

Noise Report

Noise Analysis Technical Report for the Costco/Vineyard II Retail Development Project City of Murrieta, California

Prepared by:



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Acronyms and Abbreviations

Acronym/Abbreviation	Definition		
City	City of Murrieta		
CNEL	community noise equivalent level		
dB	decibel		
dBA	A-weighted decibel		
FICON	Federal Interagency Committee on Noise		
HVAC	heating, ventilation, and air conditioning		
in/sec	inches per second		
L _{dn}	day-night average sound level		
Leq	equivalent sound level		
MM	Mitigation Measure		
PPV	peak particle velocity		

Executive Summary

The purpose of this technical report is to assess the potential noise and vibration impacts associated with implementation of the proposed Costco/Vineyard II Retail Development Project (project). This assessment uses the significance thresholds in Appendix G of the California Environmental Quality Act Guidelines (14 CCR 15000 et seq.).

The project site is located in the northern portion of the City of Murrieta (City) in Riverside County, California, at the northwest corner of Interstate 215 and Clinton Keith Road. The project site encompasses approximately 26 acres.

The project applicants, Costco Wholesale and Retail Development Advisors, propose to develop a 26.3-acre vacant site (the site or project site) in the City with the project; this would include construction and operation of approximately 225,362 square feet of new development, including a Costco Wholesale (Costco) and gas station and, in adjoining parcels, standalone retail and fitness buildings and in-line stores, one casual dining restaurant with drive-through and window service, and one drive-through fast-food restaurant. The project would include 1,215 parking spaces adjoining the retail and warehouse uses.

The project would also include construction of two detention basins, construction of the extension of Warm Springs Parkway from the southern site boundary to the northern site boundary of the site between the Costco parcel and the Vineyard II development, a temporary terminus of that road at the northerly boundary of the site, and undergrounding of certain existing power lines north of Linnel Lane back to the next pole north of the property line of the Costco parcel and the Clinton Keith Road/Creighton Road intersection.

This noise analysis evaluates the potential for significant adverse impacts due to project construction and operation. Implementation of the project would result in two primary types of potential noise impacts: short-term (i.e., temporary) noise during construction and long-term noise during operation.

Noise from construction would exceed the City's daytime construction noise standards for mobile equipment (75 Aweighted decibels (dBA) for single-family residences, and 80 dBA for multi-family residences). Additionally, unmitigated construction noise levels could result in annoyance and would be considered substantial; therefore, construction noise impacts would be significant unless mitigated. With implementation of standard and supplemental conditions and mitigation measures as required by the City (see Section 5.5, Mitigation), noise impacts from construction activities would be reduced to less than significant. The project's traffic-related impacts would not result in a significant noise-level increase along adjacent roadways; therefore, traffic noise impacts would be **less than significant** at off-site land uses. On-site operational noise (including mechanical, delivery, and parking lot noise) associated with the proposed project was assessed and determined to result in less-than-significant noise impacts. Vibration levels associated with project construction would likely be perceptible at nearby residences, but they would be below the U.S. Department of Transportation's threshold of potential damage for normal structures (0.20 peak particle velocity in inches per second), and would be mitigated through provided standard mitigation measures. The project site is not located within the vicinity of an airport or private airstrip and, therefore, would not expose people residing or working in the project area to excessive noise levels associated with an airport or airstrip. Finally, the noise analysis concludes that the project would not result in any significant cumulative impacts.

1 Introduction

1.1 Report Purpose and Scope

The purpose of this report is to evaluate the potential noise and vibration impacts associated with implementation of the proposed Costco/Vineyard II Retail Development Project (project).

1.2 Project Location

The project site is located in the northern portion of the City of Murrieta (City) in Riverside County. Specifically, the project site is located on a vacant lot in the northeastern corner of Antelope Road and Clinton Keith Road, east of Interstate 215 (Figure 1, Project Location).

The approximately 26-acre, rectangular-shaped project site is experiencing an ongoing mass grading operation that is removing the low-lying hills on site. The City's General Plan Land Use Map designates the project site as Commercial (C) (City of Murrieta 2011a). The City's Zoning Map shows the site as zoned Regional Commercial (RC) (City of Murrieta 2014).

The project site is surrounded by commercial development, residential development, and a high school. Specific land uses located in the immediate vicinity of the project site are as follows:

- North: Vacant
- East: Single-family and multi-family residential uses
- South: Vacant and Vista Murrieta High School
- West: Vacant and Interstate 215

1.3 Project Description

The proposed project (as shown in Figure 2, Proposed Site Plan) would involve construction and operation of approximately 225,362 square feet of new development, including a Costco Wholesale (Costco) and gas station and, in adjoining parcels, standalone retail and fitness buildings and in-line stores, one casual dining restaurant with drive-through and window service, and one drive-through fast-food restaurant. The project would include 1,215 parking spaces adjoining the retail and warehouse uses.

The project would also include construction of two detention basins, construction of the extension of Warm Springs Parkway from the southern site boundary to the northern site boundary of the site between the Costco parcel and the Vineyard II development, a temporary terminus of that road at the northerly boundary of the site, and undergrounding of certain existing power lines north of Linnel Lane back to the next pole north of the property line of the Costco parcel and the Clinton Keith Road/Creighton Road intersection.

Costco

Warehouse

The approximately 16.5-acre warehouse parcel would be developed with a 153,362-square-foot warehouse building. A separate gas station parcel would be developed with a 32-pump facility with overhead canopy.

The warehouse would include a bakery and sales of baked goods, alcohol sales, pharmacy, optical center with optical exams and retail optical sales, hearing aid testing exam and retail hearing aid fitting and sales center, food service preparation and sales, meat preparation and sales, and a photo center, along with the sales of over 4,000 products. The Costco warehouse would provide sales only to warehouse members. Temporary Christmas tree sales adjacent to the warehouse would typically occur from late November through December, which may temporarily make 12 to 15 vehicle spaces unavailable.

The truck loading dock would be located at the northern edge of the building, toward the northernmost Antelope Road driveway. The bay doors would be equipped with sealed gaskets to limit noise impacts. Five on-grade doors would be located on the western side of the building for emergency egress only, and four on-grade doors would be on the northern side. The two doors on the northern side of the building, adjacent to the loading docks, would be for receiving deliveries from bread companies and Federal Express-type trucks. The two doors would also be the primary entrance for employees. The other two service doors would be only for maintenance access to the fire riser and mechanical rooms. A transformer and two trash compactors would be located along the north edge of the building. Proposed landscaping and tree planting at the perimeter of the project site would provide screening of these uses.

Parking and Circulation

There would be 799 parking stalls for the Costco warehouse, which exceeds the required parking of 767 stalls. The loading dock is located on the northernmost portion of the Costco warehouse, accessible from the northwestern Antelope Road entrance and away from residences located east. A 30-foot drive aisle surrounds the warehouse to provide fire access and circulation for the delivery trucks. An Americans with Disabilities Act-compliant pedestrian pathway is required from the new warehouse to the public right-of-way to ensure connectivity throughout the site and easy access from adjacent streets and neighboring properties. To provide members with easier accessibility to vehicles, the project would provide for 781 10-foot-wide stalls and 17 accessible stalls that are larger than the minimum requirements. The project would also include three spaces for electrical vehicle charging.

Gas Station

The gas station would include a 12,684-square-foot canopy and would be located on the northeastern portion of the project site. The gas station would dispense regular, premium, and diesel grades of fuel at each fuel pump. The pumps would be fully automated and self-service and would be for Costco members only, with a Costco attendant present to oversee operations and assist members if they have fueling issues.

Vineyard II Development

The Vineyard II Retail Development would be constructed concurrently to the east of the proposed Costco location, within the same shopping center. The square footage of these retail uses would total 79,900 square feet and 416 parking stalls would be provided for the retail uses. Fourteen of these stalls would be for electric vehicle charging. The site improvements include parking, private drive aisles, wet and dry utilities, storm drains, and water quality improvements. The extension of Warm Springs Parkway is also part of this development. Warm Springs Parkway intersects with Clinton Keith Road and forms the western edge of Vineyard II, providing site access.

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Fitness Center

The proposed 37,000-square-foot fitness center would include a lap pool; indoor basketball court; showers and lockers; weight room; and areas for group exercise classes, including cycling, yoga, and other stretching classes.

Major Retail Pad

This pad is proposed to be 16,000 square feet. The support retailers may include an office supply store, pet supply store, health and beauty store, shoe store, and other similar retailers.

Retail Shops

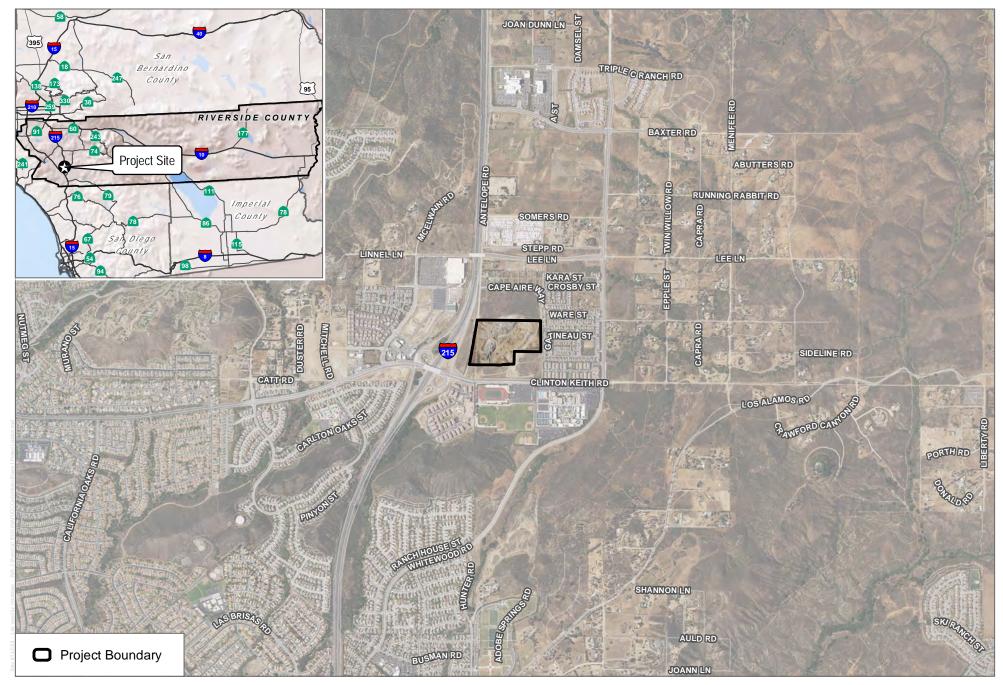
The proposed uses for these two retail shops are service-oriented businesses, such as a pick-up and drop-off dry cleaner (no plant on site), hair salon, and phone store. The larger pad is proposed to be 11,900 square feet and the smaller pad is proposed to be 3,500 square feet.

Casual Dining Restaurant

The proposed use is a 1,200-square-foot casual dining space with drive-through and window service.

Fast-Food Restaurant

This proposed 2,400-square-foot fast-food restaurant with a drive-through would service customers needing to be served quickly. The design would match elements of the overall architecture of the shopping center.



SOURCE: NAIP 2016

FIGURE 1 Project Location Costco/Candee Property



2,000

Feet

1,000



SOURCE: NAIP 2016

FIGURE 2 Proposed Site Plan Costco/Candee Property

200 Feet

2 Existing Conditions

2.1 Noise and Vibration Concepts

Sound may be described in terms of level or amplitude (measured in decibels (dB)), frequency or pitch (measured in hertz, or cycles per second), and duration (measured in seconds or minutes). The standard unit of measurement of the amplitude of sound is the decibel. Because the human ear is not equally sensitive to sound at all frequencies, a special frequency-dependent rating scale is used to relate noise to human sensitivity. The A-weighted decibel scale (dBA) performs this compensation by discriminating against low and very high frequencies in a manner approximating the sensitivity of the human ear.

Noise is defined as unwanted sound and is known to have several adverse effects on people, including hearing loss, speech interference, sleep interference, physiological responses, and annoyance. Based on these known adverse effects of noise, the federal government, the State of California, and local agencies have established criteria to protect public health and safety, to prevent disruption of certain human activities, and to minimize annoyance.

Several descriptors of noise (noise metrics) exist to help predict average community reactions to the adverse effects of environmental noise, including traffic-generated noise, on a community. These descriptors include the equivalent noise level over a given period (L_{eq}), the day-night average noise level (L_{dn}), and the community noise equivalent level (CNEL). Each of these descriptors uses units of dBA.

 L_{eq} is a sound energy level averaged over a specified time period (usually 1 hour). L_{eq} is a single numerical value that represents the amount of variable sound energy received by a receptor during a time interval. For example, a 1-hour L_{eq} measurement would represent the average amount of energy contained in all the noise that occurred in that 1 hour. L_{eq} is an effective noise descriptor because of its ability to assess the total time-varying effects of noise on sensitive receptors. L_{max} is the greatest sound level measured during a designated time interval or event.

Unlike the L_{eq} metric, L_{dn} and CNEL metrics always represent 24-hour periods. L_{dn} and CNEL also differ from L_{eq} because they apply a time-weighted factor designed to emphasize noise events that occur during the evening and nighttime hours (when speech and sleep disturbance is of more concern). "Time weighted" refers to the fact that L_{dn} and CNEL penalize noise that occurs during certain sensitive periods. In the case of CNEL, noise occurring during the daytime (7 a.m.–7 p.m.) receives no penalty. Noise during the evening (7 p.m.–10 p.m.) is penalized by adding 5 dB, and nighttime (10 p.m.–7 a.m.) noise is penalized by adding 10 dB. L_{dn} differs from CNEL in that the daytime period is defined as 7 a.m.–10 p.m., thus eliminating the evening period. L_{dn} and CNEL are the predominant criteria used to measure roadway noise affecting residential receptors. These two metrics generally differ from one another by no more than 0.5 to 1 dB; for that reason, the L_{dn} and CNEL noise metrics are often considered functionally equivalent to one another for most purposes.

Table 1 represents some typical noise levels found in the existing environment. Noise-sensitive uses near the project site include residential uses and a school (Vista Murrieta High School).

Common Outdoor Activities	Noise Level (dB)	Common Indoor Activities
_	110	Rock band
Jet flyover at 300 meters (1,000 feet)	100	-
Gas lawn mower at 1 meter (3 feet)	90	-
Diesel truck at 15 meters (50 feet), at 80	80	Food blender at 1 meter (3 feet)
kph (50 mph)		Garbage disposal at 1 meter (3 feet)
Noisy urban area, daytime	70	Vacuum cleaner at 3 meters (10 feet)
gas lawn mower at 30 meters (100 feet)		
Commercial area	60	Normal speech at 1 meter (3 feet)
Heavy traffic at 90 meters (300 feet)		
Quiet urban daytime	50	Large business office
		Dishwasher, next room
Quiet urban nighttime	40	Theater, large conference room (background)
Quiet suburban nighttime	30	Library
Quiet rural night time	20	Bedroom at night, concert hall (background)
_	10	Broadcast/recording studio
Lowest threshold of human hearing	0	Lowest threshold of human hearing

Table 1. Typical Sound Levels in the Environment and Industry

Source: Caltrans 2013a.

Notes: kph = kilometers per hour; mph = miles per hour.

There are three conceptual components to noise: the source, the transmission path, and the receiver. Noise can be reduced by reducing noise at its source; by lengthening or interrupting the transmission path through diversion, absorption, or dissipation; or by protecting the receiver through noise insulation. The most efficient and effective means of abating noise is to reduce noise at its source. Source noise can be controlled through regulation, such as restrictions outlined in noise ordinances; muffling techniques; or sound proofing. The transmission path can be interrupted through creation of a buffer between the source and the receiver, such as a noise wall, earth embankment, or a building. The receiver can be protected from noise impacts through insulation, building orientation, or shielded areas.

Noise sources can be classified in two forms: point sources, such as individual pieces of stationary or mobile equipment (pumps, heavy construction equipment), and line sources, such as a roadway with a large number of pass-by sources (motor vehicles). Sound generated by a point source typically diminishes (attenuates) at a rate of 6 dB for each doubling of distance from the source to the receptor. For example, a 60 dBA noise level measured at 50 feet from a point source would be 54 dBA at 100 feet from the source and 48 dBA at 200 feet from the source. Sound generated by a line source typically attenuates at a rate of 3 dB and 4.5 dB per doubling of distance from the source to the receptor. Typical sound levels generated by various activities are listed in Table 1.

Sound levels can also be attenuated by built or natural barriers. Intervening noise barriers, such as a solid wall or berm, typically reduce noise levels by 5 dB to 10 dB. Structures can also provide noise reduction by insulating interior spaces from outdoor noise. The exterior-to-interior noise attenuation provided by typical California building structures ranges from 15 dB to 25 dB for windows open and closed, respectively. Acoustically designed enclosures and buildings can provide up to approximately 50 dB of noise reduction, depending on the noise abatement treatments.

Vibration tolerance typically depends on the type of structures that are affected. Structural response to vibration is typically evaluated in terms of peak particle velocity (PPV), generally expressed in inches per second (in/sec). PPV is often used since it is related to the stresses that are experienced by the buildings. Various general standards are contained in the International Standards Organization's Standards 3945, 4866, and 7626-1. Limits set by these standards indicate a low probability of structural damage occurring to common structures at a PPV of 2 in/sec. Older (and non-reinforced) masonry structures would have a limit of 0.75 to 1.0 in/sec (Caltrans 2013b). The U.S. Department of Transportation's Federal Transit Administration identifies a vibration damage threshold criterion of 0.20 in/sec for non-engineered timber and masonry buildings (i.e., fragile buildings) or 0.12 in/sec for buildings extremely susceptible to vibration (i.e., fragile historic buildings) (DOT 2018).

2.2 Existing Noise Environment

The approximately 26-acre project site is located on a vacant lot and is undergoing an ongoing mass-grading operation (with the associated noise from heavy construction equipment) that is removing the low-lying hills on site. Additionally, the surrounding roadways (Interstate 215, Clinton Keith Road, Whitewood Road) generate traffic noise. Surrounding residential and educational land uses also generate noise that contribute to ambient noise levels in the project area.

A sound level survey was conducted on February 23, 2018, and August 13, 2019, to evaluate existing sound levels and assess potential project noise impacts on the surrounding area. Short-term sound levels were measured at existing noise-sensitive receptors adjacent to the project site, as shown in Figure 3, Noise Measurement and Modeling Locations. Noise measurements were taken at the multi-family residences south of the project site (ST1), the high school south of the project site (ST2), the multi-family residences east of the project site (ST3), and the single-family residences east of the project site (ST4 and ST5).

Short-term (1 hour or less), attended sound level measurements were taken with a Rion NL-52 Sound Level Meter. This instrument is categorized as Type 1, Precision Grade. The sound measuring instrument used for the survey was set to the "slow" time response and the dBA scale for all noise measurements. To ensure accuracy, the laboratory calibration of the instrument was field checked before and after each measurement period using an acoustical calibrator. The accuracy of the acoustical calibrator is maintained through a program established through the manufacturer and traceable to the National Institute of Standards and Technology. The sound measurement instrument meets the requirements of American National Standards Institute Standard S 1.4-1983 and International Electrotechnical Commission Publications 804 and 651. In all cases, the microphone height was 5 feet above the ground, and the microphone was equipped with a windscreen.

During the field measurements, physical observations of the predominant noise sources were noted. The primary noise source in the project area was vehicle traffic on Clinton Keith Road, located south of the project site. Other secondary noise sounds included noise from heating, ventilation, and air conditioning (HVAC) equipment, distant construction noise, rustling leaves, birds, distant aircraft overflights, and other community noises. The results of the sound level measurements are summarized in Table 2, and measurement data and notes are provided in Appendix A. As shown in Table 2, measured noise levels ranged from 41 dBA L_{eq} at ST5 to 56 dBA L_{eq} at ST1 when rounded to whole numbers, as is customary for community noise measurements.

Table 2. Short-Term Sound Level Measurement Results

	Measure		ment Period				Measurement Results (dBA)				
Site ID	Measurement Location	Date	Start Time (a.m.)	Duration (minutes)	Noise Sources	Leq	Lmax	Lmin	L90	L50	L10
ST1	Multi-family residences south of project site	02-23-18	10:56	10	Traffic, birds, rustling leaves	55.6	71.3	46.3	48.9	52	55.4
ST2	Vista Murrieta High School, south of project site	02-23-18	9:56	15	HVAC, pool pumps, distant traffic, birds, distant aircraft, distant construction noise	55	65.1	46.8	49.2	52	58.4
ST3	Multi-family residential east of project site	02-23-18	10:18	10	Traffic, birds, rustling leaves	54.3	65.8	44.2	47.3	52.6	57.8
ST4	Single-family residential east of project site	02-23-18	10:39	10	Construction noise, birds, distant aircraft, rustling leaves	52.1	63.6	43.9	45.4	48.2	55.9
ST5	Single-family residential east of project site	08-13-19	10:34	15	Construction noise, birds, distant aircraft, distant traffic	40.6	49.7	37.5	38.7	40.1	42.1

Notes: L_{eq} = equivalent continuous sound level (energy-averaged sound level); L_{max} = maximum sound level during the measurement interval; L_{90} = sound level exceeded for 90% of the measurement period; L_{50} = sound level exceeded for 50% of the measurement period; L_{10} = sound level exceeded for 10% of the measurement period; HVAC = heating, ventilation, and air conditioning.



SOURCE: NAIP 2016

FIGURE 3 Noise Measurement and Modeling Locations Costco/Candee Property

3.1 Federal

Noise Control Act

The Noise Control Act of 1972 recognized the role of the federal government in dealing with major commercial noise sources that require uniform treatment. Since Congress has the authority to regulate interstate and foreign commerce, regulation of noise generated by such commerce also falls under congressional authority. The federal government specifically preempts local control of noise from aircraft, railroads, and interstate highways. The U.S. Environmental Protection Agency has identified acceptable noise levels for various land uses to protect the public, with an adequate margin of safety, and to establish noise emissions standards for interstate commerce.

The Department of Housing and Urban Development's standards define day-night average sound levels (L_{dn}) at below 65 dBA for outdoors as acceptable for residential areas. Outdoor levels up to 75 dBA L_{dn} may be made acceptable through the use of insulation in buildings (HUD 2009).

3.2 State

California Code of Regulations, Title 24, Noise Insulation Standards

The pertinent California noise regulations are contained in the California Code of Regulations. Title 24, Noise Insulation Standards, establishes the acceptable interior environmental noise level for multi-family dwellings at 45 dBA L_{dn}. This may be extended by local legislative action to include single-family dwellings.

California Code of Regulations, Section 65302(f)

California Code of Regulations, Section 65302(f), requires local land use planning jurisdictions to prepare a general plan. The noise element is a mandatory component of general plans. It may include general community noise guidelines developed by the California Health and Human Services Agency and specific planning guidelines for noise/land use compatibility developed by the local jurisdiction. The state guidelines also recommend that the local jurisdiction consider adopting a local noise control ordinance. The California Health and Human Services Agency developed guidelines (OPR 2003) for community noise acceptability for use by local agencies. Selected relevant levels are as follows (OPR 2003):

- CNEL below 60 dBA normally acceptable for low-density residential use
- CNEL of 55 dBA to 70 dBA conditionally acceptable for low-density residential use
- CNEL below 65 dBA normally acceptable for high-density residential use
- CNEL of 60 dBA to 70 dBA conditionally acceptable for high-density residential use, transient lodging, churches, and educational and medical facilities
- CNEL below 70 dBA normally acceptable for playgrounds and neighborhood parks

"Normally acceptable" is defined as satisfactory for the specified land use, assuming that normal conventional construction is used in buildings. "Conditionally acceptable" may require some additional noise attenuation or

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special study. Under most of these land use categories, overlapping ranges of acceptability and unacceptability are presented, leaving some ambiguity in areas where noise levels fall within the overlapping range. Table 3 presents the complete land use/noise compatibility matrix.

	Community Noise Exposure (CNEL)				
Land Use Category	Normally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable	
Residential – Low Density, Single-Family, Duplex, Mobile Homes	50-60	55-70	70-75	75-85	
Residential – Multiple Family	50-65	60-70	70-75	70-85	
Transient Lodging – Motel, Hotels	50-65	60-70	70-80	80-85	
Schools, Libraries, Churches, Hospitals, Nursing Homes	50-70	60-70	70-80	80-85	
Auditoriums, Concert Halls, Amphitheaters	N/A	50-70	N/A	65-85	
Sports Arenas, Outdoor Spectator Sports	N/A	50-75	N/A	70-85	
Playgrounds, Neighborhood Parks	50-70	N/A	67.5-77.5	72.5-85	
Golf Courses, Riding Stables, Water Recreation, Cemeteries	50-70	N/A	70-80	80-85	
Office Buildings, Business Commercial and Professional	50-70	67.5-77.5	75-85	N/A	
Industrial, Manufacturing, Utilities, Agriculture	50-75	70-80	75-85	N/A	

Table 3. Land Use Compatibility for Community Noise Environments

Source: OPR 2003.

Notes: CNEL = community noise equivalent level; N/A = not applicable

<u>Normally Acceptable:</u> Specified land use is satisfactory based on the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.

<u>Conditionally Acceptable:</u> New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features have been included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning, will normally suffice.

<u>Normally Unacceptable:</u> New construction or development should 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 must be included in the design. <u>Clearly Unacceptable:</u> New construction or development should generally not be undertaken.

California Occupational Safety and Health Administration Occupational Noise Exposure Regulations

The extensive state regulations pertaining to worker noise exposure are, for the most part, applicable only to the construction phase of any project,¹ or workers in a central plant and/or maintenance facility, or involved in the use of landscape maintenance equipment or heavy machinery.

¹ For example, the California Occupational Safety and Health Administration Occupational Noise Exposure Regulations (8 CCR, General Industrial Safety Orders, Article 105, Control of Noise Exposure, Section 5095, et seq.).

3.3 Local

The project site is within the City of Murrieta. The pertinent noise regulations for the City are summarized below.

Murrieta General Plan 2035

The Noise Element of the Murrieta General Plan includes goals and policies associated with the protection of noisesensitive land uses, development of a comprehensive land use planning and development review process that ensures noise impacts are adequately addressed, minimization of noise from mobile noise sources, and reduction of noise levels from construction activities, as follows (City of Murrieta 2011b):

Goal N-1 Noise sensitive land uses that are properly and effectively protected from excessive noise generators

- Policy N-1.1Comply with the Land Use Compatibility for Community Noise Environments
[shown herein as Table 3].
- Policy N-1.2 Protect schools, hospitals, libraries, churches, convalescent homes, and other noise sensitive uses from excessive noise levels by incorporating site planning and project design techniques to minimize noise impacts. The use of noise barriers shall be considered after all practical design-related noise measures have been integrated into the project. In cases where sound walls are necessary, they should help create an attractive setting with features such as setbacks, changes in alignment, detail and texture, murals, pedestrian access (if appropriate), and landscaping.
- **Goal N-4** Reduced noise levels from construction activities.
 - Policy N-4.5 Allow exceedance of noise standards on a case-by-case basis for special circumstances including emergency situations, special events, and expedited development projects.

City of Murrieta Noise Ordinance

The City's Noise Ordinance (Section 16.30 of the City's Municipal Code) sets interior and exterior noise standards for specific land uses (Sections 16.30.090 and 16.30.100). The City's Noise Ordinance also has general noise regulations (Section 16.30.130) that regulate noise from construction activities. Construction noise deemed to be disturbing is prohibited from 7 p.m. to 7 a.m. Monday through Friday, or at any time on Sundays or holidays. Construction activities must be conducted in a manner that the maximum noise levels at the affected structures will not exceed those listed in Table 4.

Table 4. City of Murrieta Construction Noise Standards

Equipment Type	Single-Family Residential	Multi-Family Residential	Commercial
Mobile Equipment			
Daily, except Sundays and holidays, 7:00 a.m. to 8:00 p.m.	75 dBA	80 dBA	85 dBA

Equipment Type	Single-Family Residential	Multi-Family Residential	Commercial		
Daily, except Sundays and holidays, 8:00 p.m. to 7:00 a.m.	60 dBA	64 dBA	70 dBA		
Stationary Equipment					
Daily, except Sundays and holidays, 7:00 a.m. to 8:00 p.m.	60 dBA	65 dBA	70 dBA		
Daily, except Sundays and holidays, 8:00 p.m. to 7:00 a.m.	50 dBA	55 dBA	60 dBA		

Table 4. City of Murrieta Construction Noise Standards

Source: City of Murrieta 1997.

Note: dBA = A-weighted decibel scale.

Operational noise generated between two properties within the City is regulated by the standards contained in Section 16.30.090 of the City's Noise Ordinance. The City's exterior noise level limits between properties are presented in Table 5. Pursuant to Section 16.30.090(C), if the location in question is on a boundary property between two zoning districts (as is the case for this project), the exterior noise standard is the arithmetic mean of the exterior noise levels. For example, the exterior noise standard between the commercial zone of the project site and the residential area to the east would be 50 dBA from 10 p.m. to 7 a.m., and 55 dBA from 7 a.m. to 10 p.m.

Table 5. City of Murrieta Exterior and Interior Noise Limits

Noise Zone	Land Use (Receptor Property)	Time Period	Allowed Exterior Noise Level (dBA)			
Exterior Nois	Exterior Noise Limits					
I	Noise-sensitive area	Anytime	45			
	Residential properties	10:00 p.m. to 7:00 a.m.	45			
		7:00 a.m. to 10:00 p.m.	50			
	Residential properties within 500 feet of a kennel(s)	7:00 a.m. to 10:00 p.m.	70			
III	Commercial properties	10:00 p.m. to 7:00 a.m.	55			
		7:00 a.m. to 10:00 p.m.	60			
IV	Industrial properties	Anytime	70			
Interior Noise Limits						
All noise	Multi-family residential	10:00 p.m. to 7:00 a.m.	40			
zones		7:00 a.m. to 10:00 p.m.	45			

Source: City of Murrieta 1997.

Note: dBA = A-weighted decibel scale.

Vibration Standards

The City's Noise Ordinance Section 16.30.130(K) prohibits the operation of any device that creates vibration above the City's established perception threshold of 0.01 PPV in/sec over the range of 1 to 100 hertz. Typically, the City applies this threshold to both construction and operation, except under certain circumstances, including those listed

under Policy N-4.5 of the General Plan Noise Element (listed above). Additionally, Section 16.30.140 (Modification of Standards) within Title 16 (Development Code) of the City's Municipal Code provides the following exception:

Section 16.30.140 Modification of Standards.

Modifications to the requirements of this chapter may be granted by the director for a period of up to two years, subject to any terms, conditions, or requirements to minimize adverse effects on the surrounding neighborhood reasonable. Modifications may be granted only if one of the following findings can be made:

- A. Additional time is necessary for the applicant to alter or modify the activity, operation, or noise source to comply with this chapter: or
- B. The activity, operation, or noise source cannot feasibly be done in a manner that would comply with the provisions of this chapter. and no other reasonable alternative is available to the applicant.

4 Thresholds of Significance

California has guidelines to address the significance of noise impacts based on Appendix G of the California Environmental Quality Act Guidelines, which provides guidance that a project would have a significant environmental impact if it would do any of the following:

- 1. Result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.
- 2. Result in exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels.
- 3. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

The City's noise regulations do not directly address the incremental threshold for community noise increases (i.e., the California Environmental Quality Act Significance Threshold 1: "a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies"). Neither the City's General Plan Noise Element nor the Municipal Code have quantified levels of increase in noise above ambient that are considered "substantial." Some guidance regarding the determination of a substantial permanent increase in ambient noise levels in the project vicinity above existing levels is provided by the 1992 findings of the Federal Interagency Committee on Noise (FICON), which assessed the annoyance effects of changes in ambient noise levels resulting from aircraft operations. The FICON recommendations are based on studies that relate aircraft and traffic noise levels to the percentage of persons highly annoyed by the noise. Annoyance is a qualitative measure of the adverse reaction of people to noise that generates speech interference, sleep disturbance, or interference with the desire for a tranquil environment (FICON 1992).

The rationale for the FICON recommendations is that it is possible to consistently describe the annoyance of people exposed to transportation noise in terms of L_{dn} (and by extension, CNEL). The changes in noise exposure that are shown in Table 6 are expected to result in equal changes in annoyance at sensitive land uses. Although the FICON recommendations were specifically developed to address aircraft noise impacts, they are used in this analysis to define a substantial increase in community noise levels related to all transportation noise sources and permanent non-transportation noise sources.

Table 6. Measures of Substantial Increase for Community Noise Sources

Ambient Noise Level Without Project (Ldn)	Significant Impact Assumed to Occur if the Project Increases Ambient Noise Levels by Amount Listed
<60 dBA	+5 dB or more
60-65 dBA	+3 dB or more
>65 dBA	+2 dB or more

Notes: L_{dn} = day-night average sound level; dBA = A-weighted decibel scale; dB = decibel.

For stationary operational noise sources related to the proposed project, noise levels exceeding the standards contained in Table 5 are considered significant. For construction related to the proposed project, noise levels exceeding the standards contained in Table 3 are considered significant. For groundborne vibration, project-related activities exceeding the City's vibration threshold of perception (0.01 inches per second PPV) are considered potentially significant, with the proviso that this threshold may be exceeded under certain circumstances based upon Policy N-4.5 of the General Plan Noise Element.

5 Impacts and Mitigation

5.1 Generation of A Substantial Temporary or Permanent Increase in Ambient Noise Levels

Implementation of the proposed project would result in two primary types of potential noise impacts: short-term (i.e., temporary) noise during construction and long-term noise during operation of the project.

Short-Term Construction Noise

Construction of the proposed project would occur in phases, including grading, site preparation, building construction, architectural coatings, and paving.

The types of construction equipment that would be used to construct the proposed project would include standard equipment that would be employed for any routine construction project of this scale, such as excavators, graders, trenchers, cranes, rubber-tired bulldozers, generators, and paving equipment. Additionally, rock crushing would occur on-site, and potential rock "popping"² may take place, if necessary. Rock popping, if necessary, is anticipated to take place at least 400 feet from the nearest noise-sensitive receivers.³ Construction equipment with substantially higher noise-generation characteristics (such as pile drivers, rock drills, blasting equipment) would not be necessary for most proposed project components; however, rock blasting is anticipated to be needed for construction of Warm Springs Parkway, and is addressed below.

The range of maximum noise levels for various types of construction equipment at a distance of 50 feet is depicted in Table 7. The noise values represent maximum noise generation, or full-power operation, of the equipment. For example, a loader and two dozers, all operating at full power and relatively close together, would generate a maximum sound level of approximately 90 dBA at 50 feet from their operations. As the distance between equipment or separation of areas with simultaneous construction activity increases, dispersion and distance reduce the effects of separate noise sources added together. In addition, typical operating cycles may involve 2 minutes of full-power operation, followed by 3 or 4 minutes at lower levels. Therefore, the average noise level during construction activities is generally lower (typical levels of approximately 88 dBA L_{eq} at a distance of 50 feet) than maximum levels, since maximum noise generation may only occur up to 50% of the time. Noise levels from construction operations decrease at a rate of approximately 6 dB per doubling of distance from the source.

Table 7. Typical Maximum Construction Equipment Noise Emissions Levels

Equipment	Typical Maximum Sound Level (dBA) 50 Feet from Source
Air compressor	81
Backhoe	80

² A technique used to break up large boulders. Rock popping differs from conventional blasting techniques in that gun-powder capsules, inserted into drilled holes, are used rather than the ammonium nitrate fuel/oil explosives typically used, resulting in substantially lower noise and groundborne vibration levels. Noise from a rock popping event was measured by Dudek staff on the project site on October 26, 2019. Two separate rock popping events were measured, each from an approximate distance of 75 feet. In order to capture the impulsive nature of the events, the measurement intervals were 1/100 of a second in duration. The resultant rock popping noise levels ranged from approximately 52 to 59 dBA, at 75 feet. These noise levels may in fact have been lower if not for the background noise from the high school marching band practice to the south, which was nearly as loud if not louder than the rock popping noise.

³ Based upon information provided by the property owner, rock popping, if any more is necessary, would not occur any closer than approximately 400 feet from receivers to the south or approximately 1,200 feet from receivers to the east.

Equipment	Typical Maximum Sound Level (dBA) 50 Feet from Source	
Compactor	82	
Concrete mixer	85	
Concrete pump	82	
Concrete vibrator	76	
Crane, mobile	83	
Dozer	85	
Generator	81	
Grader	85	
Impact wrench	85	
Jackhammer	88	
Loader	85	
Paver	89	
Pneumatic tool	85	
Pump	76	
Roller	74	
Saw	76	
Truck	88	

Table 7. Typical Maximum Construction Equipment Noise Emissions Levels

Source: DOT 2018.

Note: dBA = A-weighted decibel scale.

Construction equipment would typically be operating all over the project site, both near and far from any one location in the project vicinity. The nearest point of construction activities to the closest noise-sensitive receivers (single-family residences located east of the project site) would be approximately 40 feet (during site preparation, grading, and paving of the Vineyard II portion of the project), and the farthest would be approximately 1,500 feet (during some of the Costco portion of the project). Because construction taking place within 40 feet would be temporary and intermittent, and because the site is quite large, the distance from the nearby receivers to the "acoustic center" (the point from which the energy sum of all construction activity noise, near and far, would be centered on an average or typical basis) is utilized. For example, the nearest noise-sensitive receivers are located approximately 150 feet away from what would be the acoustic center of Phase I site preparation of the Vineyard II portion of the project site. Thus, the distance to construction activities for the closest residences would be as near as 40 feet away on a temporary and intermittent basis, but would typically be approximately 150 feet away during Phase I site preparation. For other nearby noise-sensitive land uses (such as the high school and the multi-family residences to the south), the nearest point of construction would be approximately 140 feet from adjacent noise-sensitive receivers, and the typical construction activity distance would range from approximately 420 feet to 1,100 feet, depending on the project phase.

The Federal Highway Administration's Roadway Construction Noise Model (FHWA 2008) was used to estimate construction noise levels at these noise-sensitive land uses. Although the model was funded and promulgated by the Federal Highway Administration, the Roadway Construction Noise Model is often used for non-roadway projects, because the same types of construction equipment used for roadway projects are also used for other project types. Input variables for the Roadway Construction Noise Model consist of the receiver/land use type, the equipment type and number of each (e.g., two graders, one loader, one tractor), the duty cycle for each piece of equipment (e.g., percentage of hours the equipment typically works per day), and the distance from the noise-sensitive receiver.

Noise levels from the proposed construction activities are summarized in Table 8. The complete set of Roadway Construction Noise Model input and output data for construction noise is provided in Appendix B. As shown in Table 8, at the nearest residences, located east of the project site, noise levels would range from approximately 42 to 81 dBA L_{eq} when construction would take place at or near the project boundary. More typical construction noise levels at the residences east of the site would range from approximately 41 to 74 dBA L_{eq} . At the residences and the school south of the project site, noise levels would range from approximately 50 to 77 dBA L_{eq} when construction would take place at or near the project site, noise levels 47 to 70 dBA L_{eq} .

As stated previously, it is anticipated that blasting would be necessary during construction of Warm Springs Parkway. Details regarding the amount of blasting needed or duration of such activities are not known at this time. The purpose for blasting is to sufficiently break the rock in order for it to be excavated and removed. To accomplish this, the blaster drills a pattern of boreholes distributed evenly throughout the rock to be shattered. These boreholes are then filled with a pre-determined amount of explosives. Typically, the explosives are detonated in a sequence (separated by fractions of a second) for optimal breakage. The blaster is required to design the burden, stemming, subdrill, spacing, and timing to minimize excessive vibration, airblast, and fly rock. The blaster must monitor the airblast and vibration for every blasting event (or "shot") at the nearest structure. Seismographs are used to monitor the vibration (ODOT 2002). Based upon prior experience with such projects, blasting is typically limited to one or two shots per day.

Based upon the Roadway Construction Noise Model modeling, noise from blasting is estimated to range from approximately 46 to 51 dBA L_{eq} , with maximum (L_{max}) levels ranging from approximately 66 to 71 dBA at the distances (in feet) indicated in Table 8. In the context of the overall construction noise levels, the noise from blasting, while differing in character, would be lower than conventional construction.

Project Phase	Noise-Sensitive Receiver	Nearest or Typical Construction Activity Distance (feet)	L _{eq} (dBA)
Costco			
Site Preparation	Residences to the East of Project Site	Nearest Construction Work (670)	58
		Typical Construction Work (980)	55
	School and Residences to the South of Project Site	Nearest Construction Work (450)	61
		Typical Construction Work (750)	57
Grading	Residences to the East of Project Site	Nearest Construction Work (670)	58
		Typical Construction Work (980)	55
	School and Residences to the South of Project Site	Nearest Construction Work (450)	62
		Typical Construction Work (750)	58
Building Construction	Residences to the East of Project Site	Nearest Construction Work (1.100)	52
		Typical Construction Work (1,260)	51
	School and Residences to the South of Project Site	Nearest Construction Work (780)	59
		Typical Construction Work (970)	58
Paving	Residences to the East of Project Site	Nearest Construction Work (670)	54
		Typical Construction Work (980)	51
	School and Residences to the South of Project Site	Nearest Construction Work (450)	57
		Typical Construction Work (750)	53

Table 8. Construction Noise Modeling Summary Results

Project Phase	Noise-Sensitive Receiver	Nearest or Typical Construction Activity Distance (feet)	L _{eq} (dBA)
Architectural Coating	Residences to the East of Project Site	Nearest Construction Work (1.100)	42
		Typical Construction Work (1,260)	41
	School and Residences to the South of Project Site	Nearest Construction Work (780)	50
Vineyard II	of Floject Site	Typical Construction Work (970)	48
	Desidences to the Fast of Preject	Necret Construction Mark (40)	80
Phase I Site Preparation	Residences to the East of Project Site	Nearest Construction Work (40) Typical Construction Work (150)	80 70
	School and Residences to the South of Project Site	Nearest Construction Work (140)	75
		Typical Construction Work (420)	66
Phase I Grading and	Residences to the East of Project	Nearest Construction Work (40)	81
Phase I Grading and Trenching Phase I Building	Site	Typical Construction Work (150)	74
	School and Residences to the South	Nearest Construction Work (140)	77
	of Project Site	Typical Construction Work (420)	70
	Residences to the East of Project	Nearest Construction Work (420)	70
Construction	Site	Typical Construction Work (190)	73
Construction	School and Residences to the South of Project Site	Nearest Construction Work (800)	64
		Typical Construction Work (1,100)	62
Phase I Paving	Residences to the East of Project Site	Nearest Construction Work (40)	74
		Typical Construction Work (150)	64
	School and Residences to the South of Project Site	Nearest Construction Work (140)	69
		Typical Construction Work (420)	60
Phase I Architectural Coating	Residences to the East of Project Site	Nearest Construction Work (65)	66
		Typical Construction Work (190)	57
	School and Residences to the South	Nearest Construction Work (800)	50
	of Project Site	Typical Construction Work (1,100)	47
Phase II Precise Grading and Footing Trenching	Residences to the East of Project	Nearest Construction Work (40)	80
	Site	Typical Construction Work (150)	70
	School and Residences to the South	Nearest Construction Work (140)	76
	of Project Site	Typical Construction Work (420)	68
Phase II Building Construction	Residences to the East of Project Site	Nearest Construction Work (65)	75
		Typical Construction Work (190)	68
	School and Residences to the South of Project Site	Nearest Construction Work (800)	60
		Typical Construction Work (1,100)	58
Phase II Paving	Residences to the East of Project	Nearest Construction Work (40)	78
C	Site	Typical Construction Work (150)	68
	School and Residences to the South	Nearest Construction Work (140)	73
	of Project Site	Typical Construction Work (420)	64

Project Phase	Noise-Sensitive Receiver	Nearest or Typical Construction Activity Distance (feet)	L _{eq} (dBA)
Phase II	Residences to the East of Project	Nearest Construction Work (65)	66
Architectural	Site	Typical Construction Work (190)	57
Coating	School and Residences to the South	Nearest Construction Work (800)	50
	of Project Site	Typical Construction Work (1,100)	47
Warm Springs Parkw	ay		
Blasting	Residences to the East of Project	Nearest Construction Work (610)	47 (67 dBA L _{max})
-	Site	Typical Construction Work (740)	46 (66 dBA L _{max})
	School and Residences to the South	Nearest Construction Work (700)	51 (71 dBA L _{max})
	of Project Site	Typical Construction Work (1,090)	47 (67 dBA L _{max})
Grading	Residences to the East of Project	Nearest Construction Work (610)	59
_	Site	Typical Construction Work (740)	58
	School and Residences to the South	Nearest Construction Work (700)	62
	of Project Site	Typical Construction Work (1,090)	59
Paving	Residences to the East of Project	Nearest Construction Work (610)	55
-	Site	Typical Construction Work (740)	54
	School and Residences to the South	Nearest Construction Work (700)	58
	of Project Site	Typical Construction Work (1,090)	55

Notes: dBA = A-weighted decibels; L_{eq} = equivalent sound level; L_{max} = maximum sound level.

The estimated construction noise levels indicate that during the relatively brief periods when construction takes place at or near the eastern project boundary, the unmitigated noise levels would exceed the City's daytime construction noise standards for mobile equipment (75 dBA for single-family residences and 80 dBA for multi-family residences). However, with implementation of standard conditions and mitigation measures as required by the City as well as MM-NOI-3 (see Section 5.5, Mitigation Measures), this impact would be reduced to less than significant. To control construction noise levels to a level consistent with the City's General Plan Noise Element and Noise Ordinance, the City would require noise reduction measures as conditions of approval for grading and building permits. Some standard policies include limiting the hours of construction activity, locating noisy equipment as far as possible from noise-sensitive receivers, and requiring establishment of a noise complaint/resolution process.

Long-Term Operational Noise Impact

Traffic Noise Impacts. As a result of regional population growth and growth under the proposed project, traffic on local arterial streets is expected to increase relative to current conditions. Potential noise impacts from vehicular traffic were assessed using the Federal Highway Administration's Traffic Noise Model Version 2.5 (FHWA 2004). Data used to model noise from vehicular traffic were derived from the project-specific Traffic Impact Analysis prepared by Kittelson & Associates (2020). Information used in the modeling included the following scenarios (for

more detailed explanation of these traffic scenarios, please refer to Section 4.13, Transportation, or Appendix I, of the environmental impact report:

- Existing
- Existing with Project with Creighton Avenue Access
- Existing with Project without Creighton Avenue Access
- Year 2021 without Project
- Year 2021 Cumulative Conditions with Project with Creighton Avenue Access
- Year 2021 Cumulative Conditions with Project without Creighton Avenue Access
- Year 2035 without Project with Creighton Avenue Access
- Year 2035 without Project without Creighton Avenue Access
- Year 2035 Cumulative Conditions with Project with Creighton Avenue Access
- Year 2035 Cumulative Conditions with Project without Creighton Avenue Access

Each of the above scenarios was modeled using the provided average daily traffic volumes for typical weekdays and for Saturdays.⁴ Noise levels were modeled at representative noise-sensitive receivers. The receivers were modeled to be 5 feet above the local ground elevation. Six receptors (ST1 through ST5, and M1) represent existing off-site residences, as shown in Figure 3.

The information provided from this modeling was compared to the noise impact significance criteria to assess whether project-related traffic noise would cause a significant impact and, if so, where these impacts would occur. The results of the comparisons for the noise-sensitive land uses for the existing conditions are presented in Table 9. The results of the comparisons for the noise-sensitive land uses for future years 2021 and 2035 conditions are presented in Tables 10 and 11, respectively. The input and output files for the Traffic Noise Model modeling are provided in Appendix C.

As shown in Table 9, the Existing-plus-Project traffic noise would generate a noise level increase of 2 dB CNEL or less (rounded to whole numbers) along the studied roads in the vicinity of the project site. Based on the FICON criteria shown in Table 6, an increase of 2 dB is not considered to be a substantial increase for traffic noise levels of less than 65 dBA CNEL. The additional traffic volumes along the adjacent roads would not result in an exceedance of applicable compatibility standards (i.e., 60 dBA CNEL for low-density residential, 65 dBA CNEL for high-density residential, 70 dBA CNEL for playgrounds and park), nor would project traffic substantially increase the existing noise level in the project vicinity. Similarly, as shown in Table 10 and Table 11, the Future-plus-Project traffic noise would generate a noise level increase of 2 dB CNEL or less (rounded to whole numbers), and the additional traffic volumes along the adjacent roads would not result in an exceedance of applicable traffic noise would not result in an exceedance of applicable adjacent roads would not result in an exceedance of a noise level increase of 2 dB CNEL or less (rounded to whole numbers), and the additional traffic volumes along the adjacent roads would not result in an exceedance of applicable compatibility standards. Therefore, project-related traffic noise would be **less than significant**, and no mitigation measures would be required.

⁴ Traffic data for Saturdays were not provided by the project's traffic consultant for the Year 2035 scenarios because the 2035 scenario was assessed for informational purposes only. As stated in the traffic study and traffic section of this EIR, a long-range analysis is not required per the City's Traffic Impact Analysis Preparation Guide or for CEQA because the project does not propose a zone change. The 2035 analysis was conducted for the weekday PM peak hour to ensure that adequate capacity was provided along Warms Springs Parkway and for information requested by the California Department of Transportation. Therefore, traffic noise on Saturdays for Year 2035 was not modeled.

Table 9. Project-Related Traffic Noise: Existing

Modeled Receptor	Existing Weekday (dBA CNEL)	Existing with Project with Creighton Access Weekday (dBA CNEL)	Existing with Project without Creighton Access Weekday (dBA CNEL)	Maximum Increase (with Project vs. Without Project) (dBA)	Existing Saturday (dBA CNEL)	Existing with Project with Creighton Access Saturday (dBA CNEL)	Existing with Project without Creighton Access Saturday (dBA CNEL)	Maximum Increase (with Project vs. Without Project) - Saturday (dBA)
ST1 – Multi-family residences south of project site, adjacent to Clinton Keith Road	57	58	58	1	56	58	58	2
ST2 – Vista Murrieta High School, south of project sites, adjacent to Clinton Keith Road	57	57	57	0	56	57	57	1
ST3 – Multi-family residential east of project site, adjacent to Clinton Keith Road	59	61	61	2	59	60	61	2
ST4 – Single-family residential east of project site, approximately 500 feet north of Clinton Keith Road	53	53	54	1	52	53	53	1
ST5 – Single-family residential east of project site, approximately 1,100 feet north of Clinton Keith Road	50	50	51	1	50	51	51	1
M1 – Single-family residences east of project site, adjacent to Whitewood Road	57	57	57	0	56	57	57	1

Source: Appendix C.

Notes: dBA = A-weighted decibel scale; CNEL = community noise equivalent level.

Table 10. Project-Related Traffic Noise: Future Year 2021

Modeled Receptor	Year 2021 Weekday without Project (dBA CNEL)	Year 2021 Cumulative Conditions with Project with Creighton Access Weekday (dBA CNEL)	Year 2021 Cumulative Conditions with Project without Creighton Access Weekday (dBA CNEL)	Maximum Increase (with Project vs. Without Project) (dBA)	Year 2021 Saturday without Project (dBA CNEL)	Year 2021 with Project with Creighton Access Saturday (dBA CNEL)	Year 2021 with Project without Creighton Access Saturday (dBA CNEL)	Maximum Increase (with Project vs. Without Project) - Saturday (dBA)
ST1 – Multi-family residences south of project site, adjacent to Clinton Keith Road	58	59	59	1	58	59	59	1
ST2 – Vista Murrieta High School, south of project sites, adjacent to Clinton Keith Road	58	58	59	1	57	58	59	2
ST3 – Multi-family residential east of project site, adjacent to Clinton Keith Road	61	62	62	1	61	62	62	1
ST4 – Single-family residential east of project site, approximately 500 feet north of Clinton Keith Road	54	55	55	1	54	55	56	2
ST5 – Single-family residential east of project site, approximately 1,100 feet north of Clinton Keith Road	51	52	52	1	51	52	52	1
M1 – Single-family residences east of project site, adjacent to Whitewood Road	58	58	58	0	58	58	58	0

Source: Appendix C.

Notes: dBA = A-weighted decibel scale; CNEL = community noise equivalent level.

Table 11. Project-Related Traffic Noise: Future Year 2035

Modeled Receptor	Year 2035 with Creighton Access without Project Weekday (dBA CNEL)	Year 2035 Cumulative Conditions with Project with Creighton Access Weekday (dBA CNEL)	Increase (with Project vs. Without Project) – with Creighton Access (dBA)	Year 2035 without Creighton Access without Project Weekday (dBA CNEL)	Year 2035 Cumulative Conditions with Project Weekday (dBA CNEL)	Increase (with Project vs. Without Project) - without Creighton Access (dBA)
ST1 – Multi-family residences south of project site, adjacent to Clinton Keith Road	59	59	0	59	59	0
ST2 – Vista Murrieta High School, south of project sites, adjacent to Clinton Keith Road	58	59	1	58	59	1
ST3 – Multi-family residential east of project site, adjacent to Clinton Keith Road	62	63	1	62	63	1
ST4 – Single-family residential east of project site, approximately 500 feet north of Clinton Keith Road	55	56	1	55	56	1
ST5 – Single-family residential east of project site, approximately 1,100 feet north of Clinton Keith Road	52	52	0	52	52	0
M1 – Single-family residences east of project site, adjacent to Whitewood Road	60	60	0	60	60	0

Source: Appendix C.

Notes: dBA = A-weighted decibel scale; CNEL = community noise equivalent level.

On-Site Mechanical, Delivery, and Parking Lot Noise

Mechanical HVAC equipment associated with the proposed project would have the potential to generate significant noise levels. Based on information provided by the project applicant, the HVAC equipment (consisting of 5- and 10- ton-capacity units) would be located on the rooftops of the proposed buildings, and the HVAC equipment would be visually and acoustically shielded by parapet walls. Noise emissions information from the HVAC manufacturer, along with standard acoustical formulas for addition of multiple sources, attenuation with distance, and attenuation from structural shielding, were used to estimate the resulting noise levels at the nearest residences, east of the project site. The source-noise data and calculations are provided in Appendix D. As shown in Table 12, the resultant combined noise level with all HVAC units running would be approximately 45 dBA at the nearest noise-sensitive land uses. The noise from HVAC equipment would be below the City's Municipal Code noise standards for the boundary between a commercial zone and a residential zone (55 dBA during daytime hours (7 a.m. to 10 p.m.) and 50 dBA during nighttime hours (10 p.m. to 7 a.m.)). Noise from HVAC equipment related to the proposed project would be **less than significant**.

	HVAC Units		Distance from			
Building Type	Quantity	Capacity (in tons)	residents (approximate worst-case) (feet)	Resultant Unattenuated Noise Level (dBA)	Attenuation from Building and Parapet (dB)	Resultant noise level with Attenuation (dBA)
Fitness Center	16	10	105	60.1	15.8	44.3
Major	8	10	200	51.5	12.9	38.5
Shop	1	5	300	38.9	17.6	21.4
Shops	4	5	500	40.5	17.9	22.6
Fast Food	1	10	600	32.9	14.8	18.2
	1	5	600	32.9	14.8	18.2
	Combined noise level at nearest noise-sensitive receivers (worst-case) (dBA Leq)					45.4

Table 12. Project-Related Heating, Ventilation	, and Air Conditioning Noise
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Source: Appendix D

Notes: HVAC = heating, ventilation, and air conditioning; dBA = A-weighted decibel; dB = decibel.

Noise would occur from retail store deliveries and gas station deliveries. Costco warehouse hours are anticipated to be Monday through Friday from 10:00 a.m. to 8:30 p.m., Saturday from 9:30 a.m. to 6:00 p.m., and Sunday from 10:00 a.m. to 6:00 p.m. The gas station hours are anticipated to be daily from 5:00 a.m. to 10:00 p.m. Costco anticipates an average of approximately 10 trucks delivering goods to the warehouse on a typical weekday. The trucks range in size from 26 feet long for single-axle trailers to 70 feet long for double-axle trailers. Receiving times would vary based on jurisdictional restrictions, but would typically take place in the early morning, with most deliveries completed before the 10:00 a.m. warehouse opening time. Deliveries to the warehouse would be made primarily in Costco trucks from its freight consolidation facility in Mira Loma, California, entering the site from Interstate 215 and exiting at Clinton Keith Road. The Costco warehouse location (in the northwestern portion of the project site), and the delivery area (in the northeasterly corner of the warehouse building) would result in truck delivery activities taking place approximately 800 feet or more from the nearest noise-sensitive receivers, and shielded from a direct view by intervening structures (either the Costco warehouse building itself or the Vineyard II buildings).

It is estimated that fuel would be delivered to the gasoline facility via eight to nine trucks per day,⁵ as needed. The gas station's proposed location near the northern project boundary, the acoustical shielding provided by proposed on-site structures and existing residential boundary walls, and the relatively large distances (approximately 650 feet or more from the nearest noise-sensitive receivers) would minimize gas-station-related noise.

The Costco warehouse building would include a tire center. The proposed 2,720-square-foot tire center would have five bays and hydraulic lifts where customers could have new tires installed on their vehicles. The tire center would be located approximately 780 feet from the nearest noise-sensitive land uses (the school and residences to the south) and would be physically separated from those residences by Clinton Keith Road and the proposed retail structures to the south, which would likely provide some degree of structural shielding by blocking the direct view (and thus, the direct source-receiver path) of the work area.

Noise-generating equipment at the tire center would most likely include tire changers, wheel balancers, air compressors, and various tools. The primary noise sources would be the power and pneumatic tools, as well as noise from hitting and banging car parts such as hubcaps, tires, car hoods, and car doors being closed. The tire center would operate during the same hours as the Costco warehouse retail hours (Monday through Friday from 10:00 a.m. to 8:30 p.m., Saturday from 9:30 a.m. to 6:00 p.m., and Sunday from 10:00 a.m. to 6:00 p.m.). Additionally, it is anticipated that the tire center would receive one to two tire delivery trucks twice a week between the hours of 6:00 a.m. and 9:00 a.m.

Based on a prior noise study conducted at an existing Costco tire center (Giroux & Associates 2015), the noise level during a noisy period (with five air guns in intermittent operation) was approximately 53 dBA L_{eq} at a distance of 70 feet directly in front of the open bay doors. Very brief, maximum noise levels of approximately 67 dBA L_{max} at 70 feet were measured. All related work would take place within the building, which would have a solid wall with no openings to the residences to the east. However, there would be service bay doors on the south side of the building, and these would likely be open much of the time for ventilation and in order to move the cars in and out of the facility.

The closest residential properties would be approximately 780 feet or more from the tire center. At this distance, the average noise level from the tire center activities would be approximately 32 dBA L_{eq} or less, conservatively neglecting likely shielding from intervening structures. This noise level would be well below the City's noise ordinance standard for residential uses of 50 dBA L_{eq} from 7:00 a.m. to 10:00 p.m. Very brief, maximum noise levels of approximately 46 dBA L_{max} at residences are estimated; these would likely not be readily audible, because the existing ambient maximum noise levels are substantially higher (a noise level of 71 dBA L_{max} was measured at ST1 and a noise level of 65 dBA L_{max} was measured at ST2). Similarly, the tire delivery noise, occurring 780 feet of more from nearby noise-sensitive uses, would be negligible.⁶ Therefore, noise from auto-related services would be less than significant. No mitigation is required.

For the Vineyard II Retail Development, deliveries would be through the front doors before 10:30 a.m., except at the major retail pad (Building J), which has an enclosed truck door dock to control sound in the rear of the building. Operating hours for the retail development would vary and are subject to the policies of each building

⁵ Based upon reference noise levels conducted for a proposed gas station by others (Extant Acoustics 2016), fuel delivery trucks are estimated to create maximum 1-second noise levels of approximately 71 dBA at 50 feet. At the nearest residences, located approximately 650 feet away, the resultant noise level would be approximately 49 dBA, not accounting for acoustical shielding. Thus, noise from this activity (likely the loudest activity associated with the fueling station) would not be loud or intrusive.

⁶ A study in the Journal of Environmental Engineering and Landscape Management (Baltrënas et al. 2004) published cargo truck delivery noise levels of 96 dBA (L_{max}) at 1 meter (3.28 feet) from the boundary of the truck activity area. At a distance of 780 feet, the resulting noise level would be approximately 48 dBA L_{max}. Average delivery truck noise levels would be substantially lower.

occupant; however, operating hours for the retail uses are expected to be 8:30 a.m. to 6:00 p.m. Operating hours for the restaurant uses are expected to be 11:00 a.m. to 10:00 p.m. The fitness center is expected to operate from 6 a.m. to 11 p.m.

Parking for the project would primarily be provided in the center of the retail center, with stores on the perimeter. Primary access to the proposed parking lots would be via Warm Springs Parkway from Clinton Keith Road to the south. Noise sources from parking lots include car alarms, door slams, radios, and tire squeals. The instantaneous sound pressure levels from these sources typically range from approximately 30 dBA to 66 dBA at a distance of 100 feet (Gordon Bricken & Associates 1996) and are generally short-term and intermittent. Parking lots have the potential to generate instantaneous noise levels that exceed 60 dBA depending on the location of the source; however, noise sources from the parking lot would be different from each other in kind, duration, and location, so that the overall effects would be separate, and, in most cases, would not affect noise-sensitive receptors at the same time. Other parking lot activities such as periodic parking lot cleaning, which could occur prior to or after retail business hours, would create additional noise; however, such activities would be guite brief at any one location on site and would be conducted in accordance with the City of Murrieta Municipal Code. Furthermore, the proposed parking areas would, for the most part, be shielded from a direct view of residences to the east by the intervening proposed fitness center and other retail buildings. Additionally, the existing perimeter wall (approximately 6 feet in height) at the eastern project boundary would provide noise reduction from the on-site noise-generating activities. Therefore, noise impacts from on-site operational noise would be less than significant. Therefore, noise impacts from parking structure noise would be less than significant.

5.2 Excessive Groundborne Vibration or Groundborne Noise Levels

Groundborne vibration is a small, rapidly fluctuating motion transmitted through the ground that diminishes (attenuates) fairly rapidly over distance.

Construction activities may generate excessive groundborne vibration or groundborne noise, causing a potentially significant impact. Heavier pieces of construction equipment, such as bulldozers, have peak particle velocities of approximately 0.089 inches/second or less at a distance of 25 feet (DOT 2018).

Groundborne vibration typically attenuates over short distances. At the distance from the nearest residence to the construction area (approximately 40 feet) and with the anticipated construction equipment (i.e., heavier equipment such as bulldozers), the PPV would be approximately 0.044 inches/second. If extended construction work with heavy equipment were to occur adjacent to the closest sensitive receptors, vibration levels would exceed the City's established perception threshold of 0.01 PPV inches/sec (Section 16.30.130(K)), and thus result in a significant impact. However, this is not anticipated, because work would only occur intermittently near the project boundary. This is due to the majority of the project work not being adjacent to the project boundary. Furthermore, based upon Policy N-4.5 of the General Plan Noise Element, the City permits the exceedance of noise standards on a case-by-case basis for special circumstances, including expedited development projects, of which this project is one.

