SMALL PROJECT ANALYSIS LEVEL

VISTA CONTINUATION HIGH SCHOOL MODERNIZATION PROJECT



SEPTEMBER 2025

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SECTION 1 - EXECUTIVE SUMMARY

QK, Inc. (QK) has completed a Small Project Analysis Level (SPAL) for the Kern High School District (KHSD). The Project proposes to modernize the existing Vista Continuation High School (VCHS) campus to enhance the learning experience and offer new and modern amenities for the student population and faculty, as well as improve the overall use of the existing property. The Project proposes to demolish the existing buildings, internal access roads, parking spaces and courtyard to construct new buildings, outdoor recreational spaces and relocate existing ballfields on the existing 15.5-acre Project site in Bakersfield, California. All proposed construction will occur on previously disturbed ground and developed campus grounds and primary access will remain on P Street.

The proposed Project's construction and operations would include the following criteria pollutant emissions: reactive organic gases (ROG), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), and suspended particulate matter (PM_{10} and $PM_{2.5}$). Project operations would generate air pollutant emissions from mobile sources (vehicle activity from employees and visitors), energy sources (natural gas and electricity usage), and area sources (incidental activities related to architectural coating, consumer products, and landscape maintenance). Project construction and operational activities would also generate greenhouse gas (GHG) emissions. Criteria and GHG emissions were estimated using the California Emissions Estimator Model (CalEEMod) version 2022.1.1.29 (California Air Pollution Control Officers Association (CAPCOA) 2024).

Based on the thresholds established by the SJVAPCD's GAMAQI, the emissions estimates prepared pursuant to this SPAL assessment do not exceed the SJVAPCD's established emissions significance thresholds for all CEQA air quality contaminants, therefore, this Project would not pose a significant impact to the San Joaquin Valley Air Basin and would have a less than significant air quality impact.

SECTION 2 - INTRODUCTION

2.1 - Purpose

This SPAL was prepared pursuant to the SJVAPCD's Guidance for Assessing and Mitigating Air Quality Impacts (GAMAQI) (SJVAPCD 2015), the California Environmental Quality Act (CEQA) (Public Resources Code 21000 to 21189) and the CEQA Guidelines (California Code of Regulations Title 14, Division 6, Chapter 3, Sections 15000 – 15387).

2.2 - General Project Description

The Project is proposing to modernize the existing Vista Continuation High School (VCHS) campus to enhance the learning experience and offer new and modern amenities for the student population and faculty, as well as improve the overall use of the existing property. The Project proposes to demolish the existing buildings, internal access roads, parking spaces and courtyard to construct new buildings, outdoor recreational spaces and relocate existing ballfields on the existing 15.5-acre Project site in Bakersfield, California. All proposed construction will occur on previously disturbed ground and developed campus grounds and primary access will remain on P Street.

The student enrollment at VCHS was 210 students in 2024. While the Project will increase the student population to approximately 440 students and up to 5 additional staff, the increase in the student and faculty population will occur over time and not immediately after construction is complete. Based on the current student population, it is anticipated that approximately 53 percent of students will be bused to the school while the remaining 47 percent will be driven and dropped off, will drive their own vehicles or will walk to school each day. In order to be conservative this analysis considered the entire school as a new school.

The KHSD is proposing the construction of four conventionally framed buildings for the following uses: 1) a gymnasium, 2) a multi-purpose and cafeteria building, 3) an administration building and 4) a two-story classroom building with library. Additionally, the Project will include a prefabricated field house/concessions building of approximately 1,334 square feet. The total combined building square footage is approximately 50,000 square feet. The Project also proposes a central outdoor courtyard, two outdoor basketball courts, adequate parking for staff, visitors, and students, drop off lanes, access and fire lanes, outdoor lighting and the relocation of three existing ballfields. The high school will incorporate the use of renewable solar energy generated by rooftop solar and/or solar panel covered parking to offset the school's current energy demand.

This assessment examines the projected gross impact to air quality posed by this Project to the San Joaquin Valley Air Basin to determine whether or not the Project remains below established air quality thresholds of significance. **Figure 2-1** depicts the regional location and **Figure 2-2** depicts an aerial view of the Project location and **Figure 2-3** depicts the conceptual site plan.

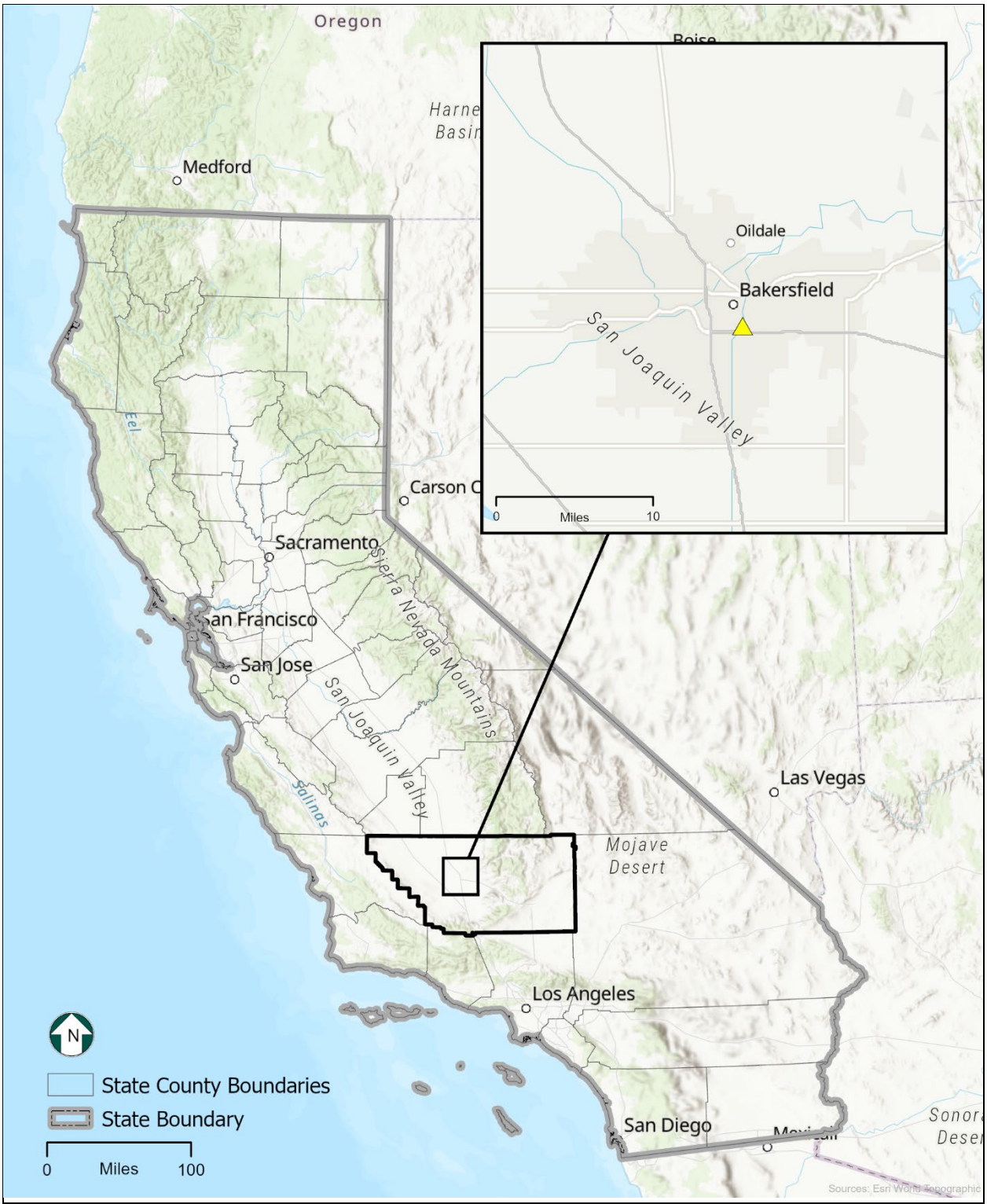


Figure 2-1
Regional Location

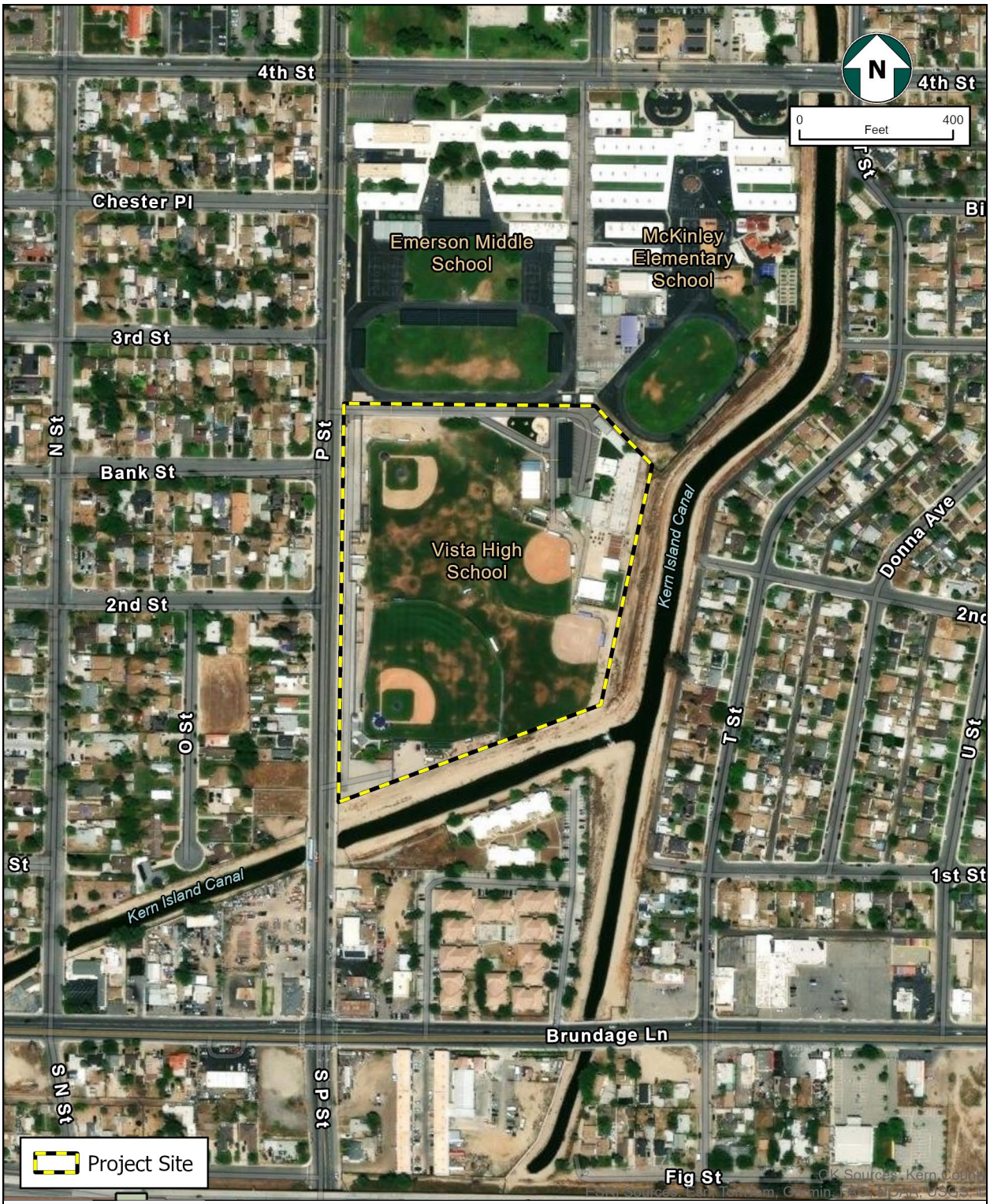


Figure 2-2
Project Location

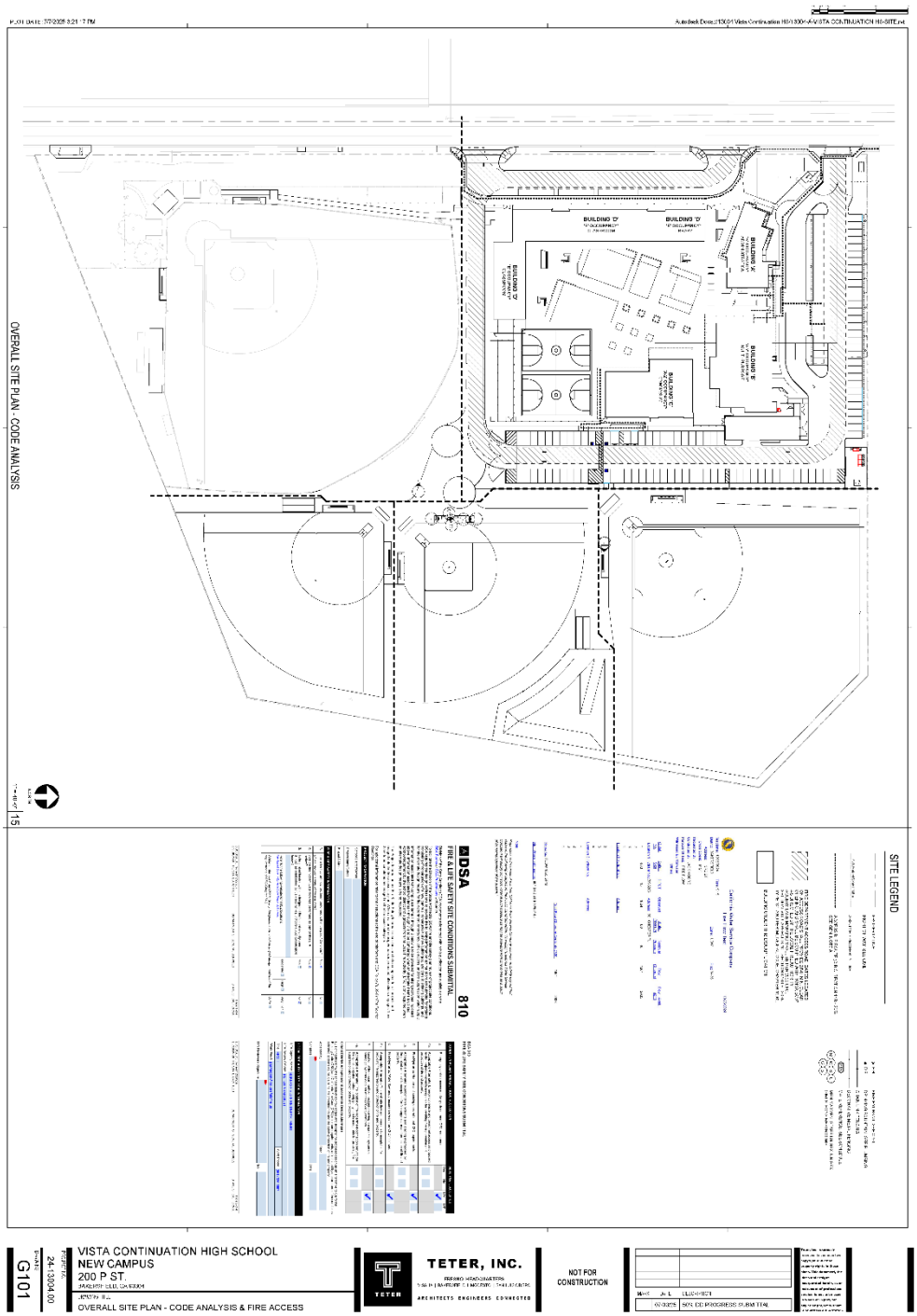


Figure 2-3
Site Plan

SECTION 3 - IMPACT ASSESSMENT

3.1 - Small Project Analysis Level Qualification

The SJVAPCD created the SPAL screening tool to streamline air quality assessments of commonly encountered projects. According to GAMAQI, the SJVAPCD "pre-calculated the emissions on a large number and types of projects to identify the level at which they have no possibility of exceeding the emissions thresholds"[1].

The SJVAPCD SPAL process established review parameters to determine whether a project qualifies as a "small project." A project that is found to be "less than" the established parameters has "no possibility of exceeding criteria pollutant emissions thresholds." **Table 3-1** presents the SPAL size parameters for educational projects.

Table 3-1
Small Project Analysis Level in Units for Educational Projects

Land Use Category - Educational	Project Size*	Unit	ADT One-Way for all Fleet Types (except HHDT)	ADT One-Way for HHDT Trips Only
Elementary School	1,880	Student	1,000	15
Elementary School	156,000	Square Feet	1,000	15
Junior High School	1,440	Student	1,000	15
Junior High School	168,800	Square Feet	1,000	15
High School	1,160	Student	1,000	15
High School	153,600	Square Feet	1,000	15
Junior College (2 year)	1,720	Student	1,000	15
Junior College (2 year)	74,400	Square Feet	1,000	15
University/College (4 year)	1,120	Student	1,000	15
Library	38,400	Square Feet	1,000	15
Place of Worship	141,000	Square Feet	1,000	15
Day Care Center	40,000	Square Feet	1,500	25
Proposed Project	**50,000**	**Square Feet**	**704**	**0****

*Project size based on SPAL Table 5, as posted on SJVAPCD webpage: https://www.valleyair.org/transportation/CEQA%20Rules/GAMAQI-SPAL.PDF

**No HHDTs are actually anticipated for standard operations of this project.

As shown in **Table 3-1**, the proposed Project would not exceed the established SPAL limits for a "High School" education project. The Project would construct 50,000 square feet of educational buildings compared to the allowable project size of 153,600 square feet. And based on the CalEEMod default trip rate the Project's average daily trips (ADTs) would be

[1] SJVAPCD GAMAQI, Section 8.3.4, Page 85.

below the SPAL ADT thresholds. Based on the above information, this Project qualifies for a limited air quality analysis applying the SPAL guidance to determine air quality impacts.

3.2 - Significance Criteria

This SPAL utilizes the CEQA and the SJVAPCD's GAMAQI to determine the significance thresholds for the proposed Project.

A potentially significant impact to air quality, as defined by the CEQA Appendix G Environmental Checklist Form (not included herein), would occur if the project caused one or more of the following to occur:

- Conflict with or obstruct implementation of the applicable air quality plan;
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard;
- Expose sensitive receptors to substantial pollutant concentrations; and/or
- Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

The SJVAPCD has established emission thresholds in their GAMAQI to determine whether a project would create any potential air quality impacts that would require further analysis in an Environmental Impact Report (EIR). The SJVAPCD air quality thresholds from GAMAQI are presented in **Table 3-2** (SJVAPCD 2015).

Table 3-2
SJVAPCD CEQA Thresholds of Significance

Criteria Pollutant	Significance Level		
	Construction Emissions	Operational Permitted Emissions	Operational Non-Permitted Emissions
CO	100 tons/yr	100 tons/yr	100 tons/yr
NOx	10 tons/yr	10 tons/yr	10 tons/yr
ROG	10 tons/yr	10 tons/yr	10 tons/yr
SOx	27 tons/yr	27 tons/yr	27 tons/yr
PM_{10}	15 tons/yr	15 tons/yr	15 tons/yr
$PM_{2.5}$	15 tons/yr	15 tons/yr	15 tons/yr

Source: SJVAPCD 2015.

3.2.1 - THRESHOLD FOR AMBIENT AIR QUALITY IMPACTS

CEQA Guidelines – Appendix G (Environmental Checklist) states that a project that would "*violate any air quality standard or contribute substantially to an existing or projected air quality violation*" would be considered to create significant impacts on air quality. Therefore, an ambient air quality analysis should determine whether the emissions from a project

would cause or contribute significantly to violations of the NAAQS or CAAQS when added to existing ambient concentrations.

Table 3-3
Federal and California Standards

Pollutant	Averaging Time	NAAQS	CAAQS
		Concentration	
O_3	8-hour	0.070 ppm (137 µg/m³)[a]	0.070 ppm (137 µg/m³)
	1-hour		0.09 ppm (180 µg/m³)
CO	8-hour	9 ppm (10 µg/m³)	9 ppm (10 µg/m³)
	1-hour	35 ppm (40 µg/m³)	20 ppm (23 µg/m³)
NO_2	Annual Average	53 ppb (100 µg/m³)	0.030 ppm (57 µg/m³)
	1-Hour	100 ppb (188.68 µg/m³)	0.18 ppm (339 µg/m³)
SO_2	3-Hour	0.5 ppm (1,300 µg/m³)	
	24 Hour	0.14 ppm (365 µg/m³)	0.04 ppm (105 µg/m³)
	1-Hour	75 ppb (196 µg/m³)	0.25 ppm (655 µg/m³)
Particulate Matter (PM_{10})	Annual Arithmetic Mean		20 µg/m³
	24-Hour	150 µg/m³	50 µg/m³
Fine Particulate Matter ($PM_{2.5}$)	Annual Arithmetic Mean	12 µg/m³	12 µg/m³
	24-Hour	35 µg/m³	
Sulfates	24-Hour		25 µg/m³
Pb[d]	Rolling Three-Month Average	0.15 µg/m³	
	30 Day Average		1.5 µg/m³
H_2S	1-Hour		0.03 ppm (42 µg/m³)
Vinyl Chloride (chloroethene)	24-Hour		0.010 ppm (26 µg/m³)
Visibility Reducing particles	8 Hour (1000 to 1800 PST)		[b]

ppm = parts per million
ppb = parts per billion
mg/m³ = milligrams per cubic meter
µg/m³ = micrograms per cubic meter

Source: CARB 2024
a. On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm
b. In 1989, CARB converted both the general statewide 10-mile visibility standards and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.

3.2.2 - THRESHOLDS FOR HAZARDOUS AIR POLLUTANTS

The SJVAPCD's Guidelines state that a project result in a significant impact if it exceeds that District's health risk notification thresholds presented in **Table 3-4**.

Table 3-4
Measures of Significance – Toxic Air Contaminants

Agency	Level	Description
Significance Thresholds Adopted for the Evaluation of Impacts Under CEQA		
SJVAPCD	Carcinogens	Maximally Exposed Individual risk **equals or exceeds** 20 in one million.
	Non-Carcinogens	**Acute**: Hazard Index **equals or exceeds** 1.0 for the Maximally Exposed Individual. **Chronic**: Hazard Index **equals or exceeds** 1.0 for the Maximally Exposed Individual.

Source: SJVAPCD 2015

3.2.3 - GLOBAL CLIMATE CHANGE THRESHOLDS OF SIGNIFICANCE

On December 17, 2009, SJVAPCD adopted Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA (SJVAPCD 2009); which outlined the SJVAPCD's methodology for assessing a project's significance for GHGs under CEQA. The following criteria was outlined in the document to determine whether a project could have a significant impact:

- Projects determined to be exempt from the requirements of CEQA would be determined to have a less than significant individual and cumulative impact for GHG emissions and would not require further environmental review, including analysis of project specific GHG emissions. Projects exempt under CEQA would be evaluated consistent with established rules and regulations governing project approval and would not be required to implement BPS.
- Projects complying with an approved GHG emission reduction plan or GHG mitigation program which avoids or substantially reduces GHG emissions within the geographic area in which the project is located would be determined to have a less than significant individual and cumulative impact for GHG emissions. Such plans or programs must be specified in law or approved by the lead agency with jurisdiction over the affected resource and supported by a CEQA compliant environmental review document adopted by the lead agency. Projects complying with an approved GHG emission reduction plan or GHG mitigation program would not be required to implement BPS.
- Projects implementing Best Performance Standards would not require quantification of project specific GHG emissions. Consistent with CEQA Guidelines, such projects would be determined to have a less than significant individual and cumulative impact for GHG emissions.
- Projects not implementing Best Performance Standards would require quantification of project specific GHG emissions and demonstration that project specific GHG emissions

would be reduced or mitigated by at least 29%, compared to Business-as-Usual (BAU), including GHG emission reductions achieved since the 2002-2004 baseline period. Projects achieving at least a 29% GHG emission reduction compared to BAU would be determined to have a less than significant individual and cumulative impact for GHG.

- Notwithstanding any of the above provisions, projects requiring preparation of an Environmental Impact Report for any other reason would require quantification of project specific GHG emissions. Projects implementing BPS or achieving at least a 29% GHG emission reduction compared to BAU would be determined to have a less than significant individual and cumulative impact for GHG.

The County of Kern nor the City of Bakersfield has developed specific thresholds for GHGs. The SJVAPCD has developed thresholds to determine significance of a proposed project – either implement Best Performance Standards or achieve a 29% reduction from BAU (a specific numerical threshold). However, the SJVAPCD has established their BAU and baseline emissions based on the years 2002-2004 and 2020, respectively. Since the 2020 projected baseline has passed no new guidance has been approved for determining BAU and projected baseline for the next target year. Therefore, the 29% reduction from BAU cannot be applied to the subject Project in order to determine significance. Additionally, a Best Performance Standards threshold has not been established. For this Project, compliance with locally adopted climate plans will be used to determine level of significance for GHG. Therefore, the GHG analysis for this Project follows the suggestions from the Court's ruling on the Newhall Ranch development project in order to determine significance using the project design features.

3.3 - Project Related Emissions

A cursory review of the Project emissions was conducted to demonstrate that it would not exceed established air quality emissions thresholds, pursuant to the SJVAPCD's GAMAQI.

3.3.1 - SHORT-TERM EMISSIONS

Short-term emissions are primarily from the demolition activities and construction of a project and would have temporary impacts on air quality.

CalEEMod was used to estimate emissions from construction worker vehicles and on-site construction equipment. CalEEMod default construction schedule and equipment was used to estimated Project emissions.

Adjustments to the CalEEMod default values were as follows:

- Land use lot acreage was adjusted to match the Project description; and
- Paving and landscape square footage was adjusted to match estimates based on Project site plan.

Even though unmitigated emissions would be less than the air quality thresholds, the Project also must comply with required SJVAPCD's mitigation measures to limit fugitive dust

emissions. The following mitigation measures were applied in CalEEMod resulting in Mitigated emissions shown in Table 3-5:

- Water exposed area 3 times per day; and
- Reduce vehicle speed to less than 15 miles per hour on unpaved roads.

Table 3-5 presents the Project's short-term emissions and demonstrated that the Project's construction activities would not exceed construction significance thresholds. Therefore, construction emissions were found to be less than significant, and no further evaluation is required. Emission calculations are available in **Appendix A**.

Table 3-5
Short-Term Project Emissions

Emissions Source	Pollutant (tons/year)					
	ROG	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
2026	0.20	1.80	2.18	<0.005	0.19	0.10
2027	0.18	0.58	0.84	<0.005	0.04	0.02
Significance Threshold	10	10	100	27	15	15
Is Threshold Exceeded for a Single Year After Mitigation?	No	No	No	No	No	No

Source: QK 2025

3.3.2 - LONG-TERM OPERATIONAL EMISSIONS

Long-term emissions are caused by operational mobile sources and area source emissions from the Project.

Table 3-6 presents the Project's long-term operations emissions generated from mobile, energy, and area sources as well as from water use and waste generation emissions. Most of these emission impacts are from mobile sources traveling to and from the Project area.

CalEEMod was used to estimate emissions from students, staff, and visitor vehicles and on-site area sources. Default trips and fleet mix were used to represent trip data for the Project. The Project's long-term emissions demonstrated that the Project's operational activities would not exceed operational thresholds. Therefore, operational emissions were found to be less than significant, and no further evaluation is required. Emission calculations are available in Appendix A.

Table 3-6
Long-Term (Operational Emissions)

Emissions Source	Pollutant (tons/year)					
	ROG	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
Project Operational Emissions	0.57	0.54	2.63	0.01	0.59	0.16
Significance Threshold	10	10	100	27	15	15
Is Threshold Exceeded After Mitigation?	No	No	No	No	No	No

3.3.3 - GREENHOUSE GAS EMISSIONS

The Project's greenhouse gas (GHG) emissions are primarily from construction equipment source activities and operational mobile and energy sources. Not all GHGs exhibit the same ability to induce climate change; as a result, GHG contributions are commonly quantified as carbon dioxide equivalents (CO_2e) (see **Appendix A**). The proposed Project's construction and operational CO_2e emissions were estimated using CalEEMod. These emissions are summarized in **Table 3-7**.

Table 3-7
Estimated Annual GHG Emissions (MT/Year)

Source	CO_2	CH_4	N_2O	CO_2e
Total Construction Emissions	580	0.02	0.01	585
Total Operational Emissions	787	0.67	0.04	816

In the decade after SJVAPCD adopted their Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA, several new laws and executive orders were adopted that require additional reductions in years after 2020. For instance, Senate Bill 32 requires that GHG emissions be 40% less than 1990 levels by 2030. More drastic still, Senate Bill 100 which was signed by the Governor recently requires 100% zero-carbon electricity by 2045. On the day SB 100 was signed into law, the Governor also signed Executive Order B-55-18 which commits California to total, economy-wide carbon neutrality by 2045. Clearly, the 2009 Guidance may be somewhat inadequate in producing a meaningful comparison by today's standards which propose a grand vision that, if achieved, would fundamentally change how business is conducted and citizens live in the State. Thus, as discussed in the most recent updates to the Scoping Plan, objectives of the Scoping Plan affect all sectors of the economy and it no longer makes sense to evaluate GHG emissions on a project-level.

For these reasons, Project GHG emissions levels presented in **Table 3-7** are primarily for disclosure purposes. The Project's largest contributors to GHG emissions are from construction activities and operational mobile and energy sources. Electricity and transportation fuels are, in effect, regulated by requiring providers and importers of electricity and fuel to participate in the GHG Cap-and-Trade Program and other Programs

(e.g., low carbon fuel standard, renewable portfolio standard, etc.). Each sector-wide program exists within the framework of AB 32 and its descendant laws the purpose of which is to achieve GHG emissions reductions consistent with the AB 32 Scoping Plan.

