or other similar device, other than as regulated by the Vehicle Code.

(2) Using, operating, playing or allowing another person to use operate or play, a radio, musical instrument, phonograph, television set or other device for the production or reproduction of sound:

(A) That disturbs the peace, quiet and comfort of persons of normal sensitivity residing in the area.

(B) That exceeds the levels in section 36.404 when measured at a distance of twenty-five feet from a device operating in a public right-of-way.

(C) That exceeds the levels in section 36.404 when measured at a distance of twenty-five feet from a device for the production or reproduction of sound operated in a County park unless a permit has been obtained from the County Parks and Recreation Department specifying the time, location and other conditions under which amplified sound may be allowed within a County park. A person using, operating or playing a device for the production or reproduction of sound in a County park, however shall not exceed a level of 90 decibels when measured fifty feet from the source or exceed the levels in section 36.404 when measured at the park boundary. Subsection 36.412 (c)(2)(C) shall be enforced by the Parks and Recreation Department.

(3) It shall be a prima facie violation of section 36.412(c)(2)(A) if a device for the production or reproduction of sound that is being operated, used or played is plainly audible at a distance of 50 feet or more from the building, structure or vehicle in which it is located.

(4) Playing, using, operating or allowing to be played, used or operated any sound production or reproduction device or machine including but not limited to radio receiving sets, phonographs, musical instruments, loudspeakers and sound amplifiers, for commercial or business advertising purposes in, on, over or across any street, alley, sidewalk, park or public property in a manner as to violate the provisions of this ordinance is prohibited. This subsection shall not apply to sound amplifying equipment mounted on a sound truck where the operator complies with the following requirements:

(A) The only sound emitted is music or human speech and the music or speech emitted is not obscene, lewd, profane or slanderous.

(B) The sound truck is only operated between the hours of 8:00 a.m. and 9:00 p.m. or after 9:00 p.m. during public events and affairs of general public interest.

(C) The sound amplifying equipment is not being operated unless the sound truck is traveling at a speed of at least 10 miles per hour, except when the truck is stopped or impeded by traffic. If the sound truck is stopped by traffic the sound amplifying equipment shall not be operated for longer than one minute at each stop.

(D) Sound is not emitted within 100 yards of a hospital, school, church or courthouse.

(E) The volume of sound does not exceed a sound level of 65 decibels (on the "A" scale) at a distance of 50 feet from the sound amplifying equipment as measured by a sound level meter.

(F) No sound amplifying equipment is operated unless the axis of the center of the sound reproducing equipment is parallel to the direction of travel of the sound truck. Any sound reproducing equipment, however, may be placed upon the sound truck as to not vary more than 15P^{o} either side of the axis of the center of the direction of travel.

(G) No sound truck with its amplifying device in operation shall be driven on the same street past the same point more than twice in one hour.

(5) Causing or allowing unreasonably loud or disturbing verbal noise that is offensive or annoying to a person of normal sensitivity.

(6) Owning, possessing or harboring an animal which by any frequent or long continued noise causes annoyance or discomfort to a person of normal sensitivity in the vicinity. The written affirmation by two persons having separate residences that an animal has caused frequent or long continued noise, that has caused them annoyance or discomfort shall be prima facie evidence of a violation of this section. This subsection does not apply to animal noise emanating from a legally operated animal hospital, humane society, County Department of Animal Services facility, farm or other agricultural facility where keeping animals is allowed.

(7) Operating or causing to be operated or used any steam whistle attached to a stationary boiler, except to give notice of the time to start or stop work or as a signal of imminent danger.

(8) Using or allowing the use of a motor vehicle to knowingly produce a noise that causes annoyance or discomfort to a person of normal sensitivity in the vicinity of the noise by backfiring the engine, screeching the tires, operating without a muffler, altering the muffler or any other action that causes a disturbing, excessive or offensive noise.

SEC. 36.415. BURGLAR ALARMS.

(a) No person shall install or operate a burglar alarm in a residence or any other building that is not equipped with a functioning automatic cutoff device that terminates

any noise emanating from the alarm within 15 minutes from the time the alarm is activated.

(b) No motor vehicle owner shall install or have in his or her possession a motor vehicle that is not equipped with a functioning automatic cutoff device that terminates any noise emanating from the alarm within 15 minutes from the time the alarm is activated.

(c) Notwithstanding the requirements of this section, a law enforcement officer may deactivate a building or motor vehicle alarm after the alarm is activated.

SEC. 36.416. NOISE FROM OFF-ROAD RECREATIONAL VEHICLES.

In addition to the general limitations on sound levels in section 36.404, no person shall operate or allow the operation of an off-road recreational vehicle on private property that produces a noise when measured at the boundary line of or on any occupied property that at any time exceeds the following maximum sound levels: 82 decibels between the hours of 7 a.m. and 7 p.m., 77 decibels between the hours of 7 p.m. and 10 p.m. and 55 decibels between the hours of 10 p.m. and 7 a.m.

SEC. 36.417. EXEMPTIONS.

(a) This chapter shall not apply to:

(1) Emergency work, as defined in this chapter, provided that (A) the person performing the work notifies noise control officer in advance, or as soon as practicable after the emergency and (B) any vehicle, device, apparatus or equipment used, related to or connected with the emergency work is designed, modified or equipped to reduce noise produced to the lowest possible level consistent with effective operation of the vehicle, device, apparatus or equipment.

(2) Noise reasonably related to authorized school: (A) bands, (B) athletic activities and (C) entertainments events.

(3) Sporting, entertainment and public events which are conducted pursuant to a license or permit issued by the County, within the scope of the license or permit. This section is not intended to excuse the act of an individual not participating in the event who violates this chapter.

(4) The operation of an emergency generator after a power failure, by an employee or agent of a law enforcement agency, fire department, hospital or other medical or surgical facility that is providing emergency medical services.

(5) The reasonable testing of an emergency generator by any person provided that the testing is conducted between the hours of 7 a.m. and 7 p.m.

(6) Any activity preempted by State or federal law.

(b) Section 36.404 shall not apply to:

(1) Noise associated with routine property maintenance used either in part or in whole for residential purposes, provided activity takes place between 7 a.m. and 8 p.m. on any day except Sunday or between 10 a.m. and 8 p.m. on Sunday.

(2) Equipment associated with agricultural operations, provided that each piece of equipment and machinery powered by an internal-combustion engine is equipped with an appropriate muffler and air intake silencer in good working order and one of the following applies:

(A) Operations do not take place between 7 p.m. and 7 a.m. of the following day.

(B) The operations and equipment are utilized for the preparation, planting, harvesting, protection or salvage of agricultural crops during periods of potential or actual frost damage or other adverse weather conditions.

(C) The operations and equipment are used for agricultural pest control in accordance with regulations and procedures administered by the County Department of Agriculture.

SEC. 36.418. RESPONSIBILITY FOR ENFORCEMENT.

The Sheriff shall have primary responsibility for enforcing sections 36.405, 36.407, 36.411, 36.412, 36.413, 36.414 and 36.415. When this chapter requires measurements to enforce these sections, the noise control officer shall assist the Sheriff. The noise control officer shall have primary responsibility for enforcing all other sections of this chapter. Pursuant to Penal Code section 836.5, a person authorized to enforce this chapter may arrest a person without a warrant if he or she has reasonable cause to believe that the person has committed a misdemeanor in his or her presence that violates this chapter.

SEC. 36.419. ADDITIONAL REMEDIES.

The noise control officer may order a person to cease violating any section of this chapter that the noise control officer enforces. The noise control officer may, in addition to using any remedy provided in section 11.121 of this code, summarily abate a public

nuisance caused by any act that violates this chapter if the noise control officer determines their is an immediate threat to the health or safety of any person.

SEC. 36.420. FALSE STATEMENT.

No person shall knowingly provide false information, either orally or in writing, to the noise control officer related to any matter within the noise control officer's jurisdiction.

SEC. 36.421. REPRODUCTION OR ALTERATION OF DOCUMENTS.

No person shall reproduce or alter any document issued by the noise control officer or required by this chapter, for the purpose of evading, attempting to evade or violating any requirement of this chapter.

SEC. 36.422. DISPLAY OF PERMIT, VARIANCE OR OTHER DOCUMENT.

Any permit, variance or other document that authorizes any activity regulated by this chapter shall be displayed or maintained on the property or at the location where the activity is occurring.

SEC. 36.423. VARIANCES.

(a) A person who proposes to perform non-emergency work on a public right-of-way, public utility facility, public transportation facility or some other project for the benefit of the general public, who is unable to conform to the requirements of this chapter may apply to the County for a variance authorizing the person to temporarily deviate from the requirements of this chapter.

(b) The noise control officer shall only grant a variance if the officer makes findings that the applicant's proposed activity cannot feasibly be done in a manner that would comply with this chapter and the applicant has no other reasonable alternative available.

(c) When evaluating a request for a variance the noise control officer shall determine the impact any noise that does not comply with the limits of this chapter will have on each property likely to be affected by the noise. The evaluation shall include the uses on each property on which the non-complying noise will be received, what activities will be impacted on the property and the duration of each impact. The evaluation shall also include the value to the community of the work being done by the applicant, the cost to the community if the applicant is unable to perform the work, the cost to the applicant for mitigating the non-complying noise and any cost to the occupant of the impacted property during the time the period of the impacted property will be subject to the non-complying noise.

(d) If the noise control officer grants a variance under this section the variance may impose time limitations on the non-complying activity and may include mitigation measures that the applicant is required to adopt.

SEC. 36.424. APPLICATION FOR VARIANCE.

An applicant for a variance shall file an application with the noise control officer on a form provided by the officer. The application shall not be deemed complete until the applicant provides all information required by the application and any supplemental information requested by the noise control officer.

SEC. 36.425. REQUEST FOR DUPLICATE VARIANCE CERTIFICATE.

A person who loses the certificate issued by the noise control officer that grants a variance shall request a duplicate certificate from the noise control officer within 10 days after the certificate is destroyed, lost or defaced.

SEC. 36.426. ACTION ON APPLICATION.

(a) The noise control officer shall review an application for a variance to determine if the applicant has provided all information necessary to render a decision on the application. If the application is not complete, the noise control officer shall notify the applicant within 15 days from the date the application was submitted what additional information the applicant needs to provide to make the application complete. If the applicant does not provide the additional information within 15 days of the notice the noise control officer shall deny the application. Within 30 days after receiving a completed application the noise control officer shall deny, approve or grant conditional approval of the request for a variance and notify the applicant in writing of the action taken.

(b) If the noise control officer denies the request for a variance the notice of denial shall state the reasons for the denial. If the noise control officer conditionally approves the variance request the notice of conditional approval shall clearly state the conditions and the reasons for the conditional approval.

(c) An applicant may deem a variance denied if the application has not been acted on within 30 days after the application was submitted or within 15 days after providing additional information requested by the noise control officer, whichever is later.

SEC. 36.427. FAILURE TO COMPLY WITH CONDITIONS.

If a person granted a variance fails to comply with a condition of the variance or this chapter the noise control officer may suspend the variance until the person complies or may revoke the variance.

SEC. 36.428. APPEALS.

A person may appeal a decision of the noise control officer by filing a notice of appeal with the Clerk of the Board of Supervisors (Clerk) and paying the appeal fee for the appeal of an administrative decision, as provided in section 362 of the County Administrative Code, within 15 days after the noise control officer:

(a) Serves a notice of denial or conditional approval of a variance or the date a variance request is deemed denied.

(b) Serves a notice of suspension or revocation of a variance.

.

SEC. 36.429. CONTENTS OF NOTICE OF APPEAL.

A notice of appeal to review a denial or conditional approval of a variance shall include a copy of the variance application, a copy of the notice of denial or conditional approval and the reasons for the appeal. A notice of appeal of a suspension or revocation of a variance shall include a copy of the variance, a copy of the noise control officer's notice of suspension or revocation and the reasons for the appeal. The appellant shall not be allowed to raise any grounds for appeal not contained in the notice of appeal.

SEC. 36.430. DISMISSAL OF APPEAL.

The appellant may dismiss an appeal at any time before the appeal hearing by filing a written notice of dismissal with the Clerk with a copy to the noise control officer.

SEC. 36.431. HEARING OFFICER.

All appeals filed under this chapter shall be heard by a County hearing officer appointed pursuant to sections 650 et seq. of the County Administrative Code. The Clerk shall assign the matter to a hearing officer on a rotating basis from the list of appointed hearing officers.

SEC. 36.432. SCHEDULING HEARINGS.

The Clerk shall schedule a hearing within 20 days after receipt of the notice of appeal and serve the notice of hearing on the appellant and the noise control officer. The notice shall provide the date, time and location of the hearing.

SEC. 36.433. HEARING PROCEDURES.

An appeal hearing authorized by this chapter shall be conducted as follows:

(a) Every witness before testifying shall take an oath or make an affirmation.

(b) The noise control officer shall present evidence that explains why the variance was denied, approved conditionally, suspended or revoked.

(c) The appellant shall present evidence that supports his/her contention that the noise control officer's determination denying, conditionally approving, suspending or revoking the variance was erroneous.

(d) Each party shall have the right to: call and examine witnesses, introduce exhibits, cross-examine opposing witnesses on any matter relevant to the issues, impeach any witness regardless of which party first called the witness to testify and to rebut the evidence against the party. The noise control officer may call and examine the appellant or any employee or agent of the appellant as a witness during the noise control officer's case in chief or during the rebuttal case. The hearing officer may examine the appellant or any of the appellant's employees or agents as if under cross-examination.

(e) Strict rules of evidence shall not apply. Evidence that might otherwise be excluded under the Evidence Code may be admissible if the hearing officer determines that it is relevant and of the kind that reasonably prudent persons rely on in making decisions. All rules of privilege recognized by the Evidence Code, however, shall apply to the hearing. The hearing officer shall exclude irrelevant and cumulative evidence.

(f) The hearing shall be conducted in English. If the appellant or any of appellant's witnesses require an interpreter the appellant is responsible to provide a State certified interpreter at appellant's expense.

SEC. 36.434. CONTINUANCES.

The hearing officer may grant a continuance requested by either party for good cause.

SEC. 36.435. DECISION.

The hearing officer shall issue a written decision with five days after the hearing is concluded and file it with the Clerk. The decision shall affirm, modify or overrule the noise control officer's decision that was appealed. The decision shall state the reasons for the hearing officer's decision. The Clerk shall serve a copy of the decision on the appellant and provide a copy to the noise control officer. The decision shall be effective after it has been served by the Clerk.

APPENDIX B

STUDY AREA PHOTOS

Monitoring Locations

Western View

Northwest View

Northwest View to I-15

Southwest View to I-15

APPENDIX C

NOISE CONTOUR MODEL INPUTS AND CALCULATIONS

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Conditions
Road Name: Old Highway 395
Road Segment: East Mission Road/ Reche Road

Project Name: Campus Park
Job Number: 4346
Analyst: A. Stalker

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	5,155 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	516 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	36 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	110.0 feet
Barrier Distance to Observer:	10.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	80.0%	7.0%	13.0%	96.00%
Medium Trucks:	80.0%	7.0%	13.0%	2.00%
Heavy Trucks:	80.0%	7.0%	13.0%	2.00%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	108.632
Medium Trucks:	108.551
Heavy Trucks:	108.559

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	-5.76	-5.16	-1.20	*-1.04*	0.000	0.000
Medium Trucks:	82.40	-22.58	-5.15	-1.20	*-1.15*	0.000	0.000
Heavy Trucks:	86.40	-22.58	-5.15	-1.20	*-1.43*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	59.7	57.9	53.3	51.3	59.2	59.5
Medium Trucks:	53.5	51.7	47.2	45.1	53.0	53.3
Heavy Trucks:	57.5	55.7	51.1	49.1	57.0	57.3
Vehicle Noise:	62.3	60.6	56.0	53.9	61.9	62.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	32	68	147	316
CNEL:	33	71	154	331

Thursday, March 12, 2009

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Conditions
Road Name: Old Highway 395
Road Segment: Reche Road/ Stewart Canyon Ro

Project Name: Campus Park
Job Number: 4346
Analyst: A. Stalker

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	5,646 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	565 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	36 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	110.0 feet
Barrier Distance to Observer:	10.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	80.0%	7.0%	13.0%	96.00%
Medium Trucks:	80.0%	7.0%	13.0%	2.00%
Heavy Trucks:	80.0%	7.0%	13.0%	2.00%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	108.632
Medium Trucks:	108.551
Heavy Trucks:	108.559

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	-5.37	-5.16	-1.20	*-1.04*	0.000	0.000
Medium Trucks:	82.40	-22.18	-5.15	-1.20	*-1.15*	0.000	0.000
Heavy Trucks:	86.40	-22.18	-5.15	-1.20	*-1.43*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	60.1	58.3	53.7	51.7	59.6	59.9
Medium Trucks:	53.9	52.1	47.5	45.5	53.4	53.7
Heavy Trucks:	57.9	56.1	51.5	49.5	57.4	57.7
Vehicle Noise:	62.7	61.0	56.4	54.3	62.3	62.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	34	72	156	336
CNEL:	35	76	163	351

Thursday, March 12, 2009

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Conditions
Road Name: Old Highway 395
Road Segment: Stewart Canyon Road/ Tecalote L

Project Name: Campus Park
Job Number: 4346
Analyst: A. Stalker

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	6,405 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	641 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	36 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	110.0 feet
Barrier Distance to Observer:	10.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	80.0%	7.0%	13.0%	96.00%
Medium Trucks:	80.0%	7.0%	13.0%	2.00%
Heavy Trucks:	80.0%	7.0%	13.0%	2.00%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	108.632
Medium Trucks:	108.551
Heavy Trucks:	108.559

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	-4.82	-5.16	-1.20	*-1.04*	0.000	0.000
Medium Trucks:	82.40	-21.63	-5.15	-1.20	*-1.15*	0.000	0.000
Heavy Trucks:	86.40	-21.63	-5.15	-1.20	*-1.43*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	60.6	58.8	54.3	52.2	60.2	60.5
Medium Trucks:	54.4	52.7	48.1	46.0	54.0	54.3
Heavy Trucks:	58.4	56.6	52.1	50.0	58.0	58.3
Vehicle Noise:	63.3	61.5	56.9	54.9	62.8	63.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	37	79	170	366
CNEL:	38	82	177	382

Thursday, March 12, 2009

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Conditions
Road Name: Old Highway 395
Road Segment: Tecalote Lane/ Pala Mesa Drive

Project Name: Campus Park
Job Number: 4346
Analyst: A. Stalker

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	6,603 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	660 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	36 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	110.0 feet
Barrier Distance to Observer:	10.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	80.0%	7.0%	13.0%	96.00%
Medium Trucks:	80.0%	7.0%	13.0%	2.00%
Heavy Trucks:	80.0%	7.0%	13.0%	2.00%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	108.632
Medium Trucks:	108.551
Heavy Trucks:	108.559

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	-4.69	-5.16	-1.20	*-1.04*	0.000	0.000
Medium Trucks:	82.40	-21.50	-5.15	-1.20	*-1.15*	0.000	0.000
Heavy Trucks:	86.40	-21.50	-5.15	-1.20	*-1.43*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	60.7	59.0	54.4	52.3	60.3	60.6
Medium Trucks:	54.5	52.8	48.2	46.1	54.1	54.4
Heavy Trucks:	58.5	56.8	52.2	50.1	58.1	58.4
Vehicle Noise:	63.4	61.6	57.1	55.0	63.0	63.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	37	80	173	373
CNEL:	39	84	181	390

Thursday, March 12, 2009

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Conditions
Road Name: Old Highway 395
Road Segment: Pala Mesa Drive/ Pala Road (SR

Project Name: Campus Park
Job Number: 4346
Analyst: A. Stalker

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	8,302 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	830 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	36 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	110.0 feet
Barrier Distance to Observer:	10.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	80.0%	7.0%	13.0%	96.00%
Medium Trucks:	80.0%	7.0%	13.0%	2.00%
Heavy Trucks:	80.0%	7.0%	13.0%	2.00%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	108.632
Medium Trucks:	108.551
Heavy Trucks:	108.559

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	-3.69	-5.16	-1.20	*-1.04*	0.000	0.000
Medium Trucks:	82.40	-20.51	-5.15	-1.20	*-1.15*	0.000	0.000
Heavy Trucks:	86.40	-20.51	-5.15	-1.20	*-1.43*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	61.7	60.0	55.4	53.3	61.3	61.6
Medium Trucks:	55.5	53.8	49.2	47.1	55.1	55.4
Heavy Trucks:	59.5	57.8	53.2	51.1	59.1	59.4
Vehicle Noise:	64.4	62.6	58.1	56.0	63.9	64.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	43	94	202	435
CNEL:	45	98	211	454

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Conditions
Road Name: Old Highway 395
Road Segment: Pala Road (SR 76)/ Dulin Road

Project Name: Campus Park
Job Number: 4346
Analyst: A. Stalker

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	6,668 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	667 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	36 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	110.0 feet
Barrier Distance to Observer:	10.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	80.0%	7.0%	13.0%	96.00%
Medium Trucks:	80.0%	7.0%	13.0%	2.00%
Heavy Trucks:	80.0%	7.0%	13.0%	2.00%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	108.632
Medium Trucks:	108.551
Heavy Trucks:	108.559

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	-4.65	-5.16	-1.20	*-1.04*	0.000	0.000
Medium Trucks:	82.40	-21.46	-5.15	-1.20	*-1.15*	0.000	0.000
Heavy Trucks:	86.40	-21.46	-5.15	-1.20	*-1.43*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	60.8	59.0	54.5	52.4	60.3	60.6
Medium Trucks:	54.6	52.8	48.3	46.2	54.2	54.4
Heavy Trucks:	58.6	56.8	52.3	50.2	58.1	58.4
Vehicle Noise:	63.4	61.7	57.1	55.0	63.0	63.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	38	81	174	375
CNEL:	39	85	182	393

Thursday, March 12, 2009

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Conditions
Road Name: Old Highway 395
Road Segment: Dulin Road/ West Lilac Road

Project Name: Campus Park
Job Number: 4346
Analyst: A. Stalker

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	4,163 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	416 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	12 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	110.0 feet
Barrier Distance to Observer:	10.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	80.0%	7.0%	13.0%	96.00%
Medium Trucks:	80.0%	7.0%	13.0%	2.00%
Heavy Trucks:	80.0%	7.0%	13.0%	2.00%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	109.950
Medium Trucks:	109.869
Heavy Trucks:	109.877

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-5.31	-5.24	-1.20	*-1.04*	0.000	0.000
Medium Trucks:	77.72	-22.12	-5.23	-1.20	*-1.15*	0.000	0.000
Heavy Trucks:	82.99	-22.12	-5.23	-1.20	*-1.43*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	54.8	53.0	48.4	46.4	54.3	54.6
Medium Trucks:	49.2	47.4	42.8	40.8	48.7	49.0
Heavy Trucks:	54.4	52.7	48.1	46.0	54.0	54.3
Vehicle Noise:	58.2	56.4	51.9	49.8	57.8	58.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	17	36	78	168
CNEL:	18	38	82	176

Thursday, March 12, 2009

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Conditions
Road Name: Reche Road
Road Segment: Live Oak Park Road/ Gird Road

Project Name: Campus Park
Job Number: 4346
Analyst: A. Stalker

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	10,380 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,038 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	12 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	110.0 feet
Barrier Distance to Observer:	10.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	80.0%	7.0%	13.0%	96.00%
Medium Trucks:	80.0%	7.0%	13.0%	2.00%
Heavy Trucks:	80.0%	7.0%	13.0%	2.00%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	109.950
Medium Trucks:	109.869
Heavy Trucks:	109.877

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-1.34	-5.24	-1.20	*-1.04*	0.000	0.000
Medium Trucks:	77.72	-18.15	-5.23	-1.20	*-1.15*	0.000	0.000
Heavy Trucks:	82.99	-18.15	-5.23	-1.20	*-1.43*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	58.7	57.0	52.4	50.3	58.3	58.6
Medium Trucks:	53.1	51.4	46.8	44.7	52.7	53.0
Heavy Trucks:	58.4	56.6	52.1	50.0	58.0	58.3
Vehicle Noise:	62.2	60.4	55.8	53.8	61.7	62.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	31	67	143	309
CNEL:	32	70	150	323

Thursday, March 12, 2009

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Conditions
Road Name: Reche Road
Road Segment: Gird Road/ Wilt Road

Project Name: Campus Park
Job Number: 4346
Analyst: A. Stalker

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	8,301 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	830 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	12 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	110.0 feet
Barrier Distance to Observer:	10.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	80.0%	7.0%	13.0%	96.00%
Medium Trucks:	80.0%	7.0%	13.0%	2.00%
Heavy Trucks:	80.0%	7.0%	13.0%	2.00%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	109.950
Medium Trucks:	109.869
Heavy Trucks:	109.877

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-2.31	-5.24	-1.20	*-1.04*	0.000	0.000
Medium Trucks:	77.72	-19.12	-5.23	-1.20	*-1.15*	0.000	0.000
Heavy Trucks:	82.99	-19.12	-5.23	-1.20	*-1.43*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	57.8	56.0	51.4	49.4	57.3	57.6
Medium Trucks:	52.2	50.4	45.8	43.8	51.7	52.0
Heavy Trucks:	57.4	55.7	51.1	49.0	57.0	57.3
Vehicle Noise:	61.2	59.4	54.9	52.8	60.8	61.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	27	57	124	266
CNEL:	28	60	129	278

Thursday, March 12, 2009

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Conditions
Road Name: Reche Road
Road Segment: Wilt Road/ Tecalote Road

Project Name: Campus Park
Job Number: 4346
Analyst: A. Stalker

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	7,814 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	781 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	12 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	110.0 feet
Barrier Distance to Observer:	10.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	80.0%	7.0%	13.0%	96.00%
Medium Trucks:	80.0%	7.0%	13.0%	2.00%
Heavy Trucks:	80.0%	7.0%	13.0%	2.00%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	109.950
Medium Trucks:	109.869
Heavy Trucks:	109.877

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-2.57	-5.24	-1.20	*-1.04*	0.000	0.000
Medium Trucks:	77.72	-19.39	-5.23	-1.20	*-1.15*	0.000	0.000
Heavy Trucks:	82.99	-19.39	-5.23	-1.20	*-1.43*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	57.5	55.7	51.2	49.1	57.1	57.4
Medium Trucks:	51.9	50.1	45.6	43.5	51.5	51.8
Heavy Trucks:	57.2	55.4	50.9	48.8	56.7	57.0
Vehicle Noise:	60.9	59.2	54.6	52.5	60.5	60.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	26	55	119	256
CNEL:	27	58	124	267

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Conditions
Road Name: Reche Road
Road Segment: Tecalote Road/ Old Highway 395

Project Name: Campus Park
Job Number: 4346
Analyst: A. Stalker

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	7,420 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	742 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	12 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	110.0 feet
Barrier Distance to Observer:	10.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	80.0%	7.0%	13.0%	96.00%
Medium Trucks:	80.0%	7.0%	13.0%	2.00%
Heavy Trucks:	80.0%	7.0%	13.0%	2.00%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	109.950
Medium Trucks:	109.869
Heavy Trucks:	109.877

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-2.80	-5.24	-1.20	*-1.04*	0.000	0.000
Medium Trucks:	77.72	-19.61	-5.23	-1.20	*-1.15*	0.000	0.000
Heavy Trucks:	82.99	-19.61	-5.23	-1.20	*-1.43*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	57.3	55.5	51.0	48.9	56.8	57.1
Medium Trucks:	51.7	49.9	45.4	43.3	51.2	51.5
Heavy Trucks:	57.0	55.2	50.6	48.5	56.5	56.8
Vehicle Noise:	60.7	58.9	54.4	52.3	60.3	60.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	25	53	115	247
CNEL:	26	56	120	258

Thursday, March 12, 2009

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Conditions
Road Name: Pala Road (SR76)
Road Segment: Via Monserate/ Gird Road

Project Name: Campus Park
Job Number: 4346
Analyst: A. Stalker

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	22,025 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,202 vehicles
Vehicle Speed:	65 mph
Near/Far Lane Distance:	74 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	110.0 feet
Barrier Distance to Observer:	10.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	80.0%	7.0%	13.0%	96.00%
Medium Trucks:	80.0%	7.0%	13.0%	2.00%
Heavy Trucks:	80.0%	7.0%	13.0%	2.00%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	103.711
Medium Trucks:	103.626
Heavy Trucks:	103.634

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	74.55	-0.18	-4.86	-1.20	*-1.04*	0.000	0.000
Medium Trucks:	84.86	-17.00	-4.85	-1.20	*-1.15*	0.000	0.000
Heavy Trucks:	88.18	-17.00	-4.85	-1.20	*-1.43*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	68.3	66.5	62.0	59.9	67.9	68.2
Medium Trucks:	61.8	60.1	55.5	53.4	61.4	61.7
Heavy Trucks:	65.1	63.4	58.8	56.7	64.7	65.0
Vehicle Noise:	70.6	68.9	64.3	62.2	70.2	70.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	113	244	526	1,132
CNEL:	118	255	550	1,184

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Conditions
Road Name: Pala Road (SR76)
Road Segment: Gird Road/ Sage Road

Project Name: Campus Park
Job Number: 4346
Analyst: A. Stalker

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	20,957 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,096 vehicles
Vehicle Speed:	65 mph
Near/Far Lane Distance:	74 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	110.0 feet
Barrier Distance to Observer:	10.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	80.0%	7.0%	13.0%	96.00%
Medium Trucks:	80.0%	7.0%	13.0%	2.00%
Heavy Trucks:	80.0%	7.0%	13.0%	2.00%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	103.711
Medium Trucks:	103.626
Heavy Trucks:	103.634

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	74.55	-0.40	-4.86	-1.20	*-1.04*	0.000	0.000
Medium Trucks:	84.86	-17.21	-4.85	-1.20	*-1.15*	0.000	0.000
Heavy Trucks:	88.18	-17.21	-4.85	-1.20	*-1.43*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	68.1	66.3	61.8	59.7	67.7	67.9
Medium Trucks:	61.6	59.8	55.3	53.2	61.2	61.5
Heavy Trucks:	64.9	63.2	58.6	56.5	64.5	64.8
Vehicle Noise:	70.4	68.6	64.1	62.0	70.0	70.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	110	236	508	1,096
CNEL:	115	247	532	1,146

Thursday, March 12, 2009

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Conditions
Road Name: Pala Road (SR76)
Road Segment: Sage Road/ Old Highway 395

Project Name: Campus Park
Job Number: 4346
Analyst: A. Stalker

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	20,817 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,082 vehicles
Vehicle Speed:	65 mph
Near/Far Lane Distance:	74 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	110.0 feet
Barrier Distance to Observer:	10.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	80.0%	7.0%	13.0%	96.00%
Medium Trucks:	80.0%	7.0%	13.0%	2.00%
Heavy Trucks:	80.0%	7.0%	13.0%	2.00%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	103.711
Medium Trucks:	103.626
Heavy Trucks:	103.634

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	74.55	-0.43	-4.86	-1.20	*-1.04*	0.000	0.000
Medium Trucks:	84.86	-17.24	-4.85	-1.20	*-1.15*	0.000	0.000
Heavy Trucks:	88.18	-17.24	-4.85	-1.20	*-1.43*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	68.1	66.3	61.7	59.7	67.6	67.9
Medium Trucks:	61.6	59.8	55.3	53.2	61.1	61.4
Heavy Trucks:	64.9	63.1	58.6	56.5	64.5	64.7
Vehicle Noise:	70.4	68.6	64.1	62.0	69.9	70.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	109	235	506	1,091
CNEL:	114	246	529	1,141

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Conditions
Road Name: Pala Road (SR76)
Road Segment: Old Highway 395/ I-15 SB Ramps

Project Name: Campus Park
Job Number: 4346
Analyst: A. Stalker

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	24,579 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,458 vehicles
Vehicle Speed:	65 mph
Near/Far Lane Distance:	74 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	110.0 feet
Barrier Distance to Observer:	10.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	80.0%	7.0%	13.0%	96.00%
Medium Trucks:	80.0%	7.0%	13.0%	2.00%
Heavy Trucks:	80.0%	7.0%	13.0%	2.00%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	103.711
Medium Trucks:	103.626
Heavy Trucks:	103.634

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	74.55	0.29	-4.86	-1.20	*-1.04*	0.000	0.000
Medium Trucks:	84.86	-16.52	-4.85	-1.20	*-1.15*	0.000	0.000
Heavy Trucks:	88.18	-16.52	-4.85	-1.20	*-1.43*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	68.8	67.0	62.5	60.4	68.3	68.6
Medium Trucks:	62.3	60.5	56.0	53.9	61.9	62.1
Heavy Trucks:	65.6	63.9	59.3	57.2	65.2	65.5
Vehicle Noise:	71.1	69.3	64.8	62.7	70.7	71.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	122	262	566	1,218
CNEL:	127	275	592	1,274

Thursday, March 12, 2009

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Conditions
Road Name: Pala Road (SR76)
Road Segment: I-15 NB Ramps/ Pankey Road

Project Name: Campus Park
Job Number: 4346
Analyst: A. Stalker

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	9,569 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	957 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	38 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	110.0 feet
Barrier Distance to Observer:	10.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	80.0%	7.0%	13.0%	96.00%
Medium Trucks:	80.0%	7.0%	13.0%	2.00%
Heavy Trucks:	80.0%	7.0%	13.0%	2.00%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	108.462
Medium Trucks:	108.380
Heavy Trucks:	108.388

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	-3.08	-5.15	-1.20	*-1.04*	0.000	0.000
Medium Trucks:	82.40	-19.89	-5.14	-1.20	*-1.15*	0.000	0.000
Heavy Trucks:	86.40	-19.89	-5.14	-1.20	*-1.43*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	62.4	60.6	56.0	54.0	61.9	62.2
Medium Trucks:	56.2	54.4	49.9	47.8	55.7	56.0
Heavy Trucks:	60.2	58.4	53.8	51.8	59.7	60.0
Vehicle Noise:	65.0	63.3	58.7	56.6	64.6	64.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	48	103	222	478
CNEL:	50	108	232	500

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Conditions
Road Name: Pala Road (SR76)
Road Segment: Pankey Road/ Horse Ranch Cree

Project Name: Campus Park
Job Number: 4346
Analyst: A. Stalker

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	9,439 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	944 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	38 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	110.0 feet
Barrier Distance to Observer:	10.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	80.0%	7.0%	13.0%	96.00%
Medium Trucks:	80.0%	7.0%	13.0%	2.00%
Heavy Trucks:	80.0%	7.0%	13.0%	2.00%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	108.462
Medium Trucks:	108.380
Heavy Trucks:	108.388

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	-3.14	-5.15	-1.20	*-1.04*	0.000	0.000
Medium Trucks:	82.40	-19.95	-5.14	-1.20	*-1.15*	0.000	0.000
Heavy Trucks:	86.40	-19.95	-5.14	-1.20	*-1.43*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	62.3	60.5	56.0	53.9	61.9	62.2
Medium Trucks:	56.1	54.4	49.8	47.7	55.7	56.0
Heavy Trucks:	60.1	58.3	53.8	51.7	59.7	60.0
Vehicle Noise:	65.0	63.2	58.6	56.6	64.5	64.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	47	102	220	474
CNEL:	50	107	230	496

Thursday, March 12, 2009

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Conditions
Road Name: Pala Road (SR76)
Road Segment: Horse Ranch Creek Road/Rice C

Project Name: Campus Park
Job Number: 4346
Analyst: A. Stalker

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	9,439 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	944 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	38 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	110.0 feet
Barrier Distance to Observer:	10.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	80.0%	7.0%	13.0%	96.00%
Medium Trucks:	80.0%	7.0%	13.0%	2.00%
Heavy Trucks:	80.0%	7.0%	13.0%	2.00%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	108.462
Medium Trucks:	108.380
Heavy Trucks:	108.388

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	-3.14	-5.15	-1.20	*-1.04*	0.000	0.000
Medium Trucks:	82.40	-19.95	-5.14	-1.20	*-1.15*	0.000	0.000
Heavy Trucks:	86.40	-19.95	-5.14	-1.20	*-1.43*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	62.3	60.5	56.0	53.9	61.9	62.2
Medium Trucks:	56.1	54.4	49.8	47.7	55.7	56.0
Heavy Trucks:	60.1	58.3	53.8	51.7	59.7	60.0
Vehicle Noise:	65.0	63.2	58.6	56.6	64.5	64.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	47	102	220	474
CNEL:	50	107	230	496

Thursday, March 12, 2009

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Conditions
Road Name: Pala Road (SR76)
Road Segment: Rice Canyon Road/ Couser Cany

Project Name: Campus Park
Job Number: 4346
Analyst: A. Stalker

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	9,041 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	904 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	38 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	110.0 feet
Barrier Distance to Observer:	10.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	80.0%	7.0%	13.0%	96.00%
Medium Trucks:	80.0%	7.0%	13.0%	2.00%
Heavy Trucks:	80.0%	7.0%	13.0%	2.00%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	108.462
Medium Trucks:	108.380
Heavy Trucks:	108.388

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	-3.32	-5.15	-1.20	*-1.04*	0.000	0.000
Medium Trucks:	82.40	-20.14	-5.14	-1.20	*-1.15*	0.000	0.000
Heavy Trucks:	86.40	-20.14	-5.14	-1.20	*-1.43*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	62.1	60.3	55.8	53.7	61.7	62.0
Medium Trucks:	55.9	54.2	49.6	47.5	55.5	55.8
Heavy Trucks:	59.9	58.2	53.6	51.5	59.5	59.8
Vehicle Noise:	64.8	63.0	58.4	56.4	64.3	64.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	46	99	214	461
CNEL:	48	104	224	482

Thursday, March 12, 2009

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Conditions
Road Name: Dulin Road
Road Segment: Old Highway 395/ Pankey Road

Project Name: Campus Park
Job Number: 4346
Analyst: A. Stalker

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	5,770 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	577 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	12 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	110.0 feet
Barrier Distance to Observer:	10.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	80.0%	7.0%	13.0%	96.00%
Medium Trucks:	80.0%	7.0%	13.0%	2.00%
Heavy Trucks:	80.0%	7.0%	13.0%	2.00%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	109.950
Medium Trucks:	109.869
Heavy Trucks:	109.877

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-3.89	-5.24	-1.20	*-1.04*	0.000	0.000
Medium Trucks:	77.72	-20.70	-5.23	-1.20	*-1.15*	0.000	0.000
Heavy Trucks:	82.99	-20.70	-5.23	-1.20	*-1.43*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	56.2	54.4	49.9	47.8	55.7	56.0
Medium Trucks:	50.6	48.8	44.3	42.2	50.1	50.4
Heavy Trucks:	55.9	54.1	49.5	47.5	55.4	55.7
Vehicle Noise:	59.6	57.9	53.3	51.2	59.2	59.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	21	45	97	209
CNEL:	22	47	101	218

Thursday, March 12, 2009

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Conditions
Road Name: Pankey Road
Road Segment: Street R/ Pala Road (SR 76)

Project Name: Campus Park
Job Number: 4346
Analyst: A. Stalker

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	10 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	36 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	110.0 feet
Barrier Distance to Observer:	10.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	80.0%	7.0%	13.0%	96.00%
Medium Trucks:	80.0%	7.0%	13.0%	2.00%
Heavy Trucks:	80.0%	7.0%	13.0%	2.00%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	108.632
Medium Trucks:	108.551
Heavy Trucks:	108.559

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	-32.89	-5.16	-1.20	*-1.04*	0.000	0.000
Medium Trucks:	82.40	-49.70	-5.15	-1.20	*-1.15*	0.000	0.000
Heavy Trucks:	86.40	-49.70	-5.15	-1.20	*-1.43*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	32.5	30.8	26.2	24.1	32.1	32.4
Medium Trucks:	26.4	24.6	20.0	17.9	25.9	26.2
Heavy Trucks:	30.3	28.6	24.0	21.9	29.9	30.2
Vehicle Noise:	35.2	33.4	28.9	26.8	34.8	35.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	0	1	2	5
CNEL:	1	1	2	5

Thursday, March 12, 2009

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Conditions
Road Name: Pankey Road
Road Segment: Pala Road (SR 76)/ Dulin Road

Project Name: Campus Park
Job Number: 4346
Analyst: A. Stalker

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	936 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	94 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	12 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	110.0 feet
Barrier Distance to Observer:	10.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	80.0%	7.0%	13.0%	96.00%
Medium Trucks:	80.0%	7.0%	13.0%	2.00%
Heavy Trucks:	80.0%	7.0%	13.0%	2.00%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	109.950
Medium Trucks:	109.869
Heavy Trucks:	109.877

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-11.79	-5.24	-1.20	*-1.04*	0.000	0.000
Medium Trucks:	77.72	-28.60	-5.23	-1.20	*-1.15*	0.000	0.000
Heavy Trucks:	82.99	-28.60	-5.23	-1.20	*-1.43*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	48.3	46.5	42.0	39.9	47.8	48.1
Medium Trucks:	42.7	40.9	36.4	34.3	42.2	42.5
Heavy Trucks:	48.0	46.2	41.6	39.6	47.5	47.8
Vehicle Noise:	51.7	50.0	45.4	43.3	51.3	51.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	6	13	29	62
CNEL:	6	14	30	65

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Conditions
Road Name: Stewart Canyon Road
Road Segment: Old Highway 395/ Horse Ranch C

Project Name: Campus Park
Job Number: 4346
Analyst: A. Stalker

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	590 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	59 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	12 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	110.0 feet
Barrier Distance to Observer:	10.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	80.0%	7.0%	13.0%	96.00%
Medium Trucks:	80.0%	7.0%	13.0%	2.00%
Heavy Trucks:	80.0%	7.0%	13.0%	2.00%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	109.950
Medium Trucks:	109.869
Heavy Trucks:	109.877

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-13.79	-5.24	-1.20	*-1.04*	0.000	0.000
Medium Trucks:	77.72	-30.61	-5.23	-1.20	*-1.15*	0.000	0.000
Heavy Trucks:	82.99	-30.61	-5.23	-1.20	*-1.43*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	46.3	44.5	40.0	37.9	45.8	46.1
Medium Trucks:	40.7	38.9	34.4	32.3	40.2	40.5
Heavy Trucks:	46.0	44.2	39.6	37.6	45.5	45.8
Vehicle Noise:	49.7	47.9	43.4	41.3	49.3	49.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	5	10	21	46
CNEL:	5	10	22	48

Thursday, March 12, 2009

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Conditions
Road Name: Reche Road
Road Segment: Green Canyon/Live Oak Park Roa

Project Name: Campus Park
Job Number: 4346
Analyst: A. Stalker

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	10,162 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,016 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	12 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	110.0 feet
Barrier Distance to Observer:	10.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	80.0%	7.0%	13.0%	96.00%
Medium Trucks:	80.0%	7.0%	13.0%	2.00%
Heavy Trucks:	80.0%	7.0%	13.0%	2.00%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	109.950
Medium Trucks:	109.869
Heavy Trucks:	109.877

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-1.43	-5.24	-1.20	*-1.04*	0.000	0.000
Medium Trucks:	77.72	-18.25	-5.23	-1.20	*-1.15*	0.000	0.000
Heavy Trucks:	82.99	-18.25	-5.23	-1.20	*-1.43*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	58.6	56.9	52.3	50.2	58.2	58.5
Medium Trucks:	53.0	51.3	46.7	44.6	52.6	52.9
Heavy Trucks:	58.3	56.6	52.0	49.9	57.9	58.2
Vehicle Noise:	62.1	60.3	55.8	53.7	61.6	61.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	30	66	141	305
CNEL:	32	69	148	319

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Conditions
Road Name: Pala Road (SR76)
Road Segment: Couser Canyon Road/Pala Missio

Project Name: Campus Park
Job Number: 4346
Analyst: A. Stalker

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	8,558 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	856 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	38 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	110.0 feet
Barrier Distance to Observer:	10.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	80.0%	7.0%	13.0%	96.00%
Medium Trucks:	80.0%	7.0%	13.0%	2.00%
Heavy Trucks:	80.0%	7.0%	13.0%	2.00%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	108.462
Medium Trucks:	108.380
Heavy Trucks:	108.388

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	-3.56	-5.15	-1.20	*-1.04*	0.000	0.000
Medium Trucks:	82.40	-20.37	-5.14	-1.20	*-1.15*	0.000	0.000
Heavy Trucks:	86.40	-20.37	-5.14	-1.20	*-1.43*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	61.9	60.1	55.6	53.5	61.4	61.7
Medium Trucks:	55.7	53.9	49.4	47.3	55.2	55.5
Heavy Trucks:	59.7	57.9	53.4	51.3	59.2	59.5
Vehicle Noise:	64.5	62.8	58.2	56.1	64.1	64.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	44	96	206	444
CNEL:	46	100	216	465

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project
Road Name: Old Highway 395
Road Segment: East Mission Road/ Reche Road

Project Name: Campus Park
Job Number: 4346
Analyst: A. Stalker

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	7,735 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	774 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	36 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	110.0 feet
Barrier Distance to Observer:	10.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	80.0%	7.0%	13.0%	96.00%
Medium Trucks:	80.0%	7.0%	13.0%	2.00%
Heavy Trucks:	80.0%	7.0%	13.0%	2.00%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	108.632
Medium Trucks:	108.551
Heavy Trucks:	108.559

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	-4.00	-5.16	-1.20	*-1.04*	0.000	0.000
Medium Trucks:	82.40	-20.81	-5.15	-1.20	*-1.15*	0.000	0.000
Heavy Trucks:	86.40	-20.81	-5.15	-1.20	*-1.43*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	61.4	59.7	55.1	53.0	61.0	61.3
Medium Trucks:	55.2	53.5	48.9	46.8	54.8	55.1
Heavy Trucks:	59.2	57.5	52.9	50.8	58.8	59.1
Vehicle Noise:	64.1	62.3	57.8	55.7	63.6	63.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	41	89	192	415
CNEL:	43	93	201	434

Thursday, March 12, 2009

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project
Road Name: Old Highway 395
Road Segment: Reche Road/ Stewart Canyon Ro

Project Name: Campus Park
Job Number: 4346
Analyst: A. Stalker

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	9,023 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	902 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	36 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	110.0 feet
Barrier Distance to Observer:	10.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	80.0%	7.0%	13.0%	96.00%
Medium Trucks:	80.0%	7.0%	13.0%	2.00%
Heavy Trucks:	80.0%	7.0%	13.0%	2.00%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	108.632
Medium Trucks:	108.551
Heavy Trucks:	108.559

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	-3.33	-5.16	-1.20	*-1.04*	0.000	0.000
Medium Trucks:	82.40	-20.15	-5.15	-1.20	*-1.15*	0.000	0.000
Heavy Trucks:	86.40	-20.15	-5.15	-1.20	*-1.43*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	62.1	60.3	55.8	53.7	61.7	61.9
Medium Trucks:	55.9	54.1	49.6	47.5	55.5	55.8
Heavy Trucks:	59.9	58.1	53.6	51.5	59.5	59.8
Vehicle Noise:	64.7	63.0	58.4	56.3	64.3	64.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	46	99	213	459
CNEL:	48	104	223	480

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project
Road Name: Old Highway 395
Road Segment: Stewart Canyon Road/ Tecalote L

Project Name: Campus Park
Job Number: 4346
Analyst: A. Stalker

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	7,119 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	712 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	36 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	110.0 feet
Barrier Distance to Observer:	10.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	80.0%	7.0%	13.0%	96.00%
Medium Trucks:	80.0%	7.0%	13.0%	2.00%
Heavy Trucks:	80.0%	7.0%	13.0%	2.00%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	108.632
Medium Trucks:	108.551
Heavy Trucks:	108.559

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	-4.36	-5.16	-1.20	*-1.04*	0.000	0.000
Medium Trucks:	82.40	-21.17	-5.15	-1.20	*-1.15*	0.000	0.000
Heavy Trucks:	86.40	-21.17	-5.15	-1.20	*-1.43*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	61.1	59.3	54.7	52.7	60.6	60.9
Medium Trucks:	54.9	53.1	48.6	46.5	54.4	54.7
Heavy Trucks:	58.9	57.1	52.5	50.5	58.4	58.7
Vehicle Noise:	63.7	62.0	57.4	55.3	63.3	63.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	39	84	182	392
CNEL:	41	88	190	410

Thursday, March 12, 2009

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project
Road Name: Old Highway 395
Road Segment: Tecalote Lane/ Pala Mesa Drive

Project Name: Campus Park
Job Number: 4346
Analyst: A. Stalker

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	7,420 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	742 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	36 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	110.0 feet
Barrier Distance to Observer:	10.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	80.0%	7.0%	13.0%	96.00%
Medium Trucks:	80.0%	7.0%	13.0%	2.00%
Heavy Trucks:	80.0%	7.0%	13.0%	2.00%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	108.632
Medium Trucks:	108.551
Heavy Trucks:	108.559

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	-4.18	-5.16	-1.20	*-1.04*	0.000	0.000
Medium Trucks:	82.40	-20.99	-5.15	-1.20	*-1.15*	0.000	0.000
Heavy Trucks:	86.40	-20.99	-5.15	-1.20	*-1.43*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	61.2	59.5	54.9	52.8	60.8	61.1
Medium Trucks:	55.1	53.3	48.7	46.7	54.6	54.9
Heavy Trucks:	59.0	57.3	52.7	50.6	58.6	58.9
Vehicle Noise:	63.9	62.1	57.6	55.5	63.5	63.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	40	87	187	403
CNEL:	42	91	196	422

Thursday, March 12, 2009

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project
Road Name: Old Highway 395
Road Segment: Pala Mesa Drive/ Pala Road (SR

Project Name: Campus Park
Job Number: 4346
Analyst: A. Stalker

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	9,492 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	949 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	36 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	110.0 feet
Barrier Distance to Observer:	10.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	80.0%	7.0%	13.0%	96.00%
Medium Trucks:	80.0%	7.0%	13.0%	2.00%
Heavy Trucks:	80.0%	7.0%	13.0%	2.00%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	108.632
Medium Trucks:	108.551
Heavy Trucks:	108.559

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	-3.11	-5.16	-1.20	*-1.04*	0.000	0.000
Medium Trucks:	82.40	-19.93	-5.15	-1.20	*-1.15*	0.000	0.000
Heavy Trucks:	86.40	-19.93	-5.15	-1.20	*-1.43*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	62.3	60.5	56.0	53.9	61.9	62.2
Medium Trucks:	56.1	54.4	49.8	47.7	55.7	56.0
Heavy Trucks:	60.1	58.4	53.8	51.7	59.7	60.0
Vehicle Noise:	65.0	63.2	58.6	56.6	64.5	64.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	48	102	221	475
CNEL:	50	107	231	497

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project
Road Name: Old Highway 395
Road Segment: Pala Road (SR 76)/ Dulin Road

Project Name: Campus Park
Job Number: 4346
Analyst: A. Stalker

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	7,067 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	707 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	36 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	110.0 feet
Barrier Distance to Observer:	10.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	80.0%	7.0%	13.0%	96.00%
Medium Trucks:	80.0%	7.0%	13.0%	2.00%
Heavy Trucks:	80.0%	7.0%	13.0%	2.00%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	108.632
Medium Trucks:	108.551
Heavy Trucks:	108.559

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	-4.39	-5.16	-1.20	*-1.04*	0.000	0.000
Medium Trucks:	82.40	-21.21	-5.15	-1.20	*-1.15*	0.000	0.000
Heavy Trucks:	86.40	-21.21	-5.15	-1.20	*-1.43*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	61.0	59.3	54.7	52.6	60.6	60.9
Medium Trucks:	54.8	53.1	48.5	46.4	54.4	54.7
Heavy Trucks:	58.8	57.1	52.5	50.4	58.4	58.7
Vehicle Noise:	63.7	61.9	57.4	55.3	63.2	63.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	39	84	181	390
CNEL:	41	88	189	408

Thursday, March 12, 2009

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project
Road Name: Old Highway 395
Road Segment: Dulin Road/ West Lilac Road

Project Name: Campus Park
Job Number: 4346
Analyst: A. Stalker

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	4,658 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	466 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	12 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	110.0 feet
Barrier Distance to Observer:	10.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	80.0%	7.0%	13.0%	96.00%
Medium Trucks:	80.0%	7.0%	13.0%	2.00%
Heavy Trucks:	80.0%	7.0%	13.0%	2.00%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	109.950
Medium Trucks:	109.869
Heavy Trucks:	109.877

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-4.82	-5.24	-1.20	*-1.04*	0.000	0.000
Medium Trucks:	77.72	-21.63	-5.23	-1.20	*-1.15*	0.000	0.000
Heavy Trucks:	82.99	-21.63	-5.23	-1.20	*-1.43*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	55.3	53.5	48.9	46.9	54.8	55.1
Medium Trucks:	49.6	47.9	43.3	41.2	49.2	49.5
Heavy Trucks:	54.9	53.2	48.6	46.5	54.5	54.8
Vehicle Noise:	58.7	56.9	52.4	50.3	58.2	58.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	18	39	84	181
CNEL:	19	41	88	189

Thursday, March 12, 2009

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project
Road Name: Reche Road
Road Segment: Live Oak Park Road/ Gird Road

Project Name: Campus Park
Job Number: 4346
Analyst: A. Stalker

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	11,081 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,108 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	12 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	110.0 feet
Barrier Distance to Observer:	10.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	80.0%	7.0%	13.0%	96.00%
Medium Trucks:	80.0%	7.0%	13.0%	2.00%
Heavy Trucks:	80.0%	7.0%	13.0%	2.00%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	109.950
Medium Trucks:	109.869
Heavy Trucks:	109.877