Regarding groundborne vibration from anticipated blasting activities during construction of Warm Springs Parkway, vibration levels would be negligible at the nearest sensitive receptors, located 600 feet away or further. Based upon reference Blast Vibration Prediction Curves per Oriard (Caltrans 2013b), vibration levels would typically range from

less than 0.001 PPV in/second to approximately 0.008 PPV in/second at 600 feet, and thus would not exceed the City's established perception threshold of 0.01 PPV in/second at the nearest sensitive receptors.

Implementation of MM-NOI-1 (Section 5.5) would ensure that construction staging and stockpiling is situated as far from nearby noise- and vibration-sensitive receivers as possible and that sensitive receptors are notified of construction activities and are provided contact information for noise- or vibration-related complaints, as well as a resolution process. Implementation of these measures would reduce vibration impacts at sensitive receptor locations to a less-than-significant-level.

Construction can also affect nearby buildings by inflicting damage from vibration. However, construction vibration associated with this project would not result in structural building damage. Building damage typically occurs at vibration levels of 0.5 inches/second or greater for buildings of reinforced concrete, steel, or timber construction (DOT 2018). As discussed above, the anticipated vibration levels during construction would be well below potential structural damage thresholds.

Once operational, the project would not generate substantial levels of groundborne vibration. Off-site delivery trucks, for example, are not anticipated to generate significant levels of vibration, because vehicles traveling on pneumatic tires with flexible suspension systems minimize such vibration, provided that the road surface is relatively smooth (Caltrans 2013b). Thus, upon compliance with MM-NOI-1, impacts associated with vibration would be **less than significant with mitigation incorporated**.

5.3 Airport Land Use Plan or Private Airstrip

The closest airport to the project site is French Valley Airport, located at 37600 Sky Canyon Drive in Murrieta, California, approximately 2.5 miles southeast of the project site. The project would not be located within 2 miles of any airport, and would not expose people residing or working in the project area to excessive noise levels associated with an airport. Additionally, there are no private airstrips in the vicinity of the project site. Therefore, the project would result in **no impact** related to airports.

5.4 Cumulative Impacts

Non-transportation noise sources (e.g., project operation) and construction noise impacts are typically projectspecific and highly localized (i.e., these do not generally affect the community noise level at distances beyond several hundred feet). Construction activities associated with proposed or future development within the area would contribute to cumulative noise levels, but in a geographically limited and temporary manner. As other development occurs in the area, noise from different types of uses (e.g., traffic, aircraft, fixed noise sources) would continue to combine, albeit on a localized basis, to cause increases in overall background noise conditions within the area. However, such sources do not significantly contribute to cumulative noise impacts at distant locations, and so were not evaluated on a cumulative level.

The future (Year 2021 and Year 2035) traffic volumes used for the analysis of traffic noise include cumulative growth. As shown in Tables 10 and 11, the project's future traffic-related impacts would not result in a significant noise level increase along adjacent roadways. Table 13 compares Future (Year 2035) Cumulative with Project Conditions traffic noise to the Existing traffic noise scenario.

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Modeled Receptor	Existing Weekday without Project (dBA CNEL)	Year 2035 Cumulative Conditions with project with Creighton Access Weekday (dBA CNEL)	Year 2035 Cumulative Conditions with project without Creighton Access Weekday (dBA CNEL)	Maximum Cumulative Increase (dBA)
ST1 – Multi-family residences south of project site, adjacent to Clinton Keith Road	57	59	59	2
ST2 – Vista Murrieta High School, south of project sites, adjacent to Clinton Keith Road	57	59	59	2
ST3 – Multi-family residential east of project site, adjacent to Clinton Keith Road	59	63	63	4
ST4 – Single-family residential east of project site, approximately 500 feet north of Clinton Keith Road	53	56	56	3
ST5 – Single-family residential east of project site, approximately 1,100 feet north of Clinton Keith Road	50	52	52	2
M1 – Single-family residences east of project site, adjacent to Whitewood Road	57	60	60	3

Notes: dBA = A-weighted decibel scale; CNEL = community noise equivalent level.

As shown in Table 13, the cumulative noise increase is estimated to range from 2 to 4 dB. The resulting increase would not be substantial based upon the FICON noise thresholds. Therefore, impacts would not be cumulatively considerable and would be **less than significant**.

5.5 Mitigation

Standard Conditions

The following standard condition (SC) applies to the project:

SC-NOI-1 The applicant shall ensure that construction activities be limited to no more than the hours of 7:00 a.m. to 7:00 p.m. Monday through Saturday except in the event of emergency declared by City, State, or Federal officials. These conditions shall be listed on the project's final design plans to the satisfaction of the City.

Mitigation Measures

The following mitigation measures (MM) would be implemented as a condition of project approval:

- MM-NOI-1 Prior to grading permit issuance, the applicant shall ensure the following:
 - All construction equipment, fixed or mobile, shall be equipped with properly operating and maintained mufflers.
 - Construction noise reduction methods, such as shutting off idling equipment, maximizing the distance between construction equipment staging areas and occupied sensitive receptor areas, and use of electric air compressors and similar power tools rather than diesel equipment, shall be used where feasible.
 - Noise attenuation measures, which may include temporary noise barriers or noise blankets, shall be placed around stationary construction noise sources.
 - During construction, stationary construction equipment shall be placed such that emitted noise is directed away from or shielded from sensitive receptors.
 - During construction, stockpiling and vehicle staging areas shall be located as far as practical from noise-sensitive receptors while being located on the project site or on existing developed areas.
 - Construction hours, allowable workdays, and the phone number of the job superintendent shall be clearly posted at all construction entrances to allow surrounding property owners and residents to contact the job superintendent if necessary. In the event that the City of Murrieta receives a complaint, appropriate corrective actions (such as eliminating the use of high-noise and vibrationproducing equipment or replacing with smaller equipment types or other equivalent methods) shall be implemented and a report of the action provided to the reporting party.
- MM-NOI-2 The applicant shall require that all construction equipment be operated with mandated noise control equipment (mufflers or silencers). Enforcement shall be accomplished by random field inspections by applicant personnel during construction activities to the satisfaction of the City of Murrieta Engineering Department.
- MM-NOI-3 A temporary construction noise barrier shall be constructed along the eastern boundary of the project site during construction of Vineyard II. The noise barrier shall be a minimum of 8 feet in height, must have a surface density of at least 4 pounds per square foot, and be free of openings and cracks and shall be designed to achieve a noise reduction of at least 5 A-weighted decibels.

DUDEK

The effectiveness of MM-NOI-1 and MM-NOI-2 would vary from several dB (which in general is a relatively small change) to 10 or more dB (which subjectively would be perceived as a substantial change), depending on the specific equipment, the original condition of that equipment, the specific locations of the noise sources and the receivers, and other factors. Installation of more effective silencers could range from several dB to well over 10 dB. MM-NOI-3, which requires the construction of an 8-foot-high temporary noise barrier along the eastern boundary of the project site during construction of Vineyard II site, would provide an additional noise reduction of approximately 5 dB. Cumulatively, these measures would result in substantial decreases in the noise from construction. Assuming a nominal reduction of 7 dB from the combination of these measurements, the maximum estimated noise level from construction activities would be reduced to below the City construction impacts associated with exposure of persons to or generation of noise levels in excess of established standards would be **less than significant**.

6 Summary and Conclusions

This noise analysis evaluated the potential for significant adverse impacts due to project construction and operation. Implementation of the project would result in two primary types of potential noise impacts: short-term (i.e., temporary) noise during construction and long-term noise during operation of the project.

Noise from construction would exceed the City's daytime construction noise standards for mobile equipment (75 dBA for single-family residences, and 80 dBA for multi-family residences). Additionally, unmitigated construction noise levels could result in annoyance and would be considered substantial; therefore, construction noise impacts would be significant unless mitigated. With implementation of standard conditions and mitigation measures as required by the City (see Section 5.5) noise impacts from construction activities would be reduced to less than significant. The project's traffic-related impacts would not result in a significant noise level increase along adjacent roadways; therefore, traffic noise impacts would be less than significant at off-site land uses. On-site mechanical and parking lot noise associated with the proposed project was assessed and determined to result in less-than-significant noise impacts. Vibration levels associated with project construction would likely be briefly perceptible at nearby residences, but they would be below the Department of Transportation's threshold of potential damage for normal structures (0.20 PPV in/sec), and would not be considered excessive. The project site is not located within the vicinity of an airport or private airstrip and, therefore, would not expose people residing or working in the project area to excessive noise levels associated with an airport or airstrip. Finally, this noise analysis concludes that the proposed project would not result in any significant cumulative impacts.

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8 List of Preparers

Mike Greene, INCE Bd. Cert., Environmental Specialist/Acoustician Connor Burke, Environmental Specialist/Acoustics and Air Quality

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Appendix A

Field Noise Measurement Data



Field Noise Measurement Data

Record: 854				
Project Name	RDA Curci			
Observer(s)	Connor Burke			
Date	2018-02-23			

Meteorological Conditions			
Temp (F)	51		
Humidity % (R.H.)	29		
Wind	Light		
Wind Speed (MPH)	8		
Wind Direction	East		
Sky	Partly Cloudy		
Sky	Partly Cloudy		

Instrument and Calibrator Information				
Instrument Name List	(ENC) Rion NL-52			
Instrument Name	(ENC) Rion NL-52			
Instrument Name Lookup Key	(ENC) Rion NL-52			
Manufacturer	Rion			
Model	NL-52			
Serial Number	553896			
Calibrator Name	(ENC) LD CAL150			
Calibrator Name	(ENC) LD CAL150			
Calibrator Name Lookup Key	(ENC) LD CAL150			
Calibrator Manufacturer	Larson Davis			
Calibrator Model	LD CAL150			
Calibrator Serial #	5152			
Pre-Test (dBA SPL)	94			
Post-Test (dBA SPL)	94			
Windscreen	Yes			
Weighting?	A-WTD			
Slow/Fast?	Slow			
ANSI?	Yes			

Recordings				
Record #	1			
Site ID	ST2			
Site Location Lat/Long	33.596960, -117.167317			
Begin (Time)	09:56:00			
End (Time)	10:11:00			
Leq	55			
Lmax	65.1			
Lmin	46.8			
Other Lx?	L90, L50, L10			
L90	49.2			
L50	52			
L10	58.4			
Other Lx (Specify Metric)	L			
Primary Noise Source	HVAC / pool pumps.			
Other Noise Sources (Background)	Birds, Distant Aircraft, Distant Traffic			
Other Noise Sources Additional Description	Backup alarms. Hvac. School construction site.			
Is the same instrument and calibrator being used	Yes			
as previously noted?				
Are the meteorological conditions the same as	Yes			
previously noted?				



Description / Photos

Photo

Comments / Description



Recordings					
Record #	2				
Site ID	ST3				
Site Location Lat/Long	33.598021, -117.166866				
Begin (Time)	10:18:00				
End (Time)	10:28:00				
Leq	54.3				
Lmax	65.8				
Lmin	44.2				
Other Lx?	L90, L50, L10				
L90	47.3				
L50	52.6				
L10	57.8				
Other Lx (Specify Metric)	L				
Primary Noise Source	Traffic				
Other Noise Sources (Background)	Birds, Rustling Leaves				
Other Noise Sources Additional Description	Backup alarms.				
Is the same instrument and calibrator being used	Yes				
as previously noted?					
Are the meteorological conditions the same as	Yes				
previously noted?					

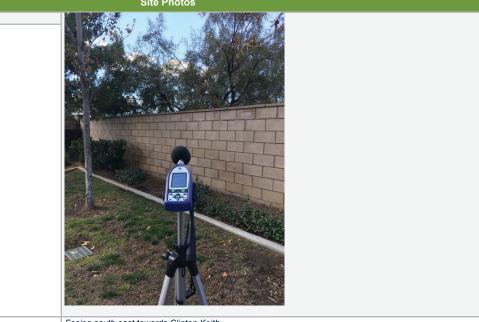


Source Info and Traffic Counts					
Number of Lanes	5				
Lane Width (feet)	10				
Roadway Width (feet)	50				
Roadway Width (m)	15				
Distance to Roadway (feet)	60				
Distance to Roadway (m)	60				
Distance Measured to Centerline or Edge of	Centerline				
Pavement?					
Estimated Vehicle Speed (MPH)	40				
Count Duration (Min)	10				

Traffic Counts				
Vehicle Count Summary	Autos 102, MT 1, HT 1, Buses 0, MC 0			
Count Duration (minutes)	0			
Counting Both Directions?	Yes			
Vehicle Count Tally				
Select Method for Vehicle Counts	Use Counter (+/-)			
Autos	102			
Medium Trucks	1			
Heavy Trucks	1			
Buses	0			
Motorcycles	0			

Description / Photos

Site Photos



Photo

Facing south east towards Clinton Keith.

CREATOR OF KERATA TECHNOLOGY

Recordings					
Record #	3				
Site ID	ST4				
Site Location Lat/Long	33.600975, -117.166889				
Begin (Time)	10:39:00				
End (Time)	10:49:00				
Leq	52.1				
Lmax	63.6				
Lmin	43.9				
Other Lx?	L90, L50, L10				
L90	45.4				
L50	48.2				
L10	55.9				
Other Lx (Specify Metric)	L				
Primary Noise Source	Construction noise.				
Other Noise Sources (Background)	Birds, Distant Aircraft, Rustling Leaves				
Other Noise Sources Additional Description	Backup alarms. Excavator.				
Is the same instrument and calibrator being used	Yes				
as previously noted?					
Are the meteorological conditions the same as	Yes				
previously noted?					

Description / Photos

Photo

Comments / Description

Site Photos





CREATOR OF KERATA TECHNOLOGY

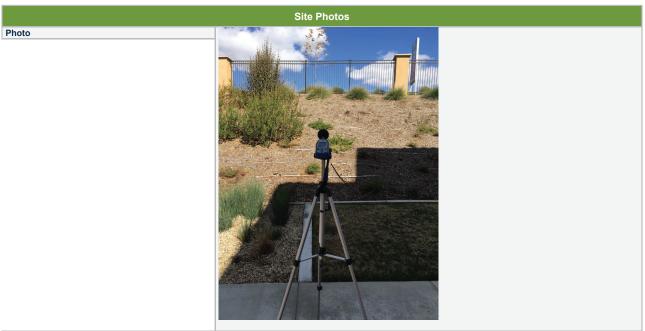
Recordings					
Record #	4				
Site ID	ST1				
Site Location Lat/Long	33.597558, -117.172063				
Begin (Time)	10:56:00				
End (Time)	11:06:00				
Leq	55.6				
Lmax	71.3				
Lmin	46.3				
Other Lx?	L90, L50, L10				
L90	48.9				
L50	52				
L10	55.4				
Other Lx (Specify Metric)	L				
Primary Noise Source	Traffic				
Other Noise Sources (Background)	Birds, Distant Traffic, Rustling Leaves				
Other Noise Sources Additional Description	Siren. Hvac				
Is the same instrument and calibrator being used	Yes				
as previously noted?					
Are the meteorological conditions the same as	Yes				
previously noted?					

Source Info and Traffic Counts					
Number of Lanes	0				
Lane Width (feet)	10				
Roadway Width (feet)	0				
Roadway Width (m)	0				
Distance to Roadway (feet)	50				
Distance to Roadway (m)	50				
Distance Measured to Centerline or Edge of	Centerline				
Pavement?					
Estimated Vehicle Speed (MPH)	40				
Count Duration (Min)	10				

Traffic Counts					
Vehicle Count Summary	Autos 0, MT 0, HT 0, Buses 0, MC 0				
Count Duration (minutes)	0				
Counting Both Directions?	Yes				
Vehicle Count Tally					
Select Method for Vehicle Counts	Enter Manually				
Autos	0				
Number of Vehicles - Autos	123				
Medium Trucks	0				
Number of Vehicles - Medium Trucks	3				
Heavy Trucks	0				
Number of Vehicles - Heavy Trucks	2				
Buses	0				
Motorcycles	0				



FIELD DATA REPORT Description / Photos



Comments / Description

Facing north towards Clinton Keith



Appendix B

Construction Noise Modeling Input/Output Files

Roadway Construction Noise Model (RCNM), Version 1.1

Report date: Case Description:

1/16/2020 Costco Murrieta - Costco Site Prep

					- Recep	tor #1					
		Baselines	(dBA)								
Description	Land Use	Daytime	Evening		ght						
Residential to east - nearest	Residential	65		60	55	5					
				Ea	uipmer	ıt					
					ec	Actua	al	Recep	tor	Estimate	ed
		Impact			าลx	Lmax		Distan		Shieldin	
Description		Device	Usage(%	6) (d	BA)	(dBA)	(feet)		(dBA)	
Dozer		No		40			81.7		670		5
Dozer		No		40			81.7		700		5
Dozer		No		40			81.7		750		5
Tractor		No		40	84	1			680		5
Front End Loader		No		40			79.1		750		5
Backhoe		No		40			77.6		800		5
Front End Loader		No		40			79.1		700		5
				Re	sults						
		Calculated	l (dBA)			Noise	e Limit	ts (dBA	.)		
				Da	iy			Evenir	ng		
Equipment		*Lmax	Leq	Ln	าลx	Leq		Lmax		Leq	
Dozer		54.1	. 50).1 N/	'A	N/A		N/A		N/A	
Dozer		53.7	49	9.8 N/	'A	N/A		N/A		N/A	
Dozer		53.1	49	9.2 N/	'A	N/A		N/A		N/A	
Tractor		56.3	52	2.3 N/	'A	N/A		N/A		N/A	
Front End Loader		50.6	46	5.6 N/	'A	N/A		N/A		N/A	
Backhoe		48.5	44	1.5 N/	'A	N/A		N/A		N/A	
Front End Loader		51.2		7.2 N/	'A	N/A		N/A		N/A	
	Total	56.3		7.6 N/		N/A		N/A		N/A	
		*Calculate	d Lmax is	s the L	oudest	value.					
					- Recep	tor #2					
		Baselines	(dBA)		- Recep	tor #2					
Description	Land Use	Baselines (Daytime			- Recep ght	tor #2					
Description Residential to east - typical	Land Use Residential		Evening								
		Daytime	Evening	Ni 60	ght 55	5					
		Daytime	Evening	Ni 60 Eq	ght 55 uipmer	ō		Rocon	tor	Ectimat	od
		Daytime 65	Evening	Ni 60 Eq Sp	ght 55 Juipmer Jec	5 It Actua	al	Recep			
Residential to east - typical		Daytime 65 Impact	Evening	Ni 60 Eq Sp Ln	ght 55 Juipmen Jec hax	5 it Actua Lmax	al	Distan		Shieldin	
Residential to east - typical Description		Daytime 65 Impact Device	Evening Usage(%	Ni 60 Eq Sp Ln 6) (d	ght 55 Juipmer Jec	5 It Actua	al :)		nce		g
Residential to east - typical Description Dozer		Daytime 65 Impact Device No	Evening Usage(9	Ni 60 Eq 5p Ln 6) (d 40	ght 55 Juipmen Jec hax	5 it Actua Lmax	al ;) 81.7	Distan (feet)	nce 980	Shieldin	g 5
Residential to east - typical Description Dozer Dozer		Daytime 65 Impact Device No No	Evening Usage(9	Ni 60 Eq Sp Ln 6) (d 40 40	ght 55 Juipmen Jec hax	5 it Actua Lmax	al :) 81.7 81.7	Distan (feet)	980 980	Shieldin	g 5 5
Residential to east - typical Description Dozer Dozer Dozer		Daytime 65 Impact Device No No No	Evening Usage(9	Ni 60 Eq Sp Ln 6) (d 40 40 40	ght 55 uipmer ec nax BA)	at Actua Lmax (dBA)	al ;) 81.7	Distan (feet)	980 980 980 980	Shieldin (dBA)	g 5 5 5
Residential to east - typical Description Dozer Dozer Dozer Tractor		Daytime 65 Impact Device No No No No	Evening Usage(9	Ni 60 Eq Sp Ln 6) (d 40 40	ght 55 Juipmen Jec hax	at Actua Lmax (dBA)	al) 81.7 81.7 81.7	Distan (feet)	980 980 980 980 980	Shieldin (dBA)	g 5 5 5 5
Residential to east - typical Description Dozer Dozer Dozer		Daytime 65 Impact Device No No No	Evening Usage(9	Ni 60 Eq 5p Ln 6) (d 40 40 40 40	ght 55 uipmer ec nax BA)	at Actua Lmax (dBA)	al :) 81.7 81.7	Distan (feet)	980 980 980 980	Shieldin (dBA)	g 5 5 5
Residential to east - typical Description Dozer Dozer Dozer Tractor Front End Loader		Daytime 65 Impact Device No No No No No No	Evening Usage(9	Ni 60 Eq 5p Ln 6) (d 40 40 40 40 40 40	ght 55 uipmer ec nax BA)	at Actua Lmax (dBA)	al 81.7 81.7 81.7 79.1	Distan (feet)	980 980 980 980 980 980	Shieldin (dBA)	g 5 5 5 5 5
Residential to east - typical Description Dozer Dozer Dozer Tractor Front End Loader Backhoe		Daytime 65 Impact Device No No No No No No No	Evening Usage(9	Ni 60 Eq Sp Ln 6) (d 40 40 40 40 40 40	ght 55 uuipmer ec nax BA) 84	at Actua Lmax (dBA)	al 81.7 81.7 81.7 79.1 77.6	Distan (feet)	980 980 980 980 980 980 980	Shieldin (dBA)	g 5 5 5 5 5 5 5
Residential to east - typical Description Dozer Dozer Dozer Tractor Front End Loader Backhoe		Daytime 65 Impact Device No No No No No No No No No	Evening Usage(%	Ni 60 Eq Sp Ln 6) (d 40 40 40 40 40 40	ght 55 uipmer ec nax BA)	t Actua Lmax (dBA)	al 81.7 81.7 81.7 79.1 77.6 79.1	Distan (feet)	980 980 980 980 980 980 980	Shieldin (dBA)	g 5 5 5 5 5 5 5
Residential to east - typical Description Dozer Dozer Dozer Tractor Front End Loader Backhoe		Daytime 65 Impact Device No No No No No No No	Evening Usage(%	Ni 60 Eq 5p Ln 6) (d 40 40 40 40 40 40 40 Re	ght 55 uuipmer ec nax BA) 84 ssults	t Actua Lmax (dBA)	al 81.7 81.7 81.7 79.1 77.6 79.1	Distan (feet)	980 980 980 980 980 980 980	Shieldin (dBA)	g 5 5 5 5 5 5 5
Residential to east - typical Description Dozer Dozer Dozer Tractor Front End Loader Backhoe		Daytime 65 Impact Device No No No No No No No No No	Evening Usage(%	Ni 60 Eq Sp Ln 6) (d 40 40 40 40 40 40 40 40 80 80 80 80 80 80 80 80 80 80 80 80 80	ght 55 uuipmer ec nax BA) 84 ssults	t Actua Lmax (dBA)	al 81.7 81.7 81.7 79.1 77.6 79.1	Distan (feet)	980 980 980 980 980 980 980	Shieldin (dBA)	g 5 5 5 5 5 5 5
Residential to east - typical Description Dozer Dozer Dozer Tractor Front End Loader Backhoe Front End Loader		Daytime 65 Impact Device No No No No No No No Calculated	Usage(% I (dBA) Leq	Ni 60 Eq Sp Ln 6) (d 40 40 40 40 40 40 40 40 80 80 80 80 80 80 80 80 80 80 80 80 80	ght 55 Juipmer Jec Jax BA) 84 ssults	5 Actua Lmax (dBA)	al 81.7 81.7 81.7 79.1 77.6 79.1	Distan (feet) ts (dBA Evenir	980 980 980 980 980 980 980	Shieldin (dBA)	g 5 5 5 5 5 5 5
Residential to east - typical Description Dozer Dozer Dozer Tractor Front End Loader Backhoe Front End Loader		Daytime 65 Impact Device No No No No No No No Calculated	Usage(% Usage(% I (dBA) Leq 44	Ni 60 Eq 5p (d 40 40 40 40 40 40 40 40 40 40 8 Eq 7 20 5 20 5 10 10 10 10 10 10 10 10 10 10 10 10 10	ght 55 Juipmer Jec Jax BA) 84 soults 97 Jax 'A	5 Actua Lmax (dBA) Noise Leq	al 81.7 81.7 81.7 79.1 77.6 79.1	Distan (feet) ts (dBA Evenir Lmax	980 980 980 980 980 980 980	Shieldin (dBA)	g 5 5 5 5 5 5 5
Residential to east - typical Description Dozer Dozer Tractor Front End Loader Backhoe Front End Loader Equipment Dozer		Daytime 65 Impact Device No No No No No No Calculated *Lmax 50.8	Usage(% Usage(% Leq 44	Ni 60 Eq Sp Ln 6) (d 40 40 40 40 40 40 40 40 40 40 5.8 N/	ght 55 Juipmer Jec Dax BA) 84 soults 97 Dax 'A 'A	s Actua Lmax (dBA) t Noise Leq N/A	al 81.7 81.7 81.7 79.1 77.6 79.1	Distan (feet) ts (dBA Evenir Lmax N/A	980 980 980 980 980 980 980	Shieldin (dBA) Leq N/A	g 5 5 5 5 5 5 5
Residential to east - typical Description Dozer Dozer Tractor Front End Loader Backhoe Front End Loader Equipment Dozer Dozer		Daytime 65 Impact Device No No No No No Calculated *Lmax 50.8 50.8	Usage(% Usage(% Leq 44 44	Ni 60 Eq Sp Ln 6) (d 40 40 40 40 40 40 40 40 40 5.8 N/ 5.8 N/	ght 55 Juipmer Jec Dax BA) 84 Soults 97 Dax 'A 'A 'A	5 Actua Lmax (dBA) 4 Noise Leq N/A N/A	al 81.7 81.7 81.7 79.1 77.6 79.1	Distan (feet) ts (dBA Evenir Lmax N/A N/A	980 980 980 980 980 980 980	Shieldin (dBA) Leq N/A N/A	g 5 5 5 5 5 5 5
Residential to east - typical Description Dozer Dozer Tractor Front End Loader Backhoe Front End Loader Equipment Dozer Dozer Dozer Dozer		Daytime 65 Impact Device No No No No No Calculated *Lmax 50.8 50.8	Usage(% Usage(% Leq 44 44 44 44 44 44 44	Ni 60 Eq Sp Ln 6) (d 40 40 40 40 40 40 40 40 40 5.8 N/ 5.8 N/ 5.8 N/	ght 55 Juipmen Jec Dax BA) 84 esults Ay Dax 'A 'A 'A 'A 'A	s Actua Lmax (dBA) d Noise Leq N/A N/A N/A	al 81.7 81.7 81.7 79.1 77.6 79.1	Distan (feet) ts (dBA Evenir Lmax N/A N/A N/A	980 980 980 980 980 980 980	Shieldin (dBA) Leq N/A N/A N/A	g 5 5 5 5 5 5 5
Residential to east - typical Description Dozer Dozer Tractor Front End Loader Backhoe Front End Loader Equipment Dozer Dozer Dozer Dozer Tractor		Daytime 65 Impact Device No No No No No Calculated *Lmax 50.8 50.8 50.8 50.8	Evening Usage(% (dBA) Leq 44 44 44 44 44 44 44 44 44 44 44 44 44	Ni 60 Eq Sp Ln 6) (d 40 40 40 40 40 40 40 40 40 5.8 N/ 5.8 N/ 5.8 N/ 5.2 N/	ght 55 uipmer ec nax BA) 84 sults 84 sults 44 A 24 24 24 24 24 24 24 24 24 24 24 24 24	Actua Lmax (dBA) Noise Leq N/A N/A N/A N/A	al 81.7 81.7 81.7 79.1 77.6 79.1	Distan (feet) ts (dBA Evenir Lmax N/A N/A N/A N/A	980 980 980 980 980 980 980	Shieldin (dBA) Leq N/A N/A N/A N/A N/A	g 5 5 5 5 5 5 5
Residential to east - typical Description Dozer Dozer Dozer Tractor Front End Loader Backhoe Front End Loader Equipment Dozer Dozer Dozer Dozer Tractor Front End Loader		Daytime 65 Impact Device No No No No No Calculated *Lmax 50.8 50.8 50.8 50.8 50.8	Evening Usage(% (dBA) Leq 44 44 44 44 44 44 44 44 44 44 44 44 44	Ni 60 Eq 5p Ln 6) (d 40 40 40 40 40 40 40 40 40 80 5.8 N/ 5.8 N/ 5.8 N/ 5.8 N/ 5.8 N/ 5.8 N/	ght 55 uipmer ec nax BA) 84 sults sults Y nax Y A Y A Y A Y A Y A Y A Y A Y A Y A Y	Actua Lmax (dBA) Noise Leq N/A N/A N/A N/A N/A	al 81.7 81.7 81.7 79.1 77.6 79.1	Distan (feet) ts (dBA Evenir Lmax N/A N/A N/A N/A N/A	980 980 980 980 980 980 980	Shieldin (dBA) Leq N/A N/A N/A N/A N/A N/A	g 5 5 5 5 5 5 5
Residential to east - typical Description Dozer Dozer Dozer Tractor Front End Loader Backhoe Front End Loader Dozer Dozer Dozer Dozer Tractor Front End Loader Backhoe		Daytime 65 Impact 0evice No No No No No Calculated *Lmax 50.8 5	Evening Usage(% (dBA) Leq 44 44 44 44 44 44 44 44 44 44 44 44 44	Ni 60 Eq 5p Ln 6) (d 40 40 40 40 40 40 40 40 40 70 8 8 8 9 7 8 8 9 7 8 9 7 8 9 7 9 7 8 9 7 9 7	ght 55 uipmer ec hax BA) 84 sults iy hax 'A 'A 'A 'A 'A 'A 'A 'A 'A 'A 'A 'A 'A	Actua Lmax (dBA) Noise Leq N/A N/A N/A N/A N/A N/A N/A	al 81.7 81.7 81.7 79.1 77.6 79.1	Distar (feet) ts (dBA Evenir Lmax N/A N/A N/A N/A N/A	980 980 980 980 980 980 980	Shieldin (dBA) Leq N/A N/A N/A N/A N/A N/A N/A	g 5 5 5 5 5 5 5
Residential to east - typical Description Dozer Dozer Dozer Tractor Front End Loader Backhoe Front End Loader Dozer Dozer Dozer Dozer Tractor Front End Loader Backhoe	Residential	Daytime 65 Impact Device No No No No Calculated *Lmax 50.8 50.8 50.8 50.8 50.8 50.8 50.8	Evening Usage(% (dBA) Leq 44 44 44 44 44 44 44 44 44 44 44 44 44	Ni 60 Eq 5p Ln 6) (d 40 40 40 40 40 40 40 40 40 70 8 8 8 9 7 8 8 9 7 8 9 7 8 9 7 9 7 8 9 7 9 7	ght 55 uipmer ec hax BA) 84 sults iy hax 'A 'A 'A 'A 'A 'A 'A 'A 'A 'A 'A 'A 'A	Actua Lmax (dBA) Noise Leq N/A N/A N/A N/A N/A N/A N/A	al 81.7 81.7 81.7 79.1 77.6 79.1	Distar (feet) ts (dBA Evenir Lmax N/A N/A N/A N/A N/A N/A	980 980 980 980 980 980 980	Shieldin (dBA) Leq N/A N/A N/A N/A N/A N/A N/A N/A N/A	g 5 5 5 5 5 5 5

Description	Land Use
School/Resi to south - nearest	Residential

Description Dozer Dozer Tractor Front End Loader Backhoe Front End Loader

		Equipm	nent					
		Spec		Actual	Recep	tor	Estimate	ed
Impact		Lmax		Lmax	Distan	ce	Shielding	B
Device	Usage(%)	(dBA)		(dBA)	(feet)		(dBA)	
No	40			81.7		450		5
No	40			81.7		470		5
No	40			81.7		500		5
No	40		84			460		5
No	40			79.1		500		5
No	40			77.6		600		5
No	40			79.1		650		5

---- Receptor #3 ----

Baselines (dBA)

Daytime Evening Night

65 60 55

		Results			
	Calculated (dBA	Noise Limits (dBA)			
		Day		Evening	
Equipment	*Lmax Leq	Lmax	Leq	Lmax	Leq
Dozer	57.6	53.6 N/A	N/A	N/A	N/A
Dozer	57.2	53.2 N/A	N/A	N/A	N/A
Dozer	56.7	52.7 N/A	N/A	N/A	N/A
Tractor	59.7	55.7 N/A	N/A	N/A	N/A
Front End Loader	54.1	50.1 N/A	N/A	N/A	N/A
Backhoe	51	47 N/A	N/A	N/A	N/A
Front End Loader	51.8	47.9 N/A	N/A	N/A	N/A
Total	59.7	60.8 N/A	N/A	N/A	N/A
	*Calculated Lma	ax is the Loudes	t value.		

		Receptor #4	4
		Baselines (dBA)	
Description	Land Use	Daytime Evening Night	
School/Resi to south - typical	Residential	65 60 55	

			Equipme	nt		
			Spec	Actual	Receptor	Estimated
	Impact		Lmax	Lmax	Distance	Shielding
Description	Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Dozer	No	40)	81.7	750	5
Dozer	No	40)	81.7	750	5
Dozer	No	40)	81.7	750	5
Tractor	No	40	8	4	750	5
Front End Loader	No	40)	79.1	. 750	5
Backhoe	No	40)	77.6	750	5
Front End Loader	No	40)	79.1	. 750	5
			Results			
	Calculated	d (dBA)		Noise Lim	ts (dBA)	
			Day		Evening	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq
Dozer	53.1	L 49.2	N/A	N/A	N/A	N/A
Dozer	53.1	L 49.2	N/A	N/A	N/A	N/A

Dozel	35.1	49.2 N/A	IN/A	N/A	IN/A
Dozer	53.1	49.2 N/A	N/A	N/A	N/A
Dozer	53.1	49.2 N/A	N/A	N/A	N/A
Tractor	55.5	51.5 N/A	N/A	N/A	N/A
Front End Loader	50.6	46.6 N/A	N/A	N/A	N/A
Backhoe	49	45.1 N/A	N/A	N/A	N/A
Front End Loader	50.6	46.6 N/A	N/A	N/A	N/A
Total	55.5	57.1 N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM), Version 1.1

1/16/2020 Costco Murrieta - Costco Grading

Description	Land Use
Residential to east - nearest	Residential

Description Excavator Grader Dozer Tractor Front End Loader Dozer

Equipment
Excavator
Grader
Dozer
Tractor
Front End Loader
Dozer

Description Land Use Residential to east - typical Residential

Description Excavator Grader Dozer Tractor Front End Loader Dozer

Equipment Excavator Grader Dozer Tractor Front End Loader Dozer

Total

Total

Description School/Resi to south - nearest

Land Use Residential

6	5 60	55	5		
		Equipmen	t		
		Spec	Actual	Receptor	Estimated
Impact		Lmax	Lmax	Distance	Shielding
Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
No	40		80.7	670	5
No	40	85	5	700	5
No	40		81.7	750	5
No	40	84	ļ	680	5

79.1

81.7

750

800

5

5

---- Receptor #1 ----

Night

		Results			
Calculated	(dBA)		Noise Limit	s (dBA)	
		Day		Evening	
*Lmax	Leq	Lmax	Leq	Lmax	Leq
53.2	49.2	N/A	N/A	N/A	N/A
57.1	53.1	N/A	N/A	N/A	N/A
53.1	49.2	N/A	N/A	N/A	N/A
56.3	52.3	N/A	N/A	N/A	N/A
50.6	46.6	N/A	N/A	N/A	N/A
52.6	48.6	N/A	N/A	N/A	N/A
57.1	58.2	N/A	N/A	N/A	N/A
*Calculated Lmax is the Loudest value.					

---- Receptor #2 ----

40

40

Baselines (dBA) Daytime Evening Night 65 60

Baselines (dBA) Daytime Evening

No

No

55

		Equipment				
		Spec		Actual	Receptor	Estimated
Impact		Lmax		Lmax	Distance	Shielding
Device	Usage(%)	(dBA)		(dBA)	(feet)	(dBA)
No	40			80.7	98	D 5
No	40		85		98	D 5
No	40			81.7	98	D 5
No	40		84		98	D 5
No	40			79.1	. 98	D 5
No	40			81.7	98	0 5

		Results			
Calculated (dBA) Noise Limits (dBA)					
		Day		Evening	
*Lmax	Leq	Lmax	Leq	Lmax	Leq
49.9	9 45.9	N/A	N/A	N/A	N/A
54.2	2 50.2	N/A	N/A	N/A	N/A
50.8	3 46.8	N/A	N/A	N/A	N/A
53.2	2 49.2	N/A	N/A	N/A	N/A
48.3	3 44.3	N/A	N/A	N/A	N/A
50.8	3 46.8	N/A	N/A	N/A	N/A
54.2	2 55.4	N/A	N/A	N/A	N/A
*Calculate	ed Lmax is tl	ne Loudes	st value.		

---- Receptor #3 ----Baselines (dBA) Daytime Evening Night 60 65 55 Equipment

		Equipmen	ι		
		Spec	Actual	Receptor	Estimated
Impact		Lmax	Lmax	Distance	Shielding
Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)

Description

Excavator	No	40		80.7	450	5
Grader	No	40	85		470	5
Dozer	No	40		81.7	500	5
Tractor	No	40	84		460	5
Front End Loader	No	40		79.1	500	5
Dozer	No	40		81.7	600	5

	Results
	Calculated (dBA) Noise Limits (dBA)
	Day Evening
Equipment	*Lmax Leq Lmax Leq Lmax Leq
Excavator	56.6 52.6 N/A N/A N/A N/A
Grader	60.5 56.6 N/A N/A N/A N/A
Dozer	56.7 52.7 N/A N/A N/A N/A
Tractor	59.7 55.7 N/A N/A N/A N/A
Front End Loader	54.1 50.1 N/A N/A N/A N/A
Dozer	55.1 51.1 N/A N/A N/A N/A
Total	60.5 61.6 N/A N/A N/A N/A
	*Calculated Lmax is the Loudest value.

		Baselines (dBA)
Description	Land Use	Daytime Evening Night
School/Resi to south - typical	Residential	65 60 55

			Equipm	nent		
			Spec	Actual	Receptor	Estimated
	Impact		Lmax	Lmax	Distance	Shielding
Description	Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Excavator	No	40)	80.	7 750) 5
Grader	No	40)	85	750) 5
Dozer	No	40)	81.	7 750) 5
Tractor	No	40)	84	750) 5
Front End Loader	No	40)	79.:	1 750) 5
Dozer	No	40)	81.	7 750) 5
			Results			
	Calculated (dBA) Noise Limits (dBA					
			Day			
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq
Excavator	52.	2 48.2	N/A	N/A	N/A	N/A
Grader	56.	5 52.5	N/A	N/A	N/A	N/A
Dozer	53.	1 49.2	N/A	N/A	N/A	N/A
Tractor	55.	5 51.5	N/A	N/A	N/A	N/A
Front End Loader	50.	6 46.6	N/A	N/A	N/A	N/A
Dozer	53.	1 49.2	N/A	N/A	N/A	N/A
Total	56.	5 57.8	N/A	N/A	N/A	N/A
	*Calculat	od I may is th	a loude	set value		

Roadway Construction Noise Model (RCNM), Version 1.1

---- Receptor #4 ----

Report date:	1/16/20	20					
Case Description:	Costco Murrieta - Costco Paving						
				Red	ceptor #1		
		Baselines	(dBA)				
Description	Land Use	Daytime	Evening	Night			
Residential to east - nearest	Residential	6	5 60)	55		
				Equipn	nent		
				Spec	Actual	Receptor	Estimated
		Impact		Lmax	Lmax	Distance	Shielding
Description		Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Paver		No	50)	77.2	2 670) 5
Paver		No	50)	77.2	2 700) 5
Concrete Pump Truck		No	20)	81.4	1 750	5

Concrete Mixer Truck	No	40	78.8	680	5
Roller	No	20	80	750	5
Roller	No	20	80	800	5

		Results			
	Calculated (dBA	A)	Noise Lin		
		Day		Evening	
Equipment	*Lmax Leq	Lmax	Leq	Lmax	Leq
Paver	49.7	46.7 N/A	N/A	N/A	N/A
Paver	49.3	46.3 N/A	N/A	N/A	N/A
Concrete Pump Truck	52.9	45.9 N/A	N/A	N/A	N/A
Concrete Mixer Truck	51.1	47.1 N/A	N/A	N/A	N/A
Roller	51.5	44.5 N/A	N/A	N/A	N/A
Roller	50.9	43.9 N/A	N/A	N/A	N/A
Total	52.9	53.7 N/A	N/A	N/A	N/A
	*Calculated Lm	ax is the Loudes	t value.		

Description Land Use Residential to east - typical

Residential

Description Paver Paver Concrete Pump Truck Concrete Mixer Truck Roller Roller

Equipment Paver Paver Concrete Pump Truck Concrete Mixer Truck Roller Roller

Description School/Resi to south - nearest

Land Use Residential

Total

Description Paver Paver Concrete Pump Truck Concrete Mixer Truck Roller Roller

Equipment Paver Paver

50.9	43.9	N/A		N/A	N/A		N/A					
52.9	53.7	N/A		N/A	N/A		N/A					
*Calculate	d Lmax is th	e Loude	est v	alue.								
Receptor #2												
Baselines (dBA)											
Daytime	Evening	Night										
65	60		55									
		Equipm	nent									
		Spec		Actual	Recep	otor	Estimate	d				
Impact		Lmax		Lmax	Distar	nce	Shielding	ŗ				
Device	Usage(%)	(dBA)		(dBA)	(feet)		(dBA)					
No	50			77.2	2	980		5				
No	50			77.2	2	980		5				
No	20			81.4	1	980		5				
No	40			78.8	3	980		5				
No	20			80	C	980		5				
No	20			80)	980		5				

Results Calculated (dBA) Noise Limits (dBA) Day Evening Lmax *Lmax Lmax Leq Leq Leq 46.4 43.4 N/A N/A N/A N/A 46.4 43.4 N/A N/A N/A N/A 50.6 43.6 N/A N/A N/A N/A 44 N/A N/A 48 N/A N/A 49.2 42.2 N/A N/A N/A N/A 49.2 42.2 N/A N/A N/A N/A 50.6 50.9 N/A N/A N/A N/A *Calculated Lmax is the Loudest value.

		Rec	ept	or #3				
Baselines (dBA)							
Daytime	Evening	Night						
65	60		55					
		Equipn	nent	t				
		Spec		Actual		Receptor	Estimat	ed
Impact		Lmax		Lmax		Distance	Shieldin	g
Device	Usage(%)	(dBA)		(dBA)		(feet)	(dBA)	
No	50			77.	2	450		5
No	50			77.	2	470		5

No	50	77.2	470	5
No	20	81.4	500	5
No	40	78.8	460	5
No	20	80	500	5
No	20	80	600	5
	Posults			

				Results			
Calculated (dBA)					ts (dBA)		
				Day		Evening	
*Lma	x	Leq		Lmax	Leq	Lmax	Leq
	53.1		50.1	N/A	N/A	N/A	N/A
	52.8		49.7	N/A	N/A	N/A	N/A

Concrete Pump Truck		56.	4	49.4	N/A	N	/A	N/A	N/A	
Concrete Mixer Truck		54.	5	50.5	N/A	N	/A	N/A	N/A	
Roller		5	5	48	N/A	N	/A	N/A	N/A	
Roller		53.	4	46.4	N/A	N	/A	N/A	N/A	
	Total	56.	4	57	N/A	N	/A	N/A	N/A	
		*Calculat	ed Lma	ıx is th	ne Loud	est val	ue.			
					Re	eptor	#4			
		Baselines	(dBA)							
Description	Land Use	Daytime	Even	ing	Night					
School/Resi to south - typical	Residential	6	5	60		55				
					Equipr	nent				
					Spec		ctual	Receptor	Estimated	
		Impact			Lmax	L	max	Distance	Shielding	
Description		Device	Usag	e(%)	(dBA)	(0	BA)	(feet)	(dBA)	
Paver		No	-	50			77.2	2 750) 5	
Paver		No		50			77.2	2 750) 5	
Concrete Pump Truck		No		20			81.4	1 750) 5	
Concrete Mixer Truck		No		40			78.8	3 750) 5	
Roller		No		20			80) 750) 5	
Roller		No		20			80) 750) 5	
					Result	5				
		Calculate	d (dBA)		N	oise Limi	its (dBA)		
					Day			Evening		
Equipment		*Lmax	Leq		Lmax	Le	eq	Lmax	Leq	
Paver		48.	7	45.7	N/A	N	/A	N/A	N/A	
Paver		48.	7	45.7	N/A	N	/A	N/A	N/A	
Concrete Pump Truck		52.	9	45.9	N/A	N	/A	N/A	N/A	
Concrete Mixer Truck		50.	3	46.3	N/A	N	/A	N/A	N/A	
Roller		51.	5	44.5	N/A		/A	N/A	N/A	
Roller		51.	5	44.5	N/A	N	/A	N/A	N/A	
	Total	52.	9	53.3	N/A	N	/A	N/A	N/A	
		*Calculat	ed Lma	ıx is th	ne Loud	est val	ue.			

Roadway Construction Noise Model (RCNM), Version 1.1

Report date: Case Description:	1/16/2020 Costco Murrieta - Costco Bldg Const)						
				Rec	eptor #:	L		
		Baselines	(dBA)					
Description	Land Use	Daytime	Evening	Night				
Residential to east - nearest	Residential	6	5 60		55			
				Equipn	nent			
				Spec	Act	ual	Receptor	Estimated
		Impact		Lmax	Lma	ах	Distance	Shielding
Description		Device	Usage(%)	(dBA)	(dB	A)	(feet)	(dBA)
Crane		No	16			80.6	1100	5
Man Lift		No	20			74.7	1150	5
Man Lift		No	20			74.7	1300	5
Man Lift		No	20			74.7	1400	5
Generator		No	50			80.6	1100	5
Tractor		No	40		84		1200	5
Front End Loader		No	40			79.1	1300	5
Backhoe		No	40			77.6	1350	5
Welder / Torch		No	40			74	1200	5
				Results	5			
		Calculate	d (dBA)		Noi	se Limi	ts (dBA)	
				Day			Evening	

*Lmax Leq

42.5

48.7

Lmax

40.7 N/A

35.5 N/A

Leq

N/A

N/A

Lmax

N/A

N/A

Leq

N/A

N/A

Equipment

Crane

Man Lift

Man Lift	41.4	34.4 N/A	N/A	N/A	N/A
Man Lift	40.8	33.8 N/A	N/A	N/A	N/A
Generator	48.8	45.8 N/A	N/A	N/A	N/A
Tractor	51.4	47.4 N/A	N/A	N/A	N/A
Front End Loader	45.8	41.8 N/A	N/A	N/A	N/A
Backhoe	43.9	40 N/A	N/A	N/A	N/A
Welder / Torch	41.4	37.4 N/A	N/A	N/A	N/A
Total	51.4	51.6 N/A	N/A	N/A	N/A

---- Receptor #2 ----

Receptor Estimated

Distance Shielding

1260

1260

1260

(dBA)

5

5

5

(feet)

80.6

74.7

74.7

		net
		Baselines (dBA)
	Land Use	Daytime Evening Night
st - typical	Residential	65 60

Residential to east - typical	Residential	6	5 60	I	55
				Equipm	ent
				Spec	Actual
		Impact		Lmax	Lmax
Description		Device	Usage(%)	(dBA)	(dBA)
Crane		No	16	i	80
Man Lift		No	20	1	74
Man Lift		No	20	1	74

Man Li Man Lift Generator Tractor Front End Loader Backhoe Welder / Torch

Description

Equipment	
Crane	
Man Lift	
Man Lift	
Man Lift	
Generator	
Tractor	
Front End Loader	
Backhoe	
Welder / Torch	
	Total

No 20 74.7 1260 5 No 50 80.6 1260 5 40 84 1260 5 No 5 No 40 79.1 1260 40 77.6 1260 5 No 5 No 40 74 1260 Results Calculated (dBA) Noise Limits (dBA) Day Evening *Lmax Leq Lmax Leq Lmax Leq 47.5 39.6 N/A N/A N/A N/A 34.7 N/A N/A N/A N/A 41.7

				,
41.7	34.7 N/A	N/A	N/A	N/A
41.7	34.7 N/A	N/A	N/A	N/A
47.6	44.6 N/A	N/A	N/A	N/A
51	47 N/A	N/A	N/A	N/A
46.1	42.1 N/A	N/A	N/A	N/A
44.5	40.6 N/A	N/A	N/A	N/A
41	37 N/A	N/A	N/A	N/A
51	51.1 N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

		Rec	ept	or #3		
Baselines (dBA)					
Daytime	Evening	Night				
65	60		55			
		Equipm	ent			
		Spec		Actual	Receptor	Estimated
Impact		Lmax		Lmax	Distance	Shielding
Device	Usage(%)	(dBA)		(dBA)	(feet)	(dBA)
No	16			80.6	780	0
No	20			74.7	800	0
No	20			74.7	850	0
No	20			74.7	900	0
No	50			80.6	800	0
No	40		84		900	0
No	40			79.1	950	0
No	40			77.6	1000	0
No	40			74	850	0
		Results				
Calculated (dBA)				Noise Limit	ts (dBA)	
		Day			Evening	
*Lmax	Leq	Lmax		Leq	Lmax	Leq

Description School/Resi to south - nearest

Land Use Residential

Description Crane Man Lift Man Lift Man Lift Generator Tractor Front End Loader Backhoe Welder / Torch

Equipment

Crane		56.7	48.7	N/A	N/A	N/A	N/A
Man Lift		50.6	43.6	N/A	N/A	N/A	N/A
Man Lift		50.1	43.1	N/A	N/A	N/A	N/A
Man Lift		49.6	42.6	N/A	N/A	N/A	N/A
Generator		56.5	53.5	N/A	N/A	N/A	N/A
Tractor		58.9	54.9	N/A	N/A	N/A	N/A
Front End Loader		53.5	49.6	N/A	N/A	N/A	N/A
Backhoe		51.5	47.6	N/A	N/A	N/A	N/A
Welder / Torch		49.4	45.4	N/A	N/A	N/A	N/A
	Total	58.9	59.3	N/A	N/A	N/A	N/A
		*Calculate	d Lmax is th	ne Loude	st value.		
				Boo	eptor #4		
		Baselines (dBA)	Rece	eptor #4		
Description	Land Use	Daytime	Evening	Night			
School/Resi to south - typical	Residential	65	•		55		
				Equipm		Deserves	Estimated.
				Spec	Actual		Estimated
Description		Impact	11(0/)	Lmax	Lmax	Distance	Shielding
Description		Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Crane		No	16		80		
Man Lift		No	20		74		
Man Lift		No	20		74		
Man Lift		No	20		74		
Generator		No	50		80		
Tractor		No	40		84	970	
Front End Loader		No	40		79		
Backhoe		No	40		77.		
Welder / Torch		No	40		7	970) 0
				Results			
		Calculated	(dBA)		Noise Lin	nits (dBA)	
				Day		Evening	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq
Crane		54.8	46.8	N/A	N/A	N/A	N/A
Man Lift		48.9	42	N/A	N/A	N/A	N/A
Man Lift		48.9	42	N/A	N/A	N/A	N/A
Man Lift		48.9	42	N/A	N/A	N/A	N/A
Generator		54.9	51.9	N/A	N/A	N/A	N/A
Tractor		58.2	54.3	N/A	N/A	N/A	N/A
Front End Loader		53.4	49.4	N/A	N/A	N/A	N/A
Backhoe		51.8	47.8	N/A	N/A	N/A	N/A
Welder / Torch		48.2		N/A	N/A	N/A	N/A
	Total	58.2	58.4	N/A	N/A	N/A	N/A
		*Calculate	d I may is th	-	-	-	

Roadway Construction Noise Model (RCNM), Version 1.1

Report date:	1/1	6/2020					
Case Description:	Costco Murrieta - Costco Arch C	oating					
				Rece	ptor #1		
		Baselines	(dBA)				
Description	Land Use	Daytime	Evening	Night			
Residential to east - nearest	Residential	65	60	5	55		
				Equipme	ent		
				Spec	Actual	Receptor	Estimated
		Impact		Lmax	Lmax	Distance	Shielding
Description		Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Compressor (air)		No	40		77.7	1100) 5
				Results			
		Calculated	d (dBA)		Noise Limi	ts (dBA)	

Equipment Compressor (air)	Total		Day Lmax 3 N/A 3 N/A he Loudest	Leq N/A N/A value.	Evening Lmax N/A N/A	Leq N/A N/A
			Recep	otor #2		
		Baselines (dBA)				
Description Residential to east - typical	Land Use Residential	Daytime Evening 65 60	Night) 5	5		
			Equipmer	nt		
			Spec	Actual	Receptor	Estimated
		Impact	Lmax	Lmax	Distance	Shielding
Description Compressor (air)		Device Usage(%) No 40		(dBA) 77.	(feet) 7 1260	(dBA) D 5
		110 40	,	//.	/ 1200	5 5
		Coloulated (dDA)	Results	Neiselin		
		Calculated (dBA)	Day	Noise Lim	Evening	
Equipment		*Lmax Leq	Lmax	Leq	Lmax	Leq
Compressor (air)		44.6 40.7	7 N/A	N/A	N/A	N/A
	Total		7 N/A	N/A	N/A	N/A
		*Calculated Lmax is t	he Loudest	value.		
			Recep	otor #3		
		Baselines (dBA)				
Description	Land Use	Daytime Evening	Night	F		
School/Resi to south - nearest	Residential	65 60) 5.	5		
			Equipmer	nt		
			Spec	Actual	•	Estimated
Description		Impact	Lmax	Lmax	Distance	Shielding
Description Compressor (air)		Device Usage(%) No 40		(dBA) 77.	(feet) 7 780	(dBA) D 0
		Coloulated (dDA)	Results	Neiselin		
		Calculated (dBA)	Day	Noise Lim	Evening	
Equipment		*Lmax Leg	Lmax	Leq	Lmax	Leq
Compressor (air)			3 N/A	N/A	N/A	N/A
	Total	53.8 49.8	3 N/A	N/A	N/A	N/A
		*Calculated Lmax is t	he Loudest	value.		
			Recep	otor #4		
		Baselines (dBA)				
Description	Land Use	Daytime Evening	Night	_		
School/Resi to south - typical	Residential	65 60) 5	5		
			Equipmer	nt		
			Spec	Actual	Receptor	
Description		Impact Device Usage(%)	Lmax	Lmax (dBA)	Distance (feet)	Shielding (dBA)
Compressor (air)		No 4	. ,	(UBA) 77.		
			-	,,,		- 5
		Coloulate -1 (-10.4)	Results	Neiss		
		Calculated (dBA)	Day	Noise Lim	its (dBA) Evening	
Equipment		*Lmax Leq	Lmax	Leq	Lmax	Leq
Compressor (air)			9 N/A	N/A	N/A	N/A
· · · ·	Total		∋ N/A	N/A	N/A	N/A
		*Calculated Lmax is t	he Loudest	value.		

Roadway Construction Noise Model (RCNM), Version 1.1

Report date:

Case Description:

1/16/2020 Costco Murrieta - Vineyard II Ph 1 Site Prep

---- Receptor #1 ----Baselines (dBA) Land Use Daytime Evening Night Description Residential to east - nearest Residential 65 60 55 Equipment Receptor Estimated Actual Spec Lmax Distance Shielding Impact Lmax Description Device Usage(%) (dBA) (dBA) (feet) (dBA) Dozer No 40 81.7 40 40 81.7 50 Dozer No 75 Dozer 40 81.7 No Tractor No 40 84 50 Front End Loader No 40 79.1 60 Results Noise Limits (dBA) Calculated (dBA) Day Evening Equipment *Lmax Leq Lmax Leq Lmax Leq 74.6 N/A Dozer N/A N/A N/A 78.6 72.7 N/A N/A N/A N/A Dozer 76.7 69.2 N/A N/A Dozer 73.1 N/A N/A Tractor 79 75 N/A N/A N/A N/A 68.5 N/A Front End Loader 72.5 N/A N/A N/A Total 79 79.8 N/A N/A N/A N/A *Calculated Lmax is the Loudest value. ---- Receptor #2 ----Baselines (dBA) Description Land Use Daytime Evening Night Residential 60 Residential to east - typical 65 55 Equipment Receptor Estimated Actual Spec Distance Shielding Impact Lmax Lmax Description Device Usage(%) (dBA) (dBA) (feet) (dBA) Dozer No 40 81.7 150 Dozer No 40 81.7 150 Dozer No 40 81.7 150 Tractor 40 84 150 No Front End Loader No 40 79.1 150 Results Calculated (dBA) Noise Limits (dBA) Day Evening *Lmax Equipment Leq Lmax Leq Lmax Leq N/A N/A Dozer 67.1 63.1 N/A N/A Dozer 67.1 63.1 N/A N/A N/A N/A Dozer 67.1 63.1 N/A N/A N/A N/A Tractor 69.5 65.5 N/A N/A N/A N/A Front End Loader 64.6 60.6 N/A N/A N/A N/A Total 69.5 70.4 N/A N/A N/A N/A

*Calculated Lmax is the Loudest value.

---- Receptor #3 ----Baselines (dBA) Daytime Evening Night

65 60 55

		Equipm	ent		
		Spec	Actual	Receptor	Estimated
Impact		Lmax	Lmax	Distance	Shielding
Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
No	40		81.7	140	0
No	40		81.7	150	0

5 5

5

5

5

5 5

5

5

5

Description School/Resi to south - nearest

Land Use Residential

Description Dozer Dozer

Dozer	No	40		81.7	175	0
Tractor	No	40	84		200	0
Front End Loader	No	40		79.1	160	0

		Results								
		Calculated (dBA)				Noise Limits (dBA)				
		Day		Day			Evening			
Equipment		*Lmax	Leq		Lmax	Leq		Lmax	Leq	
Dozer		72.7	7 6	58.7	N/A	N/A		N/A	N/A	
Dozer		72.2	L 6	58.1	N/A	N/A		N/A	N/A	
Dozer		70.8	36	6.8	N/A	N/A		N/A	N/A	
Tractor		72	2	68	N/A	N/A		N/A	N/A	
Front End Loader		69)	65	N/A	N/A		N/A	N/A	ι .
	Total	72.7	77	74.5	N/A	N/A		N/A	N/A	
		*Calculate	ed Lmax i	is the	e Loudes	est value.				
					Rece	ptor #4				
		Baselines	(dBA)							
Description	Land Use	Daytime	Evenin	g	Night					
School/Resi to south - typical	Residential	65	5	60		55				
					Equipme	ent				
					Spec	Actu	al	Recepto	or Esti	mated
		Impact			Lmax	Lma		Distanc		lding
Description		Device	Usage((dBA)	(dBA		(feet)	(dB	0
Dozer		No	8-(40	()	(81.7	• •	20	0
Dozer		No		40			81.7	4	20	0
Dozer		No		40			81.7		20	0
Tractor		No		40	8	34			20	0
Front End Loader		No		40			79.1	4	20	0
					Results					
		Calculated	d (dBA)			Nois	e Limit	s (dBA)		
			(-)		Day			Evening		
Equipment		*Lmax	Lea		Lmax	Leq		Lmax	Leq	
Dozer		63.2		59.2	N/A	N/A		N/A	N/A	
Dozer		63.2			N/A	N/A		N/A	N/A	
Dozer		63.2			N/A	N/A		N/A	N/A	
Tractor		65.5			N/A	N/A		N/A	N/A	
Front End Loader		60.6		56.6		N/A		N/A	N/A	
	Total	65.5		56.4		N/A		N/A	N/A	
		*Calculate							,,	

Roadway Construction Noise Model (RCNM), Version 1.1

Report date: Case Description: 1/16/2020 Costco Murrieta - Vineyard II Ph 1 Paving

		Baselines	(dBA)	Red	ceptor #1		
Description	Lond Llos		. ,	Niabt			
Description	Land Use	Daytime	Evening	Night			
Residential to east - nearest	Residential	6	5 6	0	55		
				Equipn	nent		
				Spec	Actual	Receptor	Estimated
		Impact		Lmax	Lmax	Distance	Shielding
Description		Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Concrete Mixer Truck		No	4	0	78.8	3 40) 5
Paver		No	5	0	77.2	2 50) 5
Roller		No	2	0	80	0 60) 5
				Result	5		
		Calculated (dBA)			Noise Lim	its (dBA)	
				Day		Evening	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq
Concrete Mixer Truck		75.	7 71.	8 N/A	N/A	N/A	N/A

Paver		72.2	69.2	N/A	N/A	N/A	N/A
Roller		73.4	66.4		N/A	N/A	N/A
Nonei	Total	75.7	74.4	-	N/A	N/A	N/A
		*Calculated Lm		-	-	,	,,,
				Recept	or #2		
		Baselines (dBA))				
Description	Land Use	Daytime Ever	ning	Night			
Residential to east - typical	Residential	65	60	- 55			
				Equipment	t		
				Spec	Actual	Receptor	Estimated
		Impact		Lmax	Lmax	Distance	Shielding
Description		Device Usa	ge(%)	(dBA)	(dBA)	(feet)	(dBA)
Concrete Mixer Truck		No	40		78.8		
Paver		No	50		77.2		
Roller		No	20		80	150) 5
				Results	NI-1	+- (-ID A)	
		Calculated (dBA	4)	Day	Noise Limi	Evening	
Equipment		*Lmax Leq		Lmax	Leq	Lmax	Leq
Concrete Mixer Truck		64.3	60.3		N/A	N/A	N/A
Paver		62.7	59.7		N/A	N/A	N/A
Roller		65.5	58.5	-	N/A	N/A	N/A
Nonei	Total	65.5	64.3	-	N/A	N/A	N/A
		*Calculated Lm		-	-		.,
				Recept	or #3		
		Baselines (dBA))				
Description	Land Use	Daytime Ever	ning	Night			
School/Resi to south - nearest	Residential	65	60	- 55			
				Equipment	t		
				Spec	Actual	Receptor	Estimated
		Impact		Lmax	Lmax	Distance	Shielding
Description		Device Usa	ge(%)	(dBA)	(dBA)	(feet)	(dBA)
Concrete Mixer Truck		No	40		78.8		
Paver		No	50		77.2		
Roller		No	20		80	160	0
				Results		(15.4)	
		Calculated (dBA	4)	Devi	Noise Limi	· · /	
Equipment		*Lmax Leq		Day Lmax	log	Evening	Log
Concrete Mixer Truck		*Lmax Leq 69.9	65.9		Leq N/A	Lmax N/A	Leq N/A
Paver		67.7		N/A	N/A	N/A	N/A
Roller		69.9		N/A	N/A	N/A	N/A
	Total	69.9	69.4		N/A	N/A	N/A
		*Calculated Lm		-	-	,	,
				Recept	or #4		
		Baselines (dBA))				
Description	Land Use	Daytime Ever	ning	Night			
School/Resi to south - typical	Residential	65	60	55			
				Equipment			
				Spec	Actual	-	Estimated
		Impact		Lmax	Lmax	Distance	
Description			ge(%)		(dBA)	(feet)	(dBA)
Concrete Mixer Truck		No	40		78.8		
Paver		No	50		77.2		
Roller		No	20		80	425	0
				Desult			
		Colouistad / 10		Results	Nata - Lis		
		Calculated (dBA	*)	Dav	Noise Limi		
Equipment		*Lmax Leq		Day Lmax	Leq	Evening Lmax	Leq
Lyupment		Linax Leq		LIIIGA	-c-4	LIIIAA	

Concrete Mixer Truck	60.2	56.2 N/A	N/A	N/A	N/A
Paver	58.6	55.6 N/A	N/A	N/A	N/A
Roller	61.4	54.4 N/A	N/A	N/A	N/A
Total	61.4	60.3 N/A	N/A	N/A	N/A
	*Calaulatad L	مامير مام مام	at under a		

Roadway Construction Noise Model (RCNM), Version 1.1

Report date:	1/16/2020
Case Description:	Costco Murrieta - Vineyard II Ph 1 Bldg Const

			Receptor #1			
		Baselines (
Description	Land Use	Daytime	Evening	Night		
Residential to east - nearest	Residential	65	60	0	55	

			Equipme		Decenter	Fatimata
	lucius et		Spec	Actual	Receptor	Estimated
Description	Impact		Lmax	Lmax	Distance	Shielding
Description		0 ()	(dBA)	(dBA)	(feet)	(dBA)
Crane	No	16		80.0		
Man Lift	No	20		74.		
Generator	No	50		80.		
Generator	No	50		80.		
Generator	No	50		80.		
Generator	No	50		80.		
Generator	No	50		80.		
Generator	No	50		80.		
Tractor	No	40		34	110	
Tractor	No	40	8	84	80	
Front End Loader	No	40		79.:		
Backhoe	No	40		77.	5 120	
Welder / Torch	No	40		74		
Welder / Torch	No	40		74	1 110	5
Welder / Torch	No	40		74	1 80	5
Welder / Torch	No	40		74	1 110	5
Compressor (air)	No	40		77.	7 90	5
			Results			
	Calculated (dB/			Noise Lim	its (dBA)	
		,	Day		Evening	
Equipment	*Lmax Leq		Lmax	Leq	Lmax	Leq
Crane	73.3	65.3 I		N/A	N/A	N/A
Man Lift	66.2	59.2		N/A	N/A	N/A
Generator	71.5	68.5 I	-	N/A	N/A	N/A
Generator	69.6	66.6		N/A	, N/A	N/A
Generator	70.5	67.5		N/A	N/A	N/A
Generator	71.5	68.5 1		N/A	N/A	N/A
Generator	69.6	66.6 1		N/A	N/A	N/A
Generator	72.1	69.1 I		N/A	N/A	N/A
Tractor	72.1	68.2		N/A	N/A	N/A
Tractor	74.9	70.9 1		N/A	N/A N/A	N/A
	/4.5	70.91		11/7	11/7	N/A

Backhoe
Welder / Torch
Compressor (air)

Description

Front End Loader

Land Use

Total

----- Receptor #2 ----Baselines (dBA) Daytime Evening Night

69

65

63

62.2

64.9

62.2

67.6

74.9

65 N/A

61 N/A

59 N/A

58.2 N/A

60.9 N/A

58.2 N/A

63.6 N/A

78.5 N/A

*Calculated Lmax is the Loudest value.