The Project would generate GHGs primarily from energy sources and combustion of gasoline/diesel fuels, each of which is regulated near the top of the supply-chain. As such, each consumer in California (including those creating emissions of this Project) will have no choice but to purchase energy and fuels produced in a way that is acceptable to the California market. Thus, Project GHG emissions will be consistent with the relevant plan (i.e., AB 32 Scoping Plan). The Project would meet its fair share of the cost to mitigate the cumulative impact of global climate change based on energy purchases from the California market. Thus, consumers of energy and transportation fuels are in effect regulated by higher level emissions restrictions on the producers of these energy sources. Therefore, the Project would have a less than significant impact on applicable GHG reduction plans and the Project's contribution to cumulative global climate change impacts would not be cumulatively considerable.

3.4 - Potential Impacts on Sensitive Receptors

Sensitive receptors are defined as locations where young children, chronically ill individuals, the elderly, or people who are more sensitive than the general population reside, such as schools, hospitals, nursing homes, and daycare centers. The nearest residential sensitive receptor is located adjacent to the proposed Project site on the east, west and south.

The closest school is the Project site, Emerson Middle School and McKinley Elementary School located adjacent to the north of the Project site. The closest hospital is Dignity Health – Mercy Hospital Downtown located 1.25 miles northwest and the closest assisted living facility is Redwood Senior Living located 0.78 miles to the southeast. The nearest daycare facility is Noah's Ark Preschool located 0.41 miles to the west of the Project.

Based on the predicted operational emissions and activity types, the proposed Project is not expected to affect any on-site or off-site sensitive receptors and is not expected to have any adverse impacts on any known sensitive receptors.

3.5 - Potential Impacts to Visibility to Nearby Class 1 Areas

Visibility impact analyses are intended for stationary sources of emissions which are subject to the PSD requirements in 40 CFR Part 60; they are not usually conducted for area sources. Under the PSD program, all international parks, national wilderness areas and national memorial parks that exceed 5,000 acres, and of national parks that exceed 6,000 acres are designated as mandatory federal Class I areas which are provided visibility protection under the Clean Air Act. Because the Project's PM10 emissions increases are predicted to be less than the PSD threshold levels, an impact at any Class 1 area or military/airspace operation within 100 kilometers of the Project is extremely unlikely. Therefore, based on the Project's predicted less-than significant PM10 emissions, the Project would be expected to have a *less than significant impact* to visibility at any Class 1 area or military/airspace operation.

3.6 - Predicted Health Impacts

Projects are considered for potential health risks wherein a new or modified source of Hazardous Air Pollutants (HAPs) is proposed for a location near an existing residential area or other sensitive receptor when evaluating potential impacts related to HAPs.

The proposed Project would result in emissions of Hazardous Air Pollutants (HAPs) during construction and would be located near existing residents; therefore, an assessment of the potential risk to the population attributable to emissions of hazardous air pollutants from the proposed Project is required.

To predict the potential health risk to the population attributable to emissions of HAPs from the proposed Project, ambient air concentrations were predicted with dispersion modeling to arrive at a conservative estimate of increased individual carcinogenic risk that might occur as a result of continuous exposure over the construction period for construction emissions. Similarly, predicted concentrations were used to calculate non-cancer chronic and acute hazard indices, which are the ratio of expected exposure to acceptable exposure. The basis for evaluating potential health risks is the identification of sources with increased HAPs. HAP emissions from anticipated on-site construction activities were evaluated.

Health risk is determined using the Hotspots Analysis and Reporting Program (HARP) software distributed by the CARB. HARP2 requires peak 1-hour emission rates and annual-averaged emission rates for all pollutants for each modeling source. The assumptions used to calculate the emission rates for the proposed Project are outlined below.

The most recent version of EPA's AMS/EPA Regulatory Model – AERMOD (recompiled for the Lakes ISC-AERMOD View) was used to predict the dispersion of emissions from the proposed Project. The analysis employed all of the regulatory default AERMOD model keyword parameters, including elevated terrain options.

Diesel combustion emissions from diesel on-site construction equipment were modeled as an area source for on-site construction activity on the property. Diesel particulate matter was calculated using CalEEMod for on-site construction. A unit emission rate of one gram/second (g/sec) was input to AERMOD for each source.

A fenceline discrete receptor grid was placed around the Project site in order to evaluate residences and businesses within close proximity of the Project site. A three-tier grid was used with 25-meter fenceline spacing. The first tier extended 100 meters with 25-meter tier spacing, the second tier extended an additional 200 meters with 50 meter tier spacing and the third tier extended another 400 meters with a tier spacing of 100 meters. A total of 1,200 discrete off-site receptors were analyzed. Elevated terrain options were employed even though there is not complex terrain in the Project area. The 7.5-minute DEM terrain data for Lamont, CA and Gosford, CA, were processed with AERMAP to identify elevations for the proposed Project.

SJVAPCD-provided AERMET processed meteorological datasets for the Fresno monitoring station, calendar years 2018 through 2022 were input to AERMOD (SJVAPCD, 2025d). This was the most recent available dataset available at the time the modeling was conducted. Rural dispersion parameters were used because the operation and the majority of the land surrounding the facility are considered "rural" under the Auer land use classification method (Auer, 1978).

Plot files generated by AERMOD were uploaded to the Air Dispersion Modeling and Risk Assessment Tool (ADMRT) program in the Hotspots Analysis and Reporting Program Version 2 (HARP2) (CARB, 2015). ADMRT post-processing was used to assess the potential for excess cancer risk and chronic and acute non-cancer effects using the most recent health effects data from the California EPA Office of Environmental Health Hazard Assessment (OEHHA) using the OEHHA Derived Method. HARP2 site parameters were set for the mandatory minimum pathways of inhalation, homegrown gardens, soil ingestion, dermal, and mother's milk. The non-inhalation pathways used a deposition rate of 0.02 m/s along with all other default parameters. Risk reports were generated using the derived OEHHA analysis method for carcinogenic risk and non-carcinogenic chronic and acute risk. Site parameters are included in the HARP2 output files. Total cancer risk was predicted for the inhalation pathway at each receptor. A hazard index was computed for chronic non-cancer health effects for each applicable endpoint and each receptor. A hazard index for acute non-cancer health effects was not computed since Deisel Particulate Matter (DPM) does not have a risk exposure level for acute risk.

SJVAPCD has set the level of significance for carcinogenic risk at twenty in one million, which is understood as the possibility of causing 20 additional cancer cases in a population of one million people. The level of significance for chronic non-cancer risk is a hazard index of 1.0. All receptors were modeled with a 3-year exposure for construction activities.

The carcinogenic risk and the health hazard index (HI) for chronic non-cancer risk at the point of maximum impact (PMI) do not exceed the significance levels of twenty in one million (20 x 10-6) and 1.0, respectively for the proposed Project. The PMIs are identified by receptor location and risk and are provided in **Table 3-8**. The electronic AERMOD and HARP2 output files are provided in **Appendix B**.

Table 3-8
Potential Maximum Impacts Predicted by HARP

	Cancer Risk	Chronic Hazard Index
Total Construction	11.8E-06	6.88E-03
SJVAPCD Threshold	20.0E-06	1.0
Exceedance?	No	No
Receptor #	6	6
UTM Easting (m)	317481.98	317481.98
UTM Northing (m)	3914457.97	3914457.97

Note: UTM = Universal Transverse Mercator

As shown above in **Table 3-8**, the maximum predicted cancer risk for the proposed Project is 11.8E-06. The maximum chronic non-cancer hazard index for the proposed Project is 6.88E-03. Since the PMI remained below the significance threshold for cancer and chronic risk, this Project would not have an adverse effect to any of the surrounding communities.

The potential health risk attributable to the proposed Project is determined to be *less than significant* based on the following conclusions:

1. Potential carcinogenic risk from the proposed Project is below the significance level of ten in a million at each of the modeled receptors; and
2. The hazard index for the potential chronic non-cancer risk from the proposed Project is below the significance level of 1.0 at each of the modeled receptors.
3. The hazard index for the potential acute non-cancer risk was not calculated since there is no acute risk associated with DPM emission; therefore, the proposed Project is considered below the significance level.

Therefore, potential risk to the population attributable to emissions of HAPs from the proposed Project would be less than significant.

3.7 - Odor Impacts and Mitigation

An evaluation is typically conducted for both of the following situations: 1) a potential source of objectionable odors is proposed for a location near existing sensitive receptors, and 2) sensitive receptors are proposed to be located near an existing source of objectionable odors. The criteria for this evaluation are based on the Lead Agency's determination of the proximity to one another of the proposed project and the sensitive receptors. A sensitive receptor is a location where human populations, especially children, senior citizens and sick persons, are present, and where there is a reasonable expectation of continuous human exposure to pollutants, according to the averaging period for ambient air quality standards, i.e. the 24-hour, 8-hour or 1-hour standards. Commercial and industrial sources are not considered sensitive receptors.

The proposed Project is not considered a source of objectionable odors or odorous compounds. Furthermore, there does not appear to be any significant source of objectionable odors in close proximity that may adversely impact the project site when it is in operation. As such, the proposed project will not be a source of any odorous compounds nor will it likely be impacted by any odorous source.

3.8 - Impacts to Ambient Air Quality

An ambient air quality analysis, when required, determines if a proposed project has the potential to cause a violation of the ambient air quality standards or a substantial contribution to an existing or projected air quality standard. As stated in the of GAMAQI (2015, p 96-97), SJVAPCD has developed screening levels for requiring an Ambient Air Quality Analysis (AAQA). The SJVAPCD recommends that an AAQA be performed for all criteria pollutants when emissions of any criteria pollutant resulting from project construction or operational activities exceed the 100 pounds per day screening level, after compliance with Rule 9510 requirements and implementation of all enforceable mitigation measures.

As demonstrated in *Sections 3.3.1 Short Term Operational Emissions and 3.3.2 Long Term Operational Emissions*, the Project's potential increase to any criteria pollutant's average daily emissions for construction and operational activities associated with this Project would not exceed 100 pounds per day. Therefore, an AAQA is not required for this Project.

3.9 - Cumulative Impacts

Cumulative impacts were also evaluated; however, cumulative emissions were not quantified because no other tentative projects were found within a one-mile radius of the Proposed Project that provided enough project detail information to accurately estimate emissions. Owing to the inherently cumulative nature of air quality impacts, the threshold for whether a project would make a cumulatively considerable contribution to a significant cumulative impact is currently based on whether the proposed Project would exceed established project-level thresholds. As such, a qualitative evaluation of the cumulative projects supports a finding that the Project's contribution would not be cumulatively considerable because the proposed Project's incremental emissions increase would be less than significant.

SECTION 4 - CONCLUSIONS

Based on the criteria established by the SJVAPCD's GAMAQI, the proposed Project does not meet the minimum standards to require a full Air Quality Impact Analysis. Furthermore, the Project as proposed would not exceed the SJVAPCD's criteria air pollutant emission levels and would generate *less than significant air quality impacts*.

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APPENDIX A

PROJECT EMISSION CALCULATIONS

Vista Continuation High School Modernization Detailed Report

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1.1. Basic Project Information

Data Field	Value
Project Name	Vista Continuation High School Modernization
Construction Start Date	1/1/2026
Operational Year	2027
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.70
Precipitation (days)	18.0
Location	35.357537295088505, -119.01053760537032
County	Kern-San Joaquin
City	Bakersfield
Air District	San Joaquin Valley APCD
Air Basin	San Joaquin Valley
TAZ	2849
EDFZ	5
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Southern California Gas
App Version	2022.1.1.30

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
High School	50.0	1000sqft	15.5	50,000	18,120	223,062	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Energy	E-10-B	Establish Onsite Renewable Energy Systems: Solar Power

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	11.7	11.7	10.2	14.5	0.03	0.38	0.33	0.71	0.35	0.08	0.43	—	2,938	2,938	0.10	0.07	1.60	2,962
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	3.82	3.21	29.2	29.6	0.06	1.24	5.32	6.57	1.14	2.68	3.82	—	6,830	6,830	0.27	0.31	0.12	6,856
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.32	1.11	9.87	12.0	0.02	0.38	0.65	1.03	0.35	0.22	0.57	—	2,589	2,589	0.09	0.06	0.53	2,609
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.24	0.20	1.80	2.18	< 0.005	0.07	0.12	0.19	0.06	0.04	0.10	—	429	429	0.02	0.01	0.09	432

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	1.39	1.17	10.2	14.5	0.03	0.38	0.33	0.71	0.35	0.08	0.43	—	2,938	2,938	0.10	0.07	1.60	2,962
2027	11.7	11.7	9.74	14.4	0.03	0.34	0.33	0.67	0.31	0.08	0.39	—	2,926	2,926	0.10	0.07	1.43	2,950
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	3.82	3.21	29.2	29.6	0.06	1.24	5.32	6.57	1.14	2.68	3.82	—	6,830	6,830	0.27	0.31	0.12	6,856
2027	1.32	1.11	9.78	13.9	0.03	0.34	0.33	0.67	0.31	0.08	0.39	—	2,893	2,893	0.10	0.07	0.04	2,916
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	1.32	1.11	9.87	12.0	0.02	0.38	0.65	1.03	0.35	0.22	0.57	—	2,589	2,589	0.09	0.06	0.53	2,609
2027	1.07	1.01	3.16	4.58	0.01	0.11	0.10	0.22	0.10	0.03	0.13	—	915	915	0.03	0.02	0.19	922
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.24	0.20	1.80	2.18	< 0.005	0.07	0.12	0.19	0.06	0.04	0.10	—	429	429	0.02	0.01	0.09	432
2027	0.20	0.18	0.58	0.84	< 0.005	0.02	0.02	0.04	0.02	< 0.005	0.02	—	151	151	0.01	< 0.005	0.03	153

2.3. Construction Emissions by Year, Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	1.39	1.17	10.2	14.5	0.03	0.38	0.33	0.71	0.35	0.08	0.43	—	2,938	2,938	0.10	0.07	1.60	2,962
2027	11.7	11.7	9.74	14.4	0.03	0.34	0.33	0.67	0.31	0.08	0.39	—	2,926	2,926	0.10	0.07	1.43	2,950
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	3.82	3.21	29.2	29.6	0.06	1.24	5.32	6.57	1.14	2.68	3.82	—	6,830	6,830	0.27	0.31	0.12	6,856
2027	1.32	1.11	9.78	13.9	0.03	0.34	0.33	0.67	0.31	0.08	0.39	—	2,893	2,893	0.10	0.07	0.04	2,916

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	1.32	1.11	9.87	12.0	0.02	0.38	0.65	1.03	0.35	0.22	0.57	—	2,589	2,589	0.09	0.06	0.53	2,609
2027	1.07	1.01	3.16	4.58	0.01	0.11	0.10	0.22	0.10	0.03	0.13	—	915	915	0.03	0.02	0.19	922
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.24	0.20	1.80	2.18	< 0.005	0.07	0.12	0.19	0.06	0.04	0.10	—	429	429	0.02	0.01	0.09	432
2027	0.20	0.18	0.58	0.84	< 0.005	0.02	0.02	0.04	0.02	< 0.005	0.02	—	151	151	0.01	< 0.005	0.03	153

2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	4.34	4.10	3.46	22.4	0.06	0.10	4.13	4.23	0.09	1.05	1.14	38.2	6,301	6,339	4.10	0.31	16.5	6,550
Mit.	4.34	4.10	3.46	22.4	0.06	0.10	4.13	4.23	0.09	1.05	1.14	38.2	6,199	6,237	4.08	0.31	16.5	6,447
% Reduced	—	—	—	—	—	—	—	—	—	—	—	—	2%	2%	< 0.5%	1%	—	2%
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	3.65	3.42	3.80	16.9	0.05	0.09	4.13	4.22	0.09	1.05	1.14	38.2	5,855	5,893	4.12	0.32	0.61	6,094
Mit.	3.65	3.42	3.80	16.9	0.05	0.09	4.13	4.22	0.09	1.05	1.14	38.2	5,753	5,791	4.11	0.32	0.61	5,991
% Reduced	—	—	—	—	—	—	—	—	—	—	—	—	2%	2%	< 0.5%	1%	—	2%
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	3.31	3.12	2.96	14.4	0.04	0.08	3.15	3.24	0.08	0.80	0.88	38.2	4,815	4,854	4.07	0.25	5.62	5,034
Mit.	3.31	3.12	2.96	14.4	0.04	0.08	3.15	3.24	0.08	0.80	0.88	38.2	4,714	4,752	4.05	0.24	5.62	4,932
% Reduced	—	—	—	—	—	—	—	—	—	—	—	—	2%	2%	< 0.5%	1%	—	2%

Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.60	0.57	0.54	2.63	0.01	0.02	0.58	0.59	0.01	0.15	0.16	6.33	797	804	0.67	0.04	0.93	834
Mit.	0.60	0.57	0.54	2.63	0.01	0.02	0.58	0.59	0.01	0.15	0.16	6.33	780	787	0.67	0.04	0.93	816
% Reduced	—	—	—	—	—	—	—	—	—	—	—	—	2%	2%	< 0.5%	1%	—	2%

2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	2.75	2.57	2.84	19.8	0.05	0.05	4.13	4.18	0.04	1.05	1.09	—	5,424	5,424	0.18	0.30	16.3	5,534
Area	1.52	1.49	0.02	2.17	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	8.94	8.94	< 0.005	< 0.005	—	8.97
Energy	0.07	0.03	0.61	0.51	< 0.005	0.05	—	0.05	0.05	—	0.05	—	857	857	0.09	< 0.005	—	861
Water	—	—	—	—	—	—	—	—	—	—	—	3.18	10.1	13.2	0.33	0.01	—	23.8
Waste	—	—	—	—	—	—	—	—	—	—	—	35.0	0.00	35.0	3.50	0.00	—	123
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.19	0.19
Total	4.34	4.10	3.46	22.4	0.06	0.10	4.13	4.23	0.09	1.05	1.14	38.2	6,301	6,339	4.10	0.31	16.5	6,550
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	2.45	2.26	3.20	16.4	0.05	0.05	4.13	4.18	0.04	1.05	1.09	—	4,988	4,988	0.21	0.31	0.42	5,086
Area	1.13	1.13	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.07	0.03	0.61	0.51	< 0.005	0.05	—	0.05	0.05	—	0.05	—	857	857	0.09	< 0.005	—	861
Water	—	—	—	—	—	—	—	—	—	—	—	3.18	10.1	13.2	0.33	0.01	—	23.8
Waste	—	—	—	—	—	—	—	—	—	—	—	35.0	0.00	35.0	3.50	0.00	—	123
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.19	0.19
Total	3.65	3.42	3.80	16.9	0.05	0.09	4.13	4.22	0.09	1.05	1.14	38.2	5,855	5,893	4.12	0.32	0.61	6,094

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	1.92	1.77	2.34	12.8	0.04	0.03	3.15	3.19	0.03	0.80	0.83	—	3,944	3,944	0.15	0.23	5.42	4,023
Area	1.32	1.31	0.01	1.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.41	4.41	< 0.005	< 0.005	—	4.43
Energy	0.07	0.03	0.61	0.51	< 0.005	0.05	—	0.05	0.05	—	0.05	—	857	857	0.09	< 0.005	—	861
Water	—	—	—	—	—	—	—	—	—	—	—	3.18	10.1	13.2	0.33	0.01	—	23.8
Waste	—	—	—	—	—	—	—	—	—	—	—	35.0	0.00	35.0	3.50	0.00	—	123
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.19	0.19
Total	3.31	3.12	2.96	14.4	0.04	0.08	3.15	3.24	0.08	0.80	0.88	38.2	4,815	4,854	4.07	0.25	5.62	5,034
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.35	0.32	0.43	2.34	0.01	0.01	0.58	0.58	0.01	0.15	0.15	—	653	653	0.02	0.04	0.90	666
Area	0.24	0.24	< 0.005	0.20	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.73	0.73	< 0.005	< 0.005	—	0.73
Energy	0.01	0.01	0.11	0.09	< 0.005	0.01	—	0.01	0.01	—	0.01	—	142	142	0.01	< 0.005	—	143
Water	—	—	—	—	—	—	—	—	—	—	—	0.53	1.67	2.19	0.05	< 0.005	—	3.94
Waste	—	—	—	—	—	—	—	—	—	—	—	5.80	0.00	5.80	0.58	0.00	—	20.3
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.03	0.03
Total	0.60	0.57	0.54	2.63	0.01	0.02	0.58	0.59	0.01	0.15	0.16	6.33	797	804	0.67	0.04	0.93	834

2.6. Operations Emissions by Sector, Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	2.75	2.57	2.84	19.8	0.05	0.05	4.13	4.18	0.04	1.05	1.09	—	5,424	5,424	0.18	0.30	16.3	5,534
Area	1.52	1.49	0.02	2.17	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	8.94	8.94	< 0.005	< 0.005	—	8.97
Energy	0.07	0.03	0.61	0.51	< 0.005	0.05	—	0.05	0.05	—	0.05	—	755	755	0.07	< 0.005	—	758
Water	—	—	—	—	—	—	—	—	—	—	—	3.18	10.1	13.2	0.33	0.01	—	23.8
Waste	—	—	—	—	—	—	—	—	—	—	—	35.0	0.00	35.0	3.50	0.00	—	123

Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.19	0.19
Total	4.34	4.10	3.46	22.4	0.06	0.10	4.13	4.23	0.09	1.05	1.14	38.2	6,199	6,237	4.08	0.31	16.5	6,447
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	2.45	2.26	3.20	16.4	0.05	0.05	4.13	4.18	0.04	1.05	1.09	—	4,988	4,988	0.21	0.31	0.42	5,086
Area	1.13	1.13	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.07	0.03	0.61	0.51	< 0.005	0.05	—	0.05	0.05	—	0.05	—	755	755	0.07	< 0.005	—	758
Water	—	—	—	—	—	—	—	—	—	—	—	3.18	10.1	13.2	0.33	0.01	—	23.8
Waste	—	—	—	—	—	—	—	—	—	—	—	35.0	0.00	35.0	3.50	0.00	—	123
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.19	0.19
Total	3.65	3.42	3.80	16.9	0.05	0.09	4.13	4.22	0.09	1.05	1.14	38.2	5,753	5,791	4.11	0.32	0.61	5,991
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	1.92	1.77	2.34	12.8	0.04	0.03	3.15	3.19	0.03	0.80	0.83	—	3,944	3,944	0.15	0.23	5.42	4,023
Area	1.32	1.31	0.01	1.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.41	4.41	< 0.005	< 0.005	—	4.43
Energy	0.07	0.03	0.61	0.51	< 0.005	0.05	—	0.05	0.05	—	0.05	—	755	755	0.07	< 0.005	—	758
Water	—	—	—	—	—	—	—	—	—	—	—	3.18	10.1	13.2	0.33	0.01	—	23.8
Waste	—	—	—	—	—	—	—	—	—	—	—	35.0	0.00	35.0	3.50	0.00	—	123
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.19	0.19
Total	3.31	3.12	2.96	14.4	0.04	0.08	3.15	3.24	0.08	0.80	0.88	38.2	4,714	4,752	4.05	0.24	5.62	4,932
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.35	0.32	0.43	2.34	0.01	0.01	0.58	0.58	0.01	0.15	0.15	—	653	653	0.02	0.04	0.90	666
Area	0.24	0.24	< 0.005	0.20	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.73	0.73	< 0.005	< 0.005	—	0.73
Energy	0.01	0.01	0.11	0.09	< 0.005	0.01	—	0.01	0.01	—	0.01	—	125	125	0.01	< 0.005	—	125
Water	—	—	—	—	—	—	—	—	—	—	—	0.53	1.67	2.19	0.05	< 0.005	—	3.94
Waste	—	—	—	—	—	—	—	—	—	—	—	5.80	0.00	5.80	0.58	0.00	—	20.3
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.03	0.03
Total	0.60	0.57	0.54	2.63	0.01	0.02	0.58	0.59	0.01	0.15	0.16	6.33	780	787	0.67	0.04	0.93	816

3. Construction Emissions Details

3.1. Demolition (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.72	2.29	20.7	19.0	0.03	0.84	—	0.84	0.78	—	0.78	—	3,427	3,427	0.14	0.03	—	3,438
Demolition	—	—	—	—	—	—	1.39	1.39	—	0.21	0.21	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.13	1.13	1.04	< 0.005	0.05	—	0.05	0.04	—	0.04	—	188	188	0.01	< 0.005	—	188
Demolition	—	—	—	—	—	—	0.08	0.08	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.03	0.02	0.21	0.19	< 0.005	0.01	—	0.01	0.01	—	0.01	—	31.1	31.1	< 0.005	< 0.005	—	31.2
Demolition	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	0.07	0.71	0.00	0.00	0.18	0.18	0.00	0.04	0.04	—	174	174	< 0.005	0.01	0.02	176
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.06	0.03	2.11	0.44	0.01	0.03	0.46	0.50	0.03	0.13	0.16	—	1,694	1,694	0.01	0.27	0.10	1,775
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	9.89	9.89	< 0.005	< 0.005	0.02	10.0
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.11	0.02	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	92.8	92.8	< 0.005	0.01	0.10	97.3
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.64	1.64	< 0.005	< 0.005	< 0.005	1.66
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	15.4	15.4	< 0.005	< 0.005	0.02	16.1

3.2. Demolition (2026) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.72	2.29	20.7	19.0	0.03	0.84	—	0.84	0.78	—	0.78	—	3,427	3,427	0.14	0.03	—	3,438
Demolition	—	—	—	—	—	—	1.39	1.39	—	0.21	0.21	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.13	1.13	1.04	< 0.005	0.05	—	0.05	0.04	—	0.04	—	188	188	0.01	< 0.005	—	188
Demolition	—	—	—	—	—	—	0.08	0.08	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.02	0.21	0.19	< 0.005	0.01	—	0.01	0.01	—	0.01	—	31.1	31.1	< 0.005	< 0.005	—	31.2
Demolition	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	0.07	0.71	0.00	0.00	0.18	0.18	0.00	0.04	0.04	—	174	174	< 0.005	0.01	0.02	176
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.06	0.03	2.11	0.44	0.01	0.03	0.46	0.50	0.03	0.13	0.16	—	1,694	1,694	0.01	0.27	0.10	1,775
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	9.89	9.89	< 0.005	< 0.005	0.02	10.0
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.11	0.02	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	92.8	92.8	< 0.005	0.01	0.10	97.3
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.64	1.64	< 0.005	< 0.005	< 0.005	1.66
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	15.4	15.4	< 0.005	< 0.005	0.02	16.1

3.3. Site Preparation (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.74	3.14	29.2	28.8	0.05	1.24	—	1.24	1.14	—	1.14	—	5,298	5,298	0.21	0.04	—	5,316

Dust From Material Movement	—	—	—	—	—	—	5.11	5.11	—	2.63	2.63	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.10	0.09	0.80	0.79	< 0.005	0.03	—	0.03	0.03	—	0.03	—	145	145	0.01	< 0.005	—	146
Dust From Material Movement	—	—	—	—	—	—	0.14	0.14	—	0.07	0.07	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.15	0.14	< 0.005	0.01	—	0.01	0.01	—	0.01	—	24.0	24.0	< 0.005	< 0.005	—	24.1
Dust From Material Movement	—	—	—	—	—	—	0.03	0.03	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.08	0.83	0.00	0.00	0.21	0.21	0.00	0.05	0.05	—	203	203	< 0.005	0.01	0.02	205

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.77	5.77	< 0.005	< 0.005	0.01	5.85
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.95	0.95	< 0.005	< 0.005	< 0.005	0.97
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.4. Site Preparation (2026) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.74	3.14	29.2	28.8	0.05	1.24	—	1.24	1.14	—	1.14	—	5,298	5,298	0.21	0.04	—	5,316
Dust From Material Movement	—	—	—	—	—	—	5.11	5.11	—	2.63	2.63	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.10	0.09	0.80	0.79	< 0.005	0.03	—	0.03	0.03	—	0.03	—	145	145	0.01	< 0.005	—	146
Dust From Material Movement	—	—	—	—	—	—	0.14	0.14	—	0.07	0.07	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.15	0.14	< 0.005	0.01	—	0.01	0.01	—	0.01	—	24.0	24.0	< 0.005	< 0.005	—	24.1
Dust From Material Movement	—	—	—	—	—	—	0.03	0.03	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.08	0.83	0.00	0.00	0.21	0.21	0.00	0.05	0.05	—	203	203	< 0.005	0.01	0.02	205
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.77	5.77	< 0.005	< 0.005	0.01	5.85

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.95	0.95	< 0.005	< 0.005	< 0.005	0.97
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.5. Grading (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.62	3.04	27.2	27.6	0.06	1.12	—	1.12	1.03	—	1.03	—	6,599	6,599	0.27	0.05	—	6,621
Dust From Material Movement	—	—	—	—	—	—	2.39	2.39	—	0.95	0.95	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.30	0.25	2.24	2.27	0.01	0.09	—	0.09	0.08	—	0.08	—	542	542	0.02	< 0.005	—	544

Dust From Material Movement	—	—	—	—	—	—	0.20	0.20	—	0.08	0.08	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.05	0.41	0.41	< 0.005	0.02	—	0.02	0.02	—	0.02	—	89.8	89.8	< 0.005	< 0.005	—	90.1
Dust From Material Movement	—	—	—	—	—	—	0.04	0.04	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.08	0.09	0.95	0.00	0.00	0.24	0.24	0.00	0.06	0.06	—	232	232	< 0.005	0.01	0.02	235
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.09	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	19.8	19.8	< 0.005	< 0.005	0.03	20.0
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.27	3.27	< 0.005	< 0.005	0.01	3.32