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-1.06	-5.24	-1.20	*-1.04*	0.000	0.000
Medium Trucks:	77.72	-17.87	-5.23	-1.20	*-1.15*	0.000	0.000
Heavy Trucks:	82.99	-17.87	-5.23	-1.20	*-1.43*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	59.0	57.3	52.7	50.6	58.6	58.9
Medium Trucks:	53.4	51.7	47.1	45.0	53.0	53.3
Heavy Trucks:	58.7	56.9	52.4	50.3	58.3	58.5
Vehicle Noise:	62.4	60.7	56.1	54.0	62.0	62.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	32	70	150	323
CNEL:	34	73	157	337

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project
Road Name: Reche Road
Road Segment: Gird Road/ Wilt Road

Project Name: Campus Park
Job Number: 4346
Analyst: A. Stalker

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	9,002 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	900 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	12 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	110.0 feet
Barrier Distance to Observer:	10.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	80.0%	7.0%	13.0%	96.00%
Medium Trucks:	80.0%	7.0%	13.0%	2.00%
Heavy Trucks:	80.0%	7.0%	13.0%	2.00%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	109.950
Medium Trucks:	109.869
Heavy Trucks:	109.877

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-1.96	-5.24	-1.20	*-1.04*	0.000	0.000
Medium Trucks:	77.72	-18.77	-5.23	-1.20	*-1.15*	0.000	0.000
Heavy Trucks:	82.99	-18.77	-5.23	-1.20	*-1.43*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	58.1	56.4	51.8	49.7	57.7	58.0
Medium Trucks:	52.5	50.8	46.2	44.1	52.1	52.4
Heavy Trucks:	57.8	56.0	51.5	49.4	57.4	57.6
Vehicle Noise:	61.5	59.8	55.2	53.1	61.1	61.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	28	61	130	281
CNEL:	29	63	136	294

Thursday, March 12, 2009

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project
Road Name: Reche Road
Road Segment: Wilt Road/ Tecalote Road

Project Name: Campus Park
Job Number: 4346
Analyst: A. Stalker

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	8,515 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	852 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	12 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	110.0 feet
Barrier Distance to Observer:	10.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	80.0%	7.0%	13.0%	96.00%
Medium Trucks:	80.0%	7.0%	13.0%	2.00%
Heavy Trucks:	80.0%	7.0%	13.0%	2.00%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	109.950
Medium Trucks:	109.869
Heavy Trucks:	109.877

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-2.20	-5.24	-1.20	*-1.04*	0.000	0.000
Medium Trucks:	77.72	-19.01	-5.23	-1.20	*-1.15*	0.000	0.000
Heavy Trucks:	82.99	-19.01	-5.23	-1.20	*-1.43*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	57.9	56.1	51.6	49.5	57.4	57.7
Medium Trucks:	52.3	50.5	45.9	43.9	51.8	52.1
Heavy Trucks:	57.5	55.8	51.2	49.1	57.1	57.4
Vehicle Noise:	61.3	59.5	55.0	52.9	60.9	61.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	27	58	126	271
CNEL:	28	61	131	283

Thursday, March 12, 2009

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project
Road Name: Reche Road
Road Segment: Tecalote Road/ Old Highway 395

Project Name: Campus Park
Job Number: 4346
Analyst: A. Stalker

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	8,218 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	822 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	12 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	110.0 feet
Barrier Distance to Observer:	10.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	80.0%	7.0%	13.0%	96.00%
Medium Trucks:	80.0%	7.0%	13.0%	2.00%
Heavy Trucks:	80.0%	7.0%	13.0%	2.00%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	109.950
Medium Trucks:	109.869
Heavy Trucks:	109.877

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-2.36	-5.24	-1.20	*-1.04*	0.000	0.000
Medium Trucks:	77.72	-19.17	-5.23	-1.20	*-1.15*	0.000	0.000
Heavy Trucks:	82.99	-19.17	-5.23	-1.20	*-1.43*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	57.7	56.0	51.4	49.3	57.3	57.6
Medium Trucks:	52.1	50.4	45.8	43.7	51.7	52.0
Heavy Trucks:	57.4	55.6	51.1	49.0	57.0	57.2
Vehicle Noise:	61.1	59.4	54.8	52.7	60.7	61.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	26	57	123	264
CNEL:	28	60	128	277

Thursday, March 12, 2009

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project
Road Name: Pala Road (SR76)
Road Segment: Via Monserate/ Gird Road

Project Name: Campus Park
Job Number: 4346
Analyst: A. Stalker

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	23,421 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,342 vehicles
Vehicle Speed:	65 mph
Near/Far Lane Distance:	74 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	110.0 feet
Barrier Distance to Observer:	10.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	80.0%	7.0%	13.0%	96.00%
Medium Trucks:	80.0%	7.0%	13.0%	2.00%
Heavy Trucks:	80.0%	7.0%	13.0%	2.00%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	103.711
Medium Trucks:	103.626
Heavy Trucks:	103.634

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	74.55	0.08	-4.86	-1.20	*-1.04*	0.000	0.000
Medium Trucks:	84.86	-16.73	-4.85	-1.20	*-1.15*	0.000	0.000
Heavy Trucks:	88.18	-16.73	-4.85	-1.20	*-1.43*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	68.6	66.8	62.3	60.2	68.1	68.4
Medium Trucks:	62.1	60.3	55.8	53.7	61.6	61.9
Heavy Trucks:	65.4	63.6	59.1	57.0	65.0	65.3
Vehicle Noise:	70.9	69.1	64.6	62.5	70.5	70.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	118	254	548	1,180
CNEL:	123	266	573	1,234

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project
Road Name: Pala Road (SR76)
Road Segment: Gird Road/ Sage Road

Project Name: Campus Park
Job Number: 4346
Analyst: A. Stalker

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	22,353 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,235 vehicles
Vehicle Speed:	65 mph
Near/Far Lane Distance:	74 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	110.0 feet
Barrier Distance to Observer:	10.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	80.0%	7.0%	13.0%	96.00%
Medium Trucks:	80.0%	7.0%	13.0%	2.00%
Heavy Trucks:	80.0%	7.0%	13.0%	2.00%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	103.711
Medium Trucks:	103.626
Heavy Trucks:	103.634

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	74.55	-0.12	-4.86	-1.20	*-1.04*	0.000	0.000
Medium Trucks:	84.86	-16.93	-4.85	-1.20	*-1.15*	0.000	0.000
Heavy Trucks:	88.18	-16.93	-4.85	-1.20	*-1.43*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	68.4	66.6	62.1	60.0	67.9	68.2
Medium Trucks:	61.9	60.1	55.6	53.5	61.4	61.7
Heavy Trucks:	65.2	63.4	58.9	56.8	64.8	65.1
Vehicle Noise:	70.7	68.9	64.4	62.3	70.3	70.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	114	246	531	1,144
CNEL:	120	258	555	1,196

Thursday, March 12, 2009

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project
Road Name: Pala Road (SR76)
Road Segment: Sage Road/ Old Highway 395

Project Name: Campus Park
Job Number: 4346
Analyst: A. Stalker

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	22,213 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,221 vehicles
Vehicle Speed:	65 mph
Near/Far Lane Distance:	74 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	110.0 feet
Barrier Distance to Observer:	10.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	80.0%	7.0%	13.0%	96.00%
Medium Trucks:	80.0%	7.0%	13.0%	2.00%
Heavy Trucks:	80.0%	7.0%	13.0%	2.00%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	103.711
Medium Trucks:	103.626
Heavy Trucks:	103.634

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	74.55	-0.15	-4.86	-1.20	*-1.04*	0.000	0.000
Medium Trucks:	84.86	-16.96	-4.85	-1.20	*-1.15*	0.000	0.000
Heavy Trucks:	88.18	-16.96	-4.85	-1.20	*-1.43*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	68.3	66.6	62.0	59.9	67.9	68.2
Medium Trucks:	61.9	60.1	55.5	53.5	61.4	61.7
Heavy Trucks:	65.2	63.4	58.9	56.8	64.7	65.0
Vehicle Noise:	70.7	68.9	64.3	62.3	70.2	70.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	114	245	529	1,139
CNEL:	119	257	553	1,191

Thursday, March 12, 2009

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project
Road Name: Pala Road (SR76)
Road Segment: Old Highway 395/ I-15 SB Ramps

Project Name: Campus Park
Job Number: 4346
Analyst: A. Stalker

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	25,184 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,518 vehicles
Vehicle Speed:	65 mph
Near/Far Lane Distance:	74 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	110.0 feet
Barrier Distance to Observer:	10.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	80.0%	7.0%	13.0%	96.00%
Medium Trucks:	80.0%	7.0%	13.0%	2.00%
Heavy Trucks:	80.0%	7.0%	13.0%	2.00%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	103.711
Medium Trucks:	103.626
Heavy Trucks:	103.634

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	74.55	0.40	-4.86	-1.20	*-1.04*	0.000	0.000
Medium Trucks:	84.86	-16.41	-4.85	-1.20	*-1.15*	0.000	0.000
Heavy Trucks:	88.18	-16.41	-4.85	-1.20	*-1.43*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	68.9	67.1	62.6	60.5	68.5	68.7
Medium Trucks:	62.4	60.6	56.1	54.0	62.0	62.3
Heavy Trucks:	65.7	64.0	59.4	57.3	65.3	65.6
Vehicle Noise:	71.2	69.4	64.9	62.8	70.8	71.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	124	267	575	1,238
CNEL:	130	279	601	1,295

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project
Road Name: Pala Road (SR76)
Road Segment: I-15 NB Ramps/ Pankey Road

Project Name: Campus Park
Job Number: 4346
Analyst: A. Stalker

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	15,538 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,554 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	38 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	110.0 feet
Barrier Distance to Observer:	10.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	80.0%	7.0%	13.0%	96.00%
Medium Trucks:	80.0%	7.0%	13.0%	2.00%
Heavy Trucks:	80.0%	7.0%	13.0%	2.00%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	108.462
Medium Trucks:	108.380
Heavy Trucks:	108.388

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	-0.97	-5.15	-1.20	*-1.04*	0.000	0.000
Medium Trucks:	82.40	-17.78	-5.14	-1.20	*-1.15*	0.000	0.000
Heavy Trucks:	86.40	-17.78	-5.14	-1.20	*-1.43*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	64.5	62.7	58.1	56.1	64.0	64.3
Medium Trucks:	58.3	56.5	52.0	49.9	57.8	58.1
Heavy Trucks:	62.3	60.5	55.9	53.9	61.8	62.1
Vehicle Noise:	67.1	65.4	60.8	58.7	66.7	67.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	66	142	307	661
CNEL:	69	149	321	691

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project
Road Name: Pala Road (SR76)
Road Segment: Pankey Road/ Horse Ranch Cree

Project Name: Campus Park
Job Number: 4346
Analyst: A. Stalker

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	15,634 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,563 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	38 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	110.0 feet
Barrier Distance to Observer:	10.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	80.0%	7.0%	13.0%	96.00%
Medium Trucks:	80.0%	7.0%	13.0%	2.00%
Heavy Trucks:	80.0%	7.0%	13.0%	2.00%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	108.462
Medium Trucks:	108.380
Heavy Trucks:	108.388

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	-0.95	-5.15	-1.20	*-1.04*	0.000	0.000
Medium Trucks:	82.40	-17.76	-5.14	-1.20	*-1.15*	0.000	0.000
Heavy Trucks:	86.40	-17.76	-5.14	-1.20	*-1.43*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	64.5	62.7	58.2	56.1	64.1	64.3
Medium Trucks:	58.3	56.5	52.0	49.9	57.9	58.2
Heavy Trucks:	62.3	60.5	56.0	53.9	61.9	62.2
Vehicle Noise:	67.1	65.4	60.8	58.7	66.7	67.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	66	143	308	664
CNEL:	69	150	322	694

Thursday, March 12, 2009

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project
Road Name: Pala Road (SR76)
Road Segment: Horse Ranch Creek Road/Rice C

Project Name: Campus Park
Job Number: 4346
Analyst: A. Stalker

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	10,642 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,064 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	38 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	110.0 feet
Barrier Distance to Observer:	10.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	80.0%	7.0%	13.0%	96.00%
Medium Trucks:	80.0%	7.0%	13.0%	2.00%
Heavy Trucks:	80.0%	7.0%	13.0%	2.00%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	108.462
Medium Trucks:	108.380
Heavy Trucks:	108.388

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	-2.62	-5.15	-1.20	*-1.04*	0.000	0.000
Medium Trucks:	82.40	-19.43	-5.14	-1.20	*-1.15*	0.000	0.000
Heavy Trucks:	86.40	-19.43	-5.14	-1.20	*-1.43*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	62.8	61.1	56.5	54.4	62.4	62.7
Medium Trucks:	56.6	54.9	50.3	48.2	56.2	56.5
Heavy Trucks:	60.6	58.9	54.3	52.2	60.2	60.5
Vehicle Noise:	65.5	63.7	59.2	57.1	65.0	65.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	51	111	238	514
CNEL:	54	116	249	537

Thursday, March 12, 2009

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project
Road Name: Pala Road (SR76)
Road Segment: Rice Canyon Road/ Couser Cany

Project Name: Campus Park
Job Number: 4346
Analyst: A. Stalker

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	10,141 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,014 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	38 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	110.0 feet
Barrier Distance to Observer:	10.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	80.0%	7.0%	13.0%	96.00%
Medium Trucks:	80.0%	7.0%	13.0%	2.00%
Heavy Trucks:	80.0%	7.0%	13.0%	2.00%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	108.462
Medium Trucks:	108.380
Heavy Trucks:	108.388

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	-2.83	-5.15	-1.20	*-1.04*	0.000	0.000
Medium Trucks:	82.40	-19.64	-5.14	-1.20	*-1.15*	0.000	0.000
Heavy Trucks:	86.40	-19.64	-5.14	-1.20	*-1.43*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	62.6	60.8	56.3	54.2	62.2	62.5
Medium Trucks:	56.4	54.7	50.1	48.0	56.0	56.3
Heavy Trucks:	60.4	58.7	54.1	52.0	60.0	60.3
Vehicle Noise:	65.3	63.5	58.9	56.9	64.8	65.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	50	107	231	497
CNEL:	52	112	241	520

Thursday, March 12, 2009

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project
Road Name: Dulin Road
Road Segment: Old Highway 395/ Pankey Road

Project Name: Campus Park
Job Number: 4346
Analyst: A. Stalker

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	6,478 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	648 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	12 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	110.0 feet
Barrier Distance to Observer:	10.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	80.0%	7.0%	13.0%	96.00%
Medium Trucks:	80.0%	7.0%	13.0%	2.00%
Heavy Trucks:	80.0%	7.0%	13.0%	2.00%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	109.950
Medium Trucks:	109.869
Heavy Trucks:	109.877

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-3.39	-5.24	-1.20	*-1.04*	0.000	0.000
Medium Trucks:	77.72	-20.20	-5.23	-1.20	*-1.15*	0.000	0.000
Heavy Trucks:	82.99	-20.20	-5.23	-1.20	*-1.43*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	56.7	54.9	50.4	48.3	56.2	56.5
Medium Trucks:	51.1	49.3	44.8	42.7	50.6	50.9
Heavy Trucks:	56.4	54.6	50.0	48.0	55.9	56.2
Vehicle Noise:	60.1	58.4	53.8	51.7	59.7	60.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	23	49	105	226
CNEL:	24	51	110	236

Thursday, March 12, 2009

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project
Road Name: Pankey Road
Road Segment: Street R/ Pala Road (SR 76)

Project Name: Campus Park
Job Number: 4346
Analyst: A. Stalker

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	483 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	48 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	36 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	110.0 feet
Barrier Distance to Observer:	10.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	80.0%	7.0%	13.0%	96.00%
Medium Trucks:	80.0%	7.0%	13.0%	2.00%
Heavy Trucks:	80.0%	7.0%	13.0%	2.00%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	108.632
Medium Trucks:	108.551
Heavy Trucks:	108.559

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	-16.05	-5.16	-1.20	*-1.04*	0.000	0.000
Medium Trucks:	82.40	-32.86	-5.15	-1.20	*-1.15*	0.000	0.000
Heavy Trucks:	86.40	-32.86	-5.15	-1.20	*-1.43*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	49.4	47.6	43.1	41.0	48.9	49.2
Medium Trucks:	43.2	41.4	36.9	34.8	42.8	43.0
Heavy Trucks:	47.2	45.4	40.9	38.8	46.7	47.0
Vehicle Noise:	52.0	50.3	45.7	43.6	51.6	51.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	7	14	30	65
CNEL:	7	15	32	68

Thursday, March 12, 2009

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project
Road Name: Pankey Road
Road Segment: Pala Road (SR 76)/ Dulin Road

Project Name: Campus Park
Job Number: 4346
Analyst: A. Stalker

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	1,644 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	164 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	12 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	110.0 feet
Barrier Distance to Observer:	10.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	80.0%	7.0%	13.0%	96.00%
Medium Trucks:	80.0%	7.0%	13.0%	2.00%
Heavy Trucks:	80.0%	7.0%	13.0%	2.00%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	109.950
Medium Trucks:	109.869
Heavy Trucks:	109.877

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-9.34	-5.24	-1.20	*-1.04*	0.000	0.000
Medium Trucks:	77.72	-26.16	-5.23	-1.20	*-1.15*	0.000	0.000
Heavy Trucks:	82.99	-26.16	-5.23	-1.20	*-1.43*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	50.7	49.0	44.4	42.3	50.3	50.6
Medium Trucks:	45.1	43.4	38.8	36.7	44.7	45.0
Heavy Trucks:	50.4	48.6	44.1	42.0	50.0	50.3
Vehicle Noise:	54.2	52.4	47.8	45.8	53.7	54.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	9	19	42	90
CNEL:	9	20	44	95

Thursday, March 12, 2009

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project
Road Name: Stewart Canyon Road
Road Segment: Old Highway 395/ Horse Ranch C

Project Name: Campus Park
Job Number: 4346
Analyst: A. Stalker

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	3,549 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	355 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	12 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	110.0 feet
Barrier Distance to Observer:	10.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	80.0%	7.0%	13.0%	96.00%
Medium Trucks:	80.0%	7.0%	13.0%	2.00%
Heavy Trucks:	80.0%	7.0%	13.0%	2.00%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	109.950
Medium Trucks:	109.869
Heavy Trucks:	109.877

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-6.00	-5.24	-1.20	*-1.04*	0.000	0.000
Medium Trucks:	77.72	-22.81	-5.23	-1.20	*-1.15*	0.000	0.000
Heavy Trucks:	82.99	-22.81	-5.23	-1.20	*-1.43*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	54.1	52.3	47.8	45.7	53.6	53.9
Medium Trucks:	48.5	46.7	42.1	40.1	48.0	48.3
Heavy Trucks:	53.7	52.0	47.4	45.3	53.3	53.6
Vehicle Noise:	57.5	55.7	51.2	49.1	57.1	57.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	15	33	70	151
CNEL:	16	34	73	158

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project
Road Name: Reche Road
Road Segment: Green Canyon/Live Oak Park Roa

Project Name: Campus Park
Job Number: 4346
Analyst: A. Stalker

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	10,760 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,076 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	12 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	110.0 feet
Barrier Distance to Observer:	10.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	80.0%	7.0%	13.0%	96.00%
Medium Trucks:	80.0%	7.0%	13.0%	2.00%
Heavy Trucks:	80.0%	7.0%	13.0%	2.00%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	109.950
Medium Trucks:	109.869
Heavy Trucks:	109.877

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-1.19	-5.24	-1.20	*-1.04*	0.000	0.000
Medium Trucks:	77.72	-18.00	-5.23	-1.20	*-1.15*	0.000	0.000
Heavy Trucks:	82.99	-18.00	-5.23	-1.20	*-1.43*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	58.9	57.1	52.6	50.5	58.5	58.7
Medium Trucks:	53.3	51.5	47.0	44.9	52.8	53.1
Heavy Trucks:	58.6	56.8	52.2	50.2	58.1	58.4
Vehicle Noise:	62.3	60.6	56.0	53.9	61.9	62.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	32	68	147	316
CNEL:	33	71	154	331

Thursday, March 12, 2009

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project
Road Name: Pala Road (SR76)
Road Segment: Couser Canyon Road/Pala Missio

Project Name: Campus Park
Job Number: 4346
Analyst: A. Stalker

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	9,349 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	935 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	38 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	110.0 feet
Barrier Distance to Observer:	10.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	80.0%	7.0%	13.0%	96.00%
Medium Trucks:	80.0%	7.0%	13.0%	2.00%
Heavy Trucks:	80.0%	7.0%	13.0%	2.00%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	108.462
Medium Trucks:	108.380
Heavy Trucks:	108.388

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	-3.18	-5.15	-1.20	*-1.04*	0.000	0.000
Medium Trucks:	82.40	-19.99	-5.14	-1.20	*-1.15*	0.000	0.000
Heavy Trucks:	86.40	-19.99	-5.14	-1.20	*-1.43*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	62.3	60.5	55.9	53.9	61.8	62.1
Medium Trucks:	56.1	54.3	49.7	47.7	55.6	55.9
Heavy Trucks:	60.1	58.3	53.7	51.7	59.6	59.9
Vehicle Noise:	64.9	63.2	58.6	56.5	64.5	64.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	47	101	219	471
CNEL:	49	106	229	493

Thursday, March 12, 2009

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Cumulative
Road Name: Old Highway 395
Road Segment: East Mission Road/ Reche Road

Project Name: Campus Park
Job Number: 4346
Analyst: A. Stalker

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	17,320 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,732 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	36 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	110.0 feet
Barrier Distance to Observer:	10.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	80.0%	7.0%	13.0%	96.00%
Medium Trucks:	80.0%	7.0%	13.0%	2.00%
Heavy Trucks:	80.0%	7.0%	13.0%	2.00%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	108.632
Medium Trucks:	108.551
Heavy Trucks:	108.559

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	-0.50	-5.16	-1.20	*-1.04*	0.000	0.000
Medium Trucks:	82.40	-17.31	-5.15	-1.20	*-1.15*	0.000	0.000
Heavy Trucks:	86.40	-17.31	-5.15	-1.20	*-1.43*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	64.9	63.2	58.6	56.5	64.5	64.8
Medium Trucks:	58.7	57.0	52.4	50.3	58.3	58.6
Heavy Trucks:	62.7	61.0	56.4	54.3	62.3	62.6
Vehicle Noise:	67.6	65.8	61.3	59.2	67.1	67.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	71	153	329	709
CNEL:	74	160	344	742

Thursday, March 12, 2009

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Cumulative
Road Name: Old Highway 395
Road Segment: Reche Road/ Stewart Canyon Ro

Project Name: Campus Park
Job Number: 4346
Analyst: A. Stalker

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	19,923 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,992 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	36 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	110.0 feet
Barrier Distance to Observer:	10.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	80.0%	7.0%	13.0%	96.00%
Medium Trucks:	80.0%	7.0%	13.0%	2.00%
Heavy Trucks:	80.0%	7.0%	13.0%	2.00%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	108.632
Medium Trucks:	108.551
Heavy Trucks:	108.559

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	0.11	-5.16	-1.20	*-1.04*	0.000	0.000
Medium Trucks:	82.40	-16.71	-5.15	-1.20	*-1.15*	0.000	0.000
Heavy Trucks:	86.40	-16.71	-5.15	-1.20	*-1.43*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	65.5	63.8	59.2	57.1	65.1	65.4
Medium Trucks:	59.3	57.6	53.0	50.9	58.9	59.2
Heavy Trucks:	63.3	61.6	57.0	54.9	62.9	63.2
Vehicle Noise:	68.2	66.4	61.9	59.8	67.8	68.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	78	168	362	779
CNEL:	81	176	378	815

Thursday, March 12, 2009

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Cumulative
Road Name: Old Highway 395
Road Segment: Stewart Canyon Road/ Tecalote L

Project Name: Campus Park
Job Number: 4346
Analyst: A. Stalker

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	16,886 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,689 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	36 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	110.0 feet
Barrier Distance to Observer:	10.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	80.0%	7.0%	13.0%	96.00%
Medium Trucks:	80.0%	7.0%	13.0%	2.00%
Heavy Trucks:	80.0%	7.0%	13.0%	2.00%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	108.632
Medium Trucks:	108.551
Heavy Trucks:	108.559

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	-0.61	-5.16	-1.20	*-1.04*	0.000	0.000
Medium Trucks:	82.40	-17.42	-5.15	-1.20	*-1.15*	0.000	0.000
Heavy Trucks:	86.40	-17.42	-5.15	-1.20	*-1.43*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	64.8	63.1	58.5	56.4	64.4	64.7
Medium Trucks:	58.6	56.9	52.3	50.2	58.2	58.5
Heavy Trucks:	62.6	60.9	56.3	54.2	62.2	62.5
Vehicle Noise:	67.5	65.7	61.1	59.1	67.0	67.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	70	150	324	698
CNEL:	73	157	339	730

Thursday, March 12, 2009

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Cumulative
Road Name: Old Highway 395
Road Segment: Tecalote Lane/ Pala Mesa Drive

Project Name: Campus Park
Job Number: 4346
Analyst: A. Stalker

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	18,583 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,858 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	36 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	110.0 feet
Barrier Distance to Observer:	10.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	80.0%	7.0%	13.0%	96.00%
Medium Trucks:	80.0%	7.0%	13.0%	2.00%
Heavy Trucks:	80.0%	7.0%	13.0%	2.00%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	108.632
Medium Trucks:	108.551
Heavy Trucks:	108.559

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	-0.20	-5.16	-1.20	*-1.04*	0.000	0.000
Medium Trucks:	82.40	-17.01	-5.15	-1.20	*-1.15*	0.000	0.000
Heavy Trucks:	86.40	-17.01	-5.15	-1.20	*-1.43*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	65.2	63.5	58.9	56.8	64.8	65.1
Medium Trucks:	59.0	57.3	52.7	50.6	58.6	58.9
Heavy Trucks:	63.0	61.3	56.7	54.6	62.6	62.9
Vehicle Noise:	67.9	66.1	61.6	59.5	67.4	67.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	74	160	345	744
CNEL:	78	168	361	778

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Cumulative
Road Name: Old Highway 395
Road Segment: Pala Mesa Drive/ Pala Road (SR

Project Name: Campus Park
Job Number: 4346
Analyst: A. Stalker

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	19,710 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,971 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	36 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	110.0 feet
Barrier Distance to Observer:	10.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	80.0%	7.0%	13.0%	96.00%
Medium Trucks:	80.0%	7.0%	13.0%	2.00%
Heavy Trucks:	80.0%	7.0%	13.0%	2.00%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	108.632
Medium Trucks:	108.551
Heavy Trucks:	108.559

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	0.06	-5.16	-1.20	*-1.04*	0.000	0.000
Medium Trucks:	82.40	-16.75	-5.15	-1.20	*-1.15*	0.000	0.000
Heavy Trucks:	86.40	-16.75	-5.15	-1.20	*-1.43*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	65.5	63.7	59.2	57.1	65.0	65.3
Medium Trucks:	59.3	57.5	53.0	50.9	58.9	59.2
Heavy Trucks:	63.3	61.5	57.0	54.9	62.9	63.1
Vehicle Noise:	68.1	66.4	61.8	59.7	67.7	68.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	77	167	359	773
CNEL:	81	174	375	809

Thursday, March 12, 2009

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Cumulative
Road Name: Old Highway 395
Road Segment: Pala Road (SR 76)/ Dulin Road

Project Name: Campus Park
Job Number: 4346
Analyst: A. Stalker

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	14,401 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,440 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	36 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	110.0 feet
Barrier Distance to Observer:	10.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	80.0%	7.0%	13.0%	96.00%
Medium Trucks:	80.0%	7.0%	13.0%	2.00%
Heavy Trucks:	80.0%	7.0%	13.0%	2.00%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	108.632
Medium Trucks:	108.551
Heavy Trucks:	108.559

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	-1.30	-5.16	-1.20	*-1.04*	0.000	0.000
Medium Trucks:	82.40	-18.11	-5.15	-1.20	*-1.15*	0.000	0.000
Heavy Trucks:	86.40	-18.11	-5.15	-1.20	*-1.43*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	64.1	62.4	57.8	55.7	63.7	64.0
Medium Trucks:	57.9	56.2	51.6	49.5	57.5	57.8
Heavy Trucks:	61.9	60.2	55.6	53.5	61.5	61.8
Vehicle Noise:	66.8	65.0	60.5	58.4	66.3	66.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	63	135	291	627
CNEL:	66	141	305	656

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Cumulative
Road Name: Old Highway 395
Road Segment: Dulin Road/ West Lilac Road

Project Name: Campus Park
Job Number: 4346
Analyst: A. Stalker

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	16,705 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,670 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	12 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	110.0 feet
Barrier Distance to Observer:	10.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	80.0%	7.0%	13.0%	96.00%
Medium Trucks:	80.0%	7.0%	13.0%	2.00%
Heavy Trucks:	80.0%	7.0%	13.0%	2.00%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	109.950
Medium Trucks:	109.869
Heavy Trucks:	109.877

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	0.73	-5.24	-1.20	*-1.04*	0.000	0.000
Medium Trucks:	77.72	-16.09	-5.23	-1.20	*-1.15*	0.000	0.000
Heavy Trucks:	82.99	-16.09	-5.23	-1.20	*-1.43*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	60.8	59.0	54.5	52.4	60.4	60.7
Medium Trucks:	55.2	53.4	48.9	46.8	54.8	55.1
Heavy Trucks:	60.5	58.7	54.2	52.1	60.0	60.3
Vehicle Noise:	64.2	62.5	57.9	55.8	63.8	64.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	42	91	197	424
CNEL:	44	96	206	444

Thursday, March 12, 2009

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Cumulative
Road Name: Reche Road
Road Segment: Live Oak Park Road/ Gird Road

Project Name: Campus Park
Job Number: 4346
Analyst: A. Stalker

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	11,399 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,140 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	12 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	110.0 feet
Barrier Distance to Observer:	10.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	80.0%	7.0%	13.0%	96.00%
Medium Trucks:	80.0%	7.0%	13.0%	2.00%
Heavy Trucks:	80.0%	7.0%	13.0%	2.00%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	109.950
Medium Trucks:	109.869
Heavy Trucks:	109.877

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-0.93	-5.24	-1.20	*-1.04*	0.000	0.000
Medium Trucks:	77.72	-17.75	-5.23	-1.20	*-1.15*	0.000	0.000
Heavy Trucks:	82.99	-17.75	-5.23	-1.20	*-1.43*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	59.1	57.4	52.8	50.7	58.7	59.0
Medium Trucks:	53.5	51.8	47.2	45.1	53.1	53.4
Heavy Trucks:	58.8	57.1	52.5	50.4	58.4	58.7
Vehicle Noise:	62.6	60.8	56.3	54.2	62.1	62.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	33	71	153	329
CNEL:	34	74	160	344

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Cumulative
Road Name: Reche Road
Road Segment: Gird Road/ Wilt Road

Project Name: Campus Park
Job Number: 4346
Analyst: A. Stalker

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	8,899 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	890 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	12 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	110.0 feet
Barrier Distance to Observer:	10.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	80.0%	7.0%	13.0%	96.00%
Medium Trucks:	80.0%	7.0%	13.0%	2.00%
Heavy Trucks:	80.0%	7.0%	13.0%	2.00%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	109.950
Medium Trucks:	109.869
Heavy Trucks:	109.877

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-2.01	-5.24	-1.20	*-1.04*	0.000	0.000
Medium Trucks:	77.72	-18.82	-5.23	-1.20	*-1.15*	0.000	0.000
Heavy Trucks:	82.99	-18.82	-5.23	-1.20	*-1.43*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	58.1	56.3	51.7	49.7	57.6	57.9
Medium Trucks:	52.5	50.7	46.1	44.1	52.0	52.3
Heavy Trucks:	57.7	56.0	51.4	49.3	57.3	57.6
Vehicle Noise:	61.5	59.7	55.2	53.1	61.1	61.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	28	60	129	279
CNEL:	29	63	135	292

Thursday, March 12, 2009

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Cumulative
Road Name: Reche Road
Road Segment: Wilt Road/ Tecalote Road

Project Name: Campus Park
Job Number: 4346
Analyst: A. Stalker

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	8,199 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	820 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	12 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	110.0 feet
Barrier Distance to Observer:	10.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	80.0%	7.0%	13.0%	96.00%
Medium Trucks:	80.0%	7.0%	13.0%	2.00%
Heavy Trucks:	80.0%	7.0%	13.0%	2.00%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	109.950
Medium Trucks:	109.869
Heavy Trucks:	109.877

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-2.37	-5.24	-1.20	*-1.04*	0.000	0.000
Medium Trucks:	77.72	-19.18	-5.23	-1.20	*-1.15*	0.000	0.000
Heavy Trucks:	82.99	-19.18	-5.23	-1.20	*-1.43*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	57.7	55.9	51.4	49.3	57.3	57.6
Medium Trucks:	52.1	50.3	45.8	43.7	51.7	52.0
Heavy Trucks:	57.4	55.6	51.1	49.0	56.9	57.2
Vehicle Noise:	61.1	59.4	54.8	52.7	60.7	61.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	26	57	123	264
CNEL:	28	59	128	276

Thursday, March 12, 2009

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Cumulative
Road Name: Reche Road
Road Segment: Tecalote Road/ Old Highway 395

Project Name: Campus Park
Job Number: 4346
Analyst: A. Stalker

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	9,802 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	980 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	12 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	110.0 feet
Barrier Distance to Observer:	10.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	80.0%	7.0%	13.0%	96.00%
Medium Trucks:	80.0%	7.0%	13.0%	2.00%
Heavy Trucks:	80.0%	7.0%	13.0%	2.00%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	109.950
Medium Trucks:	109.869
Heavy Trucks:	109.877

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-1.59	-5.24	-1.20	*-1.04*	0.000	0.000
Medium Trucks:	77.72	-18.40	-5.23	-1.20	*-1.15*	0.000	0.000
Heavy Trucks:	82.99	-18.40	-5.23	-1.20	*-1.43*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	58.5	56.7	52.2	50.1	58.0	58.3
Medium Trucks:	52.9	51.1	46.6	44.5	52.4	52.7
Heavy Trucks:	58.2	56.4	51.8	49.8	57.7	58.0
Vehicle Noise:	61.9	60.2	55.6	53.5	61.5	61.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	30	64	138	297
CNEL:	31	67	144	311

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Cumulative
Road Name: Pala Road (SR76)
Road Segment: Via Monserate/ Gird Road

Project Name: Campus Park
Job Number: 4346
Analyst: A. Stalker

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	42,904 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	4,290 vehicles
Vehicle Speed:	65 mph
Near/Far Lane Distance:	74 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	110.0 feet
Barrier Distance to Observer:	10.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	80.0%	7.0%	13.0%	96.00%
Medium Trucks:	80.0%	7.0%	13.0%	2.00%
Heavy Trucks:	80.0%	7.0%	13.0%	2.00%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	103.711
Medium Trucks:	103.626
Heavy Trucks:	103.634

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	74.55	2.71	-4.86	-1.20	*-1.04*	0.000	0.000
Medium Trucks:	84.86	-14.10	-4.85	-1.20	*-1.15*	0.000	0.000
Heavy Trucks:	88.18	-14.10	-4.85	-1.20	*-1.43*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	71.2	69.4	64.9	62.8	70.8	71.1
Medium Trucks:	64.7	63.0	58.4	56.3	64.3	64.6
Heavy Trucks:	68.0	66.3	61.7	59.6	67.6	67.9
Vehicle Noise:	73.5	71.8	67.2	65.1	73.1	73.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	177	381	820	1,766
CNEL:	185	398	858	1,847

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Cumulative
Road Name: Pala Road (SR76)
Road Segment: Gird Road/ Sage Road

Project Name: Campus Park
Job Number: 4346
Analyst: A. Stalker

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	35,304 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,530 vehicles
Vehicle Speed:	65 mph
Near/Far Lane Distance:	74 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	110.0 feet
Barrier Distance to Observer:	10.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	80.0%	7.0%	13.0%	96.00%
Medium Trucks:	80.0%	7.0%	13.0%	2.00%
Heavy Trucks:	80.0%	7.0%	13.0%	2.00%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	103.711
Medium Trucks:	103.626
Heavy Trucks:	103.634

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	74.55	1.87	-4.86	-1.20	*-1.04*	0.000	0.000
Medium Trucks:	84.86	-14.95	-4.85	-1.20	*-1.15*	0.000	0.000
Heavy Trucks:	88.18	-14.95	-4.85	-1.20	*-1.43*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	70.4	68.6	64.0	62.0	69.9	70.2
Medium Trucks:	63.9	62.1	57.5	55.5	63.4	63.7
Heavy Trucks:	67.2	65.4	60.9	58.8	66.7	67.0
Vehicle Noise:	72.7	70.9	66.4	64.3	72.2	72.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	155	334	720	1,551
CNEL:	162	350	753	1,622

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Cumulative
Road Name: Pala Road (SR76)
Road Segment: Sage Road/ Old Highway 395

Project Name: Campus Park
Job Number: 4346
Analyst: A. Stalker

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	37,704 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,770 vehicles
Vehicle Speed:	65 mph
Near/Far Lane Distance:	74 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	110.0 feet
Barrier Distance to Observer:	10.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	80.0%	7.0%	13.0%	96.00%
Medium Trucks:	80.0%	7.0%	13.0%	2.00%
Heavy Trucks:	80.0%	7.0%	13.0%	2.00%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	103.711
Medium Trucks:	103.626
Heavy Trucks:	103.634

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	74.55	2.15	-4.86	-1.20	*-1.04*	0.000	0.000
Medium Trucks:	84.86	-14.66	-4.85	-1.20	*-1.15*	0.000	0.000
Heavy Trucks:	88.18	-14.66	-4.85	-1.20	*-1.43*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	70.6	68.9	64.3	62.2	70.2	70.5
Medium Trucks:	64.2	62.4	57.8	55.7	63.7	64.0
Heavy Trucks:	67.5	65.7	61.1	59.1	67.0	67.3
Vehicle Noise:	73.0	71.2	66.6	64.6	72.5	72.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	162	349	752	1,621
CNEL:	170	365	787	1,695

Thursday, March 12, 2009

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Cumulative
Road Name: Pala Road (SR76)
Road Segment: Old Highway 395/ I-15 SB Ramps

Project Name: Campus Park
Job Number: 4346
Analyst: A. Stalker

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	38,895 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,890 vehicles
Vehicle Speed:	65 mph
Near/Far Lane Distance:	74 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	110.0 feet
Barrier Distance to Observer:	10.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	80.0%	7.0%	13.0%	96.00%
Medium Trucks:	80.0%	7.0%	13.0%	2.00%
Heavy Trucks:	80.0%	7.0%	13.0%	2.00%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	103.711
Medium Trucks:	103.626
Heavy Trucks:	103.634

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	74.55	2.29	-4.86	-1.20	*-1.04*	0.000	0.000
Medium Trucks:	84.86	-14.53	-4.85	-1.20	*-1.15*	0.000	0.000
Heavy Trucks:	88.18	-14.53	-4.85	-1.20	*-1.43*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	70.8	69.0	64.5	62.4	70.3	70.6
Medium Trucks:	64.3	62.5	58.0	55.9	63.8	64.1
Heavy Trucks:	67.6	65.8	61.3	59.2	67.2	67.5
Vehicle Noise:	73.1	71.3	66.8	64.7	72.7	73.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	165	356	768	1,654
CNEL:	173	373	803	1,731

Thursday, March 12, 2009

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Cumulative
Road Name: Pala Road (SR76)
Road Segment: I-15 NB Ramps/ Pankey Road

Project Name: Campus Park
Job Number: 4346
Analyst: A. Stalker

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	29,412 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,941 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	38 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	110.0 feet
Barrier Distance to Observer:	10.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	80.0%	7.0%	13.0%	96.00%
Medium Trucks:	80.0%	7.0%	13.0%	2.00%
Heavy Trucks:	80.0%	7.0%	13.0%	2.00%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	108.462
Medium Trucks:	108.380
Heavy Trucks:	108.388

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	1.80	-5.15	-1.20	*-1.04*	0.000	0.000
Medium Trucks:	82.40	-15.01	-5.14	-1.20	*-1.15*	0.000	0.000
Heavy Trucks:	86.40	-15.01	-5.14	-1.20	*-1.43*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	67.2	65.5	60.9	58.8	66.8	67.1
Medium Trucks:	61.0	59.3	54.7	52.6	60.6	60.9
Heavy Trucks:	65.0	63.3	58.7	56.6	64.6	64.9
Vehicle Noise:	69.9	68.1	63.6	61.5	69.5	69.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	101	218	469	1,011
CNEL:	106	228	491	1,058

Thursday, March 12, 2009

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Cumulative
Road Name: Pala Road (SR76)
Road Segment: Pankey Road/ Horse Ranch Cree

Project Name: Campus Park
Job Number: 4346
Analyst: A. Stalker

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	24,105 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,410 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	38 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	110.0 feet
Barrier Distance to Observer:	10.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	80.0%	7.0%	13.0%	96.00%
Medium Trucks:	80.0%	7.0%	13.0%	2.00%
Heavy Trucks:	80.0%	7.0%	13.0%	2.00%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	108.462
Medium Trucks:	108.380
Heavy Trucks:	108.388

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	0.93	-5.15	-1.20	*-1.04*	0.000	0.000
Medium Trucks:	82.40	-15.88	-5.14	-1.20	*-1.15*	0.000	0.000
Heavy Trucks:	86.40	-15.88	-5.14	-1.20	*-1.43*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	66.4	64.6	60.0	58.0	65.9	66.2
Medium Trucks:	60.2	58.4	53.9	51.8	59.7	60.0
Heavy Trucks:	64.2	62.4	57.9	55.8	63.7	64.0
Vehicle Noise:	69.0	67.3	62.7	60.6	68.6	68.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	89	191	411	886
CNEL:	93	200	430	926

Thursday, March 12, 2009

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Cumulative
Road Name: Pala Road (SR76)
Road Segment: Horse Ranch Creek Road/Rice C

Project Name: Campus Park
Job Number: 4346
Analyst: A. Stalker

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	32,497 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,250 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	38 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	110.0 feet
Barrier Distance to Observer:	10.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	80.0%	7.0%	13.0%	96.00%
Medium Trucks:	80.0%	7.0%	13.0%	2.00%
Heavy Trucks:	80.0%	7.0%	13.0%	2.00%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	108.462
Medium Trucks:	108.380
Heavy Trucks:	108.388

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	2.23	-5.15	-1.20	*-1.04*	0.000	0.000
Medium Trucks:	82.40	-14.58	-5.14	-1.20	*-1.15*	0.000	0.000
Heavy Trucks:	86.40	-14.58	-5.14	-1.20	*-1.43*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	67.7	65.9	61.3	59.3	67.2	67.5
Medium Trucks:	61.5	59.7	55.2	53.1	61.0	61.3
Heavy Trucks:	65.5	63.7	59.2	57.1	65.0	65.3
Vehicle Noise:	70.3	68.6	64.0	61.9	69.9	70.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	108	233	502	1,081
CNEL:	113	244	525	1,131

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Cumulative
Road Name: Pala Road (SR76)
Road Segment: Rice Canyon Road/ Couser Cany

Project Name: Campus Park
Job Number: 4346
Analyst: A. Stalker

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	31,200 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,120 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	38 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	110.0 feet
Barrier Distance to Observer:	10.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	80.0%	7.0%	13.0%	96.00%
Medium Trucks:	80.0%	7.0%	13.0%	2.00%
Heavy Trucks:	80.0%	7.0%	13.0%	2.00%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	108.462
Medium Trucks:	108.380
Heavy Trucks:	108.388

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	2.06	-5.15	-1.20	*-1.04*	0.000	0.000
Medium Trucks:	82.40	-14.76	-5.14	-1.20	*-1.15*	0.000	0.000
Heavy Trucks:	86.40	-14.76	-5.14	-1.20	*-1.43*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	67.5	65.7	61.2	59.1	67.1	67.3
Medium Trucks:	61.3	59.5	55.0	52.9	60.9	61.2
Heavy Trucks:	65.3	63.5	59.0	56.9	64.9	65.2
Vehicle Noise:	70.1	68.4	63.8	61.7	69.7	70.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	105	227	488	1,052
CNEL:	110	237	511	1,100

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Cumulative
Road Name: Dulin Road
Road Segment: Old Highway 395/ Pankey Road

Project Name: Campus Park
Job Number: 4346
Analyst: A. Stalker

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	6,992 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	699 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	12 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	110.0 feet
Barrier Distance to Observer:	10.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	80.0%	7.0%	13.0%	96.00%
Medium Trucks:	80.0%	7.0%	13.0%	2.00%
Heavy Trucks:	80.0%	7.0%	13.0%	2.00%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	109.950
Medium Trucks:	109.869
Heavy Trucks:	109.877

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-3.06	-5.24	-1.20	*-1.04*	0.000	0.000
Medium Trucks:	77.72	-19.87	-5.23	-1.20	*-1.15*	0.000	0.000
Heavy Trucks:	82.99	-19.87	-5.23	-1.20	*-1.43*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	57.0	55.3	50.7	48.6	56.6	56.9
Medium Trucks:	51.4	49.7	45.1	43.0	51.0	51.3
Heavy Trucks:	56.7	54.9	50.4	48.3	56.3	56.5
Vehicle Noise:	60.4	58.7	54.1	52.0	60.0	60.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	24	51	110	237
CNEL:	25	53	115	248

Thursday, March 12, 2009

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Cumulative
Road Name: Pankey Road
Road Segment: Street R/ Pala Road (SR 76)

Project Name: Campus Park
Job Number: 4346
Analyst: A. Stalker

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	8,140 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	814 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	36 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	110.0 feet
Barrier Distance to Observer:	10.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	80.0%	7.0%	13.0%	96.00%
Medium Trucks:	80.0%	7.0%	13.0%	2.00%
Heavy Trucks:	80.0%	7.0%	13.0%	2.00%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	108.632
Medium Trucks:	108.551
Heavy Trucks:	108.559

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	-3.78	-5.16	-1.20	*-1.04*	0.000	0.000
Medium Trucks:	82.40	-20.59	-5.15	-1.20	*-1.15*	0.000	0.000
Heavy Trucks:	86.40	-20.59	-5.15	-1.20	*-1.43*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	61.6	59.9	55.3	53.2	61.2	61.5
Medium Trucks:	55.5	53.7	49.1	47.1	55.0	55.3
Heavy Trucks:	59.5	57.7	53.1	51.0	59.0	59.3
Vehicle Noise:	64.3	62.5	58.0	55.9	63.9	64.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	43	92	199	429
CNEL:	45	97	208	449

Thursday, March 12, 2009

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Cumulative
Road Name: Pankey Road
Road Segment: Pala Road (SR 76)/ Dulin Road

Project Name: Campus Park
Job Number: 4346
Analyst: A. Stalker

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	8,312 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	831 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	12 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	110.0 feet
Barrier Distance to Observer:	10.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	80.0%	7.0%	13.0%	96.00%
Medium Trucks:	80.0%	7.0%	13.0%	2.00%
Heavy Trucks:	80.0%	7.0%	13.0%	2.00%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	109.950
Medium Trucks:	109.869
Heavy Trucks:	109.877

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-2.31	-5.24	-1.20	*-1.04*	0.000	0.000
Medium Trucks:	77.72	-19.12	-5.23	-1.20	*-1.15*	0.000	0.000
Heavy Trucks:	82.99	-19.12	-5.23	-1.20	*-1.43*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	57.8	56.0	51.4	49.4	57.3	57.6
Medium Trucks:	52.2	50.4	45.8	43.8	51.7	52.0
Heavy Trucks:	57.4	55.7	51.1	49.0	57.0	57.3
Vehicle Noise:	61.2	59.4	54.9	52.8	60.8	61.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	27	57	124	266
CNEL:	28	60	129	279

Thursday, March 12, 2009

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Cumulative
Road Name: Stewart Canyon Road
Road Segment: Old Highway 395/ Horse Ranch C

Project Name: Campus Park
Job Number: 4346
Analyst: A. Stalker

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	5,035 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	503 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	12 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	110.0 feet
Barrier Distance to Observer:	10.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	80.0%	7.0%	13.0%	96.00%
Medium Trucks:	80.0%	7.0%	13.0%	2.00%
Heavy Trucks:	80.0%	7.0%	13.0%	2.00%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	109.950
Medium Trucks:	109.869
Heavy Trucks:	109.877

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-4.48	-5.24	-1.20	*-1.04*	0.000	0.000
Medium Trucks:	77.72	-21.30	-5.23	-1.20	*-1.15*	0.000	0.000
Heavy Trucks:	82.99	-21.30	-5.23	-1.20	*-1.43*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	55.6	53.8	49.3	47.2	55.2	55.4
Medium Trucks:	50.0	48.2	43.7	41.6	49.6	49.8
Heavy Trucks:	55.3	53.5	48.9	46.9	54.8	55.1
Vehicle Noise:	59.0	57.3	52.7	50.6	58.6	58.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	19	41	89	191
CNEL:	20	43	93	199

Thursday, March 12, 2009

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Cumulative
Road Name: Reche Road
Road Segment: Green Canyon/Live Oak Park Rd

Project Name: Campus Park
Job Number: 4346
Analyst: A. Stalker

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	13,202 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,320 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	12 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	110.0 feet
Barrier Distance to Observer:	10.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	80.0%	7.0%	13.0%	96.00%
Medium Trucks:	80.0%	7.0%	13.0%	2.00%
Heavy Trucks:	80.0%	7.0%	13.0%	2.00%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	109.950
Medium Trucks:	109.869
Heavy Trucks:	109.877

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-0.30	-5.24	-1.20	*-1.04*	0.000	0.000
Medium Trucks:	77.72	-17.11	-5.23	-1.20	*-1.15*	0.000	0.000
Heavy Trucks:	82.99	-17.11	-5.23	-1.20	*-1.43*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	59.8	58.0	53.5	51.4	59.3	59.6
Medium Trucks:	54.2	52.4	47.9	45.8	53.7	54.0
Heavy Trucks:	59.5	57.7	53.1	51.0	59.0	59.3
Vehicle Noise:	63.2	61.4	56.9	54.8	62.8	63.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	36	78	168	363
CNEL:	38	82	176	379

Thursday, March 12, 2009

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Cumulative
Road Name: Pala Road (SR76)
Road Segment: Couser Canyon Road/Pala Missio

Project Name: Campus Park
Job Number: 4346
Analyst: A. Stalker

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	26,009 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,601 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	38 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	110.0 feet
Barrier Distance to Observer:	10.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	80.0%	7.0%	13.0%	96.00%
Medium Trucks:	80.0%	7.0%	13.0%	2.00%
Heavy Trucks:	80.0%	7.0%	13.0%	2.00%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	108.462
Medium Trucks:	108.380
Heavy Trucks:	108.388

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	1.26	-5.15	-1.20	*-1.04*	0.000	0.000
Medium Trucks:	82.40	-15.55	-5.14	-1.20	*-1.15*	0.000	0.000
Heavy Trucks:	86.40	-15.55	-5.14	-1.20	*-1.43*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	66.7	64.9	60.4	58.3	66.3	66.6
Medium Trucks:	60.5	58.8	54.2	52.1	60.1	60.4
Heavy Trucks:	64.5	62.7	58.2	56.1	64.1	64.4
Vehicle Noise:	69.4	67.6	63.0	61.0	68.9	69.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	93	201	432	932
CNEL:	97	210	452	975

Thursday, March 12, 2009

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project + Cumulative
Road Name: Old Highway 395
Road Segment: East Mission Road/ Reche Road

Project Name: Campus Park
Job Number: 4346
Analyst: A. Stalker

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	19,900 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,990 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	36 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	110.0 feet
Barrier Distance to Observer:	10.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	80.0%	7.0%	13.0%	96.00%
Medium Trucks:	80.0%	7.0%	13.0%	2.00%
Heavy Trucks:	80.0%	7.0%	13.0%	2.00%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	108.632
Medium Trucks:	108.551
Heavy Trucks:	108.559

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	0.10	-5.16	-1.20	*-1.04*	0.000	0.000
Medium Trucks:	82.40	-16.71	-5.15	-1.20	*-1.15*	0.000	0.000
Heavy Trucks:	86.40	-16.71	-5.15	-1.20	*-1.43*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	65.5	63.8	59.2	57.1	65.1	65.4
Medium Trucks:	59.3	57.6	53.0	50.9	58.9	59.2
Heavy Trucks:	63.3	61.6	57.0	54.9	62.9	63.2
Vehicle Noise:	68.2	66.4	61.9	59.8	67.7	68.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	78	168	361	778
CNEL:	81	175	378	814

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project + Cumulative
Road Name: Old Highway 395
Road Segment: Reche Road/ Stewart Canyon Ro

Project Name: Campus Park
Job Number: 4346
Analyst: A. Stalker

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	23,300 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,330 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	36 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	110.0 feet
Barrier Distance to Observer:	10.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	80.0%	7.0%	13.0%	96.00%
Medium Trucks:	80.0%	7.0%	13.0%	2.00%
Heavy Trucks:	80.0%	7.0%	13.0%	2.00%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	108.632
Medium Trucks:	108.551
Heavy Trucks:	108.559