N/A

Tractor

Tractor

Front End Loader

> Receptor Estimated Distance Shielding

> > 190

190

190

190

190

190

190

190

190

190

190

190

190

190

190

190

190

Leq

N/A

Receptor Estimated Distance Shielding

800

810

820

850

900

950

830

820

840

850

900

(dBA)

0

0

0

0

0

0

0

0

0

0

0

40

40

40

No

No

No

84

84

79.1

(dBA)

5 5

5

5

5

5

5 5

5

5

5 5

5

5

5

5

5

Residential to east - typical	Residential	65	60	5	5			
				Equipme	nt			
				Spec	Actua	1	Recept	toi
		Impact		Lmax	Lmax		Distan	
Description		Device	Usage(%)		(dBA)		(feet)	
Crane		No	16			80.6	` '	19
Man Lift		No	20			74.7		19
Generator		No	50			80.6		19
Generator		No	50			80.6		19
Generator		No	50			80.6		19
Generator		No	50			80.6		19
								19
Generator		No	50			80.6		
Generator		No	50			80.6		19
Tractor		No	40		4			19
Tractor		No	40		4			19
Front End Loader		No	40			79.1		19
Backhoe		No	40			77.6		19
Welder / Torch		No	40			74		19
Welder / Torch		No	40			74		19
Welder / Torch		No	40			74		19
Welder / Torch		No	40			74		19
Compressor (air)		No	40			77.7		19
				Results				
		Calculated	(dBA)		Noise	Limit	ts (dBA))
				Day			Evenin	g
Equipment		*Lmax	Leq	Lmax	Leq		Lmax	
Crane		64	56	N/A	N/A		N/A	
Man Lift		58.1	51.1	N/A	N/A		N/A	
Generator		64	61	N/A	N/A		N/A	
Generator		64	61	N/A	N/A		N/A	
Generator		64		N/A	N/A		N/A	
Generator		64		N/A	N/A		N/A	
Generator		64		N/A	N/A		N/A	
Generator		64		N/A	N/A		N/A	
Tractor		67.4	63.4		N/A		N/A	
Tractor		67.4		N/A	N/A		N/A	
Front End Loader		62.5		N/A	N/A		N/A	
Backhoe		61						
				N/A	N/A		N/A	
Welder / Torch		57.4		N/A	N/A		N/A	
Welder / Torch		57.4	53.4		N/A		N/A	
Welder / Torch		57.4		N/A	N/A		N/A	
Welder / Torch		57.4		N/A	N/A		N/A	
Compressor (air)		61.1			N/A		N/A	
	Total	67.4 *Calaulata			N/A		N/A	
		Calculate	d Lmax is th	le Loudest	value.			
				Recer	ntor #3 -			
		Baselines (dBA)	neech	101 #5			
Description	Land Use	Daytime		Night				
School/Resi to south - nearest	Residential	65	-	-	5			
				-	-			
				Equipme	nt			
				Spec	Actua	1	Recept	tor
		Impact		Lmax	Lmax		Distan	ce
Description		Device	Usage(%)	(dBA)	(dBA)		(feet)	
Crane		No	16			80.6		80
Man Lift		No	20			74.7		81
Generator		No	50			80.6		82
Generator		No	50			80.6		85
Generator		No	50			80.6		90
								90 95
Generator		No	50			80.6		
Generator		No	50			80.6		83
Generator		No	50	0		80.6		82

Backhoe	No	40	77.6	860	0
Welder / Torch	No	40	74	900	0
Welder / Torch	No	40	74	820	0
Welder / Torch	No	40	74	900	0
Welder / Torch	No	40	74	850	0
Compressor (air)	No	40	77.7	880	0

Calculated (dBA)

*Lmax Leq

56.5

50.5

56.3

56

55.5

55.1

56.2

56.3

Equipment Crane Man Lift Generator Generator Generator Generator Generator Generator Tractor Tractor Front End Loader Backhoe Welder / Torch Welder / Torch Welder / Torch Welder / Torch Compressor (air)

Total

Description School/Resi to south - typical

Land Use Residential

Description
Crane
Man Lift
Generator
Tractor
Tractor
Front End Loader
Backhoe
Welder / Torch
Compressor (air)

Equipment
Crane
Man Lift
Generator
Generator
Generator
Generator

59.5 55.5	N/A	N/A	N/A	N/A
59.4 55.4	N/A	N/A	N/A	N/A
54 50	N/A	N/A	N/A	N/A
52.8 48.9	N/A	N/A	N/A	N/A
48.9 44.9	N/A	N/A	N/A	N/A
49.7 45.7	N/A	N/A	N/A	N/A
48.9 44.9	N/A	N/A	N/A	N/A
49.4 45.4	N/A	N/A	N/A	N/A
52.8 48.8	N/A	N/A	N/A	N/A
59.5 63.7	N/A	N/A	N/A	N/A
*Calculated Lmax is th	ne Loudest v	value.		
	Recept	or #4		
Baselines (dBA)				
Daytime Evening	Night			
65 60	55			
	Equipmen	t		
	Spec	Actual	Receptor	Estimated
Impact	Lmax	Lmax	Distance	Shielding
Device Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
No 16		80.6	1100	0
No 20		74.7	1100	0
No 50		80.6	1100	0
No 50		80.6	1100	0

80.6

80.6

80.6

79.1

77.6

74

74

1100

1100

1100

1100

1100

1100

1100

1100

1100

Results

Day

48.5 N/A

43.5 N/A

53.3 N/A

53 N/A

52 N/A

53.2 N/A

53.3 N/A

50

50

50

40

40

40

40

40

40

No

No

No

No

No

No

No

No

No

52.5 N/A

Lmax

Noise Limits (dBA)

Leq

N/A

N/A

N/A

N/A

N/A

N/A

N/A

N/A

Evening

Leq

N/A

N/A

N/A

N/A

N/A

N/A

N/A

N/A

0

0

0

0

0

0

0

0

0

0

0 0

Lmax

N/A

N/A

N/A

N/A

N/A

N/A

N/A

N/A

No	40			74	1100	
No	40			74	1100	
No	40		77	7.7	1100	
		Results				
Calculated	(dBA)		Noise Limits (dBA)			
		Day		Ever	ning	
*Lmax	Leq	Lmax	Leq	Lma	x Leq	
53.7	45.7	N/A	N/A	N/A	N/A	
47.9	40.9	N/A	N/A	N/A	N/A	
53.8	50.8	N/A	N/A	N/A	N/A	
53.8	50.8	N/A	N/A	N/A	N/A	
53.8	50.8	N/A	N/A	N/A	N/A	
53.8	50.8	N/A	N/A	N/A	N/A	

84

Generator	53.8	50.8 N/A	N/A	N/A	N/A
Generator	53.8	50.8 N/A	N/A	N/A	N/A
Tractor	57.2	53.2 N/A	N/A	N/A	N/A
Tractor	57.2	53.2 N/A	N/A	N/A	N/A
Front End Loader	52.3	48.3 N/A	N/A	N/A	N/A
Backhoe	50.7	46.7 N/A	N/A	N/A	N/A
Welder / Torch	47.2	43.2 N/A	N/A	N/A	N/A
Welder / Torch	47.2	43.2 N/A	N/A	N/A	N/A
Welder / Torch	47.2	43.2 N/A	N/A	N/A	N/A
Welder / Torch	47.2	43.2 N/A	N/A	N/A	N/A
Compressor (air)	50.8	46.8 N/A	N/A	N/A	N/A
Total	57.2	61.5 N/A	N/A	N/A	N/A
	*Calculated L	may is the Loudo	ct value		

Roadway Construction Noise Model (RCNM), Version 1.1

1/16/2020 Costco Murrieta - Vineyard II Ph 1 Arch Coating

Report date:

Case Description:

			Recep	tor #1		
		Baselines (dBA)				
Description	Land Use	Daytime Evening	Night			
Residential to east - nearest	Residential	65 60) 55	5		
			Equipmer	nt		
			Spec	Actual	Receptor	Estimated
		Impact	Lmax	Lmax	Distance	Shielding
Description		Device Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Compressor (air)		No 40)	77.	7 65	5 5
			Results			
		Calculated (dBA)		Noise Lim	its (dBA)	
			Day		Evening	
Equipment		*Lmax Leg	Lmax	Leq	Lmax	Leq
Compressor (air)		70.4 66.4	1 N/A	N/A	N/A	N/A
	Total	70.4 66.4	1 N/A	N/A	N/A	N/A
		*Calculated Lmax is t	he Loudest	value.	·	
			Recep	tor #2		
		Baselines (dBA)				
Description	Land Use	Daytime Evening	Night			
Residential to east - typical	Residential	65 60	-	5		
			Equipmer	nt		
			Spec	Actual	Receptor	Estimated
		Impact	Lmax	Lmax	Distance	Shielding
Description		Device Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Compressor (air)		No 40)	77.	7 190) 5
			Results			
		Calculated (dBA)		Noise Lim	its (dBA)	
			Day		Evening	
Equipment		*Lmax Leq	Lmax	Leq	Lmax	Leq
Compressor (air)		61.1 57.3	l N/A	N/A	N/A	N/A
	Total	61.1 57.3	l N/A	N/A	N/A	N/A
		*Calculated Lmax is t	he Loudest	value.		
			Recep	tor #3		
		Baselines (dBA)	Recep	tor #3		
Description	Land Use	Baselines (dBA) Daytime Evening	Recep Night	tor #3		
Description School/Resi to south - nearest	Land Use Residential		Night			
		Daytime Evening	Night	5		
		Daytime Evening	Night) 55	5	Receptor	Estimated
		Daytime Evening 65 60	Night) 55 Equipmer	5 nt		
		Daytime Evening	Night) 55 Equipmer Spec Lmax	5 nt Actual	Receptor Distance (feet)	Estimated Shielding (dBA)

Compressor (air)		No		40		77.3	7 80	0	0
					Results				
		Calculate	d (dBA)	_	Noise Lim	. ,		
					Day		Evening		
Equipment		*Lmax	Leq		Lmax	Leq	Lmax	Leq	
Compressor (air)		53.			N/A	N/A	N/A	N/A	
	Total	53.			N/A	N/A	N/A	N/A	
		*Calculat	ed Lma	ax is th	ne Loude	st value.			
					Rece	eptor #4			
		Baselines	(dBA)						
Description	Land Use	Daytime	Ever	iing	Night				
School/Resi to south - typical	Residential	6	5	60		55			
					Equipm	ent			
					Spec	Actual	Receptor	Estimat	ced
		Impact			Lmax	Lmax	Distance		ng
Description		Device	Usag	ge(%)	(dBA)	(dBA)	(feet)	(dBA)	0
Compressor (air)		No		40	• •	77.3	` '	` '	0
					Desults				
		Calaviata	-1 / -1 D A	,	Results		:+- (-ID A)		
		Calculate	а (ава)	Davis	Noise Lim	• •		
- · · ·		**			Day		Evening		
Equipment		*Lmax	Leq	46.0	Lmax	Leq	Lmax	Leq	
Compressor (air)		50.			N/A	N/A	N/A	N/A	
	Total	50.3			N/A	N/A	N/A	N/A	
		*Calculat	ed Lma	ax is th	ne Loude	st value.			

Roadway Construction Noise Model (RCNM), Version 1.1

Report date: Costco Murrieta - Vineyard II Ph i Grading and Trenching Case Description:

				Re	cept	or #1		
		Baseline	s (dBA)					
Description	Land Use	Daytime	Evening	Night				
Residential to east - nearest	Residential	6	5	60	55			
				Equip	men	t		
				Spec		Actual	Receptor	Estimated
		Impact		Lmax		Lmax	Distance	Shielding
Description		Device	Usage(9	6) (dBA)		(dBA)	(feet)	(dBA)
Dozer		No		40		81.7	40	5
Excavator		No		40		80.7	50	5
Excavator		No		40		80.7	75	5
Excavator		No		40		80.7	50	5
Tractor		No		40	84		60	5
Front End Loader		No		40		79.1	. 70	5
Scraper		No		40		83.6	80	5
Scraper		No		40		83.6	100	5
Grader		No		40	85		75	5
				Result	s			
		Calculate	ed (dBA)			Noise Lim	ts (dBA)	
				Day			Evening	
Equipment		*Lmax	Leq	Lmax		Leq	Lmax	Leq
Dozer		78	.6 7	1.6 N/A		N/A	N/A	N/A
Excavator		75	.7 7	l.7 N/A		N/A	N/A	N/A
Excavator		72	.2 6	3.2 N/A		N/A	N/A	N/A
Excavator		75	.7 7	l.7 N/A		N/A	N/A	N/A
Tractor		77	.4 7	3.4 N/A		N/A	N/A	N/A

1/16/2020

Front End Loader	71.2	67.2 N/A	N/A	N/A	N/A
Scraper	74.5	70.5 N/A	N/A	N/A	N/A
Scraper	72.6	68.6 N/A	N/A	N/A	N/A
Grader	76.5	72.5 N/A	N/A	N/A	N/A
Total	78.6	81.1 N/A	N/A	N/A	N/A
	*Calculated Lmax is the Loudest value.				

Description Land Use Residential to east - typical Residential

Description

Excavator

Excavator

Excavator

Front End Loader

Tractor

Scraper

Scraper

Grader

Dozer

Baselines (dBA) Daytime Evening

> Equipment Receptor Estimated Spec Actual Lmax Lmax Distance Shielding Impact Device Usage(%) (dBA) (dBA) (dBA) (feet) No 40 81.7 150 5 No 40 80.7 150 5 No 40 80.7 150 5 40 80.7 150 5 No No 40 84 150 5 5 No 40 79.1 150 No 40 83.6 150 5 40 83.6 150 5 No 40 85 150 5 No

---- Receptor #2 ----

55

Night

60

65

		Results			
	Calculated (dBA	.)	Noise L	imits (dBA)	
		Day		Evening	
Equipment	*Lmax Leq	Lmax	Leq	Lmax	Leq
Dozer	67.1	63.1 N/A	N/A	N/A	N/A
Excavator	66.2	62.2 N/A	N/A	N/A	N/A
Excavator	66.2	62.2 N/A	N/A	N/A	N/A
Excavator	66.2	62.2 N/A	N/A	N/A	N/A
Tractor	69.5	65.5 N/A	N/A	N/A	N/A
Front End Loader	64.6	60.6 N/A	N/A	N/A	N/A
Scraper	69	65.1 N/A	N/A	N/A	N/A
Scraper	69	65.1 N/A	N/A	N/A	N/A
Grader	70.5	66.5 N/A	N/A	N/A	N/A
Total	70.5	73.5 N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

		Re	ceptor #3
Baselines	(dBA)		
Daytime	Evening	Night	
65	6	0	55

Equipment Spec Actual Receptor Estimated Distance Shielding Lmax Impact Lmax Usage(%) (dBA) Device (dBA) (dBA) (feet) No 40 81.7 140 0 40 80.7 0 No 150 40 80.7 175 0 No 40 200 0 No 80.7 No 40 84 160 0 79.1 No 40 180 0 40 83.6 175 0 No 40 83.6 250 0 No 40 85 220 0 No

		Results					
Calculated	Calculated (dBA) Noise Limits (dBA)						
		Day	Evening				
*Lmax	Leq	Lmax	Leq	Lmax	Leq		
72.7	68.7	N/A	N/A	N/A	N/A		
71.2	67.2	N/A	N/A	N/A	N/A		
69.8	65.8	N/A	N/A	N/A	N/A		

Description Land Use School/Resi to south - nearest Residential

Description Dozer Excavator Excavator Excavator Tractor Front End Loader Scraper Grader

Equipment Dozer Excavator Excavator

Excavator		68.7	64.7 N/A	N/A	N/A	N/A
Tractor		73.9	69.9 N/A	N/A	N/A	N/A
Front End Loader		68	64 N/A	N/A	N/A	N/A
Scraper		72.7	68.7 N/A	N/A	N/A	N/A
Scraper		69.6	65.6 N/A	N/A	N/A	N/A
Grader		72.1	68.2 N/A	N/A	N/A	N/A
	Total	73.9	76.9 N/A	N/A	N/A	N/A
		*Calculated Li	max is the Loude	st value.		

		Receptor #4
		Baselines (dBA)
Description	Land Use	Daytime Evening Night
School/Resi to south - typical	Residential	65 60 55

			Equipme	ent		
			Spec	Actual	Receptor	Estimated
	Impact		Lmax	Lmax	Distance	Shielding
Description	Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Dozer	No	40)	81.	7 425	5 0
Excavator	No	40)	80.	7 425	5 0
Excavator	No	40)	80.	7 425	5 0
Excavator	No	40)	80.	7 425	5 0
Tractor	No	40) 8	84	425	5 0
Front End Loader	No	40)	79.3	1 425	5 0
Scraper	No	40)	83.	6 425	5 0
Scraper	No	40)	83.	6 425	5 0
Grader	No	40) 8	85	425	5 0
			Results			
	Calculate	ed (dBA)		Noise Lim	its (dBA)	
			Day		Evening	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq
Dozer	63	.1 59.1	N/A	N/A	N/A	N/A
Excavator	62	.1 58.1	. N/A	N/A	N/A	N/A
Excavator	62	.1 58.1	N/A	N/A	N/A	N/A
Excavator	62	.1 58.1	. N/A	N/A	N/A	N/A
Tractor	65	.4 61.4	N/A	N/A	N/A	N/A
Front End Loader	60	.5 56.5	N/A	N/A	N/A	N/A
Scraper	(65 61	N/A	N/A	N/A	N/A
Scraper	(65 61	N/A	N/A	N/A	N/A
Grader	66	62.4	N/A	N/A	N/A	N/A
Total	66	.4 69.5	N/A	N/A	N/A	N/A
	*Calcula	ted I may is t	he Loudes	t value		

Roadway Construction Noise Model (RCNM), Version 1.1

Report date:	1/16/2020						
Case Description:	Costco Murrieta - Vineyard II Ph 2 Prcs Grdng Ftng Trnchg						
	Receptor #1						
		Baselines	(dBA)				
Description	Land Use	Daytime	Evening	Night			
Residential to east - nearest	Residential	65	5 60		55		
				Equipn	nent		
				Spec	Actual	Receptor	Estimated
		Impact		Lmax	Lmax	Distance	Shielding
Description		Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Excavator		No	40		80.	7 40	5
Excavator		No	40		80.	7 50	5
Grader		No	40		85	75	5
Tractor		No	40		84	50	5
Front End Loader		No	40		79.	1 60	5
Dozer		No	40		81.	7 70	5

				Results	Neissi		
		Calculated (dE	,	Dav	Noise Limi	. ,	
Faultaneet		*1		Day	1	Evening	1
Equipment		*Lmax Le	•	Lmax	Leq	Lmax	Leq
Excavator		77.6	73.7	-	N/A	N/A	N/A
Excavator		75.7	71.7	'	N/A	N/A	N/A
Grader		76.5	72.5		N/A	N/A	N/A
Tractor		79		N/A	N/A	N/A	N/A
Front End Loader		72.5	68.5	'	N/A	N/A	N/A
Dozer		73.7	69.8	N/A	N/A	N/A	N/A
	Total	79	80.2	N/A	N/A	N/A	N/A
		*Calculated Lr	max is th	e Loudest v	value.		
				Recept	or #2		
		Baselines (dBA					
Description Residential to east - typical	Land Use Residential	Daytime Ev 65	ening 60	Night 55			
	Residential	05	00	55			
				Equipment		Deserves	Estimate a
				Spec	Actual	Receptor	
		Impact		Lmax	Lmax	Distance	Shielding
Description			age(%)	(dBA)	(dBA)	(feet)	(dBA)
Excavator		No	40		80.7		
Excavator		No	40		80.7	190	ļ
Grader		No	40	85		190	5
Fractor		No	40	84		190	
Front End Loader		No	40		79.1		
Dozer		No	40		81.7		
				Results			
		Calculated (dB			Noise Limi	ts (dBA)	
				Day		Evening	
Equipment		*Lmax Le	q	Lmax	Leq	Lmax	Leq
Excavator		64.1	60.1	N/A	N/A	N/A	N/A
Excavator		64.1	60.1	N/A	N/A	N/A	N/A
Grader		68.4	64.4		N/A	, N/A	N/A
Fractor		67.4	63.4	-	N/A	N/A	N/A
Front End Loader		62.5	58.5		N/A	N/A	N/A
Dozer		65.1	61.1		N/A	N/A	N/A
	Total	68.4 *Calculated Lr	69.6 may is th	-	N/A	N/A	N/A
				ELOUUESI	value.		
		Baselines (dB/		Recept	or #3		
Description	Land Use	Daytime Ev		Night			
School/Resi to south - nearest	Residential	65	60	55			
				Equipment	t		
				Spec		Receptor	Estimator
				JUCL	Actual	-	Shielding
		Import		-	Imax		
Description		Impact		Lmax	Lmax	Distance	
		Device Us	age(%)	Lmax	(dBA)	(feet)	(dBA)
xcavator		Device Us No	age(%) 40	Lmax	(dBA) 80.7	(feet) 140	(dBA)
xcavator		Device Us No No	age(%) 40 40	Lmax (dBA)	(dBA) 80.7 80.7	(feet) 140 150	(dBA) (
xcavator xcavator Grader		Device Us No No No	age(%) 40 40 40	Lmax (dBA) 85	(dBA) 80.7 80.7	(feet) 140 150 175	(dBA)
Excavator Excavator Grader Tractor		Device Us No No	age(%) 40 40	Lmax (dBA)	(dBA) 80.7 80.7	(feet) 140 150 175 200	(dBA)
Excavator Excavator Grader Tractor		Device Us No No No	age(%) 40 40 40	Lmax (dBA) 85	(dBA) 80.7 80.7	(feet) 140 150 175 200	(dBA) (((
Excavator Excavator Grader Fractor Front End Loader		Device Us No No No No	age(%) 40 40 40 40	Lmax (dBA) 85	(dBA) 80.7 80.7	(feet) 140 150 175 200 160	(dBA) (((((
Excavator Excavator Grader Fractor Front End Loader		Device Us No No No No No	age(%) 40 40 40 40 40 40	Lmax (dBA) 85	(dBA) 80.7 80.7 79.1	(feet) 140 150 175 200 160	(dBA) (((((((
Excavator Excavator Grader Fractor Front End Loader		Device Us No No No No No	age(%) 40 40 40 40 40 40 8A)	Lmax (dBA) 85 84 Results	(dBA) 80.7 80.7 79.1	(feet) 140 150 175 200 160 180 ts (dBA)	(dBA)
Excavator Excavator Grader Fractor Front End Loader Dozer		Device Us No No No No Calculated (dE	age(%) 40 40 40 40 40 40 40 8A)	Lmax (dBA) 85 84 Results Day	(dBA) 80.7 80.7 79.1 81.7 Noise Limi	(feet) 140 150 175 200 160 180 ts (dBA) Evening	(dBA)
Excavator Excavator Grader Fractor Front End Loader Dozer		Device Us No No No No Calculated (dE *Lmax Lev	age(%) 40 40 40 40 40 40 40 8A)	Lmax (dBA) 85 84 Results Day Lmax	(dBA) 80.7 80.7 79.1 81.7 Noise Limi Leq	(feet) 140 150 175 200 160 180 ts (dBA) Evening Lmax	(dBA)
Excavator Excavator Grader Fractor Front End Loader Dozer Equipment Excavator		Device Us No No No No Calculated (dE *Lmax Lee 71.8	age(%) 40 40 40 40 40 40 40 40 40 40 40 67.8	Lmax (dBA) 85 84 Results Day Lmax N/A	(dBA) 80.7 80.7 79.1 81.7 Noise Limi Leq N/A	(feet) 140 150 175 200 160 180 ts (dBA) Evening Lmax N/A	(dBA) (() () () () () () () () () () () () ()
Excavator Excavator Grader Fractor Front End Loader Dozer Equipment Excavator		Device Us No No No No Calculated (dE *Lmax Lev	age(%) 40 40 40 40 40 40 40 8A)	Lmax (dBA) 85 84 Results Day Lmax N/A	(dBA) 80.7 80.7 79.1 81.7 Noise Limi Leq	(feet) 140 150 175 200 160 180 ts (dBA) Evening Lmax	(dBA)
Excavator Excavator Grader Fractor Front End Loader Dozer Equipment Excavator Excavator		Device Us No No No No Calculated (dE *Lmax Lee 71.8	age(%) 40 40 40 40 40 40 40 40 40 40 40 67.8	Lmax (dBA) 85 84 Results Day Lmax N/A N/A	(dBA) 80.7 80.7 79.1 81.7 Noise Limi Leq N/A	(feet) 140 150 175 200 160 180 ts (dBA) Evening Lmax N/A	(dBA) (((((((((((((((((((
Excavator Excavator Grader Tractor Front End Loader Dozer Equipment Excavator Excavator Grader		Device Us No No No No Calculated (dE *Lmax Lee 71.8 71.2	age(%) 40 40 40 40 40 40 40 40 40 40 40 40 40	Lmax (dBA) 85 84 Results Day Lmax N/A N/A N/A	(dBA) 80.7 80.7 79.1 81.7 Noise Limi Leq N/A N/A	(feet) 140 150 175 200 160 180 ts (dBA) Evening Lmax N/A N/A	(dBA) (d ((((((((((((((((((
Description Excavator Excavator Grader Tractor Front End Loader Dozer Equipment Excavator Excavator Excavator Grader Tractor Front End Loader		Device Us No No No No Calculated (dE *Lmax Lee 71.8 71.2 74.1	age(%) 40 40 40 40 40 40 40 40 40 40 40 40 40	Lmax (dBA) 85 84 Results Day Lmax N/A N/A	(dBA) 80.7 80.7 79.1 81.7 Noise Limi Leq N/A N/A N/A	(feet) 140 150 175 200 160 180 ts (dBA) Evening Lmax N/A N/A N/A N/A	(dBA) (d ((((((((((((((((((

	Total	74	.1 75.	5 N/A		N/A	N/A	N/A
		*Calculated Lmax is the Loudest value.						
		B	(15 4)	Red	cept	or #4		
		Baseline	. ,					
Description	Land Use	Daytime	0	Night				
School/Resi to south - typical	Residential	6	65 60)	55			
				Equipn	nent	t		
				Spec		Actual	Receptor	Estimated
		Impact		Lmax		Lmax	Distance	Shielding
Description		Device	Usage(%)	(dBA)		(dBA)	(feet)	(dBA)
Excavator		No	40	C		80.7	425	6 O
Excavator		No	40	C		80.7	425	6 O
Grader		No	40	C	85		425	6 O
Tractor		No	40	C	84		425	6 0
Front End Loader		No	40	C		79.1	425	6 O
Dozer		No	40	D		81.7	425	6 O
				Results	s			
		Calculate	Calculated (dBA) Noise Limits (dBA)					
		culculate	u (ub/ i)	Day		NOISE LITTI	Evening	
Equipment		*Lmax	Leq	Lmax		Leq	Lmax	Leq
Excavator		62	.1 58.3	1 N/A		N/A	N/A	N/A
Excavator		62	.1 58.3	1 N/A		N/A	N/A	N/A
Grader		66	.4 62.4	4 N/A		N/A	N/A	N/A
Tractor		65	.4 61.4	4 N/A		N/A	N/A	N/A
Front End Loader		60	.5 56.	5 N/A		N/A	N/A	N/A
Dozer		63	.1 59.3	1 N/A		N/A	N/A	N/A

Total

Report date:

67.6 N/A *Calculated Lmax is the Loudest value.

66.4

Roadway Construction Noise Model (RCNM), Version 1.1

N/A

N/A

N/A

Case Description:	Costco Murrieta - Vineyard II Ph 2 Pay	ving							
				Re	eceptor #1				
		Baselines	(dBA)						
Description	Land Use	Daytime	Evening	Night					
Residential to east - nearest	Residential	6	5	50	55				
				Equip	ment				
				Spec	Actual	Recep	tor	Estimated	
		Impact		Lmax	Lmax	Distan	ice	Shielding	
Description		Device	Usage(%) (dBA)	(dBA)	(feet)		(dBA)	
Tractor		No		40	84		40	5	5
Paver		No		50	77	7.2	50	5	5
Roller		No		20		80	60	5	
Roller		No		20		80	60	5	5
				Result	s				
		Calculate	d (dBA)		Noise Li	mits (dBA	.)		
				Day		Evenir	ng		
Equipment		*Lmax	Leq	Lmax	Leq	Lmax		Leq	
Tractor		80.	9	77 N/A	N/A	N/A		N/A	
Paver		72.	2 69	.2 N/A	N/A	N/A		N/A	
Roller		73.	4 66	.4 N/A	N/A	N/A		N/A	
Roller		73.	4 66	.4 N/A	N/A	N/A		N/A	
	Total	80.		.2 N/A	N/A	N/A		N/A	
		*Calculat	ed Lmax is	the Loud	lest value.				
				Re	ceptor #2				
		Baselines	(dBA)						
Description	Land Use	Daytime	Evening	Night					
Residential to east - typical	Residential	6	5	50	55				

1/16/2020

				Equipn	hen	ŀ			
				Spec	icii	Actual	Receptor	Estimate	ed
		Impact		Lmax		Lmax	Distance	Shieldin	
Description		Device	Usage(%)	(dBA)		(dBA)	(feet)	(dBA)	.0
Tractor		No	40 40	• •	84	. ,	150		5
					04				
Paver		No	50			77.2			5
Roller		No	20			80			5
Roller		No	20)		80	150		5
				Desults					
		Calculated		Results	0	Noico Limi	tc (dPA)		
		Calculated	і (ивА)	Davi		Noise Limi			
- · ·		**		Day			Evening		
Equipment		*Lmax	Leq	Lmax		Leq	Lmax	Leq	
Tractor		69.5		N/A		N/A	N/A	N/A	
Paver		62.7		N/A		N/A	N/A	N/A	
Roller		65.5		N/A		N/A	N/A	N/A	
Roller		65.5	58.5	N/A		N/A	N/A	N/A	
	Total	69.5	67.7	' N/A		N/A	N/A	N/A	
		*Calculate	ed Lmax is t	ne Loude	est v	/alue.			
				Dee					
		Pacolinos		Kec	ept	or #3			
Description	Laural Line	Baselines		ALC - LA					
Description School/Resi to south - nearest	Land Use Residential	Daytime 65	Evening 60	Night	55				
School/Resi to south - hearest	Residential	60)	55				
				Equipn	nen	t			
				Spec		Actual	Receptor	Estimate	ed
		Impact		Lmax		Lmax	Distance	Shieldin	
Description		Device	llcogo(0/)	(dBA)		(dBA)		(dBA)	B
			Usage(%)	• •	84	. ,	(feet) 140		0
Tractor		No	40		84				0
Paver		No	50			77.2			0
Roller		No	20			80			0
Roller		No	20)		80	150		0
				Results					
		Calculated		nesuna	,	Noise Limi	ts (dBA)		
		Calculated	(ubA)	Day		NOISE LIITII	Evening		
Equipment		*Lmax	100			100	•	100	
Equipment			Leq	Lmax		Leq	Lmax	Leq	
Tractor		75.1		. N/A		N/A	N/A	N/A	
Paver		67.7		' N/A		N/A	N/A	N/A	
Roller		69.9		N/A		N/A	N/A	N/A	
Roller		70.5		N/A		N/A	N/A	N/A	
	Total	75.1		N/A		N/A	N/A	N/A	
		*Calculate	ed Lmax is t	ne Loude	est v	/alue.			
				Rec	ent	or #4			
		Baselines	(dBA)		, cpc				
Description	Land Use	Daytime	Evening	Night					
School/Resi to south - typical	Residential	65)	55				
				Equipn	nen	t			
				Spec		Actual	Receptor		
		Impact		Lmax		Lmax	Distance	Shieldin	g
Description		Device	Usage(%)	(dBA)		(dBA)	(feet)	(dBA)	
Tractor		No	40)	84		425		0
Paver		No	50)		77.2	425		0
Roller		No	20)		80	425		0
Roller		No	20)		80	425		0
				Results	5				
		Calculated	l (dBA)	_		Noise Limi			
- · ·		**		Day			Evening		
Equipment		*Lmax	Leq	Lmax		Leq	Lmax	Leq	
Tractor		65.4		N/A		N/A	N/A	N/A	
Paver		58.6		5 N/A		N/A	N/A	N/A	
Roller		61.4		N/A		N/A	N/A	N/A	
Roller		61.4		N/A		N/A	N/A	N/A	
	Total	65.4	63.6	5 N/A		N/A	N/A	N/A	

Roadway Construction Noise Model (RCNM), Version 1.1

Report date:	
Case Description:	

1/16/2020 Costco Murrieta - Vineyard II Ph 2 Bldg Const

					Red	ept	or #1		
		Baseline	s (dBA)			-			
Description	Land Use	Daytime	Eveni	ng	Night				
Residential to east - nearest	Residential		55	60		55			
					Equipn	nent	t		
					Spec		Actual	Receptor	Estimated
		Impact			Lmax		Lmax	Distance	Shielding
Description		Device	Usage	e(%)	(dBA)		(dBA)	(feet)	(dBA)
Crane		No		16			80.6	6	5 5
Man Lift		No		20			74.7	7.	5 5
Generator		No		50			80.6	8) 5
Generator		No		50			80.6	100) 5
Tractor		No		40		84		90) 5
Welder / Torch		No		40			74	. 80) 5
Welder / Torch		No		40			74	100) 5
Welder / Torch		No		40			74	. 7	5 5
Welder / Torch		No		40			74	. 110	
Compressor (air)		No		40			77.7		
					Results	5			
		Calculate	ed (dBA)				Noise Lim	ts (dBA)	
			,		Day			Evening	
Equipment		*Lmax	Leq		, Lmax		Leq	Lmax	Leq
Crane		73		65.3	N/A		N/A	N/A	N/A
Man Lift		66			N/A		N/A	N/A	N/A
Generator		71			, N/A		N/A	N/A	, N/A
Generator		69			N/A		N/A	N/A	N/A
Tractor		73			N/A		N/A	N/A	N/A
Welder / Torch		64			N/A		N/A	N/A	N/A
Welder / Torch			53		N/A		N/A	N/A	N/A
Welder / Torch		65			N/A		N/A	N/A	N/A
Welder / Torch		62			N/A		N/A	N/A	N/A
Compressor (air)		68			N/A		N/A	N/A	N/A
	Total	73			N/A		N/A	N/A	N/A
	Total	*Calculat				≥st \		,,,	
		curcula					anaen		
					Red	ept	or #2		
		Baseline	s (dBA)			- 1- 6			
Description	Land Use	Daytime		ng	Night				
Residential to east - typical	Residential		55	₅ 60	-	55			
				00					
					Equipn	nent	t		
					Spec		Actual	Receptor	Estimated
		Impact			Lmax		Lmax		Shielding

Description
Crane
Man Lift
Generator
Generator
Tractor
Welder / Torch
Compressor (air)

		Equipn	nent			
		Spec		Actual	Receptor	Estimated
Impact		Lmax		Lmax	Distance	Shielding
Device	Usage(%)	(dBA)		(dBA)	(feet)	(dBA)
No	16			80.6	190	5
No	20			74.7	190	5
No	50			80.6	190	5
No	50			80.6	190	5
No	40		84		190	5
No	40			74	190	5
No	40			74	190	5
No	40			74	190	5
No	40			74	190	5
No	40			77.7	190	5

Results

	Results	
Calculated (dBA)		Noise Limits (dBA)

					Davis			E	
Faultament		*Lmax	1.0.0		Day		1.0.0	Evening	1.0.0
Equipment Crane		6 Cinax	Leq	FC	Lmax N/A		Leq	Lmax N/A	Leq
Man Lift							N/A	-	N/A
Generator		58.	4	51.1			N/A	N/A	N/A
Generator					N/A		N/A	N/A	N/A
		6			N/A		N/A	N/A	N/A
Tractor		67.		63.4			N/A	N/A	N/A
Welder / Torch		57.			N/A		N/A	N/A	N/A
Welder / Torch		57.		53.4	· .		N/A	N/A	N/A
Welder / Torch		57.		53.4			N/A	N/A	N/A
Welder / Torch		57.			N/A		N/A	N/A	N/A
Compressor (air)		61.		57.1			N/A	N/A	N/A
	Total	67. *Calculat		68.2		oct v	N/A	N/A	N/A
		Calculat		(15 (1		551 1	value.		
					Red	cept	or #3		
		Baselines							
Description	Land Use	Daytime		-	Night				
School/Resi to south - nearest	Residential	6	5	60		55			
					Equipn	nen	t		
					Spec		Actual	Receptor	Estimated
		Impact			Lmax		Lmax	Distance	Shielding
Description		Device	Usage	e(%)	(dBA)		(dBA)	(feet)	(dBA)
Crane		No		16			80.	6 80	0 0
Man Lift		No		20			74.	7 81	0 0
Generator		No		50			80.	5 82	0 0
Generator		No		50			80.	6 85	0 0
Tractor		No		40		84		90	0 0
Welder / Torch		No		40			74		
Welder / Torch		No		40			74		
Welder / Torch		No		40			74		
Welder / Torch		No		40			74		
Compressor (air)		No		40			77.		
		Calculate			Results	5	Noise Lim	ite (dPA)	
		Calculate	u (ubA)		Davi		NOISE LIII		
Faultanaant		*1	1.00		Day		1.0.0	Evening	1.0.0
Equipment Crane		*Lmax	Leq	40 5	Lmax		Leq	Lmax	Leq
		56.		48.5			N/A	N/A	N/A
Man Lift		50.		43.5			N/A	N/A	N/A
Generator		56.		53.3			N/A	N/A	N/A
Generator			6		N/A		N/A	N/A	N/A
Tractor		58.			N/A		N/A	N/A	N/A
Welder / Torch		48.		44.4			N/A	N/A	N/A
Welder / Torch		49.			N/A		N/A	N/A	N/A
Welder / Torch		49.			N/A		N/A	N/A	N/A
Welder / Torch		49.			N/A		N/A	N/A	N/A
Compressor (air)		53.			N/A		N/A	N/A	N/A
	Total	58.		60.2			N/A	N/A	N/A
		*Calculat	ed Lmax	c is th	e Loude	est v	value.		
					Red	cept	or #4		
		Baselines	. ,						
Description	Land Use	Daytime		•	Night				
School/Resi to south - typical	Residential	6	5	60		55			
					Equipn	nen	t		
					Spec		Actual	Receptor	Estimated
		Impact			Lmax		Lmax	Distance	Shielding
Description		Device	Usage	e(%)	(dBA)		(dBA)	(feet)	(dBA)
Crane		No		16			80.	5 110	0 0
Man Lift		No		20			74.	7 110	0 0
Generator		No		50			80.	5 110	0 0
Generator		No		50			80.	5 110	0 0
Tractor		No		40		84		110	
Welder / Torch		No		40			74		
Welder / Torch		No		40			74		

Welder / Torch	No	40	74	1100	0
Welder / Torch	No	40	74	1100	0
Compressor (air)	No	40	77.7	1100	0

		Results			
	Calculated (dB	BA)	Noise Limits (dBA)		
		Day	Day		
Equipment	*Lmax Leo	q Lmax	Leq	Lmax	Leq
Crane	53.7	45.7 N/A	N/A	N/A	N/A
Man Lift	47.9	40.9 N/A	N/A	N/A	N/A
Generator	53.8	50.8 N/A	N/A	N/A	N/A
Generator	53.8	50.8 N/A	N/A	N/A	N/A
Tractor	57.2	53.2 N/A	N/A	N/A	N/A
Welder / Torch	47.2	43.2 N/A	N/A	N/A	N/A
Welder / Torch	47.2	43.2 N/A	N/A	N/A	N/A
Welder / Torch	47.2	43.2 N/A	N/A	N/A	N/A
Welder / Torch	47.2	43.2 N/A	N/A	N/A	N/A
Compressor (air)	50.8	46.8 N/A	N/A	N/A	N/A
Total	57.2	58 N/A	N/A	N/A	N/A
	*Calculated Lr	nav is the Loudos	t value		

Roadway Construction Noise Model (RCNM), Version 1.1

Report date: Case Description:	1/16/20 Costco Murrieta - Vineyard II Ph 2 Ard		
Description Residential to east - nearest	Land Use Residential	Baselines (dBA) Daytime Evening Night	eptor #1 55
Description Compressor (air)		Equipm Spec Impact Lmax Device Usage(%) (dBA) No 40	ent Actual Receptor Estimated Lmax Distance Shielding (dBA) (feet) (dBA) 77.7 65 5
Equipment Compressor (air)	Total	Results Calculated (dBA) *Lmax Leq Lmax 70.4 66.4 N/A 70.4 66.4 N/A *Calculated Lmax is the Loude	Noise Limits (dBA) Evening Leq Lmax Leq N/A N/A N/A N/A N/A N/A st value.
Description Residential to east - typical	Land Use Residential	Baselines (dBA) Daytime Evening Night 65 60 Equipm	
Description Compressor (air)		Spec Impact Lmax Device Usage(%) (dBA) No 40	Actual Receptor Estimated Lmax Distance Shielding (dBA) (feet) (dBA) 77.7 190 5
Equipment Compressor (air)	Total	Results Calculated (dBA) *Lmax Leq Lmax 61.1 57.1 N/A 61.1 57.1 N/A *Calculated Lmax is the Louder	Noise Limits (dBA) Evening Leq Lmax Leq N/A N/A N/A N/A N/A N/A st value.

---- Receptor #3 ----

Description School/Resi to south - nearest	Land Use Residential	Baseline Daytime	• •	ing 60	Night	55			
					Equipm	nent			
					Spec	Actual	Receptor	Estimate	ed
		Impact			Lmax	Lmax	Distance	Shielding	g
Description		Device	Usag	e(%)	(dBA)	(dBA)	(feet)	(dBA)	
Compressor (air)		No		40		77.7	800	I.	0
					Results				
		Calculated (dBA)			Noise Lim	Noise Limits (dBA)			
					Day		Evening		
Equipment		*Lmax	Leq		Lmax	Leq	Lmax	Leq	
Compressor (air)			8.6	49.6	N/A	N/A	N/A	N/A	
	Total		8.6		N/A	N/A	N/A	N/A	
		*Calcula	ited Lma	ıx is th	ne Loude	est value.			
					Rec	eptor #4			
		Baseline	s (dBA)						
Description	Land Use	Daytime	e Even	ing	Night				
School/Resi to south - typical	Residential		65	60		55			
					Equipm	nent			
					Spec	Actual	Receptor	Estimate	
		Impact			Lmax	Lmax	Distance	Shielding	g
Description		Device	Usag	e(%)	(dBA)	(dBA)	(feet)	(dBA)	
Compressor (air)							4400		0
		No		40		77.7	1100		
		No		40	Results		1100	1	
		No Calculat	ed (dBA						
			ed (dBA						
Equipment			ed (dBA Leq		Results		ts (dBA)	Leq	
Equipment Compressor (air)		Calculat *Lmax) 46.8	Results Day Lmax N/A	Noise Lim	ts (dBA) Evening		
	Total	Calculat *Lmax 50	Leq) 46.8	Results Day Lmax	Noise Lim Leq	ts (dBA) Evening Lmax	Leq	

Roadway Construction Noise Model (RCNM), Version 1.1

Report date: Case Description:	1/16/202 Costco Murrieta - Costco Site Prep	20					
				Re	ceptor #1		
		Baselines	(dBA)				
Description	Land Use	Daytime	Evening	Night			
Residential to east - nearest	Residential	6	•	60	55		
				Equipr	ment		
				Spec	Actual	Receptor	- Estimated
		Impact		Lmax	Lmax	Distance	Shielding
Description		Device	Usage(%) (dBA)	(dBA)	(feet)	(dBA)
Dozer		No	4	0	83	1.7 67	0 5
Dozer		No	4	0	83	1.7 70	0 5
Dozer		No	4	0	83	1.7 75	5 5
Tractor		No	4	0	84	68	SO 5
Front End Loader		No	4	0	79	9.1 75	50 5
Backhoe		No	4	0	77	7.6 80	0 5
Front End Loader		No	4	0	79	9.1 70	0 5
				Result	c		
		Calculate	d (dBV)	Result		mits (dBA)	
		Calculate	u (ubA)	Day	NOISE LI	Evening	
Equipment		*Lmax	Leg	Lmax	Leg	Lmax	Leq
Dozer		54.		.1 N/A	N/A	N/A	N/A
		54.		.1 N/A .8 N/A	N/A N/A	N/A N/A	N/A N/A
Dozer		53.	/ 49	.o IN/A	N/A	N/A	N/A

Dozer		53.1	L 49.2	N/A	N/A	N/A	N/A
Tractor		56.3	3 523	N/A	N/A	N/A	N/A
Front End Loader		50.6		-	N/A	N/A	N/A
					-	-	-
Backhoe		48.5	5 44.5	N/A	N/A	N/A	N/A
Front End Loader		51.2	2 47.2	N/A	N/A	N/A	N/A
	Total	56.3	3 57.6	N/A	N/A	N/A	N/A
		*Calculate	ed Lmax is th	In Loudest	-		
		culculate		ie Loudest	value.		
				Recept	tor #2		
		Baselines	(dBA)				
Description	Land Use	Daytime	Evening	Night			
Residential to east - typical	Residential	65	0	•			
Residential to east - typical	Residential	0.	, 00	55	,		
				Equipmen	t		
				Spec	Actual	Receptor	Estimated
		Impact		Lmax	Lmax	Distance	Shielding
Description		Device	Usage(%)		(dBA)	(feet)	(dBA)
			- · ·			. ,	. ,
Dozer		No	40		81.7		
Dozer		No	40		81.7	980) 5
Dozer		No	40		81.7	980) 5
Tractor		No	40	84	L	980) 5
Front End Loader		No	40		79.1		
Backhoe		No	40		77.6		
Front End Loader		No	40		79.1	980) 5
				Results			
		Calaulata		Results	Nielee Linei		
		Calculated	а (ава)	_	Noise Limi		
				Day		Evening	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq
Dozer		50.8	3 46.8	N/A	N/A	N/A	N/A
Dozer		50.8		N/A	, N/A	N/A	N/A
				-	-	-	-
Dozer		50.8			N/A	N/A	N/A
Tractor		53.2	2 49.2	N/A	N/A	N/A	N/A
Front End Loader		48.3	3 44.3	N/A	N/A	N/A	N/A
				-	-		· .
Backhoe		46 7	7 42 7	N/A	N/A	N/A	N/A
Backhoe		46.7			N/A	N/A	N/A
Backhoe Front End Loader		48.3	3 44.3	N/A	N/A	N/A	N/A
	Total	48.3 53.2	3 44.3 2 54.8	N/A N/A	N/A N/A	-	
	Total	48.3 53.2	3 44.3	N/A N/A	N/A N/A	N/A	N/A
	Total	48.3 53.2	3 44.3 2 54.8	N/A N/A	N/A N/A	N/A	N/A
	Total	48.3 53.2	3 44.3 2 54.8	N/A N/A ne Loudest	N/A N/A value.	N/A	N/A
	Total	48.3 53.2 *Calculate	3 44.3 2 54.8 ed Lmax is th	N/A N/A	N/A N/A value.	N/A	N/A
Front End Loader		48.3 53.2 *Calculate Baselines	3 44.3 2 54.8 ed Lmax is th (dBA)	N/A N/A e Loudest Recept	N/A N/A value.	N/A	N/A
Front End Loader Description	Land Use	48.3 53.2 *Calculate Baselines Daytime	3 44.3 2 54.8 ed Lmax is th (dBA) Evening	N/A N/A ne Loudest	N/A N/A value.	N/A	N/A
Front End Loader		48.3 53.2 *Calculate Baselines	3 44.3 2 54.8 ed Lmax is th (dBA) Evening	N/A N/A e Loudest Recept Night	N/A N/A value. tor #3	N/A	N/A
Front End Loader Description	Land Use	48.3 53.2 *Calculate Baselines Daytime	3 44.3 2 54.8 ed Lmax is th (dBA) Evening	N/A N/A e Loudest Recept Night	N/A N/A value. tor #3	N/A	N/A
Front End Loader Description	Land Use	48.3 53.2 *Calculate Baselines Daytime	3 44.3 2 54.8 ed Lmax is th (dBA) Evening	N/A N/A ee Loudest Recept Night 55	N/A N/A value. tor #3	N/A	N/A
Front End Loader Description	Land Use	48.3 53.2 *Calculate Baselines Daytime	3 44.3 2 54.8 ed Lmax is th (dBA) Evening	N/A N/A ee Loudest Recept Night 55 Equipmen	N/A N/A value. tor #3	N/A N/A	N/A N/A
Front End Loader Description	Land Use	48.3 53.2 *Calculate Baselines Daytime 65	3 44.3 2 54.8 ed Lmax is th (dBA) Evening	N/A N/A e Loudest Night S5 Equipmen Spec	N/A N/A value. tor #3	N/A N/A Receptor	N/A N/A Estimated
Front End Loader Description School/Resi to south - nearest	Land Use	48.3 53.2 *Calculate Baselines Daytime 65	44.3 54.8 2 54.8 2 Ed Lmax is th (dBA) Evening 5 60	N/A N/A e Loudest Recept Night 55 Equipmen Spec Lmax	N/A N/A value. tor #3 t Actual Lmax	N/A N/A Receptor Distance	N/A N/A Estimated Shielding
Front End Loader Description	Land Use	48.3 53.2 *Calculate Baselines Daytime 65	3 44.3 2 54.8 ed Lmax is th (dBA) Evening	N/A N/A e Loudest Recept Night 55 Equipmen Spec Lmax	N/A N/A value. tor #3	N/A N/A Receptor	N/A N/A Estimated
Front End Loader Description School/Resi to south - nearest	Land Use	48.3 53.2 *Calculate Baselines Daytime 65	44.3 54.8 2 54.8 2 Ed Lmax is th (dBA) Evening 5 60	N/A N/A e Loudest Recept Night 55 Equipmen Spec Lmax (dBA)	N/A N/A value. tor #3 t Actual Lmax	N/A N/A Receptor Distance (feet)	N/A N/A Estimated Shielding (dBA)
Front End Loader Description School/Resi to south - nearest Description Dozer	Land Use	48.3 53.2 *Calculate Baselines Daytime 65 Impact Device No	44.3 54.8 254.8 2d Lmax is th (dBA) Evening 560 Usage(%) 40	N/A N/A e Loudest Recept Night 55 Equipmen Spec Lmax (dBA)	N/A N/A value. tor #3 t Actual Lmax (dBA) 81.7	N/A N/A Receptor Distance (feet) 450	N/A N/A Estimated Shielding (dBA)) 5
Front End Loader Description School/Resi to south - nearest Description Dozer Dozer	Land Use	48.3 53.2 *Calculate Baselines Daytime 65 Impact Device No No	44.3 54.8 254.8 24 Lmax is th (dBA) Evening 560 Usage(%) 40 40	N/A N/A e Loudest Recept Night 55 Equipmen Spec Lmax (dBA)	N/A N/A value. tor #3 t Actual Lmax (dBA) 81.7 81.7	N/A N/A Receptor Distance (feet) 450 470	N/A N/A Estimated Shielding (dBA) 0 5 0 5
Front End Loader Description School/Resi to south - nearest Description Dozer Dozer Dozer Dozer	Land Use	48.3 53.2 *Calculate Baselines Daytime 65 Impact Device No No No	44.3 54.8 254.8 24 Lmax is th (dBA) Evening 560 Usage(%) 40 40 40	N/A N/A e Loudest Recept Night 55 Equipmen Spec Lmax (dBA)	N/A N/A value. tor #3 t Actual Lmax (dBA) 81.7 81.7 81.7	N/A N/A Receptor Distance (feet) 450 470 500	N/A N/A Estimated Shielding (dBA) 0 5 0 5 0 5
Front End Loader Description School/Resi to south - nearest Description Dozer Dozer Dozer Dozer Tractor	Land Use	48.3 53.2 *Calculate Baselines Daytime 65 Impact Device No No No No	44.3 54.8 254.8 24 Lmax is th (dBA) Evening 5600 Usage(%) 40 40 40 40	N/A N/A e Loudest Recept Night 55 Equipmen Spec Lmax (dBA)	N/A N/A value. tor #3 t Actual Lmax (dBA) 81.7 81.7	N/A N/A Receptor Distance (feet) 450 470 500 460	N/A N/A Estimated Shielding (dBA) 0 5 0 5 0 5 0 5
Front End Loader Description School/Resi to south - nearest Description Dozer Dozer Dozer Dozer	Land Use	48.3 53.2 *Calculate Baselines Daytime 65 Impact Device No No No	44.3 54.8 254.8 24 Lmax is th (dBA) Evening 560 Usage(%) 40 40 40	N/A N/A e Loudest Recept Night 55 Equipmen Spec Lmax (dBA)	N/A N/A value. tor #3 t Actual Lmax (dBA) 81.7 81.7 81.7	N/A N/A Receptor Distance (feet) 450 470 500 460	N/A N/A Shielding (dBA) 0 5 0 5 0 5 0 5
Front End Loader Description School/Resi to south - nearest Description Dozer Dozer Dozer Dozer Tractor	Land Use	48.3 53.2 *Calculate Baselines Daytime 65 Impact Device No No No No	44.3 54.8 254.8 24 Lmax is th (dBA) Evening 5600 Usage(%) 40 40 40 40	N/A N/A e Loudest Recept Night 55 Equipmen Spec Lmax (dBA) 84	N/A N/A value. tor #3 t Actual Lmax (dBA) 81.7 81.7	N/A N/A Receptor Distance (feet) 450 470 500 460 500	N/A N/A Shielding (dBA) 0 5 0 5 0 5 0 5 0 5
Front End Loader Description School/Resi to south - nearest Description Dozer Dozer Dozer Tractor Front End Loader Backhoe	Land Use	48.3 53.2 *Calculate Baselines Daytime 65 Impact Device No No No No No No No No	44.3 54.8 254.8 24 Lmax is th (dBA) Evening 5600 Usage(%) 40 40 40 40 40 40 40 40	N/A N/A e Loudest Recept Night 55 Equipmen Spec Lmax (dBA) 84	N/A N/A value. tor #3 t Actual Lmax (dBA) 81.7 81.7 81.7 9.1 77.6	N/A N/A Receptor Distance (feet) 450 470 500 460 500 600	N/A N/A Shielding (dBA) 0 5 0 5 0 5 0 5 0 5 0 5 0 5
Front End Loader Description School/Resi to south - nearest Description Dozer Dozer Dozer Tractor Front End Loader	Land Use	48.3 53.2 *Calculate Baselines Daytime 65 Impact Device No No No No No No	44.3 54.8 254.8 24 Lmax is th (dBA) Evening 560 0 0 0 0 40 40 40 40 40 40 40	N/A N/A e Loudest Recept Night 55 Equipmen Spec Lmax (dBA) 84	N/A N/A value. tor #3 t Actual Lmax (dBA) 81.7 81.7 81.7	N/A N/A Receptor Distance (feet) 450 470 500 460 500 600	N/A N/A Shielding (dBA) 0 5 0 5 0 5 0 5 0 5 0 5 0 5
Front End Loader Description School/Resi to south - nearest Description Dozer Dozer Dozer Tractor Front End Loader Backhoe	Land Use	48.3 53.2 *Calculate Baselines Daytime 65 Impact Device No No No No No No No No	44.3 54.8 254.8 24 Lmax is th (dBA) Evening 5600 Usage(%) 40 40 40 40 40 40 40 40	N/A N/A e Loudest Recept Night 55 Equipmen Spec Lmax (dBA) 84	N/A N/A value. tor #3 t Actual Lmax (dBA) 81.7 81.7 81.7 9.1 77.6	N/A N/A Receptor Distance (feet) 450 470 500 460 500 600	N/A N/A Shielding (dBA) 0 5 0 5 0 5 0 5 0 5 0 5 0 5
Front End Loader Description School/Resi to south - nearest Description Dozer Dozer Dozer Tractor Front End Loader Backhoe	Land Use	48.3 53.2 *Calculate Baselines Daytime 65 Impact Device No No No No No No No No No No	3 44.3 2 54.8 2 54.8 2 Evening 5 60 Usage(%) 40 40 40 40 40 40 40 40 40	N/A N/A e Loudest Recept Night 55 Equipmen Spec Lmax (dBA) 84	N/A N/A value. tor #3 t Actual Lmax (dBA) 81.7 81.7 81.7 9.1 77.6 79.1	N/A N/A N/A Receptor Distance (feet) 450 470 500 460 500 600 650	N/A N/A Shielding (dBA) 0 5 0 5 0 5 0 5 0 5 0 5 0 5
Front End Loader Description School/Resi to south - nearest Description Dozer Dozer Dozer Tractor Front End Loader Backhoe	Land Use	48.3 53.2 *Calculate Baselines Daytime 65 Impact Device No No No No No No No No	3 44.3 2 54.8 2 54.8 2 Evening 5 60 Usage(%) 40 40 40 40 40 40 40 40 40	N/A N/A e Loudest Recept Night 55 Equipmen Spec Lmax (dBA) 84	N/A N/A value. tor #3 t Actual Lmax (dBA) 81.7 81.7 81.7 9.1 77.6	N/A N/A N/A Receptor Distance (feet) 450 470 500 460 500 600 650	N/A N/A Shielding (dBA) 0 5 0 5 0 5 0 5 0 5 0 5 0 5
Front End Loader Description School/Resi to south - nearest Description Dozer Dozer Dozer Tractor Front End Loader Backhoe	Land Use	48.3 53.2 *Calculate Baselines Daytime 65 Impact Device No No No No No No No No No No	3 44.3 2 54.8 2 54.8 2 Evening 5 60 Usage(%) 40 40 40 40 40 40 40 40 40	N/A N/A e Loudest Recept Night 55 Equipmen Spec Lmax (dBA) 84	N/A N/A value. tor #3 t Actual Lmax (dBA) 81.7 81.7 81.7 9.1 77.6 79.1	N/A N/A N/A Receptor Distance (feet) 450 470 500 460 500 600 650	N/A N/A Shielding (dBA) 0 5 0 5 0 5 0 5 0 5 0 5 0 5
Front End Loader Description School/Resi to south - nearest Description Dozer Dozer Dozer Tractor Front End Loader Backhoe Front End Loader	Land Use	48.3 53.2 *Calculate Baselines Daytime 65 Impact Device No No No No No No No No No No No No	3 44.3 2 54.8 2 54.8 2 Evening 5 60 Usage(%) 40 40 40 40 40 40 40 40 40	N/A N/A e Loudest Recept Night 55 Equipmen Spec Lmax (dBA) 84 Results Day	N/A N/A value. tor #3 f t Actual Lmax (dBA) 81.7 81.7 81.7 9.1 77.6 79.1 77.6 79.1 Noise Limi	N/A N/A N/A Receptor Distance (feet) 450 470 500 460 500 600 650 ts (dBA) Evening	N/A N/A Shielding (dBA) 0 5 0 5 0 5 0 5 0 5 0 5 0 5 0 5 0 5 0 5
Front End Loader Description School/Resi to south - nearest Description Dozer Dozer Dozer Tractor Front End Loader Backhoe Front End Loader	Land Use	48.3 53.2 *Calculate Baselines Daytime 65 Impact Device No No No No No No No No No No No No No	 44.3 54.8 cd Lmax is the contract of th	N/A N/A e Loudest Recept Night 55 Equipmen Spec Lmax (dBA) 84 Results Day Lmax	N/A N/A value. tor #3 f t Actual Lmax (dBA) 81.7 81.7 81.7 9.1 79.1 77.6 79.1 79.1 Noise Limi Leq	N/A N/A N/A Receptor Distance (feet) 450 470 500 460 500 600 650 ts (dBA) Evening Lmax	N/A N/A Shielding (dBA) 0 5 0 5 0 5 0 5 0 5 0 5 0 5 0 5 0 5 0 5
Front End Loader Description School/Resi to south - nearest Description Dozer Dozer Dozer Tractor Front End Loader Backhoe Front End Loader Backhoe Front End Loader	Land Use	48.3 53.2 *Calculate Baselines Daytime 65 Impact Device No No No No No No No No No No No So Calculated *Lmax 57.6	 44.3 54.8 54.8 44.3 54.8 40 40	N/A N/A e Loudest Recept Night 55 Equipmen Spec Lmax (dBA) 84 Results Day Lmax N/A	N/A N/A value. tor #3 t Actual Lmax (dBA) 81.7 81.7 81.7 79.1 77.6 79.1 79.1 Noise Limi Leq N/A	N/A N/A N/A Receptor Distance (feet) 450 450 450 600 650 ts (dBA) Evening Lmax N/A	N/A N/A Shielding (dBA) 0 5 0 5 0 5 0 5 0 5 0 5 0 5 0 5 0 5 0 5
Front End Loader Description School/Resi to south - nearest Description Dozer Dozer Dozer Tractor Front End Loader Backhoe Front End Loader	Land Use	48.3 53.2 *Calculate Baselines Daytime 65 Impact Device No No No No No No No No No No No No No	 44.3 54.8 54.8 44.3 54.8 40 40	N/A N/A e Loudest Recept Night 55 Equipmen Spec Lmax (dBA) 84 Results Day Lmax	N/A N/A value. tor #3 f t Actual Lmax (dBA) 81.7 81.7 81.7 9.1 79.1 77.6 79.1 79.1 Noise Limi Leq	N/A N/A N/A Receptor Distance (feet) 450 470 500 460 500 600 650 ts (dBA) Evening Lmax	N/A N/A Shielding (dBA) 0 5 0 5 0 5 0 5 0 5 0 5 0 5 0 5 0 5 0 5
Front End Loader Description School/Resi to south - nearest Description Dozer Dozer Dozer Tractor Front End Loader Backhoe Front End Loader Backhoe Front End Loader	Land Use	48.3 53.2 *Calculate Baselines Daytime 65 Impact Device No No No No No No No No No No No So Calculated *Lmax 57.6	 44.3 54.8 cd Lmax is the contract of th	N/A N/A e Loudest Recept Night 55 Equipmen Spec Lmax (dBA) 84 Results Day Lmax N/A	N/A N/A value. tor #3 t Actual Lmax (dBA) 81.7 81.7 81.7 79.1 77.6 79.1 79.1 Noise Limi Leq N/A	N/A N/A N/A Receptor Distance (feet) 450 450 450 600 650 ts (dBA) Evening Lmax N/A	N/A N/A Shielding (dBA) 0 5 0 5 0 5 0 5 0 5 0 5 0 5 0 5 0 5 0 5
Front End Loader Description School/Resi to south - nearest Description Dozer Dozer Dozer Tractor Front End Loader Backhoe Front End Loader Backhoe Front End Loader Backhoe Front End Loader Backhoe Front End Loader	Land Use	48.3 53.2 *Calculate Baselines Daytime 65 Impact Device No No No No No No No No No So Calculated *Lmax 57.6 57.2 56.7	44.3 54.8 254.8 254.8 254.8 254.8 2007 20	N/A N/A N/A Loudest Recept Night 55 Equipmen Spec Lmax (dBA) 84 Results Day Lmax N/A N/A N/A N/A	N/A N/A value. tor #3 t Actual Lmax (dBA) 81.7 81.7 81.7 79.1 77.6 79.1 77.6 79.1 77.6 79.1 Noise Limi Leq N/A N/A	N/A N/A N/A N/A Distance (feet) 450 450 450 600 650 ts (dBA) Evening Lmax N/A N/A N/A	N/A N/A Shielding (dBA) 0 5 0 5 0 5 0 5 0 5 0 5 0 5 0 5 0 5 0 5
Front End Loader Description School/Resi to south - nearest Description Dozer Dozer Dozer Tractor Front End Loader Backhoe Front End Loader Backhoe Front End Loader Backhoe Front End Loader Backhoe Front End Loader Dozer Dozer Dozer Tractor Front End Loader	Land Use	48.3 53.2 *Calculate Baselines Daytime 65 Impact Device No No No No No No No No No So Calculated *Lmax 57.6 57.2 56.7	44.3 54.8 254.8 254.8 254.8 254.8 2010 20	N/A N/A N/A Loudest Night 55 Equipmen Spec Lmax (dBA) 84 Results Day Lmax N/A N/A N/A N/A N/A	N/A N/A value. tor #3 t Actual Lmax (dBA) 81.7 81.7 81.7 79.1 77.6 79.1 77.6 79.1 Noise Limi Leq N/A N/A N/A N/A	N/A N/A N/A N/A Distance (feet) 450 450 600 650 450 600 650 ts (dBA) Evening Lmax N/A N/A N/A N/A	N/A N/A Shielding (dBA) D D D D D D D D D D D D D D D D D D D
Front End Loader Description School/Resi to south - nearest Description Dozer Dozer Dozer Tractor Front End Loader Backhoe Front End Loader Equipment Dozer Dozer Dozer Dozer Tractor Front End Loader	Land Use	48.3 53.2 *Calculate Baselines Daytime 65 Impact Device No No No No No No No No Calculated *Lmax 57.6 57.2 56.7 59.7 54.1	44.3 54.8 254.8 24.1 254.8 254.8 254.8 2007 20	N/A N/A N/A Loudest Recept Night 55 Equipmen Spec Lmax (dBA) 84 Results Day Lmax N/A N/A N/A N/A N/A N/A N/A	N/A N/A value. tor #3 t Actual Lmax (dBA) 81.7 81.7 81.7 79.1 77.6 79.1 77.6 79.1 77.6 79.1 Noise Limi Leq N/A N/A N/A N/A N/A	N/A N/A N/A N/A Distance (feet) 450 450 600 650 ts (dBA) Evening Lmax N/A N/A N/A N/A N/A N/A	N/A N/A Shielding (dBA) 0 5 0 5 0 5 0 5 0 5 0 5 0 5 0 5 0 5 0 5
Front End Loader Description School/Resi to south - nearest Description Dozer Dozer Dozer Tractor Front End Loader Backhoe Front End Loader Equipment Dozer Dozer Dozer Tractor Front End Loader Backhoe	Land Use	48.3 53.2 *Calculate Baselines Daytime 65 Impact Device No No No No No No No Calculated *Lmax 57.6 57.2 56.7 59.7 54.1 51	 44.3 54.8 54.8 cd Lmax is the constraints cdBA) Evening 60 Usage(%) 40 41 	N/A N/A N/A Le Loudest Night 55 Equipmen Spec Lmax (dBA) 84 Results Day Lmax N/A N/A N/A N/A N/A N/A N/A N/A	N/A N/A Value. tor #3 t Actual Lmax (dBA) 81.7 81.7 81.7 79.1 77.6 79.1 79.1 77.6 79.1 Noise Limi Leq N/A N/A N/A N/A N/A	N/A N/A N/A N/A Distance (feet) 450 460 500 600 650 ts (dBA) Evening Lmax N/A N/A N/A N/A N/A N/A N/A	N/A N/A Shielding (dBA) D D D D D D D D D D D D D D D D D D D
Front End Loader Description School/Resi to south - nearest Description Dozer Dozer Dozer Tractor Front End Loader Backhoe Front End Loader Equipment Dozer Dozer Dozer Dozer Tractor Front End Loader	Land Use	48.3 53.2 *Calculate Baselines Daytime 65 Impact Device No No No No No No No No Calculated *Lmax 57.6 57.2 56.7 59.7 54.1	 44.3 54.8 54.8 cd Lmax is the constraints cdBA) Evening 60 Usage(%) 40 41 	N/A N/A N/A Loudest Recept Night 55 Equipmen Spec Lmax (dBA) 84 Results Day Lmax N/A N/A N/A N/A N/A N/A N/A	N/A N/A value. tor #3 t Actual Lmax (dBA) 81.7 81.7 81.7 79.1 77.6 79.1 77.6 79.1 77.6 79.1 Noise Limi Leq N/A N/A N/A N/A N/A	N/A N/A N/A N/A Distance (feet) 450 450 600 650 ts (dBA) Evening Lmax N/A N/A N/A N/A N/A N/A	N/A N/A Shielding (dBA) 0 5 0 5 0 5 0 5 0 5 0 5 0 5 0 5 0 5 0 5
Front End Loader Description School/Resi to south - nearest Description Dozer Dozer Dozer Tractor Front End Loader Backhoe Front End Loader Equipment Dozer Dozer Dozer Tractor Front End Loader Equipment Dozer Dozer Dozer Tractor Front End Loader Backhoe	Land Use	48.3 53.2 *Calculate Baselines Daytime 65 Impact Device No No No No No No No Calculated *Lmax 57.6 57.2 56.7 59.7 54.1 51	 44.3 54.8 54.8 44.3 54.8 44.3 54.8 40 41 47.9 	N/A N/A N/A Le Loudest Night 55 Equipmen Spec Lmax (dBA) 84 Results Day Lmax N/A N/A N/A N/A N/A N/A N/A N/A	N/A N/A Value. tor #3 t Actual Lmax (dBA) 81.7 81.7 81.7 79.1 77.6 79.1 79.1 77.6 79.1 Noise Limi Leq N/A N/A N/A N/A N/A	N/A N/A N/A N/A Distance (feet) 450 460 500 600 650 ts (dBA) Evening Lmax N/A N/A N/A N/A N/A N/A N/A	N/A N/A Shielding (dBA) D D D D D D D D D D D D D D D D D D D

