NOISE IMPACT ANALYSIS

YERMO TRAVEL STOP PROJECT

LSA

May 2014

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LSA

May 2014

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INTRODUCTION

This noise impact analysis has been prepared to evaluate the potential noise impacts and identify feasible mitigation measures associated with the Yermo Travel Stop project, located in the unincorporated Yermo area in San Bernardino County (County), California. This report is intended to satisfy County requirements for a project-specific noise impact analysis by examining the short-term and long-term noise impacts on and adjacent to the project site, by evaluating the effectiveness of noise control measures incorporated as part of the project design, and by proposing additional mitigation to reduce noise impacts.

Project Location

The site is located north of Calico Road, between Calico Boulevard and Grand View Avenue. Figure 1 illustrates the location of the project.

Project Description

The project proposes a travel stop that includes a gas station with 32 fueling positions and a 25,060-square foot (sf) building housing a convenience store and fast casual-type restaurant, at the southeast corner of Calico Road and Calico Boulevard near the I-15 ramps at Calico Road. Access to the project site will be provided via two full-access driveways on Calico Road and one full-access driveway on Calico Boulevard. The proposed travel stop's intended clientele are travelers in passenger vehicles on I-15. According to the project applicant, the site is designed to discourage trucks from entering the site; however, access for delivery trucks will be provided off Calico Road. The opening year of the project is expected to be 2015. Figure 2 depicts the project's site plan.

METHODOLOGY RELATED TO NOISE IMPACT ASSESSMENT

Evaluation of noise impacts associated with the project includes the following:

- Determine the short-term construction noise impacts on off-site sensitive land uses
- Determine the long-term project-related traffic noise impacts on off-site noise-sensitive uses
- Determine the long-term project-related stationary source noise impacts on off-site noise-sensitive uses
- Determine the required mitigation measures to reduce short-term and long-term noise impacts

This noise impact analysis utilizes County noise standards, including the County's Noise Element of the General Plan, as thresholds against which potential noise impacts are evaluated.

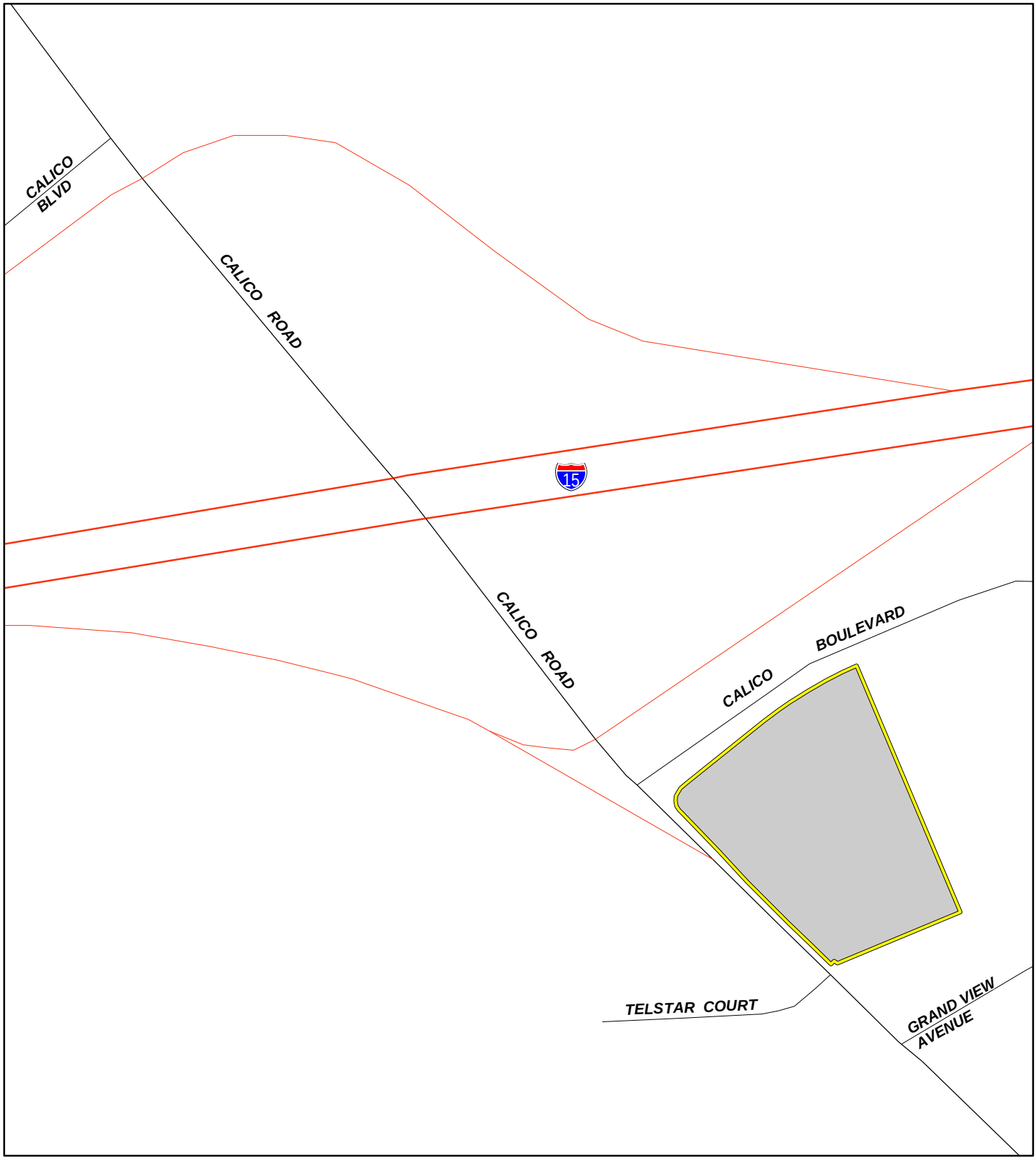

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FIGURE 1

Project Location

N

0 150 300

FEET

Yermo Travel Stop

Project Location

SOURCE: Paul Berger, November 5, 2013.

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FIGURE 2

N

0 60 120

FEET

Yermo Travel Stop

Site Plan

SOURCE: Paul Berger, November 5, 2013.

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CHARACTERISTICS OF SOUND

Sound is increasing in the environment and can affect quality of life. Noise is usually defined as unwanted sound. Noise consists of any sound that may produce physiological or psychological damage and/or interfere with communication, work, rest, recreation, and sleep.

To the human ear, sound has two significant characteristics: pitch and loudness. Pitch is generally an annoyance, while loudness can affect the ability to hear. Pitch is the number of complete vibrations (or cycles per second) of a wave, resulting in the tone's range from high to low. Loudness is the strength of a sound and describes a noisy or quiet environment; it is measured by the amplitude of the sound wave. Loudness is determined by the intensity of the sound waves combined with the reception characteristics of the human ear. Sound intensity refers to how hard the sound wave strikes an object, which in turn produces the sound's effect. This characteristic of sound can be precisely measured with instruments. The analysis of a project defines the noise environment of the project area in terms of sound intensity and its effect on adjacent sensitive land uses.