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	0.79	-5.16	-1.20	*-1.04*	0.000	0.000
Medium Trucks:	82.40	-16.03	-5.15	-1.20	*-1.15*	0.000	0.000
Heavy Trucks:	86.40	-16.03	-5.15	-1.20	*-1.43*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	66.2	64.4	59.9	57.8	65.8	66.1
Medium Trucks:	60.0	58.3	53.7	51.6	59.6	59.9
Heavy Trucks:	64.0	62.3	57.7	55.6	63.6	63.9
Vehicle Noise:	68.9	67.1	62.5	60.5	68.4	68.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	86	186	401	865
CNEL:	90	195	420	904

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project + Cumulative
Road Name: Old Highway 395
Road Segment: Stewart Canyon Road/ Tecalote L

Project Name: Campus Park
Job Number: 4346
Analyst: A. Stalker

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	17,600 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,760 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	36 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	110.0 feet
Barrier Distance to Observer:	10.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	80.0%	7.0%	13.0%	96.00%
Medium Trucks:	80.0%	7.0%	13.0%	2.00%
Heavy Trucks:	80.0%	7.0%	13.0%	2.00%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	108.632
Medium Trucks:	108.551
Heavy Trucks:	108.559

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	-0.43	-5.16	-1.20	*-1.04*	0.000	0.000
Medium Trucks:	82.40	-17.24	-5.15	-1.20	*-1.15*	0.000	0.000
Heavy Trucks:	86.40	-17.24	-5.15	-1.20	*-1.43*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	65.0	63.2	58.7	56.6	64.6	64.8
Medium Trucks:	58.8	57.0	52.5	50.4	58.4	58.7
Heavy Trucks:	62.8	61.0	56.5	54.4	62.4	62.7
Vehicle Noise:	67.7	65.9	61.3	59.2	67.2	67.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	72	154	333	717
CNEL:	75	162	348	750

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project + Cumulative
Road Name: Old Highway 395
Road Segment: Tecalote Lane/ Pala Mesa Drive

Project Name: Campus Park
Job Number: 4346
Analyst: A. Stalker

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	19,400 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,940 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	36 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	110.0 feet
Barrier Distance to Observer:	10.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	80.0%	7.0%	13.0%	96.00%
Medium Trucks:	80.0%	7.0%	13.0%	2.00%
Heavy Trucks:	80.0%	7.0%	13.0%	2.00%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	108.632
Medium Trucks:	108.551
Heavy Trucks:	108.559

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	-0.01	-5.16	-1.20	*-1.04*	0.000	0.000
Medium Trucks:	82.40	-16.82	-5.15	-1.20	*-1.15*	0.000	0.000
Heavy Trucks:	86.40	-16.82	-5.15	-1.20	*-1.43*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	65.4	63.7	59.1	57.0	65.0	65.3
Medium Trucks:	59.2	57.5	52.9	50.8	58.8	59.1
Heavy Trucks:	63.2	61.5	56.9	54.8	62.8	63.1
Vehicle Noise:	68.1	66.3	61.8	59.7	67.6	67.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	77	165	355	765
CNEL:	80	172	371	800

Thursday, March 12, 2009

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project + Cumulative
Road Name: Old Highway 395
Road Segment: Pala Mesa Drive/ Pala Road (SR

Project Name: Campus Park
Job Number: 4346
Analyst: A. Stalker

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	20,900 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,090 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	36 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	110.0 feet
Barrier Distance to Observer:	10.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	80.0%	7.0%	13.0%	96.00%
Medium Trucks:	80.0%	7.0%	13.0%	2.00%
Heavy Trucks:	80.0%	7.0%	13.0%	2.00%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	108.632
Medium Trucks:	108.551
Heavy Trucks:	108.559

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	0.32	-5.16	-1.20	*-1.04*	0.000	0.000
Medium Trucks:	82.40	-16.50	-5.15	-1.20	*-1.15*	0.000	0.000
Heavy Trucks:	86.40	-16.50	-5.15	-1.20	*-1.43*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	65.7	64.0	59.4	57.3	65.3	65.6
Medium Trucks:	59.6	57.8	53.2	51.2	59.1	59.4
Heavy Trucks:	63.5	61.8	57.2	55.1	63.1	63.4
Vehicle Noise:	68.4	66.6	62.1	60.0	68.0	68.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	80	173	373	804
CNEL:	84	181	390	841

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project + Cumulative
Road Name: Old Highway 395
Road Segment: Pala Road (SR 76)/ Dulin Road

Project Name: Campus Park
Job Number: 4346
Analyst: A. Stalker

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	14,800 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,480 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	36 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	110.0 feet
Barrier Distance to Observer:	10.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	80.0%	7.0%	13.0%	96.00%
Medium Trucks:	80.0%	7.0%	13.0%	2.00%
Heavy Trucks:	80.0%	7.0%	13.0%	2.00%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	108.632
Medium Trucks:	108.551
Heavy Trucks:	108.559

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	-1.18	-5.16	-1.20	*-1.04*	0.000	0.000
Medium Trucks:	82.40	-18.00	-5.15	-1.20	*-1.15*	0.000	0.000
Heavy Trucks:	86.40	-18.00	-5.15	-1.20	*-1.43*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	64.2	62.5	57.9	55.8	63.8	64.1
Medium Trucks:	58.1	56.3	51.7	49.7	57.6	57.9
Heavy Trucks:	62.0	60.3	55.7	53.6	61.6	61.9
Vehicle Noise:	66.9	65.1	60.6	58.5	66.5	66.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	64	138	297	639
CNEL:	67	144	310	668

Thursday, March 12, 2009

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project + Cumulative
Road Name: Old Highway 395
Road Segment: Dulin Road/ West Lilac Road

Project Name: Campus Park
Job Number: 4346
Analyst: A. Stalker

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	17,200 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,720 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	12 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	110.0 feet
Barrier Distance to Observer:	10.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	80.0%	7.0%	13.0%	96.00%
Medium Trucks:	80.0%	7.0%	13.0%	2.00%
Heavy Trucks:	80.0%	7.0%	13.0%	2.00%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	109.950
Medium Trucks:	109.869
Heavy Trucks:	109.877

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	0.85	-5.24	-1.20	*-1.04*	0.000	0.000
Medium Trucks:	77.72	-15.96	-5.23	-1.20	*-1.15*	0.000	0.000
Heavy Trucks:	82.99	-15.96	-5.23	-1.20	*-1.43*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	60.9	59.2	54.6	52.5	60.5	60.8
Medium Trucks:	55.3	53.6	49.0	46.9	54.9	55.2
Heavy Trucks:	60.6	58.8	54.3	52.2	60.2	60.5
Vehicle Noise:	64.4	62.6	58.0	56.0	63.9	64.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	43	93	201	433
CNEL:	45	97	210	452

Thursday, March 12, 2009

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project + Cumulative
Road Name: Reche Road
Road Segment: Live Oak Park Road/ Gird Road

Project Name: Campus Park
Job Number: 4346
Analyst: A. Stalker

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	12,100 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,210 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	12 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	110.0 feet
Barrier Distance to Observer:	10.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	80.0%	7.0%	13.0%	96.00%
Medium Trucks:	80.0%	7.0%	13.0%	2.00%
Heavy Trucks:	80.0%	7.0%	13.0%	2.00%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	109.950
Medium Trucks:	109.869
Heavy Trucks:	109.877

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-0.68	-5.24	-1.20	*-1.04*	0.000	0.000
Medium Trucks:	77.72	-17.49	-5.23	-1.20	*-1.15*	0.000	0.000
Heavy Trucks:	82.99	-17.49	-5.23	-1.20	*-1.43*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	59.4	57.6	53.1	51.0	59.0	59.3
Medium Trucks:	53.8	52.0	47.5	45.4	53.4	53.7
Heavy Trucks:	59.1	57.3	52.8	50.7	58.6	58.9
Vehicle Noise:	62.8	61.1	56.5	54.4	62.4	62.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	34	74	159	342
CNEL:	36	77	166	358

Thursday, March 12, 2009

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project + Cumulative
Road Name: Reche Road
Road Segment: Gird Road/ Wilt Road

Project Name: Campus Park
Job Number: 4346
Analyst: A. Stalker

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	9,600 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	960 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	12 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	110.0 feet
Barrier Distance to Observer:	10.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	80.0%	7.0%	13.0%	96.00%
Medium Trucks:	80.0%	7.0%	13.0%	2.00%
Heavy Trucks:	80.0%	7.0%	13.0%	2.00%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	109.950
Medium Trucks:	109.869
Heavy Trucks:	109.877

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-1.68	-5.24	-1.20	*-1.04*	0.000	0.000
Medium Trucks:	77.72	-18.49	-5.23	-1.20	*-1.15*	0.000	0.000
Heavy Trucks:	82.99	-18.49	-5.23	-1.20	*-1.43*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	58.4	56.6	52.1	50.0	58.0	58.2
Medium Trucks:	52.8	51.0	46.5	44.4	52.4	52.6
Heavy Trucks:	58.1	56.3	51.7	49.7	57.6	57.9
Vehicle Noise:	61.8	60.1	55.5	53.4	61.4	61.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	29	63	136	293
CNEL:	31	66	142	307

Thursday, March 12, 2009

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project + Cumulative
Road Name: Reche Road
Road Segment: Wilt Road/ Tecalote Road

Project Name: Campus Park
Job Number: 4346
Analyst: A. Stalker

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	8,900 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	890 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	12 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	110.0 feet
Barrier Distance to Observer:	10.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	80.0%	7.0%	13.0%	96.00%
Medium Trucks:	80.0%	7.0%	13.0%	2.00%
Heavy Trucks:	80.0%	7.0%	13.0%	2.00%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	109.950
Medium Trucks:	109.869
Heavy Trucks:	109.877

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-2.01	-5.24	-1.20	*-1.04*	0.000	0.000
Medium Trucks:	77.72	-18.82	-5.23	-1.20	*-1.15*	0.000	0.000
Heavy Trucks:	82.99	-18.82	-5.23	-1.20	*-1.43*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	58.1	56.3	51.7	49.7	57.6	57.9
Medium Trucks:	52.5	50.7	46.1	44.1	52.0	52.3
Heavy Trucks:	57.7	56.0	51.4	49.3	57.3	57.6
Vehicle Noise:	61.5	59.7	55.2	53.1	61.1	61.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	28	60	129	279
CNEL:	29	63	135	292

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project + Cumulative
Road Name: Reche Road
Road Segment: Tecalote Road/ Old Highway 395

Project Name: Campus Park
Job Number: 4346
Analyst: A. Stalker

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	10,600 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,060 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	12 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	110.0 feet
Barrier Distance to Observer:	10.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	80.0%	7.0%	13.0%	96.00%
Medium Trucks:	80.0%	7.0%	13.0%	2.00%
Heavy Trucks:	80.0%	7.0%	13.0%	2.00%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	109.950
Medium Trucks:	109.869
Heavy Trucks:	109.877

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-1.25	-5.24	-1.20	*-1.04*	0.000	0.000
Medium Trucks:	77.72	-18.06	-5.23	-1.20	*-1.15*	0.000	0.000
Heavy Trucks:	82.99	-18.06	-5.23	-1.20	*-1.43*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	58.8	57.1	52.5	50.4	58.4	58.7
Medium Trucks:	53.2	51.5	46.9	44.8	52.8	53.1
Heavy Trucks:	58.5	56.7	52.2	50.1	58.1	58.4
Vehicle Noise:	62.3	60.5	55.9	53.9	61.8	62.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	31	67	145	313
CNEL:	33	71	152	328

Thursday, March 12, 2009

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project + Cumulative
Road Name: Pala Road (SR76)
Road Segment: Via Monserate/ Gird Road

Project Name: Campus Park
Job Number: 4346
Analyst: A. Stalker

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	44,300 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	4,430 vehicles
Vehicle Speed:	65 mph
Near/Far Lane Distance:	74 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	110.0 feet
Barrier Distance to Observer:	10.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	80.0%	7.0%	13.0%	96.00%
Medium Trucks:	80.0%	7.0%	13.0%	2.00%
Heavy Trucks:	80.0%	7.0%	13.0%	2.00%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	103.711
Medium Trucks:	103.626
Heavy Trucks:	103.634

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	74.55	2.85	-4.86	-1.20	*-1.04*	0.000	0.000
Medium Trucks:	84.86	-13.96	-4.85	-1.20	*-1.15*	0.000	0.000
Heavy Trucks:	88.18	-13.96	-4.85	-1.20	*-1.43*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	71.3	69.6	65.0	62.9	70.9	71.2
Medium Trucks:	64.9	63.1	58.5	56.4	64.4	64.7
Heavy Trucks:	68.2	66.4	61.8	59.8	67.7	68.0
Vehicle Noise:	73.7	71.9	67.3	65.3	73.2	73.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	180	389	838	1,804
CNEL:	189	407	876	1,887

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project + Cumulative
Road Name: Pala Road (SR76)
Road Segment: Gird Road/ Sage Road

Project Name: Campus Park
Job Number: 4346
Analyst: A. Stalker

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	36,700 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,670 vehicles
Vehicle Speed:	65 mph
Near/Far Lane Distance:	74 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	110.0 feet
Barrier Distance to Observer:	10.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	80.0%	7.0%	13.0%	96.00%
Medium Trucks:	80.0%	7.0%	13.0%	2.00%
Heavy Trucks:	80.0%	7.0%	13.0%	2.00%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	103.711
Medium Trucks:	103.626
Heavy Trucks:	103.634

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	74.55	2.03	-4.86	-1.20	*-1.04*	0.000	0.000
Medium Trucks:	84.86	-14.78	-4.85	-1.20	*-1.15*	0.000	0.000
Heavy Trucks:	88.18	-14.78	-4.85	-1.20	*-1.43*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	70.5	68.8	64.2	62.1	70.1	70.4
Medium Trucks:	64.0	62.3	57.7	55.6	63.6	63.9
Heavy Trucks:	67.4	65.6	61.0	58.9	66.9	67.2
Vehicle Noise:	72.8	71.1	66.5	64.4	72.4	72.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	159	343	739	1,592
CNEL:	166	359	773	1,665

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project + Cumulative
Road Name: Pala Road (SR76)
Road Segment: Sage Road/ Old Highway 395

Project Name: Campus Park
Job Number: 4346
Analyst: A. Stalker

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	39,100 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,910 vehicles
Vehicle Speed:	65 mph
Near/Far Lane Distance:	74 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	110.0 feet
Barrier Distance to Observer:	10.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	80.0%	7.0%	13.0%	96.00%
Medium Trucks:	80.0%	7.0%	13.0%	2.00%
Heavy Trucks:	80.0%	7.0%	13.0%	2.00%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	103.711
Medium Trucks:	103.626
Heavy Trucks:	103.634

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	74.55	2.31	-4.86	-1.20	*-1.04*	0.000	0.000
Medium Trucks:	84.86	-14.50	-4.85	-1.20	*-1.15*	0.000	0.000
Heavy Trucks:	88.18	-14.50	-4.85	-1.20	*-1.43*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	70.8	69.0	64.5	62.4	70.4	70.7
Medium Trucks:	64.3	62.5	58.0	55.9	63.9	64.2
Heavy Trucks:	67.6	65.9	61.3	59.2	67.2	67.5
Vehicle Noise:	73.1	71.4	66.8	64.7	72.7	73.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	166	358	771	1,660
CNEL:	174	374	806	1,737

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project + Cumulative
Road Name: Pala Road (SR76)
Road Segment: Old Highway 395/ I-15 SB Ramps

Project Name: Campus Park
Job Number: 4346
Analyst: A. Stalker

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	39,500 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,950 vehicles
Vehicle Speed:	65 mph
Near/Far Lane Distance:	74 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	110.0 feet
Barrier Distance to Observer:	10.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	80.0%	7.0%	13.0%	96.00%
Medium Trucks:	80.0%	7.0%	13.0%	2.00%
Heavy Trucks:	80.0%	7.0%	13.0%	2.00%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	103.711
Medium Trucks:	103.626
Heavy Trucks:	103.634

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	74.55	2.35	-4.86	-1.20	*-1.04*	0.000	0.000
Medium Trucks:	84.86	-14.46	-4.85	-1.20	*-1.15*	0.000	0.000
Heavy Trucks:	88.18	-14.46	-4.85	-1.20	*-1.43*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	70.8	69.1	64.5	62.4	70.4	70.7
Medium Trucks:	64.4	62.6	58.0	56.0	63.9	64.2
Heavy Trucks:	67.7	65.9	61.4	59.3	67.2	67.5
Vehicle Noise:	73.2	71.4	66.8	64.8	72.7	73.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	167	360	776	1,672
CNEL:	175	377	812	1,748

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project + Cumulative
Road Name: Pala Road (SR76)
Road Segment: I-15 NB Ramps/ Pankey Road

Project Name: Campus Park
Job Number: 4346
Analyst: A. Stalker

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	32,500 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,250 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	38 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	110.0 feet
Barrier Distance to Observer:	10.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	80.0%	7.0%	13.0%	96.00%
Medium Trucks:	80.0%	7.0%	13.0%	2.00%
Heavy Trucks:	80.0%	7.0%	13.0%	2.00%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	108.462
Medium Trucks:	108.380
Heavy Trucks:	108.388

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	2.23	-5.15	-1.20	*-1.04*	0.000	0.000
Medium Trucks:	82.40	-14.58	-5.14	-1.20	*-1.15*	0.000	0.000
Heavy Trucks:	86.40	-14.58	-5.14	-1.20	*-1.43*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	67.7	65.9	61.3	59.3	67.2	67.5
Medium Trucks:	61.5	59.7	55.2	53.1	61.0	61.3
Heavy Trucks:	65.5	63.7	59.2	57.1	65.0	65.3
Vehicle Noise:	70.3	68.6	64.0	61.9	69.9	70.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	108	233	502	1,081
CNEL:	113	244	525	1,131

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project + Cumulative
Road Name: Pala Road (SR76)
Road Segment: Pankey Road/ Horse Ranch Cree

Project Name: Campus Park
Job Number: 4346
Analyst: A. Stalker

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	30,300 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,030 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	38 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	110.0 feet
Barrier Distance to Observer:	10.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	80.0%	7.0%	13.0%	96.00%
Medium Trucks:	80.0%	7.0%	13.0%	2.00%
Heavy Trucks:	80.0%	7.0%	13.0%	2.00%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	108.462
Medium Trucks:	108.380
Heavy Trucks:	108.388

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	1.93	-5.15	-1.20	*-1.04*	0.000	0.000
Medium Trucks:	82.40	-14.88	-5.14	-1.20	*-1.15*	0.000	0.000
Heavy Trucks:	86.40	-14.88	-5.14	-1.20	*-1.43*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	67.4	65.6	61.0	59.0	66.9	67.2
Medium Trucks:	61.2	59.4	54.9	52.8	60.7	61.0
Heavy Trucks:	65.2	63.4	58.8	56.8	64.7	65.0
Vehicle Noise:	70.0	68.3	63.7	61.6	69.6	69.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	103	222	479	1,032
CNEL:	108	232	501	1,079

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project + Cumulative
Road Name: Pala Road (SR76)
Road Segment: Horse Ranch Creek Road/Rice C

Project Name: Campus Park
Job Number: 4346
Analyst: A. Stalker

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	33,700 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,370 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	38 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	110.0 feet
Barrier Distance to Observer:	10.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	80.0%	7.0%	13.0%	96.00%
Medium Trucks:	80.0%	7.0%	13.0%	2.00%
Heavy Trucks:	80.0%	7.0%	13.0%	2.00%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	108.462
Medium Trucks:	108.380
Heavy Trucks:	108.388

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	2.39	-5.15	-1.20	*-1.04*	0.000	0.000
Medium Trucks:	82.40	-14.42	-5.14	-1.20	*-1.15*	0.000	0.000
Heavy Trucks:	86.40	-14.42	-5.14	-1.20	*-1.43*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	67.8	66.1	61.5	59.4	67.4	67.7
Medium Trucks:	61.6	59.9	55.3	53.2	61.2	61.5
Heavy Trucks:	65.6	63.9	59.3	57.2	65.2	65.5
Vehicle Noise:	70.5	68.7	64.2	62.1	70.0	70.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	111	239	514	1,107
CNEL:	116	250	538	1,158

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project + Cumulative
Road Name: Pala Road (SR76)
Road Segment: Rice Canyon Road/ Couser Cany

Project Name: Campus Park
Job Number: 4346
Analyst: A. Stalker

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	32,300 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	3,230 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	38 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	110.0 feet
Barrier Distance to Observer:	10.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	80.0%	7.0%	13.0%	96.00%
Medium Trucks:	80.0%	7.0%	13.0%	2.00%
Heavy Trucks:	80.0%	7.0%	13.0%	2.00%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	108.462
Medium Trucks:	108.380
Heavy Trucks:	108.388

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	2.21	-5.15	-1.20	*-1.04*	0.000	0.000
Medium Trucks:	82.40	-14.61	-5.14	-1.20	*-1.15*	0.000	0.000
Heavy Trucks:	86.40	-14.61	-5.14	-1.20	*-1.43*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	67.6	65.9	61.3	59.2	67.2	67.5
Medium Trucks:	61.5	59.7	55.1	53.1	61.0	61.3
Heavy Trucks:	65.4	63.7	59.1	57.0	65.0	65.3
Vehicle Noise:	70.3	68.5	64.0	61.9	69.9	70.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	108	232	500	1,077
CNEL:	113	243	523	1,126

Thursday, March 12, 2009

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project + Cumulative
Road Name: Dulin Road
Road Segment: Old Highway 395/ Pankey Road

Project Name: Campus Park
Job Number: 4346
Analyst: A. Stalker

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	7,700 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	770 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	12 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	110.0 feet
Barrier Distance to Observer:	10.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	80.0%	7.0%	13.0%	96.00%
Medium Trucks:	80.0%	7.0%	13.0%	2.00%
Heavy Trucks:	80.0%	7.0%	13.0%	2.00%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	109.950
Medium Trucks:	109.869
Heavy Trucks:	109.877

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-2.64	-5.24	-1.20	*-1.04*	0.000	0.000
Medium Trucks:	77.72	-19.45	-5.23	-1.20	*-1.15*	0.000	0.000
Heavy Trucks:	82.99	-19.45	-5.23	-1.20	*-1.43*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	57.4	55.7	51.1	49.0	57.0	57.3
Medium Trucks:	51.8	50.1	45.5	43.4	51.4	51.7
Heavy Trucks:	57.1	55.4	50.8	48.7	56.7	57.0
Vehicle Noise:	60.9	59.1	54.5	52.5	60.4	60.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	25	55	117	253
CNEL:	26	57	123	265

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project + Cumulative
Road Name: Pankey Road
Road Segment: Street R/ Pala Road (SR 76)

Project Name: Campus Park
Job Number: 4346
Analyst: A. Stalker

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	8,622 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	862 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	36 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	110.0 feet
Barrier Distance to Observer:	10.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	80.0%	7.0%	13.0%	96.00%
Medium Trucks:	80.0%	7.0%	13.0%	2.00%
Heavy Trucks:	80.0%	7.0%	13.0%	2.00%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	108.632
Medium Trucks:	108.551
Heavy Trucks:	108.559

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	-3.53	-5.16	-1.20	*-1.04*	0.000	0.000
Medium Trucks:	82.40	-20.34	-5.15	-1.20	*-1.15*	0.000	0.000
Heavy Trucks:	86.40	-20.34	-5.15	-1.20	*-1.43*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	61.9	60.1	55.6	53.5	61.5	61.7
Medium Trucks:	55.7	53.9	49.4	47.3	55.3	55.6
Heavy Trucks:	59.7	57.9	53.4	51.3	59.3	59.6
Vehicle Noise:	64.6	62.8	58.2	56.1	64.1	64.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	45	96	207	446
CNEL:	47	100	216	466

Thursday, March 12, 2009

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project + Cumulative
Road Name: Pankey Road
Road Segment: Pala Road (SR 76)/ Dulin Road

Project Name: Campus Park
Job Number: 4346
Analyst: A. Stalker

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	11,948 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,195 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	12 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	110.0 feet
Barrier Distance to Observer:	10.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	80.0%	7.0%	13.0%	96.00%
Medium Trucks:	80.0%	7.0%	13.0%	2.00%
Heavy Trucks:	80.0%	7.0%	13.0%	2.00%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	109.950
Medium Trucks:	109.869
Heavy Trucks:	109.877

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-0.73	-5.24	-1.20	*-1.04*	0.000	0.000
Medium Trucks:	77.72	-17.54	-5.23	-1.20	*-1.15*	0.000	0.000
Heavy Trucks:	82.99	-17.54	-5.23	-1.20	*-1.43*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	59.3	57.6	53.0	50.9	58.9	59.2
Medium Trucks:	53.7	52.0	47.4	45.3	53.3	53.6
Heavy Trucks:	59.0	57.3	52.7	50.6	58.6	58.9
Vehicle Noise:	62.8	61.0	56.5	54.4	62.3	62.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	34	73	157	339
CNEL:	35	76	165	355

Thursday, March 12, 2009

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project + Cumulative
Road Name: Stewart Canyon Road
Road Segment: Old Highway 395/ Horse Ranch C

Project Name: Campus Park
Job Number: 4346
Analyst: A. Stalker

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	7,994 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	799 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	12 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	110.0 feet
Barrier Distance to Observer:	10.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	80.0%	7.0%	13.0%	96.00%
Medium Trucks:	80.0%	7.0%	13.0%	2.00%
Heavy Trucks:	80.0%	7.0%	13.0%	2.00%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	109.950
Medium Trucks:	109.869
Heavy Trucks:	109.877

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-2.48	-5.24	-1.20	*-1.04*	0.000	0.000
Medium Trucks:	77.72	-19.29	-5.23	-1.20	*-1.15*	0.000	0.000
Heavy Trucks:	82.99	-19.29	-5.23	-1.20	*-1.43*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	57.6	55.8	51.3	49.2	57.2	57.5
Medium Trucks:	52.0	50.2	45.7	43.6	51.6	51.9
Heavy Trucks:	57.3	55.5	51.0	48.9	56.8	57.1
Vehicle Noise:	61.0	59.3	54.7	52.6	60.6	60.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	26	56	120	260
CNEL:	27	58	126	271

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project + Cumulative
Road Name: Reche Road
Road Segment: Green Canyon/Live Oak Park Roa

Project Name: Campus Park
Job Number: 4346
Analyst: A. Stalker

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	13,800 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	1,380 vehicles
Vehicle Speed:	40 mph
Near/Far Lane Distance:	12 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	110.0 feet
Barrier Distance to Observer:	10.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	80.0%	7.0%	13.0%	96.00%
Medium Trucks:	80.0%	7.0%	13.0%	2.00%
Heavy Trucks:	80.0%	7.0%	13.0%	2.00%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	109.950
Medium Trucks:	109.869
Heavy Trucks:	109.877

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	66.51	-0.10	-5.24	-1.20	*-1.04*	0.000	0.000
Medium Trucks:	77.72	-16.92	-5.23	-1.20	*-1.15*	0.000	0.000
Heavy Trucks:	82.99	-16.92	-5.23	-1.20	*-1.43*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	60.0	58.2	53.7	51.6	59.5	59.8
Medium Trucks:	54.4	52.6	48.0	46.0	53.9	54.2
Heavy Trucks:	59.6	57.9	53.3	51.2	59.2	59.5
Vehicle Noise:	63.4	61.6	57.1	55.0	63.0	63.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	37	80	173	373
CNEL:	39	84	181	391

Thursday, March 12, 2009

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project + Cumulative
Road Name: Pala Road (SR76)
Road Segment: Couser Canyon Road/Pala Missio

Project Name: Campus Park
Job Number: 4346
Analyst: A. Stalker

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	26,800 vehicles
Peak Hour Percentage:	10%
Peak Hour Volume:	2,680 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	38 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	100.0 feet
Centerline Dist. to Observer:	110.0 feet
Barrier Distance to Observer:	10.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	80.0%	7.0%	13.0%	96.00%
Medium Trucks:	80.0%	7.0%	13.0%	2.00%
Heavy Trucks:	80.0%	7.0%	13.0%	2.00%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.006	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	108.462
Medium Trucks:	108.380
Heavy Trucks:	108.388

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	1.40	-5.15	-1.20	*-1.04*	0.000	0.000
Medium Trucks:	82.40	-15.42	-5.14	-1.20	*-1.15*	0.000	0.000
Heavy Trucks:	86.40	-15.42	-5.14	-1.20	*-1.43*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	66.8	65.1	60.5	58.4	66.4	66.7
Medium Trucks:	60.6	58.9	54.3	52.2	60.2	60.5
Heavy Trucks:	64.6	62.9	58.3	56.2	64.2	64.5
Vehicle Noise:	69.5	67.7	63.2	61.1	69.0	69.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	95	205	441	951
CNEL:	99	214	462	994

APPENDIX D

EXTERIOR ANALYSIS PREDICTION MODEL INPUTS AND CALCULATIONS FOR EXISTING CONDITIONS

```
CAMPUS PARKWAY- Existing (4/23/07)
T-PEAK HOUR TRAFFIC CONDITIONS, 1
 5318 , 65 , 64 , 65 , 144 , 65
T-PEAK HOUR TRAFFIC CONDITIONS, 2
 5952 , 65 , 60 , 65 , 50 , 65
L-I-15 NORTH, 1
N,2460.,9892,385,
N,2718.,9281,385,
N,2823.,8986,385,
N,2938.,8615,381,
N,3051.,8176,375,
N,3112.,7863,360,
N,3165.,7540,347,
N,3214.,7084,330,
N,3241.,6643,324,
N,3248.,5980,322,
N,3196.,4029,300,
N,3155.,2667,300,
N,3119.,1088,290,
N,3072.,-1199,280,
L-I-15 SOUTH, 2
N,2346.,9849,385,
N,2603.,9238,385,
N,2712.,8945,385,
N,2823.,8585,381,
N,2934.,8154,375,
N,2996.,7840,360,
N,3047.,7527,347,
N,3096.,7077,327,
N,3123.,6636,325,
N,3129.,5979,322,
N,3078.,4032,300,
N,3037.,2670,301,
N,2990.,1092,290,
N,2949.,-1197,280,
B-HILL 1, 1 , 1 , 0 ,0
3851.,9894,500,500,
3842.,9771,529,529,
3819.,9610,522,522,
3798.,9067,481,481,
3781.,8885,475,475,
B-HILL 2, 2 , 1 , 0 ,0
3772.,8818,480,480,
3675.,8499,500,500,
3673.,8355,470,470,
3651.,8194,470,470,
3639.,8064,450,450,
3599.,7963,420,420,
B-I-15 SOUTH ROADEDGE, 3 , 1 , 0 ,0
2366.,9859,370,370,
2638.,9246,350,350,
2744.,8949,346,346,
2858.,8589,343,343,
2971.,8158,341,341,
3081.,7528,334,334,
3129.,7076,327,327,
3148.,6635,325,325,
3095.,4033,314,314,
3066.,2666,303,303,
2984.,-1199,280,280,
B-I-15 North Road Edge, 4 , 1 , 0 ,0
3152.,-1263,290,290,
3147.,-946,290,290,
```

```
3178.,-912,300,300,
3149.,-838,290,290,
3136.,-672,285,285,
3167.,-495,286,286,
3185.,-277,305,305,
3467.,-96,288,288,
3181.,408,300,300,
3187.,1043,300,300,
B-I-15 North Road Edge, 5 , 1 , 0 ,0
3183.,1172,300,300,
3190.,1474,300,300,
3272.,1560,310,310,
3274.,1678,326,326,
3249.,1833,316,316,
3274.,1935,323,323,
3239.,2043,314,314,
3266.,2135,321,321,
3212.,2390,300,300,
B-I-15 North Road Edge, 6 , 1 , 0 ,0
3212.,2390,300,300,
3197.,2587,300,300,
3196.,2838,300,300,
3283.,4305,300,300,
3282.,4304,305,305,
3248.,4828,310,310,
3309.,7185,330,330,
3305.,7313,330,330,
3254.,7316,340,340,
3166.,7863,356,356,
B-I-15 North Road Edge, 7 , 1 , 0 ,0
3166.,7863,356,356,
3101.,8228,360,360,
2787.,9316,360,360,
2480.,9962,365,365,
R, 1 , 67 ,500
5342,4640,345.,
R, 2 , 67 ,500
5657,2136,305.,
R, 3 , 67 ,500
3495,7182,373.,
D, 4.5
ALL,ALL
C,C
```

SOUND32 - RELEASE 07/30/91

TITLE:
CAMPUS PARKWAY- Existing (4/23/07)

BARRIER DATA
****

BAR ELE	0	BARRIER HEIGHTS 1	2	3	4	5	6	7	BAR ID	LENGTH	TYPE
1	-	0.*							B1 P1	126.7	BERM
2	-	0.*							B1 P2	162.8	BERM
3	-	0.*							B1 P3	545.0	BERM
4	-	0.*							B1 P4	182.9	BERM
5	-	0.*							B2 P1	334.0	BERM
6	-	0.*							B2 P2	147.1	BERM
7	-	0.*							B2 P3	162.5	BERM
8	-	0.*							B2 P4	132.1	BERM
9	-	0.*							B2 P5	112.7	BERM
10	-	0.*							B3 P1	670.9	BERM
11	-	0.*							B3 P2	315.4	BERM
12	-	0.*							B3 P3	377.6	BERM
13	-	0.*							B3 P4	445.6	BERM
14	-	0.*							B3 P5	639.6	BERM
15	-	0.*							B3 P6	454.6	BERM
16	-	0.*							B3 P7	441.4	BERM
17	-	0.*							B3 P8	2602.6	BERM
18	-	0.*							B3 P9	1367.4	BERM
19	-	0.*							B3 P10	3865.9	BERM
20	-	0.*							B4 P1	317.0	BERM
21	-	0.*							B4 P2	47.1	BERM
22	-	0.*							B4 P3	80.1	BERM
23	-	0.*							B4 P4	166.6	BERM
24	-	0.*							B4 P5	179.7	BERM
25	-	0.*							B4 P6	219.6	BERM
26	-	0.*							B4 P7	335.5	BERM
27	-	0.*							B4 P8	579.6	BERM
28	-	0.*							B4 P9	635.0	BERM
29	-	0.*							B5 P1	302.1	BERM
30	-	0.*							B5 P2	119.2	BERM
31	-	0.*							B5 P3	119.1	BERM
32	-	0.*							B5 P4	157.3	BERM
33	-	0.*							B5 P5	105.3	BERM
34	-	0.*							B5 P6	113.9	BERM
35	-	0.*							B5 P7	96.1	BERM
36	-	0.*							B5 P8	261.5	BERM
37	-	0.*							B6 P1	197.6	BERM
38	-	0.*							B6 P2	251.0	BERM
39	-	0.*							B6 P3	1469.6	BERM
40	-	0.*							B6 P4	5.2	BERM
41	-	0.*							B6 P5	525.1	BERM
42	-	0.*							B6 P6	2357.9	BERM
43	-	0.*							B6 P7	128.1	BERM
44	-	0.*							B6 P8	52.1	BERM
45	-	0.*							B6 P9	554.3	BERM
46	-	0.*							B7 P1	370.8	BERM

```
 47     -   0.*                                  B7 P2     1132.4  BERM
 48     -   0.*                                  B7 P3      715.3  BERM
 ---------------------------------------------------------------------------
        0    1    2    3    4    5    6    7
1
 REC REC ID    DNL  PEOPLE   LEQ(CAL)
 --------------------------------
  1  R-1       67.    500.   53.9
  2  R-2       67.    500.   52.1
  3  R-3       67.    500.   69.4
 --------------------------------
```

APPENDIX E

EXTERIOR ANALYSIS PREDICTION MODEL INPUTS
AND CALCULATIONS FOR BUILDOUT SCENARIO

```
CAMPUS PARK- NORTH END SINGLE FAMILY UNMITIGATED
T-PEAK HOUR TRAFFIC CONDITIONS, 1
 11295 , 65 , 377 , 65 , 879 , 65
T-PEAK HOUR TRAFFIC CONDITIONS, 2
 11295 , 65 , 377 , 65 , 879 , 65
T-PEAK HOUR TRAFFIC CONDITIONS, 3
 758 , 45 , 16 , 45 , 16 , 45
T-PEAK HOUR TRAFFIC CONDITIONS, 4
 1094 , 40 , 23 , 40 , 23 , 40
L-I-15 NORTH, 1
N,2460.,9892,362,
N,2718.,9281,352,
N,2823.,8986,347,
N,2938.,8615,343,
N,3051.,8176,375,
N,3112.,7863,337,
N,3165.,7540,337,
N,3214.,7084,330,
N,3241.,6643,324,
N,3248.,5980,322,
N,3196.,4029,300,
N,3155.,2667,300,
N,3119.,1088,290,
L-I-15 SOUTH, 2
N,2346.,9849,370,
N,2603.,9238,350,
N,2712.,8945,346,
N,2823.,8585,343,
N,2934.,8154,341,
N,2996.,7840,337,
N,3047.,7527,334,
N,3096.,7077,327,
N,3123.,6636,325,
N,3129.,5979,322,
N,3078.,4032,300,
N,3037.,2670,301,
N,2990.,1092,290,
L-HORSE RANCH CREEK SEGMENT 1, 3
N,3043.,10290,379,
N,3181.,9940,383,
N,3237.,9720,383,
N,3300.,9246,386,
N,3372.,8619,381,
N,3422.,8183,373,
N,3470.,7777,364,
N,3569.,7439,357,
N,3864.,6977,351,
L-HORSE RANCH CREEK SEGMENT 2, 4
N,3864.,6977,351,
N,4161.,6503,350,
N,4244.,5507,318,
B-I-15 SOUTH ROADEDGE, 1 , 1 , 0 ,0
2366.,9859,370,370,
2638.,9246,350,350,
2744.,8949,346,346,
2858.,8589,343,343,
2971.,8158,341,341,
3081.,7528,334,334,
3129.,7076,327,327,
3148.,6635,325,325,
3095.,4033,314,314,
3066.,2666,303,303,
3030.,1088,280,280,
```

```
B-HORSE RANCH CREEK ROADADGE, 2 , 1 , 0 ,0
3094.,10309,379,379,
3236.,9955,383,383,
3290.,9724,383,383,
3351.,9250,386,386,
3426.,8627,381,381,
3476.,8189,373,373,
3524.,7782,364,364,
3622.,7454,357,357,
3918.,6998,351,351,
4208.,6504,350,350,
4261.,6259,350,350,
B-HORSE RANCH CREEK ROADEDGE, 3 , 1 , 0 ,0
4261.,6259,350,350,
4299.,5509,318,318,
B-I-15 North Road Edge, 4 , 1 , 0 ,0
3183.,1172,300,300,
3190.,1474,300,300,
3272.,1560,310,310,
3274.,1678,326,326,
3249.,1833,316,316,
3274.,1935,323,323,
3239.,2043,314,314,
3266.,2135,321,321,
3212.,2390,300,300,
B-I-15 North Road Edge, 5 , 1 , 0 ,0
3212.,2390,300,300,
3197.,2587,300,300,
3196.,2838,300,300,
3283.,4305,300,300,
3282.,4304,305,305,
3248.,4828,310,310,
3309.,7185,330,330,
3305.,7313,330,330,
3254.,7316,340,340,
3166.,7863,356,356,
B-I-15 North Road Edge, 6 , 1 , 0 ,0
3166.,7863,356,356,
3101.,8228,360,360,
2787.,9316,360,360,
2480.,9962,365,365,
B-HILL 1, 7 , 1 , 0 ,0
3851.,9894,500,500,
3842.,9771,529,529,
3819.,9610,522,522,
3798.,9067,481,481,
3781.,8885,475,475,
B-HILL 2, 8 , 1 , 0 ,0
3772.,8818,480,480,
3675.,8499,500,500,
3673.,8355,470,470,
3651.,8194,470,470,
3639.,8064,450,450,
3599.,7963,420,420,
B-Hill 3, 9 , 2 , 0 ,0
3283.,1669,325,325,
3895.,1673,274,274,
3489.,1996,320,320,
B-Hill 4, 10 , 1 , 0 ,0
3516.,2508,290,290,
3445.,2667,316,316,
3375.,2785,290,290,
R, 1 , 67 ,500
```

```
4034,9355,455.,
R, 2 , 67 ,500
3944,9208,455.,
R, 3 , 67 ,500
4029,8909,438.,
R, 4 , 67 ,500
4023,8720,421.,
R, 5 , 67 ,500
4073,8545,419.,
R, 6 , 67 ,500
4062,8383,409.,
R, 7 , 67 ,500
4081,8238,395.,
R, 8 , 67 ,500
4154,8159,393.,
R, 9 , 67 ,500
4257,7956,413.,
R, 10 , 67 ,500
4229,7832,416.,
R, 11 , 67 ,500
4184,7737,417.,
R, 12 , 67 ,500
4183,7614,418.,
R, 13 , 67 ,500
4411,7393,421.,
R, 14 , 67 ,500
4804,7534,442.,
R, 15 , 67 ,500
4816,7737,456.,
R, 16 , 67 ,500
4647,7935,447.,
R, 17 , 67 ,500
4555,8291,445.,
R, 18 , 67 ,500
4563,8602,468.,
R, 19 , 67 ,500
4381,8967,450.,
R, 20 , 67 ,500
4260,9090,466.,
R, 21 , 67 ,500
4672,9215,482.,
R, 22 , 67 ,500
4643,8957,486.,
R, 23 , 67 ,500
4737,8794,467.,
R, 24 , 67 ,500
4891,8653,500.,
R, 25 , 67 ,500
4811,8485,461.,
R, 26 , 67 ,500
4893,8326,485.,
R, 27 , 67 ,500
4859,8057,451.,
R, 28 , 67 ,500
5084,7913,475.,
R, 29 , 67 ,500
5081,7748,451.,
R, 30 , 67 ,500
5139,7584,468.,
R, 31 , 67 ,500
5026,7335,437.,
R, 32 , 67 ,500
5563,7313,500.,
```

```
R, 33 , 67 ,500
5395,7501,464.,
R, 34 , 67 ,500
5504,7617,504.,
R, 35 , 67 ,500
5403,7819,473.,
R, 36 , 67 ,500
5595,8049,507.,
R, 37 , 67 ,500
5248,8072,475.,
R, 38 , 67 ,500
5125,8418,490.,
D, 4.5
ALL,ALL
K,-3
ALL,5,6,7,8
C,C
```

SOUND32 - RELEASE 07/30/91

TITLE:
CAMPUS PARK- NORTH END SINGLE FAMILY UNMITIGATED

EFFECTIVENESS / COST RATIOS
****

BAR ELE	0	1	2	3	4	5	6	7	
1	-	0.*							B1 P1
2	-	0.*							B1 P2
3	-	0.*							B1 P3
4	-	0.*							B1 P4
5	-	0.*							B1 P5
6	-	0.*							B1 P6
7	-	0.*							B1 P7
8	-	0.*							B1 P8
9	-	0.*							B1 P9
10	-	0.*							B1 P10
11	-	0.*							B2 P1
12	-	0.*							B2 P2
13	-	0.*							B2 P3
14	-	0.*							B2 P4
15	-	0.*							B2 P5
16	-	0.*							B2 P6
17	-	0.*							B2 P7
18	-	0.*							B2 P8
19	-	0.*							B2 P9
20	-	0.*							B2 P10
21	-	0.*							B3 P1
22	-	0.*							B4 P1
23	-	0.*							B4 P2
24	-	0.*							B4 P3
25	-	0.*							B4 P4
26	-	0.*							B4 P5
27	-	0.*							B4 P6
28	-	0.*							B4 P7
29	-	0.*							B4 P8
30	-	0.*							B5 P1
31	-	0.*							B5 P2
32	-	0.*							B5 P3
33	-	0.*							B5 P4
34	-	0.*							B5 P5
35	-	0.*							B5 P6
36	-	0.*							B5 P7
37	-	0.*							B5 P8
38	-	0.*							B5 P9
39	-	0.*							B6 P1
40	-	0.*							B6 P2
41	-	0.*							B6 P3
42	-	0.*							B7 P1
43	-	0.*							B7 P2
44	-	0.*							B7 P3
45	-	0.*							B7 P4

46	-	0.*							B8 P1	
47	-	0.*							B8 P2	
48	-	0.*							B8 P3	
49	-	0.*							B8 P4	
50	-	0.*							B8 P5	
51	-	0.*							B9 P1	
52	-	0.*							B9 P2	
53	-	0.*							B10 P1	
54	-	0.*							B10 P2	

---

0 1 2 3 4 5 6 7

1

BARRIER DATA
****

BAR ELE	BARRIER HEIGHTS 0	1	2	3	4	5	6	7	BAR ID	LENGTH	TYPE
1	-	0.*							B1 P1	670.9	BERM
2	-	0.*							B1 P2	315.4	BERM
3	-	0.*							B1 P3	377.6	BERM
4	-	0.*							B1 P4	445.6	BERM
5	-	0.*							B1 P5	639.6	BERM
6	-	0.*							B1 P6	454.6	BERM
7	-	0.*							B1 P7	441.4	BERM
8	-	0.*							B1 P8	2602.6	BERM
9	-	0.*							B1 P9	1367.4	BERM
10	-	0.*							B1 P10	1578.6	BERM
11	-	0.*							B2 P1	381.4	BERM
12	-	0.*							B2 P2	237.2	BERM
13	-	0.*							B2 P3	477.9	BERM
14	-	0.*							B2 P4	627.5	BERM
15	-	0.*							B2 P5	440.9	BERM
16	-	0.*							B2 P6	409.9	BERM
17	-	0.*							B2 P7	342.4	BERM
18	-	0.*							B2 P8	543.7	BERM
19	-	0.*							B2 P9	572.8	BERM
20	-	0.*							B2 P10	250.7	BERM
21	-	0.*							B3 P1	751.6	BERM
22	-	0.*							B4 P1	302.1	BERM
23	-	0.*							B4 P2	119.2	BERM
24	-	0.*							B4 P3	119.1	BERM
25	-	0.*							B4 P4	157.3	BERM
26	-	0.*							B4 P5	105.3	BERM
27	-	0.*							B4 P6	113.9	BERM
28	-	0.*							B4 P7	96.1	BERM
29	-	0.*							B4 P8	261.5	BERM
30	-	0.*							B5 P1	197.6	BERM
31	-	0.*							B5 P2	251.0	BERM
32	-	0.*							B5 P3	1469.6	BERM
33	-	0.*							B5 P4	5.2	BERM
34	-	0.*							B5 P5	525.1	BERM
35	-	0.*							B5 P6	2357.9	BERM
36	-	0.*							B5 P7	128.1	BERM
37	-	0.*							B5 P8	52.1	BERM
38	-	0.*							B5 P9	554.3	BERM

39	-	0.*	B6 P1	370.8	BERM
40	-	0.*	B6 P2	1132.4	BERM
41	-	0.*	B6 P3	715.3	BERM
42	-	0.*	B7 P1	126.7	BERM
43	-	0.*	B7 P2	162.8	BERM
44	-	0.*	B7 P3	545.0	BERM
45	-	0.*	B7 P4	182.9	BERM
46	-	0.*	B8 P1	334.0	BERM
47	-	0.*	B8 P2	147.1	BERM
48	-	0.*	B8 P3	162.5	BERM
49	-	0.*	B8 P4	132.1	BERM
50	-	0.*	B8 P5	112.7	BERM
51	-	0.*	B9 P1	614.1	MASONRY
52	-	0.*	B9 P2	520.8	MASONRY
53	-	0.*	B10 P1	176.1	BERM
54	-	0.*	B10 P2	139.6	BERM

---

0 1 2 3 4 5 6 7

1

REC	REC ID	DNL	PEOPLE	LEQ(CAL)
1	R-1	67.	500.	54.1
2	R-2	67.	500.	54.7
3	R-3	67.	500.	57.7
4	R-4	67.	500.	59.3
5	R-5	67.	500.	55.7
6	R-6	67.	500.	56.8
7	R-7	67.	500.	57.6
8	R-8	67.	500.	57.8
9	R-9	67.	500.	61.8
10	R-10	67.	500.	63.0
11	R-11	67.	500.	63.9
12	R-12	67.	500.	64.5
13	R-13	67.	500.	63.5
14	R-14	67.	500.	60.7
15	R-15	67.	500.	60.1
16	R-16	67.	500.	60.1
17	R-17	67.	500.	59.2
18	R-18	67.	500.	58.1
19	R-19	67.	500.	56.6
20	R-20	67.	500.	56.6
21	R-21	67.	500.	55.2
22	R-22	67.	500.	56.4
23	R-23	67.	500.	56.7
24	R-24	67.	500.	57.0
25	R-25	67.	500.	57.7
26	R-26	67.	500.	58.0
27	R-27	67.	500.	58.8
28	R-28	67.	500.	58.4
29	R-29	67.	500.	58.8
30	R-30	67.	500.	59.0
31	R-31	67.	500.	60.0
32	R-32	67.	500.	57.7
33	R-33	67.	500.	58.0
34	R-34	67.	500.	57.5
35	R-35	67.	500.	57.3
36	R-36	67.	500.	56.2
37	R-37	67.	500.	57.4

38 R-38 67. 500. 56.9

BARRIER TYPE	COST
BERM	0.
MASONRY	0.
MASONRY/JERSEY	0.
CONCRETE	0.
TOTAL COST = $	0.

BARRIER HEIGHT INDEX FOR EACH BARRIER SECTION

1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
1 1 1 1

CORRESPONDING BARRIER HEIGHTS FOR EACH SECTION

0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.
0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.
0. 0. 0. 0.