			,	15.4.)		Rec	ept	or #4				
		Baselir		,								
Description	Land Use	Daytim		Evenii	-	Night						
School/Resi to south - typical	Residential		65		60		55					
						Equipm	nent	:				
						Spec		Actual		Receptor	Estima	ted
		Impact	t			Lmax		Lmax		Distance	Shieldi	ng
Description		Device		Usage	e(%)	(dBA)		(dBA)		(feet)	(dBA)	
Dozer		No			40			81	1.7	750	r	5
Dozer		No			40			81	1.7	750	i i	5
Dozer		No			40			81	1.7	750	r	5
Tractor		No			40		84			750	i i	5
Front End Loader		No			40			79	9.1	750	,	5
Backhoe		No			40			77	7.6	750	i i	5
Front End Loader		No			40			79	9.1	750	l.	5
						Results						
		Calcula	ated	(dBA)				Noise Li	mit	s (dBA)		
				. ,		Day				Evening		
Equipment		*Lmax		Leq		, Lmax		Leq		Lmax	Leq	
Dozer		5	53.1		49.2	N/A		N/A		N/A	N/A	
Dozer		5	53.1		49.2	N/A		N/A		N/A	N/A	
Dozer		5	53.1		49.2	N/A		N/A		N/A	N/A	
Tractor		5	55.5		51.5	N/A		N/A		N/A	N/A	
Front End Loader		5	50.6		46.6			N/A		N/A	N/A	
Backhoe			49		45.1	N/A		N/A		N/A	N/A	
Front End Loader		5	50.6		46.6			N/A		N/A	N/A	
	Total	5	55.5		57.1	N/A		N/A		N/A	N/A	
											-	

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM), Version 1.1

	ieta - Warm Springs Pkwy Blasting					
			Recep	tor #1		
	Baselines	(dBA)				
Description Land Use	Daytime	Evening	Night			
Residential to east - nearest Residential	6	5 60	55	5		
			Equipmer	it		
			Spec	Actual	Receptor	Estimated
	Impact		Lmax	Lmax	Distance	Shielding
Description	Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Blasting	Yes	1	. 94	1	610	5
			Results			
	Calculate	d (dBA)		Noise Limi	ts (dBA)	
			Day		Evening	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq
Blasting	67.1	3 47.3	N/A	N/A	N/A	N/A
Total	67.1	3 47.3	N/A	N/A	N/A	N/A
	*Calculate	ed Lmax is th	ne Loudest	value.		
			Recep	tor #2		
	Baselines	(dBA)				
Description Land Use	Daytime	Evening	Night			
Residential to east - typical Residential	6	5 60	55	5		
			Equipmer	ıt		
			Spec	Actual	Receptor	Estimated
	Impact		Lmax	Lmax	Distance	Shielding
Description	Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Blasting	Yes	1	. 94	1	740	5

2/18/2020

Report date:

		Re	esults	
		Calculated (dBA)	Noise Limits	
		Da		Evening
Equipment				Lmax Leq
Blasting		65.6 45.6 N/		N/A N/A
	Total	65.6 45.6 N/	/A N/A I	N/A N/A
		*Calculated Lmax is the L	oudest value.	
			Receptor #3	
		Baselines (dBA)		
Description	Land Use	Daytime Evening Ni	ght	
School/Resi to south - nearest	Residential	65 60	55	
		Eq	quipment	
		Sp	ec Actual I	Receptor Estimated
		Impact Lm	nax Lmax I	Distance Shielding
Description		Device Usage(%) (d	BA) (dBA) ((feet) (dBA)
Blasting		Yes 1	94	700 0
		Re	esults	
		Calculated (dBA)	Noise Limits	(dBA)
		Da	ay I	Evening
Equipment		*Lmax Leq Lm	nax Leq I	Lmax Leq
Blasting		71.1 51.1 N/	/A N/A I	N/A N/A
	Total	71.1 51.1 N/	/A N/A I	N/A N/A
		*Calculated Lmax is the L	oudest value.	
			Receptor #4	
		Baselines (dBA)		
Description	Land Use	Daytime Evening Ni	ght	
School/Resi to south - typical	Residential	65 60	55	
		Eq	quipment	
		Sp	ec Actual I	Receptor Estimated
		Impact Lm	nax Lmax I	Distance Shielding
Description			BA) (dBA) ((feet) (dBA)
Blasting		Yes 1	94	1090 0
		Re	esults	
		Calculated (dBA)	Noise Limits	s (dBA)
		Da		Evening
Equipment				Lmax Leq
Blasting		67.2 47.2 N/	/A N/A I	N/A N/A
	Total	67.2 47.2 N/		N/A N/A
		*Calculated Lmax is the L	oudest value.	

Roadway Construction Noise Model (RCNM), Version 1.1

1/16/2020

Report date: Case Description:

Costco Murrieta - Warm Springs Pkwy Grading

				Rec	eptor #1		
		Baselines	(dBA)				
Description	Land Use	Daytime	Evening	Night			
Residential to east - nearest	Residential	65	5 60		55		
				Equipm	ient		
				Spec	Actual	Receptor	Estimated
		Impact		Lmax	Lmax	Distance	Shielding
Description		Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Dozer		No	40		81.7	7 610) 5
Excavator		No	40		80.7	7 620) 5

Tractor	No	40	84		650	5
Front End Loader	No	40		79.1	700	5
Backhoe	No	40		77.6	680	5
Grader	No	40	85		700	5

	Results							
	Calculated (dBA)		Noise Lim	Noise Limits (dBA)				
		Day		Evening				
Equipment	*Lmax Leq	Lmax	Leq	Lmax	Leq			
Dozer	54.9 5	1 N/A	N/A	N/A	N/A			
Excavator	53.8 49.1	9 N/A	N/A	N/A	N/A			
Tractor	56.7 52.	7 N/A	N/A	N/A	N/A			
Front End Loader	51.2 47.3	2 N/A	N/A	N/A	N/A			
Backhoe	49.9 45.1	9 N/A	N/A	N/A	N/A			
Grader	57.1 53.	1 N/A	N/A	N/A	N/A			
Total	57.1 58.	5 N/A	N/A	N/A	N/A			
	*Calculated Lmax is t	he Loudest	value.					

		Receptor #2
		Baselines (dBA)
Description	Land Use	Daytime Evening Night
Residential to east - typical	Residential	65 60 55

Land Use

Residential

Description

School/Resi to south - nearest

			Equipn				
			Spec	A	Actual	Receptor	Estimated
	Impact		Lmax	L	max	Distance	Shielding
Description	Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Dozer	No	40			81.7	740	5
Excavator	No	40			80.7	740	5
Tractor	No	40		84		740	5
Front End Loader	No	40			79.1	740	5
Backhoe	No	40			77.6	740	5
Grader	No	40		85		740	5
			Results	;			
	Calculated	d (dBA)		Γ	Noise Limi	ts (dBA)	
			Day			Evening	

		Duy		LVCIIIIS				
Equipment	*Lmax Leq	Lmax	Leq	Lmax	Leq			
Dozer	53.3	49.3 N/A	N/A	N/A	N/A			
Excavator	52.3	48.3 N/A	N/A	N/A	N/A			
Tractor	55.6	51.6 N/A	N/A	N/A	N/A			
Front End Loader	50.7	46.7 N/A	N/A	N/A	N/A			
Backhoe	49.2	45.2 N/A	N/A	N/A	N/A			
Grader	56.6	52.6 N/A	N/A	N/A	N/A			
Total	56.6	57.5 N/A	N/A	N/A	N/A			

*Calculated Lmax is the Loudest value.

		Rec	eptor #3
Baselines (dBA)		
Daytime	Evening	Night	
65	60		55

		Equipment				
			Spec	Actual	Receptor	Estimated
	Impact		Lmax	Lmax	Distance	Shielding
Description	Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Dozer	No	40)	81.7	700	0
Excavator	No	40)	80.7	710	0
Tractor	No	40) 84	Ļ	750	0
Front End Loader	No	40)	79.1	800	0
Backhoe	No	40)	77.6	770	0
Grader	No	40	85	5	800	0
			Results			
	Calculate	d (dBA)		Noise Limi	ts (dBA)	
			Day		Evening	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq
Dozer	58.	7 54.8	B N/A	N/A	N/A	N/A

Excavator		57.	7	53.7	N/A		N/A	N/A	N/A
Tractor		60.	5	56.5	N/A		N/A	N/A	N/A
Front End Loader		5	5	51	N/A		N/A	N/A	N/A
Backhoe		53.	8	49.8	N/A		N/A	N/A	N/A
Grader		60.	9	56.9	N/A		N/A	N/A	N/A
	Total	60.	9	62.3	N/A		N/A	N/A	N/A
		*Calculat	ed Lmax	x is th	ne Loud	est	value.		
					Re	cept	tor #4		
		Baselines	(dBA)			•			
Description	Land Use	Daytime	• •	ng	Night				
School/Resi to south - typical	Residential	, 6	5	60		55	;		
					Equipr	nen	t		
					Spec	nen	Actual	Recentor	Estimated
		Impact			Lmax		Lmax	Distance	Shielding
Description		Device	Usage	-(%)	(dBA)		(dBA)	(feet)	(dBA)
Dozer		No	000080	40	. ,		81.	. ,	. ,
Excavator		No		40			80.		
Tractor		No		40		84		1090	
Front End Loader		No		40		0.	79.		
Backhoe		No		40			77.		
Grader		No		40		85		1090	
					Result	c			
		Calculate	d (dBA)		Nesun	3	Noise Lin	hits (dRA)	
		culculate	a (ab/ i)		Day		Noise Ein	Evening	
Equipment		*Lmax	Leq		Lmax		Leq	Lmax	Leq
Dozer		54.	9	50.9	N/A		N/A	N/A	N/A
Excavator		53.	9	50	N/A		N/A	N/A	N/A
Tractor		57.	2	53.3	N/A		N/A	N/A	N/A
Front End Loader		52.	3	48.4	N/A		N/A	N/A	N/A
Backhoe		50.	8	46.8	N/A		N/A	N/A	N/A
Grader		58.	2	54.3	N/A		N/A	N/A	N/A
	Total	58.	2	59.1	N/A		N/A	N/A	N/A

Roadway Construction Noise Model (RCNM), Version 1.1

1/16/2020 Costco Murrieta - Warm Springs Pkwy Paving

Report date:

Case Description:

					Receptor #1						
		Baseline	s (dBA)								
Description	Land Use	Daytime	Even	ing	Night						
Residential to east - nearest	Residential	6	55	60		55					
					Equipr	nen	t				
					Spec		Actual	Recep	otor	Estimated	
		Impact			Lmax		Lmax	Distar		Shielding	
Description		Device	Usag	e(%)	(dBA)		(dBA)	(feet)		(dBA)	
Paver		No		50	• •		77.2	. ,	610	. ,	
Paver		No		50			77.3	2	620	5	
Concrete Pump Truck		No		20		82			650	5	
Concrete Mixer Truck		No		40			78.	3	700	5	
Roller		No		20			80)	680	5	
Roller		No		20			80)	700	5	
					Result	s					
		Calculate	ed (dBA)			Noise Lim	its (dBA	()		
					Day			Eveni			
Equipment		*Lmax	Leq		Lmax		Leq	Lmax		Leq	
Paver		50	.5	47.5	N/A		N/A	N/A		N/A	
Paver		50	.4	47.3	N/A		N/A	N/A		N/A	
Concrete Pump Truck		54	.7	47.7	N/A		N/A	N/A		N/A	

Concrete Mixer Truck		50.9		9 N/A	N/A	N/	A	N/A	
Roller		52.3		3 N/A	N/A	N/		N/A	
Roller		52.3		1 N/A	N/A	N/		N/A	
	Total	54.		5 N/A	N/A	N/.	A	N/A	
		*Calculate	ed Lmax is t	he Loud	est value.				
			() = +)	Re	ceptor #2				
		Baselines	. ,						
Description	Land Use	Daytime 6	-	Night	55				
Residential to east - typical	Residential	0:	5 6	0	22				
				Equip	ment				
				Spec	Actual	Re	ceptor	Estima	ate
		Impact		Lmax	Lmax	Dis	stance	Shieldi	ing
Description		Device	Usage(%)		(dBA)	•	et)	(dBA)	
Paver		No	5			77.2	740		
Paver		No	5	D		77.2	740)	
Concrete Pump Truck		No	2		82		740		
Concrete Mixer Truck		No	4			78.8	740		
Roller		No	2	0		80	740)	
Roller		No	2	0		80	740)	
				Result	S				
		Calculate	d (dBA)		Noise	Limits (o			
				Day			ening		
Equipment		*Lmax	Leq	Lmax	Leq		nax	Leq	
Paver		48.8		8 N/A	N/A	N/.		N/A	
Paver		48.8	8 45.	8 N/A	N/A	N/.	A	N/A	
Concrete Pump Truck		53.6	6 46.	6 N/A	N/A	N/	A	N/A	
Concrete Mixer Truck		50.4	4 46.	4 N/A	N/A	N/	A	N/A	
Roller		51.6	6 44.	6 N/A	N/A	N/.	A	N/A	
Roller		51.6	6 44.	6 N/A	N/A	N/.	A	N/A	
	Total	53.0		5 N/A	N/A	N/	A	N/A	
		*Calculate	ed Lmax is t	he Loud	est value.				
		Baselines		Re	ceptor #3				
Description	Land Use	Daytime	Evening	Night					
School/Resi to south - nearest	Residential	65	-	Night D	55				
				Faulta					
				Equipi Spec	Actual	Ro	ceptor	Estima	ate
		Impact		Lmax	Lmax		stance	Shieldi	
Description		Impact Dovice				(fe			ΠĘ
Description		Device	Usage(%)		(dBA)			(dBA)	
Paver		No	5			77.2	700		
Paver		No	5			77.2	710		
Concrete Pump Truck		No	2		82	70.0	750		
Concrete Mixer Truck		No	4			78.8	800		
Roller Roller		No	2			80	770		
Koller		No	2	0		80	800)	
				Result					
		Calculate	d (dBA)	Dav	Noise	Limits (c	dBA) ening		
Equipment		*Lmax	Leq	Day Lmax	100		nax	Leq	
		54.3			Leq	N/		Leq N/A	
Paver Paver		54.		3 N/A	N/A				
				2 N/A	N/A	N/.		N/A	
Concrete Pump Truck		58.		5 N/A	N/A	N/.		N/A	
Concrete Mixer Truck		54.3		7 N/A	N/A	N/.		N/A	
Roller		56.2		3 N/A	N/A	N/.		N/A	
Roller	T	55.9		9 N/A	N/A	N/.		N/A	
	Total	58.		4 N/A	N/A	N/.	A	N/A	
		*Calculate	ed Lmax is t	ne Loud	est value.				
				Re	ceptor #4				
Description	Land Use	Baselines	(dBA) Evening	Night					

65 60 55

Description School/Resi to south - typical Land Use Residential

			Equipme	ent		
			Spec	Actual	Receptor	Estimated
	Impact		Lmax	Lmax	Distance	Shielding
Description	Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Paver	No	50		77.2	1090	0
Paver	No	50		77.2	1090	0
Concrete Pump Truck	No	20	8	32	1090	0
Concrete Mixer Truck	No	40		78.8	1090	0
Roller	No	20		80	1090	0
Roller	No	20		80	1090	0
			Results			
	Calculated	(dBA)		Noise Lim	ts (dBA)	
			Day		Evening	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq
Paver	50.5	47.4	N/A	N/A	N/A	N/A
Paver	50.5	47.4	N/A	N/A	N/A	N/A
Concrete Pump Truck	55.2	48.2	N/A	N/A	N/A	N/A

Total

Concrete Mixer Truck

Roller

Roller

55.1 N/A N/A *Calculated Lmax is the Loudest value.

48.1 N/A

46.2 N/A

46.2 N/A

52

53.2

53.2

55.2

Appendix C

Traffic Noise Modeling Input/Output Files

INPUT: ROADWAYS

						1	11052	_	-						
Dudek					5 February 2	020									
M Greene					TNM 2.5	020									
NPUT: ROADWAYS							Average	pavement typ	e shall be u	used unles	S				
PROJECT/CONTRACT:	11092						a State h	ighway ageno	cy substant	iates the u	se				
RUN:	Costco M	urrieta Ex	ist Wkdy	Rev 012020		of a different type with the approval of FHWA									
Roadway	Points									_					
Name	Width	Name	No.	Coordinates	(pavement)		Flow Co	ntrol		Segment					
				X	Y	Z	Control	Speed	Percent	Pvmt	On				
							Device	Constraint	Vehicles	Туре	Struct				
									Affected						
	ft			ft	ft	ft		mph	%						
Clinton Keith Road	100.0	point1	1	4,540.0	2,082.1					Average					
		point3	3		2,071.7					Average					
		point4	4	1,877.4	2,071.7					Average					
		point5	5	-	2,092.5					Average					
		point6	6	-	2,194.9					Average					
		point7	7	540.4	2,474.8										
I-215	120.0	point29	29		1,945.7					Average					
		point9	9		2,315.1										
I-215 NB Onramp	45.0	point31	31	1,561.4	2,190.7					Average					
		point21	21	1,456.5	2,282.5					Average					
		point22	22	1,412.7	2,356.9					Average					
		point23	23		2,492.5					Average					
		point24	24	1,780.2	3,485.3					Average					
		point25	25		3,730.3										
Whitewood Road	100.0	point33	33		2,121.8					Average					
		point27	27	4,496.4	4,024.5			_		_	_				
I-215 NB Offramp	45.0	point36	36		1,648.3					Average					
		point17	17	1,167.8	1,871.4					Average					
		point18	18	,	1,989.5					Average	+				
1.045.0	400.0	point19	19		2,173.2					A	+				
I-215-2	120.0	point39	39		2,337.3					Average	+				
		point10	10	,	2,754.9					Average					
		point11	11	1,552.7	3,192.3					Average	<u> </u>				
		point12	12		3,603.4					Average	<u> </u>				
		point13	13	1,823.9	3,918.3	1,530.00				Average					

INPUT: ROADWAYS

point14	14	1,876.4	4,123.9	1,530.00	Average	
point1	15	1 450 7	4,425.7	1,530.00		

INPUT: TRAFFIC FOR LAeq1h Percentages

INPUT: TRAFFIC FOR LARGIN F	rcentages	1	i	1				110	92		1		
Dudek							5 Febru	ary 2	n				
M Greene							TNM 2.	-					
W Greene								D					
INPUT: TRAFFIC FOR LAeq1h	Percentages												
PROJECT/CONTRACT:	11092												
RUN:	Costco Mur	rieta Exis	t Wkdy Rev	0120	20								
Roadway	Points												
Name	Name	No.	Segment										
			Total	Auto	S	MTru	cks	HTru	cks	Buse	S	Moto	orcycles
			Volume	Ρ	S	Ρ	S	Ρ	S	Ρ	S	Ρ	S
			veh/hr	%	mph	%	mph	%	mph	%	mph	%	mph
Clinton Keith Road	point1	1	2526	97	40	2	40	1	40	0	C) () C
	point3	3	2526	97	40	2	40	1	40	0	C) () C
	point4	4	2526	97	40	2	40	1	40	0	C	() C
	point5	5	2526	97	40	2	40	1	40	0	C) () C
	point6	6	2526	97	40	2	40	1	40	0	C) () C
	point7	7											
I-215	point29	29	11700	93	65	3	65	4	65	0	C) () C
	point9	9											
I-215 NB Onramp	point31	31	100	97	45			1	45	0	C) () C
	point21	21	100					1	45	0	C) () C
	point22	22	100	97	45			1	45	0	C) () C
	point23	23	100	97	45			1	45	0) C) () C
	point24	24	100	97	45	2	45	1	45	0	C) () C
	point25	25											
Whitewood Road	point33	33	1250	97	45	2	45	1	45	0) C	0 () (
	point27	27											
I-215 NB Offramp	point36	36								_) C) (-
	point17	17							-				-
	point18	18		97	45	2	45	1	45	0) C) () C
	point19	19											
I-215-2	point39	39									-) (-
	point10	10											
	point11	11	11700	93	65	3	65	4	65	0	C) () (

11092

INPUT: TRAFFIC FOR LAeq1h Percentages

point12	12	11700	93	65	3	65	4	65	0	0	0	0
point13	13	11700	93	65	3	65	4	65	0	0	0	0
point14	14	11700	93	65	3	65	4	65	0	0	0	0
point15	15											

INPUT: RECEIVERS							•	11092			
Dudek						5 February	y 2020				
M Greene						TNM 2.5					
INPUT: RECEIVERS											
PROJECT/CONTRACT:	11092										
RUN:	Costco	o Murri	ieta Exist Wk	dy Rev 01202	0						
Receiver											_
Name	No.	#DUs	Coordinates	(ground)		Height	Input Sou	nd Levels	and Criteri	a	Active
			X	Y	Z	above	Existing	Impact Cr	riteria	NR	in
						Ground	LAeq1h	LAeq1h	Sub'l	Goal	Calc.
			ft	ft	ft	ft	dBA	dBA	dB	dB	
ST1	1	1	1,702.5	1,982.2	1,512.00	5.00	0.00	66	6 10.0) 8.0) Y
ST2	2	1	3,422.5	1,820.0	1,510.00	5.00	0.00	66	6 10.0) 8.0	Y C
ST3	3	1	3,310.7	2,162.6	1,510.00	5.00	0.00	66	6 10.0) 8.0)
ST4	4	1	3,272.5	2,640.2	1,510.00	5.00	0.00	66	6 10.C) 8.0)
ST5	5	1	3,312.4	3,256.6	1,510.00	5.00	0.00	66	6 10.C) 8.0)
M1	7	1	4,402.0	2,379.6	1,510.00	5.00	0.00	66	6 10.0) 8.0	J

INPUT: BARRIERS

		1	1	1														
Dudek					5 February 202	0												
M Greene					TNM 2.5	0												
M Greene					111111 2.5													
INPUT: BARRIERS																		
PROJECT/CONTRACT:	11092	2																
RUN:	Costo	o Murrie	ta Exist	Wkdy R	ev 012020													
Barrier		-	1					Points										
Name	Type	Height		If Wall	If Berm		Add'tnl	Name	No.	Coordinates	(bottom)		Height	Segm	ent			
		Min	Max	\$ per	\$ per Top	Run:Rise	\$ per			х		Z	at	Seg H		urbs	On	Importan
				Unit	Unit Width		Unit						Point	-			Struct?	Reflec-
				Area	Vol.		Length	1	ĺ				ĺ	ment				tions?
		ft	ft	\$/sq ft	\$/cu yd ft	ft:ft	\$/ft			ft	ft 1	ft	ft	ft				
Barrier1	W	0.00	99.99	0.00)		0.00	point1	1	3,293.2	2,144.9	1,510.00	6.00	0.00	0	0		
			1					point2	2	3,801.1	2,135.3		6.00	0.00	0	0		
								point3	3	3,891.6	2,142.2	1,510.00	6.00	0.00	0	0		
								point4	4	4,384.6	2,142.2	1,510.00	6.00	0.00	0	0		
								point5	5	4,413.2	2,143.7	1,510.00	6.00	0.00	0	0		
								point6	6	4,422.0	3,547.7	1,510.00	6.00					
Barrier11	W	0.00	99.99	0.00			0.00	point10	10	3,293.3	2,145.3	1,510.00	10.00	0.00	0	0		
								point8	8	,	2,570.5		10.00					
Barrier21	W	0.00	99.99	0.00)		0.00	H .	11	3,201.5	1,661.5		20.00					
								point37	37	-,	1,713.9		20.00	0.00				
								point38	38	,	1,713.9	,	20.00	0.00	0	0		
								point39	39			1,510.00	20.00					
Barrier8	W	0.00	99.99	0.00)		0.00		48			-	20.00					
								point13	13		2,163.3		20.00	0.00				
								point14	14	3,787.3	2,158.9		20.00		0	0		
D	14/	0.00	00.00	0.00			0.00	point15	15		2,272.6		20.00		0			
Barrier9	W	0.00	99.99	0.00			0.00	H .	50 17			1,510.00	20.00					
								point17										
								point18 point46	18 46				20.00		0	0		
Barrier10	W	0.00	99.99	0.00			0.00		52		,		20.00		0	0		
Damerto	••	0.00	55.55	0.00			0.00	point32	20	,	,	1,510.00	20.00					
								point20	20	,	,	1,510.00	20.00			-		
								point22	22	,	,	1,510.00	20.00		Ŭ	0		
Barrier 5	W	0.00	99.99	0.00			0.00	11 ·	54		,	1,510.00	20.00		0	0		
-								point24	24	4,097.8		1,510.00	20.00	0.00	-	-		
								point25	25	,	,	1,510.00	20.00			-		
			1				1	point45	45			1,510.00	20.00	0.00				
								point26	26		3,411.6	1,510.00	20.00	0.00	0	0		
								point27	27	3,422.8	2,609.8	1,510.00	20.00					
Barrier7	W	0.00	99.99	0.00			0.00	point56	56	3,305.6	2,340.4	1,510.00	20.00	0.00	0	0		
								point29	29	4,282.4	2,337.0	1,510.00	20.00	0.00	0	0		
								point30	30	4,276.9	2,546.4	1,510.00	20.00	0.00	0	0		
								point31	31	3,309.8	2,557.5	1,510.00	20.00	0.00	0	0		
								point33	33	3,308.6	2,342.3	1,510.00	20.00					

INPUT: BARRIERS						11092									
Barrier6	W	0.00	99.99	0.00	0.00	point58	58	3,297.8	3,093.6 1,510.0	0 20.00	0.00	0	0	-	
						point35	35	3,289.5	2,583.9 1,510.0	0 20.00	0.00	0	0		
						point36	36	3,355.7	2,581.1 1,510.0	0 20.00	0.00	0	0		
						point12	12	3,361.2	3,088.1 1,510.0	0 20.00					
Barrier20	W	0.00	99.99	0.00	0.00	point60	60	3,433.3	1,768.9 1,510.0	0 20.00	0.00	0	0		
						point41	41	3,434.4	1,876.1 1,510.0	0 20.00	0.00	0	0		
						point42	42	3,552.5	1,875.0 1,510.0	0 20.00	0.00	0	0		
						point43	43	3,552.5	1,771.1 1,510.0	0 20.00					
Barrier19	W	0.00	99.99	0.00	0.00	point61	61	1,708.0	2,180.4 1,530.0	0.00	0.00	0	0		
						point62	62	1,819.1	2,524.1 1,540.0	0.00	0.00	0	0		
						point63	63	1,871.2	2,975.4 1,550.0	0.00	0.00	0	0		
						point64	64	1,968.4	3,697.5 1,550.0	0.00	0.00	0	0		
						point65	65	1,975.3	4,003.0 1,540.0	0.00					
Barrier22	W	0.00	99.99	0.00	0.00	point67	67	1,779.6	1,933.4 1,530.0	0 20.00	0.00	0	0		
						point68	68	1,659.0	1,949.5 1,530.0	0 20.00	0.00	0	0		
						point69	69	1,506.3	2,035.2 1,530.0	0 20.00	0.00	0	0		
						point70	70	1,238.3	1,737.8 1,530.0	0 20.00	0.00	0	0		
						point71	71	1,160.6	1,692.2 1,530.0	20.00					

INPUT: TERRAIN LINES

		1	1	1
Dudek			5 February 2	020
M Greene			TNM 2.5	
	44002			
PROJECT/CONTRACT:	11092			
RUN:	Costco	Murrieta Exi	st Wkdy Rev	012020
Terrain Line	Points	;		
Name	No.	Coordinates	(ground)	
		X	Y	Z
		ft	ft	ft
Terrain Line2	2	1,605.9	2,030.4	1,522.00
	3	1,685.8	2,007.1	1,522.00
	4	1,825.5	1,990.5	1,522.00
Terrain Line3	5	3,208.7	1,970.8	1,512.00
	6	3,671.8	1,962.1	1,512.00

RESULTS: SOUND LEVELS	ĺ	1	1	Î.	1		1	1092	1			1	
Dudek								5 Februar	2020				
M Greene								TNM 2.5	y 2020				
M Oreene								Calculated	with TN	VI 2 5			
RESULTS: SOUND LEVELS								Calculated		1 2.0			
PROJECT/CONTRACT:		11092											
RUN:			Murrieta F	xist Wkdy Re	v 012020)							
BARRIER DESIGN:			HEIGHTS	,,					Average	pavement type	shall be use	d unless	
										ighway agency			
ATMOSPHERICS:		68 deg	F, 50% RH							rent type with			
Receiver		1											-
Name	No.	#DUs	Existing	No Barrier						With Barrier			
			LAeq1h	LAeq1h		I	Increase over	existing	Туре	Calculated	Noise Reduc	tion	
				Calculated	Crit'n	(Calculated	Crit'n	Impact	LAeq1h	Calculated	Goal	Calculated
						ĺ		Sub'l Inc					minus
													Goal
			dBA	dBA	dBA	C	dB	dB		dBA	dB	dB	dB
ST1	1	1	0.0	56.8		66	56.8	10		56.8	0.0	8	-8.
ST2	2	1	0.0	56.5		66	56.5	10		56.5	0.0	8	-8.
ST3	3	1	0.0	59.4		66	59.4	10		59.4	0.0	8	-8.
ST4	4	1	0.0	52.9		66	52.9	10		52.9	0.0	8	-8.
ST5	5	1	0.0	50.3		66	50.3	10		50.3	0.0	8	-8.
M1	7	1	0.0	56.6		66	56.6	10		56.6	0.0	8	-8.
Dwelling Units		#DUs	Noise Red	duction									
			Min	Avg	Max								
			dB	dB	dB								
All Selected		6	0.0	0.0	(0.0							
All Impacted		C	0.0	0.0	(0.0							
All that meet NR Goal		C	0.0	0.0	(0.0							

NF01. ROADWATS			-				11052	•			-
Dudek					5 February 2	020					
M Greene					TNM 2.5	020					
NPUT: ROADWAYS							Average	pavement typ	e shall be i	used unles	S
PROJECT/CONTRACT:	11092						a State h	ighway agenc	y substant	iates the u	se
RUN:	Costco M	urrieta Ex	is Sat Re	v 012020			of a diffe	rent type with	the approv	val of FHW	A
Roadway		Points									_
Name	Width	Name	No.	Coordinates	(pavement)		Flow Cor	ntrol		Segment	
				X	Y	Z	Control	Speed	Percent	Pvmt	On
							Device	Constraint	Vehicles	Туре	Struct
									Affected		
	ft			ft	ft	ft		mph	%		
Clinton Keith Road	100.0	point1	1	4,540.0	2,082.1	1,500.00				Average	
		point3	3		2,071.7					Average	
		point4	4	, -	2,071.7					Average	
		point5	5	-	2,092.5					Average	
		point6	6	-	2,194.9					Average	
		point7	7		2,474.8						
I-215	120.0	point29	29		1,945.7					Average	
		point9	9		2,315.1						
I-215 NB Onramp	45.0	point31	31	1,561.4	2,190.7					Average	
		point21	21	1,456.5	2,282.5					Average	
		point22	22		2,356.9					Average	
		point23	23		2,492.5					Average	
		point24	24	-	3,485.3	-				Average	
		point25	25		3,730.3						
Whitewood Road	100.0	point33	33		2,121.8					Average	
	45.0	point27	27	-	4,024.5					A	
I-215 NB Offramp	45.0	point36 point17	36		1,648.3 1,871.4					Average Average	
		point17	17		1,871.4					Average	
		point18 point19	18		2,173.2	-				Average	
I-215-2	120.0	point39	39		2,173.2					Average	
1-2 1 5-2	120.0	point39	10		2,337.3					Average	
		point10	11		3,192.3	-				Average	
		point12	12		3,603.4					Average	
		point12	13			1,530.00				Average	

point14	14	1,876.4	4,123.9	1,530.00	Average	
point15	15	1 450 7	4,425.7	1,530.00		

INPUT: TRAFFIC FOR LAeq1h P	ercentages		[1	1109	92				1
Dudek							5 Febru	arv 20]]				
M Greene							TNM 2.	-					
INPUT: TRAFFIC FOR LAeq1h I	Percentages												
PROJECT/CONTRACT:	11092			1	1								
RUN:	Costco Mur	rieta Exis	Sat Rev 01	2020									
Roadway	Points												
Name	Name	No.	Segment										
			Total	Autos	S	MTru	cks	HTru	cks	Buse	S	Moto	rcycles
			Volume	Ρ	S	Ρ	S	Ρ	S	Ρ	S	Ρ	S
			veh/hr	%	mph	%	mph	%	mph	%	mph	%	mph
Clinton Keith Road	point1	1	2028	97	40	2	40	1	40	0	C) () C
	point3	3	2028	97	40	2	40	1	40	0	C) () C
	point4	4	2028	97	40	2	40	1	40	0	C) () C
	point5	5	2028	97	40	2	40	1	40	0	C) () C
	point6	6	2028	97	40	2	40	1	40	0	C) () C
	point7	7											
I-215	point29	29	11700	93	65	3	65	4	65	0	C) () C
	point9	9											
I-215 NB Onramp	point31	31	100	97	45		1	1	45	0	C) () C
	point21	21	100	97			1	1			C) () C
	point22	22	100	97			1				C	0 0	0 0
	point23	23		97						-	-) () C
	point24	24		97	45	2	45	1	45	0	C	0 0	0 0
	point25	25											
Whitewood Road	point33	33	1067	97	45	2	45	1	45	0	C) C
	point27	27											
I-215 NB Offramp	point36	36		97			1						
	point17	17		97	45				-				-
	point18	18		97	45	2	45	1	45	0	C		0 0
	point19	19											
I-215-2	point39	39		93									-
	point10	10		93									
	point11	11	11700	93	65	3	65	4	65	0	C) () C

11092

INPUT: TRAFFIC FOR LAeq1h Percentages

point12	12	11700	93	65	3	65	4	65	0	0	0	0
point13	13	11700	93	65	3	65	4	65	0	0	0	0
point14	14	11700	93	65	3	65	4	65	0	0	0	0
point15	15											

INPUT: RECEIVERS							•	11092			
Dudek						5 February	y 2020				
M Greene						TNM 2.5					
INPUT: RECEIVERS											
PROJECT/CONTRACT:	11092										
RUN:	Costco	Murr i	ieta Exis Sat I	Rev 012020							
Receiver				-							
Name	No.	#DUs	Coordinates	(ground)		Height	Input Sou	nd Levels	and Criteri	a	Active
			X	Y	Z	above	Existing	Impact Ci	riteria	NR	in
						Ground	LAeq1h	LAeq1h	Sub'l	Goal	Calc.
			ft	ft	ft	ft	dBA	dBA	dB	dB	
ST1	1	1	1,702.5	1,982.2	1,512.00	5.00	0.00	66	6 10.0	0.8.0) Y
ST2	2	1	3,422.5	1,820.0	1,510.00	5.00	0.00	66	6 10.0) 8.0) Y
ST3	3	1	3,310.7	2,162.6	1,510.00	5.00	0.00	66	6 10.0) 8.0) Y
ST4	4	1	3,272.5	2,640.2	1,510.00	5.00	0.00	66	6 10.0) 8.0) Y
ST5	5	1	3,312.4	3,256.6	1,510.00	5.00	0.00	66	6 10.0) 8.0) Y
M1	7	1	4,402.0	2,379.6	1,510.00	5.00	0.00	66	6 10.0) 8.0) Y

INPUT: BARRIERS

			1	1														
Dudek					5 February 202	0												
M Greene					TNM 2.5	0												
M Greene					111111 2.5													
INPUT: BARRIERS																		
PROJECT/CONTRACT:	11092	2			1													
RUN:	Costo	o Murrie	ta Exis	Sat Rev	012020													
Barrier					1			Points										
Name	Туре	Height		If Wall	If Berm		Add'tnl	Name	No.	Coordinates	(bottom)		Height	Segm	ent			
		Min	Max	\$ per	\$ per Top	Run:Rise	\$ per			х		Z	at	Seg H		urbs	On	Importan
			İ	Unit	Unit Width		Unit						Point	Incre-	#Up	#Dn	Struct?	Reflec-
			ĺ	Area	Vol.		Length		İ				ĺ	ment			Ì	tions?
		ft	ft	\$/sq ft	\$/cu yd ft	ft:ft	\$/ft			ft	ft 1	ť	ft	ft				
Barrier1	W	0.00	99.99	0.00)		0.00	point1	1	3,293.2	2,144.9	1,510.00	6.00	0.00	0 0	0)	
								point2	2	3,801.1	2,135.3	1,510.00	6.00	0.00	0 0	0)	
								point3	3	3,891.6	2,142.2	1,510.00	6.00	0.00	0 0	0)	
								point4	4	4,384.6	2,142.2	1,510.00	6.00	0.00	0 0	0)	
								point5	5	4,413.2	2,143.7	1,510.00	6.00	0.00	0 0	0)	
								point6	6	4,422.0	3,547.7	1,510.00	6.00					
Barrier11	W	0.00	99.99	0.00			0.00	point10	10	3,293.3	2,145.3	1,510.00	10.00	0.00	0 0	0)	
								point8	8	3,289.2	2,570.5	1,510.00	10.00					
Barrier21	W	0.00	99.99	0.00			0.00	point11	11	3,201.5	1,661.5		20.00					
								point37	37	-,	1,713.9		20.00	0.00		-		
								point38	38	,	1,713.9	,	20.00	0.00	0 0	0		
								point39	39		1,653.3		20.00					
Barrier8	W	0.00	99.99	0.00			0.00		48				20.00					
								point13	13		2,163.3		20.00	0.00				
								point14	14	3,787.3	2,158.9		20.00	-	0 0	0)	
								point15	15		2,272.6		20.00					
Barrier9	W	0.00	99.99	0.00			0.00	H .	50				20.00					
								point17	17				20.00					
								point18 point46	18 46			-	20.00		0 0	0)	
Barrier10	W	0.00	99.99	0.00			0.00		40 52				20.00		0 0	0		
Barrier TU	vv	0.00	99.95	0.00	/		0.00	point52 point20	20	,	,	,	20.00					
								point20	20	,	2,157.9		20.00					
								point21	21	,		1,510.00	20.00		0	0	, 	
Barrier 5	W	0.00	99.99	0.00			0.00	H .	54		,	1,510.00	20.00		0 0	0		
Barrior U	**	0.00	. 55.35	0.00			0.00	point24	24	4,000.0		1,510.00	20.00	0.00	-	-		
				-				point24	25	,	,	1,510.00	20.00					
				+				point20	45			1,510.00	20.00	0.00				
				1			1	point26	26			1,510.00	20.00					
							1	point27	27			1,510.00	20.00				1	
Barrier7	W	0.00	99.99	0.00			0.00	11 ·	56			1,510.00	20.00	0.00	0 0	0)	
								point29	29	,		1,510.00	20.00)	
								point30	30			1,510.00	20.00	0.00				
				1				point31	31	3,309.8		1,510.00	20.00	0.00		0)	
								point33	33				20.00		1			

INPUT: BARRIERS						11092								
Barrier6	W	0.00	99.99	0.00	0.0) point58	58	3,297.8	3,093.6 1,510.00	20.00	0.00	0	0	
						point35	35	3,289.5	2,583.9 1,510.00	20.00	0.00	0	0	
						point36	36	3,355.7	2,581.1 1,510.00	20.00	0.00	0	0	
						point12	12	3,361.2	3,088.1 1,510.00	20.00				
Barrier20	W	0.00	99.99	0.00	0.0	point60	60	3,433.3	1,768.9 1,510.00	20.00	0.00	0	0	
						point41	41	3,434.4	1,876.1 1,510.00	20.00	0.00	0	0	
						point42	42	3,552.5	1,875.0 1,510.00	20.00	0.00	0	0	
						point43	43	3,552.5	1,771.1 1,510.00	20.00				
Barrier19	W	0.00	99.99	0.00	0.0) point61	61	1,708.0	2,180.4 1,530.00	0.00	0.00	0	0	
						point62	62	1,819.1	2,524.1 1,540.00	0.00	0.00	0	0	
						point63	63	1,871.2	2,975.4 1,550.00	0.00	0.00	0	0	
						point64	64	1,968.4	3,697.5 1,550.00	0.00	0.00	0	0	
						point65	65	1,975.3	4,003.0 1,540.00	0.00				
Barrier22	W	0.00	99.99	0.00	0.0) point67	67	1,779.6	1,933.4 1,530.00	20.00	0.00	0	0	
						point68	68	1,659.0	1,949.5 1,530.00	20.00	0.00	0	0	
						point69	69	1,506.3	2,035.2 1,530.00	20.00	0.00	0	0	
						point70	70	1,238.3	1,737.8 1,530.00	20.00	0.00	0	0	
						point71	71	1,160.6	1,692.2 1,530.00	20.00				

INPUT: TERRAIN LINES

Dudek			5 February 2	020
M Greene			TNM 2.5	
INPUT: TERRAIN LINES				
PROJECT/CONTRACT:	11092			
RUN:	Costco	Murrieta Exi	s Sat Rev 012	2020
Terrain Line	Points	;		
Name	No.	Coordinates	(ground)	
		X	Y	Z
		ft	ft	ft
Terrain Line1	1	1,605.9	2,030.4	1,522.00
	2	1,685.8	2,007.1	1,522.00
	3	1,825.5	1,990.5	1,522.00
Terrain Line2	4	3,208.7	1,970.8	1,512.00
	5	3,671.8	1,962.1	1,512.00

RESULTS: SOUND LEVELS					-		1'	1092	1			(
Dudek								5 Februar	, 2020				
M Greene								TNM 2.5	7 2020				
M Greene								Calculated	with TN	M 2 5			
RESULTS: SOUND LEVELS								Calculated					
PROJECT/CONTRACT:		11092											
RUN:			Murrieta E	xis Sat Rev 0	12020								
BARRIER DESIGN:			HEIGHTS						Average	pavement type	shall be use	d unless	
										ighway agency			
ATMOSPHERICS:		68 deg	F, 50% RH							rent type with			
Receiver					-				1				
Name	No.	#DUs	Existing	No Barrier						With Barrier	·		
			LAeq1h	LAeq1h			Increase over	existing	Туре	Calculated	Noise Reduc	tion	
				Calculated	Crit'n		Calculated	Crit'n	Impact	LAeq1h	Calculated	Goal	Calculated
						ĺ		Sub'l Inc					minus
													Goal
			dBA	dBA	dBA		dB	dB		dBA	dB	dB	dB
ST1	1	1	0.0	56.1		66	56.1	10		56.1	0.0	8	-8
ST2	2	1	0.0	55.7		66	55.7	10		55.7	0.0	8	-8
ST3	3	1	0.0	58.5		66	58.5	10		58.5	0.0	8	-8
ST4	4	1	0.0	52.3		66	52.3	10		52.3	0.0	8	-8
ST5	5	1	0.0	50.2		66	50.2	10		50.2	0.0	8	
M1	7	1	0.0	55.9		66	55.9	10		55.9	0.0	8	-8
Dwelling Units		#DUs	Noise Red	duction									
			Min	Avg	Max								
			dB	dB	dB								
All Selected		6	0.0	0.0		0.0							
All Impacted		C	0.0	0.0		0.0							
All that meet NR Goal		C	0.0	0.0		0.0							

11092

NPUI: ROADWAIS							11034	•			
Dudek					5 February 2	020					
M Greene					TNM 2.5						
INPUT: ROADWAYS							Average	pavement typ	e shall be	used unles	Si
PROJECT/CONTRACT:	11092						a State h	ighway agend	cy substant	iates the u	se
RUN:	CstcoMrr	ta Exst + F	Prj w Crt	Wkdy 012020				rent type with	-		
Roadway		Points	_					_		-	_
Name	Width	Name	No.	Coordinates	(pavement)		Flow Cor	ntrol		Segment	
				X	Y	Z	Control	Speed	Percent	Pvmt	On
							Device	Constraint	Vehicles	Туре	Struct
									Affected		
	ft			ft	ft	ft		mph	%		
Clinton Keith Road	100.0	point1	1	4,540.0	2,082.1	1,500.00				Average	
		point3	3	1,894.7	2,071.7	1,518.00				Average	
		point4	4	1,877.4	2,071.7	1,520.00				Average	
		point5	5	1,705.5	2,092.5					Average	
		point6	6	,	2,194.9					Average	
		point7	7	540.4	2,474.8	1,530.00					
I-215	120.0	point29	29		1,945.7					Average	
		point9	9		2,315.1						
I-215 NB Onramp	45.0	point31	31		2,190.7					Average	
		point21	21	-	-					Average	
		point22	22		2,356.9					Average	
		point23	23		2,492.5					Average	
		point24	24		3,485.3					Average	
		point25	25		3,730.3						
Whitewood Road	100.0	point33	33							Average	
		point27	27	-	4,024.5					-	
I-215 NB Offramp	45.0	•	36		1,648.3					Average	
		point17	17		1,871.4					Average	
		point18	18		1,989.5					Average	
1.045.0	400.0	point19	19		2,173.2					A	
I-215-2	120.0	point39	39		2,337.3					Average	
		point10	10		2,754.9					Average	
		point11	11	-	3,192.3					Average	
		point12	12		3,603.4					Average	
		point13	13	1,823.9	3,918.3	1,530.00				Average	

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	point14	14	1,876.4	4,123.9	1,530.00		Average
	point15	15	1,950.7	4,425.7	1,530.00		
Warm Springs Road 40.0	point40	40	2,652.7	2,103.5	1,515.00		Average
	point41	41	2,655.6	3,085.9	1,515.00		Average
	point42	42	2,702.6	3,323.4	1,515.00		

INPUT: TRAFFIC FOR LAeq1h Percentages

11092

INPUT: TRAFFIC FOR LARGIN	Percentages							110	92				
Dudek							5 Febru	ary 2(1				
M Greene							TNM 2.	-					
W Greene													
INPUT: TRAFFIC FOR LAeq1h													
PROJECT/CONTRACT:	11092												
RUN:	CstcoMrrta	Exst + Pr	j w Crt Wkd	y 012	020								
Roadway	Points												
Name	Name	No.	Segment										
			Total	Autos	5	MTru	cks	HTru	cks	Buse	S	Moto	rcycles
			Volume	Ρ	S	Ρ	S	Ρ	S	Ρ	S	Ρ	S
			veh/hr	%	mph	%	mph	%	mph	%	mph	%	mph
Clinton Keith Road	point1	1	3268	97	40	2	40	1	40	0	0 0	0 0	(
	point3	3	3268	97	40	2	40	1	40	0	0 0	0 0	(
	point4	4	3268	97	40	2	40	1	40	0	0 0	0 0	(
	point5	5	3268	97	40	2	40	1	40	0	0 0	0 0	(
	point6	6	3268	97	40	2	40	1	40	0	0 0	0 0	(
	point7	7											
I-215	point29	29	11700	93	65	3	65	4	65	0	0 0	0 0	(
	point9	9											
I-215 NB Onramp	point31	31	100	97	45			1	45	0	0 0	0 0	(
	point21	21	100	97	45		1	1	45	0	0 0	0 0	(
	point22	22	100	97	45			1	45	0	0 0	0 0	(
	point23	23	100	97	45	2	45	1	45	0	0 0	0 0	(
	point24	24	100	97	45	2	45	1	45	0	0 0	0 0	(
	point25	25											
Whitewood Road	point33	33	1361	97	45	2	45	1	45	0	0 0	0 0	(
	point27	27											
I-215 NB Offramp	point36	36			45			1			0 0	0 0	(
	point17	17	100	97	45	2	45	1	45	0	0 0	0 0	(
	point18	18		97	45	2	45	1	45	0	0 0	0 0	(
	point19	19											
I-215-2	point39	39	11700	93				4			0 0	0 0	(
	point10	10											
	point11	11	11700	93	65	3	65	4	65	0	0 0	0 0	(

C:\TNM25\Project Files\Costco Murrieta PN 11092\Exist+Prj w Crtn Wkdy 012020

INPUT: TRAFFIC FOR LAeq1h P	Percentages							1109	2				
	point12	12	11700	93	65	3	65	4	65	0	0	0	0
	point13	13	11700	93	65	3	65	4	65	0	0	0	0
	point14	14	11700	93	65	3	65	4	65	0	0	0	0
	point15	15											
Warm Springs Road	point40	40	1659	97	35	2	35	1	35	0	0	0	0
	point41	41	1659	97	35	2	35	1	35	0	0	0	0
	point42	42											

INPUT: RECEIVERS								-	1092			
Dudek							5 February	y 2020				
M Greene							TNM 2.5					
INPUT: RECEIVERS												
PROJECT/CONTRACT:	11092											
RUN:	Cstco	Mrrta E	Exst + Prj	w C	rt Wkdy 0120	20						
Receiver												
Name	No.	#DUs	Coordin	ates	(ground)		Height	Input Sou	nd Levels	and Criteri	a	Active
			Х		Y	Z	above	Existing	Impact C	riteria	NR	in
							Ground	LAeq1h	LAeq1h	Sub'l	Goal	Calc.
			ft		ft	ft	ft	dBA	dBA	dB	dB	
ST1	1	1	1,7	02.5	1,982.2	1,512.00	5.00	0.00	66	6 10.0) 8.	0 Y
ST2	2	1	3,4	22.5	5 1,820.0	1,510.00	5.00	0.00	66	6 10.0	8.	0 Y
ST3	3	1	3,3	310.7	2,162.6	1,510.00	5.00	0.00	66	6 10.0	8.	0 Y
ST4	4	1	3,2	272.5	2,640.2	1,510.00	5.00	0.00	66	6 10.0	8.	0 Y
ST5	5	1	3,3	312.4	3,256.6	1,510.00	5.00	0.00	66	6 10.0	8.	0 Y
M1	7	1	4,4	02.0	2,379.6	1,510.00	5.00	0.00	66	6 10.0	8.	0 Y

INPUT: BARRIERS

Dudek					5 February 202)											
M Greene					TNM 2.5												_
INPUT: BARRIERS																	_
PROJECT/CONTRACT:	11092																
RUN:			st + Prj	w Crt W	kdy 012020												-
Barrier					-			Points									
Name	Туре	Height	1	If Wall	If Berm		Add'tnl	Name	No.	Coordinates	(bottom)		Height	Segm	ent		
		Min	Max	\$ per	\$per Top	Run:Rise	1			x		z	at	-	It Perturi	os On	Importar
				Unit	Unit Width		Unit				-	_	Point	-		Dn Struct	
				Area	Vol.		Length							ment			tions?
		ft	ft	\$/sq ft	\$/cu yd ft	ft:ft	\$/ft			ft	ft	ft	ft	ft			
Barrier1	W	0.00	99.99				0.00	point1	1	3,293.2	2 144 9	1,510.00	6.00	0.00) 0	0	
Damerr		0.00	00.00	0.00			0.00	point2	2	-,	,	1,510.00				0	-
								point2	3			1,510.00				0	
								pointe point4	4			1,510.00				0	
								point5	5	.,		1,510.00	6.00			0	+
								point6	6		1 '	1,510.00					+
Barrier11	W	0.00	99.99	0.00			0.00	H	10	,		1,510.00	10.00		0 0	0	+
		0.00	00.00	0.00			0.00	point8	8	,		1,510.00	10.00				+
Barrier21	W	0.00	99.99	0.00)		0.00		11			1,510.00	20.00		0 0	0	
								point37	37	,		1,510.00	20.00			0	
								point38	38	-,		1,510.00	20.00			0	
								point39	39	,	,	1,510.00	20.00		-	-	-
Barrier8	W	0.00	99.99	0.00			0.00	point48	48			1,510.00	20.00	0.00	0 0	0	
								point13	13	3,323.7	2,163.3	1,510.00	20.00	0.00	0 0	0	
								point14	14	3,787.3	2,158.9	1,510.00	20.00	0.00	0 0	0	-
								point15	15	3,787.3	2,272.6	1,510.00	20.00				-
Barrier9	W	0.00	99.99	0.00)		0.00	point50	50	3,894.5	2,263.9	1,510.00	20.00	0.00	0 0	0	-
								point17	17	3,901.0	2,165.4	1,510.00	20.00	0.00	0 0	0	
								point18	18	4,275.0	2,158.9	1,510.00	20.00	0.00	0 0	0	-
								point46	46	6 4,272.8	2,266.0	1,510.00	20.00				
Barrier10	W	0.00	99.99	0.00			0.00	point52	52	4,323.8	2,378.3	1,510.00	20.00	0.00	0 0	0	
								point20	20	4,321.0	2,157.9	1,510.00	20.00	0.00	0 0	0	
								point21	21	4,395.4	2,160.7	1,510.00	20.00	0.00	0 0	0	
								point22	22	4,398.2	2,381.1	1,510.00	20.00				
Barrier 5	W	0.00	99.99	9 0.00			0.00	point54	54	4,086.8	2,609.8	1,510.00	20.00	0.00	0 0	0	
								point24	24	4,097.8	2,923.9	1,510.00	20.00	0.00	0 0	0	
								point25	25	6 4,340.3	2,918.4	1,510.00	20.00	0.00	0 0	0	
								point45	45	1	3,406.1	1,510.00	20.00	0.00		0	
								point26	26	,	,	1,510.00		0.00	0 0	0	
								point27	27		2,609.8	1,510.00	20.00				
Barrier7	W	0.00	99.99	0.00			0.00		56			1,510.00	20.00			0	
								point29	29			1,510.00			0 0	0	
								point30	30			1,510.00	20.00			0	
								point31	31		2,557.5	1,510.00	20.00	0.00	0 0	0	
								point33	33	3,308.6	2,342.3	1,510.00	20.00				