MEASUREMENT OF SOUND

Sound intensity is measured through the A-weighted scale to correct for the relative frequency response of the human ear. That is, an A-weighted noise level de-emphasizes low and very high frequencies of sound similar to the human ear's de-emphasis of these frequencies. Unlike linear units, such as inches or pounds, decibels (dB) are measured on a logarithmic scale representing points on a sharply rising curve.

For example, 10 dB are 10 times more intense than 1 dB, 20 dB are 100 times more intense, and 30 dB are 1,000 times more intense. Thirty decibels (30 dB) represent 1,000 times as much acoustic energy as 1 dB. The decibel scale increases as the square of the change, representing the sound-pressure energy. A sound as soft as human breathing is about 10 times greater than 0 dB. The decibel system of measuring sound gives a rough connection between the physical intensity of sound and its perceived loudness to the human ear. A 10 dB increase in sound level is perceived by the human ear as only a doubling of the loudness of the sound. Ambient sounds generally range from 30 A-weighted decibels (dBA) (very quiet) to 100 dBA (very loud).

Sound levels are generated from a source, and their decibel level decreases as the distance from that source increases. Sound dissipates exponentially with distance from the noise source. For a single point source, sound levels decrease approximately 6 dB for each doubling of distance from the source. This drop-off rate is appropriate for noise generated by stationary equipment. If noise is produced by a line source, such as highway traffic or railroad operations, the sound decreases 3 dB for each doubling of distance in a hard site environment. Line source noise in a relatively flat environment with absorptive vegetation decreases 4.5 dB for each doubling of distance.

There are many ways to rate noise for various time periods, but an appropriate rating of ambient noise affecting humans also accounts for the annoying effects of sound. Equivalent continuous sound level (L_{eq}) is the total sound energy of time-varying noise over a sample period. However, the predominant rating scales for human communities in the State of California (State) are the L_{eq} and community noise equivalent level (CNEL) or the day-night average level (L_{dn}) based on dBA. CNEL is the time-varying noise over a 24-hour period, with a 5 dBA weighting factor applied to the hourly L_{eq} for

noises occurring from 7:00 p.m. to 10:00 p.m. (defined as relaxation hours) and a 10 dBA weighting factor applied to noise occurring from 10:00 p.m. to 7:00 a.m. (defined as sleeping hours). L_{dn} is similar to the CNEL scale but without the adjustment for events occurring during the evening hours. CNEL and L_{dn} are within 1 dBA of each other and are normally exchangeable. The noise adjustments are added to the noise events occurring during the more sensitive hours.

Other noise rating scales of importance, when assessing the annoyance factor, include the maximum noise level (L_{max}), which is the highest exponential time-averaged sound level that occurs during a stated time period. The noise environments discussed in this analysis are specified in terms of L_{max} for short-term noise impacts. L_{max} reflects peak operating conditions and addresses the annoying aspects of intermittent noise.

Another noise scale often used together with the L_{max} in noise ordinances for enforcement purposes is noise standards in terms of percentile noise levels. For example, the L_{10} noise level represents the noise level exceeded 10 percent of the time during a stated period. The L_{50} noise level represents the median noise level. Half of the time the noise level exceeds this level, and half of the time it is less than this level. The L_{90} noise level represents the noise level exceeded 90 percent of the time and is considered the background noise level during a monitoring period. For a relatively constant noise source, the L_{eq} and L_{50} are approximately the same.

Noise impacts can be described in three categories. The first is audible impacts, which refers to increases in noise levels noticeable to humans. Audible increases in noise levels generally refer to a change of 3 dB or greater, since this level has been found to be barely perceptible in exterior environments. The second category, potentially audible, refers to a change in the noise level between 1 and 3 dB. This range of noise levels has been found to be noticeable only in laboratory environments. The last category is changes in noise level of less than 1 dB, which are inaudible to the human ear. Only audible changes in existing ambient or background noise levels are considered potentially significant.

PHYSIOLOGICAL EFFECTS OF NOISE

Physical damage to human hearing begins at prolonged exposure to noise levels higher than 85 dBA. Exposure to high noise levels affects the entire system, with prolonged noise exposure in excess of 75 dBA increasing body tensions and thereby affecting blood pressure and functions of the heart and the nervous system. In comparison, extended periods of noise exposure above 90 dBA would result in permanent cell damage. When the noise level reaches 120 dBA, a tickling sensation occurs in the human ear, even with short-term exposure. This level of noise is called the threshold of feeling. As the sound reaches 140 dBA, the tickling sensation is replaced by the feeling of pain in the ear. This is called the threshold of pain. A sound level of 160 to 165 dBA will potentially result in dizziness or loss of equilibrium. The ambient or background noise problem is widespread and generally more concentrated in urban areas than in outlying, less-developed areas.

Table A lists definitions of acoustical terms; Table B shows common sound levels and their noise sources; and Table C shows land use compatibility for exterior community noise, as recommended by the California Department of Health, Office of Noise Control.

Table A: Definitions of Acoustical Terms

Term	Definition
Decibel, dB	A unit of noise level that denotes the ratio between two quantities that are proportional to power; the number of decibels is 10 times the logarithm (to the base 10) of this ratio.
Frequency, Hz	Of a function periodic in time; the number of times that the quantity repeats itself in one second (i.e., number of cycles per second).
A-Weighted Sound Level, dBA	The sound level obtained by use of A-weighting. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise. All sound levels in this report are A-weighted, unless reported otherwise.
L_{02}, L_{08}, L_{50}, L_{90}	The fast A-weighted noise levels that are equaled or exceeded by a fluctuating sound level 2 percent, 8 percent, 50 percent, and 90 percent of a stated time period.
Equivalent Continuous Noise Level, L_{eq}	The level of a steady sound that, in a stated time period and at a stated location, has the same A-weighted sound energy as the time-varying sound.
Community Noise Equivalent Level, CNEL	The 24-hour A-weighted average sound level from midnight to midnight, obtained after the addition of 5 dB to sound levels occurring in the evening from 7:00 p.m. to 10:00 p.m. and after the addition of 10 dB to sound levels occurring in the night between 10:00 p.m. and 7:00 a.m.
Day/Night Noise Level, L_{dn}	The 24-hour A-weighted average sound level from midnight to midnight, obtained after the addition of 10 dB to sound levels occurring in the night between 10:00 p.m. and 7:00 a.m.
L_{max}, L_{min}	The maximum and minimum A-weighted sound levels measured on a sound level meter during a designated time interval using fast-time averaging.
Ambient Noise Level	The all-encompassing noise associated with a given environment at a specified time; usually a composite of sound from many sources from many directions, near and far; no particular sound is dominant.
Intrusive	The noise that intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends upon its amplitude, duration, frequency, time of occurrence, tonal or informational content, and the prevailing ambient noise level.