NSFMIT
CAMPUS PARK- NORTH END SINGLE FAMILY MITIGATED
T-PEAK HOUR TRAFFIC CONDITIONS, 1
 11295 , 65 , 377 , 65 , 879 , 65
T-PEAK HOUR TRAFFIC CONDITIONS, 2
 11295 , 65 , 377 , 65 , 879 , 65
T-PEAK HOUR TRAFFIC CONDITIONS, 3
 758 , 45 , 16 , 45 , 16 , 45
T-PEAK HOUR TRAFFIC CONDITIONS, 4
 1094 , 40 , 23 , 40 , 23 , 40
L-I-15 NORTH, 1
N,2460.,9892,362,
N,2718.,9281,352,
N,2823.,8986,347,
N,2938.,8615,343,
N,3051.,8176,375,
N,3112.,7863,337,
N,3165.,7540,337,
N,3214.,7084,330,
N,3241.,6643,324,
N,3248.,5980,322,
N,3196.,4029,300,
N,3155.,2667,300,
N,3119.,1088,290,
L-I-15 SOUTH, 2
N,2346.,9849,370,
N,2603.,9238,350,
N,2712.,8945,346,
N,2823.,8585,343,
N,2934.,8154,341,
N,2996.,7840,337,
N,3047.,7527,334,
N,3096.,7077,327,
N,3123.,6636,325,
N,3129.,5979,322,
N,3078.,4032,300,
N,3037.,2670,301,
N,2990.,1092,290,
L-HORSE RANCH CREEK SEGMENT 1, 3
N,3043.,10290,379,
N,3181.,9940,383,
N,3237.,9720,383,
N,3300.,9246,386,
N,3372.,8619,381,
N,3422.,8183,373,
N,3470.,7777,364,
N,3569.,7439,357,
N,3864.,6977,351,
L-HORSE RANCH CREEK SEGMENT 2, 4
N,3864.,6977,351,
N,4161.,6503,350,
N,4244.,5507,318,
B-I-15 SOUTH ROADEDGE, 1 , 1 , 0 ,0
2366.,9859,370,370,
2638.,9246,350,350,
2744.,8949,346,346,
2858.,8589,343,343,
2971.,8158,341,341,
3081.,7528,334,334,
3129.,7076,327,327,
3148.,6635,325,325,
3095.,4033,314,314,
3066.,2666,303,303,
3030.,1088,280,280,

```
B-HORSE RANCH CREEK ROADADGE, 2 , 1 , 0 ,0
3094.,10309,379,379,
3236.,9955,383,383,
3290.,9724,383,383,
3351.,9250,386,386,
3426.,8627,381,381,
3476.,8189,373,373,
3524.,7782,364,364,
3622.,7454,357,357,
3918.,6998,351,351,
4208.,6504,350,350,
4261.,6259,350,350,
B-HORSE RANCH CREEK ROADEDGE, 3 , 1 , 0 ,0
4261.,6259,350,350,
4299.,5509,318,318,
B-I-15 North Road Edge, 4 , 1 , 0 ,0
3183.,1172,300,300,
3190.,1474,300,300,
3272.,1560,310,310,
3274.,1678,326,326,
3249.,1833,316,316,
3274.,1935,323,323,
3239.,2043,314,314,
3266.,2135,321,321,
3212.,2390,300,300,
B-I-15 North Road Edge, 5 , 1 , 0 ,0
3212.,2390,300,300,
3197.,2587,300,300,
3196.,2838,300,300,
3283.,4305,300,300,
3282.,4304,305,305,
3248.,4828,310,310,
3309.,7185,330,330,
3305.,7313,330,330,
3254.,7316,340,340,
3166.,7863,356,356,
B-I-15 North Road Edge, 6 , 1 , 0 ,0
3166.,7863,356,356,
3101.,8228,360,360,
2787.,9316,360,360,
2480.,9962,365,365,
B-HILL 1, 7 , 1 , 0 ,0
3851.,9894,500,500,
3842.,9771,529,529,
3819.,9610,522,522,
3798.,9067,481,481,
3781.,8885,475,475,
B-HILL 2, 8 , 1 , 0 ,0
3772.,8818,480,480,
3675.,8499,500,500,
3673.,8355,470,470,
3651.,8194,470,470,
3639.,8064,450,450,
3599.,7963,420,420,
B-Hill 3, 9 , 2 , 0 ,0
3283.,1669,325,325,
3895.,1673,274,274,
3489.,1996,320,320,
B-Hill 4, 10 , 1 , 0 ,0
3516.,2508,290,290,
3445.,2667,316,316,
3375.,2785,290,290,
B-SOUND WALL, 11 , 2 , 0 ,0
```

```
4359.,8009,408,417,
4246.,7969,408,417,
4224.,7859,411,420,
4172.,7740,412,421,
4163.,7671,413,422,
4180.,7577,414,423,
4226.,7411,415,424,
4693.,7338,419,428,
R, 1 , 67 ,500
4034,9355,455.,
R, 2 , 67 ,500
3944,9208,455.,
R, 3 , 67 ,500
4029,8909,438.,
R, 4 , 67 ,500
4023,8720,421.,
R, 5 , 67 ,500
4073,8545,419.,
R, 6 , 67 ,500
4062,8383,409.,
R, 7 , 67 ,500
4081,8238,395.,
R, 8 , 67 ,500
4154,8159,393.,
R, 9 , 67 ,500
4257,7956,413.,
R, 10 , 67 ,500
4229,7832,416.,
R, 11 , 67 ,500
4184,7737,417.,
R, 12 , 67 ,500
4183,7614,418.,
R, 13 , 67 ,500
4411,7393,421.,
R, 14 , 67 ,500
4804,7534,442.,
R, 15 , 67 ,500
4816,7737,456.,
R, 16 , 67 ,500
4647,7935,447.,
R, 17 , 67 ,500
4555,8291,445.,
R, 18 , 67 ,500
4563,8602,468.,
R, 19 , 67 ,500
4381,8967,450.,
R, 20 , 67 ,500
4260,9090,466.,
R, 21 , 67 ,500
4672,9215,482.,
R, 22 , 67 ,500
4643,8957,486.,
R, 23 , 67 ,500
4737,8794,467.,
R, 24 , 67 ,500
4891,8653,500.,
R, 25 , 67 ,500
4811,8485,461.,
R, 26 , 67 ,500
4893,8326,485.,
R, 27 , 67 ,500
4859,8057,451.,
R, 28 , 67 ,500
```

```
5084,7913,475.,
R, 29 , 67 ,500
5081,7748,451.,
R, 30 , 67 ,500
5139,7584,468.,
R, 31 , 67 ,500
5026,7335,437.,
R, 32 , 67 ,500
5563,7313,500.,
R, 33 , 67 ,500
5395,7501,464.,
R, 34 , 67 ,500
5504,7617,504.,
R, 35 , 67 ,500
5403,7819,473.,
R, 36 , 67 ,500
5595,8049,507.,
R, 37 , 67 ,500
5248,8072,475.,
R, 38 , 67 ,500
5125,8418,490.,
D, 4.5
ALL,ALL
K,-3
ALL,5,6,7,8
C,C
```

SOUND32 - RELEASE 07/30/91

TITLE:
CAMPUS PARK- NORTH END SINGLE FAMILY MITIGATED

EFFECTIVENESS / COST RATIOS
****

BAR ELE	0	1	2	3	4	5	6	7	
1	-	0.*							B1 P1
2	-	0.*							B1 P2
3	-	0.*							B1 P3
4	-	0.*							B1 P4
5	-	0.*							B1 P5
6	-	0.*							B1 P6
7	-	0.*							B1 P7
8	-	0.*							B1 P8
9	-	0.*							B1 P9
10	-	0.*							B1 P10
11	-	0.*							B2 P1
12	-	0.*							B2 P2
13	-	0.*							B2 P3
14	-	0.*							B2 P4
15	-	0.*							B2 P5
16	-	0.*							B2 P6
17	-	0.*							B2 P7
18	-	0.*							B2 P8
19	-	0.*							B2 P9
20	-	0.*							B2 P10
21	-	0.*							B3 P1
22	-	0.*							B4 P1
23	-	0.*							B4 P2
24	-	0.*							B4 P3
25	-	0.*							B4 P4
26	-	0.*							B4 P5
27	-	0.*							B4 P6
28	-	0.*							B4 P7
29	-	0.*							B4 P8
30	-	0.*							B5 P1
31	-	0.*							B5 P2
32	-	0.*							B5 P3
33	-	0.*							B5 P4
34	-	0.*							B5 P5
35	-	0.*							B5 P6
36	-	0.*							B5 P7
37	-	0.*							B5 P8
38	-	0.*							B5 P9
39	-	0.*							B6 P1
40	-	0.*							B6 P2
41	-	0.*							B6 P3
42	-	0.*							B7 P1
43	-	0.*							B7 P2
44	-	0.*							B7 P3
45	-	0.*							B7 P4

```
                                                                  B8 P1
46      -   0.*                                                   B8 P2
47      -   0.*                                                   B8 P3
48      -   0.*                                                   B8 P4
49      -   0.*                                                   B8 P5
50      -   0.*
                                                                  B9 P1
51      -   0.*                                                   B9 P2
52      -   0.*
                                                                  B10 P1
53      -   0.*                                                   B10 P2
54      -   0.*
                                                                  B11 P1
55      -   0.*                                                   B11 P2
56      -   0.*                                                   B11 P3
57      -   0.*                                                   B11 P4
58      -   0.*                                                   B11 P5
59      -   0.*                                                   B11 P6
60      -   0.*                                                   B11 P7
61      -   0.*
-------------------------------------------------------------------
        0   1   2   3   4   5   6   7
```

1

BARRIER DATA
****

BAR ELE	0	1	BARRIER HEIGHTS 2	3	4	5	6	7	BAR ID	LENGTH	TYPE
1	-	0.*							B1 P1	670.9	BERM
2	-	0.*							B1 P2	315.4	BERM
3	-	0.*							B1 P3	377.6	BERM
4	-	0.*							B1 P4	445.6	BERM
5	-	0.*							B1 P5	639.6	BERM
6	-	0.*							B1 P6	454.6	BERM
7	-	0.*							B1 P7	441.4	BERM
8	-	0.*							B1 P8	2602.6	BERM
9	-	0.*							B1 P9	1367.4	BERM
10	-	0.*							B1 P10	1578.6	BERM
11	-	0.*							B2 P1	381.4	BERM
12	-	0.*							B2 P2	237.2	BERM
13	-	0.*							B2 P3	477.9	BERM
14	-	0.*							B2 P4	627.5	BERM
15	-	0.*							B2 P5	440.9	BERM
16	-	0.*							B2 P6	409.9	BERM
17	-	0.*							B2 P7	342.4	BERM
18	-	0.*							B2 P8	543.7	BERM
19	-	0.*							B2 P9	572.8	BERM
20	-	0.*							B2 P10	250.7	BERM
21	-	0.*							B3 P1	751.6	BERM
22	-	0.*							B4 P1	302.1	BERM
23	-	0.*							B4 P2	119.2	BERM
24	-	0.*							B4 P3	119.1	BERM
25	-	0.*							B4 P4	157.3	BERM
26	-	0.*							B4 P5	105.3	BERM
27	-	0.*							B4 P6	113.9	BERM
28	-	0.*							B4 P7	96.1	BERM
29	-	0.*							B4 P8	261.5	BERM
30	-	0.*							B5 P1	197.6	BERM

31	-	0.*
32	-	0.*
33	-	0.*
34	-	0.*
35	-	0.*
36	-	0.*
37	-	0.*
38	-	0.*
39	-	0.*
40	-	0.*
41	-	0.*
42	-	0.*
43	-	0.*
44	-	0.*
45	-	0.*
46	-	0.*
47	-	0.*
48	-	0.*
49	-	0.*
50	-	0.*
51	-	0.*
52	-	0.*
53	-	0.*
54	-	0.*
55	-	9.*
56	-	9.*
57	-	9.*
58	-	9.*
59	-	9.*
60	-	9.*
61	-	9.*

B5 P2	251.0	BERM
B5 P3	1469.6	BERM
B5 P4	5.2	BERM
B5 P5	525.1	BERM
B5 P6	2357.9	BERM
B5 P7	128.1	BERM
B5 P8	52.1	BERM
B5 P9	554.3	BERM
B6 P1	370.8	BERM
B6 P2	1132.4	BERM
B6 P3	715.3	BERM
B7 P1	126.7	BERM
B7 P2	162.8	BERM
B7 P3	545.0	BERM
B7 P4	182.9	BERM
B8 P1	334.0	BERM
B8 P2	147.1	BERM
B8 P3	162.5	BERM
B8 P4	132.1	BERM
B8 P5	112.7	BERM
B9 P1	614.1	MASONRY
B9 P2	520.8	MASONRY
B10 P1	176.1	BERM
B10 P2	139.6	BERM
B11 P1	119.9	MASONRY
B11 P2	112.2	MASONRY
B11 P3	129.9	MASONRY
B11 P4	69.6	MASONRY
B11 P5	95.5	MASONRY
B11 P6	172.3	MASONRY
B11 P7	472.7	MASONRY

0 1 2 3 4 5 6 7

1

REC	REC ID	DNL	PEOPLE	LEQ(CAL)
1	R-1	67.	500.	54.1
2	R-2	67.	500.	54.7
3	R-3	67.	500.	57.7
4	R-4	67.	500.	59.3
5	R-5	67.	500.	55.7
6	R-6	67.	500.	56.8
7	R-7	67.	500.	57.6
8	R-8	67.	500.	57.8
9	R-9	67.	500.	58.9
10	R-10	67.	500.	60.3
11	R-11	67.	500.	60.4
12	R-12	67.	500.	59.4
13	R-13	67.	500.	60.4
14	R-14	67.	500.	60.3
15	R-15	67.	500.	60.0
16	R-16	67.	500.	60.0
17	R-17	67.	500.	59.2
18	R-18	67.	500.	58.1
19	R-19	67.	500.	56.6
20	R-20	67.	500.	56.6
21	R-21	67.	500.	55.2

```
22  R-22        67.     500.    56.4
23  R-23        67.     500.    56.7
24  R-24        67.     500.    57.0
25  R-25        67.     500.    57.7
26  R-26        67.     500.    58.0
27  R-27        67.     500.    58.3
28  R-28        67.     500.    58.3
29  R-29        67.     500.    58.0
30  R-30        67.     500.    58.8
31  R-31        67.     500.    59.8
32  R-32        67.     500.    57.7
33  R-33        67.     500.    57.8
34  R-34        67.     500.    57.4
35  R-35        67.     500.    57.0
36  R-36        67.     500.    56.2
37  R-37        67.     500.    57.1
38  R-38        67.     500.    56.9
--------------------------------

BARRIER TYPE                COST
--------------------------------
BERM                       0.
MASONRY                91887.
MASONRY/JERSEY             0.
CONCRETE                   0.
--------------------------------
       TOTAL COST = $    92000.

BARRIER HEIGHT INDEX FOR EACH BARRIER SECTION
  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1
  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1
  1  1  1  1  1  1  1  1  1  1  1
CORRESPONDING BARRIER HEIGHTS FOR EACH SECTION
 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.
 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.
 0. 0. 0. 0. 9. 9. 9. 9. 9. 9. 9.
```

```
CAMPUS PARK- NORTH END SINGLE FAMILY MITIGATED SECOND FLOOR
T-PEAK HOUR TRAFFIC CONDITIONS, 1
 11295 , 65 , 377 , 65 , 879 , 65
T-PEAK HOUR TRAFFIC CONDITIONS, 2
 11295 , 65 , 377 , 65 , 879 , 65
T-PEAK HOUR TRAFFIC CONDITIONS, 3
 758 , 45 , 16 , 45 , 16 , 45
T-PEAK HOUR TRAFFIC CONDITIONS, 4
 1094 , 40 , 23 , 40 , 23 , 40
L-I-15 NORTH, 1
N,2460.,9892,362,
N,2718.,9281,352,
N,2823.,8986,347,
N,2938.,8615,343,
N,3051.,8176,375,
N,3112.,7863,337,
N,3165.,7540,337,
N,3214.,7084,330,
N,3241.,6643,324,
N,3248.,5980,322,
N,3196.,4029,300,
N,3155.,2667,300,
N,3119.,1088,290,
L-I-15 SOUTH, 2
N,2346.,9849,370,
N,2603.,9238,350,
N,2712.,8945,346,
N,2823.,8585,343,
N,2934.,8154,341,
N,2996.,7840,337,
N,3047.,7527,334,
N,3096.,7077,327,
N,3123.,6636,325,
N,3129.,5979,322,
N,3078.,4032,300,
N,3037.,2670,301,
N,2990.,1092,290,
L-HORSE RANCH CREEK SEGMENT 1, 3
N,3043.,10290,379,
N,3181.,9940,383,
N,3237.,9720,383,
N,3300.,9246,386,
N,3372.,8619,381,
N,3422.,8183,373,
N,3470.,7777,364,
N,3569.,7439,357,
N,3864.,6977,351,
L-HORSE RANCH CREEK SEGMENT 2, 4
N,3864.,6977,351,
N,4161.,6503,350,
N,4244.,5507,318,
B-I-15 SOUTH ROADEDGE, 1 , 1 , 0 ,0
2366.,9859,370,370,
2638.,9246,350,350,
2744.,8949,346,346,
2858.,8589,343,343,
2971.,8158,341,341,
3081.,7528,334,334,
3129.,7076,327,327,
3148.,6635,325,325,
3095.,4033,314,314,
3066.,2666,303,303,
3030.,1088,280,280,
```

```
B-HORSE RANCH CREEK ROADADGE, 2 , 1 , 0 ,0
3094.,10309,379,379,
3236.,9955,383,383,
3290.,9724,383,383,
3351.,9250,386,386,
3426.,8627,381,381,
3476.,8189,373,373,
3524.,7782,364,364,
3622.,7454,357,357,
3918.,6998,351,351,
4208.,6504,350,350,
4261.,6259,350,350,
B-HORSE RANCH CREEK ROADEDGE, 3 , 1 , 0 ,0
4261.,6259,350,350,
4299.,5509,318,318,
B-I-15 North Road Edge, 4 , 1 , 0 ,0
3183.,1172,300,300,
3190.,1474,300,300,
3272.,1560,310,310,
3274.,1678,326,326,
3249.,1833,316,316,
3274.,1935,323,323,
3239.,2043,314,314,
3266.,2135,321,321,
3212.,2390,300,300,
B-I-15 North Road Edge, 5 , 1 , 0 ,0
3212.,2390,300,300,
3197.,2587,300,300,
3196.,2838,300,300,
3283.,4305,300,300,
3282.,4304,305,305,
3248.,4828,310,310,
3309.,7185,330,330,
3305.,7313,330,330,
3254.,7316,340,340,
3166.,7863,356,356,
B-I-15 North Road Edge, 6 , 1 , 0 ,0
3166.,7863,356,356,
3101.,8228,360,360,
2787.,9316,360,360,
2480.,9962,365,365,
B-HILL 1, 7 , 1 , 0 ,0
3851.,9894,500,500,
3842.,9771,529,529,
3819.,9610,522,522,
3798.,9067,481,481,
3781.,8885,475,475,
B-HILL 2, 8 , 1 , 0 ,0
3772.,8818,480,480,
3675.,8499,500,500,
3673.,8355,470,470,
3651.,8194,470,470,
3639.,8064,450,450,
3599.,7963,420,420,
B-Hill 3, 9 , 2 , 0 ,0
3283.,1669,325,325,
3895.,1673,274,274,
3489.,1996,320,320,
B-Hill 4, 10 , 1 , 0 ,0
3516.,2508,290,290,
3445.,2667,316,316,
3375.,2785,290,290,
B-SOUND WALL, 11 , 2 , 0 ,0
```

```
4359.,8009,408,417,
4246.,7969,408,417,
4224.,7859,411,420,
4172.,7740,412,421,
4163.,7671,413,422,
4180.,7577,414,423,
4226.,7411,415,424,
4693.,7338,419,428,
R, 1 , 67 ,500
4034,9355,465.,
R, 2 , 67 ,500
3944,9208,465.,
R, 3 , 67 ,500
4029,8909,448.,
R, 4 , 67 ,500
4023,8720,431.,
R, 5 , 67 ,500
4073,8545,429.,
R, 6 , 67 ,500
4062,8383,419.,
R, 7 , 67 ,500
4081,8238,405.,
R, 8 , 67 ,500
4154,8159,403.,
R, 9 , 67 ,500
4257,7956,423.,
R, 10 , 67 ,500
4229,7832,426.,
R, 11 , 67 ,500
4184,7737,427.,
R, 12 , 67 ,500
4183,7614,428.,
R, 13 , 67 ,500
4411,7393,431.,
R, 14 , 67 ,500
4804,7534,452.,
R, 15 , 67 ,500
4816,7737,466.,
R, 16 , 67 ,500
4647,7935,457.,
R, 17 , 67 ,500
4555,8291,455.,
R, 18 , 67 ,500
4563,8602,478.,
R, 19 , 67 ,500
4381,8967,460.,
R, 20 , 67 ,500
4260,9090,476.,
R, 21 , 67 ,500
4672,9215,492.,
R, 22 , 67 ,500
4643,8957,496.,
R, 23 , 67 ,500
4737,8794,477.,
R, 24 , 67 ,500
4891,8653,510.,
R, 25 , 67 ,500
4811,8485,471.,
R, 26 , 67 ,500
4893,8326,495.,
R, 27 , 67 ,500
4859,8057,461.,
R, 28 , 67 ,500
```

```
5084,7913,485.,
R, 29 , 67 ,500
5081,7748,461.,
R, 30 , 67 ,500
5139,7584,478.,
R, 31 , 67 ,500
5026,7335,447.,
R, 32 , 67 ,500
5563,7313,510.,
R, 33 , 67 ,500
5395,7501,474.,
R, 34 , 67 ,500
5504,7617,514.,
R, 35 , 67 ,500
5403,7819,483.,
R, 36 , 67 ,500
5595,8049,517.,
R, 37 , 67 ,500
5248,8072,485.,
R, 38 , 67 ,500
5125,8418,500.,
K,-3
ALL,5,6,7,8
C,C
```

SOUND32 - RELEASE 07/30/91

TITLE:
CAMPUS PARK- NORTH END SINGLE FAMILY MITIGATED SECOND FLOOR

EFFECTIVENESS / COST RATIOS
****

BAR ELE	0	1	2	3	4	5	6	7	
1	-	0.*							B1 P1
2	-	0.*							B1 P2
3	-	0.*							B1 P3
4	-	0.*							B1 P4
5	-	0.*							B1 P5
6	-	0.*							B1 P6
7	-	0.*							B1 P7
8	-	0.*							B1 P8
9	-	0.*							B1 P9
10	-	0.*							B1 P10
11	-	0.*							B2 P1
12	-	0.*							B2 P2
13	-	0.*							B2 P3
14	-	0.*							B2 P4
15	-	0.*							B2 P5
16	-	0.*							B2 P6
17	-	0.*							B2 P7
18	-	0.*							B2 P8
19	-	0.*							B2 P9
20	-	0.*							B2 P10
21	-	0.*							B3 P1
22	-	0.*							B4 P1
23	-	0.*							B4 P2
24	-	0.*							B4 P3
25	-	0.*							B4 P4
26	-	0.*							B4 P5
27	-	0.*							B4 P6
28	-	0.*							B4 P7
29	-	0.*							B4 P8
30	-	0.*							B5 P1
31	-	0.*							B5 P2
32	-	0.*							B5 P3
33	-	0.*							B5 P4
34	-	0.*							B5 P5
35	-	0.*							B5 P6
36	-	0.*							B5 P7
37	-	0.*							B5 P8
38	-	0.*							B5 P9
39	-	0.*							B6 P1
40	-	0.*							B6 P2
41	-	0.*							B6 P3
42	-	0.*							B7 P1
43	-	0.*							B7 P2
44	-	0.*							B7 P3
45	-	0.*							B7 P4

46	-	0.*	B8 P1
47	-	0.*	B8 P2
48	-	0.*	B8 P3
49	-	0.*	B8 P4
50	-	0.*	B8 P5
51	-	0.*	B9 P1
52	-	0.*	B9 P2
53	-	0.*	B10 P1
54	-	0.*	B10 P2
55	-	0.*	B11 P1
56	-	0.*	B11 P2
57	-	0.*	B11 P3
58	-	0.*	B11 P4
59	-	0.*	B11 P5
60	-	0.*	B11 P6
61	-	0.*	B11 P7

0 1 2 3 4 5 6 7

1

BARRIER DATA
****

BAR ELE	0	1	BARRIER HEIGHTS 2	3	4	5	6	7	BAR ID	LENGTH	TYPE
1	-	0.*							B1 P1	670.9	BERM
2	-	0.*							B1 P2	315.4	BERM
3	-	0.*							B1 P3	377.6	BERM
4	-	0.*							B1 P4	445.6	BERM
5	-	0.*							B1 P5	639.6	BERM
6	-	0.*							B1 P6	454.6	BERM
7	-	0.*							B1 P7	441.4	BERM
8	-	0.*							B1 P8	2602.6	BERM
9	-	0.*							B1 P9	1367.4	BERM
10	-	0.*							B1 P10	1578.6	BERM
11	-	0.*							B2 P1	381.4	BERM
12	-	0.*							B2 P2	237.2	BERM
13	-	0.*							B2 P3	477.9	BERM
14	-	0.*							B2 P4	627.5	BERM
15	-	0.*							B2 P5	440.9	BERM
16	-	0.*							B2 P6	409.9	BERM
17	-	0.*							B2 P7	342.4	BERM
18	-	0.*							B2 P8	543.7	BERM
19	-	0.*							B2 P9	572.8	BERM
20	-	0.*							B2 P10	250.7	BERM
21	-	0.*							B3 P1	751.6	BERM
22	-	0.*							B4 P1	302.1	BERM
23	-	0.*							B4 P2	119.2	BERM
24	-	0.*							B4 P3	119.1	BERM
25	-	0.*							B4 P4	157.3	BERM
26	-	0.*							B4 P5	105.3	BERM
27	-	0.*							B4 P6	113.9	BERM
28	-	0.*							B4 P7	96.1	BERM
29	-	0.*							B4 P8	261.5	BERM
30	-	0.*							B5 P1	197.6	BERM

31	-	0.*	B5 P2	251.0	BERM
32	-	0.*	B5 P3	1469.6	BERM
33	-	0.*	B5 P4	5.2	BERM
34	-	0.*	B5 P5	525.1	BERM
35	-	0.*	B5 P6	2357.9	BERM
36	-	0.*	B5 P7	128.1	BERM
37	-	0.*	B5 P8	52.1	BERM
38	-	0.*	B5 P9	554.3	BERM
39	-	0.*	B6 P1	370.8	BERM
40	-	0.*	B6 P2	1132.4	BERM
41	-	0.*	B6 P3	715.3	BERM
42	-	0.*	B7 P1	126.7	BERM
43	-	0.*	B7 P2	162.8	BERM
44	-	0.*	B7 P3	545.0	BERM
45	-	0.*	B7 P4	182.9	BERM
46	-	0.*	B8 P1	334.0	BERM
47	-	0.*	B8 P2	147.1	BERM
48	-	0.*	B8 P3	162.5	BERM
49	-	0.*	B8 P4	132.1	BERM
50	-	0.*	B8 P5	112.7	BERM
51	-	0.*	B9 P1	614.1	MASONRY
52	-	0.*	B9 P2	520.8	MASONRY
53	-	0.*	B10 P1	176.1	BERM
54	-	0.*	B10 P2	139.6	BERM
55	-	9.*	B11 P1	119.9	MASONRY
56	-	9.*	B11 P2	112.2	MASONRY
57	-	9.*	B11 P3	129.9	MASONRY
58	-	9.*	B11 P4	69.6	MASONRY
59	-	9.*	B11 P5	95.5	MASONRY
60	-	9.*	B11 P6	172.3	MASONRY
61	-	9.*	B11 P7	472.7	MASONRY

---

0 1 2 3 4 5 6 7

1

REC	REC ID	DNL	PEOPLE	LEQ(CAL)
1	R-1	67.	500.	59.1
2	R-2	67.	500.	59.5
3	R-3	67.	500.	62.1
4	R-4	67.	500.	63.7
5	R-5	67.	500.	59.9
6	R-6	67.	500.	60.6
7	R-7	67.	500.	60.7
8	R-8	67.	500.	60.9
9	R-9	67.	500.	65.9
10	R-10	67.	500.	67.4
11	R-11	67.	500.	68.5
12	R-12	67.	500.	69.7
13	R-13	67.	500.	68.1
14	R-14	67.	500.	64.7
15	R-15	67.	500.	64.4
16	R-16	67.	500.	64.1
17	R-17	67.	500.	63.7
18	R-18	67.	500.	63.2
19	R-19	67.	500.	61.2
20	R-20	67.	500.	61.8
21	R-21	67.	500.	60.2

```
22  R-22      67.    500.   61.6
23  R-23      67.    500.   61.3
24  R-24      67.    500.   62.3
25  R-25      67.    500.   61.7
26  R-26      67.    500.   62.9
27  R-27      67.    500.   61.6
28  R-28      67.    500.   63.1
29  R-29      67.    500.   62.3
30  R-30      67.    500.   63.7
31  R-31      67.    500.   65.0
32  R-32      67.    500.   63.7
33  R-33      67.    500.   62.8
34  R-34      67.    500.   63.0
35  R-35      67.    500.   61.7
36  R-36      67.    500.   61.3
37  R-37      67.    500.   61.4
38  R-38      67.    500.   61.5
--------------------------------

BARRIER TYPE              COST
--------------------------------
BERM                       0.
MASONRY                91887.
MASONRY/JERSEY             0.
CONCRETE                   0.
--------------------------------
       TOTAL COST = $   92000.

BARRIER HEIGHT INDEX FOR EACH BARRIER SECTION
  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1
  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1
  1  1  1  1  1  1  1  1  1  1  1
CORRESPONDING BARRIER HEIGHTS FOR EACH SECTION
 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.
 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.
 0. 0. 0. 0. 9. 9. 9. 9. 9. 9. 9.
```

```
CAMPUS PARK-SOUTH SINGLE FAMILY UNMITIGATED
T-PEAK HOUR TRAFFIC CONDITIONS, 1
 11295 , 65 , 377 , 65 , 879 , 65
T-PEAK HOUR TRAFFIC CONDITIONS, 2
 11295 , 65 , 377 , 65 , 879 , 65
T-PEAK HOUR TRAFFIC CONDITIONS, 3
 758 , 45 , 16 , 45 , 16 , 45
T-PEAK HOUR TRAFFIC CONDITIONS, 4
 1094 , 40 , 23 , 40 , 23 , 40
T-PEAK HOUR TRAFFIC CONDITIONS, 5
 1536 , 40 , 32 , 40 , 32 , 40
L-I-15 NORTH, 1
N,2460.,9892,362,
N,2718.,9281,352,
N,2823.,8986,347,
N,2938.,8615,343,
N,3051.,8176,375,
N,3112.,7863,337,
N,3165.,7540,337,
N,3214.,7084,330,
N,3241.,6643,324,
N,3248.,5980,322,
N,3196.,4029,300,
N,3155.,2667,300,
N,3119.,1088,290,
L-I-15 SOUTH, 2
N,2346.,9849,370,
N,2603.,9238,350,
N,2712.,8945,346,
N,2823.,8585,343,
N,2934.,8154,341,
N,2996.,7840,337,
N,3047.,7527,334,
N,3096.,7077,327,
N,3123.,6636,325,
N,3129.,5979,322,
N,3078.,4032,300,
N,3037.,2670,301,
N,2990.,1092,290,
L-HORSE RANCH CREEK SEGMENT 1, 3
N,3043.,10290,379,
N,3181.,9940,383,
N,3237.,9720,383,
N,3300.,9246,386,
N,3372.,8619,381,
N,3422.,8183,373,
N,3470.,7777,364,
N,3569.,7439,357,
N,3864.,6977,351,
L-HORSE RANCH CREEK SEGMENT 2, 4
N,3864.,6977,351,
N,4161.,6503,350,
N,4244.,5507,318,
L-HORSE RANCH CREEK SEGMENT 3, 5
N,4244.,5507,318,
N,4304.,4842,312,
N,4554.,4231,310,
B-I-15 SOUTH ROADEDGE, 1 , 1 , 0 ,0
2366.,9859,370,370,
2638.,9246,350,350,
2744.,8949,346,346,
2858.,8589,343,343,
2971.,8158,341,341,
```

```
3081.,7528,334,334,
3129.,7076,327,327,
3148.,6635,325,325,
3095.,4033,314,314,
3066.,2666,303,303,
3030.,1088,280,280,
B-HORSE RANCH CREEK ROADADGE, 2 , 1 , 0 ,0
3094.,10309,379,379,
3236.,9955,383,383,
3290.,9724,383,383,
3351.,9250,386,386,
3426.,8627,381,381,
3476.,8189,373,373,
3524.,7782,364,364,
3622.,7454,357,357,
3918.,6998,351,351,
4208.,6504,350,350,
4261.,6259,350,350,
B-HORSE RANCH CREEK ROADEDGE, 3 , 1 , 0 ,0
4261.,6259,350,350,
4299.,5509,318,318,
4315.,5101,320,320,
4357.,4855,312,312,
4607.,4248,310,310,
B-HORSE RANCH CREEK ROADEDGE, 4 , 1 , 0 ,0
4200.,5507,318,318,
4262.,4829,312,312,
4506.,4207,310,310,
B-I-15 North Road Edge, 5 , 1 , 0 ,0
3183.,1172,300,300,
3190.,1474,300,300,
3272.,1560,310,310,
3274.,1678,326,326,
3249.,1833,316,316,
3274.,1935,323,323,
3239.,2043,314,314,
3266.,2135,321,321,
3212.,2390,300,300,
B-I-15 North Road Edge, 6 , 1 , 0 ,0
3212.,2390,300,300,
3197.,2587,300,300,
3196.,2838,300,300,
3283.,4305,300,300,
3282.,4304,305,305,
3248.,4828,310,310,
3309.,7185,330,330,
3305.,7313,330,330,
3254.,7316,340,340,
3166.,7863,356,356,
B-I-15 North Road Edge, 7 , 1 , 0 ,0
3166.,7863,356,356,
3101.,8228,360,360,
2787.,9316,360,360,
2480.,9962,365,365,
B-HILL 1, 8 , 1 , 0 ,0
3851.,9894,500,500,
3842.,9771,529,529,
3819.,9610,522,522,
3798.,9067,481,481,
3781.,8885,475,475,
B-HILL 2, 9 , 1 , 0 ,0
3772.,8818,480,480,
3675.,8499,500,500,
```

```
3673.,8355,470,470,
3651.,8194,470,470,
3639.,8064,450,450,
3599.,7963,420,420,
B-Hill 3, 10 , 2 , 0 ,0
3283.,1669,325,325,
3895.,1673,274,274,
3489.,1996,320,320,
B-Hill 4, 11 , 1 , 0 ,0
3516.,2508,290,290,
3445.,2667,316,316,
3375.,2785,290,290,
R, 1 , 67 ,500
4593,7128,412.,
R, 2 , 67 ,500
4619,6773,402.,
R, 3 , 67 ,500
4626,6432,393.,
R, 4 , 67 ,500
4636,5992,375.,
R, 5 , 67 ,500
4634,5698,365.,
R, 6 , 67 ,500
5568,5215,390.,
R, 7 , 67 ,500
5435,5393,387.,
R, 8 , 67 ,500
5328,5554,385.,
R, 9 , 67 ,500
5116,5767,377.,
R, 10 , 67 ,500
5240,5877,385.,
R, 11 , 67 ,500
5116,6025,391.,
R, 12 , 67 ,500
4807,6104,387.,
R, 13 , 67 ,500
4925,6321,396.,
R, 14 , 67 ,500
5093,6553,401.,
R, 15 , 67 ,500
4943,6635,414.,
R, 16 , 67 ,500
4841,6910,418.,
R, 17 , 67 ,500
5110,7074,430.,
R, 18 , 67 ,500
4940,7157,423.,
R, 19 , 67 ,500
5263,6942,446.,
R, 20 , 67 ,500
5506,6804,441.,
R, 21 , 67 ,500
5388,6621,435.,
R, 22 , 67 ,500
5584,6589,432.,
R, 23 , 67 ,500
5442,6356,431.,
R, 24 , 67 ,500
5703,6445,438.,
R, 25 , 67 ,500
5863,6198,428.,
R, 26 , 67 ,500
```

```
5660,6007,415.,
R, 27 , 67 ,500
5854,5351,399.,
R, 28 , 67 ,500
5832,5669,408.,
R, 29 , 67 ,500
6186,5668,421.,
R, 30 , 67 ,500
6133,5976,427.,
R, 31 , 67 ,500
5987,6368,429.,
R, 32 , 67 ,500
5840,6733,449.,
R, 33 , 67 ,500
5705,7006,456.,
R, 34 , 67 ,500
5278,7140,444.,
D, 4.5
ALL,ALL
K,-3
1  ,9,10,11,12,13,15,16,18
K,-3
2  ,9,10,11,12,13,15,16,18
C,C
```

SOUND32 - RELEASE 07/30/91

TITLE:
CAMPUS PARK-SOUTH SINGLE FAMILY UNMITIGATED

EFFECTIVENESS / COST RATIOS
****

BAR ELE	0	1	2	3	4	5	6	7	
1	-	0.*							B1 P1
2	-	0.*							B1 P2
3	-	0.*							B1 P3
4	-	0.*							B1 P4
5	-	0.*							B1 P5
6	-	0.*							B1 P6
7	-	0.*							B1 P7
8	-	0.*							B1 P8
9	-	0.*							B1 P9
10	-	0.*							B1 P10
11	-	0.*							B2 P1
12	-	0.*							B2 P2
13	-	0.*							B2 P3
14	-	0.*							B2 P4
15	-	0.*							B2 P5
16	-	0.*							B2 P6
17	-	0.*							B2 P7
18	-	0.*							B2 P8
19	-	0.*							B2 P9
20	-	0.*							B2 P10
21	-	0.*							B3 P1
22	-	0.*							B3 P2
23	-	0.*							B3 P3
24	-	0.*							B3 P4
25	-	0.*							B4 P1
26	-	0.*							B4 P2
27	-	0.*							B5 P1
28	-	0.*							B5 P2
29	-	0.*							B5 P3
30	-	0.*							B5 P4
31	-	0.*							B5 P5
32	-	0.*							B5 P6
33	-	0.*							B5 P7
34	-	0.*							B5 P8
35	-	0.*							B6 P1
36	-	0.*							B6 P2
37	-	0.*							B6 P3
38	-	0.*							B6 P4
39	-	0.*							B6 P5
40	-	0.*							B6 P6
41	-	0.*							B6 P7
42	-	0.*							B6 P8
43	-	0.*							B6 P9
44	-	0.*							B7 P1
45	-	0.*							B7 P2

46	-	0.*	B7 P3
47	-	0.*	B8 P1
48	-	0.*	B8 P2
49	-	0.*	B8 P3
50	-	0.*	B8 P4
51	-	0.*	B9 P1
52	-	0.*	B9 P2
53	-	0.*	B9 P3
54	-	0.*	B9 P4
55	-	0.*	B9 P5
56	-	0.*	B10 P1
57	-	0.*	B10 P2
58	-	0.*	B11 P1
59	-	0.*	B11 P2

---

0 1 2 3 4 5 6 7

1

BARRIER DATA
****

BAR ELE		0	1	BARRIER HEIGHTS 2	3	4	5	6	7	BAR ID	LENGTH	TYPE
1	-	0.*								B1 P1	670.9	BERM
2	-	0.*								B1 P2	315.4	BERM
3	-	0.*								B1 P3	377.6	BERM
4	-	0.*								B1 P4	445.6	BERM
5	-	0.*								B1 P5	639.6	BERM
6	-	0.*								B1 P6	454.6	BERM
7	-	0.*								B1 P7	441.4	BERM
8	-	0.*								B1 P8	2602.6	BERM
9	-	0.*								B1 P9	1367.4	BERM
10	-	0.*								B1 P10	1578.6	BERM
11	-	0.*								B2 P1	381.4	BERM
12	-	0.*								B2 P2	237.2	BERM
13	-	0.*								B2 P3	477.9	BERM
14	-	0.*								B2 P4	627.5	BERM
15	-	0.*								B2 P5	440.9	BERM
16	-	0.*								B2 P6	409.9	BERM
17	-	0.*								B2 P7	342.4	BERM
18	-	0.*								B2 P8	543.7	BERM
19	-	0.*								B2 P9	572.8	BERM
20	-	0.*								B2 P10	250.7	BERM
21	-	0.*								B3 P1	751.6	BERM
22	-	0.*								B3 P2	408.3	BERM
23	-	0.*								B3 P3	249.7	BERM
24	-	0.*								B3 P4	656.5	BERM
25	-	0.*								B4 P1	680.9	BERM
26	-	0.*								B4 P2	668.1	BERM
27	-	0.*								B5 P1	302.1	BERM
28	-	0.*								B5 P2	119.2	BERM
29	-	0.*								B5 P3	119.1	BERM
30	-	0.*								B5 P4	157.3	BERM
31	-	0.*								B5 P5	105.3	BERM
32	-	0.*								B5 P6	113.9	BERM

```
33      -   0.*
34      -   0.*

35      -   0.*
36      -   0.*
37      -   0.*
38      -   0.*
39      -   0.*
40      -   0.*
41      -   0.*
42      -   0.*
43      -   0.*

44      -   0.*
45      -   0.*
46      -   0.*

47      -   0.*
48      -   0.*
49      -   0.*
50      -   0.*

51      -   0.*
52      -   0.*
53      -   0.*
54      -   0.*
55      -   0.*

56      -   0.*
57      -   0.*

58      -   0.*
59      -   0.*
```

B5 P7	96.1	BERM
B5 P8	261.5	BERM
B6 P1	197.6	BERM
B6 P2	251.0	BERM
B6 P3	1469.6	BERM
B6 P4	5.2	BERM
B6 P5	525.1	BERM
B6 P6	2357.9	BERM
B6 P7	128.1	BERM
B6 P8	52.1	BERM
B6 P9	554.3	BERM
B7 P1	370.8	BERM
B7 P2	1132.4	BERM
B7 P3	715.3	BERM
B8 P1	126.7	BERM
B8 P2	162.8	BERM
B8 P3	545.0	BERM
B8 P4	182.9	BERM
B9 P1	334.0	BERM
B9 P2	147.1	BERM
B9 P3	162.5	BERM
B9 P4	132.1	BERM
B9 P5	112.7	BERM
B10 P1	614.1	MASONRY
B10 P2	520.8	MASONRY
B11 P1	176.1	BERM
B11 P2	139.6	BERM

```
----------------------------------------------------------------------
        0    1    2    3    4    5    6    7
```

1

REC	REC ID	DNL	PEOPLE	LEQ(CAL)
1	R-1	67.	500.	62.8
2	R-2	67.	500.	63.2
3	R-3	67.	500.	63.4
4	R-4	67.	500.	63.5
5	R-5	67.	500.	63.5
6	R-6	67.	500.	58.8
7	R-7	67.	500.	59.3
8	R-8	67.	500.	59.8
9	R-9	67.	500.	58.0
10	R-10	67.	500.	57.3
11	R-11	67.	500.	57.9
12	R-12	67.	500.	59.6
13	R-13	67.	500.	58.9
14	R-14	67.	500.	60.6
15	R-15	67.	500.	58.6
16	R-16	67.	500.	58.8
17	R-17	67.	500.	60.0
18	R-18	67.	500.	57.9
19	R-19	67.	500.	59.4
20	R-20	67.	500.	58.5
21	R-21	67.	500.	59.2
22	R-22	67.	500.	58.3
23	R-23	67.	500.	59.1
24	R-24	67.	500.	57.9
25	R-25	67.	500.	57.4

26	R-26	67.	500.	58.3
27	R-27	67.	500.	57.6
28	R-28	67.	500.	57.7
29	R-29	67.	500.	56.4
30	R-30	67.	500.	56.5
31	R-31	67.	500.	56.8
32	R-32	67.	500.	57.2
33	R-33	67.	500.	57.4
34	R-34	67.	500.	59.1

BARRIER TYPE	COST
BERM	0.
MASONRY	0.
MASONRY/JERSEY	0.
CONCRETE	0.
TOTAL COST = $	0.

BARRIER HEIGHT INDEX FOR EACH BARRIER SECTION

1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1

CORRESPONDING BARRIER HEIGHTS FOR EACH SECTION

0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.

```
CAMPUS PARK-SOUTH SINGLE FAMILY MITIGATED
T-PEAK HOUR TRAFFIC CONDITIONS, 1
 11295 , 65 , 377 , 65 , 879 , 65
T-PEAK HOUR TRAFFIC CONDITIONS, 2
 11295 , 65 , 377 , 65 , 879 , 65
T-PEAK HOUR TRAFFIC CONDITIONS, 3
 758 , 45 , 16 , 45 , 16 , 45
T-PEAK HOUR TRAFFIC CONDITIONS, 4
 1094 , 40 , 23 , 40 , 23 , 40
T-PEAK HOUR TRAFFIC CONDITIONS, 5
 1536 , 40 , 32 , 40 , 32 , 40
L-I-15 NORTH, 1
N,2460.,9892,362,
N,2718.,9281,352,
N,2823.,8986,347,
N,2938.,8615,343,
N,3051.,8176,375,
N,3112.,7863,337,
N,3165.,7540,337,
N,3214.,7084,330,
N,3241.,6643,324,
N,3248.,5980,322,
N,3196.,4029,300,
N,3155.,2667,300,
N,3119.,1088,290,
L-I-15 SOUTH, 2
N,2346.,9849,370,
N,2603.,9238,350,
N,2712.,8945,346,
N,2823.,8585,343,
N,2934.,8154,341,
N,2996.,7840,337,
N,3047.,7527,334,
N,3096.,7077,327,
N,3123.,6636,325,
N,3129.,5979,322,
N,3078.,4032,300,
N,3037.,2670,301,
N,2990.,1092,290,
L-HORSE RANCH CREEK SEGMENT 1, 3
N,3043.,10290,379,
N,3181.,9940,383,
N,3237.,9720,383,
N,3300.,9246,386,
N,3372.,8619,381,
N,3422.,8183,373,
N,3470.,7777,364,
N,3569.,7439,357,
N,3864.,6977,351,
L-HORSE RANCH CREEK SEGMENT 2, 4
N,3864.,6977,351,
N,4161.,6503,350,
N,4244.,5507,318,
L-HORSE RANCH CREEK SEGMENT 3, 5
N,4244.,5507,318,
N,4304.,4842,312,
N,4554.,4231,310,
B-I-15 SOUTH ROADEDGE, 1 , 1 , 0 ,0
2366.,9859,370,370,
2638.,9246,350,350,
2744.,8949,346,346,
2858.,8589,343,343,
2971.,8158,341,341,
```

```
3081.,7528,334,334,
3129.,7076,327,327,
3148.,6635,325,325,
3095.,4033,314,314,
3066.,2666,303,303,
3030.,1088,280,280,
B-HORSE RANCH CREEK ROADADGE, 2 , 1 , 0 ,0
3094.,10309,379,379,
3236.,9955,383,383,
3290.,9724,383,383,
3351.,9250,386,386,
3426.,8627,381,381,
3476.,8189,373,373,
3524.,7782,364,364,
3622.,7454,357,357,
3918.,6998,351,351,
4208.,6504,350,350,
4261.,6259,350,350,
B-HORSE RANCH CREEK ROADEDGE, 3 , 1 , 0 ,0
4261.,6259,350,350,
4299.,5509,318,318,
4315.,5101,320,320,
4357.,4855,312,312,
4607.,4248,310,310,
B-HORSE RANCH CREEK ROADEDGE, 4 , 1 , 0 ,0
4200.,5507,318,318,
4262.,4829,312,312,
4506.,4207,310,310,
B-I-15 North Road Edge, 5 , 1 , 0 ,0
3183.,1172,300,300,
3190.,1474,300,300,
3272.,1560,310,310,
3274.,1678,326,326,
3249.,1833,316,316,
3274.,1935,323,323,
3239.,2043,314,314,
3266.,2135,321,321,
3212.,2390,300,300,
B-I-15 North Road Edge, 6 , 1 , 0 ,0
3212.,2390,300,300,
3197.,2587,300,300,
3196.,2838,300,300,
3283.,4305,300,300,
3282.,4304,305,305,
3248.,4828,310,310,
3309.,7185,330,330,
3305.,7313,330,330,
3254.,7316,340,340,
3166.,7863,356,356,
B-I-15 North Road Edge, 7 , 1 , 0 ,0
3166.,7863,356,356,
3101.,8228,360,360,
2787.,9316,360,360,
2480.,9962,365,365,
B-HILL 1, 8 , 1 , 0 ,0
3851.,9894,500,500,
3842.,9771,529,529,
3819.,9610,522,522,
3798.,9067,481,481,
3781.,8885,475,475,
B-HILL 2, 9 , 1 , 0 ,0
3772.,8818,480,480,
3675.,8499,500,500,
```

```
3673.,8355,470,470,
3651.,8194,470,470,
3639.,8064,450,450,
3599.,7963,420,420,
B-Hill 3, 10 , 2 , 0 ,0
3283.,1669,325,325,
3895.,1673,274,274,
3489.,1996,320,320,
B-Hill 4, 11 , 1 , 0 ,0
3516.,2508,290,290,
3445.,2667,316,316,
3375.,2785,290,290,
B-SOUNDWALL, 12 , 2 , 0 ,0
4676.,7202,408,418,
4580.,7193,408,418,
4582.,7007,406,416,
4602.,6878,401,411,
4616.,6158,380,390,
4618.,6016,373,383,
4621.,5879,365,375,
4612.,5739,360,370,
4643.,5612,360,370,
R, 1 , 67 ,500
4593,7128,412.,
R, 2 , 67 ,500
4619,6773,402.,
R, 3 , 67 ,500
4626,6432,393.,
R, 4 , 67 ,500
4636,5992,375.,
R, 5 , 67 ,500
4634,5698,365.,
R, 6 , 67 ,500
5568,5215,390.,
R, 7 , 67 ,500
5435,5393,387.,
R, 8 , 67 ,500
5328,5554,385.,
R, 9 , 67 ,500
5116,5767,377.,
R, 10 , 67 ,500
5240,5877,385.,
R, 11 , 67 ,500
5116,6025,391.,
R, 12 , 67 ,500
4807,6104,387.,
R, 13 , 67 ,500
4925,6321,396.,
R, 14 , 67 ,500
5093,6553,401.,
R, 15 , 67 ,500
4943,6635,414.,
R, 16 , 67 ,500
4841,6910,418.,
R, 17 , 67 ,500
5110,7074,430.,
R, 18 , 67 ,500
4940,7157,423.,
R, 19 , 67 ,500
5263,6942,446.,
R, 20 , 67 ,500
5506,6804,441.,
R, 21 , 67 ,500
```

```
5388,6621,435.,
R, 22 , 67 ,500
5584,6589,432.,
R, 23 , 67 ,500
5442,6356,431.,
R, 24 , 67 ,500
5703,6445,438.,
R, 25 , 67 ,500
5863,6198,428.,
R, 26 , 67 ,500
5660,6007,415.,
R, 27 , 67 ,500
5854,5351,399.,
R, 28 , 67 ,500
5832,5669,408.,
R, 29 , 67 ,500
6186,5668,421.,
R, 30 , 67 ,500
6133,5976,427.,
R, 31 , 67 ,500
5987,6368,429.,
R, 32 , 67 ,500
5840,6733,449.,
R, 33 , 67 ,500
5705,7006,456.,
R, 34 , 67 ,500
5278,7140,444.,
D, 4.5
ALL,ALL
K,-3
1  ,9,10,11,12,13,15,16,18
K,-3
2  ,9,10,11,12,13,15,16,18
C,C
```

SOUND32 - RELEASE 07/30/91

TITLE:
CAMPUS PARK-SOUTH SINGLE FAMILY MITIGATED

EFFECTIVENESS / COST RATIOS
****

BAR ELE	0	1	2	3	4	5	6	7	
1	-	0.*							B1 P1
2	-	0.*							B1 P2
3	-	0.*							B1 P3
4	-	0.*							B1 P4
5	-	0.*							B1 P5
6	-	0.*							B1 P6
7	-	0.*							B1 P7
8	-	0.*							B1 P8
9	-	0.*							B1 P9
10	-	0.*							B1 P10
11	-	0.*							B2 P1
12	-	0.*							B2 P2
13	-	0.*							B2 P3
14	-	0.*							B2 P4
15	-	0.*							B2 P5
16	-	0.*							B2 P6
17	-	0.*							B2 P7
18	-	0.*							B2 P8
19	-	0.*							B2 P9
20	-	0.*							B2 P10
21	-	0.*							B3 P1
22	-	0.*							B3 P2
23	-	0.*							B3 P3
24	-	0.*							B3 P4
25	-	0.*							B4 P1
26	-	0.*							B4 P2
27	-	0.*							B5 P1
28	-	0.*							B5 P2
29	-	0.*							B5 P3
30	-	0.*							B5 P4
31	-	0.*							B5 P5
32	-	0.*							B5 P6
33	-	0.*							B5 P7
34	-	0.*							B5 P8
35	-	0.*							B6 P1
36	-	0.*							B6 P2
37	-	0.*							B6 P3
38	-	0.*							B6 P4
39	-	0.*							B6 P5
40	-	0.*							B6 P6
41	-	0.*							B6 P7
42	-	0.*							B6 P8
43	-	0.*							B6 P9
44	-	0.*							B7 P1
45	-	0.*							B7 P2

46	-	0.*	B7 P3
47	-	0.*	B8 P1
48	-	0.*	B8 P2
49	-	0.*	B8 P3
50	-	0.*	B8 P4
51	-	0.*	B9 P1
52	-	0.*	B9 P2
53	-	0.*	B9 P3
54	-	0.*	B9 P4
55	-	0.*	B9 P5
56	-	0.*	B10 P1
57	-	0.*	B10 P2
58	-	0.*	B11 P1
59	-	0.*	B11 P2
60	-	0.*	B12 P1
61	-	0.*	B12 P2
62	-	0.*	B12 P3
63	-	0.*	B12 P4
64	-	0.*	B12 P5
65	-	0.*	B12 P6
66	-	0.*	B12 P7
67	-	0.*	B12 P8

0 1 2 3 4 5 6 7

1

BARRIER DATA
****

BAR ELE	0	1	BARRIER HEIGHTS 2	3	4	5	6	7	BAR ID	LENGTH	TYPE
1	-	0.*							B1 P1	670.9	BERM
2	-	0.*							B1 P2	315.4	BERM
3	-	0.*							B1 P3	377.6	BERM
4	-	0.*							B1 P4	445.6	BERM
5	-	0.*							B1 P5	639.6	BERM
6	-	0.*							B1 P6	454.6	BERM
7	-	0.*							B1 P7	441.4	BERM
8	-	0.*							B1 P8	2602.6	BERM
9	-	0.*							B1 P9	1367.4	BERM
10	-	0.*							B1 P10	1578.6	BERM
11	-	0.*							B2 P1	381.4	BERM
12	-	0.*							B2 P2	237.2	BERM
13	-	0.*							B2 P3	477.9	BERM
14	-	0.*							B2 P4	627.5	BERM
15	-	0.*							B2 P5	440.9	BERM
16	-	0.*							B2 P6	409.9	BERM
17	-	0.*							B2 P7	342.4	BERM
18	-	0.*							B2 P8	543.7	BERM
19	-	0.*							B2 P9	572.8	BERM
20	-	0.*							B2 P10	250.7	BERM
21	-	0.*							B3 P1	751.6	BERM
22	-	0.*							B3 P2	408.3	BERM
23	-	0.*							B3 P3	249.7	BERM
24	-	0.*							B3 P4	656.5	BERM

25	-	0.*	B4 P1	680.9	BERM
26	-	0.*	B4 P2	668.1	BERM
27	-	0.*	B5 P1	302.1	BERM
28	-	0.*	B5 P2	119.2	BERM
29	-	0.*	B5 P3	119.1	BERM
30	-	0.*	B5 P4	157.3	BERM
31	-	0.*	B5 P5	105.3	BERM
32	-	0.*	B5 P6	113.9	BERM
33	-	0.*	B5 P7	96.1	BERM
34	-	0.*	B5 P8	261.5	BERM
35	-	0.*	B6 P1	197.6	BERM
36	-	0.*	B6 P2	251.0	BERM
37	-	0.*	B6 P3	1469.6	BERM
38	-	0.*	B6 P4	5.2	BERM
39	-	0.*	B6 P5	525.1	BERM
40	-	0.*	B6 P6	2357.9	BERM
41	-	0.*	B6 P7	128.1	BERM
42	-	0.*	B6 P8	52.1	BERM
43	-	0.*	B6 P9	554.3	BERM
44	-	0.*	B7 P1	370.8	BERM
45	-	0.*	B7 P2	1132.4	BERM
46	-	0.*	B7 P3	715.3	BERM
47	-	0.*	B8 P1	126.7	BERM
48	-	0.*	B8 P2	162.8	BERM
49	-	0.*	B8 P3	545.0	BERM
50	-	0.*	B8 P4	182.9	BERM
51	-	0.*	B9 P1	334.0	BERM
52	-	0.*	B9 P2	147.1	BERM
53	-	0.*	B9 P3	162.5	BERM
54	-	0.*	B9 P4	132.1	BERM
55	-	0.*	B9 P5	112.7	BERM
56	-	0.*	B10 P1	614.1	MASONRY
57	-	0.*	B10 P2	520.8	MASONRY
58	-	0.*	B11 P1	176.1	BERM
59	-	0.*	B11 P2	139.6	BERM
60	-	10.*	B12 P1	96.4	MASONRY
61	-	10.*	B12 P2	186.0	MASONRY
62	-	10.*	B12 P3	130.6	MASONRY
63	-	10.*	B12 P4	720.4	MASONRY
64	-	10.*	B12 P5	142.2	MASONRY
65	-	10.*	B12 P6	137.3	MASONRY
66	-	10.*	B12 P7	140.4	MASONRY
67	-	10.*	B12 P8	130.7	MASONRY

0 1 2 3 4 5 6 7

1

REC	REC ID	DNL	PEOPLE	LEQ(CAL)
1	R-1	67.	500.	58.2
2	R-2	67.	500.	58.5
3	R-3	67.	500.	59.9
4	R-4	67.	500.	59.0
5	R-5	67.	500.	60.0
6	R-6	67.	500.	58.7
7	R-7	67.	500.	59.3

8	R-8	67.	500.	59.8
9	R-9	67.	500.	57.6
10	R-10	67.	500.	56.8
11	R-11	67.	500.	57.6
12	R-12	67.	500.	59.2
13	R-13	67.	500.	58.3
14	R-14	67.	500.	59.4
15	R-15	67.	500.	58.4
16	R-16	67.	500.	58.7
17	R-17	67.	500.	59.9
18	R-18	67.	500.	57.5
19	R-19	67.	500.	59.4
20	R-20	67.	500.	58.4
21	R-21	67.	500.	59.1
22	R-22	67.	500.	58.3
23	R-23	67.	500.	59.1
24	R-24	67.	500.	57.9
25	R-25	67.	500.	57.4
26	R-26	67.	500.	58.3
27	R-27	67.	500.	57.6
28	R-28	67.	500.	57.7
29	R-29	67.	500.	56.4
30	R-30	67.	500.	56.4
31	R-31	67.	500.	56.7
32	R-32	67.	500.	57.1
33	R-33	67.	500.	57.4
34	R-34	67.	500.	59.1

BARRIER TYPE	COST
BERM	0.
MASONRY	146515.
MASONRY/JERSEY	0.
CONCRETE	0.
TOTAL COST = $	147000.