INPUT: BARRIERS						11092									
Barrier6	W	0.00	99.99	0.00	0.00	point58	58	3,297.8	3,093.6	1,510.00	20.00	0.00	0	0	
						point35	35	3,289.5	2,583.9	1,510.00	20.00	0.00	0	0	
						point36	36	3,355.7	2,581.1	1,510.00	20.00	0.00	0	0	
						point12	12	3,361.2	3,088.1	1,510.00	20.00				
Barrier20	W	0.00	99.99	0.00	0.00	point60	60	3,433.3	1,768.9	1,510.00	20.00	0.00	0	0	
						point41	41	3,434.4	1,876.1	1,510.00	20.00	0.00	0	0	
						point42	42	3,552.5	1,875.0	1,510.00	20.00	0.00	0	0	
						point43	43	3,552.5	1,771.1	1,510.00	20.00				
Barrier19	W	0.00	99.99	0.00	0.00	point61	61	1,708.0	2,180.4	1,530.00	0.00	0.00	0	0	
						point62	62	1,819.1	2,524.1	1,540.00	0.00	0.00	0	0	
						point63	63	1,871.2	2,975.4	1,550.00	0.00	0.00	0	0	
						point64	64	1,968.4	3,697.5	1,550.00	0.00	0.00	0	0	
						point65	65	1,975.3	4,003.0	1,540.00	0.00				
Barrier22	W	0.00	99.99	0.00	0.00	point67	67	1,779.6	1,933.4	1,530.00	20.00	0.00	0	0	
						point68	68	1,659.0	1,949.5	1,530.00	20.00	0.00	0	0	
						point69	69	1,506.3	2,035.2	1,530.00	20.00	0.00	0	0	
						point70	70	1,238.3	1,737.8	1,530.00	20.00	0.00	0	0	
						point71	71	1,160.6	1,692.2	1,530.00	20.00				
Barrier23	W	0.00	99.99	0.00	0.00	point72	72	3,063.8	3,151.9	1,510.00	20.00	0.00	0	0	
						point74	74	3,218.3	3,150.1	1,510.00	20.00	0.00	0	0	
						point75	75	3,215.2	2,869.0	1,510.00	20.00	0.00	0	0	
						point76	76	3,204.4	2,869.2	1,510.00	20.00	0.00	0	0	
						point77	77	3,204.2	2,844.6	1,510.00	20.00	0.00	0	0	
						point78	78	3,174.9	2,845.0	1,510.00	20.00	0.00	0	0	
						point79	79	3,174.2	2,780.4	1,510.00	20.00	0.00	0	0	
						point80	80	3,143.7	2,780.7	1,510.00	20.00	0.00	0	0	
						point81	81	3,143.1	2,724.9	1,510.00	20.00	0.00	0	0	
						point82	82	3,083.0	2,725.5	1,510.00	20.00	0.00	0	0	
						point83	83	3,083.5	2,776.9	1,510.00	20.00	0.00	0	0	
						point84	84	3,074.2	2,777.0	1,510.00	20.00	0.00	0	0	
						point85	85	3,074.9	2,837.7	1,510.00	20.00	0.00	0	0	
						point73	73	3,060.3	2,837.9	1,510.00	20.00				
Barrier24	W	0.00	99.99	0.00	0.00	point86	86	1,928.5	3,214.4	1,530.00	20.00	0.00	0	0	
						point88	88	1,850.4		1,530.00	20.00	0.00	0	0	
						point89	89	2,100.4	2,747.4	1,530.00	20.00	0.00	0	0	
						point90	90	2,102.1	2,782.1	1,530.00	20.00	0.00	0	0	
						point91	91	2,147.3	2,773.4	1,530.00	20.00	0.00	0	0	
						point92	92	2,192.4	2,804.7	1,530.00	20.00	0.00	0	0	
						point93	93	2,242.7	3,112.0	1,530.00	20.00	0.00	0	0	
						point94	94	2,168.1	3,122.4	1,530.00	20.00	0.00	0	0	
						point87	87	2,176.8	3,181.4	1,530.00	20.00				

INPUT: TERRAIN LINES

			1	
Dudek			5 February 2	020
M Greene			TNM 2.5	
INPUT: TERRAIN LINES				
PROJECT/CONTRACT:	11092			
RUN:	Cstcol	/Irrta Exst + P	rj w Crt Wkdy	012020
Terrain Line	Points	5		
Name	No.	Coordinates	(ground)	
		X	Y	Z
		ft	ft	ft
Terrain Line1	1	1,605.9	2,030.4	1,522.00
	2	1,685.8	2,007.1	1,522.00
	3	1,825.5	1,990.5	1,522.00
Terrain Line2	4	3,208.7	1,970.8	1,512.00
	5	3,671.8	1,962.1	1,512.00

RESULTS: SOUND LEVELS			1	1	1	1	1092	1	1	1		
Dudek							5 Februar	v 2020				
M Greene							TNM 2.5	, _0_0				
							Calculate	d with TN	1 2.5			
RESULTS: SOUND LEVELS												
PROJECT/CONTRACT:		11092										
RUN:		CstcoM	Irrta Exst +	Prj w Crt Wk	dy 012020							
BARRIER DESIGN:			HEIGHTS					Average	pavement type	shall be use	d unless	
									ighway agency			
ATMOSPHERICS:		68 deg	F, 50% RH						rent type with			
Receiver												
Name	No.	#DUs	Existing	No Barrier	-				With Barrier			
			LAeq1h	LAeq1h	<u>.</u>	Increase over	existing	Туре	Calculated	Noise Reduc	tion	
				Calculated	Crit'n	Calculated	Crit'n	Impact	LAeq1h	Calculated	Goal	Calculated
							Sub'l Inc					minus
												Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
ST1	1	1	0.0	57.7	66	57.7	10		57.7	0.0	8	-8
ST2	2	1	0.0	57.2	66	57.2	10		57.2	. 0.0	8	-8.
ST3	3	1	0.0	60.5	66	60.5	10		60.5	0.0	8	-8.
ST4	4	1	0.0	53.3	66	53.3	10		53.3	0.0	8	-8.
ST5	5	1	0.0	50.4	66	50.4	10		50.4	0.0	8	-
M1	7	1	0.0	57.0	66	57.0	10		57.0	0.0	8	-8.
Dwelling Units		# DUs	Noise Ree	duction								
			Min	Avg	Max							
			dB	dB	dB							
All Selected		6	0.0	0.0	0.0)						
All Impacted		0	0.0	0.0	0.0)						
All that meet NR Goal		0	0.0	0.0	0.0							

11092

NPUI: ROADWAIS							11092	<u> </u>			
Dudek					5 February 2	020					
M Greene					TNM 2.5	.020					
NPUT: ROADWAYS							Average	pavement typ	e shall be i	used unles	Si
PROJECT/CONTRACT:	11092						a State h	ighway ageno	cy substant	iates the u	se
RUN:	CstcoMrr	ta Exst + F	Prj w Crt	Sat 012020			of a diffe	rent type with	the approv	val of FHW	A
Roadway		Points								-	_
Name	Width	Name	No.	Coordinates	(pavement)		Flow Cor	ntrol		Segment	
				X	Y	Z	Control	Speed	Percent	Pvmt	On
							Device	Constraint	Vehicles	Туре	Struct
									Affected		
	ft			ft	ft	ft		mph	%		
Clinton Keith Road	100.0	point1	1	4,540.0	2,082.1	1,500.00)			Average	
		point3	3	1,894.7	2,071.7	1,518.00)			Average	
		point4	4	1,877.4	2,071.7	1,520.00				Average	
		point5	5	1,705.5	2,092.5	5 1,530.00)			Average	
		point6	6	1,367.1	2,194.9	1,530.00)			Average	-
		point7	7	540.4	2,474.8	1,530.00)				
I-215	120.0	point29	29	734.8	1,945.7	1,515.00				Average	
		point9	9	963.2	2,315.1	1,515.00					
I-215 NB Onramp	45.0	point31	31	-	2,190.7					Average	
		point21	21	-						Average	
		point22	22	-						Average	
		point23	23							Average	
		point24	24							Average	
		point25	25		3,730.3						
Whitewood Road	100.0	point33	33							Average	
		point27	27								
I-215 NB Offramp	45.0	point36	36		,					Average	
		point17	17							Average	
		point18	18							Average	<u> </u>
		point19	19								_
I-215-2	120.0	point39	39		,					Average	
		point10	10	-	2,754.9					Average	_
		point11	11		3,192.3					Average	-
		point12	12							Average	<u> </u>
		point13	13	1,823.9	3,918.3	1,530.00	<u> </u>			Average	

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	point14	14	1,876.4	4,123.9	1,530.00		Average
	point15	15	1,950.7	4,425.7	1,530.00		
Warm Springs Road 40.0	point40	40	2,652.7	2,103.5	1,515.00		Average
	point41	41	2,655.6	3,085.9	1,515.00		Average
	point42	42	2,702.6	3,323.4	1,515.00		

NPUT: TRAFFIC FOR LAeq1h P	ercentages		1					110	92	1			1
Dudek							5 Febru	arv 20	0				
M Greene							TNM 2.	-	-				
INPUT: TRAFFIC FOR LAeq1h I													
PROJECT/CONTRACT:	11092												
RUN:	CstcoMrrta	Exst + Pr	j w Crt Sat	01202	0								
Roadway	Points												
Name	Name	No.	Segment										
			Total	Autos	6	MTru	cks	HTru	cks	Buse	+S	Moto	rcycles
			Volume	Ρ	S	Ρ	S	Ρ	S	Ρ	S	Ρ	S
			veh/hr	%	mph	%	mph	%	mph	%	mph	%	mph
Clinton Keith Road	point1	1	3040	97	40	2	40	1	40	0	0 0	0 0) C
	point3	3	3040	97	40	2	40	1	40	0	0 0	0 0) C
	point4	4	3040	97	40	2	40	1	40	0	0 0	0 0) C
	point5	5	3040	97	40	2	40	1	40	0	0 0	0 0) C
	point6	6	3040	97	40	2	40	1	40	0	0 0	0 0) C
	point7	7											
I-215	point29	29	11700	93	65	3	65	4	65	0	0 0	0 0) C
	point9	9											
I-215 NB Onramp	point31	31	100	97	45			1	45	0	0 0	0 0) (
	point21	21	100		45			1			0 0	0 0) (
	point22	22	100	97	45			1	45	0	0 0	0 0) C
	point23	23	100	97	45			1			0 0	0 0	0 0
	point24	24	100	97	45	2	45	1	45	0	0 0	0 0	0 0
	point25	25											
Whitewood Road	point33	33		97	45	2	45	1	45	0	0 0	0 0	
	point27	27											
I-215 NB Offramp	point36	36			45						-		
	point17	17			45								-
	point18	18		97	45	2	45	1	45	0	0 0	0 0) C
	point19	19											
I-215-2	point39	39											
	point10	10											
	point11	11	11700	93	65	3	65	4	65	0	0 0	0	0 0

INPUT: TRAFFIC FOR LAeq1h P	ercentages							1109	2				
	point12	12	11700	93	65	3	65	4	65	0	0	0	0
	point13	13	11700	93	65	3	65	4	65	0	0	0	0
	point14	14	11700	93	65	3	65	4	65	0	0	0	0
	point15	15											
Warm Springs Road	point40	40	2172	97	35	2	35	1	35	0	0	0	0
	point41	41	2172	97	35	2	35	1	35	0	0	0	0
	point42	42											

INPUT: RECEIVERS							Ì	•	1092	1		
Dudek							5 February	y 2020				
M Greene							TNM 2.5					
INPUT: RECEIVERS												
PROJECT/CONTRACT:	11092											
RUN:	Cstco	Mrrta E	xst -	⊦ Prj w C	rt Sat 012020							
Receiver												
Name	No.	#DUs	Coo	rdinates	(ground)		Height	Input Sou	nd Levels	and Criteria	a	Active
			Х		Y	Z	above	Existing	Impact C	riteria	NR	in
							Ground	LAeq1h	LAeq1h	Sub'l	Goal	Calc.
			ft		ft	ft	ft	dBA	dBA	dB	dB	
ST1	1	1		1,702.5	1,982.2	1,512.00	5.00	0.00	66	6 10.0	8.0) Y
ST2	2	1		3,422.5	1,820.0	1,510.00	5.00	0.00	66	6 10.0) 8.0) Y
ST3	3	1		3,310.7	2,162.6	1,510.00	5.00	0.00	66	6 10.0	8.0	Y C
ST4	4	1		3,272.5	2,640.2	1,510.00	5.00	0.00	66	6 10.0	8.0	Y C
ST5	5	1		3,312.4	3,256.6	1,510.00	5.00	0.00	66	6 10.0	8.0	Y C
M1	7	1		4,402.0	2,379.6	1,510.00	5.00	0.00	66	6 10.0) 8.0) Y

INPUT: BARRIERS

11092

					J														
Dudek					5 Febru	ary 2020													
M Greene					TNM 2.	5													
INPUT: BARRIERS																			
PROJECT/CONTRACT:	11092																		
RUN:		Mrrta Ex	st + Pri	w Crt Sa	t 012020)													
Barrier		-	-						Points										
Name	Type	Height		If Wall	lf Berm			Add'tnl	Name	No.	Coordinates	(bottom)		Height	Segm	ent	-		
	.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		Max	\$ per	4	Тор	Run:Rise				x		z	at	Seg H		urbs	On	Importan
				Unit	Unit	Width		Unit						Point	-			Struct?	
				Area	Vol.			Length							ment				tions?
		ft	ft	\$/sq ft	\$/cu yd	ft	ft:ft	\$/ft			ft	ft	ft	ft	ft				
Barrier1	W	0.00	99.99		-			0.00	point1	1	1	2 144 9	1,510.00		0.00	0	0		
Barnorr		0.00	00.00	0.00				0.00	point2	2	0,200.2	,	1,510.00	6.00					
									point2	3	- /		1,510.00	6.00			-		
									point4	4	- ,		1,510.00	6.00			-		
									point5	5	4,413.2		1,510.00	6.00			-		
									point6	6	4,422.0		1,510.00	6.00		-	-		
Barrier11	W	0.00	99.99	0.00				0.00	point10	10			1,510.00	10.00		0	0		
									point8	8	3,289.2		1,510.00	10.00		-	-		
Barrier21	W	0.00	99.99	0.00				0.00	point11	11	3,201.5	,	1,510.00	20.00		0	0		
									point37	37	3,204.3		1,510.00	20.00			0		
									point38	38	3,413.7	1,713.9	1,510.00	20.00	0.00	0	0		
									point39	39		1,653.3	1,510.00	20.00					
Barrier8	W	0.00	99.99	0.00				0.00	point48	48		2,270.4	1,510.00	20.00	0.00	0	0		
									point13	13	3,323.7	2,163.3	1,510.00	20.00	0.00	0	0		
									point14	14	3,787.3	2,158.9	1,510.00	20.00	0.00	0	0		
									point15	15	3,787.3	2,272.6	1,510.00	20.00					
Barrier9	W	0.00	99.99	0.00				0.00	point50	50	3,894.5	2,263.9	1,510.00	20.00	0.00	0	0		
									point17	17	3,901.0	2,165.4	1,510.00	20.00	0.00	0	0		
									point18	18	4,275.0	2,158.9	1,510.00	20.00	0.00	0	0		
									point46	46	4,272.8	2,266.0	1,510.00	20.00					
Barrier10	W	0.00	99.99	0.00				0.00	point52	52	4,323.8	2,378.3	1,510.00	20.00	0.00	0	0		
									point20	20	4,321.0	2,157.9	1,510.00	20.00	0.00	0	0		
									point21	21	4,395.4		1,510.00	20.00	0.00	0	0		
									point22	22	4,398.2	2,381.1	1,510.00	20.00					
Barrier 5	W	0.00	99.99	0.00				0.00	point54	54	,		1,510.00	20.00					
									point24	24	,		1,510.00	20.00			0		
									point25	25			1,510.00	20.00			-		
									point45	45			1,510.00	20.00			-		
									point26	26	,		1,510.00	20.00		0	0		
									point27	27			1,510.00	20.00					<u> </u>
Barrier7	W	0.00	99.99	0.00				0.00	point56	56			1,510.00	20.00					<u> </u>
									point29	29			1,510.00	20.00			-		
									point30	30			1,510.00	20.00					
									point31	31	3,309.8	,	1,510.00	20.00		0	0		
									point33	33	3,308.6	2,342.3	1,510.00	20.00	1				

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INPUT: BARRIERS						11092									
Barrier6	W	0.00	99.99	0.00	0.00	point58	58	3,297.8	3,093.6	1,510.00	20.00	0.00	0	0	
						point35	35	3,289.5	2,583.9	1,510.00	20.00	0.00	0	0	
						point36	36	3,355.7	2,581.1	1,510.00	20.00	0.00	0	0	
						point12	12	3,361.2	3,088.1	1,510.00	20.00				
Barrier20	W	0.00	99.99	0.00	0.00	point60	60	3,433.3	1,768.9	1,510.00	20.00	0.00	0	0	
						point41	41	3,434.4	1,876.1	1,510.00	20.00	0.00	0	0	
						point42	42	3,552.5	1,875.0	1,510.00	20.00	0.00	0	0	
						point43	43	3,552.5	1,771.1	1,510.00	20.00				
Barrier19	W	0.00	99.99	0.00	0.00	point61	61	1,708.0	2,180.4	1,530.00	0.00	0.00	0	0	
						point62	62	1,819.1	2,524.1	1,540.00	0.00	0.00	0	0	
						point63	63	1,871.2	2,975.4	1,550.00	0.00	0.00	0	0	
						point64	64	1,968.4	3,697.5	1,550.00	0.00	0.00	0	0	
						point65	65	1,975.3	4,003.0	1,540.00	0.00				1
Barrier22	W	0.00	99.99	0.00	0.00	point67	67	1,779.6	1,933.4	1,530.00	20.00	0.00	0	0	
						point68	68	1,659.0	1,949.5	1,530.00	20.00	0.00	0	0	
						point69	69	1,506.3	2,035.2	1,530.00	20.00	0.00	0	0	-
						point70	70	1,238.3	1,737.8	1,530.00	20.00	0.00	0	0	
						point71	71	1,160.6	1,692.2	1,530.00	20.00				-
Barrier23	W	0.00	99.99	0.00	0.00	point72	72	3,063.8	3,151.9	1,510.00	20.00	0.00	0	0	
						point74	74	3,218.3	3,150.1	1,510.00	20.00	0.00	0	0	-
						point75	75	3,215.2	2,869.0	1,510.00	20.00	0.00	0	0	
						point76	76	3,204.4	2,869.2	1,510.00	20.00	0.00	0	0	
						point77	77	3,204.2	2,844.6	1,510.00	20.00	0.00	0	0	
						point78	78	3,174.9	2,845.0	1,510.00	20.00	0.00	0	0	
						point79	79	3,174.2	2,780.4	1,510.00	20.00	0.00	0	0	
						point80	80	3,143.7	2,780.7	1,510.00	20.00	0.00	0	0	
						point81	81	3,143.1	2,724.9	1,510.00	20.00	0.00	0	0	
						point82	82	3,083.0	2,725.5	1,510.00	20.00	0.00	0	0	
						point83	83	3,083.5	2,776.9	1,510.00	20.00	0.00	0	0	
						point84	84	3,074.2	2,777.0	1,510.00	20.00	0.00	0	0	
						point85	85	3,074.9	2,837.7	1,510.00	20.00	0.00	0	0	
						point73	73	3,060.3	2,837.9	1,510.00	20.00				
Barrier24	W	0.00	99.99	0.00	0.00	point86	86	1,928.5	3,214.4	1,530.00	20.00	0.00	0	0	
						point88	88	1,850.4		1,530.00	20.00	0.00	0	0	
						point89	89	2,100.4	2,747.4	1,530.00	20.00	0.00	0	0	
						point90	90	2,102.1	2,782.1	1,530.00	20.00	0.00	0	0	
						point91	91	2,147.3	2,773.4	1,530.00	20.00	0.00	0	0	
						point92	92	2,192.4	2,804.7	1,530.00	20.00	0.00	0	0	
						point93	93	2,242.7	3,112.0	1,530.00	20.00	0.00	0	0	
						point94	94	2,168.1	3,122.4	1,530.00	20.00	0.00	0	0	
						point87	87	2,176.8	3,181.4	1,530.00	20.00				1

INPUT: TERRAIN LINES

		1	1	1
Dudek			5 February 2	020
M Greene			TNM 2.5	
INPUT: TERRAIN LINES				
PROJECT/CONTRACT:	11092			
RUN:	Cstcol	/Irrta Exst + P	rj w Crt Sat 0	12020
Terrain Line	Points	5		
Name	No.	Coordinates	(ground)	
		X	Y	Z
		ft	ft	ft
Terrain Line2	1	1,605.9	2,030.4	1,522.00
	2	1,685.8	2,007.1	1,522.00
	3	1,825.5	1,990.5	1,522.00
Terrain Line3	4	3,208.7	1,970.8	1,512.00
	5	3,671.8	1,962.1	1,512.00

RESULTS: SOUND LEVELS		1	1		1	1	1092	1		1	1	
Dudek							5 Februar	v 2020				
M Greene							TNM 2.5	, _0_0				
							Calculated	d with TN	1 2.5			
RESULTS: SOUND LEVELS												
PROJECT/CONTRACT:		11092										
RUN:		CstcoM	Irrta Exst +	Prj w Crt Sat	012020							
BARRIER DESIGN:			HEIGHTS	-				Average	pavement type	shall be use	d unless	1
									ighway agency			
ATMOSPHERICS:		68 deg	F, 50% RH					of a diffe	rent type with	approval of F	HWA.	
Receiver												
Name	No.	#DUs	Existing	No Barrier					With Barrier			
		İ	LAeq1h	LAeq1h	<u>.</u>	Increase over	existing	Туре	Calculated	Noise Reduc	tion	
		ĺ		Calculated	Crit'n	Calculated	Crit'n	Impact	LAeq1h	Calculated	Goal	Calculated
							Sub'l Inc					minus
												Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
ST1	1	1	0.0	57.5	66	57.5	10		57.5	0.0	8	-8.
ST2	2	1	0.0	56.9	66	56.9	10		56.9	0.0	8	-8.
ST3	3	1	0.0	60.2	66	60.2	10		60.2	. 0.0	8	-8.
ST4	4	1	0.0	53.2	66	53.2	10		53.2	. 0.0	8	-8.
ST5	5	1	0.0	50.6	66	50.6	10		50.6	0.0	8	-
M1	7	1	0.0	56.5	66	56.5	10		56.5	0.0	8	-8.
Dwelling Units		# DUs	Noise Ree	duction								
		ĺ	Min	Avg	Max							
			dB	dB	dB							
All Selected		6	0.0	0.0	0.0							
All Impacted		0	0.0	0.0	0.0							
All that meet NR Goal		0	0.0	0.0	0.0							

11092

NPUT: ROADWATS							11092	<u> </u>			
Dudek					5 February 2	020					
M Greene					TNM 2.5	.020					
NPUT: ROADWAYS							Average	pavement typ	e shall be i	used unles	Si
PROJECT/CONTRACT:	11092						a State h	ighway ageno	cy substant	iates the u	se
RUN:	CstcoMrr	ta Ex+Prj	w/o Crt V	Vkdy 012020			of a diffe	rent type with	the approv	val of FHW	A
Roadway		Points								_	
Name	Width	Name	No.	Coordinates	(pavement)		Flow Cor	ntrol		Segment	
				Х	Y	Z	Control	Speed	Percent	Pvmt	On
							Device	Constraint	Vehicles	Туре	Struct?
									Affected		
	ft			ft	ft	ft		mph	%		
Clinton Keith Road	100.0	point1	1	4,540.0	2,082.1	1,500.00)			Average	
		point3	3	1,894.7	2,071.7	1,518.00				Average	
		point4	4	1,877.4	2,071.7	1,520.00				Average	
		point5	5	1,705.5	2,092.5	5 1,530.00)			Average	
		point6	6	1,367.1	2,194.9					Average	
		point7	7	540.4	2,474.8						
I-215	120.0	point29	29		,					Average	
		point9	9								
I-215 NB Onramp	45.0	point31	31							Average	
		point21	21	-						Average	
		point22	22	-						Average	
		point23	23							Average	
		point24	24							Average	
		point25	25		3,730.3			_			
Whitewood Road	100.0	point33	33							Average	
		point27	27					_			
I-215 NB Offramp	45.0	point36	36		,			_		Average	
		point17	17							Average	
		point18	18							Average	
1.045.0	(22.2)	point19	19								
I-215-2	120.0	point39	39		,					Average	
		point10	10		2,754.9					Average	
		point11	11		3,192.3					Average	<u> </u>
		point12	12							Average	<u> </u>
		point13	13	1,823.9	3,918.3	1,530.00				Average	

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	point14	14	1,876.4	4,123.9	1,530.00		Average
	point15	15	1,950.7	4,425.7	1,530.00		
Warm Springs Road 40.0	point40	40	2,652.7	2,103.5	1,515.00		Average
	point41	41	2,655.6	3,085.9	1,515.00		Average
	point42	42	2,702.6	3,323.4	1,515.00		

INPUT: TRAFFIC FOR LAeq1h Percentages

11092

INPUT: TRAFFIC FOR LARGIN	Percentages					1		110	92				1
Dudek							5 Febru	ary 20	1				
M Greene							TNM 2.	-					
M Greene							INW 2.)					
INPUT: TRAFFIC FOR LAeq1h													
PROJECT/CONTRACT:	11092												
RUN:	CstcoMrrta	Ex+Prj w	o Crt Wkdy	01202	20								
Roadway	Points												
Name	Name	No.	Segment										
			Total	Autos	6	MTru	cks	HTru	cks	Buse	S	Moto	rcycles
			Volume	Ρ	S	Ρ	S	Ρ	S	Ρ	S	Ρ	S
			veh/hr	%	mph	%	mph	%	mph	%	mph	%	mph
Clinton Keith Road	point1	1	3395	97	40	2	40	1	40	0	0 0	0	C
	point3	3	3395	97	40	2	40	1	40	0	0 0	0	C
	point4	4	3395	97	40	2	40	1	40	0	0	0	C
	point5	5	3395	97	40	2	40	1	40	0	0	0	C
	point6	6	3395	97	40	2	40	1	40	0	0	0	C
	point7	7											
I-215	point29	29	11700	93	65	3	65	4	65	0	0 0	0	0
	point9	9											
I-215 NB Onramp	point31	31	100		45			1			0 0	0 0	(
	point21	21	100	97	45		1	1	45	0	0 0	0	0
	point22	22	100		45				-		0 0	0 0	0
	point23	23	100	97	45			1	-		0 0	0 0	(
	point24	24	100	97	45	2	45	1	45	0	0	0	0
	point25	25											
Whitewood Road	point33	33		97	45	2	45	1	45	0	0	0	0
	point27	27											
I-215 NB Offramp	point36	36			45								
	point17	17			45				-		0 0	0 0	0
	point18	18		97	45	2	45	1	45	0	0 0	0	0
	point19	19											
I-215-2	point39	39			65								
	point10	10		93	65								
	point11	11	11700	93	65	3	65	4	65	0	0 0	0	C

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INPUT: TRAFFIC FOR LAeq1h P	Percentages							1109	2				
	point12	12	11700	93	65	3	65	4	65	0	0	0	0
	point13	13	11700	93	65	3	65	4	65	0	0	0	0
	point14	14	11700	93	65	3	65	4	65	0	0	0	0
	point15	15											
Warm Springs Road	point40	40	1843	97	35	2	35	1	35	0	0	0	0
	point41	41	1843	97	35	2	35	1	35	0	0	0	0
	point42	42											

INPUT: RECEIVERS								•	11092			
Dudek							5 February	y 2020				
M Greene							TNM 2.5					
INPUT: RECEIVERS												
PROJECT/CONTRACT:	11092					'						
RUN:	Cstco	Mrrta E	x+Prj w/o	o Cr	t Wkdy 01202)						
Receiver												
Name	No.	#DUs	Coordina	ates	(ground)		Height	Input Sou	nd Levels	and Criteri	a	Active
			X		Y	Z	above	Existing	Impact C	riteria	NR	in
							Ground	LAeq1h	LAeq1h	Sub'l	Goal	Calc.
			ft		ft	ft	ft	dBA	dBA	dB	dB	
ST1	1	1	1,7	02.5	5 1,982.2	1,512.00	5.00	0.00	66	6 10.0) 8.0) Y
ST2	2	1	3,4	22.5	1,820.0	1,510.00	5.00	0.00	66	6 10.0) 8.0	Y C
ST3	3	1	3,3	10.7	2,162.6	1,510.00	5.00	0.00	66	6 10.0) 8.0	Y C
ST4	4	1	3,2	72.5	2,640.2	1,510.00	5.00	0.00	66	6 10.0) 8.0	Y C
ST5	5	1	3,3	12.4	3,256.6	1,510.00	5.00	0.00	66	6 10.0) 8.0	Y C
M1	7	1	4,4	02.0	2,379.6	1,510.00	5.00	0.00	66	6 10.0) 8.0) Y

INPUT: BARRIERS

Dudak					E Eabra and												
Dudek					5 February 2020)											
M Greene					TNM 2.5												_
INPUT: BARRIERS																	_
PROJECT/CONTRACT:	11092	2															
RUN:	Cstco	Mrrta Ex	(+Prj w/c	Crt Wk	dy 012020												
Barrier		-						Points									
Name	Туре	Height		If Wall	If Berm		Add'tnl	Name	No.	Coordinat	es (bottom)		Height	Segm	ent		
		Min	Max	\$ per	\$ per Top	Run:Rise	\$ per			Х	Y	Z	at	Seg H	t Pertur	bs On	Importar
			Ì	Unit	Unit Width		Unit					Ì	Point	Incre-	#Up #	Dn Struct	? Reflec-
			Ì	Area	Vol.		Length					Ì	İ	ment		ĺ	tions?
		ft	ft	\$/sq ft	\$/cu yd ft	ft:ft	\$/ft			ft	ft	ft	ft	ft			
Barrier1	W	0.00	99.99	0.00)		0.00	point1	1	3,293	.2 2,144.9	1,510.00	6.00	0.00	0	0	
								point2	2	3,80	.1 2,135.3	1,510.00	6.00	0.00	0	0	
								point3	3	3,89		2 1,510.00		0.00	0	0	
								point4	4	4,384	.6 2,142.2	2 1,510.00	6.00	0.00	0	0	-
								point5	5			1,510.00	6.00	0.00	0	0	1
								point6	6	4,422	.0 3,547.7	1,510.00	6.00				
Barrier11	W	0.00	99.99	0.00			0.00	point10	10	3,293	.3 2,145.3	1,510.00	10.00	0.00	0 0	0	
								point8	8	3,289	.2 2,570.5	5 1,510.00	10.00				
Barrier21	W	0.00	99.99	0.00			0.00	point11	11			5 1,510.00	20.00	0.00	0 0	0	
								point37	37	3,204	.3 1,713.9	1,510.00	20.00	0.00	0	0	
								point38	38	3,413	.7 1,713.9	1,510.00	20.00	0.00	0	0	-
								point39	39	3,41	.0 1,653.3	3 1,510.00	20.00				
Barrier8	W	0.00	99.99	0.00			0.00	point48	48			1,510.00	20.00	0.00	0	0	-
								point13	13	3,323	.7 2,163.3	1,510.00	20.00	0.00	0	0	
								point14	14	3,787	.3 2,158.9	1,510.00	20.00	0.00	0	0	
								point15	15	3,787	.3 2,272.6	6 1,510.00	20.00				
Barrier9	W	0.00	99.99	0.00			0.00	point50	50	3,894	.5 2,263.9	1,510.00	20.00	0.00	0	0	-
								point17	17	3,90	.0 2,165.4	1,510.00	20.00	0.00	0	0	-
								point18	18	4,275	.0 2,158.9	1,510.00	20.00	0.00	0	0	
								point46	46	4,272	.8 2,266.0	1,510.00	20.00				
Barrier10	W	0.00	99.99	0.00			0.00	point52	52	4,323	.8 2,378.3	1,510.00	20.00	0.00	0	0	
								point20	20	4,32	.0 2,157.9	1,510.00	20.00	0.00	0	0	
								point21	21	4,395	.4 2,160.7	1,510.00	20.00	0.00	0	0	
								point22	22	4,398	.2 2,381.7	1,510.00	20.00				
Barrier 5	W	0.00	99.99	0.00			0.00	point54	54	4,086	.8 2,609.8	1,510.00	20.00	0.00	0	0	
								point24	24	4,097	.8 2,923.9	1,510.00	20.00	0.00	0	0	
								point25	25	4,340	.3 2,918.4	1,510.00	20.00	0.00	0	0	
								point45	45	4,343	.1 3,406.1	1,510.00	20.00	0.00	0	0	
								point26	26		.5 3,411.6	6 1,510.00	20.00	0.00	0	0	
								point27	27	3,422	.8 2,609.8	8 1,510.00	20.00				
Barrier7	W	0.00	99.99	0.00			0.00	point56	56	3,305	.6 2,340.4	1,510.00	20.00	0.00	0	0	
								point29	29	4,282	.4 2,337.0	1,510.00	20.00	0.00	0	0	
								point30	30	4,276	.9 2,546.4	1,510.00	20.00	0.00	0	0	
								point31	31	3,309	.8 2,557.5	5 1,510.00	20.00	0.00	0	0	
								point33	33	3,308	.6 2,342.3	1,510.00	20.00				

INPUT: BARRIERS						11092									
Barrier6	W	0.00	99.99	0.00	0.00	point58	58	3,297.8	3,093.6	1,510.00	20.00	0.00	0	0	
						point35	35	3,289.5	2,583.9	1,510.00	20.00	0.00	0	0	
						point36	36	3,355.7	2,581.1	1,510.00	20.00	0.00	0	0	
						point12	12	3,361.2	3,088.1	1,510.00	20.00				
Barrier20	W	0.00	99.99	0.00	0.00	point60	60	3,433.3	1,768.9	1,510.00	20.00	0.00	0	0	
						point41	41	3,434.4	1,876.1	1,510.00	20.00	0.00	0	0	
						point42	42	3,552.5	1,875.0	1,510.00	20.00	0.00	0	0	
						point43	43	3,552.5	1,771.1	1,510.00	20.00				
Barrier19	W	0.00	99.99	0.00	0.00	point61	61	1,708.0	2,180.4	1,530.00	0.00	0.00	0	0	
						point62	62	1,819.1	2,524.1	1,540.00	0.00	0.00	0	0	
						point63	63	1,871.2	2,975.4	1,550.00	0.00	0.00	0	0	
						point64	64	1,968.4	3,697.5	1,550.00	0.00	0.00	0	0	
						point65	65	1,975.3	4,003.0	1,540.00	0.00				1
Barrier22	W	0.00	99.99	0.00	0.00	point67	67	1,779.6	1,933.4	1,530.00	20.00	0.00	0	0	
						point68	68	1,659.0	1,949.5	1,530.00	20.00	0.00	0	0	
						point69	69	1,506.3	2,035.2	1,530.00	20.00	0.00	0	0	
						point70	70	1,238.3	1,737.8	1,530.00	20.00	0.00	0	0	
						point71	71	1,160.6	1,692.2	1,530.00	20.00				
Barrier23	W	0.00	99.99	0.00	0.00	point72	72	3,063.8	3,151.9	1,510.00	20.00	0.00	0	0	
						point74	74	3,218.3	3,150.1	1,510.00	20.00	0.00	0	0	
						point75	75	3,215.2	2,869.0	1,510.00	20.00	0.00	0	0	
						point76	76	3,204.4	2,869.2	1,510.00	20.00	0.00	0	0	
						point77	77	3,204.2	2,844.6	1,510.00	20.00	0.00	0	0	
						point78	78	3,174.9	2,845.0	1,510.00	20.00	0.00	0	0	
						point79	79	3,174.2	2,780.4	1,510.00	20.00	0.00	0	0	
						point80	80	3,143.7	2,780.7	1,510.00	20.00	0.00	0	0	
						point81	81	3,143.1	2,724.9	1,510.00	20.00	0.00	0	0	
						point82	82	3,083.0	2,725.5	1,510.00	20.00	0.00	0	0	
						point83	83	3,083.5	2,776.9	1,510.00	20.00	0.00	0	0	
						point84	84	3,074.2	2,777.0	1,510.00	20.00	0.00	0	0	
						point85	85	3,074.9	2,837.7	1,510.00	20.00	0.00	0	0	
						point73	73	3,060.3	2,837.9	1,510.00	20.00				
Barrier24	W	0.00	99.99	0.00	0.00	point86	86	1,928.5	3,214.4	1,530.00	20.00	0.00	0	0	
						point88	88	1,850.4		1,530.00	20.00	0.00	0	0	
						point89	89	2,100.4	2,747.4	1,530.00	20.00	0.00	0	0	
						point90	90	2,102.1	2,782.1	1,530.00	20.00	0.00	0	0	
						point91	91	2,147.3	2,773.4	1,530.00	20.00	0.00	0	0	
						point92	92	2,192.4	2,804.7	1,530.00	20.00	0.00	0	0	
						point93	93	2,242.7	3,112.0	1,530.00	20.00	0.00	0	0	
						point94	94	2,168.1	3,122.4	1,530.00	20.00	0.00	0	0	
						point87	87	2,176.8	3,181.4	1,530.00	20.00				

INPUT: TERRAIN LINES

		1	1	1						
Dudek			5 February 2	020						
M Greene			TNM 2.5							
INPUT: TERRAIN LINES										
PROJECT/CONTRACT:	11092									
RUN:	CstcoMrrta Ex+Prj w/o Crt Wkdy 012020									
Terrain Line	Points	; ;								
Name	No.	Coordinates	(ground)							
		X	Y	Z						
		ft	ft	ft						
Terrain Line1	1	1,605.9	2,030.4	1,522.00						
	2	1,685.8	2,007.1	1,522.00						
	3	1,825.5	1,990.5	1,522.00						
Terrain Line2	4	3,208.7	1,970.8	1,512.00						
	5	3,671.8	1,962.1	1,512.00						

RESULTS: SOUND LEVELS			1	1	1	1	1092	1		i		1
Dudek							5 Februar	v 2020				
M Greene							TNM 2.5	,				
							Calculated	d with TNI	VI 2.5			
RESULTS: SOUND LEVELS												
PROJECT/CONTRACT:		11092										
RUN:		CstcoM	Irrta Ex+Pr	j w/o Crt Wkd	y 012020							
BARRIER DESIGN:		INPUT	HEIGHTS					Average	pavement type	e shall be use	d unless	
								a State h	ighway agency	y substantiate	es the use	
ATMOSPHERICS:		68 deg	F, 50% RH					of a diffe	rent type with	approval of F	HWA.	
Receiver												
Name	No.	#DUs	Existing	No Barrier					With Barrier			
		ĺ	LAeq1h	LAeq1h		Increase over	existing	Туре	Calculated	Noise Reduc	tion	
				Calculated	Crit'n	Calculated	Crit'n	Impact	LAeq1h	Calculated	Goal	Calculated
							Sub'l Inc					minus
												Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
ST1	1	1	0.0	57.8	66	57.8	10		57.8	0.0	8	-8
ST2	2	1	0.0	57.3	66	57.3	10		57.3	0.0	8	-8.
ST3	3	1	0.0	60.7	66	60.7	10		60.7	0.0	8	-8
ST4	4	1	0.0	53.5	66	53.5	10		53.5	0.0	8	-8.
ST5	5	1	0.0	50.5	66	50.5	10		50.5	0.0	8	-
M1	7	1	0.0	57.0	66	57.0	10		57.0	0.0	8	-8
Dwelling Units		# DUs	Noise Ree	duction								
		ĺ	Min	Avg	Max							
			dB	dB	dB							
All Selected		6	0.0	0.0	0.0)						
All Impacted		0	0.0	0.0	0.0)						
All that meet NR Goal		0	0.0	0.0	0.0							

11092

NPUI: ROADWAIS		1					11092	<u> </u>			
Dudek					5 February 2	020					
M Greene					TNM 2.5	.020					
NPUT: ROADWAYS							Average	pavement typ	e shall be i	used unles	s
PROJECT/CONTRACT:	11092						a State h	ighway ageno	cy substant	iates the u	se
RUN:	CstcoMrr	ta Ex+Prj	w/o Crt S	Sat 012020			of a diffe	rent type with	the approv	val of FHW	A
Roadway		Points					<u> </u>			_	
Name	Width	Name	No.	Coordinates	(pavement)		Flow Cor	ntrol		Segment	
				X	Y	Z	Control	Speed	Percent	Pvmt	On
							Device	Constraint	Vehicles	Туре	Struct
									Affected		
	ft			ft	ft	ft		mph	%		
Clinton Keith Road	100.0	point1	1	4,540.0	2,082.1	1,500.00)			Average	
		point3	3	1,894.7	2,071.7	1,518.00				Average	
		point4	4	1,877.4	2,071.7	1,520.00				Average	
		point5	5	1,705.5	2,092.5	5 1,530.00)			Average	
		point6	6	1,367.1	2,194.9					Average	
		point7	7	540.4	2,474.8						
I-215	120.0	point29	29		,					Average	
		point9	9								
I-215 NB Onramp	45.0		31							Average	
		point21	21							Average	
		point22	22	-						Average	
		point23	23							Average	
		point24	24							Average	
		point25	25		3,730.3			_			
Whitewood Road	100.0	point33	33							Average	
		point27	27								
I-215 NB Offramp	45.0		36		,					Average	
		point17	17							Average	
		point18	18							Average	
1.045.0		point19	19								
I-215-2	120.0	point39	39		,					Average	
		point10	10	-	2,754.9					Average	
		point11	11		3,192.3					Average	
		point12	12							Average	
		point13	13	1,823.9	3,918.3	1,530.00				Average	

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	point14	14	1,876.4	4,123.9	1,530.00	Average	
	point15	15	1,950.7	4,425.7	1,530.00		
Warm Springs Road 40	0 point40	40	2,652.7	2,103.5	1,515.00	Average	
	point41	41	2,655.6	3,085.9	1,515.00	Average	
	point42	42	2,702.6	3,323.4	1,515.00		

11092

NPUT: TRAFFIC FOR LACOT	Percentages					1	1	110	92	1			
Dudek							5 Febru	arv 2(]				
M Greene							TNM 2.	-			-		
W Greene)					
INPUT: TRAFFIC FOR LAeq1h	Percentages												
PROJECT/CONTRACT:	11092												
RUN:	CstcoMrrta	Ex+Prj w	o Crt Sat 0	12020									
Roadway	Points												
Name	Name	No.	Segment										
			Total	Autos	5	MTru	cks	HTru	cks	Buse	S	Moto	rcycles
			Volume	Ρ	S	Ρ	S	Ρ	S	Ρ	S	Ρ	S
			veh/hr	%	mph	%	mph	%	mph	%	mph	%	mph
Clinton Keith Road	point1	1	3215	97	40	2	40	1	40	0	0 0	0 0	(
	point3	3	3215	97	40	2	40	1	40	0	0 0	0 0	(
	point4	4	3215	97	40	2	40	1	40	0	0 0	0 0	(
	point5	5	3215	97	40	2	40	1	40	0	0 0	0 0	(
	point6	6	3215	97	40	2	40	1	40	0	0 0	0 0	(
	point7	7											
I-215	point29	29	11700	93	65	3	65	4	65	0	0 0	0 0	(
	point9	9											
I-215 NB Onramp	point31	31	100		45			1			0 0	0 0	(
	point21	21	100		45			1	-		0 0	0 0	0
	point22	22			45				-		0 0	0 0	0
	point23	23			45			1	-		0 0	0 0	
	point24	24	100	97	45	2	45	1	45	0	0 0	0 0	0
	point25	25											
Whitewood Road	point33	33		97	45	2	45	1	45	0	0 0	0 0	(
	point27	27											
I-215 NB Offramp	point36	36			45				-	-	-		
	point17	17			45				-				
	point18	18		97	45	2	45	1	45	0	0 0	0 0	(
	point19	19									<u> </u>	<u> </u>	
I-215-2	point39	39											
	point10	10											
	point11	11	11700	93	65	3	65	4	65	0	0 0	0 0	0

C:\TNM25\Project Files\Costco Murrieta PN 11092\Ex+Prj wo Crtn Sat 012020

INPUT: TRAFFIC FOR LAeq1h P	Percentages							1109	2				
	point12	12	11700	93	65	3	65	4	65	0	0	0	0
	point13	13	11700	93	65	3	65	4	65	0	0	0	0
	point14	14	11700	93	65	3	65	4	65	0	0	0	0
	point15	15											
Warm Springs Road	point40	40	2414	97	35	2	35	1	35	0	0	0	0
	point41	41	2414	97	35	2	35	1	35	0	0	0	0
	point42	42											

INPUT: RECEIVERS									11092			
Dudek							5 Februa	ary 2020				
M Greene							TNM 2.5					
INPUT: RECEIVERS												
PROJECT/CONTRACT:	11092											
RUN:	Cstco	Mrrta E	x+Prj w/o	Crt Sa	at 012020							
Receiver												
Name	No.	#DUs	Coordinat	es (gi	round)		Height	Input Sou	nd Levels	and Criteria	a	Active
			Х	Y		Z	above	Existing	Impact Cr	iteria	NR	in
							Ground	LAeq1h	LAeq1h	Sub'l	Goal	Calc.
			ft	ft		ft	ft	dBA	dBA	dB	dB	
ST1		1	1,70	2.5	1,982.2	1,512.0	0 5.0	0.00	66	10.0	8.0) Y
ST2	2	2 1	3,42	2.5	1,820.0	1,510.0	0 5.0	0.00	66	6 10.0	8.0) Y
ST3	3	3 1	3,31	0.7	2,162.6	1,510.0	0 5.0	0.00	66	10.0	8.0) Y
ST4	2	l 1	3,27	2.5	2,640.2	1,510.0	0 5.0	0.00	66	10.0	8.0) Y
ST5	Ę	5 1	3,31	2.4	3,256.6	1,510.0	0 5.0	0.00	66	10.0	8.0) Y
M1	7	7 1	4,40	2.0	2,379.6	1,510.0	0 5.0	0.00	66	6 10.0	8.0) Y

Dudek					5 February 2020)											
M Greene					TNM 2.5												
INPUT: BARRIERS																	
PROJECT/CONTRACT:	11092	2															
RUN:	Cstco	Mrrta Ex	c+Prj w/c	Crt Sat	012020												
Barrier		-	-	_				Points									
Name	Type	Height		If Wall	If Berm		Add'tnl	Name	No.	Coordinates	(bottom)		Height	Segm	ent		_
		Min	Max	\$ per	\$ per Top	Run:Rise	\$ per			х		z	at	-	t Pertur	bs On	Importar
			Ì	Unit	Unit Width		Unit						Point	Incre-	#Up #	Dn Struct	? Reflec-
				Area	Vol.		Length		ĺ					ment			tions?
		ft	ft	\$/sq ft	\$/cu yd ft	ft:ft	\$/ft			ft	ft	ft	ft	ft			
Barrier1	W	0.00	99.99	0.00			0.00	point1	1	3,293.2	2,144.9	1,510.00	6.00	0.00	0	0	
								point2	2	3,801.1	2,135.3	1,510.00	6.00	0.00	0	0	
								point3	3	3,891.6	2,142.2	1,510.00	6.00	0.00	0	0	
								point4	4	4,384.6	2,142.2	1,510.00	6.00	0.00	0	0	
								point5	5	4,413.2	2,143.7	1,510.00	6.00	0.00	0	0	
								point6	6	4,422.0	3,547.7	1,510.00	6.00				
Barrier11	W	0.00	99.99	0.00			0.00	point10	10	3,293.3	2,145.3	1,510.00	10.00	0.00	0	0	
								point8	8	3,289.2	2,570.5	1,510.00	10.00				
Barrier21	W	0.00	99.99	0.00			0.00	point11	11	-,	1,661.5	1,510.00	20.00	0.00	0	0	
								point37	37	,	1,713.9	1,510.00	20.00	0.00	0	0	
								point38	38	,		1,510.00	20.00	0.00	0	0	
								point39	39	,		1,510.00	20.00				
Barrier8	W	0.00	99.99	0.00)		0.00		48			1,510.00	20.00	0.00		0	
								point13	13	,	,	1,510.00	20.00	0.00		0	
								point14	14	-,		1,510.00	20.00	0.00	0	0	
								point15	15	,		1,510.00	20.00				
Barrier9	W	0.00	99.99	0.00			0.00		50	,		1,510.00	20.00	0.00		0	
								point17	17	,		1,510.00	20.00	0.00		0	
								point18	18	,		1,510.00	20.00	0.00	0	0	
								point46	46			1,510.00	20.00				
Barrier10	W	0.00	99.99	0.00			0.00		52			1,510.00	20.00	0.00		0	
								point20	20	,	,	1,510.00	20.00	0.00		0	
								point21	21	,		1,510.00	20.00	0.00	0	0	
Derrier	W	0.00		0.00			0.00	point22	22	,		1,510.00	20.00	0.00		0	
Barrier 5	vv	0.00	99.99	0.00			0.00		54 24	,		1,510.00	20.00	0.00		0	-
								point24		,		1,510.00				0	
								point25	25 45		2,918.4	1,510.00	20.00	0.00		0	
								point45 point26	26	,	,	1,510.00	20.00	0.00		0	
								point26	20	,		1,510.00	20.00	0.00	U	U	
Barrier7	W	0.00	99.99	0.00			0.00		56	,		1,510.00	20.00	0.00	0	0	
	vv	0.00	99.95	0.00			0.00	point29	29			1,510.00	20.00	0.00		0	
								point29 point30	30			1,510.00	20.00	0.00		0	
								point31	30			1,510.00	20.00	0.00		0	
								point33	33		,	1,510.00		0.00	U U		

INPUT: BARRIERS						11092									
Barrier6	W	0.00	99.99	0.00	0.00	point58	58	3,297.8	3,093.6	1,510.00	20.00	0.00	0	0	
						point35	35	3,289.5	2,583.9	1,510.00	20.00	0.00	0	0	
						point36	36	3,355.7	2,581.1	1,510.00	20.00	0.00	0	0	
						point12	12	3,361.2	3,088.1	1,510.00	20.00				
Barrier20	W	0.00	99.99	0.00	0.00	point60	60	3,433.3	1,768.9	1,510.00	20.00	0.00	0	0	
						point41	41	3,434.4	1,876.1	1,510.00	20.00	0.00	0	0	
						point42	42	3,552.5	1,875.0	1,510.00	20.00	0.00	0	0	
						point43	43	3,552.5	1,771.1	1,510.00	20.00				
Barrier19	W	0.00	99.99	0.00	0.00	point61	61	1,708.0	2,180.4	1,530.00	0.00	0.00	0	0	
						point62	62	1,819.1	2,524.1	1,540.00	0.00	0.00	0	0	
						point63	63	1,871.2	2,975.4	1,550.00	0.00	0.00	0	0	
						point64	64	1,968.4	3,697.5	1,550.00	0.00	0.00	0	0	
						point65	65	1,975.3	4,003.0	1,540.00	0.00				
Barrier22	W	0.00	99.99	0.00	0.00	point67	67	1,779.6	1,933.4	1,530.00	20.00	0.00	0	0	
						point68	68	1,659.0	1,949.5	1,530.00	20.00	0.00	0	0	
						point69	69	1,506.3	2,035.2	1,530.00	20.00	0.00	0	0	
						point70	70	1,238.3	1,737.8	1,530.00	20.00	0.00	0	0	
						point71	71	1,160.6	1,692.2	1,530.00	20.00				
Barrier23	W	0.00	99.99	0.00	0.00	point72	72	3,063.8	3,151.9	1,510.00	20.00	0.00	0	0	
						point74	74	3,218.3	3,150.1	1,510.00	20.00	0.00	0	0	
						point75	75	3,215.2	2,869.0	1,510.00	20.00	0.00	0	0	
						point76	76	3,204.4	2,869.2	1,510.00	20.00	0.00	0	0	
						point77	77	3,204.2	2,844.6	1,510.00	20.00	0.00	0	0	
						point78	78	3,174.9	2,845.0	1,510.00	20.00	0.00	0	0	
						point79	79	3,174.2	2,780.4	1,510.00	20.00	0.00	0	0	
						point80	80	3,143.7	2,780.7	1,510.00	20.00	0.00	0	0	
						point81	81	3,143.1	2,724.9	1,510.00	20.00	0.00	0	0	
						point82	82	3,083.0	2,725.5	1,510.00	20.00	0.00	0	0	
						point83	83	3,083.5	2,776.9	1,510.00	20.00	0.00	0	0	
						point84	84	3,074.2	2,777.0	1,510.00	20.00	0.00	0	0	
						point85	85	3,074.9	2,837.7	1,510.00	20.00	0.00	0	0	
						point73	73	3,060.3	2,837.9	1,510.00	20.00				
Barrier24	W	0.00	99.99	0.00	0.00	point86	86	1,928.5	3,214.4	1,530.00	20.00	0.00	0	0	
						point88	88	1,850.4		1,530.00	20.00	0.00	0	0	
						point89	89	2,100.4	2,747.4	1,530.00	20.00	0.00	0	0	
						point90	90	2,102.1	2,782.1	1,530.00	20.00	0.00	0	0	
						point91	91	2,147.3	2,773.4	1,530.00	20.00	0.00	0	0	
						point92	92	2,192.4	2,804.7	1,530.00	20.00	0.00	0	0	
						point93	93	2,242.7	3,112.0	1,530.00	20.00	0.00	0	0	
						point94	94	2,168.1	3,122.4	1,530.00	20.00	0.00	0	0	
						point87	87	2,176.8	3,181.4	1,530.00	20.00				

		1	1	
Dudek			5 February 2	020
M Greene			TNM 2.5	
INPUT: TERRAIN LINES				
PROJECT/CONTRACT:	11092			
RUN:	Cstcol	/Irrta Ex+Prj v	v/o Crt Sat 01	2020
Terrain Line	Points	; ;		
Name	No.	Coordinates	(ground)	
		X	Y	Z
		ft	ft	ft
Terrain Line1	1	1,605.9	2,030.4	1,522.00
	2	1,685.8	2,007.1	1,522.00
	3	1,825.5	1,990.5	1,522.00
Terrain Line2	4	3,208.7	1,970.8	1,512.00
	5	3,671.8	1,962.1	1,512.00

RESULTS: SOUND LEVELS	[1			1	1092	1		ï	1	1
Dudek							5 Februar	v 2020				
M Greene							TNM 2.5	,				
							Calculated	d with TNI	VI 2.5			
RESULTS: SOUND LEVELS												
PROJECT/CONTRACT:		11092										
RUN:		CstcoM	Irrta Ex+Pr	w/o Crt Sat (12020							
BARRIER DESIGN:		INPUT	HEIGHTS					Average	pavement type	e shall be use	d unless	
								a State h	ighway agency	y substantiate	es the use	
ATMOSPHERICS:		68 deg	F, 50% RH					of a diffe	rent type with	approval of F	HWA.	
Receiver		·										
Name	No.	#DUs	Existing	No Barrier					With Barrier			
			LAeq1h	LAeq1h		Increase over	existing	Туре	Calculated	Noise Reduc	tion	
				Calculated	Crit'n	Calculated	Crit'n	Impact	LAeq1h	Calculated	Goal	Calculated
							Sub'l Inc					minus
												Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
ST1	1	1	0.0	57.7	66	57.7	10		57.7	0.0	8	-8.
ST2	2	1	0.0	57.1	66	57.1	10		57.1	0.0	8	-8.
ST3	3	1	0.0	60.5	66	60.5	10		60.5	0.0	8	-8.
ST4	4	1	0.0	53.4	66	53.4	10		53.4	0.0	8	-8.
ST5	5	1	0.0	50.6	66	50.6	10		50.6	0.0	8	-
M1	7	1	0.0	56.6	66	56.6	10		56.6	0.0	8	-8
Dwelling Units		#DUs	Noise Ree	duction								
			Min	Avg	Мах							
			dB	dB	dB							
All Selected		6	0.0	0.0	0.0)						
All Impacted		0	0.0	0.0	0.0)						
All that meet NR Goal		0	0.0	0.0	0.0							

		1			1	1	11052	•			-
Dudek					5 February 2	020					
M Greene					TNM 2.5	020					
NPUT: ROADWAYS							Average	pavement typ	e shall be i	isod unlos	c:
PROJECT/CONTRACT:	11092						-	ighway agenc			
RUN:		rta 2021 w	InPrcs \	Vkdy 012020				rent type with	-		
Roadway		Points									
Name	Width	Name	No.	Coordinates	(pavement)		Flow Cor	ntrol		Segment	
				X	Y	Z	Control	Speed	Percent	Pvmt	On
							Device	Constraint	Vehicles	Туре	Struct
									Affected		
	ft			ft	ft	ft		mph	%		
Clinton Keith Road	100.0	point1	1	4,540.0	2,082.1	1,500.00				Average	
		point3	3	1,894.7	2,071.7	1,518.00				Average	
		point4	4	1,877.4	2,071.7	1,520.00				Average	
		point5	5	1,705.5	2,092.5					Average	
		point6	6	1,367.1	2,194.9	1,530.00				Average	
		point7	7	540.4	2,474.8						
I-215	120.0	point29	29		,					Average	
		point9	9		,						
I-215 NB Onramp	45.0	point31	31							Average	
		point21	21	-						Average	
		point22	22							Average	
		point23	23							Average	
		point24	24	-						Average	
		point25	25		3,730.3						
Whitewood Road	100.0	point33	33							Average	
		point27	27								
I-215 NB Offramp	45.0	point36	36		,					Average	
		point17	17							Average	
		point18	18							Average	
		point19	19								
I-215-2	120.0	point39	39							Average	
		point10	10	-						Average	
		point11	11	-						Average	
		point12	12							Average	
		point13	13	1,823.9	3,918.3	1,530.00				Average	

	point14	14	1,876.4	4,123.9	1,530.00		Average
	point15	15	1,950.7	4,425.7	1,530.00		
Warm Springs Road 40.0	point40	40	2,652.7	2,103.5	1,515.00		Average
	point41	41	2,655.6	3,085.9	1,515.00		Average
	point42	42	2,702.6	3,323.4	1,515.00		

INPUT: TRAFFIC FOR LAeq1h Percentages

INPUT: TRAFFIC FUR LARGIN P	ercentages		1					110	92				
Dudek							5 Cobru	 					
							5 Febru						
M Greene							TNM 2.	5					
INPUT: TRAFFIC FOR LAeq1h F	Percentages												
PROJECT/CONTRACT:	11092												_
RUN:	Cstco Mrrta	2021 w l	nPrcs Wkdy	/ 0120	20								
Roadway	Points												
Name	Name	No.	Segment										
			Total	Auto	S	MTru	cks	HTru	cks	Buse	es es	Moto	rcycles
			Volume	Ρ	S	Ρ	S	Ρ	S	Ρ	S	Ρ	S
			veh/hr	%	mph	%	mph	%	mph	%	mph	%	mph
Clinton Keith Road	point1	1	3637	97	40	2	40	1	40	0) C) () (
	point3	3	3637	97	40	2	40	1	40	0) C) () (
	point4	4	3637	97	40	2	40	1	40	0) C) () (
	point5	5	3637	97	40	2	40	1	40	0) C) () (
	point6	6	3637	97	40	2	40	1	40	0) C) () (
	point7	7											
I-215	point29	29	11700	93	65	3	65	4	65	0) C) () (
	point9	9											
I-215 NB Onramp	point31	31	100	97	45			1	45	0) C) () (
	point21	21	100					1	-) C) () (
	point22	22	100					1	45	0	0 0) () (
	point23	23	100						-) C) () (
	point24	24	100	97	45	2	45	1	45	0) C) () (
	point25	25											
Whitewood Road	point33	33		97	45	2	45	1	45	0) C) () (
	point27	27											
I-215 NB Offramp	point36	36							-	_	-		
	point17	17							-	_) C) () (
	point18	18		97	45	2	45	1	45	0	0 0) () (
	point19	19											
I-215-2	point39	39								_	-		
	point10	10											
	point11	11	11700	93	65	3	65	4	65	0) C) () (

INPUT: TRAFFIC FOR LAeq1h P	Percentages							1109	2				
	point12	12	11700	93	65	3	65	4	65	0	0	0	0
	point13	13	11700	93	65	3	65	4	65	0	0	0	0
	point14	14	11700	93	65	3	65	4	65	0	0	0	0
	point15	15											
Warm Springs Road	point40	40	118	97	35	2	35	1	35	0	0	0	0
	point41	41	118	97	35	2	35	1	35	0	0	0	0
	point42	42											

INPUT: RECEIVERS							•	1092			
Dudek						5 February	y 2020				
M Greene						TNM 2.5					
INPUT: RECEIVERS											
PROJECT/CONTRACT:	11092										
RUN:	Cstco	Mrrta 2	2021 w InPrcs	Wkdy 01202	0						
Receiver											
Name	No.	#DUs	Coordinates	(ground)		Height	Input Sou	nd Levels a	and Criteria	a	Active
			X	Y	Z	above	Existing	Impact Cr	iteria	NR	in
						Ground	LAeq1h	LAeq1h	Sub'l	Goal	Calc.
			ft	ft	ft	ft	dBA	dBA	dB	dB	
ST1	1	1	1,702.5	1,982.2	1,512.00	5.00	0.00	66	10.0	8.0) Y
ST2	2	1	3,422.5	1,820.0	1,510.00	5.00	0.00	66	10.0	8.0) Y
ST3	3	1	3,310.7	2,162.6	1,510.00	5.00	0.00	66	10.0	8.0) Y
ST4	4	1	3,272.5	2,640.2	1,510.00	5.00	0.00	66	10.0	8.0) Y
ST5	5	1	3,312.4	3,256.6	1,510.00	5.00	0.00	66	10.0	8.0) Y
M1	7	1	4,402.0	2,379.6	1,510.00	5.00	0.00	66	6 10.0	8.0) Y