Source: Handbook of Acoustical Measurement and Noise Control, 1991.

Table B: Common Sound Levels and Their Noise Sources

Noise Source	A-Weighted Sound Level in Decibels	Noise Environments	Subjective Evaluations
Near Jet Engine	140	Deafening	128 times as loud
Civil Defense Siren	130	Threshold of Pain	64 times as loud
Hard Rock Band	120	Threshold of Feeling	32 times as loud
Accelerating Motorcycle a Few Feet Away	110	Very Loud	16 times as loud
Pile Driver; Noisy Urban Street/Heavy City Traffic	100	Very Loud	8 times as loud
Ambulance Siren; Food Blender	95	Very Loud	—
Garbage Disposal	90	Very Loud	4 times as loud
Freight Cars; Living Room Music	85	Loud	—
Pneumatic Drill; Vacuum Cleaner	80	Loud	2 times as loud
Busy Restaurant	75	Moderately Loud	—
Near Freeway Auto Traffic	70	Moderately Loud	Reference Level
Average Office	60	Quiet	½ as loud
Suburban Street	55	Quiet	—
Light Traffic; Soft Radio Music in Apartment	50	Quiet	¼ as loud
Large Transformer	45	Quiet	—
Average Residence without Stereo Playing	40	Faint	⅛ as loud
Soft Whisper	30	Faint	—
Rustling Leaves	20	Very Faint	—
Human Breathing	10	Very Faint	Threshold of Hearing
—	0	Very Faint	—

Source: Compiled by LSA Associates, Inc., 2004.

Table C: Land Use Compatibility for Exterior Community Noise

Land Use Category	Noise Range (L_{dn} or CNEL), dB			
	I	II	III	IV
Passively used open spaces	50	50–55	55–70	70+
Auditoriums, concert halls, amphitheaters	45–50	50–65	65–70	70+
Residential, low-density single-family, duplex, mobile homes	50–55	55–70	70–75	75+
Residential multifamily	50–60	60–70	70–75	75+
Transient lodging, motels, hotels	50–60	60–70	70–80	80+
Schools, libraries, churches, hospitals, nursing homes	50–60	60–70	70–80	80+
Actively used open spaces, playgrounds, neighborhood parks	50–67	–	67–73	73+
Golf courses, riding stables, water recreation, cemeteries	50–70	–	70–80	80+
Office buildings, business commercial and professional	50–67	67–75	75+	–
Industrial, manufacturing, utilities, agriculture	50–70	70–75	75+	–

Source: California Department of Health, Office of Noise Control, 1976.
Noise Range I—Normally Acceptable: Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.
Noise Range II—Conditionally Acceptable: New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made, and needed noise insulation features are included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning, will normally suffice.
Noise Range III—Normally Unacceptable: New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.
Noise Range IV—Clearly Unacceptable: New construction or development should generally not be undertaken.

L_{dn} = day-night average noise level
L_{max} = maximum noise level

SETTING

Existing Sensitive Land Uses in the Project Area

Sensitive receptors include residences, schools, hospitals, and similar uses sensitive to noise. The nearest residences to the south are adjacent to the proposed project's southern property line, approximately 60 ft from the proposed southernmost parking areas, and the residential structures are 120 ft from the nearest parking areas and 360 ft from the potential loading/unloading areas in front of the proposed onsite stores. Other land uses around the project site include a mix of industrial and commercial uses. The sensitive land uses to the south would be exposed to noise generated during construction and operation of the project.

Overview of the Existing Ambient Noise Environment

Ambient or background noise levels are typically a composite of sounds from many sources located both near and far, without any particular sound being dominant. The primary existing noise sources in the project area are transportation facilities. Traffic on the I-15 Freeway, Calico Boulevard, Calico Road, Telstar Court, and Grand View Avenue contribute to the ambient noise levels in the project vicinity. Noise from motor vehicles is generated by engine vibrations, the interaction between the

tires and the road, and the exhaust system. Wildlife such as birds also contributes a small portion of the ambient noise to the project area. The dominant noise sources for the residences located to the south of the project site are the vehicles on Calico Road.

Existing Traffic Noise

The Federal Highway Administration (FHWA) Highway Traffic Noise Prediction Model (FHWA RD-77-108) was used to evaluate traffic-related noise conditions along Calico Road and Calico Boulevard in the project vicinity. This model requires various parameters, including traffic volumes, vehicle mix, vehicle speed, and roadway geometry to compute typical equivalent noise levels during daytime, evening, and nighttime hours. The resulting noise levels are weighted and summed over 24-hour periods to determine the CNEL values. Table D lists the existing (2014) traffic noise levels on these roadways in the project vicinity.

Table D: Existing (2014) Traffic Noise Levels

Roadway Segment	ADT	Centerline to 70 CNEL (ft)	Centerline to 65 CNEL (ft)	Centerline to 60 CNEL (ft)	CNEL (dBA) 50 ft from Centerline of Outermost Lane
Calico Rd north of I-15 NB Ramps	750	< 50	< 50	< 50	56.8
Calico Rd between I-15 NB Ramps and Calico Blvd	680	< 50	< 50	< 50	56.4
Calico Rd between Calico Blvd and I-15 NB Off-ramp	460	< 50	< 50	< 50	54.7
Calico Rd south of I-15 NB Off-ramp	730	< 50	< 50	< 50	56.7
Calico Blvd east of Calico Rd	220	< 50	< 50	< 50	51.5

Source: LSA Associates, Inc., May 2014.
Note: Traffic noise within 50 ft of the roadway centerline should be evaluated with site-specific information.

ADT = average daily traffic
CNEL = Community Noise Equivalent Level
dBA = A-weighted decibels
ft = feet

These noise levels represent the worst-case scenario, which assumes that no shielding is provided between traffic and the location where the noise contours are drawn. Table D indicates that the existing traffic noise levels in the project vicinity are low along roadway segments adjacent to the project site, with the 70, 65, and 60 dBA CNEL contour lines confined within the roadway right-of--way. The specific assumptions used in developing these noise levels and the model printouts are provided in Appendix A. The project site is approximately 500 to 700 ft from the edge of I-15 and is exposed to background traffic noise from the I-15.

County of San Bernardino Noise Standards

Noise Element of the General Plan. The County adopted a Noise Element in its General Plan (first adopted in 1989, revised in 1996). One of the general goals of the Noise Element is to develop and adopt specific policies and an effective implementation program to abate and avoid excessive noise exposures in the County by requiring that effective noise mitigation measures be incorporated into the design of new noise-generating and new noise-sensitive land uses. The County has adopted specific policies to accomplish the goals of the Noise Element, including the following:

1. Areas within the County shall be designated as "noise-impacted" if exposed to existing or projected future exterior noise levels from mobile or stationary sources exceeding the standards listed in Tables E and F.