BARRIER HEIGHT INDEX FOR EACH BARRIER SECTION

```
  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1
  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1
  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1
```

CORRESPONDING BARRIER HEIGHTS FOR EACH SECTION

```
 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.
 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.
 0. 0. 0. 0. 0. 0. 0. 0. 0.10.10.10.10.10.10.10.10.
```

```
CAMPUS PARK-SOUTH SINGLE FAMILY MITIGATED SECOND FLOOR
T-PEAK HOUR TRAFFIC CONDITIONS, 1
 11295 , 65 , 377 , 65 , 879 , 65
T-PEAK HOUR TRAFFIC CONDITIONS, 2
 11295 , 65 , 377 , 65 , 879 , 65
T-PEAK HOUR TRAFFIC CONDITIONS, 3
 758 , 45 , 16 , 45 , 16 , 45
T-PEAK HOUR TRAFFIC CONDITIONS, 4
 1094 , 40 , 23 , 40 , 23 , 40
T-PEAK HOUR TRAFFIC CONDITIONS, 5
 1536 , 40 , 32 , 40 , 32 , 40
L-I-15 NORTH, 1
N,2460.,9892,362,
N,2718.,9281,352,
N,2823.,8986,347,
N,2938.,8615,343,
N,3051.,8176,375,
N,3112.,7863,337,
N,3165.,7540,337,
N,3214.,7084,330,
N,3241.,6643,324,
N,3248.,5980,322,
N,3196.,4029,300,
N,3155.,2667,300,
N,3119.,1088,290,
L-I-15 SOUTH, 2
N,2346.,9849,370,
N,2603.,9238,350,
N,2712.,8945,346,
N,2823.,8585,343,
N,2934.,8154,341,
N,2996.,7840,337,
N,3047.,7527,334,
N,3096.,7077,327,
N,3123.,6636,325,
N,3129.,5979,322,
N,3078.,4032,300,
N,3037.,2670,301,
N,2990.,1092,290,
L-HORSE RANCH CREEK SEGMENT 1, 3
N,3043.,10290,379,
N,3181.,9940,383,
N,3237.,9720,383,
N,3300.,9246,386,
N,3372.,8619,381,
N,3422.,8183,373,
N,3470.,7777,364,
N,3569.,7439,357,
N,3864.,6977,351,
L-HORSE RANCH CREEK SEGMENT 2, 4
N,3864.,6977,351,
N,4161.,6503,350,
N,4244.,5507,318,
L-HORSE RANCH CREEK SEGMENT 3, 5
N,4244.,5507,318,
N,4304.,4842,312,
N,4554.,4231,310,
B-I-15 SOUTH ROADEDGE, 1 , 1 , 0 ,0
2366.,9859,370,370,
2638.,9246,350,350,
2744.,8949,346,346,
2858.,8589,343,343,
2971.,8158,341,341,
```

```
3081.,7528,334,334,
3129.,7076,327,327,
3148.,6635,325,325,
3095.,4033,314,314,
3066.,2666,303,303,
3030.,1088,280,280,
B-HORSE RANCH CREEK ROADADGE, 2 , 1 , 0 ,0
3094.,10309,379,379,
3236.,9955,383,383,
3290.,9724,383,383,
3351.,9250,386,386,
3426.,8627,381,381,
3476.,8189,373,373,
3524.,7782,364,364,
3622.,7454,357,357,
3918.,6998,351,351,
4208.,6504,350,350,
4261.,6259,350,350,
B-HORSE RANCH CREEK ROADEDGE, 3 , 1 , 0 ,0
4261.,6259,350,350,
4299.,5509,318,318,
4315.,5101,320,320,
4357.,4855,312,312,
4607.,4248,310,310,
B-HORSE RANCH CREEK ROADEDGE, 4 , 1 , 0 ,0
4200.,5507,318,318,
4262.,4829,312,312,
4506.,4207,310,310,
B-I-15 North Road Edge, 5 , 1 , 0 ,0
3183.,1172,300,300,
3190.,1474,300,300,
3272.,1560,310,310,
3274.,1678,326,326,
3249.,1833,316,316,
3274.,1935,323,323,
3239.,2043,314,314,
3266.,2135,321,321,
3212.,2390,300,300,
B-I-15 North Road Edge, 6 , 1 , 0 ,0
3212.,2390,300,300,
3197.,2587,300,300,
3196.,2838,300,300,
3283.,4305,300,300,
3282.,4304,305,305,
3248.,4828,310,310,
3309.,7185,330,330,
3305.,7313,330,330,
3254.,7316,340,340,
3166.,7863,356,356,
B-I-15 North Road Edge, 7 , 1 , 0 ,0
3166.,7863,356,356,
3101.,8228,360,360,
2787.,9316,360,360,
2480.,9962,365,365,
B-HILL 1, 8 , 1 , 0 ,0
3851.,9894,500,500,
3842.,9771,529,529,
3819.,9610,522,522,
3798.,9067,481,481,
3781.,8885,475,475,
B-HILL 2, 9 , 1 , 0 ,0
3772.,8818,480,480,
3675.,8499,500,500,
```

```
3673.,8355,470,470,
3651.,8194,470,470,
3639.,8064,450,450,
3599.,7963,420,420,
B-Hill 3, 10 , 2 , 0 ,0
3283.,1669,325,325,
3895.,1673,274,274,
3489.,1996,320,320,
B-Hill 4, 11 , 1 , 0 ,0
3516.,2508,290,290,
3445.,2667,316,316,
3375.,2785,290,290,
B-SOUNDWALL, 12 , 2 , 0 ,0
4676.,7202,408,418,
4580.,7193,408,418,
4582.,7007,406,416,
4602.,6878,401,411,
4616.,6158,380,390,
4618.,6016,373,383,
4621.,5879,365,375,
4612.,5739,360,370,
4643.,5612,360,370,
R, 1 , 67 ,500
4593,7128,422.,
R, 2 , 67 ,500
4619,6773,412.,
R, 3 , 67 ,500
4626,6432,403.,
R, 4 , 67 ,500
4636,5992,385.,
R, 5 , 67 ,500
4634,5698,375.,
R, 6 , 67 ,500
5568,5215,400.,
R, 7 , 67 ,500
5435,5393,397.,
R, 8 , 67 ,500
5328,5554,395.,
R, 9 , 67 ,500
5116,5767,387.,
R, 10 , 67 ,500
5240,5877,395.,
R, 11 , 67 ,500
5116,6025,401.,
R, 12 , 67 ,500
4807,6104,397.,
R, 13 , 67 ,500
4925,6321,406.,
R, 14 , 67 ,500
5093,6553,411.,
R, 15 , 67 ,500
4943,6635,424.,
R, 16 , 67 ,500
4841,6910,428.,
R, 17 , 67 ,500
5110,7074,440.,
R, 18 , 67 ,500
4940,7157,433.,
R, 19 , 67 ,500
5263,6942,456.,
R, 20 , 67 ,500
5506,6804,451.,
R, 21 , 67 ,500
```

```
5388,6621,445.,
R, 22 , 67 ,500
5584,6589,442.,
R, 23 , 67 ,500
5442,6356,441.,
R, 24 , 67 ,500
5703,6445,448.,
R, 25 , 67 ,500
5863,6198,438.,
R, 26 , 67 ,500
5660,6007,425.,
R, 27 , 67 ,500
5854,5351,409.,
R, 28 , 67 ,500
5832,5669,418.,
R, 29 , 67 ,500
6186,5668,431.,
R, 30 , 67 ,500
6133,5976,437.,
R, 31 , 67 ,500
5987,6368,439.,
R, 32 , 67 ,500
5840,6733,459.,
R, 33 , 67 ,500
5705,7006,466.,
R, 34 , 67 ,500
5278,7140,454.,
K,-3
1  ,9,10,11,12,13,15,16,18
K,-3
2  ,9,10,11,12,13,15,16,18
C,C
```

SOUND32 - RELEASE 07/30/91

TITLE:
CAMPUS PARK-SOUTH SINGLE FAMILY MITIGATED SECOND FLOOR

EFFECTIVENESS / COST RATIOS
****

BAR ELE	0	1	2	3	4	5	6	7	
1	-	0.*							B1 P1
2	-	0.*							B1 P2
3	-	0.*							B1 P3
4	-	0.*							B1 P4
5	-	0.*							B1 P5
6	-	0.*							B1 P6
7	-	0.*							B1 P7
8	-	0.*							B1 P8
9	-	0.*							B1 P9
10	-	0.*							B1 P10
11	-	0.*							B2 P1
12	-	0.*							B2 P2
13	-	0.*							B2 P3
14	-	0.*							B2 P4
15	-	0.*							B2 P5
16	-	0.*							B2 P6
17	-	0.*							B2 P7
18	-	0.*							B2 P8
19	-	0.*							B2 P9
20	-	0.*							B2 P10
21	-	0.*							B3 P1
22	-	0.*							B3 P2
23	-	0.*							B3 P3
24	-	0.*							B3 P4
25	-	0.*							B4 P1
26	-	0.*							B4 P2
27	-	0.*							B5 P1
28	-	0.*							B5 P2
29	-	0.*							B5 P3
30	-	0.*							B5 P4
31	-	0.*							B5 P5
32	-	0.*							B5 P6
33	-	0.*							B5 P7
34	-	0.*							B5 P8
35	-	0.*							B6 P1
36	-	0.*							B6 P2
37	-	0.*							B6 P3
38	-	0.*							B6 P4
39	-	0.*							B6 P5
40	-	0.*							B6 P6
41	-	0.*							B6 P7
42	-	0.*							B6 P8
43	-	0.*							B6 P9
44	-	0.*							B7 P1
45	-	0.*							B7 P2

46	-	0.*	B7 P3
47	-	0.*	B8 P1
48	-	0.*	B8 P2
49	-	0.*	B8 P3
50	-	0.*	B8 P4
51	-	0.*	B9 P1
52	-	0.*	B9 P2
53	-	0.*	B9 P3
54	-	0.*	B9 P4
55	-	0.*	B9 P5
56	-	0.*	B10 P1
57	-	0.*	B10 P2
58	-	0.*	B11 P1
59	-	0.*	B11 P2
60	-	0.*	B12 P1
61	-	0.*	B12 P2
62	-	0.*	B12 P3
63	-	0.*	B12 P4
64	-	0.*	B12 P5
65	-	0.*	B12 P6
66	-	0.*	B12 P7
67	-	0.*	B12 P8

0 1 2 3 4 5 6 7

1

BARRIER DATA
****

BAR ELE	0	1	BARRIER HEIGHTS 2	3	4	5	6	7	BAR ID	LENGTH	TYPE
1	-	0.*							B1 P1	670.9	BERM
2	-	0.*							B1 P2	315.4	BERM
3	-	0.*							B1 P3	377.6	BERM
4	-	0.*							B1 P4	445.6	BERM
5	-	0.*							B1 P5	639.6	BERM
6	-	0.*							B1 P6	454.6	BERM
7	-	0.*							B1 P7	441.4	BERM
8	-	0.*							B1 P8	2602.6	BERM
9	-	0.*							B1 P9	1367.4	BERM
10	-	0.*							B1 P10	1578.6	BERM
11	-	0.*							B2 P1	381.4	BERM
12	-	0.*							B2 P2	237.2	BERM
13	-	0.*							B2 P3	477.9	BERM
14	-	0.*							B2 P4	627.5	BERM
15	-	0.*							B2 P5	440.9	BERM
16	-	0.*							B2 P6	409.9	BERM
17	-	0.*							B2 P7	342.4	BERM
18	-	0.*							B2 P8	543.7	BERM
19	-	0.*							B2 P9	572.8	BERM
20	-	0.*							B2 P10	250.7	BERM
21	-	0.*							B3 P1	751.6	BERM
22	-	0.*							B3 P2	408.3	BERM
23	-	0.*							B3 P3	249.7	BERM
24	-	0.*							B3 P4	656.5	BERM

25	-	0.*	B4 P1	680.9	BERM
26	-	0.*	B4 P2	668.1	BERM
27	-	0.*	B5 P1	302.1	BERM
28	-	0.*	B5 P2	119.2	BERM
29	-	0.*	B5 P3	119.1	BERM
30	-	0.*	B5 P4	157.3	BERM
31	-	0.*	B5 P5	105.3	BERM
32	-	0.*	B5 P6	113.9	BERM
33	-	0.*	B5 P7	96.1	BERM
34	-	0.*	B5 P8	261.5	BERM
35	-	0.*	B6 P1	197.6	BERM
36	-	0.*	B6 P2	251.0	BERM
37	-	0.*	B6 P3	1469.6	BERM
38	-	0.*	B6 P4	5.2	BERM
39	-	0.*	B6 P5	525.1	BERM
40	-	0.*	B6 P6	2357.9	BERM
41	-	0.*	B6 P7	128.1	BERM
42	-	0.*	B6 P8	52.1	BERM
43	-	0.*	B6 P9	554.3	BERM
44	-	0.*	B7 P1	370.8	BERM
45	-	0.*	B7 P2	1132.4	BERM
46	-	0.*	B7 P3	715.3	BERM
47	-	0.*	B8 P1	126.7	BERM
48	-	0.*	B8 P2	162.8	BERM
49	-	0.*	B8 P3	545.0	BERM
50	-	0.*	B8 P4	182.9	BERM
51	-	0.*	B9 P1	334.0	BERM
52	-	0.*	B9 P2	147.1	BERM
53	-	0.*	B9 P3	162.5	BERM
54	-	0.*	B9 P4	132.1	BERM
55	-	0.*	B9 P5	112.7	BERM
56	-	0.*	B10 P1	614.1	MASONRY
57	-	0.*	B10 P2	520.8	MASONRY
58	-	0.*	B11 P1	176.1	BERM
59	-	0.*	B11 P2	139.6	BERM
60	-	10.*	B12 P1	96.4	MASONRY
61	-	10.*	B12 P2	186.0	MASONRY
62	-	10.*	B12 P3	130.6	MASONRY
63	-	10.*	B12 P4	720.4	MASONRY
64	-	10.*	B12 P5	142.2	MASONRY
65	-	10.*	B12 P6	137.3	MASONRY
66	-	10.*	B12 P7	140.4	MASONRY
67	-	10.*	B12 P8	130.7	MASONRY

0 1 2 3 4 5 6 7

1

REC	REC ID	DNL	PEOPLE	LEQ(CAL)
1	R-1	67.	500.	68.0
2	R-2	67.	500.	68.2
3	R-3	67.	500.	68.4
4	R-4	67.	500.	68.1
5	R-5	67.	500.	68.4
6	R-6	67.	500.	63.9
7	R-7	67.	500.	64.4

```
  8  R-8         67.    500.   64.8
  9  R-9         67.    500.   62.4
 10  R-10        67.    500.   61.3
 11  R-11        67.    500.   62.4
 12  R-12        67.    500.   63.9
 13  R-13        67.    500.   63.1
 14  R-14        67.    500.   63.5
 15  R-15        67.    500.   63.0
 16  R-16        67.    500.   63.2
 17  R-17        67.    500.   64.6
 18  R-18        67.    500.   62.3
 19  R-19        67.    500.   64.6
 20  R-20        67.    500.   63.4
 21  R-21        67.    500.   64.0
 22  R-22        67.    500.   63.1
 23  R-23        67.    500.   64.0
 24  R-24        67.    500.   62.9
 25  R-25        67.    500.   62.4
 26  R-26        67.    500.   63.4
 27  R-27        67.    500.   62.8
 28  R-28        67.    500.   62.9
 29  R-29        67.    500.   61.6
 30  R-30        67.    500.   61.5
 31  R-31        67.    500.   61.4
 32  R-32        67.    500.   62.4
 33  R-33        67.    500.   62.7
 34  R-34        67.    500.   64.1
---------------------------------

BARRIER TYPE                 COST
---------------------------------
BERM                          0.
MASONRY                  146515.
MASONRY/JERSEY                0.
CONCRETE                      0.
---------------------------------
       TOTAL COST = $   147000.

BARRIER HEIGHT INDEX FOR EACH BARRIER SECTION
  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1
  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1
  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1
CORRESPONDING BARRIER HEIGHTS FOR EACH SECTION
 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.
 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.
 0. 0. 0. 0. 0. 0. 0. 0. 0.10.10.10.10.10.10.10.10.
```

```
CAMPUS PARK-MULTI FAMILY 1 UNMITIGATED
T-PEAK HOUR TRAFFIC CONDITIONS, 1
 11295 , 65 , 377 , 65 , 879 , 65
T-PEAK HOUR TRAFFIC CONDITIONS, 2
 11295 , 65 , 377 , 65 , 879 , 65
T-PEAK HOUR TRAFFIC CONDITIONS, 3
 1997 , 40 , 42 , 40 , 42 , 40
T-PEAK HOUR TRAFFIC CONDITIONS, 4
 2170 , 40 , 45 , 40 , 45 , 40
T-PEAK HOUR TRAFFIC CONDITIONS, 5
 2189 , 40 , 46 , 40 , 46 , 40
T-PEAK HOUR TRAFFIC CONDITIONS, 6
 1306 , 40 , 27 , 40 , 27 , 40
L-I-15 NORTH, 1
N,2460.,9892,385,
N,2718.,9281,385,
N,2823.,8986,385,
N,2938.,8615,381,
N,3051.,8176,375,
N,3112.,7863,360,
N,3165.,7540,347,
N,3214.,7084,330,
N,3241.,6643,324,
N,3248.,5980,322,
N,3196.,4029,300,
N,3155.,2667,300,
N,3119.,1088,290,
L-I-15 SOUTH, 2
N,2346.,9849,385,
N,2603.,9238,385,
N,2712.,8945,385,
N,2823.,8585,381,
N,2934.,8154,375,
N,2996.,7840,360,
N,3047.,7527,347,
N,3096.,7077,327,
N,3123.,6636,325,
N,3129.,5979,322,
N,3078.,4032,300,
N,3037.,2670,301,
N,2990.,1092,290,
L-HORSE RANCH CREEK SEGMENT 4, 3
N,4554.,4231,312,
N,5223.,2898,300,
L-HORSE RANCH CREEK SEGMENT 5, 4
N,5223.,2898,300,
N,5739.,1871,287,
N,5839.,1685,285,
L-HORSE RANCH CREEK SEGMENT 6, 5
N,5839.,1685,285,
N,6281.,957,276,
N,6382.,746,279,
L-HORSE RANCH CREEK SEGMENT 7, 6
N,6382.,746,279,
N,6788.,-617,279,
B-I-15 SOUTH ROADEDGE, 1 , 1 , 0 ,0
2366.,9859,370,370,
2638.,9246,350,350,
2744.,8949,346,346,
2858.,8589,343,343,
2971.,8158,341,341,
3081.,7528,334,334,
3129.,7076,327,327,
```

3148.,6635,325,325,
3095.,4033,314,314,
3066.,2666,303,303,
3030.,1088,280,280,
B-HORSE RANCH CREEK ROADEDGE, 2 , 1 , 0 ,0
4506.,4207,312,312,
5184.,2881,300,300,
5705.,1847,287,287,
6246.,936,277,277,
6341.,737,279,279,
6733.,-622,279,279,
B-I-15 North Road Edge, 3 , 1 , 0 ,0
3183.,1172,300,300,
3190.,1474,300,300,
3272.,1560,310,310,
3274.,1678,326,326,
3249.,1833,316,316,
3274.,1935,323,323,
3239.,2043,314,314,
3266.,2135,321,321,
3212.,2390,300,300,
B-I-15 North Road Edge, 4 , 1 , 0 ,0
3212.,2390,300,300,
3197.,2587,300,300,
3196.,2838,300,300,
3283.,4305,300,300,
3282.,4304,305,305,
3248.,4828,310,310,
3309.,7185,330,330,
3305.,7313,330,330,
3254.,7316,340,340,
3166.,7863,356,356,
B-I-15 North Road Edge, 5 , 1 , 0 ,0
3166.,7863,356,356,
3101.,8228,360,360,
2787.,9316,360,360,
2480.,9962,365,365,
B-Hill 2, 6 , 2 , 0 ,0
3283.,1669,325,325,
3895.,1673,274,274,
3489.,1996,320,320,
B-Hill 3, 7 , 1 , 0 ,0
3516.,2508,290,290,
3445.,2667,316,316,
3375.,2785,290,290,
B-Building Receptor 2, 8 , 2 , 0 ,0
4862.,2710,300,340,
4883.,2720,300,340,
4913.,2657,300,340,
4893.,2647,300,340,
4862.,2710,300,340,
B-Building Receptor 5, 9 , 2 , 0 ,0
5193.,2725,299,339,
5206.,2698,299,339,
5125.,2658,299,339,
B-Barrier & Building Receptor 19, 10 , 2 , 0 ,0
5666.,1834,298,304,
5661.,1844,298,304,
5656.,1841,298,304,
5656.,1841,288,328,
5635.,1830,288,328,
5670.,1760,288,328,
5697.,1772,288,328,

```
5666.,1834,288,328,
5661.,1831,288,328,
5656.,1841,288,328,
B-Building Receptors 5 & 6, 11 , 2 , 0 ,0
5213.,2682,297,337,
5215.,2677,297,337,
5226.,2682,297,337,
5235.,2661,297,337,
5146.,2616,297,337,
5132.,2642,297,337,
5159.,2655,297,337,
5160.,2653,297,337,
5171.,2658,297,337,
5170.,2661,297,337,
5213.,2682,297,337,
B-Building Receptors 9 & 10, 12 , 2 , 0 ,0
5274.,2584,296,336,
5284.,2562,296,336,
5194.,2517,296,336,
5181.,2543,296,336,
5207.,2557,296,336,
5209.,2554,296,336,
5219.,2559,296,336,
5218.,2562,296,336,
5261.,2584,296,336,
5263.,2579,296,336,
5274.,2584,296,336,
B-Building & Barrier Receptor 13, 13 , 2 , 0 ,0
5352.,2402,295,335,
5272.,2362,295,335,
5259.,2388,295,335,
5349.,2433,295,335,
5360.,2412,295,335,
5350.,2407,295,335,
5352.,2402,295,335,
B-Building & Barrier Receptor 15, 14 , 2 , 0 ,0
5465.,2178,292,332,
5438.,2165,292,332,
5439.,2162,292,332,
5435.,2160,292,332,
5434.,2163,292,332,
5384.,2138,292,332,
5397.,2111,292,332,
5487.,2157,292,332,
5477.,2178,292,332,
5467.,2173,292,332,
5465.,2178,292,332,
R, 1 , 67 ,500
4862,2703,315.,
R, 2 , 67 ,500
5003,2698,314.,
R, 3 , 67 ,500
4952,2524,314.,
R, 4 , 67 ,500
5057,2600,312.,
R, 5 , 67 ,500
5165,2657,312.,
R, 6 , 67 ,500
5217,2681,312.,
R, 7 , 67 ,500
5004,2453,311.,
R, 8 , 67 ,500
5095,2499,311.,
```

```
R, 9 , 67 ,500
5213,2558,311.,
R, 10 , 67 ,500
5268,2585,311.,
R, 11 , 67 ,500
5193,2326,310.,
R, 12 , 67 ,500
5265,2360,310.,
R, 13 , 67 ,500
5355,2406,310.,
R, 14 , 67 ,500
5253,2120,307.,
R, 15 , 67 ,500
5437,2162,307.,
R, 16 , 67 ,500
5375,1953,306.,
R, 17 , 67 ,500
5429,1849,304.,
R, 18 , 67 ,500
5542,1794,303.,
R, 19 , 67 ,500
5662,1836,303.,
R, 20 , 67 ,500
5697,1765,303.,
D, 4.5
ALL,ALL
C,C
```

SOUND32 - RELEASE 07/30/91

TITLE:
CAMPUS PARK-MULTI FAMILY 1 UNMITIGATED

EFFECTIVENESS / COST RATIOS
****

BAR ELE	0	1	2	3	4	5	6	7	
1	-	0.*							B1 P1
2	-	0.*							B1 P2
3	-	0.*							B1 P3
4	-	0.*							B1 P4
5	-	0.*							B1 P5
6	-	0.*							B1 P6
7	-	0.*							B1 P7
8	-	0.*							B1 P8
9	-	0.*							B1 P9
10	-	0.*							B1 P10
11	-	0.*							B2 P1
12	-	0.*							B2 P2
13	-	0.*							B2 P3
14	-	0.*							B2 P4
15	-	0.*							B2 P5
16	-	0.*							B3 P1
17	-	0.*							B3 P2
18	-	0.*							B3 P3
19	-	0.*							B3 P4
20	-	0.*							B3 P5
21	-	0.*							B3 P6
22	-	0.*							B3 P7
23	-	0.*							B3 P8
24	-	0.*							B4 P1
25	-	0.*							B4 P2
26	-	0.*							B4 P3
27	-	0.*							B4 P4
28	-	0.*							B4 P5
29	-	0.*							B4 P6
30	-	0.*							B4 P7
31	-	0.*							B4 P8
32	-	0.*							B4 P9
33	-	0.*							B5 P1
34	-	0.*							B5 P2
35	-	0.*							B5 P3
36	-	0.*							B6 P1
37	-	0.*							B6 P2
38	-	0.*							B7 P1
39	-	0.*							B7 P2
40	-	0.*							B8 P1
41	-	0.*							B8 P2
42	-	0.*							B8 P3
43	-	0.*							B8 P4

44	-	0.*	B9 P1
45	-	0.*	B9 P2
46	-	0.*	B10 P1
47	-	0.*	B10 P2
48	-	0.*	B10 P3
49	-	0.*	B10 P4
50	-	0.*	B10 P5
51	-	0.*	B10 P6
52	-	0.*	B10 P7
53	-	0.*	B10 P8
54	-	0.*	B10 P9
55	-	0.*	B11 P1
56	-	0.*	B11 P2
57	-	0.*	B11 P3
58	-	0.*	B11 P4
59	-	0.*	B11 P5
60	-	0.*	B11 P6
61	-	0.*	B11 P7
62	-	0.*	B11 P8
63	-	0.*	B11 P9
64	-	0.*	B11 P10
65	-	0.*	B12 P1
66	-	0.*	B12 P2
67	-	0.*	B12 P3
68	-	0.*	B12 P4
69	-	0.*	B12 P5
70	-	0.*	B12 P6
71	-	0.*	B12 P7
72	-	0.*	B12 P8
73	-	0.*	B12 P9
74	-	0.*	B12 P10
75	-	0.*	B13 P1
76	-	0.*	B13 P2
77	-	0.*	B13 P3
78	-	0.*	B13 P4
79	-	0.*	B13 P5
80	-	0.*	B13 P6
81	-	0.*	B14 P1
82	-	0.*	B14 P2
83	-	0.*	B14 P3
84	-	0.*	B14 P4
85	-	0.*	B14 P5
86	-	0.*	B14 P6
87	-	0.*	B14 P7
88	-	0.*	B14 P8
89	-	0.*	B14 P9
90	-	0.*	B14 P10

0 1 2 3 4 5 6 7

1

BARRIER DATA
****

BAR ELE	BARRIER HEIGHTS 0	1	2	3	4	5	6	7	BAR ID	LENGTH	TYPE
1	-	0.*							B1 P1	670.9	BERM
2	-	0.*							B1 P2	315.4	BERM

3	-	0.*		B1 P3	377.6	BERM
4	-	0.*		B1 P4	445.6	BERM
5	-	0.*		B1 P5	639.6	BERM
6	-	0.*		B1 P6	454.6	BERM
7	-	0.*		B1 P7	441.4	BERM
8	-	0.*		B1 P8	2602.6	BERM
9	-	0.*		B1 P9	1367.4	BERM
10	-	0.*		B1 P10	1578.6	BERM
11	-	0.*		B2 P1	1489.3	BERM
12	-	0.*		B2 P2	1157.9	BERM
13	-	0.*		B2 P3	1059.6	BERM
14	-	0.*		B2 P4	220.5	BERM
15	-	0.*		B2 P5	1414.4	BERM
16	-	0.*		B3 P1	302.1	BERM
17	-	0.*		B3 P2	119.2	BERM
18	-	0.*		B3 P3	119.1	BERM
19	-	0.*		B3 P4	157.3	BERM
20	-	0.*		B3 P5	105.3	BERM
21	-	0.*		B3 P6	113.9	BERM
22	-	0.*		B3 P7	96.1	BERM
23	-	0.*		B3 P8	261.5	BERM
24	-	0.*		B4 P1	197.6	BERM
25	-	0.*		B4 P2	251.0	BERM
26	-	0.*		B4 P3	1469.6	BERM
27	-	0.*		B4 P4	5.2	BERM
28	-	0.*		B4 P5	525.1	BERM
29	-	0.*		B4 P6	2357.9	BERM
30	-	0.*		B4 P7	128.1	BERM
31	-	0.*		B4 P8	52.1	BERM
32	-	0.*		B4 P9	554.3	BERM
33	-	0.*		B5 P1	370.8	BERM
34	-	0.*		B5 P2	1132.4	BERM
35	-	0.*		B5 P3	715.3	BERM
36	-	0.*		B6 P1	614.1	MASONRY
37	-	0.*		B6 P2	520.8	MASONRY
38	-	0.*		B7 P1	176.1	BERM
39	-	0.*		B7 P2	139.6	BERM
40	-	40.*		B8 P1	23.3	MASONRY
41	-	40.*		B8 P2	69.8	MASONRY
42	-	40.*		B8 P3	22.4	MASONRY
43	-	40.*		B8 P4	70.2	MASONRY
44	-	40.*		B9 P1	30.0	MASONRY
45	-	40.*		B9 P2	90.3	MASONRY
46	-	6.*		B10 P1	11.2	MASONRY
47	-	6.*		B10 P2	5.8	MASONRY
48	-	23.*		B10 P3	24.0	MASONRY
49	-	40.*		B10 P4	23.7	MASONRY
50	-	40.*		B10 P5	78.3	MASONRY
51	-	40.*		B10 P6	29.5	MASONRY
52	-	40.*		B10 P7	69.3	MASONRY
53	-	40.*		B10 P8	5.8	MASONRY
54	-	40.*		B10 P9	11.2	MASONRY
55	-	40.*		B11 P1	5.4	MASONRY

56	-	40.*	B11	P2	12.1	MASONRY
57	-	40.*	B11	P3	22.8	MASONRY
58	-	40.*	B11	P4	99.7	MASONRY
59	-	40.*	B11	P5	29.5	MASONRY
60	-	40.*	B11	P6	30.0	MASONRY
61	-	40.*	B11	P7	2.2	MASONRY
62	-	40.*	B11	P8	12.1	MASONRY
63	-	40.*	B11	P9	3.2	MASONRY
64	-	40.*	B11	P10	47.9	MASONRY
65	-	40.*	B12	P1	24.2	MASONRY
66	-	40.*	B12	P2	100.6	MASONRY
67	-	40.*	B12	P3	29.1	MASONRY
68	-	40.*	B12	P4	29.5	MASONRY
69	-	40.*	B12	P5	3.6	MASONRY
70	-	40.*	B12	P6	11.2	MASONRY
71	-	40.*	B12	P7	3.2	MASONRY
72	-	40.*	B12	P8	48.3	MASONRY
73	-	40.*	B12	P9	5.4	MASONRY
74	-	40.*	B12	P10	12.1	MASONRY
75	-	40.*	B13	P1	89.4	MASONRY
76	-	40.*	B13	P2	29.1	MASONRY
77	-	40.*	B13	P3	100.6	MASONRY
78	-	40.*	B13	P4	23.7	MASONRY
79	-	40.*	B13	P5	11.2	MASONRY
80	-	40.*	B13	P6	5.4	MASONRY
81	-	40.*	B14	P1	30.0	MASONRY
82	-	40.*	B14	P2	3.2	MASONRY
83	-	40.*	B14	P3	4.5	MASONRY
84	-	40.*	B14	P4	3.2	MASONRY
85	-	40.*	B14	P5	55.9	MASONRY
86	-	40.*	B14	P6	30.0	MASONRY
87	-	40.*	B14	P7	101.1	MASONRY
88	-	40.*	B14	P8	23.3	MASONRY
89	-	40.*	B14	P9	11.2	MASONRY
90	-	40.*	B14	P10	5.4	MASONRY

---

0 1 2 3 4 5 6 7

1

REC	REC ID	DNL	PEOPLE	LEQ(CAL)
1	R-1	67.	500.	60.1
2	R-2	67.	500.	59.8
3	R-3	67.	500.	60.1
4	R-4	67.	500.	59.9
5	R-5	67.	500.	54.8
6	R-6	67.	500.	64.0
7	R-7	67.	500.	59.9
8	R-8	67.	500.	59.8
9	R-9	67.	500.	59.0
10	R-10	67.	500.	65.0
11	R-11	67.	500.	59.9
12	R-12	67.	500.	59.9
13	R-13	67.	500.	64.1
14	R-14	67.	500.	59.4
15	R-15	67.	500.	58.3
16	R-16	67.	500.	59.4
17	R-17	67.	500.	59.3
18	R-18	67.	500.	60.0
19	R-19	67.	500.	60.5
20	R-20	67.	500.	66.3

BARRIER TYPE	COST
BERM	0.
MASONRY	6468.
MASONRY/JERSEY	0.
CONCRETE	0.
TOTAL COST = $	6000.

BARRIER HEIGHT INDEX FOR EACH BARRIER SECTION

```
  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1
  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1
  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1
  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1
```

CORRESPONDING BARRIER HEIGHTS FOR EACH SECTION

```
 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.
 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.40.40.40.40.40.40. 6. 6.23.40.40.
40.40.40.40.40.40.40.40.40.40.40.40.40.40.40.40.40.40.40.40.40.40.40.40.40.
40.40.40.40.40.40.40.40.40.40.40.40.40.40.40.
```

```
CAMPUS PARK-MULTI FAMILY 1 MITIGATED
T-PEAK HOUR TRAFFIC CONDITIONS, 1
 11295 , 65 , 377 , 65 , 879 , 65
T-PEAK HOUR TRAFFIC CONDITIONS, 2
 11295 , 65 , 377 , 65 , 879 , 65
T-PEAK HOUR TRAFFIC CONDITIONS, 3
 1997 , 40 , 42 , 40 , 42 , 40
T-PEAK HOUR TRAFFIC CONDITIONS, 4
 2170 , 40 , 45 , 40 , 45 , 40
T-PEAK HOUR TRAFFIC CONDITIONS, 5
 2189 , 40 , 46 , 40 , 46 , 40
T-PEAK HOUR TRAFFIC CONDITIONS, 6
 1306 , 40 , 27 , 40 , 27 , 40
L-I-15 NORTH, 1
N,2460.,9892,385,
N,2718.,9281,385,
N,2823.,8986,385,
N,2938.,8615,381,
N,3051.,8176,375,
N,3112.,7863,360,
N,3165.,7540,347,
N,3214.,7084,330,
N,3241.,6643,324,
N,3248.,5980,322,
N,3196.,4029,300,
N,3155.,2667,300,
N,3119.,1088,290,
L-I-15 SOUTH, 2
N,2346.,9849,385,
N,2603.,9238,385,
N,2712.,8945,385,
N,2823.,8585,381,
N,2934.,8154,375,
N,2996.,7840,360,
N,3047.,7527,347,
N,3096.,7077,327,
N,3123.,6636,325,
N,3129.,5979,322,
N,3078.,4032,300,
N,3037.,2670,301,
N,2990.,1092,290,
L-HORSE RANCH CREEK SEGMENT 4, 3
N,4554.,4231,312,
N,5223.,2898,300,
L-HORSE RANCH CREEK SEGMENT 5, 4
N,5223.,2898,300,
N,5739.,1871,287,
N,5839.,1685,285,
L-HORSE RANCH CREEK SEGMENT 6, 5
N,5839.,1685,285,
N,6281.,957,276,
N,6382.,746,279,
L-HORSE RANCH CREEK SEGMENT 7, 6
N,6382.,746,279,
N,6788.,-617,279,
B-I-15 SOUTH ROADEDGE, 1 , 1 , 0 ,0
2366.,9859,370,370,
2638.,9246,350,350,
2744.,8949,346,346,
2858.,8589,343,343,
2971.,8158,341,341,
3081.,7528,334,334,
3129.,7076,327,327,
```

```
3148.,6635,325,325,
3095.,4033,314,314,
3066.,2666,303,303,
3030.,1088,280,280,
B-HORSE RANCH CREEK ROADEDGE, 2 , 1 , 0 ,0
4506.,4207,312,312,
5184.,2881,300,300,
5705.,1847,287,287,
6246.,936,277,277,
6341.,737,279,279,
6733.,-622,279,279,
B-I-15 North Road Edge, 3 , 1 , 0 ,0
3183.,1172,300,300,
3190.,1474,300,300,
3272.,1560,310,310,
3274.,1678,326,326,
3249.,1833,316,316,
3274.,1935,323,323,
3239.,2043,314,314,
3266.,2135,321,321,
3212.,2390,300,300,
B-I-15 North Road Edge, 4 , 1 , 0 ,0
3212.,2390,300,300,
3197.,2587,300,300,
3196.,2838,300,300,
3283.,4305,300,300,
3282.,4304,305,305,
3248.,4828,310,310,
3309.,7185,330,330,
3305.,7313,330,330,
3254.,7316,340,340,
3166.,7863,356,356,
B-I-15 North Road Edge, 5 , 1 , 0 ,0
3166.,7863,356,356,
3101.,8228,360,360,
2787.,9316,360,360,
2480.,9962,365,365,
B-Hill 2, 6 , 2 , 0 ,0
3283.,1669,325,325,
3895.,1673,274,274,
3489.,1996,320,320,
B-Hill 3, 7 , 1 , 0 ,0
3516.,2508,290,290,
3445.,2667,316,316,
3375.,2785,290,290,
B-Building Receptor 2, 8 , 2 , 0 ,0
4862.,2710,300,340,
4883.,2720,300,340,
4913.,2657,300,340,
4893.,2647,300,340,
4862.,2710,300,340,
B-Building Receptor 5, 9 , 2 , 0 ,0
5193.,2725,299,339,
5206.,2698,299,339,
5125.,2658,299,339,
B-Barrier & Building Receptor 19, 10 , 2 , 0 ,0
5666.,1834,298,304,
5661.,1844,298,304,
5656.,1841,298,304,
5656.,1841,288,328,
5635.,1830,288,328,
5670.,1760,288,328,
5697.,1772,288,328,
```

```
5666.,1834,288,328,
5661.,1831,288,328,
5656.,1841,288,328,
B-Barrier Receptor 20, 11 , 2 , 0 ,0
5697.,1772,298,304,
5703.,1762,298,304,
5697.,1759,298,304,
B-Building Receptors 5 & 6, 12 , 2 , 0 ,0
5213.,2682,297,337,
5215.,2677,297,337,
5226.,2682,297,337,
5235.,2661,297,337,
5146.,2616,297,337,
5132.,2642,297,337,
5159.,2655,297,337,
5160.,2653,297,337,
5171.,2658,297,337,
5170.,2661,297,337,
5213.,2682,297,337,
B-Barrier Receptor 6, 13 , 2 , 0 ,0
5213.,2682,307,313,
5223.,2687,307,313,
5226.,2682,307,313,
B-Building Receptors 9 & 10, 14 , 2 , 0 ,0
5274.,2584,296,336,
5284.,2562,296,336,
5194.,2517,296,336,
5181.,2543,296,336,
5207.,2557,296,336,
5209.,2554,296,336,
5219.,2559,296,336,
5218.,2562,296,336,
5261.,2584,296,336,
5263.,2579,296,336,
5274.,2584,296,336,
B-Barrier Receptor 10, 15 , 2 , 0 ,0
5261.,2584,306,312,
5271.,2588,306,312,
5274.,2584,306,312,
B-Building & Barrier Receptor 13, 16 , 2 , 0 ,0
5360.,2412,305,311,
5363.,2407,305,311,
5352.,2402,305,311,
5352.,2402,295,335,
5272.,2362,295,335,
5259.,2388,295,335,
5349.,2433,295,335,
5360.,2412,295,335,
5350.,2407,295,335,
5352.,2402,295,335,
B-Building & Barrier Receptor 15, 17 , 2 , 0 ,0
5465.,2178,292,332,
5438.,2165,292,332,
5439.,2162,292,332,
5435.,2160,292,332,
5434.,2163,292,332,
5384.,2138,292,332,
5397.,2111,292,332,
5487.,2157,292,332,
5477.,2178,292,332,
5467.,2173,292,332,
5465.,2178,292,332,
R, 1 , 67 ,500
```

```
4862,2703,315.,
R, 2 , 67 ,500
5003,2698,314.,
R, 3 , 67 ,500
4952,2524,314.,
R, 4 , 67 ,500
5057,2600,312.,
R, 5 , 67 ,500
5165,2657,312.,
R, 6 , 67 ,500
5217,2681,312.,
R, 7 , 67 ,500
5004,2453,311.,
R, 8 , 67 ,500
5095,2499,311.,
R, 9 , 67 ,500
5213,2558,311.,
R, 10 , 67 ,500
5268,2585,311.,
R, 11 , 67 ,500
5193,2326,310.,
R, 12 , 67 ,500
5265,2360,310.,
R, 13 , 67 ,500
5355,2406,310.,
R, 14 , 67 ,500
5253,2120,307.,
R, 15 , 67 ,500
5437,2162,307.,
R, 16 , 67 ,500
5375,1953,306.,
R, 17 , 67 ,500
5429,1849,304.,
R, 18 , 67 ,500
5542,1794,303.,
R, 19 , 67 ,500
5662,1836,303.,
R, 20 , 67 ,500
5697,1765,303.,
D, 4.5
ALL,ALL
C,C
```

SOUND32 - RELEASE 07/30/91

TITLE:
CAMPUS PARK-MULTI FAMILY 1 MITIGATED

EFFECTIVENESS / COST RATIOS
****

BAR ELE	0	1	2	3	4	5	6	7	
1	-	0.*							B1 P1
2	-	0.*							B1 P2
3	-	0.*							B1 P3
4	-	0.*							B1 P4
5	-	0.*							B1 P5
6	-	0.*							B1 P6
7	-	0.*							B1 P7
8	-	0.*							B1 P8
9	-	0.*							B1 P9
10	-	0.*							B1 P10
11	-	0.*							B2 P1
12	-	0.*							B2 P2
13	-	0.*							B2 P3
14	-	0.*							B2 P4
15	-	0.*							B2 P5
16	-	0.*							B3 P1
17	-	0.*							B3 P2
18	-	0.*							B3 P3
19	-	0.*							B3 P4
20	-	0.*							B3 P5
21	-	0.*							B3 P6
22	-	0.*							B3 P7
23	-	0.*							B3 P8
24	-	0.*							B4 P1
25	-	0.*							B4 P2
26	-	0.*							B4 P3
27	-	0.*							B4 P4
28	-	0.*							B4 P5
29	-	0.*							B4 P6
30	-	0.*							B4 P7
31	-	0.*							B4 P8
32	-	0.*							B4 P9
33	-	0.*							B5 P1
34	-	0.*							B5 P2
35	-	0.*							B5 P3
36	-	0.*							B6 P1
37	-	0.*							B6 P2
38	-	0.*							B7 P1
39	-	0.*							B7 P2
40	-	0.*							B8 P1
41	-	0.*							B8 P2
42	-	0.*							B8 P3
43	-	0.*							B8 P4

44	-	0.*	B9 P1
45	-	0.*	B9 P2
46	-	0.*	B10 P1
47	-	0.*	B10 P2
48	-	0.*	B10 P3
49	-	0.*	B10 P4
50	-	0.*	B10 P5
51	-	0.*	B10 P6
52	-	0.*	B10 P7
53	-	0.*	B10 P8
54	-	0.*	B10 P9
55	-	0.*	B11 P1
56	-	0.*	B11 P2
57	-	0.*	B12 P1
58	-	0.*	B12 P2
59	-	0.*	B12 P3
60	-	0.*	B12 P4
61	-	0.*	B12 P5
62	-	0.*	B12 P6
63	-	0.*	B12 P7
64	-	0.*	B12 P8
65	-	0.*	B12 P9
66	-	0.*	B12 P10
67	-	0.*	B13 P1
68	-	0.*	B13 P2
69	-	0.*	B14 P1
70	-	0.*	B14 P2
71	-	0.*	B14 P3
72	-	0.*	B14 P4
73	-	0.*	B14 P5
74	-	0.*	B14 P6
75	-	0.*	B14 P7
76	-	0.*	B14 P8
77	-	0.*	B14 P9
78	-	0.*	B14 P10
79	-	0.*	B15 P1
80	-	0.*	B15 P2
81	-	0.*	B16 P1
82	-	0.*	B16 P2
83	-	0.*	B16 P3
84	-	0.*	B16 P4
85	-	0.*	B16 P5
86	-	0.*	B16 P6
87	-	0.*	B16 P7
88	-	0.*	B16 P8
89	-	0.*	B16 P9
90	-	0.*	B17 P1
91	-	0.*	B17 P2
92	-	0.*	B17 P3
93	-	0.*	B17 P4
94	-	0.*	B17 P5
95	-	0.*	B17 P6
96	-	0.*	B17 P7
97	-	0.*	B17 P8
98	-	0.*	B17 P9

99 - 0.* B17 P10

---

0 1 2 3 4 5 6 7

1

BARRIER DATA
****

BAR ELE	0	BARRIER HEIGHTS 1	2	3	4	5	6	7	BAR ID	LENGTH	TYPE
1	-	0.*							B1 P1	670.9	BERM
2	-	0.*							B1 P2	315.4	BERM
3	-	0.*							B1 P3	377.6	BERM
4	-	0.*							B1 P4	445.6	BERM
5	-	0.*							B1 P5	639.6	BERM
6	-	0.*							B1 P6	454.6	BERM
7	-	0.*							B1 P7	441.4	BERM
8	-	0.*							B1 P8	2602.6	BERM
9	-	0.*							B1 P9	1367.4	BERM
10	-	0.*							B1 P10	1578.6	BERM
11	-	0.*							B2 P1	1489.3	BERM
12	-	0.*							B2 P2	1157.9	BERM
13	-	0.*							B2 P3	1059.6	BERM
14	-	0.*							B2 P4	220.5	BERM
15	-	0.*							B2 P5	1414.4	BERM
16	-	0.*							B3 P1	302.1	BERM
17	-	0.*							B3 P2	119.2	BERM
18	-	0.*							B3 P3	119.1	BERM
19	-	0.*							B3 P4	157.3	BERM
20	-	0.*							B3 P5	105.3	BERM
21	-	0.*							B3 P6	113.9	BERM
22	-	0.*							B3 P7	96.1	BERM
23	-	0.*							B3 P8	261.5	BERM
24	-	0.*							B4 P1	197.6	BERM
25	-	0.*							B4 P2	251.0	BERM
26	-	0.*							B4 P3	1469.6	BERM
27	-	0.*							B4 P4	5.2	BERM
28	-	0.*							B4 P5	525.1	BERM
29	-	0.*							B4 P6	2357.9	BERM
30	-	0.*							B4 P7	128.1	BERM
31	-	0.*							B4 P8	52.1	BERM
32	-	0.*							B4 P9	554.3	BERM
33	-	0.*							B5 P1	370.8	BERM
34	-	0.*							B5 P2	1132.4	BERM
35	-	0.*							B5 P3	715.3	BERM
36	-	0.*							B6 P1	614.1	MASONRY
37	-	0.*							B6 P2	520.8	MASONRY
38	-	0.*							B7 P1	176.1	BERM
39	-	0.*							B7 P2	139.6	BERM
40	-	40.*							B8 P1	23.3	MASONRY
41	-	40.*							B8 P2	69.8	MASONRY
42	-	40.*							B8 P3	22.4	MASONRY
43	-	40.*							B8 P4	70.2	MASONRY
44	-	40.*							B9 P1	30.0	MASONRY
45	-	40.*							B9 P2	90.3	MASONRY

46	-	6.*	B10 P1	11.2	MASONRY
47	-	6.*	B10 P2	5.8	MASONRY
48	-	23.*	B10 P3	24.0	MASONRY
49	-	40.*	B10 P4	23.7	MASONRY
50	-	40.*	B10 P5	78.3	MASONRY
51	-	40.*	B10 P6	29.5	MASONRY
52	-	40.*	B10 P7	69.3	MASONRY
53	-	40.*	B10 P8	5.8	MASONRY
54	-	40.*	B10 P9	11.2	MASONRY
55	-	6.*	B11 P1	11.7	MASONRY
56	-	6.*	B11 P2	6.7	MASONRY
57	-	40.*	B12 P1	5.4	MASONRY
58	-	40.*	B12 P2	12.1	MASONRY
59	-	40.*	B12 P3	22.8	MASONRY
60	-	40.*	B12 P4	99.7	MASONRY
61	-	40.*	B12 P5	29.5	MASONRY
62	-	40.*	B12 P6	30.0	MASONRY
63	-	40.*	B12 P7	2.2	MASONRY
64	-	40.*	B12 P8	12.1	MASONRY
65	-	40.*	B12 P9	3.2	MASONRY
66	-	40.*	B12 P10	47.9	MASONRY
67	-	6.*	B13 P1	11.2	MASONRY
68	-	6.*	B13 P2	5.8	MASONRY
69	-	40.*	B14 P1	24.2	MASONRY
70	-	40.*	B14 P2	100.6	MASONRY
71	-	40.*	B14 P3	29.1	MASONRY
72	-	40.*	B14 P4	29.5	MASONRY
73	-	40.*	B14 P5	3.6	MASONRY
74	-	40.*	B14 P6	11.2	MASONRY
75	-	40.*	B14 P7	3.2	MASONRY
76	-	40.*	B14 P8	48.3	MASONRY
77	-	40.*	B14 P9	5.4	MASONRY
78	-	40.*	B14 P10	12.1	MASONRY
79	-	6.*	B15 P1	10.8	MASONRY
80	-	6.*	B15 P2	5.0	MASONRY
81	-	6.*	B16 P1	5.8	MASONRY
82	-	6.*	B16 P2	12.1	MASONRY
83	-	23.*	B16 P3	24.0	MASONRY
84	-	40.*	B16 P4	89.4	MASONRY
85	-	40.*	B16 P5	29.1	MASONRY
86	-	40.*	B16 P6	100.6	MASONRY
87	-	40.*	B16 P7	23.7	MASONRY
88	-	40.*	B16 P8	11.2	MASONRY
89	-	40.*	B16 P9	5.4	MASONRY
90	-	40.*	B17 P1	30.0	MASONRY
91	-	40.*	B17 P2	3.2	MASONRY
92	-	40.*	B17 P3	4.5	MASONRY
93	-	40.*	B17 P4	3.2	MASONRY
94	-	40.*	B17 P5	55.9	MASONRY
95	-	40.*	B17 P6	30.0	MASONRY
96	-	40.*	B17 P7	101.1	MASONRY
97	-	40.*	B17 P8	23.3	MASONRY
98	-	40.*	B17 P9	11.2	MASONRY
99	-	40.*	B17 P10	5.4	MASONRY

mf1mit

0 1 2 3 4 5 6 7

1

REC	REC ID	DNL	PEOPLE	LEQ(CAL)
1	R-1	67.	500.	60.1
2	R-2	67.	500.	59.8
3	R-3	67.	500.	60.1
4	R-4	67.	500.	59.8
5	R-5	67.	500.	54.8
6	R-6	67.	500.	59.3
7	R-7	67.	500.	59.9
8	R-8	67.	500.	59.8
9	R-9	67.	500.	59.0
10	R-10	67.	500.	60.1
11	R-11	67.	500.	59.9
12	R-12	67.	500.	59.9
13	R-13	67.	500.	58.7
14	R-14	67.	500.	59.4
15	R-15	67.	500.	58.3
16	R-16	67.	500.	59.4
17	R-17	67.	500.	59.3
18	R-18	67.	500.	60.0
19	R-19	67.	500.	60.4
20	R-20	67.	500.	60.4

BARRIER TYPE	COST
BERM	0.
MASONRY	15673.
MASONRY/JERSEY	0.
CONCRETE	0.
TOTAL COST = $	16000.