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.6. Grading (2026) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.62	3.04	27.2	27.6	0.06	1.12	—	1.12	1.03	—	1.03	—	6,599	6,599	0.27	0.05	—	6,621
Dust From Material Movement	—	—	—	—	—	—	2.39	2.39	—	0.95	0.95	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.30	0.25	2.24	2.27	0.01	0.09	—	0.09	0.08	—	0.08	—	542	542	0.02	< 0.005	—	544
Dust From Material Movement	—	—	—	—	—	—	0.20	0.20	—	0.08	0.08	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.05	0.41	0.41	< 0.005	0.02	—	0.02	0.02	—	0.02	—	89.8	89.8	< 0.005	< 0.005	—	90.1
Dust From Material Movement	—	—	—	—	—	—	0.04	0.04	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.08	0.09	0.95	0.00	0.00	0.24	0.24	0.00	0.06	0.06	—	232	232	< 0.005	0.01	0.02	235
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.09	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	19.8	19.8	< 0.005	< 0.005	0.03	20.0
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.27	3.27	< 0.005	< 0.005	0.01	3.32
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.7. Building Construction (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.28	1.07	9.85	13.0	0.02	0.38	—	0.38	0.35	—	0.35	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.28	1.07	9.85	13.0	0.02	0.38	—	0.38	0.35	—	0.35	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.70	0.58	5.36	7.05	0.01	0.21	—	0.21	0.19	—	0.19	—	1,304	1,304	0.05	0.01	—	1,309
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	0.11	0.98	1.29	< 0.005	0.04	—	0.04	0.03	—	0.03	—	216	216	0.01	< 0.005	—	217
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.09	0.08	1.46	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	277	277	< 0.005	0.01	0.91	281
Vendor	0.01	0.01	0.29	0.09	< 0.005	< 0.005	0.07	0.08	< 0.005	0.02	0.02	—	264	264	< 0.005	0.04	0.68	276
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.08	0.10	1.00	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	243	243	< 0.005	0.01	0.02	246
Vendor	0.01	0.01	0.31	0.10	< 0.005	< 0.005	0.07	0.08	< 0.005	0.02	0.02	—	264	264	< 0.005	0.04	0.02	275
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.04	0.05	0.59	0.00	0.00	0.14	0.14	0.00	0.03	0.03	—	137	137	< 0.005	0.01	0.21	139
Vendor	0.01	< 0.005	0.17	0.05	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	143	143	< 0.005	0.02	0.16	150
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.11	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	22.8	22.8	< 0.005	< 0.005	0.04	23.1
Vendor	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	23.8	23.8	< 0.005	< 0.005	0.03	24.8
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.8. Building Construction (2026) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road	1.28	1.07	9.85	13.0	0.02	0.38	—	0.38	0.35	—	0.35	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.28	1.07	9.85	13.0	0.02	0.38	—	0.38	0.35	—	0.35	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.70	0.58	5.36	7.05	0.01	0.21	—	0.21	0.19	—	0.19	—	1,304	1,304	0.05	0.01	—	1,309
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	0.11	0.98	1.29	< 0.005	0.04	—	0.04	0.03	—	0.03	—	216	216	0.01	< 0.005	—	217
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.09	0.08	1.46	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	277	277	< 0.005	0.01	0.91	281
Vendor	0.01	0.01	0.29	0.09	< 0.005	< 0.005	0.07	0.08	< 0.005	0.02	0.02	—	264	264	< 0.005	0.04	0.68	276
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.08	0.10	1.00	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	243	243	< 0.005	0.01	0.02	246
Vendor	0.01	0.01	0.31	0.10	< 0.005	< 0.005	0.07	0.08	< 0.005	0.02	0.02	—	264	264	< 0.005	0.04	0.02	275
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.04	0.05	0.59	0.00	0.00	0.14	0.14	0.00	0.03	0.03	—	137	137	< 0.005	0.01	0.21	139
Vendor	0.01	< 0.005	0.17	0.05	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	143	143	< 0.005	0.02	0.16	150
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.11	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	22.8	22.8	< 0.005	< 0.005	0.04	23.1
Vendor	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	23.8	23.8	< 0.005	< 0.005	0.03	24.8
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.9. Building Construction (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.23	1.03	9.39	12.9	0.02	0.34	—	0.34	0.31	—	0.31	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Roa Equipment	1.23	1.03	9.39	12.9	0.02	0.34	—	0.34	0.31	—	0.31	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Roa d Equipm ent	0.34	0.29	2.63	3.62	0.01	0.09	—	0.09	0.09	—	0.09	—	671	671	0.03	0.01	—	673
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Roa d Equipm ent	0.06	0.05	0.48	0.66	< 0.005	0.02	—	0.02	0.02	—	0.02	—	111	111	< 0.005	< 0.005	—	111
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.09	0.07	1.34	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	272	272	< 0.005	0.01	0.82	275
Vendor	0.01	0.01	0.28	0.09	< 0.005	< 0.005	0.07	0.08	< 0.005	0.02	0.02	—	258	258	< 0.005	0.04	0.61	270
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.08	0.09	0.91	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	238	238	< 0.005	0.01	0.02	241
Vendor	0.01	0.01	0.30	0.09	< 0.005	< 0.005	0.07	0.08	< 0.005	0.02	0.02	—	258	258	< 0.005	0.04	0.02	269
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.02	0.02	0.02	0.28	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	69.3	69.3	< 0.005	< 0.005	0.10	70.2
Vendor	< 0.005	< 0.005	0.08	0.03	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	72.1	72.1	< 0.005	0.01	0.07	75.4
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	11.5	11.5	< 0.005	< 0.005	0.02	11.6
Vendor	< 0.005	< 0.005	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	11.9	11.9	< 0.005	< 0.005	0.01	12.5
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.10. Building Construction (2027) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.23	1.03	9.39	12.9	0.02	0.34	—	0.34	0.31	—	0.31	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.23	1.03	9.39	12.9	0.02	0.34	—	0.34	0.31	—	0.31	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road	0.34	0.29	2.63	3.62	0.01	0.09	—	0.09	0.09	—	0.09	—	671	671	0.03	0.01	—	673
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.05	0.48	0.66	< 0.005	0.02	—	0.02	0.02	—	0.02	—	111	111	< 0.005	< 0.005	—	111
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.09	0.07	1.34	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	272	272	< 0.005	0.01	0.82	275
Vendor	0.01	0.01	0.28	0.09	< 0.005	< 0.005	0.07	0.08	< 0.005	0.02	0.02	—	258	258	< 0.005	0.04	0.61	270
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.08	0.09	0.91	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	238	238	< 0.005	0.01	0.02	241
Vendor	0.01	0.01	0.30	0.09	< 0.005	< 0.005	0.07	0.08	< 0.005	0.02	0.02	—	258	258	< 0.005	0.04	0.02	269
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.28	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	69.3	69.3	< 0.005	< 0.005	0.10	70.2
Vendor	< 0.005	< 0.005	0.08	0.03	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	72.1	72.1	< 0.005	0.01	0.07	75.4
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	11.5	11.5	< 0.005	< 0.005	0.02	11.6
Vendor	< 0.005	< 0.005	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	11.9	11.9	< 0.005	< 0.005	0.01	12.5

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.11. Paving (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.88	0.74	6.94	9.95	0.01	0.30	—	0.30	0.27	—	0.27	—	1,511	1,511	0.06	0.01	—	1,516
Paving	0.16	0.16	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.04	0.38	0.55	< 0.005	0.02	—	0.02	0.02	—	0.02	—	82.8	82.8	< 0.005	< 0.005	—	83.1
Paving	0.01	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.07	0.10	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	13.7	13.7	< 0.005	< 0.005	—	13.8
Paving	< 0.005	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	0.05	0.96	0.00	0.00	0.18	0.18	0.00	0.04	0.04	—	194	194	< 0.005	0.01	0.59	197
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	9.69	9.69	< 0.005	< 0.005	0.01	9.82
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.60	1.60	< 0.005	< 0.005	< 0.005	1.63
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.12. Paving (2027) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.88	0.74	6.94	9.95	0.01	0.30	—	0.30	0.27	—	0.27	—	1,511	1,511	0.06	0.01	—	1,516
Paving	0.16	0.16	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.04	0.38	0.55	< 0.005	0.02	—	0.02	0.02	—	0.02	—	82.8	82.8	< 0.005	< 0.005	—	83.1
Paving	0.01	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.07	0.10	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	13.7	13.7	< 0.005	< 0.005	—	13.8
Paving	< 0.005	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	0.05	0.96	0.00	0.00	0.18	0.18	0.00	0.04	0.04	—	194	194	< 0.005	0.01	0.59	197
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	9.69	9.69	< 0.005	< 0.005	0.01	9.82
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.60	1.60	< 0.005	< 0.005	< 0.005	1.63
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.13. Architectural Coating (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.14	0.11	0.83	1.13	< 0.005	0.02	—	0.02	0.02	—	0.02	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	11.6	11.6	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.05	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.32	7.32	< 0.005	< 0.005	—	7.34
Architectural Coatings	0.64	0.64	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.21	1.21	< 0.005	< 0.005	—	1.22
Architectural Coatings	0.12	0.12	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.01	0.27	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	54.3	54.3	< 0.005	< 0.005	0.16	55.1
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.71	2.71	< 0.005	< 0.005	< 0.005	2.75

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.45	0.45	< 0.005	< 0.005	< 0.005	0.46
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.14. Architectural Coating (2027) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.14	0.11	0.83	1.13	< 0.005	0.02	—	0.02	0.02	—	0.02	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	11.6	11.6	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.05	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.32	7.32	< 0.005	< 0.005	—	7.34

Architectural	0.64	0.64	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.21	1.21	< 0.005	< 0.005	—	1.22
Architectural Coatings	0.12	0.12	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.01	0.27	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	54.3	54.3	< 0.005	< 0.005	0.16	55.1
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.71	2.71	< 0.005	< 0.005	< 0.005	2.75
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.45	0.45	< 0.005	< 0.005	< 0.005	0.46
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	2.75	2.57	2.84	19.8	0.05	0.05	4.13	4.18	0.04	1.05	1.09	—	5,424	5,424	0.18	0.30	16.3	5,534
Total	2.75	2.57	2.84	19.8	0.05	0.05	4.13	4.18	0.04	1.05	1.09	—	5,424	5,424	0.18	0.30	16.3	5,534
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	2.45	2.26	3.20	16.4	0.05	0.05	4.13	4.18	0.04	1.05	1.09	—	4,988	4,988	0.21	0.31	0.42	5,086
Total	2.45	2.26	3.20	16.4	0.05	0.05	4.13	4.18	0.04	1.05	1.09	—	4,988	4,988	0.21	0.31	0.42	5,086
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	0.35	0.32	0.43	2.34	0.01	0.01	0.58	0.58	0.01	0.15	0.15	—	653	653	0.02	0.04	0.90	666
Total	0.35	0.32	0.43	2.34	0.01	0.01	0.58	0.58	0.01	0.15	0.15	—	653	653	0.02	0.04	0.90	666

4.1.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

High School	2.75	2.57	2.84	19.8	0.05	0.05	4.13	4.18	0.04	1.05	1.09	—	5,424	5,424	0.18	0.30	16.3	5,534
Total	2.75	2.57	2.84	19.8	0.05	0.05	4.13	4.18	0.04	1.05	1.09	—	5,424	5,424	0.18	0.30	16.3	5,534
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	2.45	2.26	3.20	16.4	0.05	0.05	4.13	4.18	0.04	1.05	1.09	—	4,988	4,988	0.21	0.31	0.42	5,086
Total	2.45	2.26	3.20	16.4	0.05	0.05	4.13	4.18	0.04	1.05	1.09	—	4,988	4,988	0.21	0.31	0.42	5,086
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	0.35	0.32	0.43	2.34	0.01	0.01	0.58	0.58	0.01	0.15	0.15	—	653	653	0.02	0.04	0.90	666
Total	0.35	0.32	0.43	2.34	0.01	0.01	0.58	0.58	0.01	0.15	0.15	—	653	653	0.02	0.04	0.90	666

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	—	—	—	—	—	—	—	—	—	—	—	—	134	134	0.02	< 0.005	—	135
Total	—	—	—	—	—	—	—	—	—	—	—	—	134	134	0.02	< 0.005	—	135
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	—	—	—	—	—	—	—	—	—	—	—	—	134	134	0.02	< 0.005	—	135
Total	—	—	—	—	—	—	—	—	—	—	—	—	134	134	0.02	< 0.005	—	135
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

High School	—	—	—	—	—	—	—	—	—	—	—	—	22.2	22.2	< 0.005	< 0.005	—	22.4
Total	—	—	—	—	—	—	—	—	—	—	—	—	22.2	22.2	< 0.005	< 0.005	—	22.4

4.2.2. Electricity Emissions By Land Use - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	—	—	—	—	—	—	—	—	—	—	—	—	32.0	32.0	0.01	< 0.005	—	32.4
Total	—	—	—	—	—	—	—	—	—	—	—	—	32.0	32.0	0.01	< 0.005	—	32.4
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	—	—	—	—	—	—	—	—	—	—	—	—	32.0	32.0	0.01	< 0.005	—	32.4
Total	—	—	—	—	—	—	—	—	—	—	—	—	32.0	32.0	0.01	< 0.005	—	32.4
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	—	—	—	—	—	—	—	—	—	—	—	—	5.31	5.31	< 0.005	< 0.005	—	5.36
Total	—	—	—	—	—	—	—	—	—	—	—	—	5.31	5.31	< 0.005	< 0.005	—	5.36

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

High School	0.07	0.03	0.61	0.51	< 0.005	0.05	—	0.05	0.05	—	0.05	—	723	723	0.06	< 0.005	—	725
Total	0.07	0.03	0.61	0.51	< 0.005	0.05	—	0.05	0.05	—	0.05	—	723	723	0.06	< 0.005	—	725
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	0.07	0.03	0.61	0.51	< 0.005	0.05	—	0.05	0.05	—	0.05	—	723	723	0.06	< 0.005	—	725
Total	0.07	0.03	0.61	0.51	< 0.005	0.05	—	0.05	0.05	—	0.05	—	723	723	0.06	< 0.005	—	725
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	0.01	0.01	0.11	0.09	< 0.005	0.01	—	0.01	0.01	—	0.01	—	120	120	0.01	< 0.005	—	120
Total	0.01	0.01	0.11	0.09	< 0.005	0.01	—	0.01	0.01	—	0.01	—	120	120	0.01	< 0.005	—	120

4.2.4. Natural Gas Emissions By Land Use - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	0.07	0.03	0.61	0.51	< 0.005	0.05	—	0.05	0.05	—	0.05	—	723	723	0.06	< 0.005	—	725
Total	0.07	0.03	0.61	0.51	< 0.005	0.05	—	0.05	0.05	—	0.05	—	723	723	0.06	< 0.005	—	725
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	0.07	0.03	0.61	0.51	< 0.005	0.05	—	0.05	0.05	—	0.05	—	723	723	0.06	< 0.005	—	725
Total	0.07	0.03	0.61	0.51	< 0.005	0.05	—	0.05	0.05	—	0.05	—	723	723	0.06	< 0.005	—	725
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	0.01	0.01	0.11	0.09	< 0.005	0.01	—	0.01	0.01	—	0.01	—	120	120	0.01	< 0.005	—	120

Total	0.01	0.01	0.11	0.09	< 0.005	0.01	—	0.01	0.01	—	0.01	—	120	120	0.01	< 0.005	—	120

4.3. Area Emissions by Source

4.3.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	1.07	1.07	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.06	0.06	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.39	0.36	0.02	2.17	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	8.94	8.94	< 0.005	< 0.005	—	8.97
Total	1.52	1.49	0.02	2.17	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	8.94	8.94	< 0.005	< 0.005	—	8.97
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	1.07	1.07	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.06	0.06	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	1.13	1.13	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.20	0.20	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.01	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.03	0.03	< 0.005	0.20	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.73	0.73	< 0.005	< 0.005	—	0.73
Total	0.24	0.24	< 0.005	0.20	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.73	0.73	< 0.005	< 0.005	—	0.73

4.3.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	1.07	1.07	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.06	0.06	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.39	0.36	0.02	2.17	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	8.94	8.94	< 0.005	< 0.005	—	8.97
Total	1.52	1.49	0.02	2.17	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	8.94	8.94	< 0.005	< 0.005	—	8.97

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	1.07	1.07	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.06	0.06	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	1.13	1.13	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.20	0.20	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.01	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.03	0.03	< 0.005	0.20	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.73	0.73	< 0.005	< 0.005	—	0.73
Total	0.24	0.24	< 0.005	0.20	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.73	0.73	< 0.005	< 0.005	—	0.73

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

High School	—	—	—	—	—	—	—	—	—	—	—	3.18	10.1	13.2	0.33	0.01	—	23.8
Total	—	—	—	—	—	—	—	—	—	—	—	3.18	10.1	13.2	0.33	0.01	—	23.8
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	—	—	—	—	—	—	—	—	—	—	—	3.18	10.1	13.2	0.33	0.01	—	23.8
Total	—	—	—	—	—	—	—	—	—	—	—	3.18	10.1	13.2	0.33	0.01	—	23.8
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	—	—	—	—	—	—	—	—	—	—	—	0.53	1.67	2.19	0.05	< 0.005	—	3.94
Total	—	—	—	—	—	—	—	—	—	—	—	0.53	1.67	2.19	0.05	< 0.005	—	3.94

4.4.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	—	—	—	—	—	—	—	—	—	—	—	3.18	10.1	13.2	0.33	0.01	—	23.8
Total	—	—	—	—	—	—	—	—	—	—	—	3.18	10.1	13.2	0.33	0.01	—	23.8
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	—	—	—	—	—	—	—	—	—	—	—	3.18	10.1	13.2	0.33	0.01	—	23.8
Total	—	—	—	—	—	—	—	—	—	—	—	3.18	10.1	13.2	0.33	0.01	—	23.8
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	—	—	—	—	—	—	—	—	—	—	—	0.53	1.67	2.19	0.05	< 0.005	—	3.94

Total	—	—	—	—	—	—	—	—	—	—	—	0.53	1.67	2.19	0.05	< 0.005	—	3.94

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	—	—	—	—	—	—	—	—	—	—	—	35.0	0.00	35.0	3.50	0.00	—	123
Total	—	—	—	—	—	—	—	—	—	—	—	35.0	0.00	35.0	3.50	0.00	—	123
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	—	—	—	—	—	—	—	—	—	—	—	35.0	0.00	35.0	3.50	0.00	—	123
Total	—	—	—	—	—	—	—	—	—	—	—	35.0	0.00	35.0	3.50	0.00	—	123
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	—	—	—	—	—	—	—	—	—	—	—	5.80	0.00	5.80	0.58	0.00	—	20.3
Total	—	—	—	—	—	—	—	—	—	—	—	5.80	0.00	5.80	0.58	0.00	—	20.3

4.5.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

High School	—	—	—	—	—	—	—	—	—	—	—	35.0	0.00	35.0	3.50	0.00	—	123
Total	—	—	—	—	—	—	—	—	—	—	—	35.0	0.00	35.0	3.50	0.00	—	123
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	—	—	—	—	—	—	—	—	—	—	—	35.0	0.00	35.0	3.50	0.00	—	123
Total	—	—	—	—	—	—	—	—	—	—	—	35.0	0.00	35.0	3.50	0.00	—	123
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	—	—	—	—	—	—	—	—	—	—	—	5.80	0.00	5.80	0.58	0.00	—	20.3
Total	—	—	—	—	—	—	—	—	—	—	—	5.80	0.00	5.80	0.58	0.00	—	20.3

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.19	0.19
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.19	0.19
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.19	0.19
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.19	0.19
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

High School	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.03	0.03
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.03	0.03

4.6.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.19	0.19
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.19	0.19
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.19	0.19
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.19	0.19
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.03	0.03
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.03	0.03

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.7.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.9.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Remove	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.5. Above and Belowground Carbon Accumulation by Land Use Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Demolition	Demolition	1/1/2026	1/29/2026	5.00	20.0	—
Site Preparation	Site Preparation	1/30/2026	2/13/2026	5.00	10.0	—
Grading	Grading	2/14/2026	3/28/2026	5.00	30.0	—
Building Construction	Building Construction	3/29/2026	5/23/2027	5.00	300	—
Paving	Paving	5/24/2027	6/21/2027	5.00	20.0	—
Architectural Coating	Architectural Coating	6/22/2027	7/20/2027	5.00	20.0	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Demolition	Rubber Tired Dozers	Diesel	Average	2.00	8.00	367	0.40
Demolition	Excavators	Diesel	Average	3.00	8.00	36.0	0.38
Demolition	Concrete/Industrial Saws	Diesel	Average	1.00	8.00	33.0	0.73
Site Preparation	Rubber Tired Dozers	Diesel	Average	3.00	8.00	367	0.40

Site Preparation	Tractors/Loaders/Back	Diesel	Average	4.00	8.00	84.0	0.37
Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Grading	Excavators	Diesel	Average	2.00	8.00	36.0	0.38
Grading	Tractors/Loaders/Back hoes	Diesel	Average	2.00	8.00	84.0	0.37
Grading	Scrapers	Diesel	Average	2.00	8.00	423	0.48
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Building Construction	Forklifts	Diesel	Average	3.00	8.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction	Cranes	Diesel	Average	1.00	7.00	367	0.29
Building Construction	Welders	Diesel	Average	1.00	8.00	46.0	0.45
Building Construction	Tractors/Loaders/Back hoes	Diesel	Average	3.00	7.00	84.0	0.37
Paving	Pavers	Diesel	Average	2.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Average	2.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Average	2.00	8.00	36.0	0.38
Architectural Coating	Air Compressors	Diesel	Average	1.00	6.00	37.0	0.48

5.2.2. Mitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Demolition	Rubber Tired Dozers	Diesel	Average	2.00	8.00	367	0.40
Demolition	Excavators	Diesel	Average	3.00	8.00	36.0	0.38
Demolition	Concrete/Industrial Saws	Diesel	Average	1.00	8.00	33.0	0.73
Site Preparation	Rubber Tired Dozers	Diesel	Average	3.00	8.00	367	0.40
Site Preparation	Tractors/Loaders/Back hoes	Diesel	Average	4.00	8.00	84.0	0.37
Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Grading	Excavators	Diesel	Average	2.00	8.00	36.0	0.38

Grading	Tractors/Loaders/Back	Diesel	Average	2.00	8.00	84.0	0.37
Grading	Scrapers	Diesel	Average	2.00	8.00	423	0.48
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Building Construction	Forklifts	Diesel	Average	3.00	8.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction	Cranes	Diesel	Average	1.00	7.00	367	0.29
Building Construction	Welders	Diesel	Average	1.00	8.00	46.0	0.45
Building Construction	Tractors/Loaders/Back hoes	Diesel	Average	3.00	7.00	84.0	0.37
Paving	Pavers	Diesel	Average	2.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Average	2.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Average	2.00	8.00	36.0	0.38
Architectural Coating	Air Compressors	Diesel	Average	1.00	6.00	37.0	0.48

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition	—	—	—	—
Demolition	Worker	15.0	17.3	LDA,LDT1,LDT2
Demolition	Vendor	—	10.6	HHDT,MHDT
Demolition	Hauling	25.0	20.0	HHDT
Demolition	Onsite truck	—	—	HHDT
Site Preparation	—	—	—	—
Site Preparation	Worker	17.5	17.3	LDA,LDT1,LDT2
Site Preparation	Vendor	—	10.6	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—

Grading	Worker	20.0	17.3	LDA,LDT1,LDT2
Grading	Vendor	—	10.6	HHDT,MHDT
Grading	Hauling	0.00	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	21.0	17.3	LDA,LDT1,LDT2
Building Construction	Vendor	8.20	10.6	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	15.0	17.3	LDA,LDT1,LDT2
Paving	Vendor	—	10.6	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	4.20	17.3	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	10.6	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT

5.3.2. Mitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition	—	—	—	—
Demolition	Worker	15.0	17.3	LDA,LDT1,LDT2
Demolition	Vendor	—	10.6	HHDT,MHDT
Demolition	Hauling	25.0	20.0	HHDT
Demolition	Onsite truck	—	—	HHDT
Site Preparation	—	—	—	—

Site Preparation	Worker	17.5	17.3	LDA,LDT1,LDT2
Site Preparation	Vendor	—	10.6	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	20.0	17.3	LDA,LDT1,LDT2
Grading	Vendor	—	10.6	HHDT,MHDT
Grading	Hauling	0.00	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	21.0	17.3	LDA,LDT1,LDT2
Building Construction	Vendor	8.20	10.6	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	15.0	17.3	LDA,LDT1,LDT2
Paving	Vendor	—	10.6	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	4.20	17.3	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	10.6	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Control Strategies Applied	PM10 Reduction	PM2.5 Reduction
Water unpaved roads twice daily	55%	55%
Limit vehicle speeds on unpaved roads to 25 mph	44%	44%

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
Architectural Coating	0.00	0.00	75,000	25,000	—

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (Ton of Debris)	Acres Paved (acres)
Demolition	0.00	0.00	0.00	2,000	—
Site Preparation	—	—	15.0	0.00	—
Grading	—	—	90.0	0.00	—
Paving	0.00	0.00	0.00	0.00	1.60

5.6.2. Construction Earthmoving Control Strategies

Control Strategies Applied	Frequency (per day)	PM10 Reduction	PM2.5 Reduction
Water Exposed Area	3	74%	74%
Water Demolished Area	2	36%	36%

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
High School	1.60	75%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2026	0.00	204	0.03	< 0.005
2027	0.00	204	0.03	< 0.005

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
High School	703	199	85.5	198,247	5,802	1,641	705	1,635,048

5.9.2. Mitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
High School	703	199	85.5	198,247	5,802	1,641	705	1,635,048

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.1.2. Mitigated

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
0	0.00	75,000	25,000	—

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.10.4. Landscape Equipment - Mitigated

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
High School	239,687	204	0.0330	0.0040	2,257,312

5.11.2. Mitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
High School	57,347	204	0.0330	0.0040	2,257,312

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
High School	1,660,232	4,742,049

5.12.2. Mitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
High School	1,660,232	4,742,049

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
High School	65.0	—

5.13.2. Mitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
High School	65.0	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
High School	Household refrigerators and/or freezers	R-134a	1,430	0.02	0.60	0.00	1.00
High School	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
High School	Stand-alone retail refrigerators and freezers	R-134a	1,430	< 0.005	1.00	0.00	1.00
High School	Walk-in refrigerators and freezers	R-404A	3,922	< 0.005	7.50	7.50	20.0

5.14.2. Mitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
High School	Household refrigerators and/or freezers	R-134a	1,430	0.02	0.60	0.00	1.00
High School	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
High School	Stand-alone retail refrigerators and freezers	R-134a	1,430	< 0.005	1.00	0.00	1.00
High School	Walk-in refrigerators and freezers	R-404A	3,922	< 0.005	7.50	7.50	20.0

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.15.2. Mitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment Type	Fuel Type

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

5.18.2.2. Mitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	20.4	annual days of extreme heat
Extreme Precipitation	0.00	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	0.00	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	1	0	0	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	0	0	0	N/A
Drought	0	0	0	N/A

Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	1	1	1	2
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	1	1	1	2
Drought	1	1	1	2
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	1	1	2

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	93.6
AQ-PM	99.8
AQ-DPM	91.4
Drinking Water	70.3
Lead Risk Housing	83.9
Pesticides	0.00
Toxic Releases	15.7
Traffic	50.6
Effect Indicators	—
CleanUp Sites	76.9
Groundwater	47.4
Haz Waste Facilities/Generators	63.1
Impaired Water Bodies	0.00
Solid Waste	63.7
Sensitive Population	—
Asthma	95.0
Cardio-vascular	92.9
Low Birth Weights	88.4
Socioeconomic Factor Indicators	—
Education	85.7
Housing	88.5
Linguistic	83.1
Poverty	99.0
Unemployment	96.6

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	3.682792249
Employed	2.989862697
Median HI	1.129218529
Education	—
Bachelor's or higher	9.239060695
High school enrollment	100
Preschool enrollment	85.01219043
Transportation	—
Auto Access	3.785448479
Active commuting	31.91325549
Social	—
2-parent households	1.321698961
Voting	4.49121006
Neighborhood	—
Alcohol availability	13.96124727
Park access	57.590145
Retail density	68.26639292
Supermarket access	61.77338637
Tree canopy	58.36006673
Housing	—
Homeownership	6.287694084
Housing habitability	7.031951752
Low-inc homeowner severe housing cost burden	15.39843449
Low-inc renter severe housing cost burden	6.005389452
Uncrowded housing	33.18362633
Health Outcomes	—

Insured adults	7.185936096
Arthritis	5.1
Asthma ER Admissions	5.8
High Blood Pressure	1.9
Cancer (excluding skin)	49.7
Asthma	1.0
Coronary Heart Disease	2.7
Chronic Obstructive Pulmonary Disease	1.2
Diagnosed Diabetes	1.1
Life Expectancy at Birth	0.5
Cognitively Disabled	0.7
Physically Disabled	1.5
Heart Attack ER Admissions	22.5
Mental Health Not Good	3.2
Chronic Kidney Disease	1.1
Obesity	0.2
Pedestrian Injuries	96.2
Physical Health Not Good	1.7
Stroke	1.0
Health Risk Behaviors	—
Binge Drinking	91.0
Current Smoker	2.0
No Leisure Time for Physical Activity	1.1
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	18.1
Elderly	51.6

English Speaking	32.6
Foreign-born	27.0
Outdoor Workers	5.1
Climate Change Adaptive Capacity	—
Impervious Surface Cover	31.0
Traffic Density	46.9
Traffic Access	0.0
Other Indices	—
Hardship	85.7
Other Decision Support	—
2016 Voting	0.4

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	99.0
Healthy Places Index Score for Project Location (b)	1.00
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	Yes
Project Located in a Low-Income Community (Assembly Bill 1550)	Yes
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Land Use	Acreage adjusted to match the actual Project Site
Construction: Paving	Estimated based on site plans

APPENDIX B

HEALTH RISK ASSESSMENT MODELING FILES

BIOLOGICAL RESOURCE EVALUATION

KERN HIGH SCHOOL DISTRICT

VISTA HIGH SCHOOL CONTINUATION PROJECT

SEPTEMBER 2025

BIOLOGICAL RESOURCE EVALUATION

VISTA HIGH SCHOOL CONTINUATION PROJECT

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September 2025

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Project #250128.01

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EXECUTIVE SUMMARY

This Biological Resource Evaluation (BRE) report provides the results of a biological survey conducted by QK for the proposed Vista High School Continuation Project (Project). In order to comply with the California Environmental Quality Act (CEQA) a biological evaluation was conducted to identify the potential for sensitive biological resources to occur on or near the Project site.