Table E: Interior/Exterior Noise Level Standards – Mobile Noise Sources

Categories	Land Use	L_{dn} or CNEL, dBA	
		Interior Standard[1]	Exterior Standard[2]
Residential	Single-family and multifamily, duplex, mobile homes	45	60[3]
Commercial	Hotel, motel, transient lodging	45	60[3]
	Commercial retail, bank, restaurant	50	NA
	Office building, research and development, professional offices	45	65
	Amphitheater, concert hall, auditorium, movie theater	45	NA
Institutional	Hospital, nursing home, school, classroom, church, library	45	65
Open Space	Park	NA	65

Source: County of San Bernardino Noise Element, 1989 and 1996.

[1] Indoor environment excluding: bathrooms, kitchens, toilets, and corridors.

[2] Outdoor environment limited to: private yard of single-family dwellings, multifamily private patios or balconies, mobile home parks, hospital/office building patios, park picnic areas, school playgrounds, hotel and motel recreation areas.

[3] An exterior noise level of up to 65 dBA L_{dn} (or CNEL) will be allowed provided exterior noise levels have been substantially mitigated through a reasonable application of the best available noise reduction technology and interior noise exposure does not exceed 45 dBA L_{dn} (or CNEL) with windows and doors closed. Requiring that windows and doors remain closed to achieve an acceptable interior noise level will necessitate the use of air conditioning or mechanical ventilation.

CNEL = Community Noise Equivalent Level
dBA = A-weighted decibels
L_{dn} = day-night average noise level
N/A = not applicable

Table F: Maximum Exterior Noise Limits, L_N (dBA)

Receiving Land Use	Time Period	L_{50}	L_{25}	L_8	L_2	L_{max}
Residential (single-family and multifamily)	Day: 7:00 a.m.–10:00 p.m.	55	60	65	70	75
	Night: 10:00 p.m.–7:00 a.m.	45	50	55	60	65

Source: County of San Bernardino, County Code.

dBA = A-weighted decibels
L_2 = the noise level exceeded 2 percent of the time during a stated period
L_8 = the noise level exceeded 8 percent of the time during a stated period
L_{25} = the noise level exceeded 25 percent of the time during a stated period
L_{50} = the noise level representing the median noise level; half the time the noise level exceeds this level and half the time it is less than this level
L_{max} = maximum noise level
L_N = percentile noise exceedance level

2. The County shall enforce the State Noise Insulation Standards (California Code of Regulation, Title 24) and Chapter 35 of the Uniform Building Code (UBC).

Condition subdivision approval adjacent to any developed/occupied noise-sensitive land uses by requiring the developer to submit a construction-related noise mitigation plan to the County for review and approval prior to issuance of a grading permit. The plan must depict the location of construction equipment and how the noise from this equipment will be mitigated during construction of this project through the use of such methods as:

- Temporary noise attenuation fences
- Preferential location of equipment
- Use of current technology and noise suppression equipment

The County has adopted a new General Plan (March 2007). The newly adopted Noise Element has the following policies:

N1.1 Designate areas within San Bernardino County as "noise impacted" if exposed to existing or projected future exterior noise levels from mobile or stationary sources exceeding the standards listed in Chapter 83.01 of the Development Code.

N1.2 Ensure that new development of residential or other noise-sensitive land uses is not permitted in noise-impacted areas unless effective mitigation measures are incorporated into the project design to reduce noise levels to the standards of noise-sensitive land uses include residential uses, schools, hospitals, nursing homes, places of worship, and libraries.

N1.3 When industrial, commercial, or other land uses, including locally regulated noise sources, are proposed for areas containing noise-sensitive land uses, noise levels generated by the proposed use will not exceed the performance standards of Table N-2 (shown in Table F here in this report) within outdoor activity areas. If outdoor activity areas have not yet been determined, noise levels shall not exceed the performance

standards listed in Chapter 83.01 of the Development Code at the boundary of areas planned or zoned for residential or other noise-sensitive land uses.

N1.4 Enforce the state noise insulation standards (California Administrative Code, Title 24) and Chapter 35 of the California Building Code (CBC).[1]

N1.5 Limit truck traffic in residential and commercial areas to designated truck routes; limit construction, delivery, and through-truck traffic to designated routes; and distribute maps of approved truck routes to County traffic officers.

N1.6 Enforce the hourly noise-level performance standards for stationary and other locally regulated sources, such as industrial, recreational, and construction activities, as well as mechanical and electrical equipment.

N1.7 Prevent incompatible land uses, by reason of excessive noise levels, from occurring in the future.

County of San Bernardino 2007 Development Code

The County's Development Code, Section 83.01.080, sets noise standards for stationary noise sources as shown in Table G.

Table G: Noise Standards for Stationary Noise Sources

Affected Land Uses (Receiving Noise)	7:00 a.m. to 10:00 p.m. (L_{eq})	10:00 p.m. to 7:00 a.m. (L_{eq})
Residential	55 dBA	45 dBA
Professional Services	55 dBA	55 dBA
Other Commercial	60 dBA	60 dBA
Industrial	70 dBA	70 dBA

Source: County of San Bernardino Development Code, April 2007.
dBA = A-weighted decibels
L_{eq} = equivalent continuous sound level

Maximum Exterior Noise Limits. Section 83.01.080 of the County Development Code limits exterior noise attributable to stationary noise sources at residential properties to 55 dBA from 7:00 a.m. to 10:00 p.m. and 45 dBA from 10:00 p.m. to 7:00 a.m. It is unlawful for any person to create noise at noise-sensitive land uses that causes the sound level to exceed the following:

- The noise standard for a cumulative period of more than 30 minutes in any hour
- The noise standard plus 5 dBA for a cumulative period of more than 15 minutes in any hour

[1] Title 24 requires that an acoustical analysis be prepared for all new developments of multifamily dwellings, condominiums, hotels, and motels proposed for areas within the 60 dB L_{dn} (or CNEL) contour of a major noise source for the purpose of documenting that an acceptable interior noise level of 45 dB L_{dn} (or CNEL) or below will be achieved with the windows and doors closed. UBC Chapter 35 requires that common wall and floor/ceiling assemblies within multifamily dwellings comply with minimum standards for the transmission of airborne sound and structure-borne impact noise.

- The noise standard plus 10 dBA for a cumulative period of more than 5 minutes in any hour
- The noise standard plus 15 dBA for a cumulative period of more than 1 minute in any hour
- The noise standard plus 20 dBA for any period of time

Construction Hours. Section 83.01.080 of the County Development Code limits the hours of construction to between the hours of 7:00 a.m. and 7:00 p.m., Monday through Saturday. No construction is permitted on Sundays and federal holidays.