BARRIER HEIGHT INDEX FOR EACH BARRIER SECTION

1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1

CORRESPONDING BARRIER HEIGHTS FOR EACH SECTION

0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.
0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.40.40.40.40.40.40. 6. 6.23.40.40.
40.40.40.40. 6. 6.40.40.40.40.40.40.40.40.40. 6. 6.40.40.40.40.40.40.40.
40.40.40. 6. 6. 6. 6.23.40.40.40.40.40.40.40.40.40.40.40.40.40.40.40.40.

```
CAMPUS PARK-MULTI FAMILY 1 MITIGATED THIRD FLOOR
T-PEAK HOUR TRAFFIC CONDITIONS, 1
 11295 , 65 , 377 , 65 , 879 , 65
T-PEAK HOUR TRAFFIC CONDITIONS, 2
 11295 , 65 , 377 , 65 , 879 , 65
T-PEAK HOUR TRAFFIC CONDITIONS, 3
 1997 , 40 , 42 , 40 , 42 , 40
T-PEAK HOUR TRAFFIC CONDITIONS, 4
 2170 , 40 , 45 , 40 , 45 , 40
T-PEAK HOUR TRAFFIC CONDITIONS, 5
 2189 , 40 , 46 , 40 , 46 , 40
T-PEAK HOUR TRAFFIC CONDITIONS, 6
 1306 , 40 , 27 , 40 , 27 , 40
L-I-15 NORTH, 1
N,2460.,9892,385,
N,2718.,9281,385,
N,2823.,8986,385,
N,2938.,8615,381,
N,3051.,8176,375,
N,3112.,7863,360,
N,3165.,7540,347,
N,3214.,7084,330,
N,3241.,6643,324,
N,3248.,5980,322,
N,3196.,4029,300,
N,3155.,2667,300,
N,3119.,1088,290,
L-I-15 SOUTH, 2
N,2346.,9849,385,
N,2603.,9238,385,
N,2712.,8945,385,
N,2823.,8585,381,
N,2934.,8154,375,
N,2996.,7840,360,
N,3047.,7527,347,
N,3096.,7077,327,
N,3123.,6636,325,
N,3129.,5979,322,
N,3078.,4032,300,
N,3037.,2670,301,
N,2990.,1092,290,
L-HORSE RANCH CREEK SEGMENT 4, 3
N,4554.,4231,312,
N,5223.,2898,300,
L-HORSE RANCH CREEK SEGMENT 5, 4
N,5223.,2898,300,
N,5739.,1871,287,
N,5839.,1685,285,
L-HORSE RANCH CREEK SEGMENT 6, 5
N,5839.,1685,285,
N,6281.,957,276,
N,6382.,746,279,
L-HORSE RANCH CREEK SEGMENT 7, 6
N,6382.,746,279,
N,6788.,-617,279,
B-I-15 SOUTH ROADEDGE, 1 , 1 , 0 ,0
2366.,9859,370,370,
2638.,9246,350,350,
2744.,8949,346,346,
2858.,8589,343,343,
2971.,8158,341,341,
3081.,7528,334,334,
3129.,7076,327,327,
```

```
3148.,6635,325,325,
3095.,4033,314,314,
3066.,2666,303,303,
3030.,1088,280,280,
B-HORSE RANCH CREEK ROADEDGE, 2 , 1 , 0 ,0
4506.,4207,312,312,
5184.,2881,300,300,
5705.,1847,287,287,
6246.,936,277,277,
6341.,737,279,279,
6733.,-622,279,279,
B-I-15 North Road Edge, 3 , 1 , 0 ,0
3183.,1172,300,300,
3190.,1474,300,300,
3272.,1560,310,310,
3274.,1678,326,326,
3249.,1833,316,316,
3274.,1935,323,323,
3239.,2043,314,314,
3266.,2135,321,321,
3212.,2390,300,300,
B-I-15 North Road Edge, 4 , 1 , 0 ,0
3212.,2390,300,300,
3197.,2587,300,300,
3196.,2838,300,300,
3283.,4305,300,300,
3282.,4304,305,305,
3248.,4828,310,310,
3309.,7185,330,330,
3305.,7313,330,330,
3254.,7316,340,340,
3166.,7863,356,356,
B-I-15 North Road Edge, 5 , 1 , 0 ,0
3166.,7863,356,356,
3101.,8228,360,360,
2787.,9316,360,360,
2480.,9962,365,365,
B-Hill 2, 6 , 2 , 0 ,0
3283.,1669,325,325,
3895.,1673,274,274,
3489.,1996,320,320,
B-Hill 3, 7 , 1 , 0 ,0
3516.,2508,290,290,
3445.,2667,316,316,
3375.,2785,290,290,
B-Building Receptor 2, 8 , 2 , 0 ,0
4862.,2710,300,340,
4883.,2720,300,340,
4913.,2657,300,340,
4893.,2647,300,340,
4862.,2710,300,340,
B-Building Receptor 5, 9 , 2 , 0 ,0
5193.,2725,299,339,
5206.,2698,299,339,
5125.,2658,299,339,
B-Barrier & Building Receptor 19, 10 , 2 , 0 ,0
5666.,1834,298,304,
5661.,1844,298,304,
5656.,1841,298,304,
5656.,1841,288,328,
5635.,1830,288,328,
5670.,1760,288,328,
5697.,1772,288,328,
```

```
5666.,1834,288,328,
5661.,1831,288,328,
5656.,1841,288,328,
B-Barrier Receptor 20, 11 , 2 , 0 ,0
5697.,1772,298,304,
5703.,1762,298,304,
5697.,1759,298,304,
B-Building Receptors 5 & 6, 12 , 2 , 0 ,0
5213.,2682,297,337,
5215.,2677,297,337,
5226.,2682,297,337,
5235.,2661,297,337,
5146.,2616,297,337,
5132.,2642,297,337,
5159.,2655,297,337,
5160.,2653,297,337,
5171.,2658,297,337,
5170.,2661,297,337,
5213.,2682,297,337,
B-Barrier Receptor 6, 13 , 2 , 0 ,0
5213.,2682,307,313,
5223.,2687,307,313,
5226.,2682,307,313,
B-Building Receptors 9 & 10, 14 , 2 , 0 ,0
5274.,2584,296,336,
5284.,2562,296,336,
5194.,2517,296,336,
5181.,2543,296,336,
5207.,2557,296,336,
5209.,2554,296,336,
5219.,2559,296,336,
5218.,2562,296,336,
5261.,2584,296,336,
5263.,2579,296,336,
5274.,2584,296,336,
B-Barrier Receptor 10, 15 , 2 , 0 ,0
5261.,2584,306,312,
5271.,2588,306,312,
5274.,2584,306,312,
B-Building & Barrier Receptor 13, 16 , 2 , 0 ,0
5360.,2412,305,311,
5363.,2407,305,311,
5352.,2402,305,311,
5352.,2402,295,335,
5272.,2362,295,335,
5259.,2388,295,335,
5349.,2433,295,335,
5360.,2412,295,335,
5350.,2407,295,335,
5352.,2402,295,335,
B-Building & Barrier Receptor 15, 17 , 2 , 0 ,0
5465.,2178,292,332,
5438.,2165,292,332,
5439.,2162,292,332,
5435.,2160,292,332,
5434.,2163,292,332,
5384.,2138,292,332,
5397.,2111,292,332,
5487.,2157,292,332,
5477.,2178,292,332,
5467.,2173,292,332,
5465.,2178,292,332,
R, 1 , 67 ,500
```

```
4862,2703,325.,
R, 2 , 67 ,500
5003,2698,324.,
R, 3 , 67 ,500
4952,2524,324.,
R, 4 , 67 ,500
5057,2600,322.,
R, 5 , 67 ,500
5165,2657,322.,
R, 6 , 67 ,500
5217,2681,322.,
R, 7 , 67 ,500
5004,2453,321.,
R, 8 , 67 ,500
5095,2499,321.,
R, 9 , 67 ,500
5213,2558,321.,
R, 10 , 67 ,500
5268,2585,321.,
R, 11 , 67 ,500
5193,2326,320.,
R, 12 , 67 ,500
5265,2360,320.,
R, 13 , 67 ,500
5355,2406,320.,
R, 14 , 67 ,500
5253,2120,317.,
R, 15 , 67 ,500
5437,2162,317.,
R, 16 , 67 ,500
5375,1953,316.,
R, 17 , 67 ,500
5429,1849,314.,
R, 18 , 67 ,500
5542,1794,313.,
R, 19 , 67 ,500
5662,1836,313.,
R, 20 , 67 ,500
5697,1765,313.,
C,C
```

mf1mit3

SOUND32 - RELEASE 07/30/91

TITLE:
CAMPUS PARK-MULTI FAMILY 1 MITIGATED THIRD FLOOR

EFFECTIVENESS / COST RATIOS
****

BAR ELE	0	1	2	3	4	5	6	7	
1	-	0.*							B1 P1
2	-	0.*							B1 P2
3	-	0.*							B1 P3
4	-	0.*							B1 P4
5	-	0.*							B1 P5
6	-	0.*							B1 P6
7	-	0.*							B1 P7
8	-	0.*							B1 P8
9	-	0.*							B1 P9
10	-	0.*							B1 P10
11	-	0.*							B2 P1
12	-	0.*							B2 P2
13	-	0.*							B2 P3
14	-	0.*							B2 P4
15	-	0.*							B2 P5
16	-	0.*							B3 P1
17	-	0.*							B3 P2
18	-	0.*							B3 P3
19	-	0.*							B3 P4
20	-	0.*							B3 P5
21	-	0.*							B3 P6
22	-	0.*							B3 P7
23	-	0.*							B3 P8
24	-	0.*							B4 P1
25	-	0.*							B4 P2
26	-	0.*							B4 P3
27	-	0.*							B4 P4
28	-	0.*							B4 P5
29	-	0.*							B4 P6
30	-	0.*							B4 P7
31	-	0.*							B4 P8
32	-	0.*							B4 P9
33	-	0.*							B5 P1
34	-	0.*							B5 P2
35	-	0.*							B5 P3
36	-	0.*							B6 P1
37	-	0.*							B6 P2
38	-	0.*							B7 P1
39	-	0.*							B7 P2
40	-	0.*							B8 P1
41	-	0.*							B8 P2
42	-	0.*							B8 P3
43	-	0.*							B8 P4

44	-	0.*	B9 P1
45	-	0.*	B9 P2
46	-	0.*	B10 P1
47	-	0.*	B10 P2
48	-	0.*	B10 P3
49	-	0.*	B10 P4
50	-	0.*	B10 P5
51	-	0.*	B10 P6
52	-	0.*	B10 P7
53	-	0.*	B10 P8
54	-	0.*	B10 P9
55	-	0.*	B11 P1
56	-	0.*	B11 P2
57	-	0.*	B12 P1
58	-	0.*	B12 P2
59	-	0.*	B12 P3
60	-	0.*	B12 P4
61	-	0.*	B12 P5
62	-	0.*	B12 P6
63	-	0.*	B12 P7
64	-	0.*	B12 P8
65	-	0.*	B12 P9
66	-	0.*	B12 P10
67	-	0.*	B13 P1
68	-	0.*	B13 P2
69	-	0.*	B14 P1
70	-	0.*	B14 P2
71	-	0.*	B14 P3
72	-	0.*	B14 P4
73	-	0.*	B14 P5
74	-	0.*	B14 P6
75	-	0.*	B14 P7
76	-	0.*	B14 P8
77	-	0.*	B14 P9
78	-	0.*	B14 P10
79	-	0.*	B15 P1
80	-	0.*	B15 P2
81	-	0.*	B16 P1
82	-	0.*	B16 P2
83	-	0.*	B16 P3
84	-	0.*	B16 P4
85	-	0.*	B16 P5
86	-	0.*	B16 P6
87	-	0.*	B16 P7
88	-	0.*	B16 P8
89	-	0.*	B16 P9
90	-	0.*	B17 P1
91	-	0.*	B17 P2
92	-	0.*	B17 P3
93	-	0.*	B17 P4
94	-	0.*	B17 P5
95	-	0.*	B17 P6
96	-	0.*	B17 P7
97	-	0.*	B17 P8
98	-	0.*	B17 P9

99 - 0.* B17 P10

0 1 2 3 4 5 6 7

1

BARRIER DATA
****

BAR ELE	0	1	BARRIER HEIGHTS 2	3	4	5	6	7	BAR ID	LENGTH	TYPE
1	-	0.*							B1 P1	670.9	BERM
2	-	0.*							B1 P2	315.4	BERM
3	-	0.*							B1 P3	377.6	BERM
4	-	0.*							B1 P4	445.6	BERM
5	-	0.*							B1 P5	639.6	BERM
6	-	0.*							B1 P6	454.6	BERM
7	-	0.*							B1 P7	441.4	BERM
8	-	0.*							B1 P8	2602.6	BERM
9	-	0.*							B1 P9	1367.4	BERM
10	-	0.*							B1 P10	1578.6	BERM
11	-	0.*							B2 P1	1489.3	BERM
12	-	0.*							B2 P2	1157.9	BERM
13	-	0.*							B2 P3	1059.6	BERM
14	-	0.*							B2 P4	220.5	BERM
15	-	0.*							B2 P5	1414.4	BERM
16	-	0.*							B3 P1	302.1	BERM
17	-	0.*							B3 P2	119.2	BERM
18	-	0.*							B3 P3	119.1	BERM
19	-	0.*							B3 P4	157.3	BERM
20	-	0.*							B3 P5	105.3	BERM
21	-	0.*							B3 P6	113.9	BERM
22	-	0.*							B3 P7	96.1	BERM
23	-	0.*							B3 P8	261.5	BERM
24	-	0.*							B4 P1	197.6	BERM
25	-	0.*							B4 P2	251.0	BERM
26	-	0.*							B4 P3	1469.6	BERM
27	-	0.*							B4 P4	5.2	BERM
28	-	0.*							B4 P5	525.1	BERM
29	-	0.*							B4 P6	2357.9	BERM
30	-	0.*							B4 P7	128.1	BERM
31	-	0.*							B4 P8	52.1	BERM
32	-	0.*							B4 P9	554.3	BERM
33	-	0.*							B5 P1	370.8	BERM
34	-	0.*							B5 P2	1132.4	BERM
35	-	0.*							B5 P3	715.3	BERM
36	-	0.*							B6 P1	614.1	MASONRY
37	-	0.*							B6 P2	520.8	MASONRY
38	-	0.*							B7 P1	176.1	BERM
39	-	0.*							B7 P2	139.6	BERM
40	-	40.*							B8 P1	23.3	MASONRY
41	-	40.*							B8 P2	69.8	MASONRY
42	-	40.*							B8 P3	22.4	MASONRY
43	-	40.*							B8 P4	70.2	MASONRY
44	-	40.*							B9 P1	30.0	MASONRY
45	-	40.*							B9 P2	90.3	MASONRY

46	-	6.*	B10	P1	11.2	MASONRY
47	-	6.*	B10	P2	5.8	MASONRY
48	-	23.*	B10	P3	24.0	MASONRY
49	-	40.*	B10	P4	23.7	MASONRY
50	-	40.*	B10	P5	78.3	MASONRY
51	-	40.*	B10	P6	29.5	MASONRY
52	-	40.*	B10	P7	69.3	MASONRY
53	-	40.*	B10	P8	5.8	MASONRY
54	-	40.*	B10	P9	11.2	MASONRY
55	-	6.*	B11	P1	11.7	MASONRY
56	-	6.*	B11	P2	6.7	MASONRY
57	-	40.*	B12	P1	5.4	MASONRY
58	-	40.*	B12	P2	12.1	MASONRY
59	-	40.*	B12	P3	22.8	MASONRY
60	-	40.*	B12	P4	99.7	MASONRY
61	-	40.*	B12	P5	29.5	MASONRY
62	-	40.*	B12	P6	30.0	MASONRY
63	-	40.*	B12	P7	2.2	MASONRY
64	-	40.*	B12	P8	12.1	MASONRY
65	-	40.*	B12	P9	3.2	MASONRY
66	-	40.*	B12	P10	47.9	MASONRY
67	-	6.*	B13	P1	11.2	MASONRY
68	-	6.*	B13	P2	5.8	MASONRY
69	-	40.*	B14	P1	24.2	MASONRY
70	-	40.*	B14	P2	100.6	MASONRY
71	-	40.*	B14	P3	29.1	MASONRY
72	-	40.*	B14	P4	29.5	MASONRY
73	-	40.*	B14	P5	3.6	MASONRY
74	-	40.*	B14	P6	11.2	MASONRY
75	-	40.*	B14	P7	3.2	MASONRY
76	-	40.*	B14	P8	48.3	MASONRY
77	-	40.*	B14	P9	5.4	MASONRY
78	-	40.*	B14	P10	12.1	MASONRY
79	-	6.*	B15	P1	10.8	MASONRY
80	-	6.*	B15	P2	5.0	MASONRY
81	-	6.*	B16	P1	5.8	MASONRY
82	-	6.*	B16	P2	12.1	MASONRY
83	-	23.*	B16	P3	24.0	MASONRY
84	-	40.*	B16	P4	89.4	MASONRY
85	-	40.*	B16	P5	29.1	MASONRY
86	-	40.*	B16	P6	100.6	MASONRY
87	-	40.*	B16	P7	23.7	MASONRY
88	-	40.*	B16	P8	11.2	MASONRY
89	-	40.*	B16	P9	5.4	MASONRY
90	-	40.*	B17	P1	30.0	MASONRY
91	-	40.*	B17	P2	3.2	MASONRY
92	-	40.*	B17	P3	4.5	MASONRY
93	-	40.*	B17	P4	3.2	MASONRY
94	-	40.*	B17	P5	55.9	MASONRY
95	-	40.*	B17	P6	30.0	MASONRY
96	-	40.*	B17	P7	101.1	MASONRY
97	-	40.*	B17	P8	23.3	MASONRY
98	-	40.*	B17	P9	11.2	MASONRY
99	-	40.*	B17	P10	5.4	MASONRY

0 1 2 3 4 5 6 7

1

REC	REC ID	DNL	PEOPLE	LEQ(CAL)
1	R-1	67.	500.	64.7
2	R-2	67.	500.	64.2
3	R-3	67.	500.	64.1
4	R-4	67.	500.	64.2
5	R-5	67.	500.	57.2
6	R-6	67.	500.	66.5
7	R-7	67.	500.	64.2
8	R-8	67.	500.	64.2
9	R-9	67.	500.	63.1
10	R-10	67.	500.	67.5
11	R-11	67.	500.	64.3
12	R-12	67.	500.	64.2
13	R-13	67.	500.	66.3
14	R-14	67.	500.	63.7
15	R-15	67.	500.	62.2
16	R-16	67.	500.	63.7
17	R-17	67.	500.	63.6
18	R-18	67.	500.	64.9
19	R-19	67.	500.	68.6
20	R-20	67.	500.	68.2

BARRIER TYPE	COST
BERM	0.
MASONRY	15673.
MASONRY/JERSEY	0.
CONCRETE	0.
TOTAL COST = $	16000.

BARRIER HEIGHT INDEX FOR EACH BARRIER SECTION

1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1

CORRESPONDING BARRIER HEIGHTS FOR EACH SECTION

0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.
0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.40.40.40.40.40.40. 6. 6.23.40.40.
40.40.40.40. 6. 6.40.40.40.40.40.40.40.40.40.40. 6. 6.40.40.40.40.40.40.40.
40.40.40. 6. 6. 6. 6.23.40.40.40.40.40.40.40.40.40.40.40.40.40.40.40.40.40.

```
CAMPUS PARK- MULTI FAMILY 2 UNMITIGATED
T-PEAK HOUR TRAFFIC CONDITIONS, 1
 11295 , 65 , 377 , 65 , 879 , 65
T-PEAK HOUR TRAFFIC CONDITIONS, 2
 11295 , 65 , 377 , 65 , 879 , 65
T-PEAK HOUR TRAFFIC CONDITIONS, 3
 1536 , 40 , 32 , 40 , 32 , 40
T-PEAK HOUR TRAFFIC CONDITIONS, 4
 1997 , 40 , 42 , 40 , 42 , 40
L-I-15 NORTH, 1
N,2460.,9892,362,
N,2718.,9281,352,
N,2823.,8986,347,
N,2938.,8615,343,
N,3051.,8176,375,
N,3112.,7863,337,
N,3165.,7540,337,
N,3214.,7084,330,
N,3241.,6643,324,
N,3248.,5980,322,
N,3196.,4029,300,
N,3155.,2667,300,
N,3119.,1088,290,
L-I-15 SOUTH, 2
N,2346.,9849,370,
N,2603.,9238,350,
N,2712.,8945,346,
N,2823.,8585,343,
N,2934.,8154,341,
N,2996.,7840,337,
N,3047.,7527,334,
N,3096.,7077,327,
N,3123.,6636,325,
N,3129.,5979,322,
N,3078.,4032,300,
N,3037.,2670,301,
N,2990.,1092,290,
L-HORSE RANCH CREEK SEGMENT 3, 3
N,4244.,5507,318,
N,4304.,4842,312,
N,4554.,4231,310,
L-HORSE RANCH CREEK SEGMENT 4, 4
N,4554.,4231,312,
N,5223.,2898,300,
B-I-15 SOUTH ROADEDGE, 1 , 1 , 0 ,0
2366.,9859,370,370,
2638.,9246,350,350,
2744.,8949,346,346,
2858.,8589,343,343,
2971.,8158,341,341,
3081.,7528,334,334,
3129.,7076,327,327,
3148.,6635,325,325,
3095.,4033,314,314,
3066.,2666,303,303,
3030.,1088,280,280,
B-HORSE RANCH CREEK ROADEDGE, 2 , 1 , 0 ,0
4299.,5509,318,318,
4315.,5101,320,320,
4357.,4855,312,312,
4607.,4248,304,304,
5273.,2918,300,300,
B-HORSE RANCH CREEK ROADEDGE, 3 , 1 , 0 ,0
```

```
4200.,5507,325,325,
4262.,4829,312,312,
4506.,4207,304,304,
5184.,2881,300,300,
B-I-15 North Road Edge, 4 , 1 , 0 ,0
3183.,1172,300,300,
3190.,1474,300,300,
3272.,1560,310,310,
3274.,1678,326,326,
3249.,1833,316,316,
3274.,1935,323,323,
3239.,2043,314,314,
3266.,2135,321,321,
3212.,2390,300,300,
B-I-15 North Road Edge, 5 , 1 , 0 ,0
3212.,2390,300,300,
3197.,2587,300,300,
3196.,2838,300,300,
3283.,4305,300,300,
3282.,4304,305,305,
3248.,4828,310,310,
3309.,7185,330,330,
3305.,7313,330,330,
3254.,7316,340,340,
3166.,7863,356,356,
B-I-15 North Road Edge, 6 , 1 , 0 ,0
3166.,7863,356,356,
3101.,8228,360,360,
2787.,9316,360,360,
2480.,9962,365,365,
B-Hill 2, 7 , 2 , 0 ,0
3283.,1669,325,325,
3895.,1673,274,274,
3489.,1996,320,320,
B-Hill 3, 8 , 1 , 0 ,0
3516.,2508,290,290,
3445.,2667,316,316,
3375.,2785,290,290,
B-Proposed Building, 9 , 2 , 0 ,0
4785.,4108,315,345,
4846.,3991,315,345,
4805.,3969,315,345,
4745.,4087,315,345,
4785.,4108,315,345,
B-Proposed Building, 10 , 2 , 0 ,0
4861.,4142,315,345,
4911.,4044,315,345,
4871.,4023,315,345,
4820.,4122,315,345,
4861.,4142,315,345,
B-Proposed Building, 11 , 2 , 0 ,0
4985.,3844,313,343,
5030.,3846,313,343,
5030.,3735,312,342,
4985.,3736,312,342,
4985.,3844,313,343,
B-Proposed Building, 12 , 2 , 0 ,0
4985.,3715,312,342,
5031.,3715,312,342,
5031.,3605,312,342,
4985.,3606,312,342,
4985.,3715,312,342,
R, 1 , 67 ,500
```

```
4705,4191,321.,
R, 2 , 67 ,500
4786,4225,321.,
R, 3 , 67 ,500
4852,4253,322.,
R, 4 , 67 ,500
4908,4273,323.,
R, 5 , 67 ,500
4955,4285,324.,
R, 6 , 67 ,500
5017,4295,325.,
R, 7 , 67 ,500
4753,4054,320.,
R, 8 , 67 ,500
4884,4115,320.,
R, 9 , 67 ,500
4975,4141,323.,
R, 10 , 67 ,500
4789,3985,320.,
R, 11 , 67 ,500
4909,4066,319.,
R, 12 , 67 ,500
4948,4108,322.,
R, 13 , 67 ,500
4817,3928,319.,
R, 14 , 67 ,500
4947,3949,320.,
R, 15 , 67 ,500
5022,3977,321.,
R, 16 , 67 ,500
4853,3854,318.,
R, 17 , 67 ,500
4991,3934,319.,
R, 18 , 67 ,500
5039,3821,318.,
R, 19 , 67 ,500
4892,3767,317.,
R, 20 , 67 ,500
5038,3760,317.,
R, 21 , 67 ,500
5038,3690,317.,
R, 22 , 67 ,500
5038,3626,316.,
D, 4.5
ALL,ALL
C,C
```

SOUND32 - RELEASE 07/30/91

TITLE:
CAMPUS PARK- MULTI FAMILY 2 UNMITIGATED

EFFECTIVENESS / COST RATIOS
****

BAR ELE	0	1	2	3	4	5	6	7	
1	-	0.*							B1 P1
2	-	0.*							B1 P2
3	-	0.*							B1 P3
4	-	0.*							B1 P4
5	-	0.*							B1 P5
6	-	0.*							B1 P6
7	-	0.*							B1 P7
8	-	0.*							B1 P8
9	-	0.*							B1 P9
10	-	0.*							B1 P10
11	-	0.*							B2 P1
12	-	0.*							B2 P2
13	-	0.*							B2 P3
14	-	0.*							B2 P4
15	-	0.*							B3 P1
16	-	0.*							B3 P2
17	-	0.*							B3 P3
18	-	0.*							B4 P1
19	-	0.*							B4 P2
20	-	0.*							B4 P3
21	-	0.*							B4 P4
22	-	0.*							B4 P5
23	-	0.*							B4 P6
24	-	0.*							B4 P7
25	-	0.*							B4 P8
26	-	0.*							B5 P1
27	-	0.*							B5 P2
28	-	0.*							B5 P3
29	-	0.*							B5 P4
30	-	0.*							B5 P5
31	-	0.*							B5 P6
32	-	0.*							B5 P7
33	-	0.*							B5 P8
34	-	0.*							B5 P9
35	-	0.*							B6 P1
36	-	0.*							B6 P2
37	-	0.*							B6 P3
38	-	0.*							B7 P1
39	-	0.*							B7 P2
40	-	0.*							B8 P1
41	-	0.*							B8 P2
42	-	0.*							B9 P1
43	-	0.*							B9 P2

44	-	0.*	B9 P3
45	-	0.*	B9 P4
46	-	0.*	B10 P1
47	-	0.*	B10 P2
48	-	0.*	B10 P3
49	-	0.*	B10 P4
50	-	0.*	B11 P1
51	-	0.*	B11 P2
52	-	0.*	B11 P3
53	-	0.*	B11 P4
54	-	0.*	B12 P1
55	-	0.*	B12 P2
56	-	0.*	B12 P3
57	-	0.*	B12 P4

0 1 2 3 4 5 6 7

1

BARRIER DATA
****

BAR ELE	0	1	BARRIER HEIGHTS 2	3	4	5	6	7	BAR ID	LENGTH	TYPE
1	-	0.*							B1 P1	670.9	BERM
2	-	0.*							B1 P2	315.4	BERM
3	-	0.*							B1 P3	377.6	BERM
4	-	0.*							B1 P4	445.6	BERM
5	-	0.*							B1 P5	639.6	BERM
6	-	0.*							B1 P6	454.6	BERM
7	-	0.*							B1 P7	441.4	BERM
8	-	0.*							B1 P8	2602.6	BERM
9	-	0.*							B1 P9	1367.4	BERM
10	-	0.*							B1 P10	1578.6	BERM
11	-	0.*							B2 P1	408.3	BERM
12	-	0.*							B2 P2	249.7	BERM
13	-	0.*							B2 P3	656.5	BERM
14	-	0.*							B2 P4	1487.4	BERM
15	-	0.*							B3 P1	681.0	BERM
16	-	0.*							B3 P2	668.2	BERM
17	-	0.*							B3 P3	1489.3	BERM
18	-	0.*							B4 P1	302.1	BERM
19	-	0.*							B4 P2	119.2	BERM
20	-	0.*							B4 P3	119.1	BERM
21	-	0.*							B4 P4	157.3	BERM
22	-	0.*							B4 P5	105.3	BERM
23	-	0.*							B4 P6	113.9	BERM
24	-	0.*							B4 P7	96.1	BERM
25	-	0.*							B4 P8	261.5	BERM
26	-	0.*							B5 P1	197.6	BERM
27	-	0.*							B5 P2	251.0	BERM
28	-	0.*							B5 P3	1469.6	BERM
29	-	0.*							B5 P4	5.2	BERM
30	-	0.*							B5 P5	525.1	BERM
31	-	0.*							B5 P6	2357.9	BERM
32	-	0.*							B5 P7	128.1	BERM
33	-	0.*							B5 P8	52.1	BERM

34	-	0.*		B5	P9	554.3 BERM
35	-	0.*		B6	P1	370.8 BERM
36	-	0.*		B6	P2	1132.4 BERM
37	-	0.*		B6	P3	715.3 BERM
38	-	0.*		B7	P1	614.1 MASONRY
39	-	0.*		B7	P2	520.8 MASONRY
40	-	0.*		B8	P1	176.1 BERM
41	-	0.*		B8	P2	139.6 BERM
42	-	30.*		B9	P1	131.9 MASONRY
43	-	30.*		B9	P2	46.5 MASONRY
44	-	30.*		B9	P3	132.4 MASONRY
45	-	30.*		B9	P4	45.2 MASONRY
46	-	30.*		B10	P1	110.0 MASONRY
47	-	30.*		B10	P2	45.2 MASONRY
48	-	30.*		B10	P3	111.4 MASONRY
49	-	30.*		B10	P4	45.6 MASONRY
50	-	30.*		B11	P1	45.0 MASONRY
51	-	30.*		B11	P2	111.0 MASONRY
52	-	30.*		B11	P3	45.0 MASONRY
53	-	30.*		B11	P4	108.0 MASONRY
54	-	30.*		B12	P1	46.0 MASONRY
55	-	30.*		B12	P2	110.0 MASONRY
56	-	30.*		B12	P3	46.0 MASONRY
57	-	30.*		B12	P4	109.0 MASONRY

---

0 1 2 3 4 5 6 7

1

REC	REC ID	DNL	PEOPLE	LEQ(CAL)
1	R-1	67.	500.	66.2
2	R-2	67.	500.	63.7
3	R-3	67.	500.	62.5
4	R-4	67.	500.	61.9
5	R-5	67.	500.	61.5
6	R-6	67.	500.	61.0
7	R-7	67.	500.	67.0
8	R-8	67.	500.	55.4
9	R-9	67.	500.	60.1
10	R-10	67.	500.	66.9
11	R-11	67.	500.	54.3
12	R-12	67.	500.	59.1
13	R-13	67.	500.	66.9
14	R-14	67.	500.	61.6
15	R-15	67.	500.	60.6
16	R-16	67.	500.	66.9
17	R-17	67.	500.	61.3
18	R-18	67.	500.	52.6
19	R-19	67.	500.	67.0
20	R-20	67.	500.	53.0
21	R-21	67.	500.	53.8
22	R-22	67.	500.	56.2

BARRIER TYPE	COST
BERM	0.

```
MASONRY                376179.
MASONRY/JERSEY              0.
CONCRETE                    0.
--------------------------------
       TOTAL COST = $    376000.

BARRIER HEIGHT INDEX FOR EACH BARRIER SECTION
  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1
  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1
  1  1  1  1  1  1  1
CORRESPONDING BARRIER HEIGHTS FOR EACH SECTION
 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.
 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.30.30.30.30.30.30.30.30.
30.30.30.30.30.30.30.
```

```
CAMPUS PARK- MULTI FAMILY 2 MITIGATED
T-PEAK HOUR TRAFFIC CONDITIONS, 1
 11295 , 65 , 377 , 65 , 879 , 65
T-PEAK HOUR TRAFFIC CONDITIONS, 2
 11295 , 65 , 377 , 65 , 879 , 65
T-PEAK HOUR TRAFFIC CONDITIONS, 3
 1536 , 40 , 32 , 40 , 32 , 40
T-PEAK HOUR TRAFFIC CONDITIONS, 4
 1997 , 40 , 42 , 40 , 42 , 40
L-I-15 NORTH, 1
N,2460.,9892,362,
N,2718.,9281,352,
N,2823.,8986,347,
N,2938.,8615,343,
N,3051.,8176,375,
N,3112.,7863,337,
N,3165.,7540,337,
N,3214.,7084,330,
N,3241.,6643,324,
N,3248.,5980,322,
N,3196.,4029,300,
N,3155.,2667,300,
N,3119.,1088,290,
L-I-15 SOUTH, 2
N,2346.,9849,370,
N,2603.,9238,350,
N,2712.,8945,346,
N,2823.,8585,343,
N,2934.,8154,341,
N,2996.,7840,337,
N,3047.,7527,334,
N,3096.,7077,327,
N,3123.,6636,325,
N,3129.,5979,322,
N,3078.,4032,300,
N,3037.,2670,301,
N,2990.,1092,290,
L-HORSE RANCH CREEK SEGMENT 3, 3
N,4244.,5507,318,
N,4304.,4842,312,
N,4554.,4231,310,
L-HORSE RANCH CREEK SEGMENT 4, 4
N,4554.,4231,312,
N,5223.,2898,300,
B-I-15 SOUTH ROADEDGE, 1 , 1 , 0 ,0
2366.,9859,370,370,
2638.,9246,350,350,
2744.,8949,346,346,
2858.,8589,343,343,
2971.,8158,341,341,
3081.,7528,334,334,
3129.,7076,327,327,
3148.,6635,325,325,
3095.,4033,314,314,
3066.,2666,303,303,
3030.,1088,280,280,
B-HORSE RANCH CREEK ROADEDGE, 2 , 1 , 0 ,0
4299.,5509,318,318,
4315.,5101,320,320,
4357.,4855,312,312,
4607.,4248,304,304,
5273.,2918,300,300,
B-HORSE RANCH CREEK ROADEDGE, 3 , 1 , 0 ,0
```

```
4200.,5507,325,325,
4262.,4829,312,312,
4506.,4207,304,304,
5184.,2881,300,300,
B-I-15 North Road Edge, 4 , 1 , 0 ,0
3183.,1172,300,300,
3190.,1474,300,300,
3272.,1560,310,310,
3274.,1678,326,326,
3249.,1833,316,316,
3274.,1935,323,323,
3239.,2043,314,314,
3266.,2135,321,321,
3212.,2390,300,300,
B-I-15 North Road Edge, 5 , 1 , 0 ,0
3212.,2390,300,300,
3197.,2587,300,300,
3196.,2838,300,300,
3283.,4305,300,300,
3282.,4304,305,305,
3248.,4828,310,310,
3309.,7185,330,330,
3305.,7313,330,330,
3254.,7316,340,340,
3166.,7863,356,356,
B-I-15 North Road Edge, 6 , 1 , 0 ,0
3166.,7863,356,356,
3101.,8228,360,360,
2787.,9316,360,360,
2480.,9962,365,365,
B-Hill 2, 7 , 2 , 0 ,0
3283.,1669,325,325,
3895.,1673,274,274,
3489.,1996,320,320,
B-Hill 3, 8 , 1 , 0 ,0
3516.,2508,290,290,
3445.,2667,316,316,
3375.,2785,290,290,
B-SOUND WALL SEGMENT 1, 9 , 2 , 0 ,0
5054.,4391,326,336,
4902.,4303,324,334,
4792.,4249,322,332,
4690.,4207,318,328,
4673.,4188,318,328,
4781.,3950,318,328,
4811.,3887,318,328,
4891.,3716,314,324,
B-SOUND WALL SEGMENT 2, 10 , 2 , 0 ,0
4913.,3666,313,323,
5055.,3377,311,321,
B-Proposed Building, 11 , 2 , 0 ,0
4785.,4108,315,345,
4846.,3991,315,345,
4805.,3969,315,345,
4745.,4087,315,345,
4785.,4108,315,345,
B-Proposed Building, 12 , 2 , 0 ,0
4861.,4142,315,345,
4911.,4044,315,345,
4871.,4023,315,345,
4820.,4122,315,345,
4861.,4142,315,345,
B-Proposed Building, 13 , 2 , 0 ,0
```

```
4985.,3844,313,343,
5030.,3846,313,343,
5030.,3735,312,342,
4985.,3736,312,342,
4985.,3844,313,343,
B-Proposed Building, 14 , 2 , 0 ,0
4985.,3715,312,342,
5031.,3715,312,342,
5031.,3605,312,342,
4985.,3606,312,342,
4985.,3715,312,342,
R, 1 , 67 ,500
4705,4191,321.,
R, 2 , 67 ,500
4786,4225,321.,
R, 3 , 67 ,500
4852,4253,322.,
R, 4 , 67 ,500
4908,4273,323.,
R, 5 , 67 ,500
4955,4285,324.,
R, 6 , 67 ,500
5017,4295,325.,
R, 7 , 67 ,500
4753,4054,320.,
R, 8 , 67 ,500
4884,4115,320.,
R, 9 , 67 ,500
4975,4141,323.,
R, 10 , 67 ,500
4789,3985,320.,
R, 11 , 67 ,500
4909,4066,319.,
R, 12 , 67 ,500
4948,4108,322.,
R, 13 , 67 ,500
4817,3928,319.,
R, 14 , 67 ,500
4947,3949,320.,
R, 15 , 67 ,500
5022,3977,321.,
R, 16 , 67 ,500
4853,3854,318.,
R, 17 , 67 ,500
4991,3934,319.,
R, 18 , 67 ,500
5039,3821,318.,
R, 19 , 67 ,500
4892,3767,317.,
R, 20 , 67 ,500
5038,3760,317.,
R, 21 , 67 ,500
5038,3690,317.,
R, 22 , 67 ,500
5038,3626,316.,
D, 4.5
ALL,ALL
C,C
```

SOUND32 - RELEASE 07/30/91

TITLE:
CAMPUS PARK- MULTI FAMILY 2 MITIGATED

EFFECTIVENESS / COST RATIOS
****

BAR ELE	0	1	2	3	4	5	6	7	
1	-	0.*							B1 P1
2	-	0.*							B1 P2
3	-	0.*							B1 P3
4	-	0.*							B1 P4
5	-	0.*							B1 P5
6	-	0.*							B1 P6
7	-	0.*							B1 P7
8	-	0.*							B1 P8
9	-	0.*							B1 P9
10	-	0.*							B1 P10
11	-	0.*							B2 P1
12	-	0.*							B2 P2
13	-	0.*							B2 P3
14	-	0.*							B2 P4
15	-	0.*							B3 P1
16	-	0.*							B3 P2
17	-	0.*							B3 P3
18	-	0.*							B4 P1
19	-	0.*							B4 P2
20	-	0.*							B4 P3
21	-	0.*							B4 P4
22	-	0.*							B4 P5
23	-	0.*							B4 P6
24	-	0.*							B4 P7
25	-	0.*							B4 P8
26	-	0.*							B5 P1
27	-	0.*							B5 P2
28	-	0.*							B5 P3
29	-	0.*							B5 P4
30	-	0.*							B5 P5
31	-	0.*							B5 P6
32	-	0.*							B5 P7
33	-	0.*							B5 P8
34	-	0.*							B5 P9
35	-	0.*							B6 P1
36	-	0.*							B6 P2
37	-	0.*							B6 P3
38	-	0.*							B7 P1
39	-	0.*							B7 P2
40	-	0.*							B8 P1
41	-	0.*							B8 P2
42	-	0.*							B9 P1
43	-	0.*							B9 P2

44	-	0.*	B9 P3
45	-	0.*	B9 P4
46	-	0.*	B9 P5
47	-	0.*	B9 P6
48	-	0.*	B9 P7
49	-	0.*	B10 P1
50	-	0.*	B11 P1
51	-	0.*	B11 P2
52	-	0.*	B11 P3
53	-	0.*	B11 P4
54	-	0.*	B12 P1
55	-	0.*	B12 P2
56	-	0.*	B12 P3
57	-	0.*	B12 P4
58	-	0.*	B13 P1
59	-	0.*	B13 P2
60	-	0.*	B13 P3
61	-	0.*	B13 P4
62	-	0.*	B14 P1
63	-	0.*	B14 P2
64	-	0.*	B14 P3
65	-	0.*	B14 P4

---

0 1 2 3 4 5 6 7

1

BARRIER DATA
****

BAR ELE	0	1	BARRIER HEIGHTS 2	3	4	5	6	7	BAR ID	LENGTH	TYPE
1	-	0.*							B1 P1	670.9	BERM
2	-	0.*							B1 P2	315.4	BERM
3	-	0.*							B1 P3	377.6	BERM
4	-	0.*							B1 P4	445.6	BERM
5	-	0.*							B1 P5	639.6	BERM
6	-	0.*							B1 P6	454.6	BERM
7	-	0.*							B1 P7	441.4	BERM
8	-	0.*							B1 P8	2602.6	BERM
9	-	0.*							B1 P9	1367.4	BERM
10	-	0.*							B1 P10	1578.6	BERM
11	-	0.*							B2 P1	408.3	BERM
12	-	0.*							B2 P2	249.7	BERM
13	-	0.*							B2 P3	656.5	BERM
14	-	0.*							B2 P4	1487.4	BERM
15	-	0.*							B3 P1	681.0	BERM
16	-	0.*							B3 P2	668.2	BERM
17	-	0.*							B3 P3	1489.3	BERM
18	-	0.*							B4 P1	302.1	BERM
19	-	0.*							B4 P2	119.2	BERM
20	-	0.*							B4 P3	119.1	BERM
21	-	0.*							B4 P4	157.3	BERM
22	-	0.*							B4 P5	105.3	BERM
23	-	0.*							B4 P6	113.9	BERM
24	-	0.*							B4 P7	96.1	BERM

25	-	0.*	B4 P8	261.5	BERM
26	-	0.*	B5 P1	197.6	BERM
27	-	0.*	B5 P2	251.0	BERM
28	-	0.*	B5 P3	1469.6	BERM
29	-	0.*	B5 P4	5.2	BERM
30	-	0.*	B5 P5	525.1	BERM
31	-	0.*	B5 P6	2357.9	BERM
32	-	0.*	B5 P7	128.1	BERM
33	-	0.*	B5 P8	52.1	BERM
34	-	0.*	B5 P9	554.3	BERM
35	-	0.*	B6 P1	370.8	BERM
36	-	0.*	B6 P2	1132.4	BERM
37	-	0.*	B6 P3	715.3	BERM
38	-	0.*	B7 P1	614.1	MASONRY
39	-	0.*	B7 P2	520.8	MASONRY
40	-	0.*	B8 P1	176.1	BERM
41	-	0.*	B8 P2	139.6	BERM
42	-	10.*	B9 P1	175.6	MASONRY
43	-	10.*	B9 P2	122.6	MASONRY
44	-	10.*	B9 P3	110.4	MASONRY
45	-	10.*	B9 P4	25.5	MASONRY
46	-	10.*	B9 P5	261.4	MASONRY
47	-	10.*	B9 P6	69.8	MASONRY
48	-	10.*	B9 P7	188.8	MASONRY
49	-	10.*	B10 P1	322.0	MASONRY
50	-	30.*	B11 P1	131.9	MASONRY
51	-	30.*	B11 P2	46.5	MASONRY
52	-	30.*	B11 P3	132.4	MASONRY
53	-	30.*	B11 P4	45.2	MASONRY
54	-	30.*	B12 P1	110.0	MASONRY
55	-	30.*	B12 P2	45.2	MASONRY
56	-	30.*	B12 P3	111.4	MASONRY
57	-	30.*	B12 P4	45.6	MASONRY
58	-	30.*	B13 P1	45.0	MASONRY
59	-	30.*	B13 P2	111.0	MASONRY
60	-	30.*	B13 P3	45.0	MASONRY
61	-	30.*	B13 P4	108.0	MASONRY
62	-	30.*	B14 P1	46.0	MASONRY
63	-	30.*	B14 P2	110.0	MASONRY
64	-	30.*	B14 P3	46.0	MASONRY
65	-	30.*	B14 P4	109.0	MASONRY

---

0 1 2 3 4 5 6 7

1

REC	REC ID	DNL	PEOPLE	LEQ(CAL)
1	R-1	67.	500.	59.7
2	R-2	67.	500.	59.3
3	R-3	67.	500.	58.8
4	R-4	67.	500.	58.7
5	R-5	67.	500.	58.9
6	R-6	67.	500.	59.2
7	R-7	67.	500.	59.6

8	R-8	67.	500.	55.1
9	R-9	67.	500.	59.2
10	R-10	67.	500.	59.7
11	R-11	67.	500.	54.1
12	R-12	67.	500.	58.2
13	R-13	67.	500.	59.2
14	R-14	67.	500.	58.9
15	R-15	67.	500.	59.4
16	R-16	67.	500.	59.1
17	R-17	67.	500.	59.2
18	R-18	67.	500.	52.3
19	R-19	67.	500.	60.2
20	R-20	67.	500.	52.5
21	R-21	67.	500.	53.0
22	R-22	67.	500.	53.8

BARRIER TYPE	COST
BERM	0.
MASONRY	487196.
MASONRY/JERSEY	0.
CONCRETE	0.
TOTAL COST = $	487000.

BARRIER HEIGHT INDEX FOR EACH BARRIER SECTION

```
  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1
  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1
  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1
```

CORRESPONDING BARRIER HEIGHTS FOR EACH SECTION

```
 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.
 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.10.10.10.10.10.10.10.10.30.
30.30.30.30.30.30.30.30.30.30.30.30.30.30.30.
```

```
CAMPUS PARK- MULTI FAMILY 2 MITIGATED SECOND FLOOR
T-PEAK HOUR TRAFFIC CONDITIONS, 1
 11295 , 65 , 377 , 65 , 879 , 65
T-PEAK HOUR TRAFFIC CONDITIONS, 2
 11295 , 65 , 377 , 65 , 879 , 65
T-PEAK HOUR TRAFFIC CONDITIONS, 3
 1536 , 40 , 32 , 40 , 32 , 40
T-PEAK HOUR TRAFFIC CONDITIONS, 4
 1997 , 40 , 42 , 40 , 42 , 40
L-I-15 NORTH, 1
N,2460.,9892,362,
N,2718.,9281,352,
N,2823.,8986,347,
N,2938.,8615,343,
N,3051.,8176,375,
N,3112.,7863,337,
N,3165.,7540,337,
N,3214.,7084,330,
N,3241.,6643,324,
N,3248.,5980,322,
N,3196.,4029,300,
N,3155.,2667,300,
N,3119.,1088,290,
L-I-15 SOUTH, 2
N,2346.,9849,370,
N,2603.,9238,350,
N,2712.,8945,346,
N,2823.,8585,343,
N,2934.,8154,341,
N,2996.,7840,337,
N,3047.,7527,334,
N,3096.,7077,327,
N,3123.,6636,325,
N,3129.,5979,322,
N,3078.,4032,300,
N,3037.,2670,301,
N,2990.,1092,290,
L-HORSE RANCH CREEK SEGMENT 3, 3
N,4244.,5507,318,
N,4304.,4842,312,
N,4554.,4231,310,
L-HORSE RANCH CREEK SEGMENT 4, 4
N,4554.,4231,312,
N,5223.,2898,300,
B-I-15 SOUTH ROADEDGE, 1 , 1 , 0 ,0
2366.,9859,370,370,
2638.,9246,350,350,
2744.,8949,346,346,
2858.,8589,343,343,
2971.,8158,341,341,
3081.,7528,334,334,
3129.,7076,327,327,
3148.,6635,325,325,
3095.,4033,314,314,
3066.,2666,303,303,
3030.,1088,280,280,
B-HORSE RANCH CREEK ROADEDGE, 2 , 1 , 0 ,0
4299.,5509,318,318,
4315.,5101,320,320,
4357.,4855,312,312,
4607.,4248,304,304,
5273.,2918,300,300,
B-HORSE RANCH CREEK ROADEDGE, 3 , 1 , 0 ,0
```

```
4200.,5507,325,325,
4262.,4829,312,312,
4506.,4207,304,304,
5184.,2881,300,300,
B-I-15 North Road Edge, 4 , 1 , 0 ,0
3183.,1172,300,300,
3190.,1474,300,300,
3272.,1560,310,310,
3274.,1678,326,326,
3249.,1833,316,316,
3274.,1935,323,323,
3239.,2043,314,314,
3266.,2135,321,321,
3212.,2390,300,300,
B-I-15 North Road Edge, 5 , 1 , 0 ,0
3212.,2390,300,300,
3197.,2587,300,300,
3196.,2838,300,300,
3283.,4305,300,300,
3282.,4304,305,305,
3248.,4828,310,310,
3309.,7185,330,330,
3305.,7313,330,330,
3254.,7316,340,340,
3166.,7863,356,356,
B-I-15 North Road Edge, 6 , 1 , 0 ,0
3166.,7863,356,356,
3101.,8228,360,360,
2787.,9316,360,360,
2480.,9962,365,365,
B-Hill 2, 7 , 2 , 0 ,0
3283.,1669,325,325,
3895.,1673,274,274,
3489.,1996,320,320,
B-Hill 3, 8 , 1 , 0 ,0
3516.,2508,290,290,
3445.,2667,316,316,
3375.,2785,290,290,
B-SOUND WALL SEGMENT 1, 9 , 2 , 0 ,0
5054.,4391,326,336,
4902.,4303,324,334,
4792.,4249,322,332,
4690.,4207,318,328,
4673.,4188,318,328,
4781.,3950,318,328,
4811.,3887,318,328,
4891.,3716,314,324,
B-SOUND WALL SEGMENT 2, 10 , 2 , 0 ,0
4913.,3666,313,323,
5055.,3377,311,321,
B-Proposed Building, 11 , 2 , 0 ,0
4785.,4108,315,345,
4846.,3991,315,345,
4805.,3969,315,345,
4745.,4087,315,345,
4785.,4108,315,345,
B-Proposed Building, 12 , 2 , 0 ,0
4861.,4142,315,345,
4911.,4044,315,345,
4871.,4023,315,345,
4820.,4122,315,345,
4861.,4142,315,345,
B-Proposed Building, 13 , 2 , 0 ,0
```

```
4985.,3844,313,343,
5030.,3846,313,343,
5030.,3735,312,342,
4985.,3736,312,342,
4985.,3844,313,343,
B-Proposed Building, 14 , 2 , 0 ,0
4985.,3715,312,342,
5031.,3715,312,342,
5031.,3605,312,342,
4985.,3606,312,342,
4985.,3715,312,342,
R, 1 , 67 ,500
4705,4191,331.,
R, 2 , 67 ,500
4786,4225,331.,
R, 3 , 67 ,500
4852,4253,332.,
R, 4 , 67 ,500
4908,4273,333.,
R, 5 , 67 ,500
4955,4285,334.,
R, 6 , 67 ,500
5017,4295,335.,
R, 7 , 67 ,500
4753,4054,330.,
R, 8 , 67 ,500
4884,4115,330.,
R, 9 , 67 ,500
4975,4141,333.,
R, 10 , 67 ,500
4789,3985,330.,
R, 11 , 67 ,500
4909,4066,329.,
R, 12 , 67 ,500
4948,4108,332.,
R, 13 , 67 ,500
4817,3928,329.,
R, 14 , 67 ,500
4947,3949,330.,
R, 15 , 67 ,500
5022,3977,331.,
R, 16 , 67 ,500
4853,3854,328.,
R, 17 , 67 ,500
4991,3934,329.,
R, 18 , 67 ,500
5039,3821,328.,
R, 19 , 67 ,500
4892,3767,327.,
R, 20 , 67 ,500
5038,3760,327.,
R, 21 , 67 ,500
5038,3690,327.,
R, 22 , 67 ,500
5038,3626,326.,
C,C
```

SOUND32 - RELEASE 07/30/91

TITLE:
CAMPUS PARK- MULTI FAMILY 2 MITIGATED SECOND FLOOR

EFFECTIVENESS / COST RATIOS
****

BAR ELE	0	1	2	3	4	5	6	7	
1	-	0.*							B1 P1
2	-	0.*							B1 P2
3	-	0.*							B1 P3
4	-	0.*							B1 P4
5	-	0.*							B1 P5
6	-	0.*							B1 P6
7	-	0.*							B1 P7
8	-	0.*							B1 P8
9	-	0.*							B1 P9
10	-	0.*							B1 P10
11	-	0.*							B2 P1
12	-	0.*							B2 P2
13	-	0.*							B2 P3
14	-	0.*							B2 P4
15	-	0.*							B3 P1
16	-	0.*							B3 P2
17	-	0.*							B3 P3
18	-	0.*							B4 P1
19	-	0.*							B4 P2
20	-	0.*							B4 P3
21	-	0.*							B4 P4
22	-	0.*							B4 P5
23	-	0.*							B4 P6
24	-	0.*							B4 P7
25	-	0.*							B4 P8
26	-	0.*							B5 P1
27	-	0.*							B5 P2
28	-	0.*							B5 P3
29	-	0.*							B5 P4
30	-	0.*							B5 P5
31	-	0.*							B5 P6
32	-	0.*							B5 P7
33	-	0.*							B5 P8
34	-	0.*							B5 P9
35	-	0.*							B6 P1
36	-	0.*							B6 P2
37	-	0.*							B6 P3
38	-	0.*							B7 P1
39	-	0.*							B7 P2
40	-	0.*							B8 P1
41	-	0.*							B8 P2
42	-	0.*							B9 P1
43	-	0.*							B9 P2

44	-	0.*	B9 P3
45	-	0.*	B9 P4
46	-	0.*	B9 P5
47	-	0.*	B9 P6
48	-	0.*	B9 P7
49	-	0.*	B10 P1
50	-	0.*	B11 P1
51	-	0.*	B11 P2
52	-	0.*	B11 P3
53	-	0.*	B11 P4
54	-	0.*	B12 P1
55	-	0.*	B12 P2
56	-	0.*	B12 P3
57	-	0.*	B12 P4
58	-	0.*	B13 P1
59	-	0.*	B13 P2
60	-	0.*	B13 P3
61	-	0.*	B13 P4
62	-	0.*	B14 P1
63	-	0.*	B14 P2
64	-	0.*	B14 P3
65	-	0.*	B14 P4

0 1 2 3 4 5 6 7

1

BARRIER DATA
****

BAR ELE	0		BARRIER HEIGHTS 1 2 3 4 5 6 7	BAR ID	LENGTH	TYPE
1	-	0.*		B1 P1	670.9	BERM
2	-	0.*		B1 P2	315.4	BERM
3	-	0.*		B1 P3	377.6	BERM
4	-	0.*		B1 P4	445.6	BERM
5	-	0.*		B1 P5	639.6	BERM
6	-	0.*		B1 P6	454.6	BERM
7	-	0.*		B1 P7	441.4	BERM
8	-	0.*		B1 P8	2602.6	BERM
9	-	0.*		B1 P9	1367.4	BERM
10	-	0.*		B1 P10	1578.6	BERM
11	-	0.*		B2 P1	408.3	BERM
12	-	0.*		B2 P2	249.7	BERM
13	-	0.*		B2 P3	656.5	BERM
14	-	0.*		B2 P4	1487.4	BERM
15	-	0.*		B3 P1	681.0	BERM
16	-	0.*		B3 P2	668.2	BERM
17	-	0.*		B3 P3	1489.3	BERM
18	-	0.*		B4 P1	302.1	BERM
19	-	0.*		B4 P2	119.2	BERM
20	-	0.*		B4 P3	119.1	BERM
21	-	0.*		B4 P4	157.3	BERM
22	-	0.*		B4 P5	105.3	BERM
23	-	0.*		B4 P6	113.9	BERM
24	-	0.*		B4 P7	96.1	BERM

25	-	0.*
26	-	0.*
27	-	0.*
28	-	0.*
29	-	0.*
30	-	0.*
31	-	0.*
32	-	0.*
33	-	0.*
34	-	0.*
35	-	0.*
36	-	0.*
37	-	0.*
38	-	0.*
39	-	0.*
40	-	0.*
41	-	0.*
42	-	10.*
43	-	10.*
44	-	10.*
45	-	10.*
46	-	10.*
47	-	10.*
48	-	10.*
49	-	10.*
50	-	30.*
51	-	30.*
52	-	30.*
53	-	30.*
54	-	30.*
55	-	30.*
56	-	30.*
57	-	30.*
58	-	30.*
59	-	30.*
60	-	30.*
61	-	30.*
62	-	30.*
63	-	30.*
64	-	30.*
65	-	30.*

0 1 2 3 4 5 6 7

B4 P8	261.5	BERM
B5 P1	197.6	BERM
B5 P2	251.0	BERM
B5 P3	1469.6	BERM
B5 P4	5.2	BERM
B5 P5	525.1	BERM
B5 P6	2357.9	BERM
B5 P7	128.1	BERM
B5 P8	52.1	BERM
B5 P9	554.3	BERM
B6 P1	370.8	BERM
B6 P2	1132.4	BERM
B6 P3	715.3	BERM
B7 P1	614.1	MASONRY
B7 P2	520.8	MASONRY
B8 P1	176.1	BERM
B8 P2	139.6	BERM
B9 P1	175.6	MASONRY
B9 P2	122.6	MASONRY
B9 P3	110.4	MASONRY
B9 P4	25.5	MASONRY
B9 P5	261.4	MASONRY
B9 P6	69.8	MASONRY
B9 P7	188.8	MASONRY
B10 P1	322.0	MASONRY
B11 P1	131.9	MASONRY
B11 P2	46.5	MASONRY
B11 P3	132.4	MASONRY
B11 P4	45.2	MASONRY
B12 P1	110.0	MASONRY
B12 P2	45.2	MASONRY
B12 P3	111.4	MASONRY
B12 P4	45.6	MASONRY
B13 P1	45.0	MASONRY
B13 P2	111.0	MASONRY
B13 P3	45.0	MASONRY
B13 P4	108.0	MASONRY
B14 P1	46.0	MASONRY
B14 P2	110.0	MASONRY
B14 P3	46.0	MASONRY
B14 P4	109.0	MASONRY

1

REC	REC ID	DNL	PEOPLE	LEQ(CAL)
1	R-1	67.	500.	67.6
2	R-2	67.	500.	66.4
3	R-3	67.	500.	66.0
4	R-4	67.	500.	65.7
5	R-5	67.	500.	65.4
6	R-6	67.	500.	65.1
7	R-7	67.	500.	67.6

8	R-8	67.	500.	59.0
9	R-9	67.	500.	63.8
10	R-10	67.	500.	67.2
11	R-11	67.	500.	56.7
12	R-12	67.	500.	62.9
13	R-13	67.	500.	66.8
14	R-14	67.	500.	63.0
15	R-15	67.	500.	63.6
16	R-16	67.	500.	66.7
17	R-17	67.	500.	63.3
18	R-18	67.	500.	53.6
19	R-19	67.	500.	67.2
20	R-20	67.	500.	54.1
21	R-21	67.	500.	55.4
22	R-22	67.	500.	56.3

BARRIER TYPE	COST
BERM	0.
MASONRY	487196.
MASONRY/JERSEY	0.
CONCRETE	0.