The Project site is in the eastern portion of the metropolitan Bakersfield area, along P Street. The proposed Project will update the existing Vista Continuation High School (VCHS) campus by demolishing the existing infrastructure, constructing new buildings and outdoor recreational spaces, and relocating existing ballfields.

A review of available literature and agency databases was conducted to obtain information about the occurrences of special-status natural communities, special-status plant, and wildlife species occurring on or near the Project site. QK conducted a biological reconnaissance survey on September 11, 2025, to determine the locations and extent of land use, natural vegetation communities, determine the potential for occurrences of special-status plant and wildlife species, and verify the presence of wetlands and State and/or federal jurisdictional waters. No wetlands or other sensitive biological resources were observed on or near the Project site. One historical San Joaquin kit fox natal den was observed during the site survey; however, it appeared uninhabited at this time due to the presence of cobwebs in the den entrances and sign of domestic dog (*Canis familiaris*) tracks surrounding the den opening. No other special-status plant species or special-status wildlife species, or diagnostic sign thereof, were observed.

Based on the literature and database searches and results of the site survey, there is potential for four special-status wildlife species to occur on or near the site: San Joaquin kit fox, American badger, western burrowing owl, and Swainson's hawk. The majority of the surrounding properties have urban development. The site has been routinely mowed, and there is a small amount of low-quality suitable habitat to support these species on Project site. The Project has the potential to impact San Joaquin kit fox, but is unlikely to impact American badger, western burrowing owl, and Swainson's hawk given the current site conditions.

Based on the literature and database searches and results of the site survey, it is highly unlikely that special-status plant species will occur or inhabit the site. Additionally, riparian habitats/sensitive natural communities, wetlands/water features, other sensitive biological resources, and migratory wildlife corridors are absent from the Project site.

Implementation of the recommended avoidance and minimization measures outlined in Section 6 would minimize any potential Project impacts to special status wildlife species, should they be observed on site. There is expected to be no impact to special-status plant species, sensitive natural communities, wetlands or water features, or any other sensitive biological resources.

SECTION 1 - INTRODUCTION

A biological evaluation was conducted to identify the potential for sensitive biological resources to occur on or near the proposed commercial development at the Vista High School Continuation (VHSC) Project (Project) to comply with the California Environmental Quality Act (CEQA). This Biological Resource Evaluation (BRE) provides the basic biological information needed for the permitting process.

1.1 - Project Location

The Project site is located at 200 P Street, south of 4th Street in Bakersfield, California (Figure 1-1 and Figure 1-2). The Project site is, within Section 31, Township 29S, Range 28E, Mount Diablo Base and Meridian (MDB&M). The parcel is approximately 15.50 acres.

1.2 - Project Description

The proposed Project will update the existing VHSC campus to enhance the learning experience and offer new and modern amenities for the student population and faculty, as well as improve the overall use of the existing property. The Project proposes to demolish the existing buildings, internal access roads, parking spaces and courtyard to construct new buildings, outdoor recreational spaces and relocate existing ballfields on the existing 15.5-acre Project site in Bakersfield, California. All proposed construction will occur on previously disturbed ground and developed campus grounds and primary access will remain on P Street.

1.3 - Purpose, Goals, and Objectives for this Report

This BRE report includes the results of a biological survey and available biological and natural resource database search conducted by QK biologists on and near the Project site. This report is consistent with the requirements for an analysis of impacts to biological resources needed to support an addendum to an adopted Initial Study/ Mitigated Negative Declaration following guidelines established by CEQA.

The primary focus of this report is to provide information about the presence of sensitive biological resources on the Project and develop measures to avoid and minimize impacts of the Project on those resources. To accomplish that goal, this BRE provides information on the condition and sensitivity of the biological resources present and potentially present on and adjacent to the Project site and evaluates Project impacts to those resources. This BRE focuses on providing information on sensitive natural communities, State and/or federal listed or protected (special-status species) plant and wildlife species, wildlife movement corridors, and State and/or federal jurisdictional wetlands and waters by conducting a desktop analysis of site conditions and verifying those findings with an on-site biological survey.



Figure 1-1
Regional Map
Vista High School Continuation Project,
Bakersfield, Kern County, California



Figure 1-2
Project Location Map
Vista High School Continuation Project,
Bakersfield, Kern County, California

SECTION 2 - METHODS

2.1 - Definition of Biological Study Area

The Biological Study Area (BSA) includes the Project site and a 50-foot survey buffer surrounding the Project disturbance footprint (Figure 2-1).

2.2 - Literature Review and Database Analysis

The following online resources were reviewed for information on special-status biological resources in the Project survey area:

- California Department of Fish and Wildlife's (CDFW) California Natural Diversity Database (CNDDB; CDFW 2025a).
- CDFW's Biogeographic Information and Observation System (BIOS; CDFW 2025b).
- CDFW's Special Animals List (CDFW 2025c).
- CDFW's California Wildlife Habitat Relationships (CWHR) System (Mayer and Laudenslayer 1988).
- California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants of California (CNPS 2025).
- United States Fish and Wildlife Service (USFWS) Information for Planning and Consultation System (IPaC; USFWS 2025a).
- USFWS Critical Habitat Mapper (USFWS 2025b).
- USFWS National Wetlands Inventory (NWI; USFWS 2025c).
- USGS National Hydrography Dataset (NHD; USGS 2025).
- Federal Emergency Management Agency (FEMA) flood zone maps (FEMA 2025).
- United States Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS) Web Soil Survey (NRCS 2025)
- Current and historical aerial imagery (Google LLC 2025; Netronline 2025).

The CNDDB and CNPS queries focused on the *Gosford* USGS 7.5-minute quadrangle in which the Project is located, plus the surrounding eight quadrangles: *Millux, Conner, Weed Patch, Lamont*, *Stevens, Rosedale*, *Oildale, and Oil Center.* To satisfy other standard search criteria, CNDDB records within a 10-mile radius of the Project site were queried separately from the broader database search.

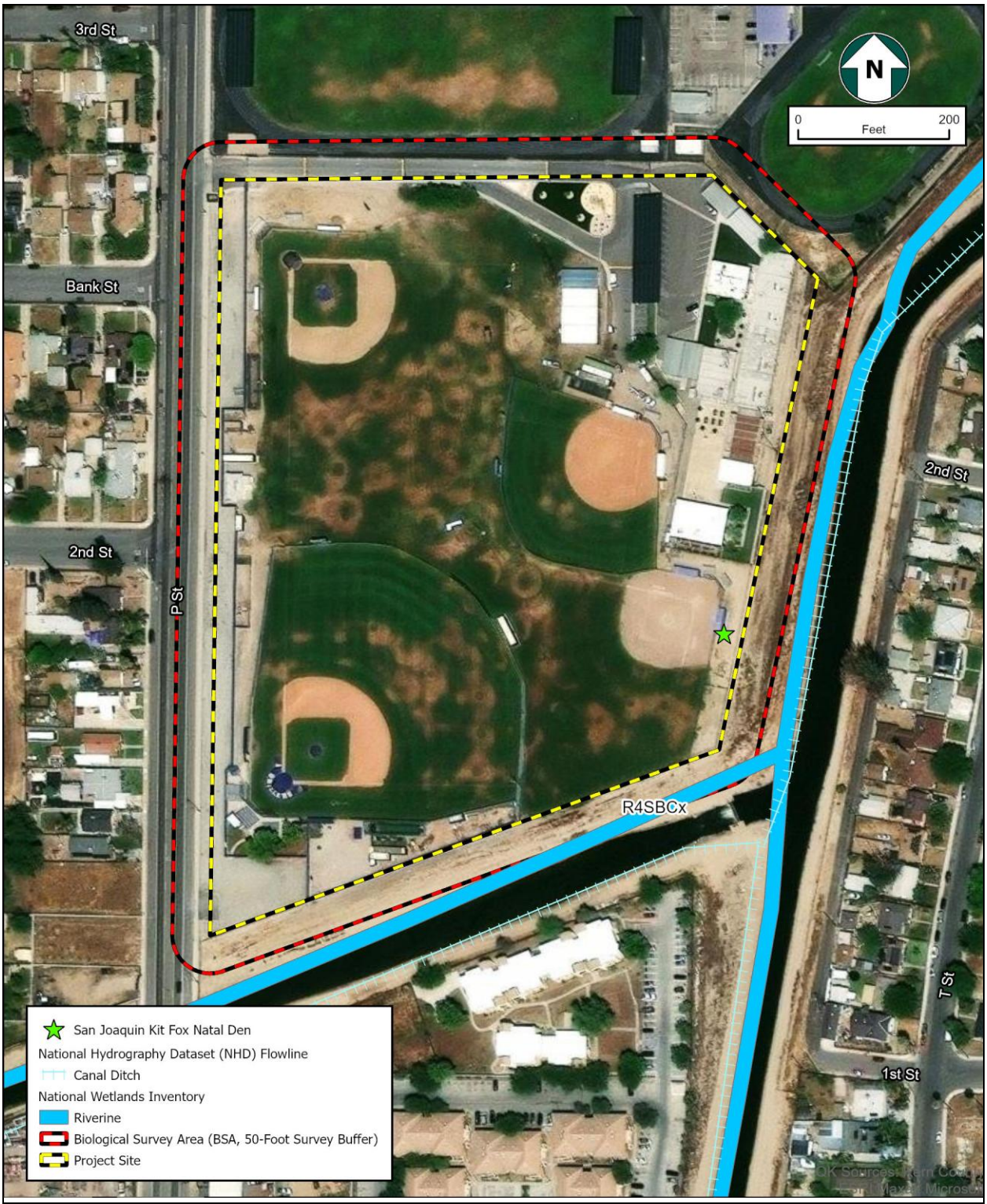


Figure 2-1
Biological Resources Observed
Vista High School Continuation Project,
Bakersfield, Kern County, California

The CNDDB provides element-specific spatial information on individual documented occurrences of special-status species and sensitive natural vegetation communities. The CNPS database provides similar information, but at a much lower spatial resolution, for additional sensitive plant species tracked by the CNPS. The CDFW Special Animals List and USFWS IPaC provide no spatial data on wildlife occurrences and provide only lists of species potentially present. Wildlife species designated as "Fully Protected" by California Fish and Game Code Sections 5050 (Fully Protected reptiles and amphibians), 3511 (Fully Protected birds), and 4700 (Fully Protected mammals) are also included on the final list of evaluated species. The database search results can be found in Appendix A.

A review of the NWI was completed to identify whether wetlands have previously been documented on or adjacent to the Project site. The NWI, which is operated by the USFWS, is a collection of wetland and riparian maps that depicts graphic representations of the type, size, and location of wetland, deep water, and riparian habitats in the United States. In addition to the NWI, regional hydrologic information from the NHD was obtained from the USGS to evaluate the potential occurrence of blueline streams within or near the Project site.

Soils data were obtained from the USDA NRCS Web Soil Survey, climate information was obtained from the Western Regional Climate Center, and land use information was obtained from available aerial imagery (NRCS 2025; WRCC 2025; Google LLC 2025). Information about flood zones was obtained from the Federal Emergency Management Agency, Department of Homeland Security (FEMA 2025).

The results of the database inquiries were reviewed to extract pertinent information on site conditions and evaluate the potential for sensitive biological resources to occur within or near the proposed Project site. Only those resources with the potential to be present and affected by the Project were included and considered in this document. The potential presence of natural communities and special-status species was based on distributional ranges overlapping the Project site and the presence of habitat and/or primary constituent habitat elements.

2.3 - Reconnaissance-Level Field Surveys

A biological reconnaissance survey of the BSA was conducted by qualified QK biologists Dave Dayton and Dylan Burkey on September 11, 2025. The survey focused on characterizing vegetation associations, current land use and habitat conditions, generating an inventory of plant and wildlife species and sign (e.g., scat, tracks, prey remains, burrows, nests, etc.), assessing the potential for migratory birds and raptors to nest on and near the BSA and analyzing the potential for special-status species to occur on and near the BSA. The survey consisted of pedestrian transects to provide 100 percent visual coverage of the entire Project site and surrounding BSA. Vegetative communities present on the Project site were classified using the California Wildlife Habitat Relationships (CWHR) system (Mayer and Laudenslayer 1988; CDFW 2014), which categorizes communities according to the dominant species present. Plant species were identified using the nomenclature of the Jepson Manual: Vascular Plants of California of Higher Plants (Baldwin et al. 2012). In addition, any historical wetland and water features documented by NWI and NHD were field

verified. All spatial data were recorded using Environmental Systems Research Institute Collector for ArcGIS software installed on an iPad. Site conditions were documented with representative photographs and included as Appendix B.

SECTION 3 - ENVIRONMENTAL SETTING

This section identifies the regional and local environmental setting of the Project site and describes existing baseline conditions. The environmental setting of the BSA was obtained from various sources of literature, databases, and aerial photographs. Site conditions were verified and updated during the site reconnaissance survey conducted by QK Environmental Scientists (Table 3-1).

Table 3-1
Field Survey Personnel and Timing

Date	Personnel	Time	Weather Conditions	Temperature
09/11/2025	Dave Dayton, Dylan Burkey	1040 - 1310	Partially cloudy	71 - 78F

3.1 - Topography

The BSA is on the floor of the Central Valley in the central portion of Kern County. The BSA is relatively flat with little variation in topography and an elevation of approximately 397 feet above mean sea level.

3.2 - Climate

The BSA is within an area that has a Mediterranean climate of hot summers and mild, wet winters. Average high temperatures range from 57.4°F in January to 98.6°F in July, with daily temperatures often exceeding 100°F several days in the summer (WRCC 2025). Average low temperatures range from 38.5°F in December to 69.2°F in July. Precipitation occurs primarily as rain, most of which falls from November to April, with an average of 6.17 inches of rainfall per year. Precipitation may also occur as a dense fog during the winter known as Tule fog. Rain rarely falls during the summer months.

3.3 - Land Use

The Project site is currently being used as a public continuation high school. Land uses surrounding the subject site include two public schools to the north with a park and single-family residential housing beyond 4th Street, Kern Island Canal and single-family residential housing to the south, Kern Island Canal and single-family residential housing to the east, and single-family residential housing to the west.

3.4 - Soils

The Project site is underlain by one soil type, Kimberlina-Urban land-Cajon complex (NRCS 2025). This soil series is described by the NRCS and listed below.

The Kimberlina series consists of very deep, well-drained soils on flood plains and recent alluvial fans (NRCS 2025). These soils are formed in mixed alluvium derived primarily from igneous and/or sedimentary rock sources. Slopes range from 0 to 2 percent at elevations from 125 to 2,250 feet. The climate is arid with hot, dry summers and cool winters. Mean precipitation is 4 to 8 inches annually and the mean annual air temperature ranges from 59 to 62 °F. Kimberlina soils are used for irrigated field, forage, and row crops, and for livestock grazing. When undisturbed these soils support annual grasses, forbs, and saltbush (*Atriplex* spp.).

3.5 - Hydrology

The NHD and NWI did not identify any wetlands or non-wetland waters within the Project site (USGS 2025; USFWS 2025c). During the site survey, no water features were observed within the BSA. The Kern Island Canal has a varying distance of approximately 75-100 feet from the southeast edge of the Project site. According to FEMA, the BSA is within an Area of Minimal Flood Hazard. The Kern Island Canal will not be impacted by Project development.

3.6 - General Biological Conditions

The Project site has been recently mowed and is primarily devoid of natural vegetation. No natural plant communities occur within the BSA. The Project site consists of urban development, maintained baseball fields, and contains ornamental shrubs and trees. The Project site is bordered by suburbs and the Kern Island Canal, which is routinely disked and void of vegetation.

There are large ornamental trees along the edge of the Project site that can support nesting birds and/or raptors. The private residences surrounding the Project site also have queen palm (*Syagrus romanzoffiana*) and pine (*Pinus sp.*) trees that could support nesting birds. Common migratory bird species observed during the survey included Canada goose (*Branta canadensis*), killdeer (*Charadrius vociferus*), and Brewer's blackbird (*Euphagus cyanocephalus*).

Low-quality suitable habitat to support burrowing owl was observed within the BSA, mostly located just beyond the Project site's southeastern boundary. One historical San Joaquin kit fox natal den was observed during the site survey; however, it appeared uninhabited due to the presence of cobwebs in the burrow entrances and domestic dog tracks surrounding the den opening (Figure 2-1).

A complete list of plant and wildlife species observed within the BSA during the biological reconnaissance survey is included in Appendix C.

SECTION 4 - FINDINGS

4.1 - Sensitive Natural Communities

4.1.1 - RESULTS OF LITERATURE REVIEW AND DATABASE SEARCHES

Literature reviews from the surrounding nine quadrangle queries for the Project site revealed five sensitive natural vegetation communities that may occur in the vicinity: Great Valley Cottonwood Riparian Forest, Great Valley Mesquite Scrub, Valley Sacaton Grassland, Valley Saltbush Scrub, and Valley Sink Scrub.

4.1.2 - PRESENCE OF SENSITIVE NATURAL COMMUNITIES

Great Valley Cottonwood Riparian Forest, Great Valley Mesquite Scrub, Valley Sacaton Grassland, Valley Saltbush Scrub, and Valley Sink Scrub were not present on the BSA. In addition, the BSA does not provide habitat that would support these communities.

4.2 - Special-Status Plants

4.2.1 - RESULTS OF LITERATURE REVIEW AND DATABASE SEARCHES

There are 21 special-status plant species identified in the literature and database review that are known or have the potential to occur within the nine quadrangles centered on the Project site (Appendix D; Table D-1).

4.2.2 - PRESENCE OF SPECIAL-STATUS PLANTS

No special-status plant species were present within the BSA. The survey coincided with some, but not all, of the plant species' optimal blooming periods; but none of the species identified in the CNDDB or IPaC database queries are expected to occur on-site due to the lack of suitable habitat conditions and/or because the BSA is located outside of the species' known range. The Project site has no native habitat and is degraded from urban development, and the adjacent lands have been similarly disturbed by development for school sites, residential subdivisions and as transportation corridors.

A complete list of plant species observed during the biological reconnaissance survey is included in Appendix C.

4.3 - Special-Status Wildlife

4.3.1 - RESULTS OF LITERATURE REVIEW AND DATABASE SEARCHES

There are 29 special-status wildlife species identified in the literature and database review that are known or have the potential to occur within the nine-quad search area centered on the Project site (Appendix D; Table D-1). There are historical records of Crotch's bumble bee, Bakersfield legless lizard, California glossy snake, blunt-nosed leopard lizard, Swainson's

hawk, western mastiff bat, Tulare grasshopper mouse, American badger, Horn's milk-vetch, hispid salty bird's-beak, and California satintail from the CNDDB that overlap the BSA; however, they are all from 1968 or earlier with low locational accuracy. There are no other historical records from the CNDDB or IPaC of any special-status wildlife species within the BSA.

4.3.2 - PRESENCE OF SPECIAL-STATUS WILDLIFE

The desktop review identified 29 special-status animal species known or with potential to occur in the vicinity of the Project site. Twenty-five species were eliminated from consideration and discussion due to lack of suitable habitat for occurrence on the Project site. Four special-status species were determined to have potential to occur on-the Project site: western burrowing owl, Swainson's hawk, American badger, and San Joaquin kit fox. An evaluation of the potential for each of these species to occur on the Project site or within the BSA is based upon nearby occurrence records, habitat affinities, and current habitat conditions and wildlife movement corridor of the nearby canal is presented below. The BSA also has the potential for nesting birds and raptors occurring during the nesting season.

WESTERN BURROWING OWL

ATHENE CUNICULARIA HYPUGAEA
Status: State Candidate

The western burrowing owl is a broadly distributed, small, ground-dwelling owl that can be found throughout western North American, Florida, Central and South America, Hispaniola, Cub, the northern Lesser Antilles, and the Bahamas (Shuford and Gardali 2008). Typically, this species can be found in a variety of habitat types, including grasslands, deserts, or other open habitats where food resources are available and contain treeless areas with low vegetation cover and gently sloping terrain (Rodewald 2015).

Burrowing owls use earthen burrows, typically relying on other fossorial mammals to construct their burrows, such as American badger (USFWS, 1998). In California, burrowing owls are associated with California ground squirrels, which were on site during the reconnaissance survey. Burrowing owls use a burrow throughout the year for temperature regulation, offspring rearing, shelter, and escape from predators. While burrows are most often earthen, they have been documented using atypical burrows such as pipes, culverts, and other man-made structures as burrows, most often as shelter (Shuford and Gardali, 2008). Burrowing owls can have several burrows close to one other that they may frequently use to avoid predators.

There are 21 CNDDB recorded occurrences for the species within 10 miles of the BSA (CDFW, 2025a). The closest CNDDB recorded occurrence (EONDX 82920) is from 2007 and approximately 1.56 miles southeast of the Project site. This species is a highly mobile transient forager that preys on small burrowing mammals. While burrowing owls are not commonly acclimated to human interactions and noises, they have been found in urbanized settings. There is a small amount of suitable foraging and nesting habitat on the southeastern

periphery of the BSA along the Kern Island Canal . It is possible the species may pass through as transients or become an inhabitant in the future if current conditions change and the land is not used as a high school.

Swainson's hawk

BUTEO SWAINSONI

Status: State Threatened

Swainson's hawks occur in grassland, desert, and agricultural landscapes throughout the Central Valley and Antelope Valley (Bechard et al., 2010; Zeiner et al., 1988). Some hawks may be resident, especially in the southern portion of their range, while others may migrate between winter and breeding habitats. They prefer larger isolated trees or small woodlots for nesting, usually with grassland or dryland grain fields nearby for foraging and have been known to nest in large eucalyptus trees (*Eucalyptus* sp.) along heavily traveled freeway corridors. Swainson's hawks forage in grassland, open scrub, pasture, and dryland grain agricultural habitats, primarily for rodents, and exhibit moderate to high nest site fidelity for successful nest sites.

There are five CNDDB recorded occurrences for this species within 10 miles of the BSA (CDFW, 2025a). The closest CNDDB record (EONDX 91383) is from 1935 and overlaps the Project site. The most recent CNDDB record (EONDX 118756) is from 2019 and approximately 6.30 miles south of the Project site. There was no sign of Swainson's hawk nests or individuals present during the survey. There is marginal foraging habitat (lack of small mammal burrows on the Project site) throughout the BSA. There is more suitable foraging habitat in areas to the west. The perimeter of the BSA and nearby residential areas have mature ornamental trees that may provide nesting habitat, but due to the current urbanized conditions in the proximity, Swainson's hawk are unlikely to be nesting within the Project site.

American badger

TAXIDEA TAXUS

Status: CDFW Species of Special Concern

The American badger is an uncommon, permanent resident at lower elevations throughout California except for the northern North Coast (CDFG, 1995). They can typically be found in grasslands, deserts, and drier habitats. Badgers are typically nocturnal and hunt or forage at night while spending daylight hours below ground. Normally, they have a single den entrance that is approximately 8 to 12 inches in width, in an elliptical or half-moon shape, similar to their body shape. Badger dens are usually found in friable soils which are easier to dig in. American badgers spend most of their time near a den; however, they may have multiple dens in an area that can be used at the same time. American badgers are able to dig a new den each night. During cooler nights, the entrance to the den may be partially plugged with soil to help regulate temperatures.

There are two CNDDB recorded occurrences for this species within 10 miles of the BSA (CDFW, 2025a). The most recent CNDDB record (EONDX 74778) is from 2008 and

approximately 5.66 miles northeast of the Project site. No American badger or diagnostic sign (i.e., dens, claw marks, scat, tracks, or prey remains) were present during the survey. This species is a highly mobile transient forager that preys on small burrowing mammals (e.g., California ground squirrel). Minimal suitable foraging habitat is present along the nearby Kern Island Canal banks within the BSA.

San Joaquin kit fox

VULPES MACROTIS MUTICA

Status: Federally Endangered, State Threatened

The San Joaquin kit fox is a subspecies of kit fox that is endemic to the San Joaquin Valley, Carrizo Plain, and Cuyama Valley, as well as other small valleys in the western foothills of the Central Valley of California (USFWS, 1998). They occupy arid to semi-arid grasslands, open shrublands, savannahs, and grazed lands with loose-textured soils. San Joaquin kit foxes are well-established in some urban areas and are highly adaptable to human-altered landscapes. They generally avoid intensively maintained agricultural land but will forage into croplands surrounding suitable habitat. This species is a highly mobile transient forager that preys on small burrowing mammals (e.g., California ground squirrel), but will consume a variety of prey, and has adapted well to urbanized settings, even feeding on anthropogenic food sources. San Joaquin kit fox use subterranean dens year-round for shelter and pup-rearing. They are nocturnally active but may be above ground near their dens during the day, particularly in the spring.

San Joaquin kit foxes are well established in the metropolitan Bakersfield area. There are 63 CNDDB recorded occurrences within 10 miles of the Project site. The closest record (EONDX 66504) is approximately 1.92 miles northwest of the Project site and is from 2006 (CDFW, 2025a).

One historical San Joaquin kit fox natal den was observed during the site survey; however, it appeared uninhabited at this time due to the presence of cobwebs at the burrow entrances and domestic dog tracks surrounding the den openings. It is possible that foxes reside temporarily underneath seatrain structures located throughout the ball fields within the BSA, although no evidence of this was observed.

There is a lack of small mammal burrows within the Project site, although there is a small amount remaining between the Project site and the Kern Island Canal where the disker could not reach. Presently, the school may be a potential food source for San Joaquin kit fox, via food trash and litter, given the limited prey base. By speaking with the school administrators, it is believed that the kit fox population gets a majority of its' food source from the student population.

4.3.3 - NESTING MIGRATORY BIRDS AND RAPTORS

There were no nests (active or inactive) observed within the BSA during the survey but the survey was conducted at the end of the nesting season. Habitat within the BSA with potential to support nesting birds is limited to ornamental trees located along the edge of the BSA and

within the surrounding urban development, which may support passerine nests or larger raptor nests. Due to periodic mowing, it is unlikely ground nesting species would nest within the Project site. Additionally, there are a variety of man-made structures (utility poles, transmission towers, agricultural residences, etc.) and trees within the vicinity that could support a variety of nesting bird species, including larger species such as raptors and common raven.

4.4 - Critical Habitat, Movement Corridors, and Linkages

4.4.1 - Presence of Critical Habitat

The BSA is not within any USFWS designated critical habitat. There is no USFWS designated critical habitat within 10 miles of the BSA.

4.4.2 - Presence of Movement Corridors and Linkages

The BSA is not within any designated wildlife linkage or movement corridors. The Project is situated within an area developed for urban use and does not provide a linkage between suitable natural habitats for most wildlife species. The adjacent canal has the potential to facilitate movement of wildlife onto or off the BSA, but it is heavily disturbed and regularly disked.

4.5 - Wetlands and Other Waters

The NHD and NWI did not identify any wetlands or non-wetland waters within the Project site (USGS 2025; USFWS 2025c). During the survey, no water features were observed within the BSA. The Kern Island Canal has a varying distance of approximately 75-100 feet from the edge of the southeast side of the Project site.

SECTION 5 - POTENTIAL PROJECT IMPACTS

The purpose of this section is to present an evaluation of the potential for Project-related impacts to sensitive biological resources from Project construction activities. Although the potential for impacts is anticipated to be minor because the Project will be constructed at a school where the vegetation is regularly managed, there are some risks of Project impacts. Avoidance and minimization measures are designed to reduce or eliminate impacts to special-status species during Project construction activities. Detailed specific measures are outlined below for each special-status species that may occur on the Project site.

5.1 - Potential Impacts to Sensitive Vegetation Communities

No sensitive vegetation communities occur within the BSA. The Project would not impact sensitive natural communities.

5.2 - Potential Impacts to Special-Status Plant Species

No special-status plant species occur within the BSA and there is no suitable habitat for any special-status plant species on or near the BSA. The Project would not impact any special-status plant species.

5.3 - Potential Impacts to Special-Status Wildlife Species

San Joquin kit fox was determined to be a potential resident within the BSA. Three more special-status wildlife species, western burrowing owl, Swainson's hawk, and American badger, were determined to have limited potential to occur within the BSA as transient species. Available habitat within the BSA fulfilling the foraging and denning/burrowing requirements of these species is limited, therefore it is unlikely they would inhabit the site.

San Joaquin Kit Fox

The San Joaquin kit fox has the potential to be present within the BSA. The Project site has low quality habitat for the species due to the historic and ongoing disturbance. The surrounding BSA has been similarly degraded. The BSA is situated among intensive urban development with no connectivity to natural habitat for the species. One historical San Joaquin kit fox natal den was observed during the site survey; however, it appeared uninhabited due to the presence of cobwebs and domestic dog tracks surrounding the den opening. It is possible that foxes reside underneath seatrains within the BSA. The lack of small mammal burrows present within the Project site indicates that the Project site does not support an adequate prey base, although the school may a potential food source, via food trash and litter. The Kern Island Canal along the southeast side of the BSA is also regularly disked, likely collapsing any small mammal burrows adjacent to the BSA.

Potential impacts to this species could occur if there is an active San Joaquin kit fox den or transient individual within or near the Project site during construction activities. Potential direct impacts resulting in injury, death, or entrapment in dens, trenches, or pipes could

occur if a San Joaquin kit fox occupies the construction area or travels through. Noise, vibration, and the presence of construction workers could alter normal behaviors if kit foxes are present, which could affect reproductive success and overall fitness. Implementation of avoidance measures BIO-1 through BIO-5 would avoid and/or reduce impacts to the species.