11092

									ĺ				1	1				
Dudek					5 February 202	0												
M Greene					TNM 2.5	0												
M Greene					111111 2.5													
INPUT: BARRIERS																		
PROJECT/CONTRACT:	11092	2			1													
RUN:	Cstco	Mrrta 20	021 w In	Prcs Wk	dy 012020													
Barrier					1			Points										
Name	Туре	Height		If Wall	If Berm		Add'tnl	Name	No.	Coordinates	(bottom)		Height	Segm	ent			
		Min	Max	\$ per	\$ per Top	Run:Rise	\$ per			х		z	at	Seg H		urbs	On	Importan
			İ	Unit	Unit Width		Unit						Point	Incre-	#Up	#Dn	Struct?	Reflec-
			ĺ	Area	Vol.		Length		İ				ĺ	ment				tions?
		ft	ft	\$/sq ft	\$/cu yd ft	ft:ft	\$/ft			ft	ft 1	ft	ft	ft				
Barrier1	W	0.00	99.99	0.00)		0.00	point1	1	3,293.2	2,144.9	1,510.00	6.00	0.00	0 0	0)	
								point2	2	3,801.1	2,135.3	1,510.00	6.00	0.00	0 0	0		
								point3	3	3,891.6	2,142.2	1,510.00	6.00	0.00	0 0	0		
								point4	4	4,384.6	2,142.2	1,510.00	6.00	0.00	0 0	0		
								point5	5	4,413.2	2,143.7	1,510.00	6.00	0.00	0 0	0		
								point6	6	4,422.0	3,547.7	1,510.00	6.00					
Barrier11	W	0.00	99.99	0.00			0.00	point10	10	3,293.3	2,145.3	1,510.00	10.00	0.00	0 0	0		
								point8	8	3,289.2	2,570.5	1,510.00	10.00					
Barrier21	W	0.00	99.99	0.00			0.00	point11	11	3,201.5	1,661.5		20.00					
								point37	37	-,	1,713.9		20.00	0.00		-		
								point38	38	,	1,713.9	,	20.00	0.00	0 0	0		
								point39	39			1,510.00	20.00					
Barrier8	W	0.00	99.99	0.00			0.00		48		2,270.4		20.00					
								point13	13		2,163.3		20.00	0.00				
								point14	14	3,787.3	2,158.9		20.00	-	0 0	0		
								point15	15		2,272.6		20.00					
Barrier9	W	0.00	99.99	0.00			0.00	H .	50	,		1,510.00	20.00	-				
								point17	17		2,165.4		20.00					
								point18 point46	18 46		2,158.9		20.00		0 0	0		
Barrier10	W	0.00	99.99	0.00			0.00		40 52		2,266.0 2,378.3		20.00		0 0	0		
Barrier TU	vv	0.00	99.95	0.00	/		0.00	point20	20	,	2,378.3	,	20.00					
								point20 point21	20	,	2,157.9		20.00					
			-	+				point21	21	,		1,510.00	20.00		0	0		
Barrier 5	W	0.00	99.99	0.00			0.00	11 ·	54	,	,	1,510.00	20.00		0 0	0		
Barrior U	**	0.00	. 55.35	0.00			0.00	point24	24	4,000.0		1,510.00	20.00	0.00	-	-		
				-				point24	25	,	,	1,510.00	20.00					
				1				point20	45		,	1,510.00	20.00	0.00				
				1			1	point26	26		,	1,510.00	20.00					
							1	point27	27			1,510.00	20.00					
Barrier7	W	0.00	99.99	0.00			0.00	11 ·	56		,	1,510.00	20.00	0.00	0 0	0	1	
								point29	29	,	,	1,510.00	20.00					
								point30	30		,	1,510.00	20.00	0.00				
				1				point31	31	3,309.8		1,510.00	20.00	0.00		0)	
								point33	33		2,342.3		20.00		1		1	

INPUT: BARRIERS						11092									
Barrier6	W	0.00	99.99	0.00	0.00	point58	58	3,297.8	3,093.6 1,51	.00 20.00	0.00	0	0	-	
						point35	35	3,289.5	2,583.9 1,51	.00 20.00	0.00	0	0		
						point36	36	3,355.7	2,581.1 1,51	.00 20.00	0.00	0	0		
						point12	12	3,361.2	3,088.1 1,51	.00 20.00					
Barrier20	W	0.00	99.99	0.00	0.00	point60	60	3,433.3	1,768.9 1,51	.00 20.00	0.00	0	0		
						point41	41	3,434.4	1,876.1 1,51	.00 20.00	0.00	0	0		
						point42	42	3,552.5	1,875.0 1,51	.00 20.00	0.00	0	0		
						point43	43	3,552.5	1,771.1 1,51	.00 20.00					
Barrier19	W	0.00	99.99	0.00	0.00	point61	61	1,708.0	2,180.4 1,53	.00 0.00	0.00	0	0		
						point62	62	1,819.1	2,524.1 1,54	.00 0.00	0.00	0	0		
						point63	63	1,871.2	2,975.4 1,55	.00 0.00	0.00	0	0		
						point64	64	1,968.4	3,697.5 1,55	.00 0.00	0.00	0	0		
						point65	65	1,975.3	4,003.0 1,54	.00 0.00					
Barrier22	W	0.00	99.99	0.00	0.00	point67	67	1,779.6	1,933.4 1,53	.00 20.00	0.00	0	0		
						point68	68	1,659.0	1,949.5 1,53	.00 20.00	0.00	0	0		
						point69	69	1,506.3	2,035.2 1,53	.00 20.00	0.00	0	0		
						point70	70	1,238.3	1,737.8 1,53	.00 20.00	0.00	0	0		
						point71	71	1,160.6	1,692.2 1,53	.00 20.00					

Dudek			5 February 2	020
M Greene			TNM 2.5	
INPUT: TERRAIN LINES				
PROJECT/CONTRACT:	11092			
RUN:	Cstco	Mrrta 2021 w	InPrcs Wkdy	012020
Terrain Line	Points	;		
Name	No.	Coordinates	(ground)	
		X	Y	Z
		ft	ft	ft
Terrain Line1	1	1,605.9	2,030.4	1,522.00
	2	1,685.8	2,007.1	1,522.00
	3	1,825.5	1,990.5	1,522.00
Terrain Line2	4	3,208.7	1,970.8	1,512.00
	5	3,671.8	1,962.1	1,512.00

RESULTS: SOUND LEVELS			1		1	1	1092	1				
Dudek							5 February	, 2020				
M Greene							TNM 2.5	2020				
W Greene							Calculated	with TN	M 2 5			
RESULTS: SOUND LEVELS							Calculated		141 2.5			
PROJECT/CONTRACT:		11092										
RUN:			/Irrta 2021 v	w InPrcs Wkc	lv 012020							
BARRIER DESIGN:			HEIGHTS		19 012020			Average	pavement type	shall ha usa	d unless	
BARRIER BEGIGIT.									ighway agency			
ATMOSPHERICS:		68 deg	F, 50% RH						erent type with			
Receiver			,	<u> </u>								
Name	No.	#DUs	Existing	No Barrier					With Barrier			
			LAeq1h	LAeq1h		Increase over	existing	Туре	Calculated	Noise Reduc	tion	
				Calculated	Crit'n	Calculated	Crit'n	Impact	LAeq1h	Calculated	Goal	Calculated
	İ						Sub'l Inc					minus
												Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
ST1	1	1	0.0	58.1	66	58.1	10		58.1	0.0	8	-8
ST2	2	1	0.0	57.6	66	57.6	10		57.6	0.0	8	-8
ST3	3	1	0.0	61.0	66	61.0	10		61.0	0.0	8	-8
ST4	4	1	0.0	54.4	66	54.4	10		54.4	0.0	8	-8
ST5	5	1	0.0	51.0	66	51.0	10		51.0	0.0	8	-8
M1	7	1	0.0	57.9	66	57.9	10		57.9	0.0	8	-8
Dwelling Units		#DUs	Noise Red	duction								
			Min	Avg	Max							
			dB	dB	dB							
All Selected		6	0.0	0.0	0.0							
All Impacted		0	0.0	0.0	0.0)						
All that meet NR Goal		0	0.0	0.0	0.0)						

		1					1103	د			
Dudek					5 February 2	020					
M Greene					TNM 2.5	.020					
INPUT: ROADWAYS								pavement typ			
PROJECT/CONTRACT:	11092							ighway ageno	•		
RUN:	Cstco Mr	rta 2021 w	InPrcs S	Sat 012020			of a diffe	erent type with	the approv	val of FHW	A
Roadway		Points									
Name	Width	Name	No.	Coordinates	(pavement)		Flow Co	ntrol		Segment	
				Х	Y	Z	Control	Speed	Percent	Pvmt	On
							Device	Constraint	Vehicles	Туре	Struct
									Affected		
	ft			ft	ft	ft		mph	%		
Clinton Keith Road	100.0	point1	1	4,540.0	2,082.1					Average	
		point3	3	1,894.7	2,071.7					Average	
		point4	4	, -	2,071.7					Average	
		point5	5		2,092.5					Average	
		point6	6	1,367.1	2,194.9					Average	
		point7	7	540.4	2,474.8						
I-215	120.0	point29	29		1,945.7					Average	
		point9	9	963.2	2,315.1						
I-215 NB Onramp	45.0	point31	31	1,561.4	2,190.7					Average	
		point21	21	1,456.5	2,282.5					Average	
		point22	22	-	2,356.9					Average	
		point23	23		2,492.5					Average	
		point24	24	-	3,485.3					Average	
		point25	25		3,730.3						
Whitewood Road	100.0	point33	33		2,121.8					Average	
		point27	27	-	4,024.5						
I-215 NB Offramp	45.0	point36	36		1,648.3					Average	
		point17	17		1,871.4					Average	
		point18	18	,	1,989.5					Average	
		point19	19		2,173.2						
I-215-2	120.0	point39	39		2,337.3					Average	
		point10	10	-	2,754.9					Average	
		point11	11		3,192.3					Average	
		point12	12		3,603.4					Average	
		point13	13	1,823.9	3,918.3	1,530.00				Average	

	point14	14	1,876.4	4,123.9	1,530.00	Average	
	point15	15	1,950.7	4,425.7	1,530.00		
Warm Springs Road 40	0 point40	40	2,652.7	2,103.5	1,515.00	Average	
	point41	41	2,655.6	3,085.9	1,515.00	Average	
	point42	42	2,702.6	3,323.4	1,515.00		

NPUT: TRAFFIC FOR LARGIN P	ercentages				1		1	110	72				1
Dudek							5 Febru	ary 2	1				
M Greene							TNM 2.	-					
M Greene							I NW 2.)					
INPUT: TRAFFIC FOR LAeq1h F	Percentages												
PROJECT/CONTRACT:	11092				1								
RUN:	Cstco Mrrta	2021 w l	nPrcs Sat 0	12020	1								
Roadway	Points												
Name	Name	No.	Segment										
			Total	Auto	S	MTru	cks	HTru	cks	Buse	S	Moto	rcycles
			Volume	Ρ	S	Ρ	S	Ρ	S	Ρ	S	Ρ	S
			veh/hr	%	mph	%	mph	%	mph	%	mph	%	mph
Clinton Keith Road	point1	1	3355	97	40	2	40	1	40	0	C	C	(
	point3	3	3355	97	40	2	40	1	40	0	C	C	(
	point4	4	3355	97	40	2	40	1	40	0	C	C	0
	point5	5	3355	97	40	2	40	1	40	0	C	C	0
	point6	6	3355	97	40	2	40	1	40	0	C	C	0
	point7	7											
I-215	point29	29	11700	93	65	3	65	4	65	0) C	C	(
	point9	9											
I-215 NB Onramp	point31	31	100				1						
	point21	21	100		-		1	1) C	C	0
	point22	22	100		-				45) C	0 0	0
	point23	23	100		-			1	45	0) C	C	0
	point24	24		97	45	2	45	1	45	0) C	C	0
	point25	25											
Whitewood Road	point33	33	1625	97	45	2	45	1	45	0) C	C	0
	point27	27											
I-215 NB Offramp	point36	36) C	C	0
	point17	17	100						-				
	point18	18		97	45	2	45	1	45	0	C	C	0
	point19	19											
I-215-2	point39	39	11700				1	4	65	0	C	C	(
	point10	10											
	point11	11	11700	93	65	3	65	4	65	0	C	0 0	(

INPUT: TRAFFIC FOR LAeq1h P	Percentages							1109	2				
	point12	12	11700	93	65	3	65	4	65	0	0	0	0
	point13	13	11700	93	65	3	65	4	65	0	0	0	0
	point14	14	11700	93	65	3	65	4	65	0	0	0	0
	point15	15											
Warm Springs Road	point40	40	197	97	35	2	35	1	35	0	0	0	0
	point41	41	197	97	35	2	35	1	35	0	0	0	0
	point42	42											

INPUT: RECEIVERS								•	1092			
Dudek							5 February	y 2020				
M Greene							TNM 2.5					
INPUT: RECEIVERS												
PROJECT/CONTRACT:	11092											
RUN:	Cstco	Mrrta 2	2021	w InPrcs	Sat 012020							
Receiver												
Name	No.	#DUs	Соо	rdinates	(ground)		Height	Input Sou	nd Levels a	and Criteria	a	Active
			Χ		Y	Z	above	Existing	Impact Cr	iteria	NR	in
							Ground	LAeq1h	LAeq1h	Sub'l	Goal	Calc.
			ft		ft	ft	ft	dBA	dBA	dB	dB	
ST1	1	1		1,702.5	1,982.2	1,512.00	5.00	0.00	66	10.0	8.0) Y
ST2	2	1		3,422.5	1,820.0	1,510.00	5.00	0.00	66	10.0	8.0) Y
ST3	3	1		3,310.7	2,162.6	1,510.00	5.00	0.00	66	10.0	8.0) Y
ST4	4	1		3,272.5	2,640.2	1,510.00	5.00	0.00	66	10.0	8.0) Y
ST5	5	1		3,312.4	3,256.6	1,510.00	5.00	0.00	66	10.0	8.0) Y
M1	7	1		4,402.0	2,379.6	1,510.00	5.00	0.00	66	10.0	8.0) Y

11092

			1	1						1								
Dudek					5 February 202	0												
M Greene					TNM 2.5	0												
M Greene					111111 2.5													
INPUT: BARRIERS																		
PROJECT/CONTRACT:	11092	2			1													
RUN:	Cstco	Mrrta 20	021 w In	Prcs Sat	012020													
Barrier		-			1	-	-	Points										
Name	Type	Height		If Wall	If Berm		Add'tnl	Name	No.	Coordinates	(bottom)		Height	Segm	ent			
		Min	Max	\$ per	\$ per Top	Run:Rise	\$ per			x			at	Seg H		urbs	On	Importan
				Unit	Unit Width		Unit						Point	Incre-	#Up	#Dn	Struct?	Reflec-
			1	Area	Vol.		Length	1	ĺ				ĺ	ment				tions?
		ft	ft	\$/sq ft	\$/cu yd ft	ft:ft	\$/ft			ft	ft 1	ft	ft	ft				
Barrier1	W	0.00	99.99	0.00)		0.00	point1	1	3,293.2	2,144.9	1,510.00	6.00	0.00	0	0		
								point2	2	3,801.1	2,135.3		6.00	0.00	0	0		
								point3	3	3,891.6	2,142.2	1,510.00	6.00	0.00	0	0		
								point4	4	4,384.6	2,142.2	1,510.00	6.00	0.00	0	0		
								point5	5	4,413.2	2,143.7	1,510.00	6.00	0.00	0	0		
								point6	6	4,422.0	3,547.7	1,510.00	6.00					
Barrier11	W	0.00	99.99	0.00			0.00	point10	10	3,293.3	2,145.3	1,510.00	10.00	0.00	0	0		
								point8	8	3,289.2	2,570.5	1,510.00	10.00					
Barrier21	W	0.00	99.99	0.00			0.00	point11	11	3,201.5	1,661.5	1,510.00	20.00	0.00	0	0		
								point37	37	3,204.3	1,713.9	1,510.00	20.00	0.00	0	0		
								point38	38	,	1,713.9	1,510.00	20.00	0.00	0	0		
								point39	39		1,653.3	1,510.00	20.00					
Barrier8	W	0.00	99.99	0.00			0.00	point48	48				20.00					
								point13	13		2,163.3		20.00	0.00				
								point14	14	3,787.3	2,158.9		20.00		0	0		
								point15	15		2,272.6		20.00					
Barrier9	W	0.00	99.99	0.00			0.00	1 ·	50		,		20.00					
								point17	17				20.00					
								point18	18				20.00		0	0		
								point46	46		,		20.00					
Barrier10	W	0.00	99.99	0.00)		0.00	1 ·	52	,	,	,	20.00					
								point20	20	,	,		20.00					
								point21 point22	21	,	2,160.7 2,381.1	1,510.00	20.00		0	0		
Barrier 5	W	0.00	99.99	0.00			0.00	H .	54		,	1,510.00	20.00		0	0		
Dame J	vv	0.00	39.98	, 0.00		-	0.00	point34	24	4,080.8		1,510.00	20.00	0.00	-	-		
			+	-			+	point24	24	,	,	1,510.00	20.00					
								point25	45		,	1,510.00	20.00					
				+				point26	26		,	1,510.00	20.00			-		
				1				point20	27			1,510.00	20.00	5.00				
Barrier7	W	0.00	99.99	0.00			0.00	11 ·	56			1,510.00	20.00	0.00	0	0		
								point29	29	,		1,510.00	20.00					
							1	point30	30	-	,	1,510.00	20.00	0.00				
								point31	31	3,309.8		1,510.00	20.00	0.00				
		-		1				point33	33	-			20.00					

INPUT: BARRIERS						11092								
Barrier6	W	0.00	99.99	0.00	0.00	point58	58	3,297.8	3,093.6 1,51	0.00 20.00	0.00	0	0	
						point35	35	3,289.5	2,583.9 1,51	0.00 20.00	0.00	0	0	
						point36	36	3,355.7	2,581.1 1,51	0.00 20.00	0.00	0	0	
						point12	12	3,361.2	3,088.1 1,51	0.00 20.00)			
Barrier20	W	0.00	99.99	0.00	0.00	point60	60	3,433.3	1,768.9 1,51	0.00 20.00	0.00	0	0	
						point41	41	3,434.4	1,876.1 1,51	0.00 20.00	0.00	0	0	
						point42	42	3,552.5	1,875.0 1,51	0.00 20.00	0.00	0	0	
						point43	43	3,552.5	1,771.1 1,51	0.00 20.00				
Barrier19	W	0.00	99.99	0.00	0.00	point61	61	1,708.0	2,180.4 1,53	0.00 0.00	0.00	0	0	
						point62	62	1,819.1	2,524.1 1,54	0.00 0.00	0.00	0	0	
						point63	63	1,871.2	2,975.4 1,55	0.00 0.00	0.00	0	0	
						point64	64	1,968.4	3,697.5 1,55	0.00 0.00	0.00	0	0	
						point65	65	1,975.3	4,003.0 1,54	0.00 0.00				
Barrier22	W	0.00	99.99	0.00	0.00	point67	67	1,779.6	1,933.4 1,53	0.00 20.00	0.00	0	0	
						point68	68	1,659.0	1,949.5 1,53	0.00 20.00	0.00	0	0	
						point69	69	1,506.3	2,035.2 1,53	0.00 20.00	0.00	0	0	
						point70	70	1,238.3	1,737.8 1,53	0.00 20.00	0.00	0	0	
						point71	71	1,160.6	1,692.2 1,53	0.00 20.00				

Dudek			5 February 2	020
M Greene			TNM 2.5	
INPUT: TERRAIN LINES				
PROJECT/CONTRACT:	11092			
RUN:	Cstco	Mrrta 2021 w	InPrcs Sat 01	2020
Terrain Line	Points	5	·	
Name	No.	Coordinates	(ground)	
		X	Y	Z
		ft	ft	ft
Terrain Line1	1	1,605.9	2,030.4	1,522.00
	2	1,685.8	2,007.1	1,522.00
	3	1,825.5	1,990.5	1,522.00
Terrain Line2	4	3,208.7	1,970.8	1,512.00
	5	3,671.8	1,962.1	1,512.00

RESULTS: SOUND LEVELS	Î	1	1	1		1	1092	1		i	i	1
Dudek							5 Februar	1 2020				
M Greene							TNM 2.5	y 2020				
W Greene							Calculated	l with TN	M 2 5			
RESULTS: SOUND LEVELS							Calculated		141 2.5			
PROJECT/CONTRACT:		11092										
RUN:			/Irrta 2021 v	w InPrcs Sat	012020							
BARRIER DESIGN:			HEIGHTS	willines out	012020			Avorago	pavement type	shall bo uso	d unlose	
BARRIER DEGIGIA.									ighway agency			
ATMOSPHERICS:		68 deg	F, 50% RH						erent type with			
Receiver			<u> </u>	<u> </u>								
Name	No.	#DUs	Existing	No Barrier					With Barrier			
			LAeq1h	LAeq1h		Increase over	existing	Туре	Calculated	Noise Reduc	tion	
				Calculated	Crit'n	Calculated	Crit'n	Impact	LAeq1h	Calculated	Goal	Calculated
							Sub'l Inc					minus
												Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
ST1	1	1	0.0	57.8	66	57.8	10		57.8	0.0	8	-8
ST2	2	1	0.0	57.2	66	57.2	10		57.2	0.0	8	-8
ST3	3	1	0.0	60.6	66	60.6	10		60.6	0.0	8	-8
ST4	4	1	0.0	54.2	66	54.2	10		54.2	0.0	8	-8
ST5	5	1	0.0	51.0	66	51.0	10		51.0	0.0	8	-8
M1	7	1	0.0	57.7	66	57.7	10		57.7	0.0	8	-8
Dwelling Units		# DUs	Noise Red	duction								
			Min	Avg	Max							
			dB	dB	dB							
All Selected		6	0.0	0.0	0.0							
All Impacted		0	0.0	0.0	0.0							
All that meet NR Goal		C	0.0	0.0	0.0							

11092

NPUT: ROADWATS							11034	•			
Dudek					5 February 2	020					
M Greene					TNM 2.5						
INPUT: ROADWAYS							Average	pavement typ	e shall be i	used unles	Si
PROJECT/CONTRACT:	11092						a State h	ighway agend	cy substant	iates the u	se
RUN:	CstcoMrr	ta2021wP	NoInPrcs	sWkdy012020				rent type with	-		
Roadway		Points						-			
Name	Width	Name	No.	Coordinates	(pavement)		Flow Cor	ntrol		Segment	
				X	Y	Z	Control	Speed	Percent	Pvmt	On
							Device	Constraint	Vehicles	Туре	Struct
									Affected		
	ft			ft	ft	ft		mph	%		
Clinton Keith Road	100.0	point1	1	4,540.0	2,082.1	1,500.00				Average	
		point3	3	1,894.7	2,071.7	1,518.00				Average	
		point4	4	1,877.4	2,071.7	1,520.00				Average	
		point5	5	1,705.5	2,092.5					Average	
		point6	6	,	2,194.9					Average	
		point7	7	540.4	2,474.8						
I-215	120.0	point29	29		1,945.7					Average	
		point9	9		2,315.1						
I-215 NB Onramp	45.0	point31	31		2,190.7					Average	
		point21	21	-	-					Average	
		point22	22		2,356.9					Average	
		point23	23		2,492.5					Average	
		point24	24		3,485.3					Average	
		point25	25		3,730.3						
Whitewood Road	100.0	point33	33							Average	
		point27	27	-	4,024.5					-	
I-215 NB Offramp	45.0		36		1,648.3					Average	
		point17	17		1,871.4					Average	
		point18	18		1,989.5					Average	
1.045.0	400.0	point19	19		2,173.2					A	
I-215-2	120.0	point39	39		2,337.3					Average	
		point10	10		2,754.9					Average	
		point11	11	-	3,192.3					Average	
		point12	12		3,603.4					Average	
		point13	13	1,823.9	3,918.3	1,530.00				Average	

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	point14	14	1,876.4	4,123.9	1,530.00	Average	
	point15	15	1,950.7	4,425.7	1,530.00		
Warm Springs Road 40.) point40	40	2,652.7	2,103.5	1,515.00	Average	
	point41	41	2,655.6	3,085.9	1,515.00	Average	
	point42	42	2,702.6	3,323.4	1,515.00		

INPUT: TRAFFIC FOR LAeq1h Percentages

11092

INPUT: TRAFFIC FOR LARGIN	Percentages		1					1108	72				
Dudek							5 Eabru	07120					
							5 Febru	-					
M Greene							TNM 2.	5					
INPUT: TRAFFIC FOR LAeq1h	Percentages												
PROJECT/CONTRACT:	11092												
RUN:	CstcoMrrta	2021wPN	oInPrcsWkc	ly0120)20								
Roadway	Points												
Name	Name	No.	Segment										
			Total	Autos	6	MTru	cks	HTru	cks	Buse	S	Moto	rcycles
			Volume	Ρ	S	Ρ	S	Ρ	S	Ρ	S	Ρ	S
			veh/hr	%	mph	%	mph	%	mph	%	mph	%	mph
Clinton Keith Road	point1	1	3470	97	40	2	40	1	40	0	0	0	(
	point3	3	3470	97	40	2	40	1	40	0	0	0	(
	point4	4	3470	97	40	2	40	1	40	0	0	0	0
	point5	5	3470	97	40	2	40	1	40	0	0	0	(
	point6	6	3470	97	40	2	40	1	40	0	0	0	(
	point7	7											
I-215	point29	29	11700	93	65	3	65	4	65	0	0 0	0	0
	point9	9											
I-215 NB Onramp	point31	31			45								
	point21	21			45				-		-		
	point22	22			45				-				
	point23	23			-				-		-		
	point24	24		97	45	2	45	1	45	0	0 0	0	0
	point25	25											
Whitewood Road	point33	33		97	45	2	45	1	45	0	0 0	0	(
	point27	27											
I-215 NB Offramp	point36	36			45								
	point17	17			45								
	point18	18		97	45	2	45	1	45	0	0 0	0	0
	point19	19									<u> </u>		
I-215-2	point39	39											
	point10	10		93									
	point11	11	11700	93	65	3	65	4	65	0	0 0	0	C

C:\TNM25\Project Files\Costco Murrieta PN 11092\2021wPwCrtnNoInP Wkdy 012020

INPUT: TRAFFIC FOR LAeq1h P	Percentages							1109	2				
	point12	12	11700	93	65	3	65	4	65	0	0	0	0
	point13	13	11700	93	65	3	65	4	65	0	0	0	0
	point14	14	11700	93	65	3	65	4	65	0	0	0	0
	point15	15											
Warm Springs Road	point40	40	1659	97	35	2	35	1	35	0	0	0	0
	point41	41	1659	97	35	2	35	1	35	0	0	0	0
	point42	42											

INPUT: RECEIVERS							•	1092			
Dudek						5 Februar	y 2020				
M Greene						TNM 2.5					
INPUT: RECEIVERS											
PROJECT/CONTRACT:	11092	2			'						
RUN:	Cstco	Mrrta2	021wPNoInPr	csWkdy01202	20						
Receiver											
Name	No.	#DUs	Coordinates	(ground)		Height	Input Sou	nd Levels a	and Criteria	a	Active
			X	Y	Z	above	Existing	Impact Cr	iteria	NR	in
						Ground	LAeq1h	LAeq1h	Sub'l	Goal	Calc.
			ft	ft	ft	ft	dBA	dBA	dB	dB	
ST1		I 1	1,702.5	1,982.2	1,512.00	5.00	0.00	66	10.0	8	.0 Y
ST2		2 1	3,422.5	1,820.0	1,510.00	5.00	0.00	66	10.0	8	.0 Y
ST3	3	3 1	3,310.7	2,162.6	1,510.00	5.00	0.00	66	10.0	8	.0 Y
ST4	2	1 1	3,272.5	2,640.2	1,510.00	5.00	0.00	66	10.0	8	.0 Y
ST5	Ę	5 1	3,312.4	3,256.6	1,510.00	5.00	0.00	66	10.0	8	.0 Y
M1		7 1	4,402.0	2,379.6	1,510.00	5.00	0.00	66	10.0	8	.0 Y

			-	1		1		11032	-									
Dudek					5 Febru	ary 202	20											
M Greene					TNM 2.	-	20											
M Greene					1111111 2.3	, 		1										
INPUT: BARRIERS																		
PROJECT/CONTRACT:	11092				1													
RUN:			21wPNo	InPrcsW	kdv0120	20												
Barrier			+	1	1	-	_	Points										
Name	Туре	Height	1	lf Wall	If Berm		Add'tnl	Name	No.	Coordinates	(bottom)		Height	Segm	ont			
Name	Type	Min	Мах	\$ per	\$ per	Тор	Run:Rise \$ per	Name	NO.	X		z	at	Seg H		urhs	On	Importar
			Max	Unit	Unit	Width				~	•	-	Point				Struct?	
				Area	Vol.	math	Length							ment	<i>"</i> O P		on don	tions?
		ft	ft	\$/sq ft	\$/cu yd	ft	ft:ft \$/ft			ft	ft	ft	ft	ft				
Barrier1	W	0.00	99.99				0.00	point1	1			1,510.00			0	0		
	••	0.00	99.99	0.00	/		0.00	point2	2	0,200.2		1,510.00	6.00					
								point2	3			1,510.00	6.00			-		
			+					point3	4	- ,		1,510.00	6.00					
								point5	5			1,510.00	6.00			-		
								point6	6	.,		1,510.00	6.00		0	0		
Barrier11	W	0.00) 99.99	0.00			0.00	H .	10			1,510.00	10.00		0	0		
Damerri		0.00	, 00.00	0.00	, 		0.00	point8	8	,		1,510.00	10.00			0		
Barrier21	W	0.00	99.99	0.00			0.00	11 ·	11	3,201.5		1,510.00	20.00		0	0		
		0.00	00.00	0.00	, 		0.00	point37	37			1,510.00	20.00					
								point38	38			1,510.00	20.00					
								point39	39	,		1,510.00	20.00			-		
Barrier8	W	0.00	99.99	0.00)		0.00	H .	48			1,510.00	20.00		0	0		
-								point13	13			1,510.00	20.00					
								point14	14			1,510.00	20.00			0		
								point15	15		2,272.6	1,510.00	20.00					
Barrier9	W	0.00	99.99	0.00			0.00	point50	50			1,510.00	20.00	0.00	0	0		
								point17	17	3,901.0	2,165.4	1,510.00	20.00	0.00	0	0		
								point18	18	4,275.0	2,158.9	1,510.00	20.00	0.00	0	0		
								point46	46	4,272.8	2,266.0	1,510.00	20.00					
Barrier10	W	0.00	99.99	0.00			0.00	point52	52	4,323.8	2,378.3	1,510.00	20.00	0.00	0	0		
								point20	20	4,321.0	2,157.9	1,510.00	20.00	0.00	0	0		
								point21	21		2,160.7	1,510.00	20.00	0.00	0	0		
								point22	22			1,510.00	20.00					
Barrier 5	W	0.00	99.99	0.00			0.00	11.	54			1,510.00	20.00					
								point24	24			1,510.00	20.00			-		
								point25	25	,		1,510.00	20.00					
								point45	45			1,510.00	20.00					
					L			point26	26			1,510.00	20.00		0	0		
								point27	27			1,510.00	20.00					
Barrier7	W	0.00	99.99	0.00			0.00	<u> </u>	56			1,510.00	20.00					
								point29	29			1,510.00	20.00					
					ļ			point30	30			1,510.00	20.00			-		
								point31	31			1,510.00	20.00		0	0		
								point33	33	3,308.6	2,342.3	1,510.00	20.00					

INPUT: BARRIERS						11092								
Barrier6	W	0.00	99.99	0.00	0.00	point58	58	3,297.8	3,093.6 1,510.00	20.00	0.00	0	0	
						point35	35	3,289.5	2,583.9 1,510.00	20.00	0.00	0	0	
						point36	36	3,355.7	2,581.1 1,510.00	20.00	0.00	0	0	
						point12	12	3,361.2	3,088.1 1,510.00	20.00				
Barrier20	W	0.00	99.99	0.00	0.00	point60	60	3,433.3	1,768.9 1,510.00	20.00	0.00	0	0	
						point41	41	3,434.4	1,876.1 1,510.00	20.00	0.00	0	0	
						point42	42	3,552.5	1,875.0 1,510.00	20.00	0.00	0	0	
						point43	43	3,552.5	1,771.1 1,510.00	20.00				
Barrier19	W	0.00	99.99	0.00	0.00	point61	61	1,708.0	2,180.4 1,530.00	0.00	0.00	0	0	
						point62	62	1,819.1	2,524.1 1,540.00	0.00	0.00	0	0	
						point63	63	1,871.2	2,975.4 1,550.00	0.00	0.00	0	0	
						point64	64	1,968.4	3,697.5 1,550.00	0.00	0.00	0	0	
						point65	65	1,975.3	4,003.0 1,540.00	0.00				
Barrier22	W	0.00	99.99	0.00	0.00	point67	67	1,779.6	1,933.4 1,530.00	20.00	0.00	0	0	
						point68	68	1,659.0	1,949.5 1,530.00	20.00	0.00	0	0	
						point69	69	1,506.3	2,035.2 1,530.00	20.00	0.00	0	0	
						point70	70	1,238.3	1,737.8 1,530.00	20.00	0.00	0	0	
						point71	71	1,160.6	1,692.2 1,530.00	20.00				

Dudek			5 February 2	020						
M Greene			TNM 2.5							
INPUT: TERRAIN LINES										
PROJECT/CONTRACT:	11092 CstcoMrrta2021wPNoInPrcsWkdy012020									
RUN:										
Terrain Line	Points	5								
Name	No.	Coordinates	(ground)							
		X	Y	Z						
		ft	ft	ft						
Terrain Line1	1	1,605.9	2,030.4	1,522.00						
	2	1,685.8	2,007.1	1,522.00						
	3	1,825.5	1,990.5	1,522.00						
Terrain Line2	4	3,208.7	1,970.8	1,512.00						
	5	3,671.8	1,962.1	1,512.00						

RESULTS: SOUND LEVELS		i	i	1	1	1	1092	1			1	
Dudek							5 Februar	v 2020				
M Greene							TNM 2.5	,				
							Calculated	d with TNI	A 2.5			
RESULTS: SOUND LEVELS												
PROJECT/CONTRACT:		11092										
RUN:		CstcoN	Irrta2021wl	PNoInPrcsWk	dy012020							
BARRIER DESIGN:		INPUT	HEIGHTS					Average	pavement type	e shall be use	d unless	
								a State h	ighway agency	y substantiate	es the use	
ATMOSPHERICS:		68 deg	F, 50% RH					of a diffe	rent type with	approval of F	HWA.	
Receiver												
Name	No.	#DUs	Existing	No Barrier					With Barrier			
			LAeq1h	LAeq1h		Increase over	existing	Туре	Calculated	Noise Reduc	tion	
				Calculated	Crit'n	Calculated	Crit'n	Impact	LAeq1h	Calculated	Goal	Calculated
							Sub'l Inc					minus
												Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
ST1	1	1	0.0	57.9	66	57.9	10		57.9	0.0	8	-8.
ST2	2	1	0.0	57.4	66	57.4	10		57.4	0.0	8	-8.
ST3	3	1	0.0	60.8	66	60.8	10		60.8	0.0	8	-8.
ST4	4	1	0.0	54.7	66	54.7	10		54.7	0.0	8	-8.
ST5	5	1	0.0	51.5	66	51.5	10		51.5	0.0	8	-
M1	7	1	0.0	57.3	66	57.3	10		57.3	0.0	8	-8
Dwelling Units		# DUs	Noise Ree	duction								
			Min	Avg	Max							
			dB	dB	dB							
All Selected		6	0.0	0.0	0.0)						
All Impacted		0	0.0	0.0	0.0)						
All that meet NR Goal		0	0.0	0.0	0.0							

11092

NPUT: ROADWATS		1					11092				
Dudek					5 February 2	020					
M Greene					TNM 2.5						
NPUT: ROADWAYS								pavement typ			
PROJECT/CONTRACT:	11092							ghway agend	-		
RUN:	CstcoMrr	ta2021 PN	oInPrcs	Sat 012020			of a diffe	ent type with	the approv	val of FHW	A
Roadway		Points									
Name	Width	Name	No.	Coordinates	(pavement)		Flow Con	trol		Segment	
				Х	Y	Z	Control	Speed	Percent	Pvmt	On
							Device	Constraint	Vehicles	Туре	Struct?
									Affected		
	ft			ft	ft	ft		mph	%		
Clinton Keith Road	100.0	point1	1	4,540.0	2,082.1	1,500.00				Average	
		point3	3	1,894.7	2,071.7	1,518.00				Average	
		point4	4	1,877.4	2,071.7	1,520.00				Average	
		point5	5	1,705.5	2,092.5					Average	
		point6	6	1,367.1	2,194.9					Average	
		point7	7		2,474.8						
I-215	120.0	point29	29	734.8	1,945.7					Average	
		point9	9		2,315.1						
I-215 NB Onramp	45.0	point31	31		2,190.7					Average	
		point21	21							Average	
		point22	22		2,356.9					Average	
		point23	23	-	2,492.5					Average	
		point24	24		3,485.3					Average	
		point25	25		3,730.3						
Whitewood Road	100.0	point33	33							Average	
		point27	27		4,024.5						
I-215 NB Offramp	45.0	point36	36							Average	
		point17	17		1,871.4					Average	
		point18	18		1,989.5					Average	
		point19	19		2,173.2						
I-215-2	120.0	point39	39		2,337.3					Average	
		point10	10		2,754.9					Average	
		point11	11		3,192.3					Average	
		point12	12		3,603.4					Average	
		point13	13	1,823.9	3,918.3	1,530.00				Average	

C:\TNM25\Project Files\Costco Murrieta PN 11092\2021wPwCrtnNoInP Sat 012020

	point14	14	1,876.4	4,123.9	1,530.00		Average
	point15	15	1,950.7	4,425.7	1,530.00		
Warm Springs Road 40.0	point40	40	2,652.7	2,103.5	1,515.00		Average
	point41	41	2,655.6	3,085.9	1,515.00		Average
	point42	42	2,702.6	3,323.4	1,515.00		

11092

INPUT: TRAFFIC FOR LARGIN	Percentages						1	110	92				
Dudek							5 Febru	ary 20	1				
							TNM 2.	-					
M Greene								D					
INPUT: TRAFFIC FOR LAeq1h													
PROJECT/CONTRACT:	11092												
RUN:	CstcoMrrta	2021 PNo	InPrcs Sat ()1202(D								
Roadway	Points												
Name	Name	No.	Segment										
			Total	Autos	S	MTru	icks	HTru	cks	Buse	S	Moto	rcycles
			Volume	Ρ	S	Ρ	S	Ρ	S	Ρ	S	Ρ	S
			veh/hr	%	mph	%	mph	%	mph	%	mph	%	mph
Clinton Keith Road	point1	1	3202	97	40	2	40	1	40	0	0 0	0 0	(
	point3	3	3202	97	40	2	40	1	40	0	0 0	0 0	(
	point4	4	3202	97	40	2	40	1	40	0	0 0	0 0	(
	point5	5	3202	97	40	2	40	1	40	0	0 0	0 0	(
	point6	6	3202	97	40	2	40	1	40	0	0 0	0 0	(
	point7	7											
I-215	point29	29	11700	93	65	3	65	4	65	0	0 0	0 0	(
	point9	9											
I-215 NB Onramp	point31	31	100		45			1			0 0	0 0	0
	point21	21	100	97	45			1	45	0	0 0	0 0	(
	point22	22	100	97	45			1	45	0	0 0	0 0	(
	point23	23	100	97	45	2	45	1	45	0	0 0	0 0	(
	point24	24	100	97	45	2	45	1	45	0	0 0	0 0	0
	point25	25											
Whitewood Road	point33	33	1297	97	45	2	45	1	45	0	0 0	0 0	0
	point27	27											
I-215 NB Offramp	point36	36			45			1			0 0	0 0	(
	point17	17			45				-		0 0	0 0	(
	point18	18		97	45	2	45	1	45	0	0 0	0 0	(
	point19	19											
I-215-2	point39	39											
	point10	10											
	point11	11	11700	93	65	3	65	4	65	0	0 0	0 0	(

C:\TNM25\Project Files\Costco Murrieta PN 11092\2021wPwCrtnNoInP Sat 012020

INPUT: TRAFFIC FOR LAeq1h P	ercentages							1109	2				
	point12	12	11700	93	65	3	65	4	65	0	0	0	0
	point13	13	11700	93	65	3	65	4	65	0	0	0	0
	point14	14	11700	93	65	3	65	4	65	0	0	0	0
	point15	15											
Warm Springs Road	point40	40	2172	97	35	2	35	1	35	0	0	0	0
	point41	41	2172	97	35	2	35	1	35	0	0	0	0
	point42	42											

INPUT: RECEIVERS									1092				
Dudek							5 February	y 2020					
M Greene							TNM 2.5						
INPUT: RECEIVERS													
PROJECT/CONTRACT:	11092	2											
RUN:	Cstco	Mrrta2	021 PNoInPrc	s Sat 012020									
Receiver													
Name	No.	#DUs	Coordinates	(ground)			Height	Input Sou	nd Levels a	and Criteria	a	F	Active
			X	Y	Ζ		above	Existing	Impact Cr	iteria	NR	i,	n
							Ground	LAeq1h	LAeq1h	Sub'l	Goal	C	Calc.
			ft	ft	ft		ft	dBA	dBA	dB	dB		
ST1		1 1	1,702.5	1,982.2		1,512.00	5.00	0.00	66	10.0)	8.0	Y
ST2		2 1	3,422.5	1,820.0		1,510.00	5.00	0.00	66	10.0)	8.0	Y
ST3	:	3 1	3,310.7	2,162.6		1,510.00	5.00	0.00	66	10.0)	8.0	Y
ST4		1 1	3,272.5	2,640.2		1,510.00	5.00	0.00	66	10.0)	8.0	Y
ST5		5 1	3,312.4	3,256.6		1,510.00	5.00	0.00	66	10.0)	8.0	Υ
M1		7 1	4,402.0	2,379.6		1,510.00	5.00	0.00	66	10.0)	8.0	Υ

Dudak					E Eabra and												
Dudek					5 February 2020)					-						
M Greene					TNM 2.5												_
INPUT: BARRIERS																	_
PROJECT/CONTRACT:	11092	2			1												
RUN:	Cstco	Mrrta202	21 PNoli	nPrcs Sa	it 012020												
Barrier		-						Points									
Name	Туре	Height		If Wall	If Berm		Add'tnl	Name	No.	Coordinates	(bottom)		Height	Segm	ent		
		Min	Max	\$ per	\$ per Top	Run:Rise	\$ per	11	ĺ	х	Y	Z	at	Seg H	t Pertur	bs On	Importar
			Ì	Unit	Unit Width		Unit						Point	Incre-	#Up #	Dn Struct	? Reflec-
			Ì	Area	Vol.		Length	[]					İ	ment		ĺ	tions?
		ft	ft	\$/sq ft	\$/cu yd ft	ft:ft	\$/ft			ft	ft	ft	ft	ft			
Barrier1	W	0.00	99.99	0.00)		0.00	point1	1	3,293.2	2 2,144.9	1,510.00	6.00	0.00	0	0	
								point2	2	3,801.1	2,135.3	1,510.00	6.00	0.00	0	0	
								point3	3	3,891.6		1,510.00		0.00	0	0	
								point4	4	4,384.6		1,510.00		0.00	0	0	-
								point5	5	4,413.2		1,510.00	6.00	0.00	0	0	
								point6	6	6 4,422.0	3,547.7	1,510.00	6.00				
Barrier11	W	0.00	99.99	0.00			0.00	point10	10	3,293.3	3 2,145.3	1,510.00	10.00	0.00	0	0	
								point8	8	3,289.2	2 2,570.5	1,510.00	10.00				
Barrier21	W	0.00	99.99	0.00			0.00	point11	11			1,510.00	20.00	0.00	0	0	
								point37	37	3,204.3	3 1,713.9	1,510.00	20.00	0.00	0	0	
								point38	38	3,413.7	7 1,713.9	1,510.00	20.00	0.00	0	0	-
								point39	39	3,411.0	1,653.3	1,510.00	20.00				-
Barrier8	W	0.00	99.99	0.00)		0.00	point48	48			1,510.00	20.00	0.00	0	0	-
								point13	13	3,323.7	2,163.3	1,510.00	20.00	0.00	0	0	
								point14	14	3,787.3	3 2,158.9	1,510.00	20.00	0.00	0	0	
								point15	15	3,787.3	3 2,272.6	1,510.00	20.00				
Barrier9	W	0.00	99.99	0.00)		0.00	point50	50	3,894.5	5 2,263.9	1,510.00	20.00	0.00	0	0	
								point17	17	3,901.0	2,165.4	1,510.00	20.00	0.00	0	0	
								point18	18	4,275.0	2,158.9	1,510.00	20.00	0.00	0	0	
								point46	46	6 4,272.8	3 2,266.0	1,510.00	20.00				
Barrier10	W	0.00	99.99	0.00			0.00	point52	52	4,323.8	3 2,378.3	1,510.00	20.00	0.00	0	0	
								point20	20	4,321.0	2,157.9	1,510.00	20.00	0.00	0	0	
								point21	21	4,395.4	2,160.7	1,510.00	20.00	0.00	0	0	
								point22	22	4,398.2	2,381.1	1,510.00	20.00				
Barrier 5	W	0.00	99.99	0.00			0.00	point54	54	4,086.8	3 2,609.8	1,510.00	20.00	0.00	0	0	
								point24	24	4,097.8	3 2,923.9	1,510.00	20.00	0.00	0	0	
								point25	25	6 4,340.3	3 2,918.4	1,510.00	20.00	0.00	0	0	
								point45	45	5 4,343. ⁻	3,406.1	1,510.00	20.00	0.00	0	0	
								point26	26		3,411.6	1,510.00	20.00	0.00	0	0	
								point27	27			1,510.00	20.00				
Barrier7	W	0.00	99.99	0.00			0.00	point56	56	3,305.6	6 2,340.4	1,510.00	20.00	0.00	0	0	
								point29	29	4,282.4	2,337.0	1,510.00	20.00	0.00	0	0	
								point30	30	4,276.9	2,546.4	1,510.00	20.00	0.00	0	0	
								point31	31	3,309.8	3 2,557.5	1,510.00	20.00	0.00	0	0	
							1	point33	33	3,308.6	2,342.3	1,510.00	20.00				

INPUT: BARRIERS						11092								
Barrier6	W	0.00	99.99	0.00	0.00	point58	58	3,297.8	3,093.6 1,510.00	20.00	0.00	0	0	
						point35	35	3,289.5	2,583.9 1,510.00	20.00	0.00	0	0	
						point36	36	3,355.7	2,581.1 1,510.00	20.00	0.00	0	0	
						point12	12	3,361.2	3,088.1 1,510.00	20.00				
Barrier20	W	0.00	99.99	0.00	0.00	point60	60	3,433.3	1,768.9 1,510.00	20.00	0.00	0	0	
						point41	41	3,434.4	1,876.1 1,510.00	20.00	0.00	0	0	
						point42	42	3,552.5	1,875.0 1,510.00	20.00	0.00	0	0	
						point43	43	3,552.5	1,771.1 1,510.00	20.00				
Barrier19	W	0.00	99.99	0.00	0.00	point61	61	1,708.0	2,180.4 1,530.00	0.00	0.00	0	0	
						point62	62	1,819.1	2,524.1 1,540.00	0.00	0.00	0	0	
						point63	63	1,871.2	2,975.4 1,550.00	0.00	0.00	0	0	
						point64	64	1,968.4	3,697.5 1,550.00	0.00	0.00	0	0	
						point65	65	1,975.3	4,003.0 1,540.00	0.00				
Barrier22	W	0.00	99.99	0.00	0.00	point67	67	1,779.6	1,933.4 1,530.00	20.00	0.00	0	0	
						point68	68	1,659.0	1,949.5 1,530.00	20.00	0.00	0	0	
						point69	69	1,506.3	2,035.2 1,530.00	20.00	0.00	0	0	
						point70	70	1,238.3	1,737.8 1,530.00	20.00	0.00	0	0	
						point71	71	1,160.6	1,692.2 1,530.00	20.00				

RESULTS: SOUND LEVELS			1	1	1	1	1092	1		i		1
Dudek							5 Februar	v 2020				
M Greene							TNM 2.5	,				
							Calculated	d with TNI	VI 2.5			
RESULTS: SOUND LEVELS												
PROJECT/CONTRACT:		11092										
RUN:		CstcoM	Irrta2021 P	NoInPrcs Sat	012020							
BARRIER DESIGN:		INPUT	HEIGHTS					Average	pavement type	e shall be use	d unless	
								a State h	ighway agency	y substantiate	es the use	
ATMOSPHERICS:		68 deg	F, 50% RH					of a diffe	rent type with	approval of F	HWA.	
Receiver		·										
Name	No.	#DUs	Existing	No Barrier					With Barrier			
			LAeq1h	LAeq1h		Increase over	existing	Туре	Calculated	Noise Reduc	tion	
				Calculated	Crit'n	Calculated	Crit'n	Impact	LAeq1h	Calculated	Goal	Calculated
							Sub'l Inc					minus
												Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
ST1	1	1	0.0	57.6	66	57.6	10		57.6	0.0	8	-8.
ST2	2	1	0.0	57.1	66	57.1	10		57.1	0.0	8	-8.
ST3	3	1	0.0	60.5	66	60.5	10		60.5	0.0	8	-8.
ST4	4	1	0.0	54.6	66	54.6	10		54.6	0.0	8	-8.
ST5	5	1	0.0	51.6	66	51.6	10		51.6	0.0	8	-
M1	7	1	0.0	56.8	66	56.8	10		56.8	0.0	8	-8
Dwelling Units		#DUs	Noise Ree	duction								
			Min	Avg	Max							
			dB	dB	dB							
All Selected		6	0.0	0.0	0.0)						
All Impacted		0	0.0	0.0	0.0)						
All that meet NR Goal		0	0.0	0.0	0.0							

11092

NPUT: ROADWATS							11034	<u> </u>			
Dudek					5 February 2	020					
M Greene					TNM 2.5						
INPUT: ROADWAYS							Average	pavement typ	e shall be	used unles	Si
PROJECT/CONTRACT:	11092							ighway agend			
RUN:		2021woPN	oInPrcs\	Vkdy012020				rent type with	-		
Roadway		Points									
Name	Width	Name	No.	Coordinates	(pavement)		Flow Cor	ntrol		Segment	
				X	Y	Z	Control	Speed	Percent	Pvmt	On
							Device	Constraint	Vehicles	Туре	Struct
									Affected		
	ft			ft	ft	ft		mph	%		
Clinton Keith Road	100.0	point1	1	4,540.0	2,082.1	1,500.00				Average	
		point3	3	1,894.7	2,071.7	1,518.00				Average	
		point4	4	1,877.4	2,071.7	1,520.00				Average	
		point5	5	1,705.5	2,092.5	1,530.00				Average	
		point6	6	1,367.1	2,194.9	1,530.00				Average	
		point7	7	540.4	2,474.8	1,530.00					
I-215	120.0	point29	29	734.8	1,945.7	1,515.00				Average	
		point9	9		2,315.1						
I-215 NB Onramp	45.0	point31	31		2,190.7					Average	
		point21	21	-	-					Average	
		point22	22		2,356.9					Average	
		point23	23		2,492.5					Average	
		point24	24		3,485.3					Average	
		point25	25		3,730.3						
Whitewood Road	100.0	•	33							Average	
		point27	27	-	4,024.5						
I-215 NB Offramp	45.0	•	36		1,648.3					Average	
		point17	17		1,871.4					Average	
		point18	18		1,989.5					Average	
		point19	19		2,173.2						
I-215-2	120.0	•	39		2,337.3					Average	
		point10	10		2,754.9					Average	
		point11	11	-	3,192.3					Average	
		point12	12		3,603.4					Average	
		point13	13	1,823.9	3,918.3	1,530.00				Average	

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	point14	14	1,876.4	4,123.9	1,530.00		Average
	point15	15	1,950.7	4,425.7	1,530.00		
Warm Springs Road 40.0	point40	40	2,652.7	2,103.5	1,515.00		Average
	point41	41	2,655.6	3,085.9	1,515.00		Average
	point42	42	2,702.6	3,323.4	1,515.00		

11092

INPUT: TRAFFIC FOR LACOT	Percentages							110	2				
Dudek							5 Febru	ary 20	1				
								-					
M Greene							TNM 2.	D					
INPUT: TRAFFIC FOR LAeq1h	Percentages												
PROJECT/CONTRACT:	11092												
RUN:	CtcMrrta202	21woPNo	nPrcsWkdy	/01202	20								
Roadway	Points												
Name	Name	No.	Segment										
			Total	Autos	S	MTru	icks	HTru	cks	Buse	S	Moto	rcycles
			Volume	Ρ	S	Ρ	S	Ρ	S	Ρ	S	Ρ	S
			veh/hr	%	mph	%	mph	%	mph	%	mph	%	mph
Clinton Keith Road	point1	1	3598	97	40	2	40	1	40	0	0 0	0	(
	point3	3	3598	97	40	2	40	1	40	0	0	0	(
	point4	4	3598	97	40	2	40	1	40	0	0	0	0
	point5	5	3598	97	40	2	40	1	40	0	0	0	(
	point6	6	3598	97	40	2	40	1	40	0	0	0	(
	point7	7											
I-215	point29	29	11700	93	65	5 3	65	4	65	0	0 0	0	(
	point9	9											
I-215 NB Onramp	point31	31	100	97	45			1	45	0	0 0	0	(
	point21	21	100	97	45			1	45	0	0 0	0	(
	point22	22	100	97	45			1	45	0	0 0	0	(
	point23	23	100	97	45	5 2	45	1	45	0	0 0	0	(
	point24	24	100	97	45	6 2	45	1	45	0	0 0	0	(
	point25	25											
Whitewood Road	point33	33		97	45	6 2	45	1	45	0	0	0	(
	point27	27											
I-215 NB Offramp	point36	36			45				-		-		
	point17	17			45								
	point18	18		97	45	6 2	45	1	45	0	0 0	0	0
	point19	19											
I-215-2	point39	39											
	point10	10											
	point11	11	11700	93	65	5 3	65	4	65	0	0 0	0	0

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INPUT: TRAFFIC FOR LAeq1h P	Percentages							1109	2				
	point12	12	11700	93	65	3	65	4	65	0	0	0	0
	point13	13	11700	93	65	3	65	4	65	0	0	0	0
	point14	14	11700	93	65	3	65	4	65	0	0	0	0
	point15	15											
Warm Springs Road	point40	40	1843	97	35	2	35	1	35	0	0	0	0
	point41	41	1843	97	35	2	35	1	35	0	0	0	0
	point42	42											

INPUT: RECEIVERS							•	1092			
Dudek						5 Februar	y 2020				
M Greene						TNM 2.5					
INPUT: RECEIVERS											
PROJECT/CONTRACT:	11092	2			'						
RUN:	CtcM	r rta202 ′	1woPNoInPro	sWkdy012020)						
Receiver											
Name	No.	#DUs	Coordinates	(ground)		Height	Input Sou	nd Levels a	and Criteria	a	Active
			X	Y	Z	above	Existing	Impact Cr	iteria	NR	in
						Ground	LAeq1h	LAeq1h	Sub'l	Goal	Calc.
			ft	ft	ft	ft	dBA	dBA	dB	dB	
ST1		1 1	1,702.5	5 1,982.2	1,512.00	5.00	0.00	66	10.0	8.	0 Y
ST2		2 1	3,422.5	5 1,820.0	1,510.00	5.00	0.00	66	10.0	8.	0 Y
ST3	:	3 1	3,310.7	2,162.6	1,510.00	5.00	0.00	66	10.0	8.	0 Y
ST4	2	1 1	3,272.5	5 2,640.2	1,510.00	5.00	0.00	66	10.0	8.	0 Y
ST5	Ę	5 1	3,312.4	3,256.6	1,510.00	5.00	0.00	66	10.0	8.	0 Y
M1	-	7 1	4,402.0	2,379.6	1,510.00	5.00	0.00	66	10.0	8.	0 Y

Dudek					5 Febru	arv 202	20											
M Greene					TNM 2.	-												
					114101 2.5													
INPUT: BARRIERS																		
PROJECT/CONTRACT:	11092				1													
RUN:			woPNoIn	PrcsWk	dv01202	0												
								Points										
Barrier	Trues	Halasha	·	If Main	If Dame		Add'tnl		Na	C a andinata a	(h = 11 = 11)		11	0				
Name	туре	Height Min	Мах		If Berm			Name	No.	Coordinates X		Z	Height	Segm			0	
		IVIIII	wax	\$ per Unit	\$ per Unit	Top Width	Run:Rise \$ per Unit			^	T	2	at Point	Seg H				Importan
					Vol.	wiath							Point		#Up	#DN	Struct?	tions?
		ft	4	Area \$/sq ft	\$/cu yd	£4	ft:ft \$/ft			ft	ft	ft	ft	ment ft				tions?
			11												-			
Barrier1	W	0.00	99.99	0.00			0.00	H .	1	0,200.2		1,510.00						
								point2	2	- /		1,510.00	6.00					
								point3	3	- ,		1,510.00	6.00			-		
								point4	4	1,00110		1,510.00	6.00			-		
								point5	5	.,		1,510.00	6.00		0	0		
								point6	6	.,		1,510.00	6.00					
Barrier11	W	0.00	99.99	0.00	2		0.00	H.	10	,		1,510.00	10.00		0	0		
								point8	8	0,200.2		1,510.00	10.00					
Barrier21	W	0.00	99.99	0.00	2		0.00	H .	11	3,201.5		1,510.00	20.00					
								point37	37			1,510.00	20.00					
								point38	38	,		1,510.00	20.00		0	0		
								point39	39			1,510.00	20.00					
Barrier8	W	0.00	99.99	0.00			0.00	H	48			1,510.00	20.00					
								point13	13			1,510.00	20.00			-		
								point14	14			1,510.00	20.00		0	0		
								point15	15			1,510.00	20.00		-			
Barrier9	W	0.00	99.99	0.00			0.00	11 ·	50			1,510.00	20.00					
								point17	17			1,510.00	20.00					
								point18	18			1,510.00	20.00		0	0		
								point46	46			1,510.00	20.00					
Barrier10	W	0.00	99.99	0.00			0.00	11.	52			1,510.00	20.00					
								point20	20	,		1,510.00	20.00					
								point21	21			1,510.00	20.00		0	0		
Demien C	14/	0.00	00.00	0.00				point22	22			1,510.00	20.00		-			
Barrier 5	W	0.00	99.99	0.00	1		0.00	1.	54			1,510.00	20.00					
								point24	24			1,510.00	20.00			-		
								point25	25	,		1,510.00	20.00					
								point45	45			1,510.00	20.00					
								point26	26			1,510.00	20.00		0	0		
D	14/	0.00	00.00	0.00				point27	27			1,510.00	20.00					
Barrier7	W	0.00	99.99	0.00	1		0.00	H.	56			1,510.00	20.00					
								point29	29			1,510.00	20.00					
								point30	30			1,510.00	20.00			-		
								point31	31			1,510.00	20.00		0	0		
								point33	33	3,308.6	2,342.3	1,510.00	20.00					

INPUT: BARRIERS						11092								
Barrier6	W	0.00	99.99	0.00	0.00	point58	58	3,297.8	3,093.6 1,510.00	20.00	0.00	0	0	
						point35	35	3,289.5	2,583.9 1,510.00	20.00	0.00	0	0	
						point36	36	3,355.7	2,581.1 1,510.00	20.00	0.00	0	0	
						point12	12	3,361.2	3,088.1 1,510.00	20.00				
Barrier20	W	0.00	99.99	0.00	0.00	point60	60	3,433.3	1,768.9 1,510.00	20.00	0.00	0	0	
						point41	41	3,434.4	1,876.1 1,510.00	20.00	0.00	0	0	
						point42	42	3,552.5	1,875.0 1,510.00	20.00	0.00	0	0	
						point43	43	3,552.5	1,771.1 1,510.00	20.00				
Barrier19	W	0.00	99.99	0.00	0.00	point61	61	1,708.0	2,180.4 1,530.00	0.00	0.00	0	0	
						point62	62	1,819.1	2,524.1 1,540.00	0.00	0.00	0	0	
						point63	63	1,871.2	2,975.4 1,550.00	0.00	0.00	0	0	
						point64	64	1,968.4	3,697.5 1,550.00	0.00	0.00	0	0	
						point65	65	1,975.3	4,003.0 1,540.00	0.00				
Barrier22	W	0.00	99.99	0.00	0.00	point67	67	1,779.6	1,933.4 1,530.00	20.00	0.00	0	0	
						point68	68	1,659.0	1,949.5 1,530.00	20.00	0.00	0	0	
						point69	69	1,506.3	2,035.2 1,530.00	20.00	0.00	0	0	
						point70	70	1,238.3	1,737.8 1,530.00	20.00	0.00	0	0	
						point71	71	1,160.6	1,692.2 1,530.00	20.00				

INPUT: TERRAIN LINES

Dudek			5 February 2	020
M Greene			TNM 2.5	
INPUT: TERRAIN LINES				
PROJECT/CONTRACT:	11092			
RUN:	CtcMrr	ta2021woPNc	oInPrcsWkdy)12020
Terrain Line	Points	5		-
Name	No.	Coordinates	(ground)	
		X	Υ	Z
		ft	ft	ft
Terrain Line1	1	1,605.9	2,030.4	1,522.00
	2	1,685.8	2,007.1	1,522.00
	3	1,825.5	1,990.5	1,522.00
Terrain Line2	4	3,208.7	1,970.8	1,512.00
	5	3,671.8	1,962.1	1,512.00

RESULTS: SOUND LEVELS		i	i	1	1	1	1092	1			1	
Dudek							5 Februar	v 2020				
M Greene							TNM 2.5	,				
							Calculate	d with TNI	VI 2.5			
RESULTS: SOUND LEVELS												1
PROJECT/CONTRACT:		11092										
RUN:		CtcMrr	a2021woP	NoInPrcsWkd	y012020							
BARRIER DESIGN:			HEIGHTS					Average	pavement type	shall be use	d unless	
									ighway agency			
ATMOSPHERICS:		68 deg	F, 50% RH						rent type with			
Receiver		1										
Name	No.	#DUs	Existing	No Barrier	-				With Barrier			
			LAeq1h	LAeq1h	<u>.</u>	Increase over	existing	Туре	Calculated	Noise Reduc	tion	
				Calculated	Crit'n	Calculated	Crit'n	Impact	LAeq1h	Calculated	Goal	Calculated
							Sub'l Inc					minus
												Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
ST1	1	1	0.0	58.0	66	58.0	10		58.0	0.0	8	-8.
ST2	2	1	0.0	57.6	66	57.6	10		57.6	0.0	8	-8.
ST3	3	1	0.0	60.9	66	60.9	10		60.9	0.0	8	-8.
ST4	4	1	0.0	54.8	66	54.8	10		54.8	0.0	8	-8.
ST5	5	1	0.0	51.6	66	51.6	10		51.6	0.0	8	-
M1	7	1	0.0	57.3	66	57.3	10		57.3	0.0	8	-8.
Dwelling Units		# DUs	Noise Ree	duction								
			Min	Avg	Max							
			dB	dB	dB							
All Selected		6	0.0	0.0	0.0)						
All Impacted		0	0.0	0.0	0.0)						
All that meet NR Goal		0	0.0	0.0	0.0							