TOTAL COST = $ 487000.

BARRIER HEIGHT INDEX FOR EACH BARRIER SECTION

1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1

CORRESPONDING BARRIER HEIGHTS FOR EACH SECTION

0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.
0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.10.10.10.10.10.10.10.30.
30.30.30.30.30.30.30.30.30.30.30.30.30.30.

```
CAMPUS PARK-MULTI FAMILY 3 UNMITIGATED
T-PEAK HOUR TRAFFIC CONDITIONS, 1
 11295 , 65 , 377 , 65 , 879 , 65
T-PEAK HOUR TRAFFIC CONDITIONS, 2
 11295 , 65 , 377 , 65 , 879 , 65
T-PEAK HOUR TRAFFIC CONDITIONS, 3
 1094 , 40 , 23 , 40 , 23 , 40
T-PEAK HOUR TRAFFIC CONDITIONS, 4
 1536 , 40 , 32 , 40 , 32 , 40
T-PEAK HOUR TRAFFIC CONDITIONS, 5
 1997 , 40 , 42 , 40 , 42 , 40
L-I-15 NORTH, 1
N,2460.,9892,362,
N,2718.,9281,352,
N,2823.,8986,347,
N,2938.,8615,343,
N,3051.,8176,375,
N,3112.,7863,337,
N,3165.,7540,337,
N,3214.,7084,330,
N,3241.,6643,324,
N,3248.,5980,322,
N,3196.,4029,300,
N,3155.,2667,300,
N,3119.,1088,290,
L-I-15 SOUTH, 2
N,2346.,9849,370,
N,2603.,9238,350,
N,2712.,8945,346,
N,2823.,8585,343,
N,2934.,8154,341,
N,2996.,7840,337,
N,3047.,7527,334,
N,3096.,7077,327,
N,3123.,6636,325,
N,3129.,5979,322,
N,3078.,4032,300,
N,3037.,2670,301,
N,2990.,1092,290,
L-HORSE RANCH CREEK SEGMENT 2, 3
N,4161.,6503,350,
N,4244.,5507,318,
L-HORSE RANCH CREEK SEGMENT 3, 4
N,4244.,5507,318,
N,4304.,4842,312,
N,4554.,4231,310,
L-HORSE RANCH CREEK SEGMENT 4, 5
N,4554.,4231,312,
N,5223.,2898,300,
B-I-15 SOUTH ROADEDGE, 1 , 1 , 0 ,0
2366.,9859,370,370,
2638.,9246,350,350,
2744.,8949,346,346,
2858.,8589,343,343,
2971.,8158,341,341,
3081.,7528,334,334,
3129.,7076,327,327,
3148.,6635,325,325,
3095.,4033,314,314,
3066.,2666,303,303,
3030.,1088,280,280,
B-HORSE RANCH CREEK 1 ROADADGE, 2 , 1 , 0 ,0
4208.,6504,350,350,
```

```
4261.,6259,350,350,
B-HORSE RANCH CREEK 2 ROADEDGE, 3 , 1 , 0 ,0
4261.,6259,350,350,
4299.,5509,318,318,
4315.,5101,320,320,
4357.,4855,312,312,
4607.,4248,304,304,
5273.,2918,300,300,
B-HORSE RANCH CREEK S ROADEDGE, 4 , 1 , 0 ,0
4200.,5507,318,318,
4262.,4829,312,312,
4506.,4207,304,304,
5184.,2881,300,300,
B-I-15 North Road Edge, 5 , 1 , 0 ,0
3183.,1172,300,300,
3190.,1474,300,300,
3272.,1560,310,310,
3274.,1678,326,326,
3249.,1833,316,316,
3274.,1935,323,323,
3239.,2043,314,314,
3266.,2135,321,321,
3212.,2390,300,300,
B-I-15 North Road Edge, 6 , 1 , 0 ,0
3212.,2390,300,300,
3197.,2587,300,300,
3196.,2838,300,300,
3283.,4305,300,300,
3282.,4304,305,305,
3248.,4828,310,310,
3309.,7185,330,330,
3305.,7313,330,330,
3254.,7316,340,340,
3166.,7863,356,356,
B-I-15 North Road Edge, 7 , 1 , 0 ,0
3166.,7863,356,356,
3101.,8228,360,360,
2787.,9316,360,360,
2480.,9962,365,365,
B-Hill 2, 8 , 2 , 0 ,0
3283.,1669,325,325,
3895.,1673,274,274,
3489.,1996,320,320,
B-Hill 3, 9 , 1 , 0 ,0
3516.,2508,290,290,
3445.,2667,316,316,
3375.,2785,290,290,
R, 1 , 67 ,500
4632,5430,353.,
R, 2 , 67 ,500
4767,5445,355.,
R, 3 , 67 ,500
4978,5478,358.,
R, 4 , 67 ,500
5219,5553,360.,
R, 5 , 67 ,500
4642,5246,351.,
R, 6 , 67 ,500
4926,5290,352.,
R, 7 , 67 ,500
5036,5273,354.,Rec Area
R, 8 , 67 ,500
5283,5340,357.,
```

```
R, 9 , 67 ,500
4659,5079,348.,
R, 10 , 67 ,500
4959,5144,349.,
R, 11 , 67 ,500
5230,5241,353.,
R, 12 , 67 ,500
5422,5267,357.,
R, 13 , 67 ,500
4702,4867,344.,
R, 14 , 67 ,500
5065,4984,350.,
R, 15 , 67 ,500
5305,5072,353.,
R, 16 , 67 ,500
5518,5114,354.,
R, 17 , 67 ,500
4753,4680,341.,
R, 18 , 67 ,500
5130,4833,345.,
R, 19 , 67 ,500
5395,4989,350.,
R, 20 , 67 ,500
5582,5019,354.,
R, 21 , 67 ,500
4836,4481,340.,
R, 22 , 67 ,500
5105,4599,345.,
R, 23 , 67 ,500
5415,4759,350.,
R, 24 , 67 ,500
5585,4855,352.,
D, 4.5
ALL,ALL
K,-3
ALL,2,3,4,6,7,8,10,11,12,14,15,16,18,19,20,22,23,24
C,C
```

SOUND32 - RELEASE 07/30/91

TITLE:
CAMPUS PARK-MULTI FAMILY 3 UNMITIGATED

EFFECTIVENESS / COST RATIOS
****

BAR ELE	0	1	2	3	4	5	6	7	
1	-	0.*							B1 P1
2	-	0.*							B1 P2
3	-	0.*							B1 P3
4	-	0.*							B1 P4
5	-	0.*							B1 P5
6	-	0.*							B1 P6
7	-	0.*							B1 P7
8	-	0.*							B1 P8
9	-	0.*							B1 P9
10	-	0.*							B1 P10
11	-	0.*							B2 P1
12	-	0.*							B3 P1
13	-	0.*							B3 P2
14	-	0.*							B3 P3
15	-	0.*							B3 P4
16	-	0.*							B3 P5
17	-	0.*							B4 P1
18	-	0.*							B4 P2
19	-	0.*							B4 P3
20	-	0.*							B5 P1
21	-	0.*							B5 P2
22	-	0.*							B5 P3
23	-	0.*							B5 P4
24	-	0.*							B5 P5
25	-	0.*							B5 P6
26	-	0.*							B5 P7
27	-	0.*							B5 P8
28	-	0.*							B6 P1
29	-	0.*							B6 P2
30	-	0.*							B6 P3
31	-	0.*							B6 P4
32	-	0.*							B6 P5
33	-	0.*							B6 P6
34	-	0.*							B6 P7
35	-	0.*							B6 P8
36	-	0.*							B6 P9
37	-	0.*							B7 P1
38	-	0.*							B7 P2
39	-	0.*							B7 P3
40	-	0.*							B8 P1
41	-	0.*							B8 P2
42	-	0.*							B9 P1
43	-	0.*							B9 P2

0 1 2 3 4 5 6 7

1

BARRIER DATA
****

BAR ELE	BARRIER HEIGHTS 0	1	2	3	4	5	6	7	BAR ID	LENGTH	TYPE
1	-	0.*							B1 P1	670.9	BERM
2	-	0.*							B1 P2	315.4	BERM
3	-	0.*							B1 P3	377.6	BERM
4	-	0.*							B1 P4	445.6	BERM
5	-	0.*							B1 P5	639.6	BERM
6	-	0.*							B1 P6	454.6	BERM
7	-	0.*							B1 P7	441.4	BERM
8	-	0.*							B1 P8	2602.6	BERM
9	-	0.*							B1 P9	1367.4	BERM
10	-	0.*							B1 P10	1578.6	BERM
11	-	0.*							B2 P1	250.7	BERM
12	-	0.*							B3 P1	751.6	BERM
13	-	0.*							B3 P2	408.3	BERM
14	-	0.*							B3 P3	249.7	BERM
15	-	0.*							B3 P4	656.5	BERM
16	-	0.*							B3 P5	1487.4	BERM
17	-	0.*							B4 P1	680.9	BERM
18	-	0.*							B4 P2	668.2	BERM
19	-	0.*							B4 P3	1489.3	BERM
20	-	0.*							B5 P1	302.1	BERM
21	-	0.*							B5 P2	119.2	BERM
22	-	0.*							B5 P3	119.1	BERM
23	-	0.*							B5 P4	157.3	BERM
24	-	0.*							B5 P5	105.3	BERM
25	-	0.*							B5 P6	113.9	BERM
26	-	0.*							B5 P7	96.1	BERM
27	-	0.*							B5 P8	261.5	BERM
28	-	0.*							B6 P1	197.6	BERM
29	-	0.*							B6 P2	251.0	BERM
30	-	0.*							B6 P3	1469.6	BERM
31	-	0.*							B6 P4	5.2	BERM
32	-	0.*							B6 P5	525.1	BERM
33	-	0.*							B6 P6	2357.9	BERM
34	-	0.*							B6 P7	128.1	BERM
35	-	0.*							B6 P8	52.1	BERM
36	-	0.*							B6 P9	554.3	BERM
37	-	0.*							B7 P1	370.8	BERM
38	-	0.*							B7 P2	1132.4	BERM
39	-	0.*							B7 P3	715.3	BERM
40	-	0.*							B8 P1	614.1	MASONRY
41	-	0.*							B8 P2	520.8	MASONRY
42	-	0.*							B9 P1	176.1	BERM
43	-	0.*							B9 P2	139.6	BERM

0 1 2 3 4 5 6 7

1

REC	REC ID	DNL	PEOPLE	LEQ(CAL)
1	R-1	67.	500.	63.5
2	R-2	67.	500.	59.6
3	R-3	67.	500.	58.5
4	R-4	67.	500.	57.3
5	R-5	67.	500.	63.4
6	R-6	67.	500.	58.7
7	Rec Area	67.	500.	58.2
8	R-8	67.	500.	57.0
9	R-9	67.	500.	63.2
10	R-10	67.	500.	58.5
11	R-11	67.	500.	57.2
12	R-12	67.	500.	56.4
13	R-13	67.	500.	63.1
14	R-14	67.	500.	58.0
15	R-15	67.	500.	56.9
16	R-16	67.	500.	56.0
17	R-17	67.	500.	62.9
18	R-18	67.	500.	57.7
19	R-19	67.	500.	56.5
20	R-20	67.	500.	55.7
21	R-21	67.	500.	62.6
22	R-22	67.	500.	57.8
23	R-23	67.	500.	56.4
24	R-24	67.	500.	55.7

BARRIER TYPE	COST
BERM	0.
MASONRY	0.
MASONRY/JERSEY	0.
CONCRETE	0.
TOTAL COST = $	0.

BARRIER HEIGHT INDEX FOR EACH BARRIER SECTION
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1

CORRESPONDING BARRIER HEIGHTS FOR EACH SECTION
0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.
0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.

```
CAMPUS PARK-MULTI FAMILY 3 MITIGATED
T-PEAK HOUR TRAFFIC CONDITIONS, 1
 11295 , 65 , 377 , 65 , 879 , 65
T-PEAK HOUR TRAFFIC CONDITIONS, 2
 11295 , 65 , 377 , 65 , 879 , 65
T-PEAK HOUR TRAFFIC CONDITIONS, 3
 1094 , 40 , 23 , 40 , 23 , 40
T-PEAK HOUR TRAFFIC CONDITIONS, 4
 1536 , 40 , 32 , 40 , 32 , 40
T-PEAK HOUR TRAFFIC CONDITIONS, 5
 1997 , 40 , 42 , 40 , 42 , 40
L-I-15 NORTH, 1
N,2460.,9892,362,
N,2718.,9281,352,
N,2823.,8986,347,
N,2938.,8615,343,
N,3051.,8176,375,
N,3112.,7863,337,
N,3165.,7540,337,
N,3214.,7084,330,
N,3241.,6643,324,
N,3248.,5980,322,
N,3196.,4029,300,
N,3155.,2667,300,
N,3119.,1088,290,
L-I-15 SOUTH, 2
N,2346.,9849,370,
N,2603.,9238,350,
N,2712.,8945,346,
N,2823.,8585,343,
N,2934.,8154,341,
N,2996.,7840,337,
N,3047.,7527,334,
N,3096.,7077,327,
N,3123.,6636,325,
N,3129.,5979,322,
N,3078.,4032,300,
N,3037.,2670,301,
N,2990.,1092,290,
L-HORSE RANCH CREEK SEGMENT 2, 3
N,4161.,6503,350,
N,4244.,5507,318,
L-HORSE RANCH CREEK SEGMENT 3, 4
N,4244.,5507,318,
N,4304.,4842,312,
N,4554.,4231,310,
L-HORSE RANCH CREEK SEGMENT 4, 5
N,4554.,4231,312,
N,5223.,2898,300,
B-I-15 SOUTH ROADEDGE, 1 , 1 , 0 ,0
2366.,9859,370,370,
2638.,9246,350,350,
2744.,8949,346,346,
2858.,8589,343,343,
2971.,8158,341,341,
3081.,7528,334,334,
3129.,7076,327,327,
3148.,6635,325,325,
3095.,4033,314,314,
3066.,2666,303,303,
3030.,1088,280,280,
B-HORSE RANCH CREEK 1 ROADADGE, 2 , 1 , 0 ,0
4208.,6504,350,350,
```

```
4261.,6259,350,350,
B-HORSE RANCH CREEK 2 ROADEDGE, 3 , 1 , 0 ,0
4261.,6259,350,350,
4299.,5509,318,318,
4315.,5101,320,320,
4357.,4855,312,312,
4607.,4248,304,304,
5273.,2918,300,300,
B-HORSE RANCH CREEK S ROADEDGE, 4 , 1 , 0 ,0
4200.,5507,318,318,
4262.,4829,312,312,
4506.,4207,304,304,
5184.,2881,300,300,
B-I-15 North Road Edge, 5 , 1 , 0 ,0
3183.,1172,300,300,
3190.,1474,300,300,
3272.,1560,310,310,
3274.,1678,326,326,
3249.,1833,316,316,
3274.,1935,323,323,
3239.,2043,314,314,
3266.,2135,321,321,
3212.,2390,300,300,
B-I-15 North Road Edge, 6 , 1 , 0 ,0
3212.,2390,300,300,
3197.,2587,300,300,
3196.,2838,300,300,
3283.,4305,300,300,
3282.,4304,305,305,
3248.,4828,310,310,
3309.,7185,330,330,
3305.,7313,330,330,
3254.,7316,340,340,
3166.,7863,356,356,
B-I-15 North Road Edge, 7 , 1 , 0 ,0
3166.,7863,356,356,
3101.,8228,360,360,
2787.,9316,360,360,
2480.,9962,365,365,
B-Hill 2, 8 , 2 , 0 ,0
3283.,1669,325,325,
3895.,1673,274,274,
3489.,1996,320,320,
B-Hill 3, 9 , 1 , 0 ,0
3516.,2508,290,290,
3445.,2667,316,316,
3375.,2785,290,290,
B-SOUND WALL, 10 , 2 , 0 ,0
4752.,5457,349,359,
4618.,5440,349,359,
4631.,5202,346,356,
4652.,4991,343,353,
4729.,4698,337,347,
4834.,4455,335,345,
4977.,4521,334,344,
R, 1 , 67 ,500
4632,5430,353.,
R, 2 , 67 ,500
4767,5445,355.,
R, 3 , 67 ,500
4978,5478,358.,
R, 4 , 67 ,500
5219,5553,360.,
```

```
R, 5 , 67 ,500
4642,5246,351.,
R, 6 , 67 ,500
4926,5290,352.,
R, 7 , 67 ,500
5036,5273,354.,Rec Area
R, 8 , 67 ,500
5283,5340,357.,
R, 9 , 67 ,500
4659,5079,348.,
R, 10 , 67 ,500
4959,5144,349.,
R, 11 , 67 ,500
5230,5241,353.,
R, 12 , 67 ,500
5422,5267,357.,
R, 13 , 67 ,500
4702,4867,344.,
R, 14 , 67 ,500
5065,4984,350.,
R, 15 , 67 ,500
5305,5072,353.,
R, 16 , 67 ,500
5518,5114,354.,
R, 17 , 67 ,500
4753,4680,341.,
R, 18 , 67 ,500
5130,4833,345.,
R, 19 , 67 ,500
5395,4989,350.,
R, 20 , 67 ,500
5582,5019,354.,
R, 21 , 67 ,500
4836,4481,340.,
R, 22 , 67 ,500
5105,4599,345.,
R, 23 , 67 ,500
5415,4759,350.,
R, 24 , 67 ,500
5585,4855,352.,
D, 4.5
ALL,ALL
K,-3
ALL,2,3,4,6,7,8,10,11,12,14,15,16,18,19,20,22,23,24
C,C
```

SOUND32 - RELEASE 07/30/91

TITLE:
CAMPUS PARK-MULTI FAMILY 3 MITIGATED

EFFECTIVENESS / COST RATIOS
****

BAR ELE	0	1	2	3	4	5	6	7	
1	-	0.*							B1 P1
2	-	0.*							B1 P2
3	-	0.*							B1 P3
4	-	0.*							B1 P4
5	-	0.*							B1 P5
6	-	0.*							B1 P6
7	-	0.*							B1 P7
8	-	0.*							B1 P8
9	-	0.*							B1 P9
10	-	0.*							B1 P10
11	-	0.*							B2 P1
12	-	0.*							B3 P1
13	-	0.*							B3 P2
14	-	0.*							B3 P3
15	-	0.*							B3 P4
16	-	0.*							B3 P5
17	-	0.*							B4 P1
18	-	0.*							B4 P2
19	-	0.*							B4 P3
20	-	0.*							B5 P1
21	-	0.*							B5 P2
22	-	0.*							B5 P3
23	-	0.*							B5 P4
24	-	0.*							B5 P5
25	-	0.*							B5 P6
26	-	0.*							B5 P7
27	-	0.*							B5 P8
28	-	0.*							B6 P1
29	-	0.*							B6 P2
30	-	0.*							B6 P3
31	-	0.*							B6 P4
32	-	0.*							B6 P5
33	-	0.*							B6 P6
34	-	0.*							B6 P7
35	-	0.*							B6 P8
36	-	0.*							B6 P9
37	-	0.*							B7 P1
38	-	0.*							B7 P2
39	-	0.*							B7 P3
40	-	0.*							B8 P1
41	-	0.*							B8 P2
42	-	0.*							B9 P1
43	-	0.*							B9 P2

44	-	0.*							B10 P1
45	-	0.*							B10 P2
46	-	0.*							B10 P3
47	-	0.*							B10 P4
48	-	0.*							B10 P5
49	-	0.*							B10 P6

0 1 2 3 4 5 6 7

1

BARRIER DATA
****

BAR ELE	0	1	BARRIER HEIGHTS 2	3	4	5	6	7	BAR ID	LENGTH	TYPE
1	-	0.*							B1 P1	670.9	BERM
2	-	0.*							B1 P2	315.4	BERM
3	-	0.*							B1 P3	377.6	BERM
4	-	0.*							B1 P4	445.6	BERM
5	-	0.*							B1 P5	639.6	BERM
6	-	0.*							B1 P6	454.6	BERM
7	-	0.*							B1 P7	441.4	BERM
8	-	0.*							B1 P8	2602.6	BERM
9	-	0.*							B1 P9	1367.4	BERM
10	-	0.*							B1 P10	1578.6	BERM
11	-	0.*							B2 P1	250.7	BERM
12	-	0.*							B3 P1	751.6	BERM
13	-	0.*							B3 P2	408.3	BERM
14	-	0.*							B3 P3	249.7	BERM
15	-	0.*							B3 P4	656.5	BERM
16	-	0.*							B3 P5	1487.4	BERM
17	-	0.*							B4 P1	680.9	BERM
18	-	0.*							B4 P2	668.2	BERM
19	-	0.*							B4 P3	1489.3	BERM
20	-	0.*							B5 P1	302.1	BERM
21	-	0.*							B5 P2	119.2	BERM
22	-	0.*							B5 P3	119.1	BERM
23	-	0.*							B5 P4	157.3	BERM
24	-	0.*							B5 P5	105.3	BERM
25	-	0.*							B5 P6	113.9	BERM
26	-	0.*							B5 P7	96.1	BERM
27	-	0.*							B5 P8	261.5	BERM
28	-	0.*							B6 P1	197.6	BERM
29	-	0.*							B6 P2	251.0	BERM
30	-	0.*							B6 P3	1469.6	BERM
31	-	0.*							B6 P4	5.2	BERM
32	-	0.*							B6 P5	525.1	BERM
33	-	0.*							B6 P6	2357.9	BERM
34	-	0.*							B6 P7	128.1	BERM
35	-	0.*							B6 P8	52.1	BERM
36	-	0.*							B6 P9	554.3	BERM
37	-	0.*							B7 P1	370.8	BERM
38	-	0.*							B7 P2	1132.4	BERM
39	-	0.*							B7 P3	715.3	BERM
40	-	0.*							B8 P1	614.1	MASONRY

41	-	0.*	B8 P2	520.8	MASONRY
42	-	0.*	B9 P1	176.1	BERM
43	-	0.*	B9 P2	139.6	BERM
44	-	10.*	B10 P1	135.1	MASONRY
45	-	10.*	B10 P2	238.4	MASONRY
46	-	10.*	B10 P3	212.1	MASONRY
47	-	10.*	B10 P4	303.0	MASONRY
48	-	10.*	B10 P5	264.7	MASONRY
49	-	10.*	B10 P6	157.5	MASONRY

0 1 2 3 4 5 6 7

1

REC	REC ID	DNL	PEOPLE	LEQ(CAL)
1	R-1	67.	500.	59.0
2	R-2	67.	500.	59.0
3	R-3	67.	500.	58.4
4	R-4	67.	500.	57.2
5	R-5	67.	500.	59.7
6	R-6	67.	500.	58.4
7	Rec Area	67.	500.	58.0
8	R-8	67.	500.	56.9
9	R-9	67.	500.	59.4
10	R-10	67.	500.	58.1
11	R-11	67.	500.	57.1
12	R-12	67.	500.	56.3
13	R-13	67.	500.	59.4
14	R-14	67.	500.	57.8
15	R-15	67.	500.	56.7
16	R-16	67.	500.	55.9
17	R-17	67.	500.	59.6
18	R-18	67.	500.	57.4
19	R-19	67.	500.	56.3
20	R-20	67.	500.	55.6
21	R-21	67.	500.	59.4
22	R-22	67.	500.	57.6
23	R-23	67.	500.	56.3
24	R-24	67.	500.	55.6

BARRIER TYPE	COST
BERM	0.
MASONRY	114034.
MASONRY/JERSEY	0.
CONCRETE	0.

TOTAL COST = $ 114000.

BARRIER HEIGHT INDEX FOR EACH BARRIER SECTION

1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1

CORRESPONDING BARRIER HEIGHTS FOR EACH SECTION

0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.
0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.10.10.10.10.10.

```
CAMPUS PARK-MULTI FAMILY 3 MITIGATED SECOND FLOOR
T-PEAK HOUR TRAFFIC CONDITIONS, 1
 11295 , 65 , 377 , 65 , 879 , 65
T-PEAK HOUR TRAFFIC CONDITIONS, 2
 11295 , 65 , 377 , 65 , 879 , 65
T-PEAK HOUR TRAFFIC CONDITIONS, 3
 1094 , 40 , 23 , 40 , 23 , 40
T-PEAK HOUR TRAFFIC CONDITIONS, 4
 1536 , 40 , 32 , 40 , 32 , 40
T-PEAK HOUR TRAFFIC CONDITIONS, 5
 1997 , 40 , 42 , 40 , 42 , 40
L-I-15 NORTH, 1
N,2460.,9892,362,
N,2718.,9281,352,
N,2823.,8986,347,
N,2938.,8615,343,
N,3051.,8176,375,
N,3112.,7863,337,
N,3165.,7540,337,
N,3214.,7084,330,
N,3241.,6643,324,
N,3248.,5980,322,
N,3196.,4029,300,
N,3155.,2667,300,
N,3119.,1088,290,
L-I-15 SOUTH, 2
N,2346.,9849,370,
N,2603.,9238,350,
N,2712.,8945,346,
N,2823.,8585,343,
N,2934.,8154,341,
N,2996.,7840,337,
N,3047.,7527,334,
N,3096.,7077,327,
N,3123.,6636,325,
N,3129.,5979,322,
N,3078.,4032,300,
N,3037.,2670,301,
N,2990.,1092,290,
L-HORSE RANCH CREEK SEGMENT 2, 3
N,4161.,6503,350,
N,4244.,5507,318,
L-HORSE RANCH CREEK SEGMENT 3, 4
N,4244.,5507,318,
N,4304.,4842,312,
N,4554.,4231,310,
L-HORSE RANCH CREEK SEGMENT 4, 5
N,4554.,4231,312,
N,5223.,2898,300,
B-I-15 SOUTH ROADEDGE, 1 , 1 , 0 ,0
2366.,9859,370,370,
2638.,9246,350,350,
2744.,8949,346,346,
2858.,8589,343,343,
2971.,8158,341,341,
3081.,7528,334,334,
3129.,7076,327,327,
3148.,6635,325,325,
3095.,4033,314,314,
3066.,2666,303,303,
3030.,1088,280,280,
B-HORSE RANCH CREEK 1 ROADADGE, 2 , 1 , 0 ,0
4208.,6504,350,350,
```

```
4261.,6259,350,350,
B-HORSE RANCH CREEK 2 ROADEDGE, 3 , 1 , 0 ,0
4261.,6259,350,350,
4299.,5509,318,318,
4315.,5101,320,320,
4357.,4855,312,312,
4607.,4248,304,304,
5273.,2918,300,300,
B-HORSE RANCH CREEK S ROADEDGE, 4 , 1 , 0 ,0
4200.,5507,318,318,
4262.,4829,312,312,
4506.,4207,304,304,
5184.,2881,300,300,
B-I-15 North Road Edge, 5 , 1 , 0 ,0
3183.,1172,300,300,
3190.,1474,300,300,
3272.,1560,310,310,
3274.,1678,326,326,
3249.,1833,316,316,
3274.,1935,323,323,
3239.,2043,314,314,
3266.,2135,321,321,
3212.,2390,300,300,
B-I-15 North Road Edge, 6 , 1 , 0 ,0
3212.,2390,300,300,
3197.,2587,300,300,
3196.,2838,300,300,
3283.,4305,300,300,
3282.,4304,305,305,
3248.,4828,310,310,
3309.,7185,330,330,
3305.,7313,330,330,
3254.,7316,340,340,
3166.,7863,356,356,
B-I-15 North Road Edge, 7 , 1 , 0 ,0
3166.,7863,356,356,
3101.,8228,360,360,
2787.,9316,360,360,
2480.,9962,365,365,
B-Hill 2, 8 , 2 , 0 ,0
3283.,1669,325,325,
3895.,1673,274,274,
3489.,1996,320,320,
B-Hill 3, 9 , 1 , 0 ,0
3516.,2508,290,290,
3445.,2667,316,316,
3375.,2785,290,290,
B-SOUND WALL, 10 , 2 , 0 ,0
4752.,5457,349,359,
4618.,5440,349,359,
4631.,5202,346,356,
4652.,4991,343,353,
4729.,4698,337,347,
4834.,4455,335,345,
4977.,4521,334,344,
R, 1 , 67 ,500
4632,5430,363.,
R, 2 , 67 ,500
4767,5445,365.,
R, 3 , 67 ,500
4978,5478,368.,
R, 4 , 67 ,500
5219,5553,370.,
```

```
R, 5 , 67 ,500
4642,5246,361.,
R, 6 , 67 ,500
4926,5290,362.,
R, 7 , 67 ,500
5036,5273,364.,Rec Area
R, 8 , 67 ,500
5283,5340,367.,
R, 9 , 67 ,500
4659,5079,358.,
R, 10 , 67 ,500
4959,5144,359.,
R, 11 , 67 ,500
5230,5241,363.,
R, 12 , 67 ,500
5422,5267,367.,
R, 13 , 67 ,500
4702,4867,354.,
R, 14 , 67 ,500
5065,4984,360.,
R, 15 , 67 ,500
5305,5072,363.,
R, 16 , 67 ,500
5518,5114,364.,
R, 17 , 67 ,500
4753,4680,351.,
R, 18 , 67 ,500
5130,4833,355.,
R, 19 , 67 ,500
5395,4989,360.,
R, 20 , 67 ,500
5582,5019,364.,
R, 21 , 67 ,500
4836,4481,350.,
R, 22 , 67 ,500
5105,4599,355.,
R, 23 , 67 ,500
5415,4759,360.,
R, 24 , 67 ,500
5585,4855,362.,
K,-3
ALL,2,3,4,6,7,8,10,11,12,14,15,16,18,19,20,22,23,24
C,C
```

SOUND32 - RELEASE 07/30/91

TITLE:
CAMPUS PARK-MULTI FAMILY 3 MITIGATED SECOND FLOOR

EFFECTIVENESS / COST RATIOS
****

BAR ELE	0	1	2	3	4	5	6	7	
1	-	0.*							B1 P1
2	-	0.*							B1 P2
3	-	0.*							B1 P3
4	-	0.*							B1 P4
5	-	0.*							B1 P5
6	-	0.*							B1 P6
7	-	0.*							B1 P7
8	-	0.*							B1 P8
9	-	0.*							B1 P9
10	-	0.*							B1 P10
11	-	0.*							B2 P1
12	-	0.*							B3 P1
13	-	0.*							B3 P2
14	-	0.*							B3 P3
15	-	0.*							B3 P4
16	-	0.*							B3 P5
17	-	0.*							B4 P1
18	-	0.*							B4 P2
19	-	0.*							B4 P3
20	-	0.*							B5 P1
21	-	0.*							B5 P2
22	-	0.*							B5 P3
23	-	0.*							B5 P4
24	-	0.*							B5 P5
25	-	0.*							B5 P6
26	-	0.*							B5 P7
27	-	0.*							B5 P8
28	-	0.*							B6 P1
29	-	0.*							B6 P2
30	-	0.*							B6 P3
31	-	0.*							B6 P4
32	-	0.*							B6 P5
33	-	0.*							B6 P6
34	-	0.*							B6 P7
35	-	0.*							B6 P8
36	-	0.*							B6 P9
37	-	0.*							B7 P1
38	-	0.*							B7 P2
39	-	0.*							B7 P3
40	-	0.*							B8 P1
41	-	0.*							B8 P2
42	-	0.*							B9 P1
43	-	0.*							B9 P2

44	-	0.*	B10 P1
45	-	0.*	B10 P2
46	-	0.*	B10 P3
47	-	0.*	B10 P4
48	-	0.*	B10 P5
49	-	0.*	B10 P6

0 1 2 3 4 5 6 7

1

BARRIER DATA
****

BAR ELE		BARRIER HEIGHTS 0 1 2 3 4 5 6 7	BAR ID	LENGTH	TYPE
1	-	0.*	B1 P1	670.9	BERM
2	-	0.*	B1 P2	315.4	BERM
3	-	0.*	B1 P3	377.6	BERM
4	-	0.*	B1 P4	445.6	BERM
5	-	0.*	B1 P5	639.6	BERM
6	-	0.*	B1 P6	454.6	BERM
7	-	0.*	B1 P7	441.4	BERM
8	-	0.*	B1 P8	2602.6	BERM
9	-	0.*	B1 P9	1367.4	BERM
10	-	0.*	B1 P10	1578.6	BERM
11	-	0.*	B2 P1	250.7	BERM
12	-	0.*	B3 P1	751.6	BERM
13	-	0.*	B3 P2	408.3	BERM
14	-	0.*	B3 P3	249.7	BERM
15	-	0.*	B3 P4	656.5	BERM
16	-	0.*	B3 P5	1487.4	BERM
17	-	0.*	B4 P1	680.9	BERM
18	-	0.*	B4 P2	668.2	BERM
19	-	0.*	B4 P3	1489.3	BERM
20	-	0.*	B5 P1	302.1	BERM
21	-	0.*	B5 P2	119.2	BERM
22	-	0.*	B5 P3	119.1	BERM
23	-	0.*	B5 P4	157.3	BERM
24	-	0.*	B5 P5	105.3	BERM
25	-	0.*	B5 P6	113.9	BERM
26	-	0.*	B5 P7	96.1	BERM
27	-	0.*	B5 P8	261.5	BERM
28	-	0.*	B6 P1	197.6	BERM
29	-	0.*	B6 P2	251.0	BERM
30	-	0.*	B6 P3	1469.6	BERM
31	-	0.*	B6 P4	5.2	BERM
32	-	0.*	B6 P5	525.1	BERM
33	-	0.*	B6 P6	2357.9	BERM
34	-	0.*	B6 P7	128.1	BERM
35	-	0.*	B6 P8	52.1	BERM
36	-	0.*	B6 P9	554.3	BERM
37	-	0.*	B7 P1	370.8	BERM
38	-	0.*	B7 P2	1132.4	BERM
39	-	0.*	B7 P3	715.3	BERM
40	-	0.*	B8 P1	614.1	MASONRY

41	-	0.*	B8 P2	520.8	MASONRY
42	-	0.*	B9 P1	176.1	BERM
43	-	0.*	B9 P2	139.6	BERM
44	-	10.*	B10 P1	135.1	MASONRY
45	-	10.*	B10 P2	238.4	MASONRY
46	-	10.*	B10 P3	212.1	MASONRY
47	-	10.*	B10 P4	303.0	MASONRY
48	-	10.*	B10 P5	264.7	MASONRY
49	-	10.*	B10 P6	157.5	MASONRY

0 1 2 3 4 5 6 7

1

REC	REC ID	DNL	PEOPLE	LEQ(CAL)
1	R-1	67.	500.	68.3
2	R-2	67.	500.	64.1
3	R-3	67.	500.	63.2
4	R-4	67.	500.	62.1
5	R-5	67.	500.	68.1
6	R-6	67.	500.	63.1
7	Rec Area	67.	500.	62.7
8	R-8	67.	500.	61.8
9	R-9	67.	500.	67.6
10	R-10	67.	500.	62.7
11	R-11	67.	500.	61.9
12	R-12	67.	500.	61.3
13	R-13	67.	500.	67.4
14	R-14	67.	500.	62.4
15	R-15	67.	500.	61.4
16	R-16	67.	500.	60.7
17	R-17	67.	500.	67.3
18	R-18	67.	500.	62.1
19	R-19	67.	500.	61.1
20	R-20	67.	500.	60.5
21	R-21	67.	500.	67.2
22	R-22	67.	500.	62.4
23	R-23	67.	500.	61.2
24	R-24	67.	500.	60.4

BARRIER TYPE	COST
BERM	0.
MASONRY	114034.
MASONRY/JERSEY	0.
CONCRETE	0.
TOTAL COST = $	114000.

BARRIER HEIGHT INDEX FOR EACH BARRIER SECTION

1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1

CORRESPONDING BARRIER HEIGHTS FOR EACH SECTION

0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.
0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.10.10.10.10.10.10.

```
CAMPUS PARK-MULTI FAMILY 4 UNMITIGATED
T-PEAK HOUR TRAFFIC CONDITIONS, 1
 11295 , 65 , 377 , 65 , 879 , 65
T-PEAK HOUR TRAFFIC CONDITIONS, 2
 11295 , 65 , 377 , 65 , 879 , 65
T-PEAK HOUR TRAFFIC CONDITIONS, 3
 1306 , 40 , 27 , 40 , 27 , 40
T-PEAK HOUR TRAFFIC CONDITIONS, 4
 720 , 45 , 15 , 45 , 15 , 45
T-PEAK HOUR TRAFFIC CONDITIONS, 5
 989 , 45 , 21 , 45 , 21 , 45
T-PEAK HOUR TRAFFIC CONDITIONS, 6
 3072 , 55 , 64 , 55 , 64 , 55
L-I-15 NORTH, 1
N,2460.,9892,385,
N,2718.,9281,385,
N,2823.,8986,385,
N,2938.,8615,381,
N,3051.,8176,375,
N,3112.,7863,360,
N,3165.,7540,347,
N,3214.,7084,330,
N,3241.,6643,324,
N,3248.,5980,322,
N,3196.,4029,300,
N,3155.,2667,300,
N,3119.,1088,290,
L-I-15 SOUTH, 2
N,2346.,9849,385,
N,2603.,9238,385,
N,2712.,8945,385,
N,2823.,8585,381,
N,2934.,8154,375,
N,2996.,7840,360,
N,3047.,7527,347,
N,3096.,7077,327,
N,3123.,6636,325,
N,3129.,5979,322,
N,3078.,4032,300,
N,3037.,2670,301,
N,2990.,1092,290,
L-HORSE RANCH CREEK SEGMENT 7, 3
N,6445.,558,281,
N,6788.,-617,279,
L-PALA MESA DRIVE, 4
N,4843.,406,287,
N,5158.,-330,267,
N,5403.,-919,272,
N,5392.,-1364,272,
L-PANKEY PLACE, 5
N,5158.,-330,267,
N,5890.,299,270,
N,6436.,598,280,
L-SR 76, 6
N,4872.,-1133,270,
N,5403.,-919,272,
N,5988.,-780,274,
N,6801.,-668,277,
B-I-15 SOUTH ROADEDGE, 1 , 1 , 0 ,0
2366.,9859,370,370,
2638.,9246,350,350,
2744.,8949,346,346,
2858.,8589,343,343,
```

```
2971.,8158,341,341,
3081.,7528,334,334,
3129.,7076,327,327,
3148.,6635,325,325,
3095.,4033,314,314,
3066.,2666,303,303,
3030.,1088,280,280,
B-HORSE RANCH CREEK ROADEDGE, 2 , 1 , 0 ,0
6413.,540,281,281,
6733.,-622,279,279,
B-I-15 North Road Edge, 3 , 1 , 0 ,0
3183.,1172,300,300,
3190.,1474,300,300,
3272.,1560,310,310,
3274.,1678,326,326,
3249.,1833,316,316,
3274.,1935,323,323,
3239.,2043,314,314,
3266.,2135,321,321,
3212.,2390,300,300,
B-I-15 North Road Edge, 4 , 1 , 0 ,0
3212.,2390,300,300,
3197.,2587,300,300,
3196.,2838,300,300,
3283.,4305,300,300,
3282.,4304,305,305,
3248.,4828,310,310,
3309.,7185,330,330,
3305.,7313,330,330,
3254.,7316,340,340,
3166.,7863,356,356,
B-I-15 North Road Edge, 5 , 1 , 0 ,0
3166.,7863,356,356,
3101.,8228,360,360,
2787.,9316,360,360,
2480.,9962,365,365,
B-SR-76 Road Edge, 6 , 1 , 0 ,0
5419.,-846,272,272,
5988.,-751,274,274,
6791.,-638,277,277,
B-Pala Mesa Drive Road Edge 1, 7 , 1 , 0 ,0
4864.,415,287,287,
5175.,-293,267,267,
B-Pala Mesa Drive Road Edge 2, 8 , 1 , 0 ,0
5196.,-353,267,267,
5411.,-846,272,272,
B-Hill 2, 9 , 2 , 0 ,0
3283.,1669,325,325,
3895.,1673,274,274,
3489.,1996,320,320,
B-Hill 3, 10 , 1 , 0 ,0
3516.,2508,290,290,
3445.,2667,316,316,
3375.,2785,290,290,
R, 1 , 67 ,500
5250,-402,276.,
R, 2 , 67 ,500
5313,-326,276.,
R, 3 , 67 ,500
5422,-257,276.,
R, 4 , 67 ,500
5510,-168,276.,
R, 5 , 67 ,500
```

```
5649,-30,279.,
R, 6 , 67 ,500
5795,112,280.,
R, 7 , 67 ,500
5282,-473,276.,
R, 8 , 67 ,500
5485,-397,276.,
R, 9 , 67 ,500
5560,-302,277.,
R, 10 , 67 ,500
5680,-291,280.,Rec Area
R, 11 , 67 ,500
5802,-210,282.,
R, 12 , 67 ,500
5899,-168,283.,
R, 13 , 67 ,500
5328,-578,277.,
R, 14 , 67 ,500
5556,-515,277.,
R, 15 , 67 ,500
5691,-457,280.,
R, 16 , 67 ,500
5808,-367,282.,
R, 17 , 67 ,500
5373,-682,279.,
R, 18 , 67 ,500
5512,-621,279.,
R, 19 , 67 ,500
5666,-565,280.,
R, 20 , 67 ,500
5817,-516,281.,
R, 21 , 67 ,500
5419,-778,279.,
R, 22 , 67 ,500
5547,-725,280.,
R, 23 , 67 ,500
5670,-696,280.,
R, 24 , 67 ,500
5779,-677,282.,
R, 25 , 67 ,500
5901,-665,282.,
D, 4.5
ALL,ALL
K,-3
6  ,17,18,19,20
C,C
```

SOUND32 - RELEASE 07/30/91

TITLE:
CAMPUS PARK-MULTI FAMILY 4 UNMITIGATED

EFFECTIVENESS / COST RATIOS
****

BAR ELE	0	1	2	3	4	5	6	7	
1	-	0.*							B1 P1
2	-	0.*							B1 P2
3	-	0.*							B1 P3
4	-	0.*							B1 P4
5	-	0.*							B1 P5
6	-	0.*							B1 P6
7	-	0.*							B1 P7
8	-	0.*							B1 P8
9	-	0.*							B1 P9
10	-	0.*							B1 P10
11	-	0.*							B2 P1
12	-	0.*							B3 P1
13	-	0.*							B3 P2
14	-	0.*							B3 P3
15	-	0.*							B3 P4
16	-	0.*							B3 P5
17	-	0.*							B3 P6
18	-	0.*							B3 P7
19	-	0.*							B3 P8
20	-	0.*							B4 P1
21	-	0.*							B4 P2
22	-	0.*							B4 P3
23	-	0.*							B4 P4
24	-	0.*							B4 P5
25	-	0.*							B4 P6
26	-	0.*							B4 P7
27	-	0.*							B4 P8
28	-	0.*							B4 P9
29	-	0.*							B5 P1
30	-	0.*							B5 P2
31	-	0.*							B5 P3
32	-	0.*							B6 P1
33	-	0.*							B6 P2
34	-	0.*							B7 P1
35	-	0.*							B8 P1
36	-	0.*							B9 P1
37	-	0.*							B9 P2
38	-	0.*							B10 P1
39	-	0.*							B10 P2
	0	1	2	3	4	5	6	7	

1

BARRIER DATA
****

BAR ELE	0	1	BARRIER HEIGHTS 2	3	4	5	6	7	BAR ID	LENGTH	TYPE
1	-	0.*							B1 P1	670.9	BERM
2	-	0.*							B1 P2	315.4	BERM
3	-	0.*							B1 P3	377.6	BERM
4	-	0.*							B1 P4	445.6	BERM
5	-	0.*							B1 P5	639.6	BERM
6	-	0.*							B1 P6	454.6	BERM
7	-	0.*							B1 P7	441.4	BERM
8	-	0.*							B1 P8	2602.6	BERM
9	-	0.*							B1 P9	1367.4	BERM
10	-	0.*							B1 P10	1578.6	BERM
11	-	0.*							B2 P1	1205.3	BERM
12	-	0.*							B3 P1	302.1	BERM
13	-	0.*							B3 P2	119.2	BERM
14	-	0.*							B3 P3	119.1	BERM
15	-	0.*							B3 P4	157.3	BERM
16	-	0.*							B3 P5	105.3	BERM
17	-	0.*							B3 P6	113.9	BERM
18	-	0.*							B3 P7	96.1	BERM
19	-	0.*							B3 P8	261.5	BERM
20	-	0.*							B4 P1	197.6	BERM
21	-	0.*							B4 P2	251.0	BERM
22	-	0.*							B4 P3	1469.6	BERM
23	-	0.*							B4 P4	5.2	BERM
24	-	0.*							B4 P5	525.1	BERM
25	-	0.*							B4 P6	2357.9	BERM
26	-	0.*							B4 P7	128.1	BERM
27	-	0.*							B4 P8	52.1	BERM
28	-	0.*							B4 P9	554.3	BERM
29	-	0.*							B5 P1	370.8	BERM
30	-	0.*							B5 P2	1132.4	BERM
31	-	0.*							B5 P3	715.3	BERM
32	-	0.*							B6 P1	576.9	BERM
33	-	0.*							B6 P2	810.9	BERM
34	-	0.*							B7 P1	773.6	BERM
35	-	0.*							B8 P1	537.9	BERM
36	-	0.*							B9 P1	614.1	MASONRY
37	-	0.*							B9 P2	520.8	MASONRY
38	-	0.*							B10 P1	176.1	BERM
39	-	0.*							B10 P2	139.6	BERM
		0	1	2	3	4	5	6	7		