American Badger

There is no evidence that American badger is present within the BSA, but the Project site does have low quality foraging and denning habitat. Because this species is highly mobile and the school may be a potential food source, via food trash and litter, there is a potential that American badger could become established in these areas or be present from time to time throughout the BSA as transient foragers.

Potential impacts to this species could occur if there is an active American badger den or transient individual within or near the Project site during construction activities. Potential direct impacts resulting in injury, death, or entrapment in dens, trenches, or pipes could occur if an American badger occupies the construction area or travels through. Noise, vibration, and the presence of construction workers could alter normal behaviors if badgers are present, which could affect reproductive success and overall fitness. Implementation of avoidance measures BIO-1 through BIO-3 as listed below, would avoid and/or reduce potential impacts to the American badger.

Western Burrowing Owl

Burrowing owl inhabit grassland, open bare ground, and utilize existing small mammal burrows, typically created by California ground squirrel, for breeding and shelter. There was no diagnostic sign (e.g., whitewash, tracks, prey remains) of burrowing owl present within the Project site. There is a lack of small mammal burrows for refuge present, and the Project site does not support an adequate prey base for this species. The Project would be considered to have marginal quality habitat to support this species. The BSA is continually subjected to disturbance through maintenance and other types of human activities, and it is unlikely to support nesting burrowing owls as they typically prefer isolation from people and loud noises. Burrowing owls may be present as transient foragers, although this is also unlikely given the scarcity of a prey base, its current use as a high school campus and a small number of suitable available burrows observed on the Project site.

Potential impacts to this species could occur if there is an active western burrowing owl burrow or transient individual within or near the Project site during construction activities. Potential direct impacts resulting in injury, death, or entrapment in burrows, trenches, or pipes could occur if a western burrowing owl occupies or travels through the construction site. Noise, vibration, and the presence of construction workers could alter normal behaviors if burrowing owls are present, which could affect reproductive success and overall fitness. Implementation of avoidance measures BIO-1 through BIO-3 would avoid and/or reduce impacts to the species.

Swainson's Hawk

The BSA provides little nesting and foraging habitat for Swainson's hawk. There are a few large trees located within the surrounding residential areas and along the edge of the BSA that could potentially support nesting raptors including Swainson's hawk. These trees were examined for nests during the site survey, and none were present. The Project site provides limited prey base due ongoing use as a school campus, and routine vegetation management of the Project site.. The Project site has low quality nesting and foraging habitat for the species, but they are known to occur in the area and may be present as transients.

Impacts to individual nesting Swainson's hawk outside of the Project site but within the BSA are not expected if construction activities occur near an active nest. Due to the distance from the Project site and other human activities that occur continually in this populated area, the noise and vibration from construction of the Project and the presence of construction workers are unlikely to alter the normal behaviors of nesting adults because the species has adapted to the noises and is known to nest adjacent to construction sites without reproductive loss. However, implementation of Measures BIO-6 through BIO-7 would reduce impacts to this species.

5.4 - Potential Impacts to Nesting Birds and Raptors

No nests were present within the BSA during the survey. There is potential for passerines to nest near the Project site in ornamental trees associated with urban development. There is also potential for birds to nest outside of the Project site but within the BSA in existing structures, trees, and utility poles in the surrounding urban areas. Few large trees are located within the BSA that may potentially support nesting raptor species. If there are active nests present during Project construction activities, nests could be impacted by Project activities that interfere with normal breeding behaviors, which could discourage breeding or lead to nest abandonment or failure.

Nesting Birds

Nesting birds are protected by the Migratory Bird Treaty Act (MBTA). No bird nests were identified during the site survey. However, the BSA supports several habitats for nesting birds, which may nest on trees and shrubs, man-made structures, and directly on the ground. Migratory birds could nest throughout the entire BSA.

Construction activities and vegetation removal could lead to the destruction of nests. Construction-related vibration, noise, and dust production, and human presence could alter the normal behaviors of nesting birds in the vicinity of the Project and lead to nest failure.

To avoid and minimize impacts to western burrowing owl, Swainson's hawk, American badger, San Joaquin kit fox, migratory birds and other special-status species, avoidance, and minimization measures BIO- 1 through BIO-8 are recommended to be implemented during construction to reduce impacts to these biological resources.

5.5 - Potential Impacts to Critical Habitat, Movement Corridors and Linkages

5.5.1 - Potential Impacts to Critical Habitat

There is no critical habitat identified in the area, and therefore, the Project would not have impact on any designated critical habitat.

5.5.2 - Potential Impacts to Movement Corridors and Linkages

Project activities would not impact any movement corridors or habitat linkages.

5.6 - Potential Impacts to Wetlands and Waters

There are no wetlands or non-wetland waters within the Project site that would fall under the federal jurisdiction of the USACE or under the regulatory authority of the CDFW, RWQCB, or Central Valley Flood Protection Board. Therefore, the Project would not impact any jurisdictional waters.

SECTION 6 - RECOMMENDATIONS

The Project is anticipated to have no impacts on sensitive natural communities, special-status plant species, wetlands and non-wetland water features, Critical Habitat, or migratory corridors. There is potential for Project activities to result in impacts to four special-status wildlife species: western burrowing owl, Swainson's hawk, San Joaquin kit fox, and American badger, as listed in Sections 4 and 5. While the potential for impacts to these special status species is low, to avoid impacts to these and other wildlife species, we recommend that the following measures be implemented during Project construction activities:

Avoidance and Minimization Measures:

BIO-1 **Burrowing Owl, American Badger, and San Joaquin Kit Fox Detection.** Within 14 days prior to the start of Project ground-disturbing activities, a pre-construction survey should be conducted by a qualified biologist knowledgeable in the identification of these species. Surveys for active, known, potential, and natal San Joaquin kit fox dens within and adjacent to the Project site will be conducted following the USFWS' "Standardized recommendations for protection of the San Joaquin kit fox (SJKF) prior to or during ground disturbance" (2011). Surveys for active western burrowing owl burrows within and adjacent to the Project Area will be conducted following the CDFG's "Staff Report on Burrowing Owl Mitigation" (2012). If no special status species or their sign (tracks, scat, etc) are observed during the survey, no further action is required. A copy of the pre-construction survey report should be submitted to the lead agency prior to the start of construction.

If, during construction activities, a live burrowing owl, American badger, or SJKF is encountered, all construction activity should stop in the affected area until the animal leaves of its own volition. The special-status species should be avoided by construction activities and construction workers and allowed to leave the Project site without harassment.

BIO-2 **Avoidance of Burrows for Western Burrowing Owl, American Badger, and San Joaquin Kit Fox.** If dens/burrows that could support any of these species are discovered during the pre-construction survey (BIO-1), the avoidance buffers outlined below should be established. No work would occur within these buffers unless the biologist approves and monitors the activity.

Western Burrowing Owl (active burrows)

- April 1-August 15
  - Low disturbance – 200 m
  - Medium disturbance– 500 m
  - High disturbance – 500 m
- August 16-October 15
  - Low disturbance – 200 m

  - Medium disturbance – 200 m
  - High disturbance – 500 m
- October 16-March 31
  - Low disturbance – 50 m
  - Medium disturbance – 100 m
  - High disturbance – 500m

American Badger/SJKF

- Potential or Atypical den – 50 feet
- Known den – 100-feet
- Natal or pupping den – 500 feet, unless otherwise specified by CDFW.

If any of these species are found within these recommended buffers and avoidance is not possible, consultation with CDFW should be initiated. CDFW may allow burrow exclusion by a qualified biologist and only during the non-breeding season, before breeding behavior is exhibited and after the burrow is confirmed empty through non-invasive methods, such as surveillance. An Incidental Take Permit may be required by CDFW prior to any exclusion activity is completed.

BIO-3 **Western Burrowing Owl, American Badger, and San Joaquin Kit Fox Avoidance.** A qualified biologist should remain on-call throughout the construction phase if a western burrowing owl, American badger, or San Joaquin Kit Fox occurs on the site during construction. If one of these species occurs on-site, work should be halted in that area. The biologist should be contacted immediately to determine whether biological monitoring or the implementation of avoidance buffers may be warranted.

BIO-4 **Monitoring for San Joaquin Kit Fox During Seatrain Removal.** A qualified biologist should thoroughly inspect and monitor the existing seatrains for kit foxes and other wildlife before and during the removal of seatrains.

BIO-5 **Standard Avoidance and Minimization Measures for the protection of San Joaquin Kit Fox.**

The following avoidance and minimization measures should be implemented during construction of the Project to reduce the potential for impact from the Project. They are modified from the *U.S. Fish and Wildlife Service Standardized Recommendations for Protection of the Endangered SJKF Prior to or During Ground Disturbance* (USFWS 2011, Appendix E).

a. All food-related trash items such as wrappers, cans, bottles, and food scraps shall be disposed of in securely closed containers and removed at least once a week from the construction or Project Site.
b. Construction-related vehicle traffic shall be restricted to established roads and predetermined ingress and egress corridors, staging, and parking areas.

Vehicle speeds shall not exceed 20 miles per hour (mph) within the Project Site.

c. A Worker Environmental Awareness Training Program should be prepared and presented to all workers that will be on-site during construction activities
d. To prevent inadvertent entrapment of kit fox or other animals during construction, the contractor shall cover all excavated, steep-walled holes or trenches more than two feet deep at the close of each workday with plywood or similar materials. If holes or trenches cannot be covered, one or more escape ramps constructed of earthen fill or wooden planks shall be installed in the trench. Before such holes or trenches are filled, the contractor shall thoroughly inspect them for entrapped animals. All construction-related pipes, culverts, or similar structures with a diameter of four-inches or greater that are stored on the Project Site shall be thoroughly inspected for wildlife before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If at any time an entrapped or injured kit fox is discovered, work in the immediate area shall be temporarily halted and USFWS and CDFW shall be consulted.
e. Kit foxes are attracted to den-like structures such as pipes and may enter stored pipes and become trapped or injured. All construction pipes, culverts, or similar structures with a diameter of four inches or greater that are stored at a construction site for one or more overnight periods shall be thoroughly inspected for kit foxes before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If a kit fox is discovered inside a pipe, that section of pipe shall not be moved until the USFWS and CDFW have been consulted. If necessary, and under the direct supervision of the biologist, the pipe may be moved only once to remove it from the path of construction activity, until the fox has escaped.
f. No pets, such as dogs or cats, shall be permitted on the Project sites to prevent harassment, mortality of kit foxes, or destruction of dens.
g. Use of anti-coagulant rodenticides and herbicides in Project sites shall be restricted. This is necessary to prevent primary or secondary poisoning of kit foxes and the depletion of prey populations on which they depend. All uses of such compounds shall observe label and other restrictions mandated by the U.S. Environmental Protection Agency, California Department of Food and Agriculture, and other State and Federal legislation, as well as additional Project-related restrictions deemed necessary by the USFWS and CDFW. If rodent control must be conducted, zinc phosphide shall be used because of the proven lower risk to kit foxes.
h. A representative shall be appointed by the Project proponent who will be the contact source for any employee or contractor who might inadvertently kill or injure a kit fox or who finds a dead, injured, or entrapped kit fox. The representative shall be identified during the employee education program and their name and telephone number shall be provided to the USFWS.
i. The Sacramento Fish and Wildlife Office of USFWS and CDFW shall be notified in writing within three working days of the accidental death or injury to a SJKF

during Project-related activities. Notification must include the date, time, and location of the incident or of the finding of a dead or injured animal and any other pertinent information. The USFWS contact is the Chief of the Division of Endangered Species, at the addresses and telephone numbers below. The CDFW contact can be reached at (559) 243-4014 and R4CESA@wildlifeca.gov.

j. All sightings of the SJKF shall be reported to the California Natural Diversity Database (CNDDB). A copy of the reporting form and a topographic map clearly marked with the location of where the kit fox was observed shall also be provided to the Service at the address below.

k. Any Project-related information required by the USFWS or questions concerning the above conditions, or their implementation may be directed in writing to the U.S. Fish and Wildlife Service at: Endangered Species Division, 2800 Cottage Way, Suite W 2605, Sacramento, California 95825-1846, phone: (916) 414-6620 or (916) 414-6600.

BIO-6 **Pre-activity Surveys for Swainson's Hawk Nests**. If Project construction activities must occur during the Swainson's hawk nesting season (February 15 to August 31), pre-construction activity surveys should be conducted for Swainson's hawk nests in accordance with the *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley*, Swainson's Hawk Technical Advisory Committee (CDFG, 2000). The timing and the number of phases of surveys can be adjusted based on the timing of the construction schedule. The surveys may be phased to coincide with active construction areas plus a 0.5-mile buffer of those areas. The buffers, at the qualified biologist's discretion, may be altered based upon site conditions. If no active nests are observed during the surveys, no additional action is required.

BIO-7 **Swainson's Hawk Nest Avoidance.** If an active Swainson's hawk nest is discovered at any time within 0.5 miles of active construction, a qualified biologist should complete an assessment of the potential for current construction activities to impact the nest. The assessment would consider the type of construction activities, the location of construction relative to the nest, the visibility of construction activities from the nest location, and other existing disturbances in the area that are not related to the construction activities of this Project. Based on this assessment, the biologist will determine if construction activities can proceed, and the level of nest monitoring required. Construction activities should not occur within 0.5 miles of an active nest but depending upon conditions at the site this distance may be reduced. Full-time monitoring to evaluate the effects of construction activities on nesting Swainson's hawks may be required. The qualified biologist should have the authority to stop work if it is determined that Project construction is disturbing the nest. These buffers may need to increase depending on the sensitivity of the nesting Swainson's hawk to disturbances and at the discretion of the qualified biologist. No avoidance would be needed if construction occurs near a known Swainson's hawk nest outside of the Swainson's hawk nesting season.

BIO-8 **Pre-activity Surveys for Nesting Birds.** If Project construction activities will be initiated during the nesting season (February 1 to September 15), a preconstruction activity nesting bird survey should be conducted within 14 days prior to the start of ground disturbance activities. The surveys should encompass the Project site and accessible land visible from accessible areas within a 250-foot buffer for songbirds and a 500-foot buffer for raptors.

The surveys may be phased with the construction of the Project. If no active nests are found, no further action is required. However, existing nests may become active and new nests may be built at any time prior to and throughout the nesting season, including when construction activities are in progress. Surveys for burrowing owl will follow CDFW protocol.

If active nests are found during the survey or at any time during construction of the Project, an avoidance buffer ranging from 50 feet to 500 feet may be required, with the avoidance buffer from any specific nest being determined by a qualified biologist. The avoidance buffer will remain in place until the biologist has determined that the young are no longer reliant on the adults or the nest, or if breeding attempts have otherwise been unsuccessful. Work may occur within the avoidance buffer under the approval and guidance of the biologist, but full-time monitoring may be required. The biologist shall have the ability to stop construction if nesting adults show any sign of distress.

SECTION 7 - SUMMARY AND CONCLUSIONS

The Project site is highly disturbed and contains no suitable habitat that would support special-status plant species or sensitive natural communities. There are no designated Critical Habitats, movement corridors, wetlands, or non-wetland water features that would be impacted by the Project.

Based on the literature and database searches and results of the site survey, there is potential for four special-status wildlife species to occur on the site: the San Joaquin kit fox, American badger, western burrowing owl, and Swainson's hawk. A known natal San Joaquin kit fox is within the Project site.

There is a lack of small mammal burrows, and the site does not support a large small mammal prey base for American badger, Swainson's hawk or western burrowing owl though these species may occur as transient foragers.

There is a possibility that Swainson's hawk could be in the area. There are a small number of ornamental trees along the edge of the BSA that could provide nesting habitat, but the site has very low-quality foraging habitat. The Project and surrounding areas provide suitable nesting habitat for other nesting migratory birds and impacts to these species may also occur. Implementation of the recommended avoidance and minimization measures outlined in Section 6 would minimize any Project impacts to these species.

This Biological Resource Evaluation report has been performed in accordance with professionally accepted biological investigation practices conducted at this time and in this geographic area. The findings and opinions conveyed in this report are based on findings derived from specified historical and literary sources and a biological survey of the Project site and surrounding area. The biological investigation was limited by the scope of work performed. The biological survey may not have been performed during blooming periods or periods of seasonal or daily wildlife activity that would provide positive identification if resources were present, and therefore the findings of this report might not be definitive. The biological survey was also limited by the environmental conditions present at the time of the survey. In addition, general biological (protocol) surveys do not guarantee that the organisms are not present and will not be discovered in the future within the site. Mobile animal species could occupy the site on a transient basis or re-establish populations in the future. No other guarantees or warranties, expressed or implied, are provided.

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APPENDIX A

SPECIAL-STATUS SPECIES DATABASE SEARCH RESULTS

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
Phone: (916) 414-6600 Fax: (916) 414-6713

In Reply Refer To:
Project Code: 2025-0151449
Project Name: Visa High School Continuation Project

09/18/2025 15:41:42 UTC

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)

(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

https://www.fws.gov/sites/default/files/documents/endangered-species-consultation-handbook.pdf

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts, see https://www.fws.gov/program/migratory-bird-permit/what-we-do.

It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures, see https://www.fws.gov/library/collections/threats-birds.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/partner/council-conservation-migratory-birds.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
(916) 414-6600

PROJECT SUMMARY

Project Code: 2025-0151449
Project Name: Visa High School Continuation Project
Project Type: Commercial Development
Project Description: Kern High School District plans to remove old school buildings, upgrade facilities, and reconfigure baseball fields.
Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@35.3569552,-119.01053333762346,14z



Counties: Kern County, California

MAMMALS

NAME	STATUS
Buena Vista Lake Shrew *Sorex ornatus relictus* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/1610	Endangered
Giant Kangaroo Rat *Dipodomys ingens* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6051	Endangered
San Joaquin Kit Fox *Vulpes macrotis mutica* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2873	Endangered
Tipton Kangaroo Rat *Dipodomys nitratoides nitratoides* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7247	Endangered

BIRDS

NAME	STATUS
California Condor *Gymnogyps californianus* Population: Wherever found, except where listed as an experimental population There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8193	Endangered
Southwestern Willow Flycatcher *Empidonax traillii extimus* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/6749	Endangered
Yellow-billed Cuckoo *Coccyzus americanus* Population: Western U.S. DPS There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3911	Threatened

REPTILES

NAME	STATUS
Blunt-nosed Leopard Lizard *Gambelia silus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/625	Endangered
Northwestern Pond Turtle *Actinemys marmorata* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1111	Proposed Threatened

AMPHIBIANS

ENDANGERED SPECIES ACT SPECIES

There is a total of 12 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

NAME	STATUS
Western Spadefoot *Spea hammondii* Population: Northern DPS No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/5425	Proposed Threatened

INSECTS

NAME	STATUS
Monarch Butterfly *Danaus plexippus* There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/9743	Proposed Threatened

CRUSTACEANS

NAME	STATUS
Vernal Pool Fairy Shrimp *Branchinecta lynchi* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/498	Threatened

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

IPAC USER CONTACT INFORMATION

Agency:	Private Entity
Name:	Dylan Burkey
Address:	5080 California Avenue
Address Line 2:	Suite 220
City:	Bakersfield
State:	CA
Zip:	93309
Email	dylan.burkey@qkinc.com
Phone:	5597938260

CALIFORNIA DEPARTMENT OF FISH and WILDLIFE **RareFind**

Query Summary:
Quad IS (Rosedale (3511942) OR Oildale (3511941) OR Oil Center (3511848) OR Lamont (3511838) OR Stevens (3511932) OR Gosford (3511931) OR Millux (3511922) OR Weed Patch (3511828) OR Conner (3511921))

Print Close

CNDDB Element Query Results

Scientific Name	Common Name	Taxonomic Group	Element Code	Total Occs	Returned Occs	Federal Status	State Status	Global Rank	State Rank	CA Rare Plant Rank	Other Status	Habitats
Valley Saltbush Scrub	Valley Saltbush Scrub	Scrub	CTT36220CA	19	6	None	None	G2	S2.1	null	null	Chenopod scrub
Valley Sink Scrub	Valley Sink Scrub	Scrub	CTT36210CA	29	2	None	None	G1	S1.1	null	null	Chenopod scrub
Great Valley Cottonwood Riparian Forest	Great Valley Cottonwood Riparian Forest	Riparian	CTT61410CA	56	2	None	None	G2	S2.1	null	null	Riparian forest
Great Valley Mesquite Scrub	Great Valley Mesquite Scrub	Riparian	CTT63420CA	7	4	None	None	G1	S1.1	null	null	Riparian scrub
Actinemys marmorata	northwestern pond turtle	Reptiles	ARAAD02031	1160	3	Proposed Threatened	None	G2	SNR	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_VU-Vulnerable, USFS_S-Sensitive	null
Anniella grinnelli	Bakersfield legless lizard	Reptiles	ARACC01050	31	15	None	None	G2G3	S2S3	null	CDFW_SSC-Species of Special Concern	null
Anniella spp.	California legless lizard	Reptiles	ARACC01070	124	1	None	None	G3G4	S3S4	null	CDFW_SSC-Species of Special Concern	null
Arizona elegans occidentalis	California glossy snake	Reptiles	ARADB01017	260	11	None	None	G5T2	S2	null	CDFW_SSC-Species of Special Concern	null
Gambelia sila	blunt-nosed leopard lizard	Reptiles	ARACF07010	475	19	Endangered	Endangered	G1	S2	null	CDFW_FP-Fully Protected, IUCN_EN-Endangered	Chenopod scrub
Masticophis flagellum ruddocki	San Joaquin coachwhip	Reptiles	ARADB21021	96	4	None	None	G5T2T3	S3	null	CDFW_SSC-Species of Special Concern	Chenopod scrub, Valley & foothill grassland
Phrynosoma blainvillii	coast horned lizard	Reptiles	ARACF12100	841	3	None	None	G4	S4	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern	Chaparral, Cismontane woodland, Coastal bluff scrub, Coastal scrub, Desert wash, Pinon & juniper woodlands, Riparian scrub, Riparian woodland, Valley & foothill grassland
Calochortus striatus	alkali mariposa-lily	Monocots	PMLIL0D190	113	2	None	None	G3	S2S3	1B.2	BLM_S-Sensitive, SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden, USFS_S-Sensitive	Chaparral, Chenopod scrub, Meadow & seep, Mojavean desert scrub, Wetland
Imperata brevifolia	California satintail	Monocots	PMPOA3D020	32	1	None	None	G3	S3	2B.1	SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden, SB_SBBG-Santa Barbara Botanic Garden, USFS_S-Sensitive	Chaparral, Coastal scrub, Meadow & seep, Mojavean desert scrub, Riparian scrub, Wetland
Puccinellia simplex	California alkali grass	Monocots	PMPOA53110	80	1	None	None	G2	S2	1B.2	BLM_S-Sensitive	Chenopod scrub, Meadow & seep, Valley & foothill

												grassland, Vernal pool
Gonidea angulata	western ridged mussel	Mollusks	IMBIV19010	158	1	None	None	G3	S2	null	IUCN_VU-Vulnerable	Aquatic
Helminthoglypta callistoderma	Kern shoulderband	Mollusks	IMGASC2080	3	1	None	None	G1	S1	null	IUCN_EN-Endangered	Aquatic, Sacramento/San Joaquin flowing waters
Ammospermophilus nelsoni	Nelson's (=San Joaquin) antelope squirrel	Mammals	AMAFB04040	287	4	None	Threatened	G2G3	S3	null	BLM_S-Sensitive, IUCN_EN-Endangered	Chenopod scrub
Dipodomys ingens	giant kangaroo rat	Mammals	AMAFD03080	143	1	Endangered	Endangered	G1G2	S2	null	IUCN_EN-Endangered	Chenopod scrub, Valley & foothill grassland
Dipodomys nitratoides brevinasus	short-nosed kangaroo rat	Mammals	AMAFD03153	64	2	None	None	G2T1T2	S1S2	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_VU-Vulnerable	Chenopod scrub, Valley & foothill grassland
Dipodomys nitratoides nitratoides	Tipton kangaroo rat	Mammals	AMAFD03152	81	16	Endangered	Endangered	G2T1T2	S2	null	IUCN_VU-Vulnerable	Chenopod scrub
Eumops perotis californicus	western mastiff bat	Mammals	AMACD02011	296	2	None	None	G4G5T4	S3S4	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern	Chaparral, Cismontane woodland, Coastal scrub, Valley & foothill grassland
Lasiurus cinereus	hoary bat	Mammals	AMACC05032	238	1	None	None	G3G4	S4	null	IUCN_LC-Least Concern	Broadleaved upland forest, Cismontane woodland, Lower montane coniferous forest, North coast coniferous forest
Onychomys torridus tularensis	Tulare grasshopper mouse	Mammals	AMAFF06021	104	5	None	None	G5T1T2	S1S2	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern	Chenopod scrub
Perognathus inornatus	San Joaquin pocket mouse	Mammals	AMAFD01060	140	4	None	None	G3	S2S3	null	BLM_S-Sensitive, IUCN_LC-Least Concern	Cismontane woodland, Mojavean desert scrub, Valley & foothill grassland
Sorex ornatus relictus	Buena Vista Lake ornate shrew	Mammals	AMABA01102	7	3	Endangered	None	G5T1	S1	null	CDFW_SSC-Species of Special Concern	Marsh & swamp, Riparian scrub
Taxidea taxus	American badger	Mammals	AMAJF04010	648	2	None	None	G5	S3	null	CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern	Alkali marsh, Alkali playa, Alpine, Alpine dwarf scrub, Bog & fen, Brackish marsh, Broadleaved upland forest, Chaparral, Chenopod scrub, Cismontane woodland, Closed-cone coniferous forest, Coastal bluff scrub, Coastal dunes, Coastal prairie, Coastal scrub, Desert dunes, Desert wash, Freshwater marsh, Great Basin grassland, Great Basin scrub, Interior dunes, Ione formation, Joshua tree woodland, Limestone, Lower montane coniferous

												forest, Marsh & swamp, Meadow & seep, Mojavean desert scrub, Montane dwarf scrub, North coast coniferous forest, Oldgrowth, Pavement plain, Redwood, Riparian forest, Riparian scrub, Riparian woodland, Salt marsh, Sonoran desert scrub, Sonoran thorn woodland, Ultramafic, Upper montane coniferous forest, Upper Sonoran scrub, Valley & foothill grassland
Vulpes macrotis mutica	San Joaquin kit fox	Mammals	AMAJA03041	1026	78	Endangered	Threatened	G4T2	S3	null	null	Chenopod scrub, Valley & foothill grassland
Bombus crotchii	Crotch's bumble bee	Insects	IIHYM24480	786	6	None	Candidate Endangered	G2	S2	null	IUCN_EN-Endangered	null
Danaus plexippus plexippus pop. 1	monarch - California overwintering population	Insects	IILEPP2012	405	4	Proposed Threatened	None	G4T1T2Q	S2	null	IUCN_EN-Endangered, USFS_S-Sensitive	Closed-cone coniferous forest
Desmocerus californicus dimorphus	valley elderberry longhorn beetle	Insects	IICOL48011	271	1	Threatened	None	G3T3	S3	null	null	Riparian scrub
Lytta moesta	moestan blister beetle	Insects	IICOL4C020	12	1	None	None	G2	S2	null	null	Valley & foothill grassland
Lytta morrisoni	Morrison's blister beetle	Insects	IICOL4C040	10	1	None	None	G1G2	S2	null	null	Valley & foothill grassland
Rhaphiomidas trochilus	San Joaquin Valley giant flower-loving fly	Insects	IIDIP05010	6	1	None	None	G1	S1	null	null	Interior dunes
Valley Sacaton Grassland	Valley Sacaton Grassland	Herbaceous	CTT42120CA	9	1	None	None	G1	S1.1	null	null	Valley & foothill grassland
Astragalus hornii var. hornii	Horn's milk-vetch	Dicots	PDFAB0F421	28	13	None	None	GUT1	S1	1B.1	BLM_S-Sensitive	Alkali playa, Meadow & seep, Wetland
Atriplex cordulata var. cordulata	heartscale	Dicots	PDCHE040B0	66	1	None	None	GNRT2	S2	1B.2	BLM_S-Sensitive	Chenopod scrub, Meadow & seep, Valley & foothill grassland
Atriplex coronata var. vallicola	Lost Hills crownscale	Dicots	PDCHE04371	75	1	None	None	G4T3	S3	1B.2	BLM_S-Sensitive	Chenopod scrub, Valley & foothill grassland, Vernal pool
Atriplex tularensis	Bakersfield smallscale	Dicots	PDCHE04240	3	2	None	Endangered	GX	SX	1A	null	Chenopod scrub, Meadow & seep
Caulanthus californicus	California jewelflower	Dicots	PDBRA31010	67	1	Endangered	Endangered	G1	S1	1B.1	SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden, SB_SBBG-Santa Barbara Botanic Garden, SB_UCBG-UC Botanical Garden at Berkeley	Chenopod scrub, Pinon & juniper woodlands, Valley & foothill grassland
Chloropyron molle ssp. hispidum	hispid salty bird's-beak	Dicots	PDSCR0J0D1	35	2	None	None	G2T1	S1	1B.1	BLM_S-Sensitive	Alkali playa, Meadow & seep, Wetland
Delphinium recurvatum	recurved larkspur	Dicots	PDRAN0B1J0	119	6	None	None	G2?	S2	1B.2	BLM_S-Sensitive, SB_SBBG-Santa Barbara Botanic Garden	Chenopod scrub, Cismontane woodland, Valley & foothill grassland