11092

NF 01: ROADWATS							11094			(
Dudek					5 February 2	2020					
M Greene					TNM 2.5						
INPUT: ROADWAYS							Average	pavement typ	e shall be	used unles	Si
PROJECT/CONTRACT:	11092							ighway agend			
RUN:	CtcMrrta2	021woPN	loInPrcsSa	t 012020				rent type with	-		
Roadway		Points						_			
Name	Width	Name	No. C	oordinates	(pavement)		Flow Cor	ntrol		Segment	
			X		Y	Z	Control	Speed	Percent	Pvmt	On
							Device	Constraint	Vehicles	Туре	Struct
									Affected		
	ft		ft		ft	ft		mph	%		
Clinton Keith Road	100.0	point1	1	4,540.0	2,082.1	1,500.00)			Average	
		point3	3	1,894.7	2,071.7	7 1,518.00				Average	
		point4	4	1,877.4	2,071.7	7 1,520.00				Average	
		point5	5	1,705.5	2,092.5					Average	
		point6	6	1,367.1	2,194.9					Average	
		point7	7	540.4	2,474.8	3 1,530.00)				
I-215	120.0	point29	29	734.8	1,945.7	7 1,515.00)			Average	
		point9	9	963.2	2,315.1	1,515.00					
I-215 NB Onramp	45.0	point31	31	1,561.4	2,190.7	7 1,530.00)			Average	
		point21	21	1,456.5	2,282.5	5 1,530.00)			Average	
		point22	22	1,412.7	2,356.9	9 1,530.00)			Average	
		point23	23	1,421.5	2,492.5	5 1,530.00)			Average	
		point24	24	1,780.2	3,485.3	3 1,530.00				Average	
		point25	25	1,850.1	3,730.3	3 1,530.00					
Whitewood Road	100.0	point33	33	4,478.8	2,121.8					Average	
		point27	27	4,496.4	4,024.5						
I-215 NB Offramp	45.0	point36	36	717.3	-					Average	
		point17	17	1,167.8	1,871.4	1,525.00				Average	
		point18	18	1,281.5	1,989.5	5 1,528.00				Average	
		point19	19	1,355.9	2,173.2	2 1,530.00)				
I-215-2	120.0	point39	39	980.0	-					Average	
		point10	10	1,294.7	2,754.9	9 1,520.00)			Average	
		point11	11	1,552.7	3,192.3	3 1,525.00)			Average	
		point12	12	1,727.6	3,603.4	1,530.00)			Average	
		point13	13	1,823.9	3,918.3	3 1,530.00)			Average	

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	point14	14	1,876.4	4,123.9	1,530.00		Average
	point15	15	1,950.7	4,425.7	1,530.00		
Warm Springs Road 40.0	point40	40	2,652.7	2,103.5	1,515.00		Average
	point41	41	2,655.6	3,085.9	1,515.00		Average
	point42	42	2,702.6	3,323.4	1,515.00		

11092

INPUT: TRAFFIC FOR LARGIN	Percentages						1	110	92				
Dudek							5 Febru	ary 20	1				
							TNM 2.	-					
M Greene								D					
INPUT: TRAFFIC FOR LAeq1h	Percentages												
PROJECT/CONTRACT:	11092												
RUN:	CtcMrrta202	21woPNo	nPrcsSat 0	12020									
Roadway	Points												
Name	Name	No.	Segment										
			Total	Autos	S	MTru	icks	HTru	cks	Buse	S	Moto	rcycles
			Volume	Ρ	S	Ρ	S	Ρ	S	Ρ	S	Ρ	S
			veh/hr	%	mph	%	mph	%	mph	%	mph	%	mph
Clinton Keith Road	point1	1	3377	97	40	2	40	1	40	0	0 0	0 0) (
	point3	3	3377	97	40	2	40	1	40	0	0 0	0 0) (
	point4	4	3377	97	40	2	40	1	40	0	0 0	0 0) (
	point5	5	3377	97	40	2	40	1	40	0	0 0	0 0) (
	point6	6	3377	97	40	2	40	1	40	0	0 0	0 0) (
	point7	7											
I-215	point29	29	11700	93	65	5 3	65	4	65	0	0 0	0 0) (
	point9	9											
I-215 NB Onramp	point31	31	100		45			1			0 0	0 0	
	point21	21	100		45						0 0	0 0	
	point22	22	100		45				-		0 0	0 0	
	point23	23			45				-		-		
	point24	24	100	97	45	2	45	1	45	0	0 0	0 0	
	point25	25											
Whitewood Road	point33	33		97	45	2	45	1	45	0	0 0	0 0	
	point27	27											
I-215 NB Offramp	point36	36			45								
	point17	17			45				-		0 0	0 0) (
	point18	18		97	45	2	45	1	45	0	0 0	0 0) (
	point19	19											
I-215-2	point39	39											
	point10	10											
	point11	11	11700	93	65	3	65	4	65	0	0 0	0 0	0 0

C:\TNM25\Project Files\Costco Murrieta PN 11092\2021wPwoCrtnNoIPSat 012020

INPUT: TRAFFIC FOR LAeq1h P	Percentages							1109	2				
	point12	12	11700	93	65	3	65	4	65	0	0	0	0
	point13	13	11700	93	65	3	65	4	65	0	0	0	0
	point14	14	11700	93	65	3	65	4	65	0	0	0	0
	point15	15											
Warm Springs Road	point40	40	2414	97	35	2	35	1	35	0	0	0	0
	point41	41	2414	97	35	2	35	1	35	0	0	0	0
	point42	42											

INPUT: RECEIVERS							•	11092			
Dudek						5 February	y 2020				
M Greene						TNM 2.5					
INPUT: RECEIVERS											
PROJECT/CONTRACT:	11092										
RUN:	CtcMr	rta202′	1woPNoInPrc	sSat 012020							
Receiver											
Name	No.	#DUs	Coordinates	(ground)		Height	Input Sou	nd Levels a	and Criteria	a	Active
			X	Y	Z	above	Existing	Impact Cr	iteria	NR	in
						Ground	LAeq1h	LAeq1h	Sub'l	Goal	Calc.
			ft	ft	ft	ft	dBA	dBA	dB	dB	
ST1	1	1	1,702.5	1,982.2	1,512.00	5.00	0.00	66	10.0	8.0	Y
ST2	2	1	3,422.5	1,820.0	1,510.00	5.00	0.00	66	10.0	8.0	Y
ST3	3	1	3,310.7	2,162.6	1,510.00	5.00	0.00	66	10.0	8.0	Y
ST4	4	1	3,272.5	2,640.2	1,510.00	5.00	0.00	66	10.0	8.0	Y
ST5	5	1	3,312.4	3,256.6	1,510.00	5.00	0.00	66	10.0	8.0	Y
M1	7	1	4,402.0	2,379.6	1,510.00	5.00	0.00	66	10.0	8.0	Y

Dudek					5 Febru	ary 202	20											
M Greene					TNM 2.	-												
M Oreene					114101 2.5													
INPUT: BARRIERS																		
PROJECT/CONTRACT:	11092																	
RUN:			woPNoIn	PresSat	012020													
								Points										
Barrier Name	Trues	Halasha	·	IS MAL	lf Berm		Add'tnl	Name	No.	C a andinata a	(h = 11 = 11)		11	0				
Name	туре	Height Min	Мах		-		Run:Rise \$ per	Name	NO.	Coordinates X		Z	Height at	Segm		who	0.7	Importar
		IVIIII	Wax	\$ per Unit	\$ per Unit	Top Width				^	I	2	Point	Seg H			Struct?	
				Area	Vol.	wiath							Foint	ment	#op	#DII	Structr	tions?
		ft	ft	\$/sq ft	\$/cu yd	ft	ft:ft \$/ft			ft	ft	ft	ft	ft				tions
Barrier1	W	0.00	99.99	0.00)		0.00		1	0,200.2		1,510.00						
								point2	2	- /		1,510.00	6.00			-		
								point3	3	- ,		1,510.00	6.00			-		
								point4	4	.,000		1,510.00	6.00			-		
								point5	5	.,		1,510.00	6.00		0	0		
5								point6	6	.,		1,510.00	6.00					
Barrier11	W	0.00	99.99	0.00)		0.00	H	10	,		1,510.00	10.00		0	0		
								point8	8	0,200.2		1,510.00	10.00					
Barrier21	W	0.00	99.99	0.00)		0.00	11 ·	11	3,201.5		1,510.00	20.00					
								point37	37			1,510.00	20.00					
								point38	38	,		1,510.00	20.00		0	0		
								point39	39			1,510.00	20.00					
Barrier8	W	0.00	99.99	0.00)		0.00	11 ·	48			1,510.00	20.00					
								point13	13			1,510.00	20.00					
								point14	14			1,510.00	20.00		0	0		
								point15	15			1,510.00	20.00		-			
Barrier9	W	0.00	99.99	0.00)		0.00		50			1,510.00	20.00					
								point17	17			1,510.00	20.00					
								point18	18			1,510.00	20.00		0	0		
								point46	46			1,510.00	20.00		-			
Barrier10	W	0.00	99.99	0.00			0.00		52			1,510.00	20.00					
								point20	20			1,510.00	20.00					
								point21	21			1,510.00	20.00		0	0		
Ducing	147							point22	22			1,510.00	20.00		-	-		
Barrier 5	W	0.00	99.99	0.00			0.00		54			1,510.00	20.00					
								point24	24			1,510.00	20.00			-		
		-						point25	25	,		1,510.00	20.00					
								point45	45			1,510.00	20.00					
								point26	26			1,510.00	20.00		0	0		
D	14/	0.00	00.00	0.00				point27	27			1,510.00	20.00			-		
Barrier7	W	0.00	99.99	0.00			0.00	<u></u>	56			1,510.00	20.00					
								point29	29			1,510.00	20.00					
								point30	30			1,510.00	20.00			-		
								point31	31			1,510.00	20.00		0	0		
								point33	33	3,308.6	2,342.3	1,510.00	20.00					

INPUT: BARRIERS						11092								
Barrier6	W	0.00	99.99	0.00	0.00	point58	58	3,297.8	3,093.6 1,510.00	20.00	0.00	0	0	
						point35	35	3,289.5	2,583.9 1,510.00	20.00	0.00	0	0	
						point36	36	3,355.7	2,581.1 1,510.00	20.00	0.00	0	0	
						point12	12	3,361.2	3,088.1 1,510.00	20.00				
Barrier20	W	0.00	99.99	0.00	0.00	point60	60	3,433.3	1,768.9 1,510.00	20.00	0.00	0	0	
						point41	41	3,434.4	1,876.1 1,510.00	20.00	0.00	0	0	
						point42	42	3,552.5	1,875.0 1,510.00	20.00	0.00	0	0	
						point43	43	3,552.5	1,771.1 1,510.00	20.00				
Barrier19	W	0.00	99.99	0.00	0.00	point61	61	1,708.0	2,180.4 1,530.00	0.00	0.00	0	0	
						point62	62	1,819.1	2,524.1 1,540.00	0.00	0.00	0	0	
						point63	63	1,871.2	2,975.4 1,550.00	0.00	0.00	0	0	
						point64	64	1,968.4	3,697.5 1,550.00	0.00	0.00	0	0	
						point65	65	1,975.3	4,003.0 1,540.00	0.00				
Barrier22	W	0.00	99.99	0.00	0.00	point67	67	1,779.6	1,933.4 1,530.00	20.00	0.00	0	0	
						point68	68	1,659.0	1,949.5 1,530.00	20.00	0.00	0	0	
						point69	69	1,506.3	2,035.2 1,530.00	20.00	0.00	0	0	
						point70	70	1,238.3	1,737.8 1,530.00	20.00	0.00	0	0	
						point71	71	1,160.6	1,692.2 1,530.00	20.00				

INPUT: TERRAIN LINES

		1	1	
Dudek			5 February 2	020
M Greene			TNM 2.5	
INPUT: TERRAIN LINES				
PROJECT/CONTRACT:	11092			
RUN:	CtcMrr	ta2021woPNo	oInPrcsSat 01	2020
Terrain Line	Points	5		
Name	No.	Coordinates	(ground)	
		X	Y	Z
		ft	ft	ft
Terrain Line1	1	1,605.9	2,030.4	1,522.00
	2	1,685.8	2,007.1	1,522.00
	3	1,825.5	1,990.5	1,522.00
Terrain Line2	4	3,208.7	1,970.8	1,512.00
	5	3,671.8	1,962.1	1,512.00

RESULTS: SOUND LEVELS			1	1	1	1	1092	1			1	(
Dudek							5 Februar	v 2020				
M Greene							TNM 2.5	, _0_0				
							Calculate	d with TN	VI 2.5			
RESULTS: SOUND LEVELS												
PROJECT/CONTRACT:		11092										
RUN:		CtcMrrt	ta2021woPl	NoInPrcsSat (012020							
BARRIER DESIGN:		INPUT	HEIGHTS					Average	pavement type	shall be use	d unless	
									ighway agency			
ATMOSPHERICS:		68 deg	F, 50% RH					of a diffe	rent type with	approval of F	HWA.	
Receiver		1										
Name	No.	#DUs	Existing	No Barrier					With Barrier			
			LAeq1h	LAeq1h	<u>.</u>	Increase over	existing	Туре	Calculated	Noise Reduc	tion	
				Calculated	Crit'n	Calculated	Crit'n	Impact	LAeq1h	Calculated	Goal	Calculated
							Sub'l Inc					minus
												Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
ST1	1	1	0.0	57.8	66	57.8	10		57.8	0.0	8	-8.
ST2	2	1	0.0	57.3	66	57.3	10		57.3	0.0	8	-8.
ST3	3	1	0.0	60.7	66	60.7	10		60.7	0.0	8	-8.
ST4	4	1	0.0	54.8	66	54.8	10		54.8	0.0	8	-8.
ST5	5	1	0.0	51.7	66	51.7	10		51.7	0.0	8	-
M1	7	1	0.0	56.8	66	56.8	10		56.8	0.0	8	-8
Dwelling Units		#DUs	Noise Ree	duction								
			Min	Avg	Max							
			dB	dB	dB							
All Selected		6	0.0	0.0	0.0)						
All Impacted		0	0.0	0.0	0.0)						
All that meet NR Goal		0	0.0	0.0	0.0							

11092

NPUI: ROADWAIS							11034	•			
Dudek					5 February 2	020					
M Greene					TNM 2.5	020					
INPUT: ROADWAYS							Average	pavement typ	e shall be	used unles	s
PROJECT/CONTRACT:	11092						a State h	ighway agend	cy substant	iates the u	se
RUN:	2021Cmw	/PwwoCtn	wInPrcs	Wkd 012020			of a diffe	rent type with	the appro	val of FHW	A
Roadway		Points									
Name	Width	Name	No.	Coordinates	(pavement)		Flow Cor	ntrol		Segment	_
				X	Y	Z	Control	Speed	Percent	Pvmt	On
							Device	Constraint	Vehicles	Туре	Struct
									Affected		
	ft			ft	ft	ft		mph	%		
Clinton Keith Road	100.0	point1	1	4,540.0	2,082.1	1,500.00				Average	
		point3	3	1,894.7	2,071.7	1,518.00				Average	
		point4	4	1,877.4	2,071.7	1,520.00				Average	
		point5	5	1,705.5	2,092.5					Average	
		point6	6	,	2,194.9					Average	
		point7	7	540.4	2,474.8	1,530.00					
I-215	120.0	point29	29		1,945.7					Average	
		point9	9		2,315.1						
I-215 NB Onramp	45.0	point31	31		2,190.7					Average	
		point21	21	-	-					Average	
		point22	22		2,356.9					Average	
		point23	23		2,492.5					Average	
		point24	24		3,485.3					Average	
		point25	25		3,730.3						
Whitewood Road	100.0	point33	33							Average	
		point27	27	-	4,024.5					-	
I-215 NB Offramp	45.0		36		1,648.3					Average	
		point17	17		1,871.4					Average	
		point18	18		1,989.5					Average	
1.045.0		point19	19		2,173.2						
I-215-2	120.0	point39	39		2,337.3					Average	
		point10	10		2,754.9					Average	
		point11	11	-	3,192.3					Average	
		point12	12		3,603.4					Average	
		point13	13	1,823.9	3,918.3	1,530.00				Average	

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	point14	14	1,876.4	4,123.9	1,530.00		Average
	point15	15	1,950.7	4,425.7	1,530.00		
Warm Springs Road 40.0	point40	40	2,652.7	2,103.5	1,515.00		Average
	point41	41	2,655.6	3,085.9	1,515.00		Average
	point42	42	2,702.6	3,323.4	1,515.00		

11092

INPUT: TRAFFIC FOR LARGIN	Percentages							110	92				
Dudek							5 Febru	ary 20	1				
M Greene							TNM 2.	-					
M Greene							INW 2.)					
INPUT: TRAFFIC FOR LAeq1h	Percentages												
PROJECT/CONTRACT:	11092												
RUN:	2021CmwP	wwoCtnw	InPrcsWkd	01202	20								
Roadway	Points												
Name	Name	No.	Segment										
			Total	Autos	6	MTru	cks	HTru	cks	Buse	S	Moto	rcycles
			Volume	Ρ	S	Ρ	S	Ρ	S	Ρ	S	Ρ	S
			veh/hr	%	mph	%	mph	%	mph	%	mph	%	mph
Clinton Keith Road	point1	1	4506	97	40	2	40	1	40	0	0 0	0 0	(
	point3	3	4506	97	40	2	40	1	40	0	0 0	0 0	(
	point4	4	4506	97	40	2	40	1	40	0	0 0	0 0	(
	point5	5	4506	97	40	2	40	1	40	0	0 0	0 0	(
	point6	6	4506	97	40	2	40	1	40	0	0 0	0 0	(
	point7	7											
I-215	point29	29	11700	93	65	3	65	4	65	0	0 0	0 0	0
	point9	9											
I-215 NB Onramp	point31	31	100		45			1			0 0	0 0	0
	point21	21	100	97	45		1				0 0	0 0	0
	point22	22	100		45				-		0 0	0 0	0
	point23	23			45				-		-		
	point24	24	100	97	45	2	45	1	45	0	0 0	0 0	0
	point25	25											
Whitewood Road	point33	33		97	45	2	45	1	45	0	0 0	0 0	(
	point27	27											
I-215 NB Offramp	point36	36			45								
	point17	17			45				-		0 0	0 0	(
	point18	18		97	45	2	45	1	45	0	0 0	0 0	(
	point19	19											
I-215-2	point39	39											
	point10	10		93									
	point11	11	11700	93	65	3	65	4	65	0	0 0	0 0	(

C:\TNM25\Project Files\Costco Murrieta PN 11092\2021CmltvwPwoCrtnWkdy 012020

INPUT: TRAFFIC FOR LAeq1h P	Percentages							1109	2				
	point12	12	11700	93	65	3	65	4	65	0	0	0	0
	point13	13	11700	93	65	3	65	4	65	0	0	0	0
	point14	14	11700	93	65	3	65	4	65	0	0	0	0
	point15	15											
Warm Springs Road	point40	40	1961	97	35	2	35	1	35	0	0	0	0
	point41	41	1961	97	35	2	35	1	35	0	0	0	0
	point42	42											

INPUT: RECEIVERS									11092			
Dudek							5 February	y 2020				
M Greene							TNM 2.5					
INPUT: RECEIVERS												
PROJECT/CONTRACT:	11092											
RUN:	2021C	mwPw	woCt	nwInPrcs\	Vkd 012020							
Receiver												
Name	No.	#DUs	Coor	dinates (g	round)		Height	Input Sou	nd Levels	and Criteria	a	Active
			Χ	Y		Z	above	Existing	Impact Cr	iteria	NR	in
							Ground	LAeq1h	LAeq1h	Sub'l	Goal	Calc.
			ft	ft		ft	ft	dBA	dBA	dB	dB	
ST1	1	1		1,702.5	1,982.2	1,512.0	0 5.00	0.00	66	6 10.0	8.0) Y
ST2	2	1		3,422.5	1,820.0	1,510.0	0 5.00	0.00	66	6 10.0	8.0) Y
ST3	3	1		3,310.7	2,162.6	1,510.0	0 5.00	0.00	66	6 10.0	8.0) Y
ST4	4	1		3,272.5	2,640.2	1,510.0	0 5.00	0.00	66	6 10.0	8.0) Y
ST5	5	1		3,312.4	3,256.6	1,510.0	0 5.00	0.00	66	6 10.0	8.0) Y
M1	7	1		4,402.0	2,379.6	1,510.0	0 5.00	0.00	66	6 10.0	8.0) Y

								1										
Dudek					5 Febru	ary 202	20											
M Greene					TNM 2.	-	20											
W Oreene						,												
INPUT: BARRIERS																		
PROJECT/CONTRACT:	11092				1													
RUN:			voCtnwlr	PrcsWk	d 01202	0												
Barrier			+		1	-	_	Points										
Name	Туре	Height		lf Wall	If Berm		Add'tnl	Name	No.	Coordinates	(bottom)		Height	Segm	ont			
Nume	Type	Min	Мах	\$ per	\$ per	Тор	Run:Rise \$ per		110.	X		z	at	Seg H		urbs	On	Importar
			max	Unit	Unit	Width				~	•	-	Point				Struct?	
				Area	Vol.		Length			1				ment				tions?
		ft	ft	\$/sq ft	\$/cu yd	ft	ft:ft \$/ft			ft	ft	ft	ft	ft				
Barrier1	W	0.00	99.99				0.00	point1	1	3,293.2	2 144 9	1,510.00	6.00	0.00	0	0		
		0.00		0.00			0.00	point2	2			1,510.00	6.00					
								point3	3			1,510.00	6.00			-		
			1	1				point4	4	- ,		1,510.00	6.00					
								point5	5			1,510.00	6.00	0.00	0	0		
								point6	6	4,422.0	3,547.7	1,510.00	6.00					
Barrier11	W	0.00	99.99	0.00			0.00	point10	10	3,293.3	2,145.3	1,510.00	10.00	0.00	0	0		
								point8	8	3,289.2	2,570.5	1,510.00	10.00					
Barrier21	W	0.00	99.99	0.00			0.00	point11	11	3,201.5	1,661.5	1,510.00	20.00	0.00	0	0		
								point37	37	3,204.3	1,713.9	1,510.00	20.00	0.00	0	0		
								point38	38	3,413.7	1,713.9	1,510.00	20.00	0.00	0	0		
								point39	39	3,411.0	1,653.3	1,510.00	20.00					
Barrier8	W	0.00	99.99	0.00			0.00	point48	48		2,270.4	1,510.00	20.00	0.00	0	0		
								point13	13			1,510.00	20.00		0	0		
								point14	14			1,510.00	20.00		0	0		
								point15	15			1,510.00	20.00					
Barrier9	W	0.00	99.99	0.00			0.00	H .	50			1,510.00	20.00					
								point17	17			1,510.00	20.00					
								point18	18			1,510.00	20.00		0	0		
								point46	46			1,510.00	20.00					
Barrier10	W	0.00	99.99	0.00	1		0.00	11.	52			1,510.00	20.00					
								point20	20			1,510.00	20.00					
								point21	21			1,510.00	20.00		0	0		
Porrior 5	W	0.00	00.00	0.00	.		0.00	point22	22 54			1,510.00	20.00					
Barrier 5	vv	0.00	99.99	0.00	1		0.00	point54	24			1,510.00 1,510.00	20.00					
								point24	24	,		1,510.00	20.00					
		-	+		-	-		point25	45	,		1,510.00	20.00					
			-					point43	26			1,510.00	20.00					
								point20	20			1,510.00	20.00					
Barrier7	W	0.00	99.99	0.00			0.00	11.	56			1,510.00	20.00		0	0		
		0.00	00.00	0.00			0.00	point29	29			1,510.00	20.00					
								point20	30			1,510.00	20.00					
			-					point31	31			1,510.00	20.00			-		
				1	-			point33	33			1,510.00	20.00		+			

INPUT: BARRIERS						11092								
Barrier6	W	0.00	99.99	0.00	0.00	point58	58	3,297.8	3,093.6 1,510.00	20.00	0.00	0	0	
						point35	35	3,289.5	2,583.9 1,510.00	20.00	0.00	0	0	
						point36	36	3,355.7	2,581.1 1,510.00	20.00	0.00	0	0	
						point12	12	3,361.2	3,088.1 1,510.00	20.00				
Barrier20	W	0.00	99.99	0.00	0.00	point60	60	3,433.3	1,768.9 1,510.00	20.00	0.00	0	0	
						point41	41	3,434.4	1,876.1 1,510.00	20.00	0.00	0	0	
						point42	42	3,552.5	1,875.0 1,510.00	20.00	0.00	0	0	
						point43	43	3,552.5	1,771.1 1,510.00	20.00				
Barrier19	W	0.00	99.99	0.00	0.00	point61	61	1,708.0	2,180.4 1,530.00	0.00	0.00	0	0	
						point62	62	1,819.1	2,524.1 1,540.00	0.00	0.00	0	0	
						point63	63	1,871.2	2,975.4 1,550.00	0.00	0.00	0	0	
						point64	64	1,968.4	3,697.5 1,550.00	0.00	0.00	0	0	
						point65	65	1,975.3	4,003.0 1,540.00	0.00				
Barrier22	W	0.00	99.99	0.00	0.00	point67	67	1,779.6	1,933.4 1,530.00	20.00	0.00	0	0	
						point68	68	1,659.0	1,949.5 1,530.00	20.00	0.00	0	0	
						point69	69	1,506.3	2,035.2 1,530.00	20.00	0.00	0	0	
						point70	70	1,238.3	1,737.8 1,530.00	20.00	0.00	0	0	
						point71	71	1,160.6	1,692.2 1,530.00	20.00				

RESULTS: SOUND LEVELS			i	1		1	1092	1		i		
Dudek							5 Februar	v 2020				
M Greene							TNM 2.5	,				
							Calculated	d with TNI	1 2.5			
RESULTS: SOUND LEVELS												
PROJECT/CONTRACT:		11092										
RUN:		2021Cn	nwPwwoCt	nwinPrcsWkd	I 012020							
BARRIER DESIGN:		INPUT	HEIGHTS					Average	pavement type	e shall be use	d unless	
								a State h	ighway agency	y substantiate	es the use	
ATMOSPHERICS:		68 deg	F, 50% RH					of a diffe	rent type with	approval of F	HWA.	
Receiver		·										
Name	No.	#DUs	Existing	No Barrier					With Barrier			
			LAeq1h	LAeq1h		Increase over	existing	Туре	Calculated	Noise Reduc	tion	
				Calculated	Crit'n	Calculated	Crit'n	Impact	LAeq1h	Calculated	Goal	Calculated
							Sub'l Inc					minus
												Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
ST1	1	1	0.0	58.9	66	58.9	10		58.9	0.0	8	-8
ST2	2	1	0.0	58.5	66	58.5	10		58.5	0.0	8	-8.
ST3	3	1	0.0	61.9	66	61.9	10		61.9	0.0	8	-8
ST4	4	1	0.0	55.4	66	55.4	10		55.4	0.0	8	-8
ST5	5	1	0.0	51.8	66		_		51.8	0.0	8	-
M1	7	1	0.0	58.2	66	58.2	10		58.2	0.0	8	-8
Dwelling Units		#DUs	Noise Ree	duction								
			Min	Avg	Мах							
			dB	dB	dB							
All Selected		6	0.0	0.0	0.0							
All Impacted		0	0.0	0.0	0.0							
All that meet NR Goal		0	0.0	0.0	0.0							

11092

NF01: ROADWATS							11094				
Dudek					5 February 2	2020					
M Greene					TNM 2.5						
INPUT: ROADWAYS							Average	pavement typ	e shall be	used unles	s
PROJECT/CONTRACT:	11092							ighway agend			
RUN:	2021Cmw	PwwoCtn	wInPrcsSa	t 012020				rent type with	-		
Roadway		Points								-	
Name	Width	Name	No. Co	oordinates	(pavement)		Flow Cor	ntrol		Segment	_
			X		Y	Z	Control	Speed	Percent	Pvmt	On
							Device	Constraint	Vehicles	Туре	Struct
									Affected		
	ft		ft		ft	ft		mph	%		
Clinton Keith Road	100.0	point1	1	4,540.0	2,082.2	1 1,500.00)			Average	
		point3	3	1,894.7	2,071.7	7 1,518.00				Average	
		point4	4	1,877.4						Average	
		point5	5	1,705.5						Average	
		point6	6	1,367.1						Average	
		point7	7	540.4	,						
I-215	120.0	point29	29	734.8	,					Average	
		point9	9	963.2							
I-215 NB Onramp	45.0	point31	31	1,561.4						Average	
		point21	21	1,456.5						Average	
		point22	22	1,412.7						Average	
		point23	23	1,421.5						Average	
		point24	24	1,780.2						Average	
		point25	25	1,850.1				_			
Whitewood Road	100.0	point33	33	4,478.8						Average	
		point27	27	4,496.4				_			
I-215 NB Offramp	45.0	point36	36	717.3				_		Average	
		point17	17	1,167.8						Average	
		point18	18	1,281.5						Average	
		point19	19	1,355.9							
I-215-2	120.0	point39	39	980.0						Average	
		point10	10	1,294.7						Average	
		point11	11	1,552.7						Average	
		point12	12	1,727.6						Average	
		point13	13	1,823.9	3,918.3	3 1,530.00				Average	

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	point14	14	1,876.4	4,123.9	1,530.00		Average
	point15	15	1,950.7	4,425.7	1,530.00		
Warm Springs Road 40.0	point40	40	2,652.7	2,103.5	1,515.00		Average
	point41	41	2,655.6	3,085.9	1,515.00		Average
	point42	42	2,702.6	3,323.4	1,515.00		

INPUT: TRAFFIC FOR LARGIN	Percentages		1					110	92				
Dudek							5 Febru	ary 20	1				
M Greene							TNM 2.	-					
W Greene)					
INPUT: TRAFFIC FOR LAeq1h	Percentages												
PROJECT/CONTRACT:	11092												
RUN:	2021CmwPv	wwoCtnw	InPrcsSat 0	12020)								
Roadway	Points												
Name	Name	No.	Segment										
			Total	Autos	5	MTru	cks	HTru	cks	Buse	S	Moto	rcycles
			Volume	Ρ	S	Ρ	S	Ρ	S	Ρ	S	Ρ	S
			veh/hr	%	mph	%	mph	%	mph	%	mph	%	mph
Clinton Keith Road	point1	1	4542	97	40	2	40	1	40	0	0 0	0	(
	point3	3	4542	97	40	2	40	1	40	0	0	0	(
	point4	4	4542	97	40	2	40	1	40	0	0	0	(
	point5	5	4542	97	40	2	40	1	40	0	0	0	(
	point6	6	4542	97	40	2	40	1	40	0	0	0	(
	point7	7											
I-215	point29	29	11700	93	65	3	65	4	65	0	0 0	0	(
	point9	9											
I-215 NB Onramp	point31	31	100		45				-				(
	point21	21	100		45				-	-	0 0	0	(
	point22	22	100		45			1	-		0 0	0	0
	point23	23			45				-		0	0	
	point24	24	100	97	45	2	45	1	45	0	0	0	(
	point25	25											
Whitewood Road	point33	33		97	45	2	45	1	45	0	0 0	0	(
	point27	27											
I-215 NB Offramp	point36	36			45				-	-	-		
	point17	17			45				-		-		
	point18	18		97	45	2	45	1	45	0	0 0	0	(
	point19	19											
I-215-2	point39	39											
	point10	10											
	point11	11	11700	93	65	3	65	4	65	0	0 0	0	(

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INPUT: TRAFFIC FOR LAeq1h P	Percentages							1109	2				
	point12	12	11700	93	65	3	65	4	65	0	0	0	0
	point13	13	11700	93	65	3	65	4	65	0	0	0	0
	point14 14 11700				65	3	65	4	65	0	0	0	0
	point15	15											
Warm Springs Road	point40	40	2611	97	35	2	35	1	35	0	0	0	0
1 3	point41	41	2611	97	35	2	35	1	35	0	0	0	0
	point42	42											

INPUT: RECEIVERS								11092			
Dudek						5 Februa	ry 2020				
M Greene						TNM 2.5					
INPUT: RECEIVERS											
PROJECT/CONTRACT:	11092				1						
RUN:	2021C	mwPw	woCtnwInPro	sSat 012020							
Receiver											
Name	No.	#DUs	Coordinates	(ground)		Height	Input Sou	nd Levels a	and Criteria	a	Active
			X	Y	Z	above	Existing	Impact Cr	iteria	NR	in
						Ground	LAeq1h	LAeq1h	Sub'l	Goal	Calc.
			ft	ft	ft	ft	dBA	dBA	dB	dB	
ST1	1	1	1,702.5	1,982.2	1,512.0	0 5.0	0.00	66	10.0	8.0	Y
ST2	2	1	3,422.5	1,820.0	1,510.0	0 5.0	0.00	66	10.0	8.0	Y
ST3	3	1	3,310.7	2,162.6	1,510.0	0 5.0	0.00	66	10.0	8.0	Y
ST4	4	1	3,272.5	2,640.2	1,510.0	0 5.0	0.00	66	10.0	8.0	Y
ST5	5	1	3,312.4	3,256.6	1,510.0	0 5.0	0.00	66	10.0	8.0	Y
M1	7	1	4,402.0	2,379.6	1,510.0	0 5.0	0.00	66	6 10.0	8.0	Y

11092

Dudek					5 Febru	ary 202	20											
M Greene					TNM 2.	-												
					114101 2.1													
INPUT: BARRIERS																		
PROJECT/CONTRACT:	11092																	
RUN:			voCtnwlr	PresSa	+ 012020													
								Points										
Barrier	Truce	Halasha	·	IS MAL	lf Dame		Add'tnl		Na	C a andinata a	(h = 11 = 11)		Haimht	0				
Name	туре	Height Min	Мах		If Berm			Name	No.	Coordinates X		Z	Height	Segm			0	
		IVIIII	wax	\$ per	\$ per	Top Width	Run:Rise \$ per			^	T	2	at	Seg H				Importar
				Unit	Unit Vol.	wiath							Point		#Up	#DU	Struct?	tions?
		ft	4	Area		£1	ft:ft \$/ft			£4	£4	ft	£4	ment ft				tions?
			n.	\$/sq ft	\$/cu yd					ft			ft					
Barrier1	W	0.00	99.99	0.00)		0.00		1	0,200.2		1,510.00						
								point2	2	- /		1,510.00				-		
								point3	3	- ,		1,510.00				-		
								point4	4	1,00110		1,510.00				-		
								point5	5	.,		1,510.00			0	0		
								point6	6	.,		1,510.00						
Barrier11	W	0.00	99.99	0.00)		0.00	H	10	,		1,510.00	10.00		0	0		
								point8	8	0,200.2		1,510.00	10.00					
Barrier21	W	0.00	99.99	0.00)		0.00		11	3,201.5		1,510.00	20.00					
								point37	37			1,510.00						
								point38	38	,		1,510.00			0	0		
								point39	39			1,510.00						
Barrier8	W	0.00	99.99	0.00)		0.00	11 ·	48			1,510.00						
								point13	13			1,510.00						
								point14	14			1,510.00			0	0		
								point15	15			1,510.00						
Barrier9	W	0.00	99.99	0.00)		0.00		50			1,510.00	20.00					
								point17	17			1,510.00						
								point18	18			1,510.00			0	0		
								point46	46			1,510.00						
Barrier10	W	0.00	99.99	0.00)		0.00		52			1,510.00						
								point20	20			1,510.00						
				-				point21	21			1,510.00	20.00		0	0		
								point22	22			1,510.00						
Barrier 5	W	0.00	99.99	0.00)		0.00		54			1,510.00						
								point24	24			1,510.00				-		
				-				point25	25	,		1,510.00	20.00					
				-				point45	45			1,510.00						
				-				point26	26			1,510.00			0	0		
				-				point27	27			1,510.00	20.00					
Barrier7	W	0.00	99.99	0.00)		0.00	<u>.</u>	56			1,510.00	20.00					
								point29	29			1,510.00						
								point30	30			1,510.00	20.00			-		
								point31	31			1,510.00	20.00		0	0		
								point33	33	3,308.6	2,342.3	1,510.00	20.00	9				

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INPUT: BARRIERS						11092								
Barrier6	W	0.00	99.99	0.00	0.00	point58	58	3,297.8	3,093.6 1,510.00	20.00	0.00	0	0	
						point35	35	3,289.5	2,583.9 1,510.00	20.00	0.00	0	0	
						point36	36	3,355.7	2,581.1 1,510.00	20.00	0.00	0	0	
						point12	12	3,361.2	3,088.1 1,510.00	20.00				
Barrier20	W	0.00	99.99	0.00	0.00	point60	60	3,433.3	1,768.9 1,510.00	20.00	0.00	0	0	
						point41	41	3,434.4	1,876.1 1,510.00	20.00	0.00	0	0	
						point42	42	3,552.5	1,875.0 1,510.00	20.00	0.00	0	0	
						point43	43	3,552.5	1,771.1 1,510.00	20.00				
Barrier19	W	0.00	99.99	0.00	0.00	point61	61	1,708.0	2,180.4 1,530.00	0.00	0.00	0	0	
						point62	62	1,819.1	2,524.1 1,540.00	0.00	0.00	0	0	
						point63	63	1,871.2	2,975.4 1,550.00	0.00	0.00	0	0	
						point64	64	1,968.4	3,697.5 1,550.00	0.00	0.00	0	0	
						point65	65	1,975.3	4,003.0 1,540.00	0.00				
Barrier22	W	0.00	99.99	0.00	0.00	point67	67	1,779.6	1,933.4 1,530.00	20.00	0.00	0	0	
						point68	68	1,659.0	1,949.5 1,530.00	20.00	0.00	0	0	
						point69	69	1,506.3	2,035.2 1,530.00	20.00	0.00	0	0	
						point70	70	1,238.3	1,737.8 1,530.00	20.00	0.00	0	0	
						point71	71	1,160.6	1,692.2 1,530.00	20.00				

RESULTS: SOUND LEVELS			i	[[1	1092				1	1
Dudek							5 Februar	v 2020				
M Greene							TNM 2.5	,				
							Calculated	d with TNI	VI 2.5			
RESULTS: SOUND LEVELS												
PROJECT/CONTRACT:		11092										
RUN:		2021Cn	nwPwwoCt	nwInPrcsSat	012020							
BARRIER DESIGN:		INPUT	HEIGHTS					Average	pavement type	e shall be use	d unless	
								a State h	ighway agency	y substantiate	s the use	
ATMOSPHERICS:		68 deg	F, 50% RH					of a diffe	rent type with	approval of F	HWA.	
Receiver]	-							-		
Name	No.	#DUs	Existing	No Barrier					With Barrier			
			LAeq1h	LAeq1h	<u>.</u>	Increase over	existing	Туре	Calculated	Noise Reduc	tion	
				Calculated	Crit'n	Calculated	Crit'n	Impact	LAeq1h	Calculated	Goal	Calculated
							Sub'l Inc				ĺ	minus
											ĺ	Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
ST1	1	1	0.0	58.9	66	58.9	10		58.9	0.0	8	-8.
ST2	2	1	0.0	58.5	66	58.5	10		58.5	0.0	8	-8.
ST3	3	1	0.0	61.9	66	61.9	10		61.9	0.0	8	-8.
ST4	4	1	0.0	55.6	66	55.6	10		55.6	0.0	8	-8
ST5	5	1	0.0	52.0	66	52.0	10		52.0	0.0	8	-
M1	7	1	0.0	58.2	66	58.2	10		58.2	0.0	8	-8.
Dwelling Units		# DUs	Noise Re	duction								
			Min	Avg	Мах							
			dB	dB	dB							
All Selected		6	0.0	0.0	0.0							
All Impacted		0	0.0	0.0	0.0							
All that meet NR Goal		0	0.0	0.0	0.0							

11092

NF 01: NOADWATS							11094			(
Dudek					5 February 2	2020					
M Greene					TNM 2.5						
INPUT: ROADWAYS							Average	pavement typ	e shall be	used unles	Si
PROJECT/CONTRACT:	11092							ighway agend			
RUN:	2021Cum	wPwCrtnv	vInPrcsWkd	I 012020				rent type with	-		
Roadway		Points						_			
Name	Width	Name	No. Co	ordinates	(pavement)		Flow Cor	ntrol		Segment	
			Х		Y	Z	Control	Speed	Percent	Pvmt	On
							Device	Constraint	Vehicles	Туре	Struct
									Affected		
	ft		ft		ft	ft		mph	%		
Clinton Keith Road	100.0	point1	1	4,540.0	2,082.1	1,500.00)			Average	
		point3	3	1,894.7	2,071.7					Average	
		point4	4	1,877.4	2,071.7	7 1,520.00				Average	
		point5	5	1,705.5	2,092.5					Average	
		point6	6	1,367.1	2,194.9					Average	
		point7	7	540.4	2,474.8	3 1,530.00					
I-215	120.0	point29	29	734.8	1,945.7	7 1,515.00)			Average	
		point9	9	963.2	2,315.1	1,515.00					
I-215 NB Onramp	45.0	point31	31	1,561.4	2,190.7	7 1,530.00)			Average	
		point21	21	1,456.5	2,282.5	5 1,530.00				Average	
		point22	22	1,412.7	2,356.9	9 1,530.00				Average	
		point23	23	1,421.5	2,492.5					Average	
		point24	24	1,780.2						Average	
		point25	25	1,850.1	3,730.3						
Whitewood Road	100.0	point33	33	4,478.8	2,121.8					Average	
		point27	27	4,496.4							
I-215 NB Offramp	45.0	point36	36	717.3	-					Average	
		point17	17	1,167.8	1,871.4					Average	
		point18	18	1,281.5	1,989.5					Average	
		point19	19	1,355.9							
I-215-2	120.0	point39	39	980.0	-					Average	
		point10	10	1,294.7	2,754.9					Average	
		point11	11	1,552.7	3,192.3	3 1,525.00				Average	
		point12	12	1,727.6						Average	
		point13	13	1,823.9	3,918.3	3 1,530.00)			Average	

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	point14	14	1,876.4	4,123.9	1,530.00		Average
	point15	15	1,950.7	4,425.7	1,530.00		
Warm Springs Road 40.0	point40	40	2,652.7	2,103.5	1,515.00		Average
	point41	41	2,655.6	3,085.9	1,515.00		Average
	point42	42	2,702.6	3,323.4	1,515.00		

INPUT: TRAFFIC FOR LAeq1h Percentages

11092

INPUT: TRAFFIC FOR LARGIN	Percentages		1					110	92				1
Dudek							5 Febru	ary 20	1				
M Greene							TNM 2.	-					
W Greene)					
INPUT: TRAFFIC FOR LAeq1h	Percentages												
PROJECT/CONTRACT:	11092												
RUN:	2021CumwF	PwCrtnwl	nPrcsWkd (01202	0								
Roadway	Points												
Name	Name	No.	Segment										
			Total	Autos	5	MTru	cks	HTru	cks	Buse	S	Moto	rcycles
			Volume	Ρ	S	Ρ	S	Ρ	S	Ρ	S	Ρ	S
			veh/hr	%	mph	%	mph	%	mph	%	mph	%	mph
Clinton Keith Road	point1	1	4378	97	40	2	40	1	40	0	0	0	(
	point3	3	4378	97	40	2	40	1	40	0	0	0	(
	point4	4	4378	97	40	2	40	1	40	0	0	0	(
	point5	5	4378	97	40	2	40	1	40	0	0	0	(
	point6	6	4378	97	40	2	40	1	40	0	0	0	(
	point7	7											
I-215	point29	29	11700	93	65	3	65	4	65	0	0	0	(
	point9	9											
I-215 NB Onramp	point31	31			45				-				
	point21	21			45				-	-	-		
	point22	22			45				-				
	point23	23			45				-		-		
	point24	24		97	45	2	45	1	45	0	0 0	0	(
	point25	25											
Whitewood Road	point33	33		97	45	2	45	1	45	0	0 0	0	(
	point27	27											
I-215 NB Offramp	point36	36			45				-	-	-		
	point17	17			45				-		-		
	point18	18		97	45	2	45	1	45	0	0 0	0	(
	point19	19									<u> </u>		
I-215-2	point39	39											
	point10	10											
	point11	11	11700	93	65	3	65	4	65	0	0 0	0	0

C:\TNM25\Project Files\Costco Murrieta PN 11092\2021CmltvwPwCrtnWkdy 012020

INPUT: TRAFFIC FOR LAeq1h P	Percentages							1109	2				
	point12	12	11700	93	65	3	65	4	65	0	0	0	0
	point13	13	11700	93	65	3	65	4	65	0	0	0	0
	point14	14	11700	93	65	3	65	4	65	0	0	0	0
	point15	15											
Warm Springs Road	point40	40	1776	97	35	2	35	1	35	0	0	0	0
1 0	point41	41	1776	97	35	2	35	1	35	0	0	0	0
	point42	42											

INPUT: RECEIVERS										11092			
Dudek								5 Februar	y 2020				
M Greene								TNM 2.5					
INPUT: RECEIVERS													
PROJECT/CONTRACT:	11092	2											
RUN:	20210	CumwP	wCrtnwInP	rcsWkd 0	12020								
Receiver													
Name	No.	#DUs	Coordinat	es (groun	nd)			Height	Input Sou	nd Levels a	and Criteria	a	Active
			Х	Y		Z		above	Existing	Impact Cr	iteria	NR	in
								Ground	LAeq1h	LAeq1h	Sub'l	Goal	Calc.
			ft	ft		ft		ft	dBA	dBA	dB	dB	
ST1		1 1	1,702	2.5	1,982.2	1,51	2.00	5.00	0.00	66	6 10.0	8.0	Y C
ST2		2 1	3,422	2.5	1,820.0	1,51	0.00	5.00	0.00	66	6 10.0	8.0	Y C
ST3	;	3 1	3,310).7 2	2,162.6	1,51	0.00	5.00	0.00	66	6 10.0	8.0	Y C
ST4	4	4 1	3,272	2.5 2	2,640.2	1,51	0.00	5.00	0.00	66	6 10.0	8.0	Y C
ST5		5 1	3,312	2.4 3	3,256.6	1,51	0.00	5.00	0.00	66	6 10.0	8.0	Y C
M1	-	7 1	4,402	2.0 2	2,379.6	1,51	0.00	5.00	0.00	66	6 10.0	8.0) Y

								1										
Dudek					5 Febru	ary 202	20											
M Greene					TNM 2.	-	10											
M Greene					1111111 2.3	, 												
INPUT: BARRIERS																		
PROJECT/CONTRACT:	11092				I													
RUN:			Crtnwln	PrcsWk	4 012020	1												
					+			Points										
Barrier Name	Trues	Halasha	·	IS MAL	lf Berm		Add'tnl	Name	No.	C a andinata a	(h = 11 = 11)		11	0				
Name	туре	Height Min	Мах	\$ per			Run:Rise \$ per	Name	NO.	Coordinates X		Z	Height at	Segm Seg H		urbo	0.7	Importar
		IVIIII	Wax	Unit	\$ per Unit	Top Width	1			^	I	2	Point				Struct?	
				Area	Vol.	wiath	Length						Foint	ment	#op	#DII	Structr	tions?
		ft	ft	\$/sq ft	\$/cu yd	ft	ft:ft \$/ft			ft	ft	ft	ft	ft				tions
D																		
Barrier1	W	0.00	99.99	0.00			0.00		1	0,200.2		1,510.00						
								point2	2	- /		1,510.00	6.00					
								point3	3	- ,		1,510.00	6.00			-		
								point4	4	.,000		1,510.00	6.00			-		
								point5	5	.,		1,510.00	6.00		0	0		
5								point6	6	.,		1,510.00	6.00					
Barrier11	W	0.00	99.99	0.00			0.00	H	10	,		1,510.00	10.00		0	0		
-								point8	8	0,200.2		1,510.00	10.00					
Barrier21	W	0.00	99.99	0.00) 		0.00		11	3,201.5		1,510.00	20.00					
								point37	37			1,510.00	20.00			-		
								point38	38	,		1,510.00	20.00		0	0		
								point39	39			1,510.00	20.00					
Barrier8	W	0.00	99.99	0.00			0.00	11 ·	48			1,510.00	20.00					
								point13	13			1,510.00	20.00			-		
								point14	14			1,510.00	20.00		0	0		
								point15	15			1,510.00	20.00					
Barrier9	W	0.00	99.99	0.00			0.00		50			1,510.00	20.00					
								point17	17			1,510.00	20.00					
								point18	18			1,510.00	20.00		0	0		
								point46	46			1,510.00	20.00					
Barrier10	W	0.00	99.99	0.00	1		0.00		52			1,510.00	20.00					
								point20	20	,		1,510.00	20.00					
								point21	21			1,510.00	20.00		0	0		
Derrier F	W	0.00	00.00		.			point22	22			1,510.00	20.00		-			
Barrier 5	VV	0.00	99.99	0.00	1		0.00		54 24			1,510.00	20.00					
<u> </u>								point24				1,510.00	20.00					
							+	point25	25 45	,		1,510.00	20.00					
		-						point45	45 26			1,510.00	20.00					
								point26 point27	26			1,510.00 1,510.00	20.00		0	0		
Porrior7	W	0.00	00.00	0.00	.		0.00								0			
Barrier7	VV	0.00	99.99	0.00			0.00	<u>.</u>	56			1,510.00	20.00					
								point29	29			1,510.00	20.00					
								point30	30			1,510.00	20.00			-		
								point31	31			1,510.00	20.00		0	0		
								point33	33	3,308.6	2,342.3	1,510.00	20.00					

INPUT: BARRIERS						11092								
Barrier6	W	0.00	99.99	0.00	0.00	point58	58	3,297.8	3,093.6 1,510.00	20.00	0.00	0	0	
						point35	35	3,289.5	2,583.9 1,510.00	20.00	0.00	0	0	
						point36	36	3,355.7	2,581.1 1,510.00	20.00	0.00	0	0	
						point12	12	3,361.2	3,088.1 1,510.00	20.00				
Barrier20	W	0.00	99.99	0.00	0.00	point60	60	3,433.3	1,768.9 1,510.00	20.00	0.00	0	0	
						point41	41	3,434.4	1,876.1 1,510.00	20.00	0.00	0	0	
						point42	42	3,552.5	1,875.0 1,510.00	20.00	0.00	0	0	
						point43	43	3,552.5	1,771.1 1,510.00	20.00				
Barrier19	W	0.00	99.99	0.00	0.00	point61	61	1,708.0	2,180.4 1,530.00	0.00	0.00	0	0	
						point62	62	1,819.1	2,524.1 1,540.00	0.00	0.00	0	0	
						point63	63	1,871.2	2,975.4 1,550.00	0.00	0.00	0	0	
						point64	64	1,968.4	3,697.5 1,550.00	0.00	0.00	0	0	
						point65	65	1,975.3	4,003.0 1,540.00	0.00				
Barrier22	W	0.00	99.99	0.00	0.00	point67	67	1,779.6	1,933.4 1,530.00	20.00	0.00	0	0	
						point68	68	1,659.0	1,949.5 1,530.00	20.00	0.00	0	0	
						point69	69	1,506.3	2,035.2 1,530.00	20.00	0.00	0	0	
						point70	70	1,238.3	1,737.8 1,530.00	20.00	0.00	0	0	
						point71	71	1,160.6	1,692.2 1,530.00	20.00				

RESULTS: SOUND LEVELS			1	1	1	1	1092				1	
Dudek							5 Februar	v 2020				
M Greene							TNM 2.5	,				
							Calculated	d with TNI	VI 2.5			
RESULTS: SOUND LEVELS												
PROJECT/CONTRACT:		11092										
RUN:		2021Cu	mwPwCrtr	wInPrcsWkd	012020							
BARRIER DESIGN:		INPUT	HEIGHTS					Average	pavement type	e shall be use	d unless	
								a State h	ighway agency	y substantiate	es the use	
ATMOSPHERICS:		68 deg	F, 50% RH					of a diffe	rent type with	approval of F	HWA.	
Receiver		·										
Name	No.	#DUs	Existing	No Barrier					With Barrier			
			LAeq1h	LAeq1h		Increase over	existing	Туре	Calculated	Noise Reduc	tion	
				Calculated	Crit'n	Calculated	Crit'n	Impact	LAeq1h	Calculated	Goal	Calculated
							Sub'l Inc					minus
												Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
ST1	1	1	0.0	58.7	66	58.7	10		58.7	0.0	8	-8.
ST2	2	1	0.0	58.4	66	58.4	10		58.4	0.0	8	-8.
ST3	3	1	0.0	61.8	66	61.8	10		61.8	0.0	8	-8.
ST4	4	1	0.0	55.3	66	55.3	10		55.3	0.0	8	-8.
ST5	5	1	0.0	51.7	66	51.7	10		51.7	0.0	8	-
M1	7	1	0.0	58.2	66	58.2	10		58.2	0.0	8	-8
Dwelling Units		#DUs	Noise Re	duction								
			Min	Avg	Max							
			dB	dB	dB							
All Selected		6	0.0	0.0	0.0)						
All Impacted		0	0.0	0.0	0.0)						
All that meet NR Goal		0	0.0	0.0	0.0							

11092

NF01: ROADWATS					1		11094	<u> </u>			
Dudek					5 February 2	2020					
M Greene					TNM 2.5						
INPUT: ROADWAYS							Average	pavement typ	e shall be	used unles	s
PROJECT/CONTRACT:	11092						a State h	ighway agend	cy substant	iates the u	se
RUN:	CumwPw	CrtnwInPi	rcsSat 01	2020				rent type with	-		
Roadway		Points]				
Name	Width	Name	No.	Coordinates	(pavement)		Flow Cor	ntrol		Segment	
				X	Y	Z	Control	Speed	Percent	Pvmt	On
							Device	Constraint	Vehicles	Туре	Struct
									Affected		
	ft			ft	ft	ft		mph	%		
Clinton Keith Road	100.0	point1	1	4,540.0	2,082.2	1,500.00)			Average	
		point3	3	1,894.7	2,071.7	7 1,518.00				Average	
		point4	4	1,877.4	2,071.7					Average	
		point5	5	1,705.5						Average	
		point6	6	1,367.1						Average	
		point7	7	540.4	-						
I-215	120.0	point29	29	734.8	,					Average	
		point9	9	963.2	,						
I-215 NB Onramp	45.0	point31	31	1,561.4						Average	
		point21	21	1,456.5						Average	
		point22	22	1,412.7	2,356.9					Average	
		point23	23	1,421.5						Average	
		point24	24	1,780.2						Average	
		point25	25	1,850.1	3,730.3			_			
Whitewood Road	100.0	point33	33	4,478.8						Average	
		point27	27	4,496.4				_			
I-215 NB Offramp	45.0	point36	36	717.3	,					Average	
		point17	17	1,167.8						Average	
		point18	18	1,281.5						Average	
1.045.0	400.0	point19	19	1,355.9							
I-215-2	120.0	point39	39	980.0						Average	
		point10	10	1,294.7	2,754.9					Average	
		point11	11	1,552.7						Average	
		point12	12	1,727.6						Average	
		point13	13	1,823.9	3,918.3	3 1,530.00				Average	

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	point14	14	1,876.4	4,123.9	1,530.00	Average	
	point15	15	1,950.7	4,425.7	1,530.00		
Warm Springs Road 4	.0 point40	40	2,652.7	2,103.5	1,515.00	Average	
	point41	41	2,655.6	3,085.9	1,515.00	Average	
	point42	42	2,702.6	3,323.4	1,515.00		

INPUT: TRAFFIC FOR LARGIN P	rercentages		1					110	92				1
Dudek							5 Febru	lary 20	1				
M Greene							TNM 2.	-					
M Greene								5					
INPUT: TRAFFIC FOR LAeq1h F	Percentages												
PROJECT/CONTRACT:	11092												
RUN:	CumwPwCr	tnwInPrc	sSat 012020	D									
Roadway	Points												
Name	Name	No.	Segment										
			Total	Autos	5	MTru	cks	HTru	cks	Buse	S	Moto	rcycles
			Volume	Ρ	S	Ρ	S	Ρ	S	Ρ	S	Ρ	S
			veh/hr	%	mph	%	mph	%	mph	%	mph	%	mph
Clinton Keith Road	point1	1	4367	97	40	2	40	1	40	0	0	0	(
	point3	3	4367	97	40	2	40	1	40	0	0	0	(
	point4	4	4367	97	40	2	40	1	40	0	0	0	(
	point5	5	4367	97	40	2	40	1	40	0	0	0	(
	point6	6	4367	97	40	2	40	1	40	0	0	0	(
	point7	7											
I-215	point29	29	11700	93	65	3	65	4	65	0	0	0	0
	point9	9											
I-215 NB Onramp	point31	31			45		1						
	point21	21			45	1	1				-		
	point22	22			45						-		
	point23	23			45						0	0	
	point24	24		97	45	2	45	1	45	0	0	0	(
	point25	25											
Whitewood Road	point33	33		97	45	2	45	1	45	0	0	0	(
	point27	27											
I-215 NB Offramp	point36	36			45								
	point17	17			45								
	point18	18		97	45	2	45	1	45	0	0	0	0
	point19	19										<u> </u>	<u> </u>
I-215-2	point39	39											
	point10	10											
	point11	11	11700	93	65	3	65	4	65	0	0	0	C

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INPUT: TRAFFIC FOR LAeq1h P	Percentages							1109	2				
	point12	12	11700	93	65	3	65	4	65	0	0	0	0
	point13	13	11700	93	65	3	65	4	65	0	0	0	0
	point14	14	11700	93	65	3	65	4	65	0	0	0	0
	point15	15											
Warm Springs Road	point40	40	2369	97	35	2	35	1	35	0	0	0	0
	point41	41	2369	97	35	2	35	1	35	0	0	0	0
	point42	42											

INPUT: RECEIVERS							•	11092			
Dudek						5 February	y 2020				
M Greene						TNM 2.5					
INPUT: RECEIVERS											
PROJECT/CONTRACT:	11092										
RUN:	Cumw	PwCrt	nwInPrcsSat	012020							
Receiver											
Name	No.	#DUs	Coordinates	(ground)		Height	Input Sou	nd Levels	and Criter	ia	Active
			X	Y	Z	above	Existing	Impact C	riteria	NR	in
						Ground	LAeq1h	LAeq1h	Sub'l	Goal	Calc.
			ft	ft	ft	ft	dBA	dBA	dB	dB	
ST1	1	1	1,702.5	1,982.2	1,512.00	5.00	0.00	60	6 10.	3 0	3.0 Y
ST2	2	1	3,422.5	1,820.0	1,510.00	5.00	0.00	60	6 10.	3 0	3.0 Y
ST3	3	1	3,310.7	2,162.6	1,510.00	5.00	0.00	6	6 10.	3 0	3.0 Y
ST4	4	1	3,272.5	2,640.2	1,510.00	5.00	0.00	6	6 10.	3 0	3.0 Y
ST5	5	1	3,312.4	3,256.6	1,510.00	5.00	0.00	6	6 10.	3 0	3.0 Y
M1	7	1	4,402.0	2,379.6	1,510.00	5.00	0.00	6	6 10.	s 0	3.0 Y

								1									
Dudek					5 February 202	n											
M Greene					TNM 2.5	•											_
								1									
INPUT: BARRIERS																	
PROJECT/CONTRACT:	11092	2															
RUN:	Cumv	PwCrtn	wInPrcs	Sat 0120	20												
Barrier								Points									
Name	Type	Height		If Wall	lf Berm		Add'tnl	Name	No.	Coordinates	(bottom)		Height	Segm	ent		
	51.5	Min	Max	\$ per	\$ per Top	Run:Rise	\$ per			x		Z	at	-	t Perturb	s On	Importa
				Unit	Unit Width		Unit						Point				? Reflec-
				Area	Vol.		Length							ment			tions?
		ft	ft	\$/sq ft	\$/cu yd ft	ft:ft	\$/ft			ft	ft	ft	ft	ft			
Barrier1	W	0.00	99.99				0.00	point1	1	3,293.2	2.144.9	1,510.00	6.00	0.00	0	0	
								point2	2			1,510.00	6.00			0	
								point3	3			1,510.00	6.00			0	
								point4	4	4,384.6		1,510.00	6.00	0.00	0	0	
								point5	5	4,413.2	2,143.7	1,510.00	6.00	0.00	0	0	
								point6	6	4,422.0	3,547.7	1,510.00	6.00				
Barrier11	W	0.00	99.99	0.00			0.00	point10	10	3,293.3	2,145.3	1,510.00	10.00	0.00	0	0	
								point8	8	3,289.2	2,570.5	1,510.00	10.00				
Barrier21	W	0.00	99.99	0.00			0.00	point11	11	3,201.5	1,661.5	1,510.00	20.00	0.00	0	0	
								point37	37	3,204.3	1,713.9	1,510.00	20.00	0.00	0	0	
								point38	38	3,413.7	1,713.9	1,510.00	20.00	0.00	0	0	
								point39	39	3,411.0	1,653.3	1,510.00	20.00				
Barrier8	W	0.00	99.99	0.00			0.00	point48	48	3,325.9	2,270.4	1,510.00	20.00	0.00	0	0	
								point13	13	3,323.7	2,163.3	1,510.00	20.00	0.00	0	0	
								point14	14	3,787.3		1,510.00	20.00		0	0	
								point15	15			1,510.00	20.00				
Barrier9	W	0.00	99.99	0.00			0.00		50			1,510.00	20.00			0	
								point17	17	3,901.0		1,510.00	20.00			0	
								point18	18	,		1,510.00	20.00		0	0	
								point46	46	4,272.8	-	1,510.00	20.00				
Barrier10	W	0.00	99.99	0.00			0.00		52			1,510.00	20.00			0	
								point20	20	4,321.0		1,510.00	20.00			0	
								point21	21	4,395.4		1,510.00	20.00		0	0	
Derrier F	W	0.00	00.00	0.00			0.00	point22	22			1,510.00	20.00			0	
Barrier 5	٧V	0.00	99.99	0.00			0.00	point54 point24	54 24	4,086.8 4,097.8		1,510.00	20.00			0	
								point24	24	,		1,510.00	20.00			0	
								point25	45			1,510.00	20.00			0	
								point26	26	· · · ·		1,510.00	20.00			0	
								point26	20	3,403.5		1,510.00	20.00		U	5	
Barrier7	W	0.00	99.99	0.00			0.00		56	,		1,510.00	20.00		0	0	
Damen	~~~~	0.00	55.95	0.00			0.00	point29	29			1,510.00	20.00			0	
								point29	30			1,510.00	20.00			0	
								point30	31	3,309.8		1,510.00	20.00			0	
						1			33	,	2,342.3		20.00			~	