On noise standards for adjacent mobile noise sources, the County's Development Code, Section 83.01, has noise standards similar to those identified in Table F. In addition, Table H lists noise standards for other structures that require these structures to be sound, attenuated against the combined input of all present and projected exterior noise to not exceed the criteria.

Table H: Noise Standards for Other Structures

Typical Uses	12-Hour Equivalent Sound Level (Interior) in dBA L_{dn}
Educational, institutions, libraries, meeting facilities, etc.	45
General office, reception, etc.	50
Retail stores, restaurants, etc.	55
Other areas for manufacturing, assembly, testing, warehousing, etc.	65

Source: County of San Bernardino Development Code, April 2007.
dBA = A-weighted decibels
L_{dn} = day/night noise level

In addition, the average of the maximum levels on the loudest of intrusive sounds occurring during a 24-hour period shall not exceed 65 dBA interior.

PROJECT IMPACTS

Construction Noise Impact

Short-term noise impacts would be associated with site preparation, grading, building erection, and tenant improvement within the building. Construction-related, short-term noise levels would be higher than existing ambient noise levels in the project area, but would no longer occur once tenant improvement of the project building is completed.

Two types of short-term noise impacts could occur during construction on the project site. First, construction crew commutes and the transport of construction equipment and materials to the site for the proposed project would incrementally increase noise levels on access roads leading to the site. There will be a relatively high single-event noise exposure potential at a maximum level of 87 dBA L_{max} with trucks passing at 50 ft. However, soils will be balanced on site, and no import or export of the soils/dirt is expected. Therefore, the projected construction traffic will be minimal when compared to the existing traffic volumes on Calico Road, Calico Boulevard, Grand View Avenue, and other affected streets; and its associated long-term noise level change will not be perceptible. Therefore,

short-term construction-related worker commutes and equipment transport noise impacts would not be substantial.

The second type of short-term noise impact is related to noise generated during site preparation, grading, building erection, and tenant improvement within the building. Table I lists the maximum noise levels from the Federal Highway Administration Roadway Construction Noise Model (RCNM, FHWA Highway Construction Noise Handbook, August 2006) for noise impact assessments for typical construction equipment based on a distance of 50 ft between the equipment and a noise receptor.

Table I: RCNM Default Noise Emission Reference Levels and Usage Factors

Equipment Description	Impact Device?	Acoustical Usage Factor	Spec. 721.560 L_{max} at 50 ft (dBA, slow)	Actual Measured L_{max} at 50 ft (dBA, slow)	Number of Actual Data Samples (Count)
All other Equipment > 5 HP	No	50	85	N/A	0
Auger Drill Rig	No	20	85	84	36
Backhoe	No	40	80	78	372
Bar Bender	No	20	80	N/A	0
Blasting	Yes	N/A	94	N/A	0
Boring Jack Power Unit	No	50	80	83	1
Chainsaw	No	20	85	84	46
Clam Shovel (dropping)	Yes	20	93	87	4
Compactor (ground)	No	20	80	83	57
Compressor (air)	No	40	80	78	18
Concrete Batch Plant	No	15	83	N/A	0
Concrete Mixer Truck	No	40	85	79	40
Concrete Pump Truck	No	20	82	81	30
Concrete Saw	No	20	90	90	55
Crane	No	16	85	81	405
Dozer	No	40	85	82	55
Drill Rig Truck	No	20	84	79	22
Drum Mixer	No	50	80	80	1
Dump Truck	No	40	84	76	31
Excavator	No	40	85	81	170
Flat Bed Truck	No	40	84	74	4
Front- End Loader	No	40	80	79	96
Generator	No	50	82	81	19
Generator (< 25 kVA, VMS Signs)	No	50	70	73	74
Gradall	No	40	85	83	70
Grader	No	40	85	N/A	0
Grapple (on backhoe)	No	40	85	87	1
Horizontal Boring Hydraulic Jack	No	25	80	82	6
Hydra Break Ram	Yes	10	90	N/A	0
Impact Derive	Yes	20	95	101	11
Jackhammer	Yes	20	85	89	133
Man Lift	No	20	85	75	23
Mounted Impact Hammer (hoe ram)	Yes	20	90	90	212
Pavement Scarifier	No	20	85	90	2
Paver	No	50	85	77	9
Pickup Truck	No	40	55	75	1
Pneumatic Tools	No	50	85	85	90
Pumps	No	50	77	81	17

Table I: RCNM Default Noise Emission Reference Levels and Usage Factors

Equipment Description	Impact Device?	Acoustical Usage Factor	Spec. 721.560 L_{max} at 50 ft (dBA, slow)	Actual Measured L_{max} at 50 ft (dBA, slow)	Number of Actual Data Samples (Count)
Refrigerator Unit	No	100	82	73	3
Rivet Buster/Chipping Gun	Yes	20	85	79	19
Rock Drill	No	20	85	81	3
Roller	No	20	85	80	16
Sand Blasting (single nozzle)	No	20	85	96	9
Scraper	No	40	85	84	12
Shears (on backhoe)	No	40	85	96	5
Slurry Plant	No	100	78	78	1
Slurry Trench Machine	No	50	82	80	75
Soil Mix Drill Rig	No	50	80	N/A	0
Tractor	No	40	84	N/A	0
Vacuum Excavator (Vac-Truck)	No	40	85	85	149
Vacuum Street Sweeper	No	10	80	82	19
Ventilation Fan	No	100	85	79	13
Vibrating Hopper	No	50	85	87	1
Vibratory Concrete Mixer	No	20	80	80	1
Vibratory Pile Driver	No	20	95	101	44
Warning Horn	No	5	85	83	12
Welder/Torch	No	40	73	74	5

Source: FHWA Highway Construction Noise Handbook (August 2006).
dBA = A-weighted decibels
FHWA = Federal Highway Administration
ft-lb/blow = foot-pounds per blow
HP = horsepower
L_{max} = maximum instantaneous noise level
N/A = Not Applicable
RCNM = Roadway Construction Noise Model

Construction of the proposed project is expected to require the use of scrapers, dozers, and trucks. Based on the Suggested Maximum Sound Level for Analysis at 50 ft (dBA) column in Table I, the maximum noise level generated by scrapers is assumed to be 87 dBA L_{max} at 50 ft. The maximum noise level generated by dozers is approximately 85 dBA L_{max} at 50 ft. The maximum noise level generated by trucks is approximately 86 dBA L_{max} at 50 ft. Combined together with these activities occurring at the same time, active construction area would result in approximately 90 dBA L_{max} at a distance of 50 ft.