Diplacus pictus	calico monkeyflower	Dicots	PDSCR1B240	73	1	None	None	G2	S2	1B.2	BLM_S-Sensitive, SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	Broadleaved upland forest, Cismontane woodland
Eremalche parryi ssp. kernensis	Kern mallow	Dicots	PDMAL0C031	202	8	Endangered	None	G3G4T3	S3	1B.2	SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden, SB_SBBG-Santa Barbara Botanic Garden	Chenopod scrub, Pinon & juniper woodlands, Valley & foothill grassland
Eriastrum hooveri	Hoover's eriastrum	Dicots	PDPLM03070	47	7	Delisted	None	G3	S3	4.2	SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	Chenopod scrub, Pinon & juniper woodlands, Valley & foothill grassland
Eschscholzia lemmonii ssp. kernensis	Tejon poppy	Dicots	PDPAP0A071	86	1	None	None	G5T2	S2	1B.1	BLM_S-Sensitive, SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden, SB_SBBG-Santa Barbara Botanic Garden, SB_USDA-US Dept of Agriculture	Chenopod scrub, Valley & foothill grassland
Lasthenia glabrata ssp. coulteri	Coulter's goldfields	Dicots	PDAST5L0A1	109	1	None	None	G4T2	S2	1B.1	BLM_S-Sensitive, SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden, SB_SBBG-Santa Barbara Botanic Garden	Alkali playa, Marsh & swamp, Salt marsh, Vernal pool, Wetland
Layia leucopappa	Comanche Point layia	Dicots	PDAST5N0A0	10	1	None	None	G1	S1	1B.1	BLM_S-Sensitive, SB_SBBG-Santa Barbara Botanic Garden	Chenopod scrub, Valley & foothill grassland
Monolopia congdonii	San Joaquin woollythreads	Dicots	PDASTA8010	111	9	Endangered	None	G2	S2	1B.2	SB_UCBG-UC Botanical Garden at Berkeley	Chenopod scrub, Valley & foothill grassland
Navarretia setiloba	Piute Mountains navarretia	Dicots	PDPLM0C0S0	56	1	None	None	G2	S2	1B.1	BLM_S-Sensitive, SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden, USFS_S-Sensitive	Cismontane woodland, Pinon & juniper woodlands, Valley & foothill grassland
Opuntia basilaris var. treleasei	Bakersfield cactus	Dicots	PDCAC0D055	62	27	Endangered	Endangered	G5T1	S1	1B.1	SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	Chenopod scrub, Cismontane woodland, Valley & foothill grassland
Stylocline citroleum	oil neststraw	Dicots	PDAST8Y070	84	1	None	None	G3	S3	1B.1	BLM_S-Sensitive	Chenopod scrub, Coastal scrub, Valley & foothill grassland
Stylocline masonii	Mason's neststraw	Dicots	PDAST8Y080	13	1	None	None	G1	S1	1B.1	BLM_S-Sensitive, USFS_S-Sensitive	Chenopod scrub, Desert wash, Pinon & juniper woodlands
Tortula californica	California screw moss	Bryophytes	NBMUS7L090	15	1	None	None	G2G3	S2?	1B.2	BLM_S-Sensitive	Chenopod scrub, Valley & foothill grassland
Agelaius tricolor	tricolored blackbird	Birds	ABPBXB0020	960	3	None	Threatened	G1G2	S2	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_EN-Endangered, USFWS_BCC-Birds of Conservation Concern	Freshwater marsh, Marsh & swamp, Swamp, Wetland
Ardea alba	great egret	Birds	ABNGA04040	43	1	None	None	G5	S4	null	CDF_S-Sensitive, IUCN_LC-Least Concern	Brackish marsh, Estuary, Freshwater marsh, Marsh & swamp, Riparian forest, Wetland
Athene cunicularia	burrowing owl	Birds	ABNSB10010	2261	32	None	Candidate Endangered	G4	S2	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern,	Coastal prairie, Coastal scrub, Great Basin grassland, Great Basin scrub,

											USFWS_BCC-Birds of Conservation Concern	Mojavean desert scrub, Sonoran desert scrub, Valley & foothill grassland
Buteo swainsoni	Swainson's hawk	Birds	ABNKC19070	2585	10	None	Threatened	G5	S4	null	BLM_S-Sensitive, IUCN_LC-Least Concern	Great Basin grassland, Riparian forest, Riparian woodland, Valley & foothill grassland
Charadrius nivosus nivosus	western snowy plover	Birds	ABNNB03031	140	1	Threatened	None	G3T3	S3	null	CDFW_SSC-Species of Special Concern	Great Basin standing waters, Sand shore, Wetland
Coccyzus americanus occidentalis	western yellow-billed cuckoo	Birds	ABNRB02022	165	1	Threatened	Endangered	G5T2T3	S1	null	BLM_S-Sensitive, USFS_S-Sensitive	Riparian forest
Dendrocygna bicolor	fulvous whistling-duck	Birds	ABNJB01010	3	1	None	None	G5	S1	null	CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern	Freshwater marsh, Marsh & swamp
Egretta thula	snowy egret	Birds	ABNGA06030	20	1	None	None	G5	S4	null	IUCN_LC-Least Concern	Marsh & swamp, Meadow & seep, Riparian forest, Riparian woodland, Wetland
Elanus leucurus	white-tailed kite	Birds	ABNKC06010	190	1	None	None	G5	S3S4	null	BLM_S-Sensitive, CDFW_FP-Fully Protected, IUCN_LC-Least Concern	Cismontane woodland, Marsh & swamp, Riparian woodland, Valley & foothill grassland, Wetland
Eremophila alpestris actia	California horned lark	Birds	ABPAT02011	94	2	None	None	G5T4Q	S4	null	CDFW_WL-Watch List, IUCN_LC-Least Concern	Marine intertidal & splash zone communities, Meadow & seep
Plegadis chihi	white-faced ibis	Birds	ABNGE02020	20	1	None	None	G5	S3S4	null	CDFW_WL-Watch List, IUCN_LC-Least Concern	Marsh & swamp, Wetland
Xanthocephalus xanthocephalus	yellow-headed blackbird	Birds	ABPBXB3010	13	1	None	None	G5	S3	null	CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern	Marsh & swamp, Wetland
Spea hammondii	western spadefoot	Amphibians	AAABF02020	1445	11	Proposed Threatened	None	G2G3	S3S4	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_NT-Near Threatened	Cismontane woodland, Coastal scrub, Valley & foothill grassland, Vernal pool, Wetland

Calochortus striatus	alkali mariposa-lily	Liliaceae	perennial bulbiferous herb	Apr-Jun	None	None	G3	S2S3	1B.2	1974-01-01	No Photo Available
Caulanthus californicus	California jewelflower	Brassicaceae	annual herb	Feb-May	FE	CE	G1	S1	1B.1	Yes	1984-01-01	No Photo Available
Chloropyron molle ssp. *hispidum*	hispid salty bird's-beak	Orobanchaceae	annual herb (hemiparasitic)	Jun-Sep	None	None	G2T1	S1	1B.1	Yes	1974-01-01	No Photo Available
Clarkia exilis	slender clarkia	Onagraceae	annual herb	Apr-May	None	None	G3	S3	4.3	Yes	1974-01-01	No Photo Available
Delphinium recurvatum	recurved larkspur	Ranunculaceae	perennial herb	Mar-Jun	None	None	G2?	S2	1B.2	Yes	1988-01-01	No Photo Available
Diplacus pictus	calico monkeyflower	Phrymaceae	annual herb	Mar-May	None	None	G2	S2	1B.2	Yes	1974-01-01	 © 2020 Matt C. Berger
Eremalche parryi ssp. *kernensis*	Kern mallow	Malvaceae	annual herb	Jan(Feb)Mar-May	FE	None	G3G4T3	S3	1B.2	Yes	1974-01-01	No Photo Available
Eriastrum hooveri	Hoover's eriastrum	Polemoniaceae	annual herb	Mar-Jul	FD	None	G3	S3	4.2	Yes	1974-01-01	 © 2011 Chris Winchell
Eriogonum gossypinum	cottony buckwheat	Polygonaceae	annual herb	Mar-Sep	None	None	G3G4	S3S4	4.2	Yes	1974-01-01	No Photo Available
Eschscholzia lemmonii ssp. *kernensis*	Tejon poppy	Papaveraceae	annual herb	(Feb)Mar-May	None	None	G5T2	S2	1B.1	Yes	1994-01-01	No Photo Available

CALIFORNIA NATIVE PLANT SOCIETY

CNPS Rare Plant Inventory

Search Results

31 matches found. Click on scientific name for details

Search Criteria: , 9-Quad include [3511838:3511931:3511848:3511941:3511942:3511932:3511828:3511921:3511922]

▲ SCIENTIFIC NAME	COMMON NAME	FAMILY	LIFEFORM	BLOOMING PERIOD	FED LIST	STATE LIST	GLOBAL RANK	STATE RANK	CA RARE PLANT RANK	CA ENDEMIC	DATE ADDED	PHOTO
Allium howellii var. *howellii*	Howell's onion	Alliaceae	perennial bulbiferous herb	Mar-Apr	None	None	G3G4T3	S3	4.3	Yes	2017-04-04	 © 2013 Neal Kramer
Astragalus hornii var. *hornii*	Horn's milk-vetch	Fabaceae	annual herb	May-Oct	None	None	GUT1	S1	1B.1		2006-12-01	No Photo Available
Atriplex cordulata var. *cordulata*	heartscale	Chenopodiaceae	annual herb	Apr-Oct	None	None	GNRT2	S2	1B.2	Yes	1988-01-01	 © 1994 Robert E. Preston, Ph.D.
Atriplex coronata var. *vallicola*	Lost Hills crownscale	Chenopodiaceae	annual herb	Apr-Sep	None	None	G4T3	S3	1B.2	Yes	1974-01-01	 © 2016 John Doyen
Atriplex tularensis	Bakersfield smallscale	Chenopodiaceae	annual herb	Jun-Oct	None	CE	GX	SX	1A	Yes	1974-01-01	No Photo Available
Azolla microphylla	Mexican mosquito fern	Azollaceae	annual/perennial herb	Aug	None	None	G5	S4	4.2		1994-01-01	 © 2021 Neal Kramer

Puccinellia simplex	California alkali grass	Poaceae	annual herb	Mar-May	None	None	G2	S2	1B.2		2015-10-15	 © 2017 Chris Winchell
Stylocline citroleum	oil neststraw	Asteraceae	annual herb	Mar-Apr	None	None	G3	S3	1B.1	Yes	1994-01-01	No Photo Available
Stylocline masonii	Mason's neststraw	Asteraceae	annual herb	Mar-May	None	None	G1	S1	1B.1	Yes	1994-01-01	No Photo Available
Tortula californica	California screw moss	Pottiaceae	moss		None	None	G2G3	S2?	1B.2	Yes	2001-01-01	No Photo Available
Trichostema ovatum	San Joaquin bluecurls	Lamiaceae	annual herb	(Apr-Jun)Jul-Oct	None	None	G3	S3	4.2	Yes	1974-01-01	No Photo Available

Showing 1 to 31 of 31 entries

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California Native Plant Society, Rare Plant Program. 2025. Rare Plant Inventory (online edition, v9.5.1). Website https://www.rareplants.cnps.org [accessed 18 September 2025].
}

Goodmania luteola	golden goodmania	Polygonaceae	annual herb	Apr-Aug	None	None	G3	S3	4.2		1994-01-01	 © 2007 Steve Matson
Hordeum intercedens	vernal barley	Poaceae	annual herb	Mar-Jun	None	None	G3G4	S3S4	3.2		1994-01-01	No Photo Available
Imperata brevifolia	California satintail	Poaceae	perennial rhizomatous herb	Sep-May	None	None	G3	S3	2B.1		2006-12-26	 © 2020 Matt C. Berger
Lasthenia ferrisiae	Ferris' goldfields	Asteraceae	annual herb	Feb-May	None	None	G3	S3	4.2	Yes	2001-01-01	 © 2009 Zoya Akulova
Lasthenia glabrata ssp. *coulteri*	Coulter's goldfields	Asteraceae	annual herb	Feb-Jun	None	None	G4T2	S2	1B.1		1994-01-01	 © 2013 Keir Morse
Layia leucopappa	Comanche Point layia	Asteraceae	annual herb	Mar-Apr	None	None	G1	S1	1B.1	Yes	1974-01-01	 © 2013 Neal Kramer
Leptosiphon grandiflorus	large-flowered leptosiphon	Polemoniaceae	annual herb	Apr-Aug	None	None	G3G4	S3S4	4.2	Yes	1994-01-01	 © 2003 Doreen L. Smith
Monolopia congdonii	San Joaquin woollythreads	Asteraceae	annual herb	Feb-May	FE	None	G2	S2	1B.2	Yes	1988-01-01	No Photo Available
Navarretia setiloba	Piute Mountains navarretia	Polemoniaceae	annual herb	Apr-Jul	None	None	G2	S2	1B.1	Yes	1974-01-01	No Photo Available
Opuntia basilaris var. *treleasei*	Bakersfield cactus	Cactaceae	perennial stem	Apr-May	FE	CE	G5T1	S1	1B.1	Yes	1974-01-01	 Keir Morse

APPENDIX B

REPRESENTATIVE PHOTOGRAPHS

VISTA HIGH SCHOOL CONTINUATION PROJECT



Photo 1. Historical San Joaquin kit fox natal den
GPS coordinates: 35.356676, -119.009454
Taken by Dylan Burkey on September 11, 2025.



Photo 2. Hisotrical San Joaquin kit fox natal den.
GPS coordinates: 35.356676, -119.009454
Taken by Dylan Burkey on September 11, 2025.



Photo 3. View of seatrains found within the Project site.
GPS coordinates: 35.357688, -119.010128
Taken by Dylan Burkey on September 11, 2025.



Photo 4. View of seatrains found within the Project site.
GPS coordinates: 35.357688, -119.010128
Taken by Dylan Burkey on September 11, 2025.



Photo 5. View of seatrains found within the Project site.
GPS coordinates: 35.357451, -119.011841
Taken by Dylan Burkey on September 11, 2025.



Photo 6. View of seatrains found within the Project site.
GPS coordinates: 35.357451, -119.011841
Taken by Dylan Burkey on September 11, 2025.



Photo 7. View of seatrains found within the Project site.
GPS coordinates: 35.356805, -119.010392
Taken by Dylan Burkey on September 11, 2025.



Photo 8. View of seatrains found within the Project site.
GPS coordinates: 35.355969, -119.010709
Taken by Dylan Burkey on September 11, 2025.



Photo 9. View of seatrains found within the Project site.
GPS coordinates: 35.355969, -119.010709
Taken by Dylan Burkey on September 11, 2025.



Photo 10. View of potential entrance for San Joaquin kit fox.
GPS coordinates: 35.357196, -119.008509
Taken by Dylan Burkey on September 11, 2025.

APPENDIX C

PLANT AND WILDLIFE SPECIES OBSERVED

VISTA HIGH SCHOOL CONTINUATION PROJECT

Table C - 1
Plant and Wildlife Species Observed within the BSA

Scientific Name	Common Name	Status
Plants		
Urban	None	None
Barren	None	None
Non-native ornamental trees	None	None
Birds		
Branta canadensis	Canada goose	None
Charadrius vociferus	killdeer	None
Euphagus cyanocephalus	Brewer's blackbird	None
Reptiles		
Uta stansburiana	side-blotched lizard	None
Mammals		
*Vulpes macrotis mutica**	San Joaquin kit fox	FE/ST
*Canis familiaris**	domestic dog	None

* Indicates that only sign (e.g., tracks, scat, burrows, dens, vocalizations) of the species was observed.

APPENDIX D

SPECIAL-STATUS SPECIES DATABASE SEARCH RESULTS AND EVALUATION TABLE

Table D-1
Special-Status Plant and Wildlife Species in the Regional Vicinity of the Project Site
Vista High School Continuation Project, Kern County, California

Scientific Name Common Name	Status Fed/State ESA CRPR/CDFW	Habitat Requirements	Potential to Occur	Rationale
Sensitive Natural Communities				
Great Valley Cottonwood Riparian Forest	-/- -/-	This community consists of medium to tall, broad-leaved winter deciduous trees with well-closed canopies, dominated by *Populus fremontii, Salix gooddingii,* and understories of various other willows. Typically found on floodplains, along low-gradient rivers, intermittent streams, springs, in canyons in desert mountains, in alluvial fans, and in valleys with a dependable subsurface water supply at elevations from sea level to 7,875 feet.	No	Suitable habitat for this community is absent from the Project site. The closest CNDDB occurrence (EONDX 28905) is from 1985 and approximately 4.91 miles west of the Project site.
Great Valley Mesquite Scrub	-/- -/-	This community consists of open to closed woodlands, dominated by *Prosopis glandulosa* and *Prosopis pubescens* along with *Populus fremontii,* various *Salix sp,* and understories of *Atriplex sp*. Typically found on fringes of playa lakes, river terraces, stream banks, gullies, floodplains, and springs. Found in moderately saline soils with a wide range of toil textures at	No	Suitable habitat for this community is absent from the Project site. The only CNDDB occurrence (EONDX 15664) within 10 miles is from 1985 and approximately 9.84 miles southwest of the Project site.

Scientific Name Common Name	Status Fed/State ESA CRPR/CDFW	Habitat Requirements	Potential to Occur	Rationale
		elevations of approximately -262 feet to 5,085 feet.		
Valley Sacaton Grassland	-/- -/-	This community consists of open to continuous grasslands dominated by *Muhlenbergia asperifolia, Puccinellia lemmonii, Puccinellia nuttalliana, Spartina gracilis,* and *Sporobolus airoides*. Typically found in moist, poorly drained, often alkaline areas along streams, alluvial fans, basins, swales, meadows, and margins of marshes and ponds. Found in nonsaline to moderately saline soils at elevations from sea level to 6,890 feet.	No	Suitable habitat for this community is absent from the Project site. There are no CNDDB occurrences within 10 miles of the Project site.
Valley Saltbush Scrub	-/- -/-	This community consists of open, gray or blue-green chenopod scrubs, usually over a low herbaceous annual understory. Areas dominated by *Atriplex polycarpa* or *A. spinifera* may be differentiable from one another. Typically found on sandy to loamy soils without surface alkalinity, largely on rolling, dissected alluvial fans. Found in areas with long, arid summers and short, damp winters, and tule fog is often present during the winters.	No	Suitable habitat for this community is absent from the Project site. The only CNDDB occurrence (EONDX 16319) within 10 miles is from 1987 and approximately 6.92 miles southeast of the Project site.
Valley Sink Scrub	-/-	This community consists of open to continuous shrubs, dominated by *Allenrolfea*	No	Suitable habitat for this community is absent from the

Scientific Name Common Name	Status Fed/State ESA CRPR/CDFW	Habitat Requirements	Potential to Occur	Rationale
	-/-	*occidentalis, Atriplex canescens, Distichlis spicata, Frankenia salina, Kochia californica, Sarcobatus vermiculatus, Sporobolus airoides* and *Suaeda moquinii*. Typically found in alkaline soils, along dry lakebed margins, hummocks, playas, and seeps at elevations from 262 feet to 5,905 feet.		Project site. There are no CNDDB occurrences within 10 miles of the Project site.
Plants				
Astragalus hornii var. hornii Horn's milk vetch	-/- 1B.1/-	This is a perennial herb that blooms between May and September. It occurs in meadows and seeps, alkali playas, wetlands, salty flats, and along lake margins. It occurs at elevations ranging from approximately 200 to 1,000 feet and is known to occur in Inyo, Kern, San Bernardino, and possibly Tulare counties.	No	Suitable habitat for this species is absent from the BSA. The most recent CNDDB record (EONDX 117518) is from 2013 and approximately 9.52 miles southwest of the Project site.
Atriplex cordulata var. cordulata heartscale	-/- 1B.2/-	This is an annual herb that blooms between June and July; however, if conditions are favorable, heartscale has been known to bloom as early as April or as last as October. It is typically found in chenopod scrub, meadows and seeps, valley and foothill grassland (typically sandy soils). The species	No	Suitable habitat for this species is absent from the BSA. There are no CNDDB recorded occurrences for this species within 10 miles of the BSA.

Scientific Name Common Name	Status Fed/State ESA CRPR/CDFW	Habitat Requirements	Potential to Occur	Rationale
		is found on alkaline or saline soils at elevations between 0 and 1,837 feet.		
Atriplex coronata var. vallicola Lost Hills crownscale	-/- 1B.1/-	This is an annual herb that blooms from April to September. It occurs in dry beds of alkaline pools in chenopod scrub, valley and foothill grassland, and vernal pools; also found on exposed slopes rich in gypsum. It occurs at elevations of approximately 165 to 2,085 feet; documented on the valley floors and lower foothills of the western Central Valley from San Benito to Kern and San Luis Obispo counties. It is threatened by grazing, vehicles, and development.	No	Suitable habitat for this species is absent from the BSA. There are no CNDDB recorded occurrences for this species within 10 miles of the BSA.
Atriplex tularensis Bakersfield smallscale	-/SE 1A/-	This is an annual herb that blooms from June to October. It occurs in chenopod scrub and is endemic to California. It occurs at elevations ranging from approximately 295 to 656 feet and is known to occur in Kern County. Most known populations are likely extirpated. This species is threatened by habitat loss, lowering of water table, and hybridization with saltscale (*Atriplex serenana*).	No	Suitable habitat for this species is absent from the BSA. The only CNDDB record (EONDX 2522) within 10 miles of the Project site lists presence as extirpated since 1983.
Calochortus striatus Alkali mariposa-lily	-/- 1B.2	This is a perennial bulbiferous herb that blooms between April and June. It occurs in chaparral, chenopod scrub, Mojavean desert	No	Suitable habitat for this species is absent from the BSA. There are no CNDDB recorded occurrences

Scientific Name Common Name	Status Fed/State ESA CRPR/CDFW	Habitat Requirements	Potential to Occur	Rationale
		scrub, meadows and seeps, and in alkaline or mesic soil. It occurs at elevations ranging from approximately 230 to 5,230 feet. This species is threatened by urbanization, grazing, trampling, road construction, hydrological alterations, and water diversions that result in the lowering of the water table.		for this species within 10 miles of the BSA.
Caulanthus californicus California jewelflower	FE/SE 1B.1/-	This is an annual herb that blooms between February and May. It occurs in slightly alkaline sandy soils in chenopod scrub, valley and foothill grassland, and pinyon and juniper woodland, typically at elevations from approximately 200 to 3,280 feet. It occurs in the San Joaquin Valley, Carrizo Plain, and Cuyama Valley from Fresno County south to Santa Barbara County and many occurrences are presumed extirpated. It is threatened by development, grazing, and competition from non-native plants.	No	Suitable habitat for this species is absent from the BSA. The most recent CNDDB occurrence (EONDX 63228) within 10 miles of the Project site is from 1986 and lists presence as extirpated.
Chloropyron molle ssp. *hispidum* Hispid salty bird's beak	-/- 1B.1/-	This is a hemi-parasitic annual herb that blooms from June to September. It grows in alkaline soils in meadows and seeps, playas, and valley and foothill grassland. It occurs at elevations ranging from approximately sea level to 510 feet in scattered occurrences in foothills along the east and west side of	No	Suitable habitat for this species is absent from the BSA. The closest CNDDB record (EONDX 84432) is from 1927 and overlaps the Project site.

Scientific Name Common Name	Status Fed/State ESA CRPR/CDFW	Habitat Requirements	Potential to Occur	Rationale
		Sacramento Valley. It is believed to be extirpated from much of the lower San Joaquin Valley and is threatened by agricultural conversion, development, and grazing.		
Delphinium recurvatum recurved larkspur	-/- 1B.2/-	This is a perennial herb that blooms between March and June. It occurs in alkaline conditions in chenopod scrub, cismontane woodland, and valley and foothill grassland. It occurs at elevations ranging from approximately 10 to 2,590 feet. This species is endemic to California. It occurs throughout the Central Valley and Coast Ranges from Butte County south. Few occurrences are in the Antelope Valley. This species is threatened by agriculture and competition from non-native plants.	No	Suitable habitat for this species is absent from the BSA. The closest CNDDB occurrence (EONDX 51922) is from 1935 and approximately 4.58 miles west of the Project site.
Diplacus pictus Calico monkeyflower	-/- 1B.2/-	This is an annual herb that starts blooms between March to May. It occurs in broad-leafed upland forest and cismontane woodlands in bare, sunny, shrubby areas around granite outcrops and disturbed areas. It occurs at elevations ranging from approximately 443 to 4,101 feet.	No	Suitable habitat for this species is absent from the BSA. The only CNDDB record (EONDX 17678) within 10 miles of the Project is from 1935 and is 7.51 miles northeast of the Project site.
Eremalche parry ssp. *kernensis*	FE/-	This is an annual herb that starts to bloom in January, sometimes February or March, until	No	Suitable habitat for this species is absent from the BSA. The only

Scientific Name Common Name	Status Fed/State ESA CRPR/CDFW	Habitat Requirements	Potential to Occur	Rationale
Kern mallow	1B.2/-	May. It occurs on dry, open sandy to clay soils, often at the edges of balds in chenopod scrub, pinyon and juniper woodland, and valley and foothill grassland. It occurs at elevations ranging from approximately 230 to 4,230 feet. It has been documented in the southern San Joaquin Valley and Carrizo Plain and surrounding foothills and mountains. This species is threatened by agriculture and development, and possibly non-native plants.		CNDDB record (EONDX 107370) within 10 miles is from 1988 and approximately 9.66 miles northeast of the Project site.
Eschscholzia lemmonii ssp. *kernensis* Tejon poppy	-/- 1B.1/-	This is an annual herb that blooms in March, sometimes as early as February, to May. It is found in open valley and foothill grasslands and chenopod scrub at elevations from approximately 450 to 4,500 feet. It is distinguished from the more common California poppy (*E. californica*) by its calyx. It is possibly threatened by grazing and non-native plants.	No	Suitable habitat for this species is absent from the BSA. The only CNDDB recorded occurrence (EONDX 101748) within 10 miles of the BSA is from 1937 and approximately 3.93 miles northeast.
Imperata brevifolia California satintail	-/- 2B.1/-	This perennial rhizomatous herb blooms between September and May. It occurs in chaparral, coastal scrub, Mojavean desert scrub, meadows and seeps, and riparian scrub on mesic or alkali soils. It is found at elevations from approximately sea level up	No	Suitable habitat for this species is absent from the BSA. The only CNDDB recorded occurrence (EONDX 69838) within 10 miles is from 1896 and approximately

Scientific Name Common Name	Status Fed/State ESA CRPR/CDFW	Habitat Requirements	Potential to Occur	Rationale
		to 3,985 feet. The species is threatened by development and agriculture.		0.82 miles northwest of the Project site.
Lasthenia glabrata ssp. coulteri Coulter's goldfields	-/- 1B.1/-	This is an annual herb that blooms between February and June. It occurs in coastal salt marshes and swamps, playas, and vernal pools in the interior of California. It occurs at elevations from sea level to 4,000 feet. It is seriously threatened by urbanization and agricultural development and road maintenance, and is potentially threatened by foot traffic and drought.	No	Suitable habitat for this species is absent from the BSA. There are no CNDDB recorded occurrences for this species within 10 miles of the BSA.
Layia leucopappa Comanche Point layia	-/- 1B.1/-	This is an annual herb endemic to California that can bloom as early as February but typically blooms from March to April. It occurs in chenopod scrub and valley and foothill grasslands in dry clay soils, often with weedy grasses. It occurs at elevations from approximately 328 to 1,148 feet. Populations have been reduced by agriculture and it is threatened by development and grazing.	No	Suitable habitat for this species is absent from the BSA. The only CNDDB recorded occurrence (EONDX 42610) within 10 miles is from 1935 and approximately 5.94 miles east of the Project site.
Monolopia congdonii San Joaquin woollythreads	FE/- 1B.2/-	This is an annual herb endemic to California that blooms from February to May. It occurs in chenopod scrub and on sandy soils in valley and foothill grassland. It occurs at elevations from approximately 196 to 2,624	No	Suitable habitat for this species is absent from the BSA due to current and historical ground disturbance. The closest CNDDB occurrence (EONDX 2748) is

Scientific Name Common Name	Status Fed/State ESA CRPR/CDFW	Habitat Requirements	Potential to Occur	Rationale
		feet. Approximately half of the historical occurrences are expected to be extirpated, and the known populations occur in Carrizo Plain Natural Area, Lost Hills, Kettleman Hills, Jacalitos Hills, Panoche Hills, and Cuyama Valley. It is seriously threatened by agricultural conversion, energy development, urbanization, grazing, trampling, and vehicles.		from 1988 and is 4.56 miles northeast of the Project site. It is listed as possibly extirpated.
Navarretia setiloba Piute Mountains navarretia	-/- 1B.1/-	This is an annual herb endemic to California that blooms between April and July. It is found on clay or gravelly loam soil in cismontane woodland, pinyon and juniper woodland, and valley and foothill grassland. It occurs at elevations from approximately 1,640 to 6,890 feet. Many historical occurrences are likely extinct and are threatened by residential development and vehicles.	No	Suitable habitat for this species is absent from the BSA. There is one CNDDB record (EOINDX 56125) within 10 miles of the BSA that was listed as extirpated in 1985.
Opuntia basilaris var. *treleasei* Bakersfield cactus	FE/SE 1B.1/-	This is a perennial stem succulent endemic to California that blooms between April and May. It is found on sandy or gravelly substrates in chenopod scrub, valley and foothill grasslands, and cismontane woodlands. It occurs at elevations from approximately 390 to 1,805 feet and is threatened by energy development,	No	Suitable habitat for this species is absent from the BSA. The closest CNDDB occurrence (EOINDX 2991) is from 1989 and approximately 3.42 miles northeast of the Project site.