1

REC	REC ID	DNL	PEOPLE	LEQ(CAL)
1	R-1	67.	500.	67.5
2	R-2	67.	500.	65.2
3	R-3	67.	500.	63.8
4	R-4	67.	500.	64.2

```
 5  R-5        67.    500.   64.8
 6  R-6        67.    500.   65.5
 7  R-7        67.    500.   66.9
 8  R-8        67.    500.   61.3
 9  R-9        67.    500.   60.7
10  Rec Area   67.    500.   59.9
11  R-11       67.    500.   59.6
12  R-12       67.    500.   59.4
13  R-13       67.    500.   66.9
14  R-14       67.    500.   60.9
15  R-15       67.    500.   61.0
16  R-16       67.    500.   60.2
17  R-17       67.    500.   66.6
18  R-18       67.    500.   61.2
19  R-19       67.    500.   60.2
20  R-20       67.    500.   59.7
21  R-21       67.    500.   69.5
22  R-22       67.    500.   66.1
23  R-23       67.    500.   65.6
24  R-24       67.    500.   65.8
25  R-25       67.    500.   66.3
----------------------------------

BARRIER TYPE                 COST
----------------------------------
BERM                          0.
MASONRY                       0.
MASONRY/JERSEY                0.
CONCRETE                      0.
----------------------------------
        TOTAL COST = $        0.

BARRIER HEIGHT INDEX FOR EACH BARRIER SECTION  1   1   1   1   1   1   1   1   1   1   1
  1   1   1   1   1   1   1   1   1   1   1   1   1   1
  1   1   1   1   1   1   1   1   1   1   1   1   1   1
CORRESPONDING BARRIER HEIGHTS FOR EACH SECTION 0.  0.  0.  0.  0.  0.  0.  0.  0.  0.  0.
 0.  0.  0.  0.  0.  0.  0.  0.  0.  0.  0.  0.  0.  0.
 0.  0.  0.  0.  0.  0.  0.  0.  0.  0.  0.  0.  0.  0.
```

```
CAMPUS PARK-MULTI FAMILY 4 MITIGATED
T-PEAK HOUR TRAFFIC CONDITIONS, 1
 11295 , 65 , 377 , 65 , 879 , 65
T-PEAK HOUR TRAFFIC CONDITIONS, 2
 11295 , 65 , 377 , 65 , 879 , 65
T-PEAK HOUR TRAFFIC CONDITIONS, 3
 1306 , 40 , 27 , 40 , 27 , 40
T-PEAK HOUR TRAFFIC CONDITIONS, 4
 720 , 45 , 15 , 45 , 15 , 45
T-PEAK HOUR TRAFFIC CONDITIONS, 5
 989 , 45 , 21 , 45 , 21 , 45
T-PEAK HOUR TRAFFIC CONDITIONS, 6
 3072 , 55 , 64 , 55 , 64 , 55
L-I-15 NORTH, 1
N,2460.,9892,385,
N,2718.,9281,385,
N,2823.,8986,385,
N,2938.,8615,381,
N,3051.,8176,375,
N,3112.,7863,360,
N,3165.,7540,347,
N,3214.,7084,330,
N,3241.,6643,324,
N,3248.,5980,322,
N,3196.,4029,300,
N,3155.,2667,300,
N,3119.,1088,290,
L-I-15 SOUTH, 2
N,2346.,9849,385,
N,2603.,9238,385,
N,2712.,8945,385,
N,2823.,8585,381,
N,2934.,8154,375,
N,2996.,7840,360,
N,3047.,7527,347,
N,3096.,7077,327,
N,3123.,6636,325,
N,3129.,5979,322,
N,3078.,4032,300,
N,3037.,2670,301,
N,2990.,1092,290,
L-HORSE RANCH CREEK SEGMENT 7, 3
N,6445.,558,281,
N,6788.,-617,279,
L-PALA MESA DRIVE, 4
N,4843.,406,287,
N,5158.,-330,267,
N,5403.,-919,272,
N,5392.,-1364,272,
L-PANKEY PLACE, 5
N,5158.,-330,267,
N,5890.,299,270,
N,6436.,598,280,
L-SR 76, 6
N,4872.,-1133,270,
N,5403.,-919,272,
N,5988.,-780,274,
N,6801.,-668,277,
B-I-15 SOUTH ROADEDGE, 1 , 1 , 0 ,0
2366.,9859,370,370,
2638.,9246,350,350,
2744.,8949,346,346,
2858.,8589,343,343,
```

```
2971.,8158,341,341,
3081.,7528,334,334,
3129.,7076,327,327,
3148.,6635,325,325,
3095.,4033,314,314,
3066.,2666,303,303,
3030.,1088,280,280,
B-HORSE RANCH CREEK ROADEDGE, 2 , 1 , 0 ,0
6413.,540,281,281,
6733.,-622,279,279,
B-I-15 North Road Edge, 3 , 1 , 0 ,0
3183.,1172,300,300,
3190.,1474,300,300,
3272.,1560,310,310,
3274.,1678,326,326,
3249.,1833,316,316,
3274.,1935,323,323,
3239.,2043,314,314,
3266.,2135,321,321,
3212.,2390,300,300,
B-I-15 North Road Edge, 4 , 1 , 0 ,0
3212.,2390,300,300,
3197.,2587,300,300,
3196.,2838,300,300,
3283.,4305,300,300,
3282.,4304,305,305,
3248.,4828,310,310,
3309.,7185,330,330,
3305.,7313,330,330,
3254.,7316,340,340,
3166.,7863,356,356,
B-I-15 North Road Edge, 5 , 1 , 0 ,0
3166.,7863,356,356,
3101.,8228,360,360,
2787.,9316,360,360,
2480.,9962,365,365,
B-SR-76 Road Edge, 6 , 1 , 0 ,0
5419.,-846,272,272,
5988.,-751,274,274,
6791.,-638,277,277,
B-Pala Mesa Drive Road Edge 1, 7 , 1 , 0 ,0
4864.,415,287,287,
5175.,-293,267,267,
B-Pala Mesa Drive Road Edge 2, 8 , 1 , 0 ,0
5196.,-353,267,267,
5411.,-846,272,272,
B-Hill 2, 9 , 2 , 0 ,0
3283.,1669,325,325,
3895.,1673,274,274,
3489.,1996,320,320,
B-Hill 3, 10 , 1 , 0 ,0
3516.,2508,290,290,
3445.,2667,316,316,
3375.,2785,290,290,
B-Sound Wall Segment 1, 11 , 1 , 0 ,0
5878.,221,272,280,
5699.,45,274,282,
B-Sound Wall Segment 2, 12 , 2 , 0 ,0
5672.,17,274,282,
5459.,-194,272,280,
5383.,-262,272,280,
B-Sound Wall Segment 3, 13 , 2 , 0 ,0
5352.,-285,272,280,
```

```
5225.,-358,271,279,
5352.,-656,276,284,
5410.,-795,276,284,
5410.,-795,276,286,
5537.,-742,278,288,
5676.,-705,278,288,
5793.,-685,278,288,
5939.,-672,278,288,
5936.,-267,278,288,
R, 1 , 67 ,500
5250,-402,276.,
R, 2 , 67 ,500
5313,-326,276.,
R, 3 , 67 ,500
5422,-257,276.,
R, 4 , 67 ,500
5510,-168,276.,
R, 5 , 67 ,500
5649,-30,279.,
R, 6 , 67 ,500
5795,112,280.,
R, 7 , 67 ,500
5282,-473,276.,
R, 8 , 67 ,500
5485,-397,276.,
R, 9 , 67 ,500
5560,-302,277.,
R, 10 , 67 ,500
5680,-291,280.,Rec Area
R, 11 , 67 ,500
5802,-210,282.,
R, 12 , 67 ,500
5899,-168,283.,
R, 13 , 67 ,500
5328,-578,277.,
R, 14 , 67 ,500
5556,-515,277.,
R, 15 , 67 ,500
5691,-457,280.,
R, 16 , 67 ,500
5808,-367,282.,
R, 17 , 67 ,500
5373,-682,279.,
R, 18 , 67 ,500
5512,-621,279.,
R, 19 , 67 ,500
5666,-565,280.,
R, 20 , 67 ,500
5817,-516,281.,
R, 21 , 67 ,500
5419,-778,279.,
R, 22 , 67 ,500
5547,-725,280.,
R, 23 , 67 ,500
5670,-696,280.,
R, 24 , 67 ,500
5779,-677,282.,
R, 25 , 67 ,500
5901,-665,282.,
D, 4.5
ALL,ALL
K,-3
6  ,17,18,19,20
```

SOUND32 - RELEASE 07/30/91

TITLE:
CAMPUS PARK-MULTI FAMILY 4 MITIGATED

EFFECTIVENESS / COST RATIOS
****

BAR ELE	0	1	2	3	4	5	6	7	
1	-	0.*							B1 P1
2	-	0.*							B1 P2
3	-	0.*							B1 P3
4	-	0.*							B1 P4
5	-	0.*							B1 P5
6	-	0.*							B1 P6
7	-	0.*							B1 P7
8	-	0.*							B1 P8
9	-	0.*							B1 P9
10	-	0.*							B1 P10
11	-	0.*							B2 P1
12	-	0.*							B3 P1
13	-	0.*							B3 P2
14	-	0.*							B3 P3
15	-	0.*							B3 P4
16	-	0.*							B3 P5
17	-	0.*							B3 P6
18	-	0.*							B3 P7
19	-	0.*							B3 P8
20	-	0.*							B4 P1
21	-	0.*							B4 P2
22	-	0.*							B4 P3
23	-	0.*							B4 P4
24	-	0.*							B4 P5
25	-	0.*							B4 P6
26	-	0.*							B4 P7
27	-	0.*							B4 P8
28	-	0.*							B4 P9
29	-	0.*							B5 P1
30	-	0.*							B5 P2
31	-	0.*							B5 P3
32	-	0.*							B6 P1
33	-	0.*							B6 P2
34	-	0.*							B7 P1
35	-	0.*							B8 P1
36	-	0.*							B9 P1
37	-	0.*							B9 P2
38	-	0.*							B10 P1
39	-	0.*							B10 P2
40	-	0.*							B11 P1

41	-	0.*	B12 P1
42	-	0.*	B12 P2
43	-	0.*	B13 P1
44	-	0.*	B13 P2
45	-	0.*	B13 P3
46	-	0.*	B13 P4
47	-	0.*	B13 P5
48	-	0.*	B13 P6
49	-	0.*	B13 P7
50	-	0.*	B13 P8
51	-	0.*	B13 P9

0 1 2 3 4 5 6 7

1

BARRIER DATA
****

BAR ELE	0	1	BARRIER HEIGHTS 2	3	4	5	6	7	BAR ID	LENGTH	TYPE
1	-	0.*							B1 P1	670.9	BERM
2	-	0.*							B1 P2	315.4	BERM
3	-	0.*							B1 P3	377.6	BERM
4	-	0.*							B1 P4	445.6	BERM
5	-	0.*							B1 P5	639.6	BERM
6	-	0.*							B1 P6	454.6	BERM
7	-	0.*							B1 P7	441.4	BERM
8	-	0.*							B1 P8	2602.6	BERM
9	-	0.*							B1 P9	1367.4	BERM
10	-	0.*							B1 P10	1578.6	BERM
11	-	0.*							B2 P1	1205.3	BERM
12	-	0.*							B3 P1	302.1	BERM
13	-	0.*							B3 P2	119.2	BERM
14	-	0.*							B3 P3	119.1	BERM
15	-	0.*							B3 P4	157.3	BERM
16	-	0.*							B3 P5	105.3	BERM
17	-	0.*							B3 P6	113.9	BERM
18	-	0.*							B3 P7	96.1	BERM
19	-	0.*							B3 P8	261.5	BERM
20	-	0.*							B4 P1	197.6	BERM
21	-	0.*							B4 P2	251.0	BERM
22	-	0.*							B4 P3	1469.6	BERM
23	-	0.*							B4 P4	5.2	BERM
24	-	0.*							B4 P5	525.1	BERM
25	-	0.*							B4 P6	2357.9	BERM
26	-	0.*							B4 P7	128.1	BERM
27	-	0.*							B4 P8	52.1	BERM
28	-	0.*							B4 P9	554.3	BERM
29	-	0.*							B5 P1	370.8	BERM
30	-	0.*							B5 P2	1132.4	BERM
31	-	0.*							B5 P3	715.3	BERM
32	-	0.*							B6 P1	576.9	BERM
33	-	0.*							B6 P2	810.9	BERM
34	-	0.*							B7 P1	773.6	BERM
35	-	0.*							B8 P1	537.9	BERM

36	-	0.*	B9 P1	614.1	MASONRY
37	-	0.*	B9 P2	520.8	MASONRY
38	-	0.*	B10 P1	176.1	BERM
39	-	0.*	B10 P2	139.6	BERM
40	-	8.*	B11 P1	251.0	BERM
41	-	8.*	B12 P1	299.8	MASONRY
42	-	8.*	B12 P2	102.0	MASONRY
43	-	8.*	B13 P1	146.5	MASONRY
44	-	8.*	B13 P2	324.0	MASONRY
45	-	8.*	B13 P3	150.6	MASONRY
46	-	9.*	B13 P4	2.0	MASONRY
47	-	10.*	B13 P5	137.6	MASONRY
48	-	10.*	B13 P6	143.8	MASONRY
49	-	10.*	B13 P7	118.7	MASONRY
50	-	10.*	B13 P8	146.6	MASONRY
51	-	10.*	B13 P9	405.0	MASONRY

0 1 2 3 4 5 6 7

1

REC	REC ID	DNL	PEOPLE	LEQ(CAL)
1	R-1	67.	500.	59.8
2	R-2	67.	500.	59.9
3	R-3	67.	500.	59.6
4	R-4	67.	500.	58.7
5	R-5	67.	500.	59.9
6	R-6	67.	500.	59.5
7	R-7	67.	500.	59.0
8	R-8	67.	500.	58.6
9	R-9	67.	500.	58.5
10	Rec Area	67.	500.	58.2
11	R-11	67.	500.	58.1
12	R-12	67.	500.	58.1
13	R-13	67.	500.	58.8
14	R-14	67.	500.	58.8
15	R-15	67.	500.	58.6
16	R-16	67.	500.	58.4
17	R-17	67.	500.	58.5
18	R-18	67.	500.	57.9
19	R-19	67.	500.	57.5
20	R-20	67.	500.	57.3
21	R-21	67.	500.	59.5
22	R-22	67.	500.	58.4
23	R-23	67.	500.	57.7
24	R-24	67.	500.	59.0
25	R-25	67.	500.	59.1

BARRIER TYPE	COST
BERM	7280.
MASONRY	154357.
MASONRY/JERSEY	0.
CONCRETE	0.
TOTAL COST = $	162000.

BARRIER HEIGHT INDEX FOR EACH BARRIER SECTION

```
    1    1    1    1    1    1    1    1    1    1    1    1    1    1    1    1    1    1    1    1    1    1    1    1    1
    1    1    1    1    1    1    1    1    1    1    1    1    1    1    1    1    1    1    1    1    1    1    1    1    1
    1
CORRESPONDING BARRIER HEIGHTS FOR EACH SECTION
   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.
   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   8.   8.   8.   8.   8.   8.   9.  10.  10.  10.  10.
  10.
```

```
CAMPUS PARK-MULTI FAMILY 4 MITIGATED SECOND FLOOR
T-PEAK HOUR TRAFFIC CONDITIONS, 1
 11295 , 65 , 377 , 65 , 879 , 65
T-PEAK HOUR TRAFFIC CONDITIONS, 2
 11295 , 65 , 377 , 65 , 879 , 65
T-PEAK HOUR TRAFFIC CONDITIONS, 3
 1306 , 40 , 27 , 40 , 27 , 40
T-PEAK HOUR TRAFFIC CONDITIONS, 4
 720 , 45 , 15 , 45 , 15 , 45
T-PEAK HOUR TRAFFIC CONDITIONS, 5
 989 , 45 , 21 , 45 , 21 , 45
T-PEAK HOUR TRAFFIC CONDITIONS, 6
 3072 , 55 , 64 , 55 , 64 , 55
L-I-15 NORTH, 1
N,2460.,9892,385,
N,2718.,9281,385,
N,2823.,8986,385,
N,2938.,8615,381,
N,3051.,8176,375,
N,3112.,7863,360,
N,3165.,7540,347,
N,3214.,7084,330,
N,3241.,6643,324,
N,3248.,5980,322,
N,3196.,4029,300,
N,3155.,2667,300,
N,3119.,1088,290,
L-I-15 SOUTH, 2
N,2346.,9849,385,
N,2603.,9238,385,
N,2712.,8945,385,
N,2823.,8585,381,
N,2934.,8154,375,
N,2996.,7840,360,
N,3047.,7527,347,
N,3096.,7077,327,
N,3123.,6636,325,
N,3129.,5979,322,
N,3078.,4032,300,
N,3037.,2670,301,
N,2990.,1092,290,
L-HORSE RANCH CREEK SEGMENT 7, 3
N,6445.,558,281,
N,6788.,-617,279,
L-PALA MESA DRIVE, 4
N,4843.,406,287,
N,5158.,-330,267,
N,5403.,-919,272,
N,5392.,-1364,272,
L-PANKEY PLACE, 5
N,5158.,-330,267,
N,5890.,299,270,
N,6436.,598,280,
L-SR 76, 6
N,4872.,-1133,270,
N,5403.,-919,272,
N,5988.,-780,274,
N,6801.,-668,277,
B-I-15 SOUTH ROADEDGE, 1 , 1 , 0 ,0
2366.,9859,370,370,
2638.,9246,350,350,
2744.,8949,346,346,
2858.,8589,343,343,
```

```
2971.,8158,341,341,
3081.,7528,334,334,
3129.,7076,327,327,
3148.,6635,325,325,
3095.,4033,314,314,
3066.,2666,303,303,
3030.,1088,280,280,
B-HORSE RANCH CREEK ROADEDGE, 2 , 1 , 0 ,0
6413.,540,281,281,
6733.,-622,279,279,
B-I-15 North Road Edge, 3 , 1 , 0 ,0
3183.,1172,300,300,
3190.,1474,300,300,
3272.,1560,310,310,
3274.,1678,326,326,
3249.,1833,316,316,
3274.,1935,323,323,
3239.,2043,314,314,
3266.,2135,321,321,
3212.,2390,300,300,
B-I-15 North Road Edge, 4 , 1 , 0 ,0
3212.,2390,300,300,
3197.,2587,300,300,
3196.,2838,300,300,
3283.,4305,300,300,
3282.,4304,305,305,
3248.,4828,310,310,
3309.,7185,330,330,
3305.,7313,330,330,
3254.,7316,340,340,
3166.,7863,356,356,
B-I-15 North Road Edge, 5 , 1 , 0 ,0
3166.,7863,356,356,
3101.,8228,360,360,
2787.,9316,360,360,
2480.,9962,365,365,
B-SR-76 Road Edge, 6 , 1 , 0 ,0
5419.,-846,272,272,
5988.,-751,274,274,
6791.,-638,277,277,
B-Pala Mesa Drive Road Edge 1, 7 , 1 , 0 ,0
4864.,415,287,287,
5175.,-293,267,267,
B-Pala Mesa Drive Road Edge 2, 8 , 1 , 0 ,0
5196.,-353,267,267,
5411.,-846,272,272,
B-Hill 2, 9 , 2 , 0 ,0
3283.,1669,325,325,
3895.,1673,274,274,
3489.,1996,320,320,
B-Hill 3, 10 , 1 , 0 ,0
3516.,2508,290,290,
3445.,2667,316,316,
3375.,2785,290,290,
B-Sound Wall Segment 1, 11 , 1 , 0 ,0
5878.,221,272,280,
5699.,45,274,282,
B-Sound Wall Segment 2, 12 , 2 , 0 ,0
5672.,17,274,282,
5459.,-194,272,280,
5383.,-262,272,280,
B-Sound Wall Segment 3, 13 , 2 , 0 ,0
5352.,-285,272,280,
```

```
5225.,-358,271,279,
5352.,-656,276,284,
5410.,-795,276,284,
5410.,-795,276,286,
5537.,-742,278,288,
5676.,-705,278,288,
5793.,-685,278,288,
5939.,-672,278,288,
5936.,-267,278,288,
R, 1 , 67 ,500
5250,-402,286.,
R, 2 , 67 ,500
5313,-326,286.,
R, 3 , 67 ,500
5422,-257,286.,
R, 4 , 67 ,500
5510,-168,286.,
R, 5 , 67 ,500
5649,-30,289.,
R, 6 , 67 ,500
5795,112,290.,
R, 7 , 67 ,500
5282,-473,286.,
R, 8 , 67 ,500
5485,-397,286.,
R, 9 , 67 ,500
5560,-302,287.,
R, 10 , 67 ,500
5680,-291,290.,Rec Area
R, 11 , 67 ,500
5802,-210,292.,
R, 12 , 67 ,500
5899,-168,293.,
R, 13 , 67 ,500
5328,-578,287.,
R, 14 , 67 ,500
5556,-515,287.,
R, 15 , 67 ,500
5691,-457,290.,
R, 16 , 67 ,500
5808,-367,282.,
R, 17 , 67 ,500
5373,-682,292.,
R, 18 , 67 ,500
5512,-621,289.,
R, 19 , 67 ,500
5666,-565,290.,
R, 20 , 67 ,500
5817,-516,291.,
R, 21 , 67 ,500
5419,-778,289.,
R, 22 , 67 ,500
5547,-725,290.,
R, 23 , 67 ,500
5670,-696,290.,
R, 24 , 67 ,500
5779,-677,292.,
R, 25 , 67 ,500
5901,-665,292.,
K,-3
6  ,17,18,19,20
C,C
```

SOUND32 - RELEASE 07/30/91

TITLE:
CAMPUS PARK-MULTI FAMILY 4 MITIGATED SECOND FLOOR

EFFECTIVENESS / COST RATIOS
****

BAR ELE	0	1	2	3	4	5	6	7	
1	-	0.*							B1 P1
2	-	0.*							B1 P2
3	-	0.*							B1 P3
4	-	0.*							B1 P4
5	-	0.*							B1 P5
6	-	0.*							B1 P6
7	-	0.*							B1 P7
8	-	0.*							B1 P8
9	-	0.*							B1 P9
10	-	0.*							B1 P10
11	-	0.*							B2 P1
12	-	0.*							B3 P1
13	-	0.*							B3 P2
14	-	0.*							B3 P3
15	-	0.*							B3 P4
16	-	0.*							B3 P5
17	-	0.*							B3 P6
18	-	0.*							B3 P7
19	-	0.*							B3 P8
20	-	0.*							B4 P1
21	-	0.*							B4 P2
22	-	0.*							B4 P3
23	-	0.*							B4 P4
24	-	0.*							B4 P5
25	-	0.*							B4 P6
26	-	0.*							B4 P7
27	-	0.*							B4 P8
28	-	0.*							B4 P9
29	-	0.*							B5 P1
30	-	0.*							B5 P2
31	-	0.*							B5 P3
32	-	0.*							B6 P1
33	-	0.*							B6 P2
34	-	0.*							B7 P1
35	-	0.*							B8 P1
36	-	0.*							B9 P1
37	-	0.*							B9 P2
38	-	0.*							B10 P1
39	-	0.*							B10 P2
40	-	0.*							B11 P1

41	-	0.*	B12 P1
42	-	0.*	B12 P2
43	-	0.*	B13 P1
44	-	0.*	B13 P2
45	-	0.*	B13 P3
46	-	0.*	B13 P4
47	-	0.*	B13 P5
48	-	0.*	B13 P6
49	-	0.*	B13 P7
50	-	0.*	B13 P8
51	-	0.*	B13 P9

0 1 2 3 4 5 6 7

1

BARRIER DATA
****

BAR ELE	0	BARRIER HEIGHTS 1	2	3	4	5	6	7	BAR ID	LENGTH	TYPE
1	-	0.*							B1 P1	670.9	BERM
2	-	0.*							B1 P2	315.4	BERM
3	-	0.*							B1 P3	377.6	BERM
4	-	0.*							B1 P4	445.6	BERM
5	-	0.*							B1 P5	639.6	BERM
6	-	0.*							B1 P6	454.6	BERM
7	-	0.*							B1 P7	441.4	BERM
8	-	0.*							B1 P8	2602.6	BERM
9	-	0.*							B1 P9	1367.4	BERM
10	-	0.*							B1 P10	1578.6	BERM
11	-	0.*							B2 P1	1205.3	BERM
12	-	0.*							B3 P1	302.1	BERM
13	-	0.*							B3 P2	119.2	BERM
14	-	0.*							B3 P3	119.1	BERM
15	-	0.*							B3 P4	157.3	BERM
16	-	0.*							B3 P5	105.3	BERM
17	-	0.*							B3 P6	113.9	BERM
18	-	0.*							B3 P7	96.1	BERM
19	-	0.*							B3 P8	261.5	BERM
20	-	0.*							B4 P1	197.6	BERM
21	-	0.*							B4 P2	251.0	BERM
22	-	0.*							B4 P3	1469.6	BERM
23	-	0.*							B4 P4	5.2	BERM
24	-	0.*							B4 P5	525.1	BERM
25	-	0.*							B4 P6	2357.9	BERM
26	-	0.*							B4 P7	128.1	BERM
27	-	0.*							B4 P8	52.1	BERM
28	-	0.*							B4 P9	554.3	BERM
29	-	0.*							B5 P1	370.8	BERM
30	-	0.*							B5 P2	1132.4	BERM
31	-	0.*							B5 P3	715.3	BERM
32	-	0.*							B6 P1	576.9	BERM
33	-	0.*							B6 P2	810.9	BERM
34	-	0.*							B7 P1	773.6	BERM
35	-	0.*							B8 P1	537.9	BERM

36	-	0.*	B9 P1	614.1	MASONRY
37	-	0.*	B9 P2	520.8	MASONRY
38	-	0.*	B10 P1	176.1	BERM
39	-	0.*	B10 P2	139.6	BERM
40	-	8.*	B11 P1	251.0	BERM
41	-	8.*	B12 P1	299.8	MASONRY
42	-	8.*	B12 P2	102.0	MASONRY
43	-	8.*	B13 P1	146.5	MASONRY
44	-	8.*	B13 P2	324.0	MASONRY
45	-	8.*	B13 P3	150.6	MASONRY
46	-	9.*	B13 P4	2.0	MASONRY
47	-	10.*	B13 P5	137.6	MASONRY
48	-	10.*	B13 P6	143.8	MASONRY
49	-	10.*	B13 P7	118.7	MASONRY
50	-	10.*	B13 P8	146.6	MASONRY
51	-	10.*	B13 P9	405.0	MASONRY

0 1 2 3 4 5 6 7

1

REC	REC ID	DNL	PEOPLE	LEQ(CAL)
1	R-1	67.	500.	68.9
2	R-2	67.	500.	67.3
3	R-3	67.	500.	65.2
4	R-4	67.	500.	66.6
5	R-5	67.	500.	67.0
6	R-6	67.	500.	67.6
7	R-7	67.	500.	68.6
8	R-8	67.	500.	61.9
9	R-9	67.	500.	61.9
10	Rec Area	67.	500.	61.6
11	R-11	67.	500.	61.7
12	R-12	67.	500.	61.7
13	R-13	67.	500.	67.5
14	R-14	67.	500.	61.9
15	R-15	67.	500.	62.2
16	R-16	67.	500.	60.6
17	R-17	67.	500.	68.6
18	R-18	67.	500.	61.8
19	R-19	67.	500.	61.4
20	R-20	67.	500.	61.4
21	R-21	67.	500.	70.0
22	R-22	67.	500.	66.9
23	R-23	67.	500.	67.3
24	R-24	67.	500.	70.8
25	R-25	67.	500.	71.6

BARRIER TYPE	COST
BERM	7280.
MASONRY	154357.
MASONRY/JERSEY	0.
CONCRETE	0.

TOTAL COST = $ 162000.

BARRIER HEIGHT INDEX FOR EACH BARRIER SECTION

```
  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1
  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1
  1
CORRESPONDING BARRIER HEIGHTS FOR EACH SECTION
 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.
 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 8. 8. 8. 8. 8. 8. 9.10.10.10.10.
10.
```

```
CAMPUS PARK-PARKS AND POOLS UNMITIGATED
T-PEAK HOUR TRAFFIC CONDITIONS, 1
 11295 , 65 , 377 , 65 , 879 , 65
T-PEAK HOUR TRAFFIC CONDITIONS, 2
 11295 , 65 , 377 , 65 , 879 , 65
T-PEAK HOUR TRAFFIC CONDITIONS, 3
 758 , 45 , 16 , 45 , 16 , 45
T-PEAK HOUR TRAFFIC CONDITIONS, 4
 1094 , 40 , 23 , 40 , 23 , 40
T-PEAK HOUR TRAFFIC CONDITIONS, 5
 1536 , 40 , 32 , 40 , 32 , 40
T-PEAK HOUR TRAFFIC CONDITIONS, 6
 1306 , 40 , 27 , 40 , 27 , 40
T-PEAK HOUR TRAFFIC CONDITIONS, 7
 720 , 45 , 15 , 45 , 15 , 45
T-PEAK HOUR TRAFFIC CONDITIONS, 8
 989 , 45 , 21 , 45 , 21 , 45
T-PEAK HOUR TRAFFIC CONDITIONS, 9
 3072 , 55 , 64 , 55 , 64 , 55
L-I-15 NORTH, 1
N,2460.,9892,362,
N,2718.,9281,352,
N,2823.,8986,347,
N,2938.,8615,343,
N,3051.,8176,375,
N,3112.,7863,337,
N,3165.,7540,337,
N,3214.,7084,330,
N,3241.,6643,324,
N,3248.,5980,322,
N,3196.,4029,300,
N,3155.,2667,300,
N,3119.,1088,290,
L-I-15 SOUTH, 2
N,2346.,9849,370,
N,2603.,9238,350,
N,2712.,8945,346,
N,2823.,8585,343,
N,2934.,8154,341,
N,2996.,7840,337,
N,3047.,7527,334,
N,3096.,7077,327,
N,3123.,6636,325,
N,3129.,5979,322,
N,3078.,4032,300,
N,3037.,2670,301,
N,2990.,1092,290,
L-HORSE RANCH CREEK SEGMENT 1, 3
N,3043.,10290,379,
N,3181.,9940,383,
N,3237.,9720,383,
N,3300.,9246,386,
N,3372.,8619,381,
N,3422.,8183,373,
N,3470.,7777,364,
N,3569.,7439,357,
N,3864.,6977,351,
L-HORSE RANCH CREEK SEGMENT 2, 4
N,3864.,6977,351,
N,4161.,6503,350,
N,4244.,5507,318,
L-HORSE RANCH CREEK SEGMENT 3, 5
N,4244.,5507,318,
```

```
N,4304.,4842,312,
N,4554.,4231,310,
L-HORSE RANCH CREEK SEGMENT 7, 6
N,6445.,558,281,
N,6788.,-617,279,
L-PALA MESA DRIVE, 7
N,4843.,406,287,
N,5158.,-330,267,
N,5403.,-919,272,
N,5392.,-1364,272,
L-PANKEY PLACE, 8
N,5158.,-330,267,
N,5890.,299,270,
N,6436.,598,280,
L-SR 76, 9
N,4872.,-1133,270,
N,5403.,-919,272,
N,5988.,-780,274,
N,6801.,-668,277,
B-I-15 SOUTH ROADEDGE, 1 , 1 , 0 ,0
2366.,9859,370,370,
2638.,9246,350,350,
2744.,8949,346,346,
2858.,8589,343,343,
2971.,8158,341,341,
3081.,7528,334,334,
3129.,7076,327,327,
3148.,6635,325,325,
3095.,4033,314,314,
3066.,2666,303,303,
3030.,1088,280,280,
B-HORSE RANCH CREEK ROADADGE, 2 , 1 , 0 ,0
3094.,10309,379,379,
3236.,9955,383,383,
3290.,9724,383,383,
3351.,9250,386,386,
3426.,8627,381,381,
3476.,8189,373,373,
3524.,7782,364,364,
3622.,7454,357,357,
3918.,6998,351,351,
4208.,6504,350,350,
4261.,6259,350,350,
B-HORSE RANCH CREEK ROADEDGE, 3 , 1 , 0 ,0
4261.,6259,350,350,
4299.,5509,318,318,
4315.,5101,320,320,
4357.,4855,312,312,
4607.,4248,306,310,
B-HORSE RANCH CREEK ROADEDGE, 4 , 1 , 0 ,0
4200.,5507,318,318,
4262.,4829,312,312,
4506.,4207,310,310,
B-I-15 North Road Edge, 5 , 1 , 0 ,0
3212.,2390,300,300,
3197.,2587,300,300,
3196.,2838,300,300,
3283.,4305,300,300,
3282.,4304,305,305,
3248.,4828,310,310,
3309.,7185,330,330,
3305.,7313,330,330,
3254.,7316,340,340,
```

```
3166.,7863,356,356,
B-I-15 North Road Edge, 6 , 1 , 0 ,0
3166.,7863,356,356,
3101.,8228,360,360,
2787.,9316,360,360,
2480.,9962,365,365,
B-HILL 1, 7 , 1 , 0 ,0
3851.,9894,500,500,
3842.,9771,529,529,
3819.,9610,522,522,
3798.,9067,481,481,
3781.,8885,475,475,
B-HILL 2, 8 , 1 , 0 ,0
3772.,8818,480,480,
3675.,8499,500,500,
3673.,8355,470,470,
3651.,8194,470,470,
3639.,8064,450,450,
3599.,7963,420,420,
3561.,7874,390,390,
3535.,7763,362,362,
B-Hill 3, 9 , 1 , 0 ,0
3659.,8059,450,450,
3691.,7969,430,430,
3727.,7895,400,400,
3789.,7866,380,380,
B-POOL BUILDING, 10 , 2 , 0 ,0
4004.,7894,380,392,
4031.,7887,380,392,
4025.,7861,380,392,
4051.,7855,380,392,
4044.,7827,380,392,
3991.,7841,380,392,
4004.,7894,380,392,
R, 1 , 67 ,500
4292,8456,428.,PARK
R, 2 , 67 ,500
4005,8007,385.,POOL
R, 3 , 67 ,500
4052,7876,385.,POOL
R, 4 , 67 ,500
5163,6518,407.,PARK
R, 5 , 67 ,500
5041,5273,354.,Rec Area
R, 6 , 67 ,500
5165,2255,298.,Rec Area
R, 7 , 67 ,500
5680,-291,280.,Rec Area
R, 8 , 67 ,500
4333,6378,355.,SC
R, 9 , 67 ,500
4348,5907,340.,SC
D, 4.5
ALL,ALL
K,-3
ALL,5,7
C,C
```

SOUND32 - RELEASE 07/30/91

TITLE:
CAMPUS PARK-PARKS AND POOLS UNMITIGATED

EFFECTIVENESS / COST RATIOS
****

BAR ELE	0	1	2	3	4	5	6	7	
1	-	0.*							B1 P1
2	-	0.*							B1 P2
3	-	0.*							B1 P3
4	-	0.*							B1 P4
5	-	0.*							B1 P5
6	-	0.*							B1 P6
7	-	0.*							B1 P7
8	-	0.*							B1 P8
9	-	0.*							B1 P9
10	-	0.*							B1 P10
11	-	0.*							B2 P1
12	-	0.*							B2 P2
13	-	0.*							B2 P3
14	-	0.*							B2 P4
15	-	0.*							B2 P5
16	-	0.*							B2 P6
17	-	0.*							B2 P7
18	-	0.*							B2 P8
19	-	0.*							B2 P9
20	-	0.*							B2 P10
21	-	0.*							B3 P1
22	-	0.*							B3 P2
23	-	0.*							B3 P3
24	-	0.*							B3 P4
25	-	0.*							B4 P1
26	-	0.*							B4 P2
27	-	0.*							B5 P1
28	-	0.*							B5 P2
29	-	0.*							B5 P3
30	-	0.*							B5 P4
31	-	0.*							B5 P5
32	-	0.*							B5 P6
33	-	0.*							B5 P7
34	-	0.*							B5 P8
35	-	0.*							B5 P9
36	-	0.*							B6 P1
37	-	0.*							B6 P2
38	-	0.*							B6 P3
39	-	0.*							B7 P1
40	-	0.*							B7 P2
41	-	0.*							B7 P3
42	-	0.*							B7 P4
43	-	0.*							B8 P1
44	-	0.*							B8 P2

45	-	0.*	B8 P3
46	-	0.*	B8 P4
47	-	0.*	B8 P5
48	-	0.*	B8 P6
49	-	0.*	B8 P7
50	-	0.*	B9 P1
51	-	0.*	B9 P2
52	-	0.*	B9 P3
53	-	0.*	B10 P1
54	-	0.*	B10 P2
55	-	0.*	B10 P3
56	-	0.*	B10 P4
57	-	0.*	B10 P5
58	-	0.*	B10 P6

0 1 2 3 4 5 6 7

1

BARRIER DATA
****

BAR ELE	0	1	BARRIER HEIGHTS 2	3	4	5	6	7	BAR ID	LENGTH	TYPE
1	-	0.*							B1 P1	670.9	BERM
2	-	0.*							B1 P2	315.4	BERM
3	-	0.*							B1 P3	377.6	BERM
4	-	0.*							B1 P4	445.6	BERM
5	-	0.*							B1 P5	639.6	BERM
6	-	0.*							B1 P6	454.6	BERM
7	-	0.*							B1 P7	441.4	BERM
8	-	0.*							B1 P8	2602.6	BERM
9	-	0.*							B1 P9	1367.4	BERM
10	-	0.*							B1 P10	1578.6	BERM
11	-	0.*							B2 P1	381.4	BERM
12	-	0.*							B2 P2	237.2	BERM
13	-	0.*							B2 P3	477.9	BERM
14	-	0.*							B2 P4	627.5	BERM
15	-	0.*							B2 P5	440.9	BERM
16	-	0.*							B2 P6	409.9	BERM
17	-	0.*							B2 P7	342.4	BERM
18	-	0.*							B2 P8	543.7	BERM
19	-	0.*							B2 P9	572.8	BERM
20	-	0.*							B2 P10	250.7	BERM
21	-	0.*							B3 P1	751.6	BERM
22	-	0.*							B3 P2	408.3	BERM
23	-	0.*							B3 P3	249.7	BERM
24	-	2.*							B3 P4	656.5	BERM
25	-	0.*							B4 P1	680.9	BERM
26	-	0.*							B4 P2	668.1	BERM
27	-	0.*							B5 P1	197.6	BERM
28	-	0.*							B5 P2	251.0	BERM
29	-	0.*							B5 P3	1469.6	BERM
30	-	0.*							B5 P4	5.2	BERM
31	-	0.*							B5 P5	525.1	BERM
32	-	0.*							B5 P6	2357.9	BERM
33	-	0.*							B5 P7	128.1	BERM
34	-	0.*							B5 P8	52.1	BERM

```
35      -   0.*
36      -   0.*
37      -   0.*
38      -   0.*
39      -   0.*
40      -   0.*
41      -   0.*
42      -   0.*
43      -   0.*
44      -   0.*
45      -   0.*
46      -   0.*
47      -   0.*
48      -   0.*
49      -   0.*
50      -   0.*
51      -   0.*
52      -   0.*
53      -  12.*
54      -  12.*
55      -  12.*
56      -  12.*
57      -  12.*
58      -  12.*
-------------------------------------------------------------------------------
        0    1    2    3    4    5    6    7
```

B5 P9	554.3	BERM	
B6 P1	370.8	BERM	
B6 P2	1132.4	BERM	
B6 P3	715.3	BERM	
B7 P1	126.7	BERM	
B7 P2	162.8	BERM	
B7 P3	545.0	BERM	
B7 P4	182.9	BERM	
B8 P1	334.0	BERM	
B8 P2	147.1	BERM	
B8 P3	162.5	BERM	
B8 P4	132.1	BERM	
B8 P5	112.7	BERM	
B8 P6	101.3	BERM	
B8 P7	117.4	BERM	
B9 P1	97.6	BERM	
B9 P2	87.6	BERM	
B9 P3	71.3	BERM	
B10 P1	27.9	MASONRY	
B10 P2	26.7	MASONRY	
B10 P3	26.7	MASONRY	
B10 P4	28.9	MASONRY	
B10 P5	54.8	MASONRY	
B10 P6	54.6	MASONRY	

1

REC	REC ID	DNL	PEOPLE	LEQ(CAL)
1	PARK	67.	500.	58.3
2	POOL	67.	500.	61.6
3	POOL	67.	500.	58.4
4	PARK	67.	500.	60.2
5	Rec Area	67.	500.	58.1
6	Rec Area	67.	500.	59.5
7	Rec Area	67.	500.	58.4
8	SC	67.	500.	65.5
9	SC	67.	500.	65.5

BARRIER TYPE	COST
BERM	5744.
MASONRY	23049.
MASONRY/JERSEY	0.
CONCRETE	0.
TOTAL COST = $	29000.

BARRIER HEIGHT INDEX FOR EACH BARRIER SECTION

```
  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1
  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1  1
  1  1  1  1  1  1  1  1
```

CORRESPONDING BARRIER HEIGHTS FOR EACH SECTION

```
 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 2. 0.
 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.
 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.
 0. 0.12.12.12.12.12.12.
```

```
CAMPUS PARK-PARKS AND POOLS MITIGATED
T-PEAK HOUR TRAFFIC CONDITIONS, 1
 11295 , 65 , 377 , 65 , 879 , 65
T-PEAK HOUR TRAFFIC CONDITIONS, 2
 11295 , 65 , 377 , 65 , 879 , 65
T-PEAK HOUR TRAFFIC CONDITIONS, 3
 758 , 45 , 16 , 45 , 16 , 45
T-PEAK HOUR TRAFFIC CONDITIONS, 4
 1094 , 40 , 23 , 40 , 23 , 40
T-PEAK HOUR TRAFFIC CONDITIONS, 5
 1536 , 40 , 32 , 40 , 32 , 40
T-PEAK HOUR TRAFFIC CONDITIONS, 6
 1306 , 40 , 27 , 40 , 27 , 40
T-PEAK HOUR TRAFFIC CONDITIONS, 7
 720 , 45 , 15 , 45 , 15 , 45
T-PEAK HOUR TRAFFIC CONDITIONS, 8
 989 , 45 , 21 , 45 , 21 , 45
T-PEAK HOUR TRAFFIC CONDITIONS, 9
 3072 , 55 , 64 , 55 , 64 , 55
L-I-15 NORTH, 1
N,2460.,9892,362,
N,2718.,9281,352,
N,2823.,8986,347,
N,2938.,8615,343,
N,3051.,8176,375,
N,3112.,7863,337,
N,3165.,7540,337,
N,3214.,7084,330,
N,3241.,6643,324,
N,3248.,5980,322,
N,3196.,4029,300,
N,3155.,2667,300,
N,3119.,1088,290,
L-I-15 SOUTH, 2
N,2346.,9849,370,
N,2603.,9238,350,
N,2712.,8945,346,
N,2823.,8585,343,
N,2934.,8154,341,
N,2996.,7840,337,
N,3047.,7527,334,
N,3096.,7077,327,
N,3123.,6636,325,
N,3129.,5979,322,
N,3078.,4032,300,
N,3037.,2670,301,
N,2990.,1092,290,
L-HORSE RANCH CREEK SEGMENT 1, 3
N,3043.,10290,379,
N,3181.,9940,383,
N,3237.,9720,383,
N,3300.,9246,386,
N,3372.,8619,381,
N,3422.,8183,373,
N,3470.,7777,364,
N,3569.,7439,357,
N,3864.,6977,351,
L-HORSE RANCH CREEK SEGMENT 2, 4
N,3864.,6977,351,
N,4161.,6503,350,
N,4244.,5507,318,
L-HORSE RANCH CREEK SEGMENT 3, 5
N,4244.,5507,318,
```

```
N,4304.,4842,312,
N,4554.,4231,310,
L-HORSE RANCH CREEK SEGMENT 7, 6
N,6445.,558,281,
N,6788.,-617,279,
L-PALA MESA DRIVE, 7
N,4843.,406,287,
N,5158.,-330,267,
N,5403.,-919,272,
N,5392.,-1364,272,
L-PANKEY PLACE, 8
N,5158.,-330,267,
N,5890.,299,270,
N,6436.,598,280,
L-SR 76, 9
N,4872.,-1133,270,
N,5403.,-919,272,
N,5988.,-780,274,
N,6801.,-668,277,
B-I-15 SOUTH ROADEDGE, 1 , 1 , 0 ,0
2366.,9859,370,370,
2638.,9246,350,350,
2744.,8949,346,346,
2858.,8589,343,343,
2971.,8158,341,341,
3081.,7528,334,334,
3129.,7076,327,327,
3148.,6635,325,325,
3095.,4033,314,314,
3066.,2666,303,303,
3030.,1088,280,280,
B-HORSE RANCH CREEK ROADADGE, 2 , 1 , 0 ,0
3094.,10309,379,379,
3236.,9955,383,383,
3290.,9724,383,383,
3351.,9250,386,386,
3426.,8627,381,381,
3476.,8189,373,373,
3524.,7782,364,364,
3622.,7454,357,357,
3918.,6998,351,351,
4208.,6504,350,350,
4261.,6259,350,350,
B-HORSE RANCH CREEK ROADEDGE, 3 , 1 , 0 ,0
4261.,6259,350,350,
4299.,5509,318,318,
4315.,5101,320,320,
4357.,4855,312,312,
4607.,4248,306,310,
B-HORSE RANCH CREEK ROADEDGE, 4 , 1 , 0 ,0
4200.,5507,318,318,
4262.,4829,312,312,
4506.,4207,310,310,
B-I-15 North Road Edge, 5 , 1 , 0 ,0
3212.,2390,300,300,
3197.,2587,300,300,
3196.,2838,300,300,
3283.,4305,300,300,
3282.,4304,305,305,
3248.,4828,310,310,
3309.,7185,330,330,
3305.,7313,330,330,
3254.,7316,340,340,
```

```
3166.,7863,356,356,
B-I-15 North Road Edge, 6 , 1 , 0 ,0
3166.,7863,356,356,
3101.,8228,360,360,
2787.,9316,360,360,
2480.,9962,365,365,
B-HILL 1, 7 , 1 , 0 ,0
3851.,9894,500,500,
3842.,9771,529,529,
3819.,9610,522,522,
3798.,9067,481,481,
3781.,8885,475,475,
B-HILL 2, 8 , 1 , 0 ,0
3772.,8818,480,480,
3675.,8499,500,500,
3673.,8355,470,470,
3651.,8194,470,470,
3639.,8064,450,450,
3599.,7963,420,420,
3561.,7874,390,390,
3535.,7763,362,362,
B-Hill 3, 9 , 1 , 0 ,0
3659.,8059,450,450,
3691.,7969,430,430,
3727.,7895,400,400,
3789.,7866,380,380,
B-POOL BUILDING, 10 , 2 , 0 ,0
4004.,7894,380,392,
4031.,7887,380,392,
4025.,7861,380,392,
4051.,7855,380,392,
4044.,7827,380,392,
3991.,7841,380,392,
4004.,7894,380,392,
B-POOL BARRIER, 11 , 2 , 0 ,0
4008.,8069,380,389,
3983.,8042,380,389,
3997.,7981,380,389,
4001.,7948,380,389,
3996.,7915,380,389,
3982.,7884,380,389,
3961.,7858,380,389,
3942.,7839,380,389,
R, 1 , 67 ,500
4292,8456,428.,PARK
R, 2 , 67 ,500
4005,8007,385.,POOL
R, 3 , 67 ,500
4052,7876,385.,POOL
R, 4 , 67 ,500
5163,6518,407.,PARK
R, 5 , 67 ,500
5041,5273,354.,Rec Area
R, 6 , 67 ,500
5165,2255,298.,Rec Area
R, 7 , 67 ,500
5680,-291,280.,Rec Area
R, 8 , 67 ,500
4333,6378,355.,SC
R, 9 , 67 ,500
4348,5907,340.,SC
D, 4.5
ALL,ALL
```

```
K,-3
ALL,5,7
C,C
```

SOUND32 - RELEASE 07/30/91

TITLE:
CAMPUS PARK-PARKS AND POOLS MITIGATED

EFFECTIVENESS / COST RATIOS
****

BAR ELE	0	1	2	3	4	5	6	7	
1	-	0.*							B1 P1
2	-	0.*							B1 P2
3	-	0.*							B1 P3
4	-	0.*							B1 P4
5	-	0.*							B1 P5
6	-	0.*							B1 P6
7	-	0.*							B1 P7
8	-	0.*							B1 P8
9	-	0.*							B1 P9
10	-	0.*							B1 P10
11	-	0.*							B2 P1
12	-	0.*							B2 P2
13	-	0.*							B2 P3
14	-	0.*							B2 P4
15	-	0.*							B2 P5
16	-	0.*							B2 P6
17	-	0.*							B2 P7
18	-	0.*							B2 P8
19	-	0.*							B2 P9
20	-	0.*							B2 P10
21	-	0.*							B3 P1
22	-	0.*							B3 P2
23	-	0.*							B3 P3
24	-	0.*							B3 P4
25	-	0.*							B4 P1
26	-	0.*							B4 P2
27	-	0.*							B5 P1
28	-	0.*							B5 P2
29	-	0.*							B5 P3
30	-	0.*							B5 P4
31	-	0.*							B5 P5
32	-	0.*							B5 P6
33	-	0.*							B5 P7
34	-	0.*							B5 P8
35	-	0.*							B5 P9
36	-	0.*							B6 P1
37	-	0.*							B6 P2
38	-	0.*							B6 P3
39	-	0.*							B7 P1
40	-	0.*							B7 P2
41	-	0.*							B7 P3
42	-	0.*							B7 P4
43	-	0.*							B8 P1
44	-	0.*							B8 P2

45	-	0.*	B8 P3
46	-	0.*	B8 P4
47	-	0.*	B8 P5
48	-	0.*	B8 P6
49	-	0.*	B8 P7
50	-	0.*	B9 P1
51	-	0.*	B9 P2
52	-	0.*	B9 P3
53	-	0.*	B10 P1
54	-	0.*	B10 P2
55	-	0.*	B10 P3
56	-	0.*	B10 P4
57	-	0.*	B10 P5
58	-	0.*	B10 P6
59	-	0.*	B11 P1
60	-	0.*	B11 P2
61	-	0.*	B11 P3
62	-	0.*	B11 P4
63	-	0.*	B11 P5
64	-	0.*	B11 P6
65	-	0.*	B11 P7

---

0 1 2 3 4 5 6 7

1

BARRIER DATA
****

BAR ELE	0		1	2	3	4	5	6	7	BAR ID	LENGTH	TYPE
1	-	0.*								B1 P1	670.9	BERM
2	-	0.*								B1 P2	315.4	BERM
3	-	0.*								B1 P3	377.6	BERM
4	-	0.*								B1 P4	445.6	BERM
5	-	0.*								B1 P5	639.6	BERM
6	-	0.*								B1 P6	454.6	BERM
7	-	0.*								B1 P7	441.4	BERM
8	-	0.*								B1 P8	2602.6	BERM
9	-	0.*								B1 P9	1367.4	BERM
10	-	0.*								B1 P10	1578.6	BERM
11	-	0.*								B2 P1	381.4	BERM
12	-	0.*								B2 P2	237.2	BERM
13	-	0.*								B2 P3	477.9	BERM
14	-	0.*								B2 P4	627.5	BERM
15	-	0.*								B2 P5	440.9	BERM
16	-	0.*								B2 P6	409.9	BERM
17	-	0.*								B2 P7	342.4	BERM
18	-	0.*								B2 P8	543.7	BERM
19	-	0.*								B2 P9	572.8	BERM
20	-	0.*								B2 P10	250.7	BERM
21	-	0.*								B3 P1	751.6	BERM
22	-	0.*								B3 P2	408.3	BERM
23	-	0.*								B3 P3	249.7	BERM
24	-	2.*								B3 P4	656.5	BERM
25	-	0.*								B4 P1	680.9	BERM
26	-	0.*								B4 P2	668.1	BERM

27	-	0.*	B5 P1	197.6	BERM
28	-	0.*	B5 P2	251.0	BERM
29	-	0.*	B5 P3	1469.6	BERM
30	-	0.*	B5 P4	5.2	BERM
31	-	0.*	B5 P5	525.1	BERM
32	-	0.*	B5 P6	2357.9	BERM
33	-	0.*	B5 P7	128.1	BERM
34	-	0.*	B5 P8	52.1	BERM
35	-	0.*	B5 P9	554.3	BERM
36	-	0.*	B6 P1	370.8	BERM
37	-	0.*	B6 P2	1132.4	BERM
38	-	0.*	B6 P3	715.3	BERM
39	-	0.*	B7 P1	126.7	BERM
40	-	0.*	B7 P2	162.8	BERM
41	-	0.*	B7 P3	545.0	BERM
42	-	0.*	B7 P4	182.9	BERM
43	-	0.*	B8 P1	334.0	BERM
44	-	0.*	B8 P2	147.1	BERM
45	-	0.*	B8 P3	162.5	BERM
46	-	0.*	B8 P4	132.1	BERM
47	-	0.*	B8 P5	112.7	BERM
48	-	0.*	B8 P6	101.3	BERM
49	-	0.*	B8 P7	117.4	BERM
50	-	0.*	B9 P1	97.6	BERM
51	-	0.*	B9 P2	87.6	BERM
52	-	0.*	B9 P3	71.3	BERM
53	-	12.*	B10 P1	27.9	MASONRY
54	-	12.*	B10 P2	26.7	MASONRY
55	-	12.*	B10 P3	26.7	MASONRY
56	-	12.*	B10 P4	28.9	MASONRY
57	-	12.*	B10 P5	54.8	MASONRY
58	-	12.*	B10 P6	54.6	MASONRY
59	-	9.*	B11 P1	36.8	MASONRY
60	-	9.*	B11 P2	62.6	MASONRY
61	-	9.*	B11 P3	33.2	MASONRY
62	-	9.*	B11 P4	33.4	MASONRY
63	-	9.*	B11 P5	34.0	MASONRY
64	-	9.*	B11 P6	33.4	MASONRY
65	-	9.*	B11 P7	26.9	MASONRY

---

0 1 2 3 4 5 6 7

1

REC	REC ID	DNL	PEOPLE	LEQ(CAL)
1	PARK	67.	500.	58.3
2	POOL	67.	500.	59.7
3	POOL	67.	500.	58.4
4	PARK	67.	500.	60.2
5	Rec Area	67.	500.	58.1
6	Rec Area	67.	500.	59.5
7	Rec Area	67.	500.	58.4
8	SC	67.	500.	65.5
9	SC	67.	500.	65.5

BARRIER	TYPE	COST