Existing land uses in the vicinity of the project area may be subject to short-term, intermittent noise generated by on-site tenant improvement activities. The closest residence in the vicinity of the project area is the residence located 60 ft to the south of the project site that would be subject to short-term noise reaching 89 dBA L_{max} generated by construction activities near the southern project boundary. Vehicular traffic on Calico Road, Calico Boulevard, and Grand View Avenue would provide a masking effect for these residences from construction noise at the project site. Construction on the project site would follow the County's permitted hours, and no additional mitigation is necessary.

Long-Term On-Site Stationary Source Impacts

Potential long-term noise impacts would be associated with stationary sources on the project site. The proposed travel stop's intended clientele are those traveling in passenger vehicles on I-15. According to the project applicant, the site is designed to discourage trucks from entering the site; however, access for delivery trucks will be provided off of Calico Road. Therefore, delivery trucks and parking lot activity are two biggest noise-generating activities on the project site. These activities are potential point sources of noise that could affect off-site noise-sensitive receptors such as residences- to the south. The following noise impact analysis is based on assumptions from similar facilities evaluated by LSA in the past.

Truck Delivery Activity. It is expected that there would be diesel trucks delivering goods to the proposed on-site stores and fuel trucks delivering fuel to the on-site fueling stations. The diesel trucks would idle no more than 5 minutes during each loading/unloading operation per the requirement of the California Air Resources Board (ARB) and South Coast Air Quality Management District (SCAQMD) on truck idling.

When sound propagates through open space, it will attenuate by the distance divergence, air absorption, and ground attenuation. There are residences to the south of the project site that are approximately 360 ft from the storefront loading area and fueling stations. At this distance, trucks would receive 17 dBA in noise reduction when compared to the noise level measured at 50 ft from the truck in operation. Typical diesel truck would generate up to 75 dBA L_{max} when idling, and up to 87 dBA L_{max} when passing by with a speed of 45 miles per hour (mph). A slow moving truck maneuvering to its destination on-site would generate approximately 80 dBA L_{max} at 50 ft. Since trucks on the project site would not be operating at 45 mph, the only noise generated on-site would be truck maneuvering and idling. Therefore, on-site truck noise would be reduced to 63 dBA L_{max} intermittently when the truck maneuvers to its loading/unloading area, and to 58 dBA L_{max} when it is idling (up to 5 minutes) at the loading/unloading area. Both of these noise levels are below the County's 75 dBA L_{max} noise standard. The idling noise of 58 dBA L_{max}, if lasts for up to 5 minutes, would be below the 65 dBA L_8 noise threshold not to be exceeded for more than 5 minutes in any hour. Therefore, no significant truck delivery noise would occur for residences to the south of the project site.

Parking Lot Activity. Proposed parking facilities are located on the northwest and southeast portions of the project site. The parking area on the southeastern portion of the project site is approximately 60 ft to the property line and 120 ft to the residential structures to the south. Representative parking activities, such as employees conversing and doors slamming, would generate approximately 60–70 dBA L_{max} at 50 ft intermittently. This level of noise is much lower than that of the truck idling and loading/unloading activities. With the noise attenuation from the distance divergence, noise in the parking lot closest to the existing residences to the south would be attenuated to below 68 dBA L_{max} at the property line and below 62 dBA L_{max} at the residential structures. Since activity at the parking lot is intermittent and usually lasts less than one minute, neither the noise level at the property line nor the noise level at the residential structures on the south side of the project site are anticipated to experience a significant noise issue with respect to parking lot activity.

Long-Term Traffic Noise Impact

The FHWA Highway Traffic Noise Prediction Model (FHWA RD-77-108) was used to evaluate traffic-related noise conditions along Calico Road and Calico Boulevard in the project vicinity. This model requires various parameters, including traffic volumes, vehicle mix, vehicle speed, and roadway geometry to compute typical equivalent noise levels during daytime, evening, and nighttime hours. The resulting noise levels are weighted and summed over 24-hour periods to determine the CNEL values. The future traffic average daily traffic (ADT) volumes were taken from the Traffic Impact Analysis prepared for the proposed project (LSA, May 2014). Table J lists the existing (2014) with project traffic noise levels. Tables K and L respectively list the opening year without and with project traffic noise levels. Tables M and N respectively list the opening year without and with project traffic noise levels. These noise levels represent the worst-case scenario, which assumes that no shielding is provided between the traffic and the location where the noise contours are drawn. The specific assumptions used in developing these noise levels and the model printouts are provided in Appendix A.

Off-Site Traffic Noise Impacts. Tables J, K, and N show that project-related traffic would have traffic noise level increases from 4.3 to 7.8 dBA along most roadway segments in the project vicinity. However, Table N shows that the 65 dBA CNEL contour along most of the roadway segments in the project vicinity would be confined to within the roadway right-of-way, except along Calico Road south of the I-15 NB off-ramp where the 65 dBA CNEL contour would extend to 53 ft from the roadway centerline. Since existing residences along this segment of Calico Road are more than 53 ft from the centerline of Calico Road, no existing land uses would be exposed to traffic noise exceeding the County's 65 dBA CNEL exterior noise standard for residential uses. Therefore, no significant off-site traffic noise impacts from project-related traffic would occur; therefore, no mitigation measures are required.

Table J: Existing (2013) With Project Traffic Noise Levels

Roadway Segment	ADT	Centerline to 70 CNEL (ft)	Centerline to 65 CNEL (ft)	Centerline to 60 CNEL (ft)	CNEL (dBA) 50 ft from Centerline of Outermost Lane	Increase CNEL (dBA) 50 ft from Centerline of Outermost Lane
Calico Rd north of I-15 Ramps	2,500	< 50	< 50	76	62.0	5.2
Calico Rd between I-15 Ramps and Calico Blvd	3,700	< 50	< 50	99	63.7	7.3
Calico Rd between Calico Blvd and I-15 NB Off-ramp	2,800	< 50	< 50	82	62.5	7.8
Calico Rd south of I-15 NB Off-ramp	4,400	< 50	52	111	64.5	7.8
Calico Blvd east of Calico Rd	900	< 50	< 50	< 50	57.6	6.1

Source: LSA Associates, Inc., May 2014.
Note: Traffic noise within 50 ft of the roadway centerline should be evaluated with site-specific information.
ADT = average daily traffic
CNEL = Community Noise Equivalent Level
dBA = A-weighted decibel
ft = feet

Table K: Opening Year Without Project Traffic Noise Levels

Roadway Segment	ADT	Centerline to 70 CNEL (ft)	Centerline to 65 CNEL (ft)	Centerline to 60 CNEL (ft)	CNEL (dBA) 50 ft from Centerline of Outermost Lane
Calico Rd north of I-15 NB Ramps	760	< 50	< 50	< 50	56.8
Calico Rd between I-15 NB Ramps and Calico Blvd	690	< 50	< 50	< 50	56.4
Calico Rd between Calico Blvd and I-15 NB Off-ramp	470	< 50	< 50	< 50	54.8
Calico Rd south of I-15 NB Off-ramp	740	< 50	< 50	< 50	56.7
Calico Blvd east of Calico Rd	220	< 50	< 50	< 50	51.5