Scientific Name Common Name	Status Fed/State ESA CRPR/CDFW	Habitat Requirements	Potential to Occur	Rationale
		agricultural conversion, grazing, mining, vehicles, and especially urbanization in the Bakersfield area.		
Puccinellia simplex California alkali grass	-/- 1B.2/-	This is an annual herb that blooms from March to May. It occurs in vernally moist, alkaline conditions in chenopod scrub, meadows and seeps, valley and foothill grassland, and vernal pools, usually on sinks, flats, and lake margins. It occurs at elevations of approximately 6 to 3,050 feet. It is threatened by hydrological alterations, urbanization, agricultural conversion, development, and habitat fragmentation/ disturbance.	No	Suitable habitat for this species is absent from the BSA. There are no CNDDB recorded occurrences for this species within 10 miles of the BSA.
Stylocline citroleum oil neststraw	-/- 1B.1/-	This is an annual herb endemic to California that blooms from March to April. It occurs on clay substrates in chenopod and coastal scrub, and valley and foothill grasslands. It occurs at elevations of approximately 164 to 1,312 feet and is possibly threatened by energy development and urbanization.	No	Suitable habitat for this species is absent from the BSA. There is one CNDDB occurrence (EONDX 7158) from 1935 and approximately 6.46 miles northeast of the Project site.
Stylocline masonii Mason's neststraw	-/- 1B.1/-	This is an annual herb endemic to California that blooms from March to May. It occurs in loose sandy soils of washes and flats, in chenopod scrub, desert washes, and pinyon and juniper woodland. It occurs at elevations	No	Suitable habitat for this species is absent from the BSA. There are no CNDDB occurrences within 10 miles of the Project site.

Scientific Name Common Name	Status Fed/State ESA CRPR/CDFW	Habitat Requirements	Potential to Occur	Rationale
		from approximately 330 to 3,940 feet and is threatened by development and habitat disturbance.		
Tortula californica California screw moss	-/- 1B.2/-	This is a non-vascular moss endemic to California that does not flower. It occurs on sandy soils in chenopod scrub or valley and foothill grassland at elevations from approximately 32 to 4,790 feet.	No	Suitable habitat for this species is absent from the BSA. There is one CNDDB occurrence (EONDX 45710) that is undated and approximately 8.15 miles northeast of the Project site.
Invertebrates				
Bombus crotchii Crotch's bumble bee	-/SCE -/-	This bee occurs in relatively warm and dry environments, including the inner Coast Range of California and the margins of the Mojave Desert. It inhabits grassland and scrub habitats, where it nests in abandoned rodent burrows, occasionally nesting above ground in tufts of grass, rock piles, or cavities in dead trees. This species is classified as a short-tongued species, whose food plants include *Asclepias, Chaenactis, Lupinus, Medicago, Phacelia,* and *Salvia*. The species is threatened by habitat loss and degradation, including agricultural intensification and rapid urbanization.	No	None of the primary plant species that the Crotch's bumble bee feeds on its present within the BSA. There is no nesting habitat due to the lack of vegetation cover and historical and current disturbance on the site. The most recent CNDDB record (EONDX 135035) within 10 miles of the BSA is from 2022 and approximately 4.14 miles northeast of the Project site.
Danaus plexippus	FPT/-	This butterfly species occurs in various open habitats including fields, meadows, weedy	No	The BSA contains no milkweed or roosting habitat. The closest

Scientific Name Common Name	Status Fed/State ESA CRPR/CDFW	Habitat Requirements	Potential to Occur	Rationale
monarch butterfly	-/-	areas, marshes, and roadsides. Adults make massive migrations from August to October, flying thousands of miles south to hibernate along the California coast and in central Mexico. Eggs are laid and larvae feed on plants in the milkweed family, primarily *Asclepias* sp., but also other genera including *Calotropis, Cynanchum, Gonolobus,* and *Sarcostemma.* Adult butterflies typically live from two to six weeks, but overwintering individuals may live as long as nine months. Overwintering migratory adults will roost in large colonies in forested sites in California and Mexico, which must provide protection from the elements and assist with thermoregulation.		CNDDB occurrence (EONDX 7692) and is from 1990 and overlaps the Project site. The occurrence lists presence as possibly extirpated.
Desmocerus californicus dimorphus valley elderberry longhorn beetle	FT-/ -/-	This beetle species is closely associated with elderberry shrubs (Sambucus sp.) for food and reproduction. This species usually occurs along rivers and streams and eggs are laid on the bark of elderberry shrubs and larvae hatch and burrow into the stems. Adults eat elderberry leaves and flowers. Stem diameter must be a minimum of one inch and exit holes in stems are the most common methods for identification. This	No	The site is outside of the species' accepted distribution range and contains no elderberry. The closest CNDDB record (EONDX 15172) is from 1991 and approximately 5.22 miles northeast of the Project site.

Scientific Name Common Name	Status Fed/State ESA CRPR/CDFW	Habitat Requirements	Potential to Occur	Rationale
		species ranges from southern Shasta County to Fresno County.		
Amphibians				
Spea hammondii western spadefoot	FPT/- -/SSC	This species relies on vernal pools for breeding where predators cannot become established. It occurs in open areas with sand or gravelly soils in a variety of habitats: grasslands, coastal scrub, woodlands, chaparral, sandy washes, lowland river floodplains, alkali flats, foothills, and mountains. This species is endemic to California and northern Baja California with a distribution from Redding south throughout Central Valley and foothills, throughout the South Coast mountain range into coastal southern California to Transverse mountains and Peninsular mountains. This species occurs at elevations ranging from sea level to 4,500 feet.	No	No suitable breeding habitat is present within the BSA or nearby. The most recent CNDDB occurrence (EONDX 117481) is from 2008 and approximately 7.52 miles west of the Project site.
Reptiles				
Actinemys marmorata Western pond turtle	FPT/- -/SSC	This species is highly aquatic and diurnally active. It is found in ponds, lakes, rivers, streams, creeks, marshes, and irrigation ditches with vegetation and rocky or muddy bottoms in a wide variety of habitats. It needs basking areas near water (logs, rocks,	No	Aquatic habitat is absent from the BSA. The most recent CNDDB record (EONDX 42373 is from 2000 and approximately 5.34

Scientific Name Common Name	Status Fed/State ESA CRPR/CDFW	Habitat Requirements	Potential to Occur	Rationale
		vegetation mats, banks). This species may enter brackish water and even seawater and it digs a nest on land near water. It ranges from north of the San Francisco Bay area to south, including the Central Valley.		miles northeast of the Project site.
Anniella grinnelli Bakersfield legless lizard	-/- -/SSC	This species occurs in moist warm loose soil with sparsely vegetated areas of beach dunes, chaparral, pine-oak woodlands, desert scrub, sandy washes, and stream terraces with sycamores, cottonwoods, or oaks. It can be found under leaf litter from trees and bushes or under objects such as rocks, boards, driftwood, and logs. This species requires moisture in the soil. Breeding occurs between early spring and July with young born between September and November.	No	Suitable habitat for this species is absent from the BSA. The consistent ground disturbance at the site had prevented this species from establishing in the soil. The most recent CNDDB occurrence (EONDX 124103), from 2023, is approximately 3.91 miles southeast of the Project site.
Anniella ssp. California legless lizard	-/- -/SSC	This species occurs in moist, loose soils with sparsely vegetated areas of beach dunes, chaparral, pine-oak woodlands, desert scrub, sandy washes, and stream terraces with sycamores, cottonwoods, or oaks. It can be found under leaf litter from trees and bushes or under objects such as rocks, boards, driftwood, and logs. This species requires moisture in the soil. Breeding occurs	No	Suitable habitat for this species is absent from the BSA. No CNDDB occurrences are present within 10 miles of the Project site.

Scientific Name Common Name	Status Fed/State ESA CRPR/CDFW	Habitat Requirements	Potential to Occur	Rationale
		between early spring and July with young born between September and November.		
Arizona elegans occidentalis California glossy snake	-/- -/SSC	This subspecies of glossy snake occurs from the eastern part of the San Francisco Bay south to northwestern Baja, California. It appears to prefer microhabitats of open areas with soil loose enough for easy burrowing. It inhabits arid scrub, rocky washes, grasslands, and chaparral. This species is nocturnal and hides under rocks, in existing burrows, or creates its own burrow during daylight hours. It is usually active from late February until November.	No	Suitable habitat for this species is absent from the BSA. The most recent CNDDB occurrence (EONDX 104915) is from 1993 and approximately 7.71 miles northwest of the Project site.
Gambelia sila blunt-nosed leopard lizard	FE/SE SFP	This large lizard occurs in semiarid habitats within the southern Central Valley, Cuyama Valley, and Panoche Valley, at elevations between 100 and 2,400 feet. Preferred habitats are typically flat, sparsely vegetated grasslands with large open areas with scattered shrubs for cover, and sandy washes. The species spends most of the year underground in abandoned small mammal burrows, with adults surfacing in the spring and early summer to breed and feed. Young hatch in July and August, and both adults and young recede to refugia between August and November. Individuals feed primarily on	No	Suitable habitat for this species (saltbush scrub) is absent from the BSA due to historical and current disturbance. The closest CNDDB occurrence (EONDX 65490) is from 2006 and approximately 6.29 miles northeast of the Project site.

Scientific Name Common Name	Status Fed/State ESA CRPR/CDFW	Habitat Requirements	Potential to Occur	Rationale
		grasshoppers and smaller lizards. The species is threatened mainly by habitat loss and fragmentation.		
Masticophis flagellum ruddocki San Joaquin coachwhip	-/- -/SSC	This species occurs in open, dry, treeless areas with little or no cover. They are found in valley grassland and saltbush scrub habitats and avoid areas that are densely vegetated. They are found from the Sacramento Valley in Colusa County southward to the Grapevine in Kern County and westward to the inner South Coast Ranges. They are threatened by habitat loss and fragmentation, conversion of large suitable habitats to agricultural use in the San Joaquin Valley and urban development in the inner Coast Ranges.	No	Suitable habitat for this species is absent from the BSA due to historical and current disturbance. The only CNDDB occurrence (EONDX 66287) within 10 miles of the BSA is from 2000 and approximately 7.95 miles southwest of the Project site.
Phrynosoma blainvillii coast horned lizard	-/- -/SSC	This cryptic lizard prefers sandy, loose soils in grasslands, forests, woodlands, and open chaparral. Individuals are often found along sandy washes and dirt roads with scattered shrubs for cover. This species feeds almost exclusively on ants. It is found in coastal California from Baja California north to the Bay Area, southeastern desert regions, southern Central Valley flats and foothills and the surrounding mountains on drier, warmer slopes, at elevations up to 8,000	No	Suitable habitat for this species is absent from the BSA due to historical and current disturbance. No CNDDB occurrences are present within 10 miles of the Project site.

Scientific Name Common Name	Status Fed/State ESA CRPR/CDFW	Habitat Requirements	Potential to Occur	Rationale
		feet. The species is threatened by habitat loss and fragmentation and the spread of invasive ant species displacing native prey.		
Birds				
Agelaius tricolor tricolored blackbird	-/ST -/SSC	This species is a year-round resident that is a colonial breeder. It occurs in freshwater, emergent wetlands with tall, dense cattails or tule, but also thickets of willow, blackberry, wild rose, and tall herbs. Breeding colonies consist of a minimum of approximately 50 pairs. This species forages for mostly insects and spiders and less often seeds and cultivated grains in pastures, grain fields, cropland, and similar habitats near breeding areas.	No	Suitable habitat for this species is absent from the BSA. The most recent CNDDB occurrence (EONDX 97857) is from 2012 and approximately 9.81 miles southeast of the Project site.
Athene cunicularia hypugaea western burrowing owl	-/SCE -/-	This species occupies a variety of open, semi-arid to arid habitats throughout Central and Southern California, including desert regions. It prefers open habitats with few shrubs or trees and low-growing vegetation. It is most active around sunrise and sunset and utilizes burrows constructed by mammals year-round for shelter and nesting. This species is well documented in urban areas where patches of undeveloped	Yes	Western burrowing owls may move through the Project site as transient foragers. There is suitable low quality foraging habitat on the southeastern edge of the BSA. No burrows with diagnostic sign (i.e., whitewash, feathers) were observed within the BSA. No individuals or sign of the species were observed

Scientific Name Common Name	Status Fed/State ESA CRPR/CDFW	Habitat Requirements	Potential to Occur	Rationale
		areas are present (e.g., canals, airports, drainage basins), and in areas of dense agricultural development, particularly where canals provide burrow habitat. It forages primarily for rodents and insects within several miles of its burrow, usually in open grassy habitats if available. It has been observed hunting bats and insects around parking lot lights. Threats to this species include development resulting in habitat loss/fragmentation.		during the survey. There are 21 CNDDB recorded occurrences for the species within 10 miles of the BSA. The closest CNDDB recorded occurrence (EONDX 82920) is from 2007 and approximately 1.56 miles southeast of the Project site.
Buteo swainsoni Swainson's hawk	-/ST -/-	This species occurs in grassland, desert and agricultural landscapes in the Central Valley and Antelope Valley. These hawks may be resident or migrant, and nest and breed in stands with few trees in juniper-sage flats, riparian areas, and oak savannah habitats. This species has also been observed nesting and breeding in large eucalyptus trees along freeways and in trees over rural residences surrounded by agriculture. Nests are a platform of sticks, bark, and fresh leaves at or near the top of trees. This species breeds from late March to late August. It forages in grassland, open scrub, and grain fields, primarily for rodents.	Yes	There is suitable low-quality foraging and nesting habitat throughout the BSA. There is more suitable foraging habitat to the west. The edge of the BSA and nearby residential areas have some mature trees that could provide nesting habitat. No individuals or sign of the species were observed during the survey. The most recent CNDDB record (EONDX 118756) is from 2019 and approximately 6.30 miles south of the Project site.

Scientific Name Common Name	Status Fed/State ESA CRPR/CDFW	Habitat Requirements	Potential to Occur	Rationale
Coccyzus americanus occidentalis western yellow-billed cuckoo	FT/SE -/-	This migratory species nests in open riparian woodlands along broad lower flood bottoms of larger river systems. It prefers willows, often mixed with cottonwood, with an understory of blackberry, nettles or wild grape. Its nest is most often placed in willows with cottonwoods used extensively for foraging and also occasionally nests in orchards adjacent to river bottoms.	No	No suitable foraging or nesting habitat is present within the BSA for this species. No CNDDB occurrences are present within 10 miles of the Project site.
Dendrocygna bicolor fulvous whistling-duck	-/- -/SSC	This species occupies freshwater wetlands including marshes, marshy ponds, and flooded rice fields; breeds from March to September in dense floating or flooded emergent vegetation; threatened by irregular species movements, pesticide contamination, habitat loss and degradation, agricultural and hunting disturbances.	No	No suitable foraging or nesting habitat is present within the BSA for this species. No CNDDB occurrences are present within 10 miles of the Project site.
Elanus leucurus white-tailed kite	-/- -/SFP	This species occurs in cismontane woodland, marshes and swamps, wetlands, riparian woodland, agricultural areas, and valley & foothill grassland; prefers rolling foothills and valley margins with scattered oaks & river bottomlands, or marshes next to deciduous woodland; forages in open grasslands, meadows, or marshes close to isolated, dense-topped trees for nesting and perching; year-long resident in coastal and	No	Suitable habitat for this species is absent from the BSA. There are suitable habitats to the west and southeast. The only CNDDB record (EONDX 66020) within 10 miles of the BSA is from 1992 and approximately 9.55 miles west of the Project site.

Scientific Name Common Name	Status Fed/State ESA CRPR/CDFW	Habitat Requirements	Potential to Occur	Rationale
		valley lowlands; forages over open grassland, wetlands, and grazed lands; rarely found away from agricultural areas.		
Eremophila alpestris actia California horned lark	-/- -/WL	This species is a year-round resident in California; occurs in grasslands and deserts with open areas and low growing herbaceous vegetation or sometimes scattered low shrubs near seal to open alpine dwarf-shrub habitat above tree line ; ground nester; builds grass-lined nest in cup-shaped depression on ground in the open; threatened by pesticide poisoning and habitat loss.	No	Suitable habitat for this species is absent from the BSA. The only CNDDB occurrence (EONDX 66888) within 10 miles of the BSA is from 2006 and approximately 9.49 miles west of the Project site.
Plegadis chihi white-faced ibis	-/- -/WL	This species is a year-round resident in California. It occurs in freshwater wetlands including marshes, marshy ponds, and flooded agricultural fields. This species breeds in colonies that shift in size depending on water availability. Nests are usually built on the ground using dead tules or cattails surrounded by tall mash plants, very rarely do they nest in trees. This species is threatened by pesticide poisoning and loss of wetland habitat.	No	No suitable foraging or nesting habitat is present within the BSA for this species. No CNDDB occurrences are present within 10 miles of the Project site.
Xanthocephalus xanthocephalus	-/-	This species is a migratory and summer resident in Central Valley from mid-April to	No	No suitable foraging or nesting habitat is present within the BSA

Scientific Name Common Name	Status Fed/State ESA CRPR/CDFW	Habitat Requirements	Potential to Occur	Rationale
yellow-headed blackbird	-/SSC	late July; breeding species in the Central Valley; prefers marshes, pockets of habitat along rivers and tributaries with tall emergent vegetation; water levels in a nesting habitat are approximately 0.6 to 1.2 meters deep; they forage on seeds and cultivated grain and during the breeding season they may eat insects; susceptible to pesticide; threatened by loss due to wetland drainage for irrigation, flood control, or water diversions.		for this species. No CNDDB occurrences are present within 10 miles of the Project site.
Mammals				
Ammospermophilus nelsoni San Joaquin antelope squirrel	-/ST -/-	This species occurs in saltbush scrub and grassland habitats and prefers washes and open shrub areas with sandy soils. Known populations occur in Lokern Natural Area, Elk Hills Carrizo and Elkhorn Plains, Temblor Range and foothills and interior valleys of the Diablo Range and as far north as Merced and San Benito counties. It feeds primarily on insects, green vegetation, seeds, and occasionally on small vertebrates. This species can excavate burrows or use kangaroo rat burrows for temperature regulation, litter-rearing, shelter, and escape from predators. It is threatened by habitat loss and population fragmentation from	No	No suitable valley saltbush, valley sink scrub, or grassland habitats are present within the BSA. The only CNDDB occurrence (EONDX 57241) within 10 miles of the BSA is from 1911 and approximately 8.82 miles northeast of the Project site.

Scientific Name Common Name	Status Fed/State ESA CRPR/CDFW	Habitat Requirements	Potential to Occur	Rationale
		agricultural development, urbanization, petroleum extraction, and excessive cattle grazing.		
Dipodomys ingens giant kangaroo rat	FE/SE -/-	This species occurs in six major geographic units: Panoche Region, Kettleman Hills, San Juan Creek Valley, western Kern County (Lokern, Elk Hills, McKittrick, Taft, and Maricopa), Carrizo Plain Natural Area, and Cuyama Valley; prefers native annual grassland and shrubland habitats with vegetated annual grass and forbs and scattered desert shrubs; found at elevations between 280 to 2,800 feet; colonial burrowers (aka precincts)located on level or gentle slopes with friable, sandy, well-drained soils; precincts are identifiable due to the large circular shaped entrance and numerous entrances within a small range; nocturnal foraging species; threatened by habitat loss, fragmentation, and degradation, and drought; also threatened by land conversions to agricultural, industrial, and urban developments.	No	No suitable valley saltbush, valley sink scrub, or grassland habitats are present within the BSA. No CNDDB occurrences are present within 10 miles of the Project site.
Dipodomys nitratoides brevinasus	-/- -/SSC	This species occurs in Pleasant Valley, Kettleman and Lost Hills, Lokern, Elk Hills, San Emigdio, Wheler Ridge, Carrizo Plain Natural Area, and Caliente Mountains;	No	No suitable valley saltbush, valley sink scrub, or grassland habitats are present within the BSA. No CNDDB occurrences are

Scientific Name Common Name	Status Fed/State ESA CRPR/CDFW	Habitat Requirements	Potential to Occur	Rationale
short-nosed kangaroo rat		geographically found west of the California Aqueduct; found on friable soils on flat or gentle slops in grassland or desert scrub habitat; burrow on higher ground to reduce likelihood of seasonal flooding; higher ground areas include berms, canal embankments, railroad begs, bases of shrubs or fences where the wind-blown soils have accumulated; breeding begins in winter with the young weaned by April; forages in habitats that have *Atriplex* sp. or *Ephedra californica*; nocturnal foraging species; threatened by random catastrophic events (i.e. drought, flooding, fire), overgrazing range land, and extensive agricultural developments in 1960s through 1970s.		present within 10 miles of the Project site.
Dipodomys nitratoides nitratoides Tipton kangaroo rat	FE/SE -/-	This is a subspecies of the San Joaquin kangaroo rat (*Dipodomys nitratoides*) that occurs in valley saltbush scrub, valley sink scrub, and grasslands. It is historically known to occur in the southern San Joaquin Valley from southern margins on Tulare Lake bed near Lemoore and Hanford, and on the valley floor in Tulare and Kern counties but now is found only east of the California Aqueduct. Population distribution is not continuous and occurs only in small isolated	No	No suitable valley saltbush, valley sink scrub, or grassland habitats are present within the BSA. The closest CNDDB recorded occurrence (EONDX 65364) is from 1990 and approximately 9.82 miles west of the BSA.

Scientific Name Common Name	Status Fed/State ESA CRPR/CDFW	Habitat Requirements	Potential to Occur	Rationale
		patches. It is a nocturnal foraging species that excavates burrows for temperature regulation, litter-rearing, shelter, and escape from predators. This species is threatened by habitat loss, fragmentation, degradation and by land conversions to agricultural, industrial, and urban developments, but it can quickly inhabit fallow agricultural fields if a source population is nearby.		
Eumops perotis californicus western mastiff bat	-/- -/SSC	This species occurs in open, semi-arid to arid habitats throughout southeastern San Joaquin Valley and Coast Ranges from Monterey County southward. It can also occur in urban areas. It feeds on insects captured in flight and roosts in cliff faces, high buildings, trees, and tunnels. The maternity season begins in March with young typically volant by September. Nursery roosts most often occur in tight rock crevices or crevices in buildings.	No	No suitable roosting habitat is present within the BSA. The closest CNDDB record (EONDX 66381) is from an unknown year and approximately 1.26 miles northeast of the Project site.
Onychomys torridus tularensis Tulare grasshopper mouse	-/- -/SSC	This subspecies occurs in shrubland communities in hot, arid grassland and shrubland associations. These include blue oak woodlands, upper Sonoran subshrub scrub, alkali sink and mesquite associations on the Valley Floor, and grasslands associations on the sloping margins of the	No	No suitable grassland or shrubland habitat was present within the BSA to support this species. The only CNDDB occurrence (EONDX 125543) within 10 miles of the BSA is from 1891 and approximately

Scientific Name Common Name	Status Fed/State ESA CRPR/CDFW	Habitat Requirements	Potential to Occur	Rationale
		San Joaquin Valley and Carrizo Plain region. This subspecies occupies burrows and feeds primarily on invertebrates but may supplement its diet with seeds and other small mammals.		0.57 miles northwest of the Project site.
Sorex ornatus relictus Buena Vista Lake ornate shrew	FE/- -/SSC	This shrew species occurs in moist soil conditions in marsh habitat with dense emergent vegetation and/or leaf litter and is often associated with cottonwoods, willows, alkali heath, wild rye grass, and Baltic rush. Historically, this species occurred in and around the Buena Vista Lake and Tulare Lake Basins and was once thought to be extinct but was rediscovered at Kern Lake Preserve in 1986. It is primarily insectivorous. Reproduction typically occurs from late February to September or early October and the litter size varies.	No	No moist soils in marsh habitat with dense emergent vegetation or leaf litter was present within the BSA. Suitable habitat for this species is absent from the BSA. There are no CNDDB occurrences within 10 miles of the Project site.
Taxidea taxus American badger	-/- SSC	This species occurs mostly in open, drier stages of shrub, forest, and herbaceous habitats, with friable soils. It feeds mostly on fossorial rodents. It digs burrows for cover and reproduction and can dig a new den each night. Litters are typically born in March and April. This species can be somewhat tolerant of human activities but	Yes	This species may be a transient forager through the Project site. No potential dens are present within the BSA. The most recent CNDDB record (EONDX 74778) is from 2008 and approximately 5.66 miles northeast of the Project site.

Scientific Name Common Name	Status Fed/State ESA CRPR/CDFW	Habitat Requirements	Potential to Occur	Rationale
		generally avoids cultivated agricultural habitats.		
Vulpes macrotis mutica San Joaquin kit fox	FE/ST -/-	This fox species is endemic to the Central Valley and primarily occurs in arid to semi-arid grasslands, open shrublands, savannahs, and grazed lands with loose-textured soils within the San Joaquin Valley, Carrizo Plain, Salinas Valley, Cuyama Valley, and other small valleys in western foothills. Intensively-maintained agricultural areas are typically avoided. It is highly adaptable and documented in developed urban areas. It uses burrows year-round for shelter, escape from predators, and rearing young and it will use man-made structures, such as pipes, for denning. Kit fox feed primarily on small mammals, but will also consume birds, reptiles, insects, and scavenge for human food. It is threatened by habitat loss and fragmentation, vehicle strikes, and disease such as the current mange outbreak in urban population in Bakersfield and in nearby natural areas.	Yes	This species has been a potential resident in the Project site. One historical natal den is present within the BSA. San Joaquin kit foxes are well established in the metropolitan Bakersfield area, There are 63 CNDDB recorded occurrences within 10 miles of the Project site. The closest record (EONDX 66504) is approximately 1.92 miles northwest of the Project site and is from 2006.

CRPR (California Rare Plant Rank):
- 1A Presumed Extinct in California
- 1B Rare, Threatened, or Endangered in California and elsewhere
- 2A Plants presumed extirpated in California, but more common elsewhere

- FE Federally Endangered
- FT Federally Threatened
- FPT Federally Proposed Threatened
- FC Federal Candidate Species
- FS Federally Sensitive

2B Plants Rare, Threatened, or Endangered in California, but more common elsewhere

CRPR Threat Code Extension:

.1 Seriously endangered in California (over 80% of occurrences threatened / high degree and immediacy of threat)

.2 Fairly endangered in California (20-80% occurrences threatened)

.3 Not very endangered in California (<20% of occurrences threatened)

SE	State Endangered
ST	State Threatened
SCE	State Candidate Endangered
SS	State Sensitive
SSC	State Species of Special Concern
SFP	State Fully Protected
SR	State Rare
WL	Watch List

TECHNICAL MEMORANDUM

Date: July 21, 2025

Project: Cultural resources records search- **Vista Continuation High School Modernization Project**

To: Jaymie Brauer, Principal Planner

From: Robert Parr, MS, RPA, Senior Archaeologist

Subject: Cultural Resources Records Search Results (#25-302)

Background

A cultural resources records search (#25-302) was conducted at the Southern San Joaquin Valley Information Center at California State University, Bakersfield for the Vista High School Continuation Project in the city of Bakersfield, California. The purpose of the search was to determine whether any known cultural resources were located on or near the proposed project that might be impacted by project development and/or activities.

Project Location

VCHS is currently addressed at 200 P Street, located south of 4th Street. The Project site is located within Section 31, Township 29 South, Range 28 East, Mount Diablo Base and Meridian (MDB&M), within the Gosford U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle. The site encompasses approximately 15.5-acre portion of Assessor's Parcel Number (APN) 010-110-03. See Attachment A.

Project Description

The Kern High School District is proposing to construct new buildings, a new gym, multipurpose rooms and relocate several ballfields on the existing campus in order to better serve the current student population. The project will be conducted within the footprint of the high school campus on land that has been previously disturbed and will not cause an increase in student or faculty population.

Results

The records search covered an area within one-half mile of the project and included a review of the *National Register of Historic Places*, *California Points of Historical Interest*, *California Registry of Historic Resources*, *California Historical Landmarks*, *California State Historic Resources Inventory*, and a review of cultural resource reports on file.

The records search indicated that although the project had never been surveyed for cultural resources, it was included within the boundaries of an overview for a large redevelopment project (Pruett 1998). No cultural resources were identified on the project.

Seven cultural resource studies have been conducted within a half mile of the project (Pruett and Fleagle 2000a, 2000b; Duke 2001; Hooks and Larocque 2007; Gold 2009; Brewer 2010; Wills 2013; Hudlow 2021).

Eleven historic era (i.e., 45+ years old) cultural resources have been recorded within one half mile of the project. These include six single family residences (Primary nos. P-15-007961, -007962, -007963, -007968, -007969, -008129), a commercial building (P-15-007960), two building foundations (P-15-021381, -021382), the Kern Island Canal (P-15-013707), and the State Route/Golden State Avenue Bridge (P-15-018885). The project will not impact the Kern Island Canal or other cultural resources located off site.

A Sacred Lands File request was also submitted to the Native American Heritage Commission (NAHC). A response dated July 14, 2025, indicates *negative* results (see Attachment B).

On August 1, 2025 pursuant to Public Resources Code §21080.3.1 and Government Code §65300 et seq, Assembly Bill 52, letters were sent to each of the Native American tribes within the geographic area as identified by the NAHC (see Attachment B). The letters included a Project description and location maps. Tribal consultation under AB 52 closed on August 7, 2025. Follow up contact was initiated on August 21, 2025. One response was provided over the phone from Curtis Alcantar, Cultural and Natural Resource Manager for Tejon Indian Tribe, in which the individual stated the Tribe was aware that Ohlone people were in the area but he didn't have any evidence of this and declined consultation and would like to be contacted if cultural resources are identified.

Conclusions

Based on the results of cultural records search findings and the lack of significant historical or archaeological resources previously identified within a half mile radius of the proposed Project, the potential to encounter subsurface cultural resources is minimal. The potential to uncover subsurface historical or archaeological deposits would be considered unlikely.

However, there is still a possibility that historical or archaeological materials may be exposed during construction. Grading and trenching, as well as other ground-disturbing actions have the potential to damage or destroy these previously unidentified and potentially significant cultural resources within the project area, including historical or archaeological resources. Disturbance of any deposits that have the potential to provide significant cultural data would be considered a significant impact. To reduce the potential impacts of the Project on cultural resources, the following measures are recommended to be included as Conditions of Approval. With implementation of CUL-1 and CUL-2, the Project would have a less than significant impact related to cultural resources.