INPUT: BARRIERS						11092								
Barrier6	W	0.00	99.99	0.00	0.00	point58	58	3,297.8	3,093.6 1,510.00	20.00	0.00	0	0	
						point35	35	3,289.5	2,583.9 1,510.00	20.00	0.00	0	0	
						point36	36	3,355.7	2,581.1 1,510.00	20.00	0.00	0	0	
						point12	12	3,361.2	3,088.1 1,510.00	20.00				
Barrier20	W	0.00	99.99	0.00	0.00	point60	60	3,433.3	1,768.9 1,510.00	20.00	0.00	0	0	
						point41	41	3,434.4	1,876.1 1,510.00	20.00	0.00	0	0	
						point42	42	3,552.5	1,875.0 1,510.00	20.00	0.00	0	0	
						point43	43	3,552.5	1,771.1 1,510.00	20.00				
Barrier19	W	0.00	99.99	0.00	0.00	point61	61	1,708.0	2,180.4 1,530.00	0.00	0.00	0	0	
						point62	62	1,819.1	2,524.1 1,540.00	0.00	0.00	0	0	
						point63	63	1,871.2	2,975.4 1,550.00	0.00	0.00	0	0	
						point64	64	1,968.4	3,697.5 1,550.00	0.00	0.00	0	0	
						point65	65	1,975.3	4,003.0 1,540.00	0.00				
Barrier22	W	0.00	99.99	0.00	0.00	point67	67	1,779.6	1,933.4 1,530.00	20.00	0.00	0	0	
						point68	68	1,659.0	1,949.5 1,530.00	20.00	0.00	0	0	
						point69	69	1,506.3	2,035.2 1,530.00	20.00	0.00	0	0	
						point70	70	1,238.3	1,737.8 1,530.00	20.00	0.00	0	0	
						point71	71	1,160.6	1,692.2 1,530.00	20.00				

INPUT: TERRAIN LINES

Dudek			5 February 2	020
M Greene			TNM 2.5	
INPUT: TERRAIN LINES				
PROJECT/CONTRACT:	11092			
RUN:	Cumwl	PwCrtnwInPro	csSat 012020	
Terrain Line	Points	;		-
Name	No.	Coordinates	(ground)	
		X	Y	Z
		ft	ft	ft
Terrain Line2	1	1,605.9	2,030.4	1,522.00
	2	1,685.8	2,007.1	1,522.00
	3	1,825.5	1,990.5	1,522.00
Terrain Line3	4	3,208.7	1,970.8	1,512.00
	5	3,671.8	1,962.1	1,512.00

RESULTS: SOUND LEVELS			1	1	1	1	1092	1		1		
Dudek							5 February	, 2020				
M Greene							TNM 2.5	7 2020				
M Greene								with TN	M 2 5			
RESULTS: SOUND LEVELS							Guiodiates					
PROJECT/CONTRACT:		11092										
RUN:		CumwF	wCrtnwInF	PrcsSat 01202	20							
BARRIER DESIGN:		INPUT	HEIGHTS					Average	pavement type	shall be use	d unless	
								-	ighway agency			
ATMOSPHERICS:		68 deg	F, 50% RH						erent type with			
Receiver												
Name	No.	#DUs	Existing	No Barrier					With Barrier			
			LAeq1h	LAeq1h		Increase over	existing	Туре	Calculated	Noise Reduc	tion	
				Calculated	Crit'n	Calculated	Crit'n	Impact	LAeq1h	Calculated	Goal	Calculated
							Sub'l Inc					minus
												Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
ST1	1	1	0.0	58.7	66	58.7	10		58.7	0.0	8	-8
ST2	2	2 1	0.0	58.4	66	58.4	10		58.4	0.0	8	-8
ST3	3	3 1	0.0	61.8			10		61.8	0.0	8	-8
ST4	4	l 1	0.0	55.4	66	55.4	10		55.4	0.0	8	-8
ST5	5		0.0	51.9	66	51.9	10		51.9	0.0	8	-
M1	7	′ 1	0.0	58.2	66	58.2	2 10		58.2	0.0	8	-8
Dwelling Units		# DUs	Noise Ree	duction								
			Min	Avg	Max							
			dB	dB	dB							
All Selected		6	0.0	0.0	0.0)						
All Impacted		0	0.0	0.0	0.0)						
All that meet NR Goal		0	0.0	0.0	0.0)						

11092

NPUT: ROADWATS		1					11094	•			
Dudek					5 February 2	020					
M Greene					TNM 2.5						
NPUT: ROADWAYS							Average	pavement typ	e shall be	used unles	s
PROJECT/CONTRACT:	11092						a State h	ighway agend	cy substant	iates the u	se
RUN:	2035woP	woCrtnNo	InPrcsW	kd 012020				rent type with	-		
Roadway		Points						_		_	-
Name	Width	Name	No.	Coordinates	(pavement)	L	Flow Cor	ntrol		Segment	
				X	Y	Z	Control	Speed	Percent	Pvmt	On
							Device	Constraint	Vehicles	Туре	Struct
									Affected		
	ft			ft	ft	ft		mph	%		
Clinton Keith Road	100.0	point1	1	4,540.0	2,082.1	1,500.00				Average	
		point3	3	1,894.7	2,071.7	1,518.00				Average	
		point4	4	1,877.4	2,071.7	1,520.00				Average	
		point5	5	1,705.5	2,092.5	1,530.00				Average	
		point6	6	1,367.1	2,194.9	1,530.00				Average	
		point7	7	540.4	2,474.8	1,530.00					
I-215	120.0	point29	29	734.8	1,945.7	1,515.00				Average	
		point9	9	963.2	2,315.1	1,515.00					
I-215 NB Onramp	45.0	-	31		2,190.7					Average	
		point21	21	-	-					Average	
		point22	22		2,356.9					Average	
		point23	23		2,492.5					Average	
		point24	24		3,485.3					Average	
		point25	25		3,730.3						
Whitewood Road	100.0	•	33							Average	
		point27	27	-	4,024.5						
I-215 NB Offramp	45.0	•	36		1,648.3					Average	
		point17	17		1,871.4					Average	
		point18	18		1,989.5					Average	
		point19	19		2,173.2						
I-215-2	120.0	•	39		2,337.3					Average	
		point10	10		2,754.9					Average	
		point11	11	-	3,192.3					Average	
		point12	12		3,603.4					Average	
		point13	13	1,823.9	3,918.3	1,530.00				Average	

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	point14	14	1,876.4	4,123.9	1,530.00	Average	
	point15	15	1,950.7	4,425.7	1,530.00		
Warm Springs Road 40.) point40	40	2,652.7	2,103.5	1,515.00	Average	
	point41	41	2,655.6	3,085.9	1,515.00	Average	
	point42	42	2,702.6	3,323.4	1,515.00		

INPUT: TRAFFIC FOR LARGIN	Percentages					1	1	110	92				
Dudek							5 Febru	ary 20	1				
M Greene							TNM 2.	-					
W Greene)					
INPUT: TRAFFIC FOR LAeq1h	Percentages												
PROJECT/CONTRACT:	11092				I								
RUN:	2035woPwo	CrtnNoIn	PrcsWkd 0 [°]	12020									
Roadway	Points												
Name	Name	No.	Segment										
			Total	Autos	5	MTru	cks	HTru	cks	Buse	S	Moto	rcycles
			Volume	Ρ	S	Ρ	S	Ρ	S	Ρ	S	Ρ	S
			veh/hr	%	mph	%	mph	%	mph	%	mph	%	mph
Clinton Keith Road	point1	1	4355	97	40	2	40	1	40	0	0	0	(
	point3	3	4355	97	40	2	40	1	40	0	0	0	(
	point4	4	4355	97	40	2	40	1	40	0	0	0	(
	point5	5	4355	97	40	2	40	1	40	0	0	0	(
	point6	6	4355	97	40	2	40	1	40	0	0	0	(
	point7	7											
I-215	point29	29	11700	93	65	3	65	4	65	0	0 0	0 0	(
	point9	9											
I-215 NB Onramp	point31	31	100		45			1			0 0	0 0	(
	point21	21	100	97	45			1	45	0	0 0	0 0	(
	point22	22	100	97	45			1	45	0	0 0	0 0	(
	point23	23	100	97	45	2	45	1	45	0	0 0	0 0	(
	point24	24	100	97	45	2	45	1	45	0	0 0	0 0	(
	point25	25											
Whitewood Road	point33	33	2566	97	45	2	45	1	45	0	0 0	0	(
	point27	27											
I-215 NB Offramp	point36	36			45			1			0 0	0	(
	point17	17			45				-		0 0	0 0	0
	point18	18		97	45	2	45	1	45	0	0 0	0 0	0
	point19	19											
I-215-2	point39	39											
	point10	10											
	point11	11	11700	93	65	3	65	4	65	0	0	0 0	(

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INPUT: TRAFFIC FOR LAeq1h P	Percentages							1109	2				
	point12	12	11700	93	65	3	65	4	65	0	0	0	0
	point13	13	11700	93	65	3	65	4	65	0	0	0	0
	point14	14	11700	93	65	3	65	4	65	0	0	0	0
	point15	15											
Warm Springs Road	point40	40	1098	97	35	2	35	1	35	0	0	0	0
	point41	41	1098	97	35	2	35	1	35	0	0	0	0
	point42	42											

INPUT: RECEIVERS								11092			
Dudek						5 Februa	ry 2020				
M Greene						TNM 2.5					
INPUT: RECEIVERS											
PROJECT/CONTRACT:	11092				1						
RUN:	2035w	oPwo	CrtnNoInPrc	sWkd 012020							
Receiver											
Name	No.	#DUs	Coordinate	s (ground)		Height	Input Sou	nd Levels a	and Criteria	a	Active
		ĺ	X	Y	Z	above	Existing	Impact Cr	iteria	NR	in
						Ground	LAeq1h	LAeq1h	Sub'l	Goal	Calc.
			ft	ft	ft	ft	dBA	dBA	dB	dB	
ST1	1	1	1,702.	5 1,982.2	1,512.0	0 5.0	0.00	66	10.0	8.0) Y
ST2	2	1	3,422.	5 1,820.0	1,510.0	0 5.0	0.00	66	10.0	8.0) Y
ST3	3	1	3,310.	7 2,162.6	1,510.0	0 5.0	0.00	66	10.0	8.0) Y
ST4	4	1	3,272.	5 2,640.2	1,510.0	0 5.0	0.00	66	10.0	8.0) Y
ST5	5	1	3,312.	4 3,256.6	1,510.0	0 5.0	0.00	66	10.0	8.0) Y
M1	7	1	4,402.	0 2,379.6	1,510.0	0 5.0	0.00	66	10.0	8.0) Y

				· · · · · ·				1										
Dudek					5 Febru	arv 202	20											
M Greene					TNM 2.	-												
INPUT: BARRIERS																		
PROJECT/CONTRACT:	11092				1													
RUN:			rtnNoInP	rcsWkd	012020													
Barrier							_	Points										
Name	Turne	Height		lf Mall	If Berm		Add'tnl	Name	No.	Coordinates	(hottom)		Llaimht	Segm	- m4			
Name	туре	Min	Мах	\$ per	\$ per	Тор	Run:Rise \$ per	Indifie	NO.	X		Z	Height at	Seg H		urbo	On	Importar
			IVIAA	Unit	Unit	Width				^	•	2	Point				Struct?	
				Area	Vol.	wiath	Length						FUIIL	ment	#op	#DII	Struct	tions?
		ft	ft	\$/sq ft	\$/cu yd	ft	ft:ft \$/ft			ft	ft	ft	ft	ft				tions
D																		
Barrier1	W	0.00	99.99	0.00			0.00	H .	1	0,200.2		1,510.00						
								point2	2	- /		1,510.00	6.00					
								point3	3	- ,		1,510.00	6.00			-		
								point4	4	.,000		1,510.00	6.00			-		
								point5	5	.,		1,510.00	6.00		0	0		
	144							point6	6	.,		1,510.00	6.00					
Barrier11	W	0.00	99.99	0.00			0.00	H.	10	,		1,510.00	10.00		0	0		
-								point8	8	0,200.2		1,510.00	10.00					
Barrier21	W	0.00	99.99	0.00			0.00	H .	11	3,201.5		1,510.00	20.00					
								point37	37			1,510.00	20.00					
								point38	38	,		1,510.00	20.00		0	0		
-								point39	39			1,510.00	20.00					
Barrier8	W	0.00	99.99	0.00			0.00	H	48			1,510.00	20.00					
								point13	13			1,510.00	20.00			-		
								point14	14			1,510.00	20.00		0	0		
								point15	15			1,510.00	20.00		-			
Barrier9	W	0.00	99.99	0.00			0.00	11.	50			1,510.00	20.00					
								point17	17			1,510.00	20.00					
								point18	18			1,510.00	20.00		0	0		
								point46	46			1,510.00	20.00		-			
Barrier10	W	0.00	99.99	0.00			0.00	1.	52			1,510.00	20.00					
								point20	20	,		1,510.00	20.00					
								point21	21			1,510.00	20.00		0	0		
			0.0.0.0.					point22	22			1,510.00	20.00		-	-		
Barrier 5	W	0.00	99.99	0.00			0.00	1.	54			1,510.00	20.00					
								point24	24			1,510.00	20.00			-		
								point25	25	,		1,510.00	20.00					
								point45	45			1,510.00	20.00					
								point26	26			1,510.00	20.00		0	0		
D : T			0.0.0.0.					point27	27			1,510.00	20.00		-	-		
Barrier7	W	0.00	99.99	0.00			0.00	H.	56			1,510.00	20.00					
								point29	29			1,510.00	20.00					
								point30	30			1,510.00	20.00			-		
								point31	31			1,510.00	20.00		0	0		
								point33	33	3,308.6	2,342.3	1,510.00	20.00	2				

INPUT: BARRIERS						11092								
Barrier6	W	0.00	99.99	0.00	0.0	0 point58	58	3,297.8	3,093.6 1,510.00	20.00	0.00	0	0	
						point35	35	3,289.5	2,583.9 1,510.00	20.00	0.00	0	0	
						point36	36	3,355.7	2,581.1 1,510.00	20.00	0.00	0	0	
						point12	12	3,361.2	3,088.1 1,510.00	20.00				
Barrier20	W	0.00	99.99	0.00	0.0	0 point60	60	3,433.3	1,768.9 1,510.00	20.00	0.00	0	0	
						point41	41	3,434.4	1,876.1 1,510.00	20.00	0.00	0	0	
						point42	42	3,552.5	1,875.0 1,510.00	20.00	0.00	0	0	
						point43	43	3,552.5	1,771.1 1,510.00	20.00				
Barrier19	W	0.00	99.99	0.00	0.0	0 point61	61	1,708.0	2,180.4 1,530.00	0.00	0.00	0	0	
						point62	62	1,819.1	2,524.1 1,540.00	0.00	0.00	0	0	
						point63	63	1,871.2	2,975.4 1,550.00	0.00	0.00	0	0	
						point64	64	1,968.4	3,697.5 1,550.00	0.00	0.00	0	0	
						point65	65	1,975.3	4,003.0 1,540.00	0.00				
Barrier22	W	0.00	99.99	0.00	0.0	0 point67	67	1,779.6	1,933.4 1,530.00	20.00	0.00	0	0	
						point68	68	1,659.0	1,949.5 1,530.00	20.00	0.00	0	0	
						point69	69	1,506.3	2,035.2 1,530.00	20.00	0.00	0	0	
						point70	70	1,238.3	1,737.8 1,530.00	20.00	0.00	0	0	
						point71	71	1,160.6	1,692.2 1,530.00	20.00				

INPUT: TERRAIN LINES

		1	1	1
Dudek			5 February 2	020
M Greene			TNM 2.5	
INPUT: TERRAIN LINES				
PROJECT/CONTRACT:	11092			
RUN:	2035wo	oPwoCrtnNol	nPrcsWkd 01	2020
Terrain Line	Points	; ;		
Name	No.	Coordinates	(ground)	
		X	Y	Z
		ft	ft	ft
Terrain Line1	1	1,605.9	2,030.4	1,522.00
	2	1,685.8	2,007.1	1,522.00
	3	1,825.5	1,990.5	1,522.00
Terrain Line2	4	3,208.7	1,970.8	1,512.00
	5	3,671.8	1,962.1	1,512.00

RESULTS: SOUND LEVELS			1	1	1	1	1092	1			1	(
Dudek							5 Februar	v 2020				
M Greene							TNM 2.5	,				
							Calculated	d with TNI	A 2.5			
RESULTS: SOUND LEVELS												
PROJECT/CONTRACT:		11092										
RUN:		2035wo	PwoCrtnN	olnPrcsWkd (012020							
BARRIER DESIGN:		INPUT	HEIGHTS					Average	pavement type	e shall be use	d unless	
								a State h	ighway agency	y substantiate	es the use	
ATMOSPHERICS:		68 deg	F, 50% RH					of a diffe	rent type with	approval of F	HWA.	
Receiver		·										
Name	No.	#DUs	Existing	No Barrier					With Barrier			
			LAeq1h	LAeq1h		Increase over	existing	Туре	Calculated	Noise Reduc	tion	
				Calculated	Crit'n	Calculated	Crit'n	Impact	LAeq1h	Calculated	Goal	Calculated
							Sub'l Inc					minus
												Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
ST1	1	1	0.0	58.7	66	58.7	10		58.7	0.0	8	-8
ST2	2	1	0.0	58.3	66	58.3	10		58.3	0.0	8	-8.
ST3	3	1	0.0	61.8	66	61.8	10		61.8	0.0	8	-8
ST4	4	1	0.0	55.2	66	55.2	10		55.2	.0.0	8	-8.
ST5	5	1	0.0	51.5	66	51.5	10		51.5	0.0	8	-
M1	7	1	0.0	59.7	66	59.7	10		59.7	0.0	8	-8
Dwelling Units		#DUs	Noise Ree	duction								
			Min	Avg	Max							
			dB	dB	dB							
All Selected		6	0.0	0.0	0.0)						
All Impacted		0	0.0	0.0	0.0)						
All that meet NR Goal		0	0.0	0.0	0.0							

11092

NPUT: ROADWATS							11034	•			
Dudek					5 February 2	020					
M Greene					TNM 2.5						
NPUT: ROADWAYS							Average	pavement typ	e shall be	used unles	s
PROJECT/CONTRACT:	11092						a State h	ighway agend	cy substant	iates the u	se
RUN:	2035woP	2035woPwCrtnwInPrcsWkd 012020 of a different type with the a									
Roadway		Points	-					-			
Name	Width	Name	No.	Coordinates	(pavement)		Flow Control			Segment	
				X	Y	Z	Control	Speed	Percent	Pvmt	On
							Device	Constraint	Vehicles	Туре	Struct
									Affected		
	ft			ft	ft	ft		mph	%		
Clinton Keith Road	100.0	point1	1	4,540.0	2,082.1	1,500.00				Average	
		point3	3	1,894.7	2,071.7	1,518.00				Average	
		point4	4	1,877.4	2,071.7					Average	
		point5	5	1,705.5	2,092.5					Average	
		point6	6	1,367.1	2,194.9					Average	
		point7	7	540.4	2,474.8	1,530.00					
I-215	120.0	point29	29	734.8	1,945.7	1,515.00				Average	
		point9	9		2,315.1						
I-215 NB Onramp	45.0	-	31		2,190.7					Average	
		point21	21	-	-					Average	
		point22	22		2,356.9					Average	
		point23	23		2,492.5					Average	
		point24	24		3,485.3					Average	
		point25	25		3,730.3						
Whitewood Road	100.0	•	33							Average	
		point27	27	-	4,024.5						
I-215 NB Offramp	45.0	•	36		1,648.3					Average	
		point17	17		1,871.4					Average	
		point18	18		1,989.5					Average	
		point19	19		2,173.2						
I-215-2	120.0	•	39		2,337.3					Average	
		point10	10		2,754.9					Average	
		point11	11	-	3,192.3					Average	
		point12	12		3,603.4					Average	
		point13	13	1,823.9	3,918.3	1,530.00				Average	

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	point14	14	1,876.4	4,123.9	1,530.00		Average
	point15	15	1,950.7	4,425.7	1,530.00		
Warm Springs Road 40.0	point40	40	2,652.7	2,103.5	1,515.00		Average
	point41	41	2,655.6	3,085.9	1,515.00		Average
	point42	42	2,702.6	3,323.4	1,515.00		

NPUT: TRAFFIC FOR LAeq1n Percentages							11092								
Dudek							5 Febru	ary 20	1						
							TNM 2.	-							
M Greene							INW 2.)							
INPUT: TRAFFIC FOR LAeq1h	Percentages														
PROJECT/CONTRACT:	11092														
RUN:	2035woPw0	CrtnwInPr	csWkd 012	020											
Roadway	Points														
Name	Name	No.	Segment												
				Autos	utos		MTrucks		cks	Buses		Motorcycles			
			Volume	Ρ	S	Ρ	S	Ρ	S	Ρ	S	Ρ	S		
			veh/hr	%	mph	%	mph	%	mph	%	mph	%	mph		
Clinton Keith Road	point1	1	4483	97	40	2	40	1	40	0	0 0	0 0	(
	point3	3	4483	97	40	2	40	1	40	0	0 0	0 0	(
	point4	4	4483	97	40	2	40	1	40	0	0 0	0 0	(
	point5	5	4483	97	40	2	40	1	40	0	0 0	0 0	(
	point6	6	4483	97	40	2	40	1	40	0	0 0	0 0	(
	point7	7													
I-215	point29	29	11700	93	65	3	65	4	65	0	0 0	0 0	0		
	point9	9													
I-215 NB Onramp	point31	31	100		45			1			0 0	0 0	(
	point21	21	100	97	45		1				0 0	0 0	0		
	point22	22	100		45				-		0 0	0 0	0		
	point23	23			45				-		-				
	point24	24	100	97	45	2	45	1	45	0	0 0	0 0	0		
	point25	25													
Whitewood Road	point33	33		97	45	2	45	1	45	0	0 0	0 0	(
	point27	27													
I-215 NB Offramp	point36	36			45										
	point17	17			45				-		0 0	0 0	(
	point18	18		97	45	2	45	1	45	0	0 0	0 0	(
	point19	19													
I-215-2	point39	39													
	point10	10		93											
	point11	11	11700	93	65	3	65	4	65	0	0 0	0 0	0		

C:\TNM25\Project Files\Costco Murrieta PN 11092\2035 woPwCrtnwIP Wkdy 012020

INPUT: TRAFFIC FOR LAeq1h P	Percentages							1109	2				
	point12	12	11700	93	65	3	65	4	65	0	0	0	0
	point13	13	11700	93	65	3	65	4	65	0	0	0	0
	point14	14	11700	93	65	3	65	4	65	0	0	0	0
	point15	15											
Warm Springs Road	point40	40	988	97	35	2	35	1	35	0	0	0	0
	point41	41	988	97	35	2	35	1	35	0	0	0	0
	point42	42											

INPUT: RECEIVERS								11092			
Dudek						5 Februar	y 2020				
M Greene						TNM 2.5					
INPUT: RECEIVERS											
PROJECT/CONTRACT:	11092	2			1						
RUN:	2035v	voPwCı	rtnwInPrcsW	kd 012020							
Receiver											
Name	No.	#DUs	Coordinates	(ground)		Height	Input Sou	nd Levels a	and Criteria	a	Active
			X	Y	Z	above	Existing	Impact Cr	iteria	NR	in
						Ground	LAeq1h	LAeq1h	Sub'l	Goal	Calc.
			ft	ft	ft	ft	dBA	dBA	dB	dB	
ST1	1	1	1,702.5	5 1,982.2	1,512.0	00 5.00	0.00	66	6 10.0	8.0) Y
ST2	2	2 1	3,422.5	5 1,820.0	1,510.0	00 5.00	0.00	66	6 10.0	0.8) Y
ST3	3	3 1	3,310.7	2,162.6	1,510.0	00 5.00	0.00	66	6 10.0	8.0) Y
ST4	۷	l 1	3,272.5	2,640.2	1,510.0	00 5.00	0.00	66	6 10.0	8.0) Y
ST5	5	5 1	3,312.4	3,256.6	1,510.0	00 5.00	0.00	66	6 10.0	8.0) Y
M1	7	7 1	4,402.0	2,379.6	1,510.0	00 5.00	0.00	66	6 10.0	8.0) Y

INPUT: BARRIERS

Dudek					5 Febru	arv 202	20											
M Greene					TNM 2.4	-												
INPUT: BARRIERS																		
PROJECT/CONTRACT:	11092				1													
RUN:			nwInPrc	sWkd 01	2020													
Barrier							_	Points										
Name	Turne	Height		If Wall	If Berm		Add'tnl	Name	No.	Coordinates	(hottom)		Llaimht	Segm	- m4			
Name	туре	Min	Мах	\$ per	\$ per	Тор	Run:Rise \$ per	Name	NO.	X		Z	Height at	Seg H		urbo	On	Importar
		IAILLI	IVIAA	Unit	Unit	Width				^	•	2	Point				Struct?	
				Area	Vol.	wiath	Length						FUIIL	ment	#op	#DII	Struct	tions?
		ft	ft	\$/sq ft	\$/cu yd	ft	ft:ft \$/ft			ft	ft	ft	ft	ft				tions:
	W								1						0			
Barrier1	VV	0.00	99.99	0.00	/		0.00	· ·		0,200.2		1,510.00						
								point2	2	- /		1,510.00						
								point3 point4	3	- ,		1,510.00				-		
								H .	5							-		
								point5	6	.,		1,510.00			0	0		
Derrier11	W	0.00	99.99	0.00			0.00	point6	10			1,510.00	10.00		0	0		
Barrier11	VV	0.00	99.99	0.00	/		0.00	H.	10	,					0	0		
Demise04	10/	0.00	00.00	0.00			0.00	point8	8	0,200.2		1,510.00	10.00			0		
Barrier21	W	0.00	99.99	0.00	/		0.00	H .		3,201.5		1,510.00	20.00					
								point37	37			1,510.00						
								point38	38	,		1,510.00			0	0		
Barrier8	W	0.00	99.99	0.00			0.00	point39	39 48			1,510.00			0	0		
Damero	VV	0.00	99.99	0.00	/		0.00	H.	40			1,510.00						
								point13	13			1,510.00				-		
								point14 point15	14			-			0	0		
Perrier0	W	0.00	99.99	0.00			0.00	11 ·	50			1,510.00			0	0		
Barrier9	VV	0.00	99.99	0.00			0.00	point50 point17	17			1,510.00	20.00					
								-	17									
								point18 point46	46			1,510.00			0	0		
Barrier10	W	0.00	99.99	0.00			0.00		52			1,510.00			0	0		
Barrier TU	vv	0.00	99.99	0.00	,		0.00	· ·	20			1,510.00						
								point20 point21	20			1,510.00	20.00					
		-						point21	21			1,510.00			0	0		
Barrier 5	W	0.00	99.99	0.00			0.00		54			1,510.00			0	0		
	vv	0.00	, 39.99	0.00			0.00	point34	24			1,510.00						
		-		-				point24	24			1,510.00	20.00					
			+		-			point25	45	,		1,510.00						
			+					point45	26			1,510.00						
			-					point20	20			1,510.00	20.00		0			
Barrier7	W	0.00	99.99	0.00			0.00		56			1,510.00	20.00		0	0		
	vv	0.00	, 39.99	0.00			0.00	point29	29			1,510.00						
								point29 point30	30			1,510.00	20.00					
		-		-			_	point30	30			1,510.00	20.00			-		
								point33	33							0		
								pointss	33	3,308.0	2,342.3	1,510.00	20.00	1				

INPUT: BARRIERS						11092								
Barrier6	W	0.00	99.99	0.00	0.00	point58	58	3,297.8	3,093.6 1,510.00	20.00	0.00	0	0	
						point35	35	3,289.5	2,583.9 1,510.00	20.00	0.00	0	0	
						point36	36	3,355.7	2,581.1 1,510.00	20.00	0.00	0	0	
						point12	12	3,361.2	3,088.1 1,510.00	20.00				
Barrier20	W	0.00	99.99	0.00	0.00	point60	60	3,433.3	1,768.9 1,510.00	20.00	0.00	0	0	
						point41	41	3,434.4	1,876.1 1,510.00	20.00	0.00	0	0	
						point42	42	3,552.5	1,875.0 1,510.00	20.00	0.00	0	0	
						point43	43	3,552.5	1,771.1 1,510.00	20.00				
Barrier19	W	0.00	99.99	0.00	0.00	point61	61	1,708.0	2,180.4 1,530.00	0.00	0.00	0	0	
						point62	62	1,819.1	2,524.1 1,540.00	0.00	0.00	0	0	
						point63	63	1,871.2	2,975.4 1,550.00	0.00	0.00	0	0	
						point64	64	1,968.4	3,697.5 1,550.00	0.00	0.00	0	0	
						point65	65	1,975.3	4,003.0 1,540.00	0.00				
Barrier22	W	0.00	99.99	0.00	0.00	point67	67	1,779.6	1,933.4 1,530.00	20.00	0.00	0	0	
						point68	68	1,659.0	1,949.5 1,530.00	20.00	0.00	0	0	
						point69	69	1,506.3	2,035.2 1,530.00	20.00	0.00	0	0	
						point70	70	1,238.3	1,737.8 1,530.00	20.00	0.00	0	0	
						point71	71	1,160.6	1,692.2 1,530.00	20.00				

RESULTS: SOUND LEVELS			1	í	1	1	1092	1				
Dudek							5 February	, 2020				
M Greene							TNM 2.5	, 2020				
M Oreene							Calculated	with TN	M 2 5			
RESULTS: SOUND LEVELS							ouloulutot					
PROJECT/CONTRACT:		11092										
RUN:			PwCrtnwlr	PrcsWkd 012	2020							
BARRIER DESIGN:		INPUT	HEIGHTS					Average	pavement type	e shall be use	d unless	
								-	ighway agency			
ATMOSPHERICS:		68 deg	F, 50% RH						erent type with			
Receiver]			-							
Name	No.	#DUs	Existing	No Barrier					With Barrier			
			LAeq1h	LAeq1h		Increase over	existing	Туре	Calculated	Noise Reduc	tion	
				Calculated	Crit'n	Calculated	Crit'n	Impact	LAeq1h	Calculated	Goal	Calculated
							Sub'l Inc					minus
												Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
ST1	1	1	0.0	58.8	66	58.8	10		58.8	0.0	8	-8
ST2	2	2 1	0.0	58.4	66	58.4	10		58.4	0.0	8	-8
ST3	3	3 1	0.0	61.9	66	61.9	10		61.9	0.0	8	-8
ST4	۷	1	0.0	55.2	66	55.2	10		55.2	. 0.0	8	-8
ST5	5	5 1	0.0	51.5	66	51.5	10		51.5	0.0	8	-8
M1	7	/ 1	0.0	59.7	66	59.7	10		59.7	0.0	8	-8
Dwelling Units		# DUs	Noise Re	duction								
		ĺ	Min	Avg	Max							
			dB	dB	dB							
All Selected		6	0.0	0.0	0.0)						
All Impacted		0	0.0	0.0	0.0)						
All that meet NR Goal		0	0.0	0.0	0.0							

11092

NFUI: ROADWAIS		[11034	•			
Dudek					5 February 2	020					
M Greene					TNM 2.5						
NPUT: ROADWAYS							Average	pavement typ	e shall be	used unles	s
PROJECT/CONTRACT:	11092						a State h	ighway agend	cy substant	iates the u	se
RUN:	2035Cum	lwPwoCrt	nWkd 01	2020				rent type with	-		
Roadway		Points	_					_		_	_
Name	Width	Name	No.	Coordinates	(pavement)		Flow Cor	ntrol		Segment	
				X	Y	Z	Control	Speed	Percent	Pvmt	On
							Device	Constraint	Vehicles	Туре	Struct
									Affected		
	ft			ft	ft	ft		mph	%		
Clinton Keith Road	100.0	point1	1	4,540.0	2,082.1	1,500.00				Average	
		point3	3	1,894.7	2,071.7	1,518.00				Average	
		point4	4	1,877.4	2,071.7	1,520.00				Average	
		point5	5	1,705.5	2,092.5					Average	
		point6	6	,	2,194.9					Average	
		point7	7	540.4	2,474.8						
I-215	120.0	point29	29		1,945.7					Average	
		point9	9		2,315.1						
I-215 NB Onramp	45.0	point31	31		2,190.7					Average	
		point21	21	-	-					Average	
		point22	22		2,356.9					Average	
		point23	23		2,492.5					Average	
		point24	24		3,485.3					Average	
		point25	25		3,730.3						
Whitewood Road	100.0	point33	33							Average	
		point27	27	-	4,024.5					-	
I-215 NB Offramp	45.0	•	36		1,648.3					Average	
		point17	17		1,871.4					Average	
		point18	18		1,989.5					Average	
1.045.0	400.0	point19	19		2,173.2					A	
I-215-2	120.0	point39	39		2,337.3					Average	
		point10	10		2,754.9					Average	
		point11	11	-	3,192.3					Average	
		point12	12		3,603.4					Average	
		point13	13	1,823.9	3,918.3	1,530.00				Average	

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	point14	14	1,876.4	4,123.9	1,530.00		Average
	point15	15	1,950.7	4,425.7	1,530.00		
Warm Springs Road 40.0	point40	40	2,652.7	2,103.5	1,515.00		Average
	point41	41	2,655.6	3,085.9	1,515.00		Average
	point42	42	2,702.6	3,323.4	1,515.00		

11092

INPUT: TRAFFIC FOR LACOT	Percentages		1					110	92				
Dudek							5 Febru	ary 20	1				
M Greene							TNM 2.	-					
W Greene							I INIVI Z.;	D					
INPUT: TRAFFIC FOR LAeq1h	Percentages												
PROJECT/CONTRACT:	11092												
RUN:	2035Cumlw	PwoCrtn\	Nkd 012020)									
Roadway	Points												
Name	Name	No.	Segment										
			Total	Autos	5	MTru	cks	HTru	cks	Buse	S	Moto	rcycles
			Volume	Ρ	S	Ρ	S	Ρ	S	Ρ	S	Ρ	S
			veh/hr	%	mph	%	mph	%	mph	%	mph	%	mph
Clinton Keith Road	point1	1	5224	97	40	2	40	1	40	0	0 0	0	(
	point3	3	5224	97	40	2	40	1	40	0	0 0	0	(
	point4	4	5224	97	40	2	40	1	40	0	0 0	0	C
	point5	5	5224	97	40	2	40	1	40	0	0	0	(
	point6	6	5224	97	40	2	40	1	40	0	0	0	C
	point7	7											
I-215	point29	29	11700	93	65	3	65	4	65	0	0 0	0	0
	point9	9											
I-215 NB Onramp	point31	31	100	97	45			1	45	0	0 0	0	(
	point21	21	100		45			1	-		0 0	0	0
	point22	22	100	97	45			1	-		0 0	0	0
	point23	23	100	97	45			1	45	0	0 0	0	0
	point24	24	100	97	45	2	45	1	45	0	0 0	0	0
	point25	25											
Whitewood Road	point33	33		97	45	2	45	1	45	0	0	0	(
	point27	27											
I-215 NB Offramp	point36	36			45								
	point17	17			45						0 0	0	
	point18	18		97	45	2	45	1	45	0	0 0	0	0
	point19	19											
I-215-2	point39	39											
	point10	10											
	point11	11	11700	93	65	3	65	4	65	0	0 0	0	C

C:\TNM25\Project Files\Costco Murrieta PN 11092\2035 CumltvwPwoCrtnWkdy 012020

INPUT: TRAFFIC FOR LAeq1h P	Percentages							1109	2				
	point12	12	11700	93	65	3	65	4	65	0	0	0	0
	point13	13	11700	93	65	3	65	4	65	0	0	0	0
	point14	14	11700	93	65	3	65	4	65	0	0	0	0
	point15	15											
Warm Springs Road	point40	40	2941	97	35	2	35	1	35	0	0	0	0
	point41	41	2941	97	35	2	35	1	35	0	0	0	0
	point42	42											

INPUT: BARRIERS

Dudek					5 Febru	ary 202)										
M Greene					TNM 2.	-											
INPUT: BARRIERS																	
PROJECT/CONTRACT:	11092				1												
RUN:	20350	umlwPv	voCrtnW	/kd 0120	20												
Barrier		-						Points									
Name	Туре	Height		If Wall	If Berm		Add'tnl	Name	No.	Coordinates	(bottom)		Height	Segm	ent		
		Min	Max	\$ per	\$ per	Тор	Run:Rise \$ per			х	Y	Z	at	-	t Perturk	s On	Importar
			Ì	Unit	Unit	Width	Unit						Point			n Struct	
				Area	Vol.		Length		1					ment	1		tions?
		ft	ft	\$/sq ft	\$/cu yd	ft	ft:ft \$/ft			ft	ft	ft	ft	ft			
Barrier1	W	0.00	99.99	0.00)		0.00	point1	1	3,293.2	2,144.9	1,510.00	6.00	0.00	0 0	0	
								point2	2	3,801.1		1,510.00		0.00	0 0	0	
								point3	3	3,891.6		1,510.00	6.00	0.00	0 0	0	
								point4	4	4,384.6		1,510.00	6.00	0.00	0 0	0	
								point5	5	4,413.2	2,143.7	1,510.00	6.00	0.00	0 0	0	
								point6	6	4,422.0	3,547.7	1,510.00	6.00				
Barrier11	W	0.00	99.99	0.00			0.00	point10	10	3,293.3	2,145.3	1,510.00	10.00	0.00	0 0	0	
								point8	8	3,289.2	2,570.5	1,510.00	10.00				
Barrier21	W	0.00	99.99	0.00			0.00	point11	11	3,201.5	1,661.5	1,510.00	20.00	0.00	0 0	0	
								point37	37	3,204.3	1,713.9	1,510.00	20.00	0.00	0 0	0	
								point38	38	,	1,713.9	1,510.00	20.00	0.00	0 0	0	
								point39	39	,		1,510.00	20.00				
Barrier8	W	0.00	99.99	0.00			0.00	point48	48			1,510.00	20.00			0	
								point13	13	,		1,510.00	20.00			0	
								point14	14	,		1,510.00	20.00		0 0	0	
								point15	15			1,510.00	20.00				
Barrier9	W	0.00	99.99	0.00			0.00		50			1,510.00	20.00			0	
								point17	17	,		1,510.00	20.00			0	
								point18	18	,		1,510.00	20.00		0 0	0	
5								point46	46	,		1,510.00	20.00			-	
Barrier10	W	0.00	99.99	0.00	1		0.00		52	,		1,510.00	20.00			0	
								point20	20	,		1,510.00	20.00			0	
								point21 point22	21			1,510.00	20.00		0	0	+
Barrier 5	W	0.00	99.99	0.00			0.00		54			1,510.00	20.00		0 0	0	
	vv	0.00	99.95	0.00	1		0.00	point24	24			1,510.00	20.00			0	
			+					point24	24	,	,	1,510.00	20.00			0	
			+		-			point25	45	,		1,510.00	20.00			0	-
			-					point26	26	,	,	1,510.00	20.00			0	+
								point27	27	,		1,510.00	20.00			-	
Barrier7	W	0.00	99.99	0.00			0.00		56			1,510.00	20.00		0 0	0	1
		0.00	00.00	0.00			0.00	point29	29			1,510.00	20.00			0	
			1		1			point30	30			1,510.00	20.00			0	1
								point31	31			1,510.00	20.00			0	1
			1		1			point33	33		,	1,510.00					+

INPUT: BARRIERS						11092								
Barrier6	W	0.00	99.99	0.00	0.00	point58	58	3,297.8	3,093.6 1,510.00	20.00	0.00	0	0	
						point35	35	3,289.5	2,583.9 1,510.00	20.00	0.00	0	0	
						point36	36	3,355.7	2,581.1 1,510.00	20.00	0.00	0	0	
						point12	12	3,361.2	3,088.1 1,510.00	20.00				
Barrier20	W	0.00	99.99	0.00	0.00	point60	60	3,433.3	1,768.9 1,510.00	20.00	0.00	0	0	
						point41	41	3,434.4	1,876.1 1,510.00	20.00	0.00	0	0	
						point42	42	3,552.5	1,875.0 1,510.00	20.00	0.00	0	0	
						point43	43	3,552.5	1,771.1 1,510.00	20.00				
Barrier19	W	0.00	99.99	0.00	0.00	point61	61	1,708.0	2,180.4 1,530.00	0.00	0.00	0	0	
						point62	62	1,819.1	2,524.1 1,540.00	0.00	0.00	0	0	
						point63	63	1,871.2	2,975.4 1,550.00	0.00	0.00	0	0	
						point64	64	1,968.4	3,697.5 1,550.00	0.00	0.00	0	0	
						point65	65	1,975.3	4,003.0 1,540.00	0.00				
Barrier22	W	0.00	99.99	0.00	0.00	point67	67	1,779.6	1,933.4 1,530.00	20.00	0.00	0	0	
						point68	68	1,659.0	1,949.5 1,530.00	20.00	0.00	0	0	
						point69	69	1,506.3	2,035.2 1,530.00	20.00	0.00	0	0	
						point70	70	1,238.3	1,737.8 1,530.00	20.00	0.00	0	0	
						point71	71	1,160.6	1,692.2 1,530.00	20.00				

RESULTS: SOUND LEVELS			i	[1	1	1092			1		
Dudek							5 Februar	v 2020				
M Greene							TNM 2.5	,				
							Calculated	d with TNI	VI 2.5			
RESULTS: SOUND LEVELS												
PROJECT/CONTRACT:		11092										
RUN:		2035Cu	ımlwPwoCı	tnWkd 01202	0							
BARRIER DESIGN:		INPUT	HEIGHTS					Average	pavement type	e shall be use	d unless	
								a State h	ighway agency	y substantiate	es the use	
ATMOSPHERICS:		68 deg	F, 50% RH					of a diffe	rent type with	approval of F	HWA.	
Receiver												
Name	No.	#DUs	Existing	No Barrier	-				With Barrier			
		İ	LAeq1h	LAeq1h	<u>.</u>	Increase over	existing	Туре	Calculated	Noise Reduc	tion	
		ĺ		Calculated	Crit'n	Calculated	Crit'n	Impact	LAeq1h	Calculated	Goal	Calculated
							Sub'l Inc					minus
												Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
ST1	1	1	0.0	59.4	66	59.4	10		59.4	0.0	8	-8
ST2	2	1	0.0	59.1	66	59.1	10		59.1	0.0	8	-8
ST3	3	1	0.0	62.5	66	62.5	5 10		62.5	0.0	8	-8
ST4	4	1	0.0	56.0	66	56.0) 10		56.0	0.0	8	-8.
ST5	5	1	0.0	52.2	66	52.2	2 10		52.2	. 0.0	8	-
M1	7	1	0.0	59.9	66	59.9	9 10		59.9	0.0	8	-8
Dwelling Units		# DUs	Noise Ree	duction				-				
		ĺ	Min	Avg	Max							
			dB	dB	dB							
All Selected		6	0.0	0.0	0.0)						
All Impacted		0	0.0	0.0	0.0)						
All that meet NR Goal		0	0.0	0.0	0.0]						

11092

NPUT. ROADWATS				1	1		11092	5			
Dudek					5 February 2	2020					
M Greene					TNM 2.5						
NPUT: ROADWAYS							Average	pavement typ	e shall be	used unles	Si
PROJECT/CONTRACT:	11092						a State h	ighway agend	cy substant	iates the u	se
RUN:	2035Cum	lwPwCrtn	Wkd 012	020			of a diffe	rent type with	the appro	val of FHW	A
Roadway		Points						_			_
Name	Width	Name	No.	Coordinates	(pavement)	L	Flow Cor	ntrol		Segment	_
				X	Y	Z	Control	Speed	Percent	Pvmt	On
							Device	Constraint	Vehicles	Туре	Struct
									Affected		
	ft			ft	ft	ft		mph	%		
Clinton Keith Road	100.0	point1	1	4,540.0	2,082.2	1 1,500.00)			Average	
		point3	3	1,894.7	2,071.7	7 1,518.00)			Average	
		point4	4	1,877.4	2,071.7	7 1,520.00				Average	
		point5	5	1,705.5	2,092.5					Average	
		point6	6	,						Average	
		point7	7	540.4	2,474.8	3 1,530.00					
I-215	120.0	point29	29	734.8	1,945.7					Average	
		point9	9		,						
I-215 NB Onramp	45.0	point31	31	1,561.4						Average	
		point21	21	1,456.5						Average	
		point22	22		2,356.9					Average	
		point23	23							Average	
		point24	24							Average	
		point25	25		3,730.3						
Whitewood Road	100.0	point33	33							Average	
		point27	27	-							
I-215 NB Offramp	45.0	point36	36		,					Average	
		point17	17							Average	
		point18	18							Average	
		point19	19								_
I-215-2	120.0	point39	39							Average	-
		point10	10		2,754.9					Average	_
		point11	11	-						Average	
		point12	12							Average	
		point13	13	1,823.9	3,918.3	3 1,530.00				Average	

C:\TNM25\Project Files\Costco Murrieta PN 11092\2035 CumltvwPwCrtn 012020

	point14	14	1,876.4	4,123.9	1,530.00	Average	
	point15	15	1,950.7	4,425.7	1,530.00		
Warm Springs Road 4	.0 point40	40	2,652.7	2,103.5	1,515.00	Average	
	point41	41	2,655.6	3,085.9	1,515.00	Average	
	point42	42	2,702.6	3,323.4	1,515.00		

INPUT: TRAFFIC FOR LARGIN P	rcentages		1					110	92				
Dudek							5 Febru	iary 20	1				
M Greene							TNM 2.	-				-	
M Greene								5					
INPUT: TRAFFIC FOR LAeq1h I	Percentages												
PROJECT/CONTRACT:	11092												
RUN:	2035Cumlw	PwCrtnW	kd 012020										
Roadway	Points												
Name	Name	No.	Segment										
			Total	Autos	5	MTru	cks	HTru	cks	Buse	S	Moto	rcycles
			Volume	Ρ	S	Ρ	S	Ρ	S	Ρ	S	Ρ	S
			veh/hr	%	mph	%	mph	%	mph	%	mph	%	mph
Clinton Keith Road	point1	1	5224	97	40	2	40	1	40	0	0	0 0) (
	point3	3	5224	97	40	2	40	1	40	0	0	0 0) (
	point4	4	5224	97	40	2	40	1	40	0	0	0 0	0
	point5	5	5224	97	40	2	40	1	40	0	0	0 0) (
	point6	6	5224	97	40	2	40	1	40	0	0	0 0) (
	point7	7											
I-215	point29	29	11700	93	65	3	65	4	65	0	0	0 0	0 0
	point9	9											
I-215 NB Onramp	point31	31	100		45								0 (
	point21	21	100		45		1				0	0 0	0 (
	point22	22	100		45				-		0	0 0	0 0
	point23	23			45				-		-		
	point24	24		97	45	2	45	1	45	0	0	0 0	0 (
	point25	25											
Whitewood Road	point33	33		97	45	2	45	1	45	0	0	0 0	0 (
	point27	27											
I-215 NB Offramp	point36	36			45								
	point17	17			45								
	point18	18		97	45	2	45	1	45	0	0	0 0	0 (
	point19	19										<u> </u>	
I-215-2	point39	39											
	point10	10											
	point11	11	11700	93	65	3	65	4	65	0	0	0 0) C

INPUT: TRAFFIC FOR LAeq1h P	Percentages							1109	2				
	point12	12	11700	93	65	3	65	4	65	0	0	0	0
	point13	13	11700	93	65	3	65	4	65	0	0	0	0
	point14	14	11700	93	65	3	65	4	65	0	0	0	0
	point15	15											
Warm Springs Road	point40	40	2647	97	35	2	35	1	35	0	0	0	0
	point41	41	2647	97	35	2	35	1	35	0	0	0	0
	point42	42											

INPUT: RECEIVERS		i							•	11092	<u></u>	1		
Dudek								5 February	y 2020					
M Greene								TNM 2.5						
INPUT: RECEIVERS														
PROJECT/CONTRACT:	11092													
RUN:	2035C	umlwP	wCrtn	Wkd 0120	20									
Receiver														
Name	No.	#DUs	Coord	dinates (gi	ound)			Height	Input Sou	nd Levels a	and Criteria	a		Active
			Х	Y		Z		above	Existing	Impact Cr	iteria	NR	i	in
								Ground	LAeq1h	LAeq1h	Sub'l	Goal	(Calc.
			ft	ft		ft		ft	dBA	dBA	dB	dB		
ST1	1	1		1,702.5	1,982.2		1,512.00	5.00	0.00	66	10.0)	8.0	Y
ST2	2	1		3,422.5	1,820.0		1,510.00	5.00	0.00	66	10.0)	8.0	Y
ST3	3	1		3,310.7	2,162.6		1,510.00	5.00	0.00	66	10.0)	8.0	Υ
ST4	4	1		3,272.5	2,640.2	!	1,510.00	5.00	0.00	66	10.0)	8.0	Y
ST5	5	1		3,312.4	3,256.6		1,510.00	5.00	0.00	66	10.0)	8.0	Υ
M1	7	1		4,402.0	2,379.6		1,510.00	5.00	0.00	66	6 10.0)	8.0	Y

INPUT: BARRIERS

INFUT. BARKIERS			1						11092									
Dudek					5 Febru	ary 202	0											
M Greene					TNM 2.	-	•											-
									1									
INPUT: BARRIERS																		
PROJECT/CONTRACT:	11092				1													
RUN:	20350	umlwPw	vCrtnWk	d 01202	0													
Barrier		-							Points								_	
Name	Type	Height	1	If Wall	If Berm			Add'tnl	Name	No.	Coordinates	(bottom)		Height	Segm	ent		-
	.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	Min	Max	\$ per	\$ per	Тор	Run:Rise	1			x		Z	at	-	t Perturb	s On	Importa
				Unit	Unit	Width		Unit						Point	-			? Reflec-
				Area	Vol.			Length							ment			tions?
		ft	ft	\$/sq ft	\$/cu yd	ft	ft:ft	\$/ft			ft	ft	ft	ft	ft			
Barrier1	W	0.00	99.99	0.00			1	0.00	point1	1	3,293.2	2 144 9	1,510.00	6.00	0.00	0	0	
		0.00	00.00	0.00				0.00	point2	2	- /		1,510.00				0	
									point3	3	,		1,510.00				0	
									point4	4	4,384.6		1,510.00				0	
		1					1		point5	5			1,510.00				0	1
									point6	6			1,510.00					
Barrier11	W	0.00	99.99	0.00				0.00	point10	10	3,293.3	2,145.3	1,510.00	10.00	0.00	0	0	
									point8	8	3,289.2		1,510.00	10.00				
Barrier21	W	0.00	99.99	0.00				0.00	point11	11	3,201.5	1,661.5	1,510.00	20.00	0.00	0	0	
									point37	37	3,204.3	1,713.9	1,510.00	20.00	0.00	0	0	
									point38	38	3,413.7	1,713.9	1,510.00	20.00	0.00	0	0	
									point39	39	3,411.0	1,653.3	1,510.00	20.00				
Barrier8	W	0.00	99.99	0.00				0.00	point48	48	3,325.9	2,270.4	1,510.00	20.00	0.00	0	0	
									point13	13	3,323.7		1,510.00		0.00	0	0	
									point14	14			1,510.00			0	0	
									point15	15			1,510.00					
Barrier9	W	0.00	99.99	0.00				0.00		50			1,510.00				0	
									point17	17			1,510.00				0	
									point18	18			1,510.00			0	0	
5	14/								point46	46			1,510.00				-	
Barrier10	W	0.00	99.99	0.00	1			0.00	11 ·	52	,		1,510.00				0	
									point20	20	4,321.0 4,395.4		1,510.00				0	
									point21 point22	21			1,510.00			U	0	
Barrier 5	W	0.00	99.99	0.00				0.00		54			1,510.00			0	0	
	vv	0.00	39.95	0.00	1			0.00	point24	24	,		1,510.00				0	
									point24	24			1,510.00				0	-
									point25	45	,		1,510.00				0	
			-					-	point40	26	,		1,510.00				0	1
									point27	27			1,510.00				-	1
Barrier7	W	0.00	99.99	0.00				0.00	· ·	56			1,510.00			0	0	-
									point29	29			1,510.00				0	
									point30	30			1,510.00				0	
		1							point31	31	3,309.8		1,510.00				0	
				1					point33	33			1,510.00					

INPUT: BARRIERS						11092								
Barrier6	W	0.00	99.99	0.00	0.00	point58	58	3,297.8	3,093.6 1,510.00	20.00	0.00	0	0	
						point35	35	3,289.5	2,583.9 1,510.00	20.00	0.00	0	0	
						point36	36	3,355.7	2,581.1 1,510.00	20.00	0.00	0	0	
						point12	12	3,361.2	3,088.1 1,510.00	20.00				
Barrier20	W	0.00	99.99	0.00	0.00	point60	60	3,433.3	1,768.9 1,510.00	20.00	0.00	0	0	
						point41	41	3,434.4	1,876.1 1,510.00	20.00	0.00	0	0	
						point42	42	3,552.5	1,875.0 1,510.00	20.00	0.00	0	0	
						point43	43	3,552.5	1,771.1 1,510.00	20.00				
Barrier19	W	0.00	99.99	0.00	0.00	point61	61	1,708.0	2,180.4 1,530.00	0.00	0.00	0	0	
						point62	62	1,819.1	2,524.1 1,540.00	0.00	0.00	0	0	
						point63	63	1,871.2	2,975.4 1,550.00	0.00	0.00	0	0	
						point64	64	1,968.4	3,697.5 1,550.00	0.00	0.00	0	0	
						point65	65	1,975.3	4,003.0 1,540.00	0.00				
Barrier22	W	0.00	99.99	0.00	0.00	point67	67	1,779.6	1,933.4 1,530.00	20.00	0.00	0	0	
						point68	68	1,659.0	1,949.5 1,530.00	20.00	0.00	0	0	
						point69	69	1,506.3	2,035.2 1,530.00	20.00	0.00	0	0	
						point70	70	1,238.3	1,737.8 1,530.00	20.00	0.00	0	0	
						point71	71	1,160.6	1,692.2 1,530.00	20.00				

INPUT: TERRAIN LINES

Dudek			5 February 2	020
M Greene			TNM 2.5	
INPUT: TERRAIN LINES				
PROJECT/CONTRACT:	11092			
RUN:	2035Cu	umlwPwCrtnV	Vkd 012020	
Terrain Line	Points	; ;		
Name	No.	Coordinates	(ground)	
		X	Y	Z
		ft	ft	ft
Terrain Line1	1	1,605.9	2,030.4	1,522.0
	2	1,685.8	2,007.1	1,522.0
	3	1,825.5	1,990.5	1,522.0
Terrain Line2	4	3,208.7	1,970.8	1,512.0
	5	3,671.8	1,962.1	1,512.0

RESULTS: SOUND LEVELS			1	1	1	1	1092	1		1		
Dudek							5 Februar	v 2020				
M Greene							TNM 2.5	y 2020				
M Greene								l with TN	M 2 5			
RESULTS: SOUND LEVELS							Guiodiatov					
PROJECT/CONTRACT:		11092										
RUN:			mlwPwCrt	nWkd 012020								
BARRIER DESIGN:		INPUT	HEIGHTS					Average	pavement type	shall be use	d unless	
								-	ighway agency			
ATMOSPHERICS:		68 deg	F, 50% RH						erent type with			
Receiver					-							
Name	No.	#DUs	Existing	No Barrier					With Barrier			
			LAeq1h	LAeq1h		Increase over	existing	Туре	Calculated	Noise Reduc	tion	
				Calculated	Crit'n	Calculated	Crit'n	Impact	LAeq1h	Calculated	Goal	Calculated
							Sub'l Inc					minus
												Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
ST1	1	1	0.0	59.4	66	59.4	10		59.4	0.0	8	-8
ST2	2	2 1	0.0	59.1	66	59.1	10		59.1	0.0	8	-8
ST3	3	6 1	0.0	62.5			10		62.5	0.0	8	-8
ST4	4	1	0.0	56.0	66	56.0	10		56.0	0.0	8	-8
ST5	5		0.0	52.1	66	52.1	10		52.1	0.0	8	-
M1	7	1	0.0	59.9	66	59.9	10		59.9	0.0	8	-8
Dwelling Units		# DUs	Noise Ree	duction								
			Min	Avg	Max							
			dB	dB	dB							
All Selected		6	0.0	0.0	0.0)						
All Impacted		0	0.0	0.0	0.0)						
All that meet NR Goal		0	0.0	0.0	0.0)						

Appendix D

Mechanical Equipment Noise Calculations

HVAC Noise Calculations

Building Type	HVAC	Units	Distance from residents (approximate worst- case) (feet)		Attenuation from Building and Parapet (dB)	Resultant noise level with Attenuation
	Quantity	Capacity	cases (leet)	(dBA)		(dBA)
		(in tons)				
Fitness Center						
	16	10	105	60.1	15.8	44.3
Major						
	8	10	200	51.5	12.9	38.5
Shop						
	1	5	300	38.9	17.6	21.4
Shops						
	4	5	500	40.5	17.9	22.6
Fast Food						
	1	10	600	32.9	14.8	18.2
	1	5	600	32.9	14.8	18.2
Combined noice low	ol at poaro		nsitive receivers (wors	+ caca)		45.4

49.5

54.5

Assumptions:

SPLs (shown) calculated based upon Lennox specifications (provided in Appendix D) 5

RAY-TRACE PROGRAM (FOR A POINT-SOURCE)

Uses the Equation: (A_{e4})_{point}=20*log[(2*pi*N)^{1/2}/tanh(2*pi*N)^{1/2}]+5dB (Ref. Pg.174, Noise and Vibration Control, L.L. Beranek Editor, 1971 Ed.

Project: Costco Murrieta Project Date: 8/14/18 By: MGG

Please Enter: Using English (E) units or Metric (M) units ? E

Ray Trace Number/Description	Source- Receiver Distance (ft. or m)	Source Base Elev. (ft. or m)	Source Height above Ground (ft. or m)	Receiver Base Elev. (ft. or m)	Receiver Height above Ground (ft. or m)	Horizontal Barrier Dist. (in ref. to source) (ft. or m)	Barrier Base Elev. (ft. or m)	Barrier Height (ft. or m)	Dominant Freq.(Hz)	Source- Rcvr Straight- Line Dist. (ft. or m)	Source- Top-of- Barrier Dist. (ft. or m)	Receiver- Top-of- Barrier Dist. (ft. or m)	Lambda	N _{max}	AE _(barriers) (dB)
1. Source -HVAC Noise	105.0	120.0	4.0	100.0	5.0	55.0	120.0	5.0	500.0	106.7	55.0	53.9	2.3	1.9	15.8
2. Source -HVAC Noise	200.0	120.0	4.0	100.0	5.0	100.0	120.0	5.0	500.0	200.9	100.0	102.0	2.3	1.0	12.9
2. Source -HVAC Noise	300.0	120.0	4.0	100.0	5.0	250.0	120.0	5.0	500.0	300.6	250.0	53.9	2.3	2.9	17.6
2. Source -HVAC Noise	500.0	120.0	4.0	100.0	5.0	450.0	120.0	5.0	500.0	500.4	450.0	53.9	2.3	3.1	17.9
2. Source -HVAC Noise	600.0	120.0	4.0	100.0	5.0	500.0	120.0	5.0	500.0	600.3	500.0	102.0	2.3	1.5	14.8

AIR CONDITIONERS ELITE® COMMERCIAL SPLIT SYSTEMS R-410A - 60 HZ

PRODUCT SPECIFICATIONS

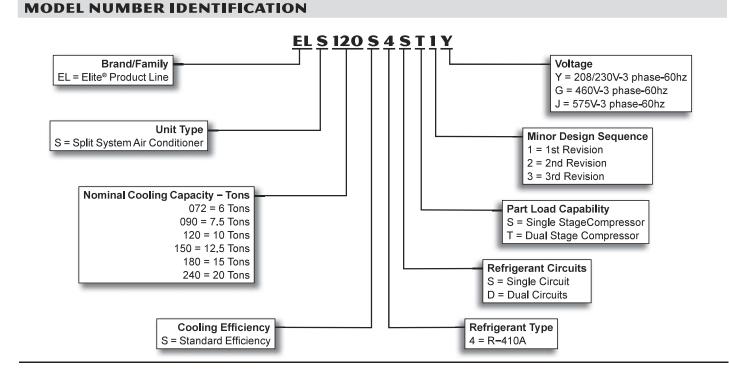


072-090 Models





6 to 20 Tons Cooling Capacity - 71,000 to 232,000 Btuh



ELITE

Bulletin No. 210804 February 2018

EER up to 12.0





AHRI SYSTEM MATCHES										
Model	Cooling Btuh	EER IEER		Air Handler	Expansion Device	AHRI Reference				
ELS072S4S	71,000	12.0	16.0	ELA072S4S	Factory TXV	201753420				
ELS090S4S	89,000	11.2	14.4	ELA090S4D	Factory TXV	201753421				
ELS120S4S	115,000	11.2	14.4	ELA120S4D	Factory TXV	201753423				
ELS120S4D	115,000	11.2	12.9	ELA120S4D	Factory TXV	201753422				
ELS150S4D	136,000	11.0	12.4	ELA150S4D	Factory TXV	201753424				
ELS180S4D	178,000	11.0	12.4	ELA180S4D	Factory TXV	201753975				
ELS240S4D	232,000	11.0	12.4	ELA240S4D	Factory TXV	201753426				

NOTES - Units with capacity of 65,000 Btuh or greater are AHRI Certified to AHRI Standard 340/360: 95°F outdoor air temperature, 80°F db/67°F wb entering evaporator air (minimum external duct static pressure) with 25 ft. of connecting refrigerant lines.

SOUND DATA

¹ Unit Model No.	Octave B	¹ Sound Rating						
	125	250	500	1000	2000	4000	8000	Number (dB)
ELS072S4S	65	68	73	76	72	68	63	81
ELS090S4S	64	69	73	77	74	70	63	81
ELS120S4S	70	77	82	81	77	75	71	86
ELS120S4D	71	77	80	80	77	72	67	85
ELS150S4D	68	77	80	82	78	73	65	86
ELS180S4D	73	80	83	83	79	74	66	88
ELS240S4D	73	80	85	84	80	78	74	89

NOTE - the octave sound power data does not include tonal correction.

¹ Tested according to AHRI Standard 270 test conditions.