Source: LSA Associates, Inc., May 2014.
Note: Traffic noise within 50 ft of the roadway centerline should be evaluated with site-specific information.
ADT = average daily traffic
CNEL = Community Noise Equivalent Level
dBA = A-weighted decibels
ft = feet

Table L: Opening Year With Project Traffic Noise Levels

Roadway Segment	ADT	Centerline to 70 CNEL (ft)	Centerline to 65 CNEL (ft)	Centerline to 60 CNEL (ft)	CNEL (dBA) 50 ft from Centerline of Outermost Lane	Increase CNEL (dBA) 50 ft from Centerline of Outermost Lane
Calico Rd north of I-15 Ramps	2,500	< 50	< 50	76	62.0	5.2
Calico Rd between I-15 Ramps and Calico Blvd	3,700	< 50	< 50	99	63.7	7.3
Calico Rd between Calico Blvd and I-15 NB Off-ramp	2,800	< 50	< 50	82	62.5	7.7
Calico Rd south of I-15 NB Off-ramp	4,400	< 50	52	111	64.5	7.8
Calico Blvd east of Calico Rd	900	< 50	< 50	< 50	57.6	6.1

Source: LSA Associates, Inc., May 2014.
Note: Traffic noise within 50 ft of the roadway centerline should be evaluated with site-specific information.
ADT = average daily traffic
CNEL = Community Noise Equivalent Level
dBA = A-weighted decibel
ft = feet

Table M: 2035 Without Project Traffic Noise Levels

Roadway Segment	ADT	Centerline to 70 CNEL (ft)	Centerline to 65 CNEL (ft)	Centerline to 60 CNEL (ft)	CNEL (dBA) 50 ft from Centerline of Outermost Lane
Calico Rd north of I-15 NB Ramps	990	< 50	< 50	< 50	58.0
Calico Rd between I-15 NB Ramps and Calico Blvd	900	< 50	< 50	< 50	57.6
Calico Rd between Calico Blvd and I-15 NB Off-ramp	610	< 50	< 50	< 50	55.9
Calico Rd south of I-15 NB Off-ramp	960	< 50	< 50	< 50	57.9
Calico Blvd east of Calico Rd	290	< 50	< 50	< 50	52.7

Source: LSA Associates, Inc., May 2014.
Note: Traffic noise within 50 ft of the roadway centerline should be evaluated with site-specific information.
ADT = average daily traffic
CNEL = Community Noise Equivalent Level
dBA = A-weighted decibels
ft = feet

Table N: 2035 With Project Traffic Noise Levels

Roadway Segment	ADT	Centerline to 70 CNEL (ft)	Centerline to 65 CNEL (ft)	Centerline to 60 CNEL (ft)	CNEL (dBA) 50 ft from Centerline of Outermost Lane	Increase CNEL (dBA) 50 ft from Centerline of Outermost Lane
Calico Rd north of I-15 Ramps	2,700	< 50	< 50	80	62.3	4.3
Calico Rd between I-15 Ramps and Calico Blvd	3,900	< 50	< 50	102	63.9	6.3
Calico Rd between Calico Blvd and I-15 NB Off-ramp	2,900	< 50	< 50	84	62.7	6.8
Calico Rd south of I-15 NB Off-ramp	4,600	< 50	53	114	64.7	6.8
Calico Blvd east of Calico Rd	970	< 50	< 50	< 50	57.9	5.2

Source: LSA Associates, Inc., May 2014.
Note: Traffic noise within 50 ft of the roadway centerline should be evaluated with site-specific information.
ADT = average daily traffic
CNEL = Community Noise Equivalent Level
dBA = A-weighted decibel
ft = feet

On-Site Traffic Noise Impacts. Because the proposed project is not considered noise-sensitive, no significant traffic noise impacts on on-site uses would occur; therefore, no mitigation measures are required.

MITIGATION MEASURES

Construction Impacts

No mitigation is necessary.

Short Term Construction Impacts

No mitigation is required.

Long-Term Operational Impacts

No mitigation is required.

REFERENCES

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

County of San Bernardino, Noise Element of the General Plan.

County of San Bernardino, Development Code 87.0905, Noise. 1995.

Federal Highway Administration, Highway Traffic Noise Prediction Model, FHWA RD-77-108, 1977.

FHWA Highway Construction Noise Handbook. August 2006. Roadway Construction Noise Model, FHWA-HEP-06-015. DOT-VNTSC-FHWA-06-02. NTIS No. PB2006-109012.

LSA Associates, Inc., Traffic Impact Analysis, May 2014.

United States Environmental Protection Agency, Protective Noise Levels, Condensed Version of EPA Levels Document, 1978.

APPENDIX A

FHWA HIGHWAY TRAFFIC NOISE MODEL PRINTOUTS

TABLE Existing-01
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 05/02/2014
ROADWAY SEGMENT: Calico Rd north of I-15 NB Ramps
NOTES: Yermo Travel Stop - Existing

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 750 SPEED (MPH): 50 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 56.79

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	73.5

TABLE Existing-02
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 05/02/2014
ROADWAY SEGMENT: Calico Rd between I-15 NB Ramps and Calico Blvd
NOTES: Yermo Travel Stop - Existing

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 680 SPEED (MPH): 50 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 56.36

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	68.8

TABLE Existing-03
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 05/02/2014
ROADWAY SEGMENT: Calico Rd between Calico Blvd and I-15 NB Offramp
NOTES: Yermo Travel Stop - Existing

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 460 SPEED (MPH): 50 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 54.66

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	53.2

TABLE Existing-04
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 05/02/2014
ROADWAY SEGMENT: Calico Rd south of I-15 NB Offramp
NOTES: Yermo Travel Stop - Existing

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 730 SPEED (MPH): 50 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 56.67

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	72.2

TABLE Existing-05
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 05/02/2014
ROADWAY SEGMENT: Calico Blvd east of Calico Rd
NOTES: Yermo Travel Stop - Existing

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 220 SPEED (MPH): 50 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 51.46

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	0.0

TABLE Existing with Project-01
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 05/02/2014
ROADWAY SEGMENT: Calico Rd north of I-15 NB Ramps
NOTES: Yermo Travel Stop - Existing with Project

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 2500 SPEED (MPH): 50 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 62.01

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	76.1	163.4

TABLE Existing with Project-02
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 05/02/2014
ROADWAY SEGMENT: Calico Rd between I-15 NB Ramps and Calico Blvd
NOTES: Yermo Travel Stop - Existing with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 3700 SPEED (MPH): 50 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 63.72

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	98.7	212.2

TABLE Existing with Project-03
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 05/02/2014
ROADWAY SEGMENT: Calico Rd between Calico Blvd and I-15 NB Offramp
NOTES: Yermo Travel Stop - Existing with Project

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 2800 SPEED (MPH): 50 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 62.51

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	82.0	176.3

TABLE Existing with Project-04
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 05/02/2014
ROADWAY SEGMENT: Calico Rd south of I-15 NB Offramp
NOTES: Yermo Travel Stop - Existing with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 4400 SPEED (MPH): 50 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 64.47

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	51.7	110.7	238.1

TABLE Existing with Project-05
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 05/02/2014
ROADWAY SEGMENT: Calico Blvd east of Calico Rd
NOTES: Yermo Travel Stop - Existing with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 900 SPEED (MPH): 50 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 57.58

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	82.9

TABLE Open Year w/o Project-01
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 05/02/2014
ROADWAY SEGMENT: Calico Rd north of I-15 NB Ramps
NOTES: Yermo Travel Stop - Open Year w/o Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 760 SPEED (MPH): 50 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 56.84

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	74.1

TABLE Open Year w/o Project-02
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 05/02/2014
ROADWAY SEGMENT: Calico Rd between I-15 NB Ramps and Calico Blvd
NOTES: Yermo Travel Stop - Open Year w/o Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 690 SPEED (MPH): 50 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 56.42

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	69.5

TABLE Open Year w/o Project-03
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 05/02/2014
ROADWAY SEGMENT: Calico Rd between Calico Blvd and I-15 NB Offramp
NOTES: Yermo Travel Stop - Open Year w/o Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 470 SPEED (MPH): 50 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 54.76

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	54.0

TABLE Open Year w/o Project-04
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 05/02/2014
ROADWAY SEGMENT: Calico Rd south of I-15 NB Offramp
NOTES: Yermo Travel Stop - Open Year w/o Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 740 SPEED (MPH): 50 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 56.73

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	72.8

TABLE Open Year w/o Project-05
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 05/02/2014
ROADWAY SEGMENT: Calico Blvd east of Calico Rd
NOTES: Yermo Travel Stop - Open Year w/o Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 220 SPEED (MPH): 50 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 51.46

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	0.0

TABLE Open Year with Project-01
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 05/02/2014
ROADWAY SEGMENT: Calico Rd north of I-15 NB Ramps
NOTES: Yermo Travel Stop - Open Year with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 2500 SPEED (MPH): 50 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 62.01

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	76.1	163.4

TABLE Open Year with Project-02
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 05/02/2014
ROADWAY SEGMENT: Calico Rd between I-15 NB Ramps and Calico Blvd
NOTES: Yermo Travel Stop - Open Year with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 3700 SPEED (MPH): 50 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 63.72

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	98.7	212.2

TABLE Open Year with Project-03
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 05/02/2014
ROADWAY SEGMENT: Calico Rd between Calico Blvd and I-15 NB Offramp
NOTES: Yermo Travel Stop - Open Year with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 2800 SPEED (MPH): 50 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 62.51

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	82.0	176.3

TABLE Open Year with Project-04
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 05/02/2014
ROADWAY SEGMENT: Calico Rd south of I-15 NB Offramp
NOTES: Yermo Travel Stop - Open Year with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 4400 SPEED (MPH): 50 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 64.47

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	51.7	110.7	238.1

TABLE Open Year with Project-05
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 05/02/2014
ROADWAY SEGMENT: Calico Blvd east of Calico Rd
NOTES: Yermo Travel Stop - Open Year with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 900 SPEED (MPH): 50 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 57.58

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	82.9

TABLE 2035 Cumulative w/o Project-01
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 05/02/2014
ROADWAY SEGMENT: Calico Rd north of I-15 NB Ramps
NOTES: Yermo Travel Stop - 2035 Cumulative w/o Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 990 SPEED (MPH): 50 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 57.99

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	88.3

TABLE 2035 Cumulative w/o Project-02
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 05/02/2014
ROADWAY SEGMENT: Calico Rd between I-15 NB Ramps and Calico Blvd
NOTES: Yermo Travel Stop - 2035 Cumulative w/o Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 900 SPEED (MPH): 50 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 57.58

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	82.9

TABLE 2035 Cumulative w/o Project-03
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 05/02/2014
ROADWAY SEGMENT: Calico Rd between Calico Blvd and I-15 NB Offramp
NOTES: Yermo Travel Stop - 2035 Cumulative w/o Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 610 SPEED (MPH): 50 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 55.89

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	64.1

TABLE 2035 Cumulative w/o Project-04
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 05/02/2014
ROADWAY SEGMENT: Calico Rd south of I-15 NB Offramp
NOTES: Yermo Travel Stop - 2035 Cumulative w/o Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 960 SPEED (MPH): 50 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 57.86

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	86.5

TABLE 2035 Cumulative w/o Project-05
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 05/02/2014
ROADWAY SEGMENT: Calico Blvd east of Calico Rd
NOTES: Yermo Travel Stop - 2035 Cumulative w/o Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 290 SPEED (MPH): 50 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 52.66

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	0.0

TABLE 2035 Cumulative with Project-01
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 05/02/2014
ROADWAY SEGMENT: Calico Rd north of I-15 NB Ramps
NOTES: Yermo Travel Stop - 2035 Cumulative with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 2700 SPEED (MPH): 50 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 62.35

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	80.0	172.0

TABLE 2035 Cumulative with Project-02
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 05/02/2014
ROADWAY SEGMENT: Calico Rd between I-15 NB Ramps and Calico Blvd
NOTES: Yermo Travel Stop - 2035 Cumulative with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 3900 SPEED (MPH): 50 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 63.95

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL	70 CNEL	65 CNEL	60 CNEL	55 CNEL
	0.0	0.0	102.2	219.8

TABLE 2035 Cumulative with Project-03
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 05/02/2014
ROADWAY SEGMENT: Calico Rd between Calico Blvd and I-15 NB Offramp
NOTES: Yermo Travel Stop - 2035 Cumulative with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 2900 SPEED (MPH): 50 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 62.66

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	83.9	180.4

TABLE 2035 Cumulative with Project-04
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 05/02/2014
ROADWAY SEGMENT: Calico Rd south of I-15 NB Offramp
NOTES: Yermo Travel Stop - 2035 Cumulative with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 4600 SPEED (MPH): 50 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 64.66

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	53.2	114.0	245.3

TABLE 2035 Cumulative with Project-05
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 05/02/2014
ROADWAY SEGMENT: Calico Blvd east of Calico Rd
NOTES: Yermo Travel Stop - 2035 Cumulative with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 970 SPEED (MPH): 50 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 57.90

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	87.1