CUL-1: If prehistoric or historic-era cultural materials are encountered during construction activities, all work in the immediate vicinity of the find shall halt until a qualified archaeologist

can evaluate the find and make recommendations. Cultural resource materials may include prehistoric resources such as flaked and ground stone tools and debris, shell, bone, ceramics, and fire-affected rock as well as historic resources such as glass, metal, wood, brick, or structural remnants. If the qualified archaeologist determines that the discovery represents a potentially significant cultural resource, additional investigations may be required to mitigate adverse impacts from Project implementation. These additional studies may include avoidance, testing, and evaluation or data recovery excavation. Implementation of the mitigation measure below would ensure that the proposed Project would not cause a substantial adverse change in the significance of a historical resource.

CUL-2: If human remains are discovered during construction or operational activities, further excavation or disturbance shall be prohibited pursuant to Section 7050.5 of the California Health and Safety Code. The specific protocol, guidelines, and channels of communication outlined by the Native American Heritage Commission, in accordance with Section 7050.5 of the Health and Safety Code, Section 5097.98 of the Public Resources Code (Chapter 1492, Statutes of 1982, Senate Bill 297), and Senate Bill 447 (Chapter 44, Statutes of 1987), shall be followed. Section 7050.5(c) shall guide the potential Native American involvement, in the event of discovery of human remains, at the direction of the county coroner.



Robert E. Parr, MS, RPA
Senior Archaeologist

Attachment A- Figures
Attachment B- AB 52 Letters
NAHC Response Letter

250128.01

References

(Note: Alpha-numeric designation in parentheses following citation refers to IC report reference number

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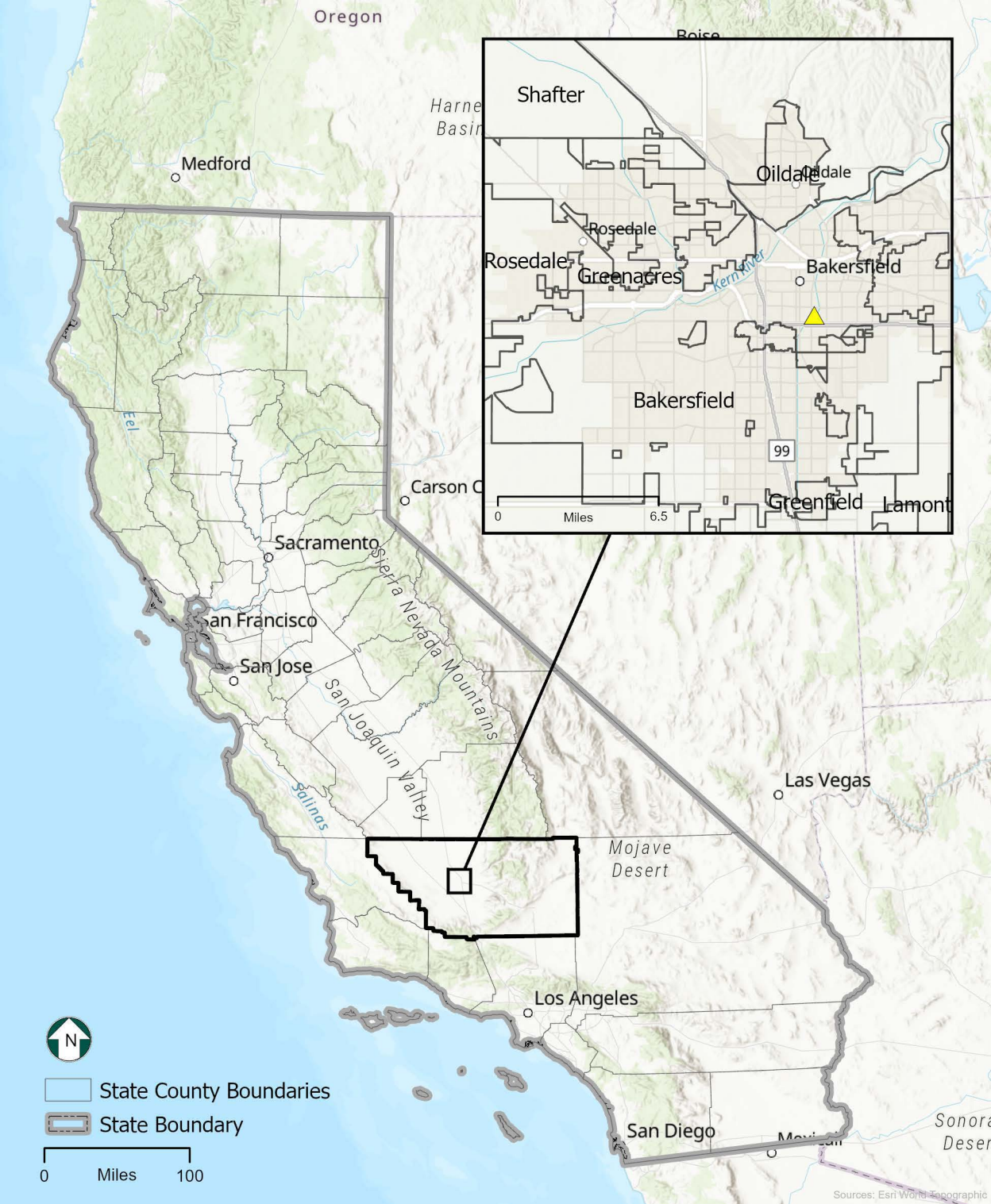
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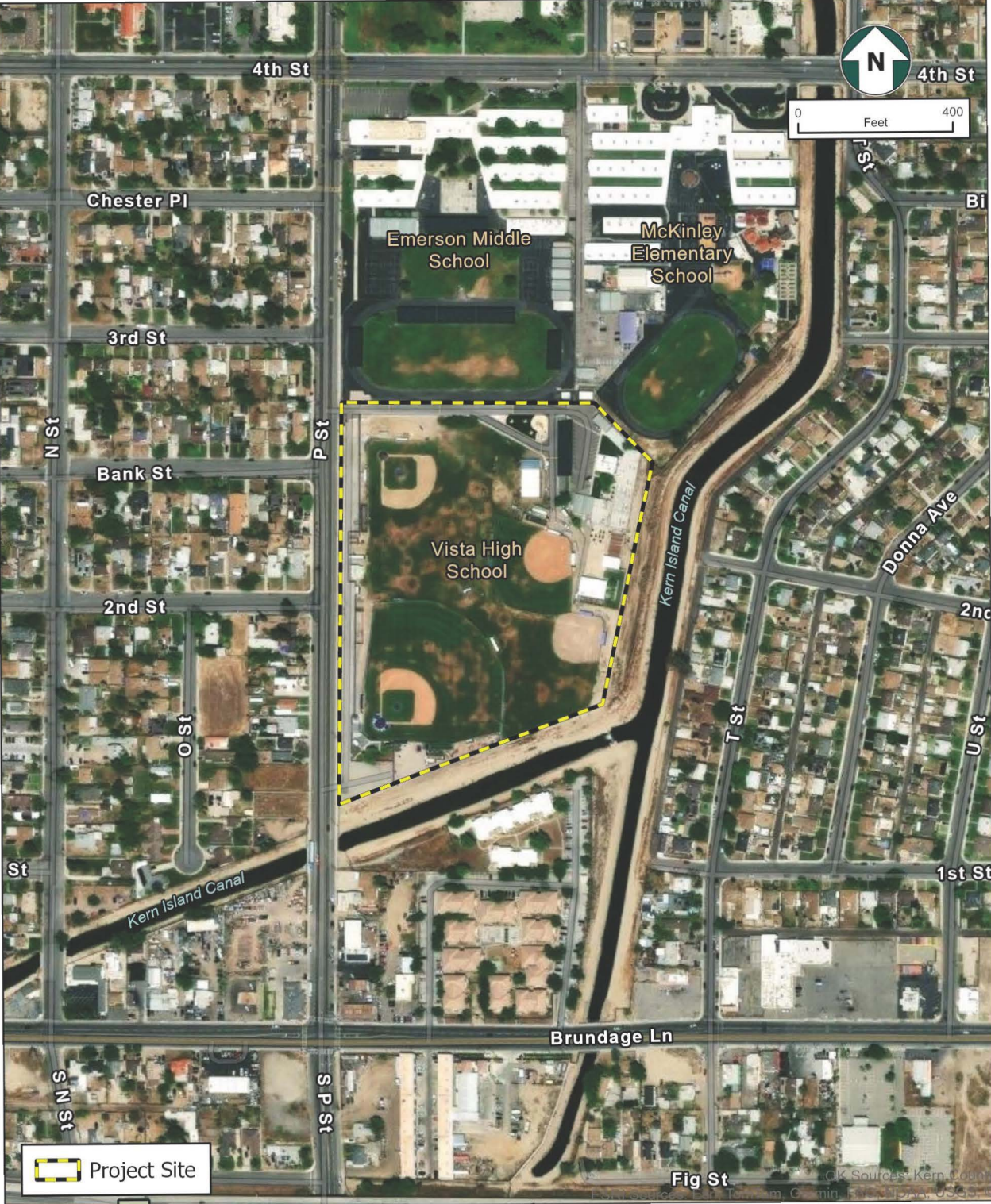
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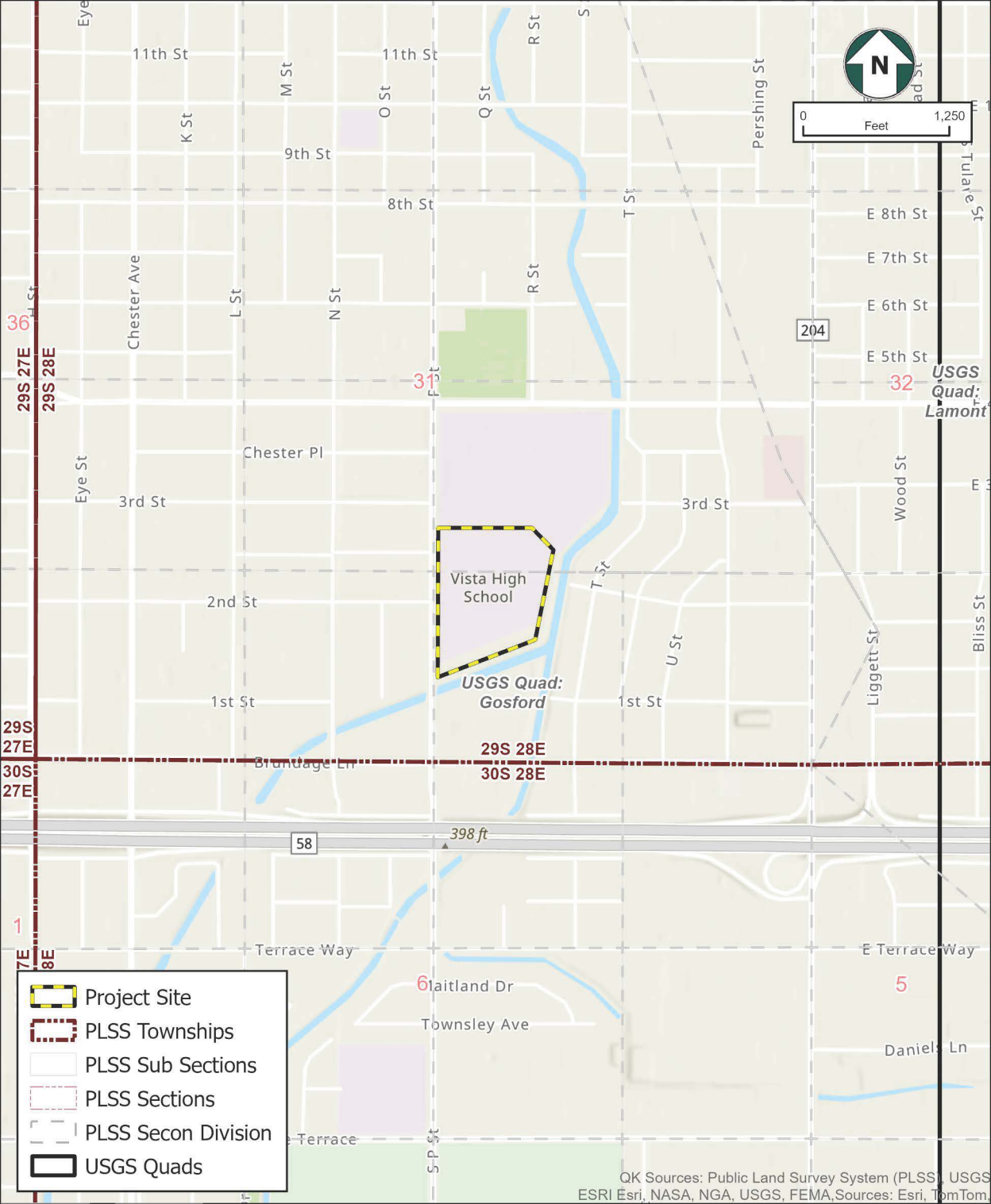
Wills, Carrie

2013 Cultural Resources Records Search and Site Visit Results for AT&T Mobility, LLC Candidate CLV0611 (Hunter Field), Adjacent to 720 Chester Avenue, Bakersfield, Kern County, California. Environmental Assessment Specialists (KE-04559)

Attachment A - Figures


Oregon
Medford
Shafter
Oildale
Rosedale
Greenacres
Bakersfield
Kern River
99
Greenfield
Lamont
0
Miles
6.5
Carson C
Sacramento
Eel
Sierra Nevada Mountains
San Joaquin Valley
Salinas
San Francisco
San Jose
Las Vegas
Mojave Desert
Los Angeles
San Diego
N
State County Boundaries
State Boundary
0
Miles
100
Sources: Esri World Topographic


N
0
400
Feet
4th St
Chester Pl
3rd St
N St
P St
Bank St
2nd St
O St
Emerson Middle School
McKinley Elementary School
Vista High School
Kern Island Canal
Donna Ave
T St
U St
1st St
Brundage Ln
S N St
S P St
Fig St
Project Site


N
0
1,250
Feet
11th St
K St
M St
O St
Q St
R St
9th St
8th St
T St
Pershing St
E 8th St
E 7th St
E 6th St
E 5th St
204
Chester Ave
L St
N St
36
31
32
29S 27E
29S 28E
USGS Quad: Lamont
Chester Pl
Eye St
3rd St
Wood St
Vista High School
2nd St
T St
U St
Liggett St
Bliss St
1st St
USGS Quad: Gosford
29S 27E
29S 28E
30S 27E
30S 28E
58
398 ft
1
Terrace Way
E Terrace Way
6
5
Townsley Ave
Project Site
PLSS Townships
PLSS Sub Sections
PLSS Sections
PLSS Secon Division
USGS Quads
QK Sources: Public Land Survey System (PLSS), USGS
ESRI Esri, NASA, NGA, USGS, FEMA,Sources: Esri, TomTom,


N
0
400
Feet
Project Site
QK Sources
ESRI Copyright:© 2013 National Geographic Society, i-cube

Attachment B -
AB 52 Letters
NAHC Response Letter

KERN HIGH SCHOOL DISTRICT

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5801 SUNDALE AVENUE • BAKERSFIELD • CALIFORNIA • 93309-2924 • (661) 827-3100 • FAX:(661) 827-3301

August 1, 2025

FROM: Kern High School District

RE: Tribal Cultural Resources under the California Environmental Quality Act, AB 52 (Gatto, 2014). A Formal Notification of a Decision to Undertake a Project and Notification of Consultation Opportunity, pursuant to Public Resources Code § 21080.3.1 (hereafter PRC).

Dear Tribal Representative:

The Kern High School District has decided to undertake the following project: to upgrade and reconfigure the existing Vista Continuation High School campus (Project). All proposed construction work will occur on previously disturbed ground within the footprint of the existing campus. Below please find a map showing the Regional Location Map (Figure 1) and Project Map (Figure 2).

Vista Continuation High School is currently addressed at 200 P Street, located south of 4th Street. The Project site is located within Section 31, Township 29 South, Range 28 East, Mount Diablo Base and Meridian (MDB&M), within the Gosford U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle. The site encompasses approximately 15.5-acre portion of Assessor's Parcel Numbers (APN) 010-110-03. The Project site is located east of P Street and north of the Kern Island Canal (Figure 1-2).

Pursuant to PRC § 21080.3.1 (b), you have 30 days from receipt of this letter to request consultation, in writing, with the Kern High School District.

Should you have any comments or questions please contact our designated representative, Jaymie L. Brauer at (661) 616-2600 or at jaymie.brauer@QKinc.com.

Very Respectfully,

Jaymie L. Brauer
Principal Planner

Enclosures: Figures 1 and 2



Figure 1 . Regional Location Map

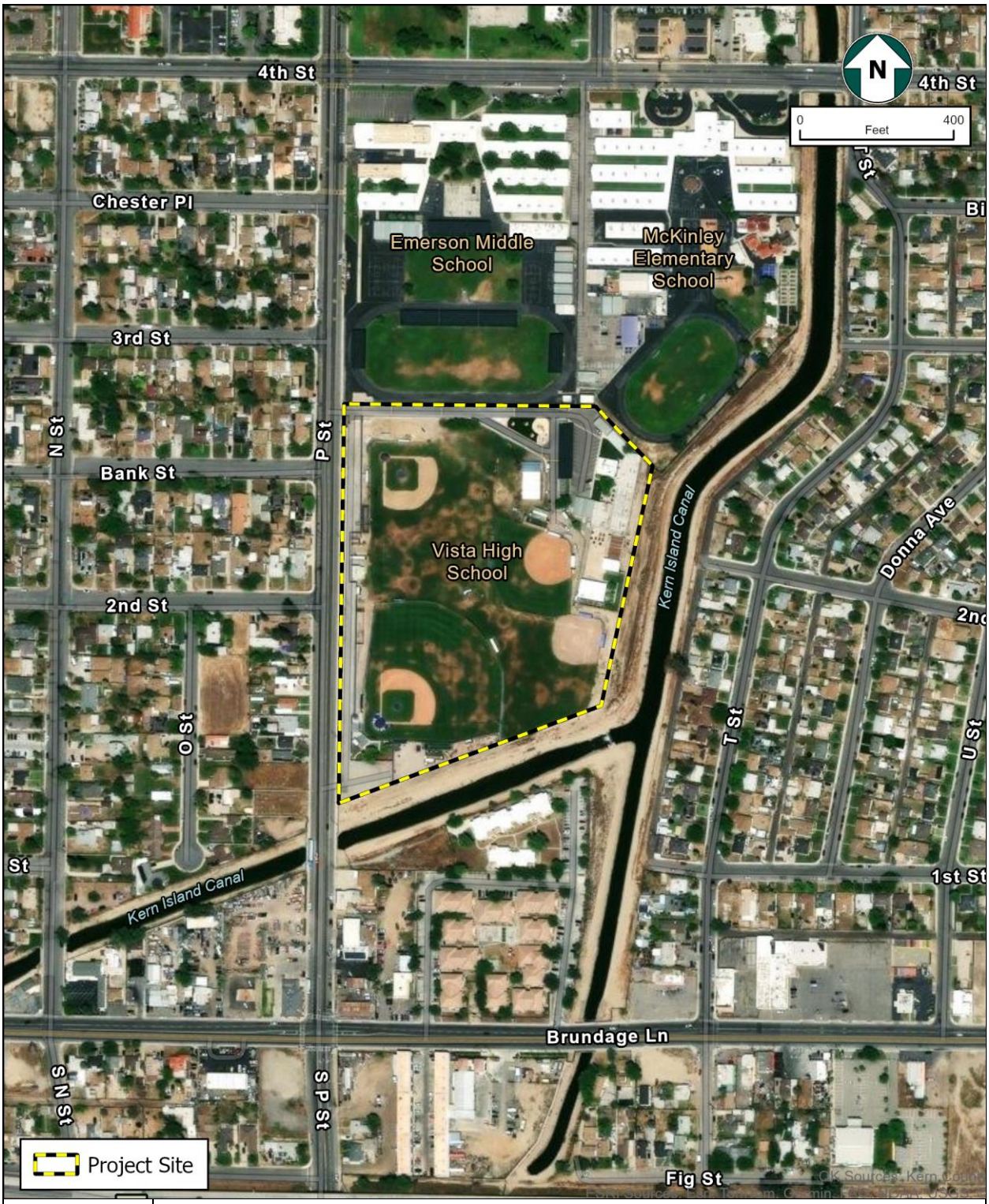


Figure 2
Project Map

Tribal Consultation – Vista Continuation High School Upgrades and Reconfiguration Project 8/1/25

Tribe	Contact	Comments
Kitanemuk & Yowlumne Tejon Indians	Delia Dominguez, Chairperson (626) 339-6785 2deedominguez@gmail.com	Emailed tribal consultation letter on 8/1/25 Left voicemail 8/21/25
Northern Chumash Tribal Council	Violet Walker, Chairperson (760) 549-3532 violetsagewalker@gmail.com	Emailed tribal consultation letter on 8/1/25 Called 8/21/25, voicemail box is full
Table Mountain Rancheria	Michelle Heredia-Cordova, Chairperson (559) 822-2587 mhcordova@tmr.org	Emailed tribal consultation letter on 8/1/25 Called 8/21/25, made contact with a staff member that asked that I forward the original email to her so she could bring it up to Michelle when she's in the office
Tejon Indian Tribe	Candice Garza, CRM Scheduler (661) 345-0632 cgarza@tejonindiantribe-nsn.gov	Emailed tribal consultation letter on 8/1/25 Left voicemail 8/21/25
Tejon Indian Tribe	Curtis Alcantar, Cultural and Natural Resource Manager (661) 699-5138 calcantar@tejonindiantribe-nsn.gov	Emailed tribal consultation letter on 8/1/25 Made contact with Curtis over phone 8/21/25, he asked whether there are any known sites there and I read the results of the Cultural Memo. He mentioned that the Tribe is aware that Ohlone people were in the area but he didn't have any evidence of this and said that Project could proceed.
Tule River Indian Tribe	Neil Peyron, Chairperson (559) 781-4271 neil.peyron@tulerivertribe-nsn.gov	Emailed tribal consultation letter on 8/1/25 Left voicemail 8/21/25

Fort Independence Indian Community of Paiute Indians of the Fort Independence Reservation, California	Carl Dahlberg, Chairperson (760) 878-5160 carl@forindependence.com	Emailed tribal consultation letter on 8/1/25 Left voicemail 8/21/25
Fort Independence Indian Community of Paiute Indians of the Fort Independence Reservation, California	Sean Scruggs, Interim THPO (702) 601-3163 Falconkeeper22@gmail.com	Emailed tribal consultation letter on 8/1/25 Left voicemail 8/21/25
Te-Moak Tribe of Western Shoshone Indians of Nevada (Four constituent bands: Battle Mountain Band; Elko Band; South Fork Band and Wells Band)	Danena Ike (775) 738-9251 Councilmember2@elkoband.org	Emailed tribal consultation letter on 8/1/25 Call could not be completed as dialed, possibly no longer a valid phone number 8/1/25

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(916) 373-3710
nahc@nahc.ca.gov

July 14, 2025

Jaymie Brauer
QK Inc.

Via Email to: jaymie.brauer@qkinc.com

Re: Native American Tribal Consultation, Pursuant to the Assembly Bill 52 (AB 52), Amendments to the California Environmental Quality Act (CEQA) (Chapter 532, Statutes of 2014), Public Resources Code Sections 5097.94 (m), 21073, 21074, 21080.3.1, 21080.3.2, 21082.3, 21083.09, 21084.2 and 21084.3, Vista High School Continuation (250128) Project, Kern County

To Whom It May Concern:

Pursuant to Public Resources Code section 21080.3.1 (c), attached is a consultation list of tribes that are traditionally and culturally affiliated with the geographic area of the above-listed project. Please note that the intent of the AB 52 amendments to CEQA is to avoid and/or mitigate impacts to tribal cultural resources, (Pub. Resources Code §21084.3 (a)) ("Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource.")

Public Resources Code sections 21080.3.1 and 21084.3(c) require CEQA lead agencies to consult with California Native American tribes that have requested notice from such agencies of proposed projects in the geographic area that are traditionally and culturally affiliated with the tribes on projects for which a Notice of Preparation or Notice of Negative Declaration or Mitigated Negative Declaration has been filed on or after July 1, 2015. Specifically, Public Resources Code section 21080.3.1 (d) provides:

Within 14 days of determining that an application for a project is complete or a decision by a public agency to undertake a project, the lead agency shall provide formal notification to the designated contact of, or a tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, which shall be accomplished by means of at least one written notification that includes a brief description of the proposed project and its location, the lead agency contact information, and a notification that the California Native American tribe has 30 days to request consultation pursuant to this section.

The AB 52 amendments to CEQA law does not preclude initiating consultation with the tribes that are culturally and traditionally affiliated within your jurisdiction prior to receiving requests for notification of projects in the tribe's areas of traditional and cultural affiliation. The Native American Heritage Commission (NAHC) recommends, but does not require, early consultation as a best practice to ensure that lead agencies receive sufficient information about cultural resources in a project area to avoid damaging effects to tribal cultural resources.

The NAHC also recommends, but does not require that agencies should also include with their notification letters, information regarding any cultural resources assessment that has been completed on the area of potential effect (APE), such as:

1. The results of any record search that may have been conducted at an Information Center of the California Historical Resources Information System (CHRIS), including, but not limited to:

- A listing of any and all known cultural resources that have already been recorded on or adjacent to the APE, such as known archaeological sites;
- Copies of any and all cultural resource records and study reports that may have been provided by the Information Center as part of the records search response;
- Whether the records search indicates a low, moderate, or high probability that unrecorded cultural resources are located in the APE; and
- If a survey is recommended by the Information Center to determine whether previously unrecorded cultural resources are present.

2. The results of any archaeological inventory survey that was conducted, including:

- Any report that may contain site forms, site significance, and suggested mitigation measures.

  All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum, and not be made available for public disclosure in accordance with Government Code section 6254.10.

3. The result of the Sacred Lands File (SLF) check conducted through the Native American Heritage Commission was negative.

4. Any ethnographic studies conducted for any area including all or part of the APE; and

5. Any geotechnical reports regarding all or part of the APE.

Lead agencies should be aware that records maintained by the NAHC and CHRIS are not exhaustive and a negative response to these searches does not preclude the existence of a tribal cultural resource. A tribe may be the only source of information regarding the existence of a tribal cultural resource.

This information will aid tribes in determining whether to request formal consultation. In the event that they do, having the information beforehand will help to facilitate the consultation process.

If you receive notification of change of addresses and phone numbers from tribes, please notify the NAHC. With your assistance, we can assure that our consultation list remains current.

If you have any questions, please contact me at my email address: Mathew.Lin@nahc.ca.gov

Sincerely,

Mathew Lin

Mathew Lin, MPP
Cultural Resources Analyst

Attachment

SOILS ENGINEERING, INC.

GEOTECHNICAL INVESTIGATION

FOR THE

VISTA CONTINUATION HIGH SCHOOL

35.357194, -119.010650 | 200 P STREET

BAKERSFIELD, KERN COUNTY, CA

Prepared for:

Kern High School District
801 So. Mt. Vernon Avenue
Bakersfield CA 93307

By:

SOILS ENGINEERING, INC.
SEI File 25-20342
July 14, 2025



On Man Lau, P.E., G.E.
Engineering Manager

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GEOTECHNICAL INVESTIGATION

FOR THE

VISTA CONTINUATION HIGH SCHOOL

35.357194, -119.010650 | 200 P STREET

BAKERSFIELD, KERN COUNTY, CA

SOILS ENGINEERING, INC.
SEI File No. 25-20342
July 14, 2025

INTRODUCTION

At your request, Soils Engineering, Inc. has prepared this Geotechnical Investigation for the subject site. This report includes recommendations for the site preparation and grading and for foundation design.

Appendix A, "Guide Specifications for Earthwork," is provided as supplement to the "Earthwork Recommendations" section of this report.

Appendix B, "Field Investigation", contains a boring location map, Figure 1, and Logs of Test Borings, Figures 2 through 14.

Appendix C, "Soils Test Data," contains tabulations of laboratory test data.

Appendix D, "Seismic Investigation & Geological Hazard Study," contains information provided by EQFAULT, and the USGS and Liquefypro.

We hope this provides the information you require. If you have any questions regarding the contents of our report, or if we can be of further assistance, please contact us.

Respectfully submitted,
SOILS ENGINEERING, INC.

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SITE INFORMATION

A. SITE LOCATION AND CONDITIONS

The Vista Continuation High School project is located at 200 P Street in Bakersfield, CA (site). The subject site is an active high school with campus buildings on the northeast portion of the site, softball and baseball fields on the southern and western portion of the site, paved driveways along the northern border of the site, and paved parking with a solar canopy directly adjacent to the west of the campus buildings. The main improvements for the project site are to construct multiple buildings (administration building, multi-purpose building, gym, classrooms, concessions/restroom building) totaling 47,000 SF, new parking lots, parent drop-off area, bus drop-off area, sport courts, utilities, drainage sump, and a baseball field and two softball fields with associated infrastructure. We anticipate the proposed buildings will be constructed of a combination of concrete, wood, masonry and/or metal framing. It is assumed that the parking and/or drive aisles will be made up of aggregate base and hot mix asphalt.

The project site area is bordered P Street to the west, Emerson Middle School to the north, McKinley Elementary School to the northeast, and the Kern Island Canal to the east and south.

The project area surfaces appear to mainly consists of grass, concrete, and asphaltic concrete surfaces where there is no existing buildings. The site is relatively planar.

B. GEOLOGIC SETTING

According to the California Department of Conservation's Geologic Atlas of California, Bakersfield Sheet, and the 2010 Geologic Map of California, the project site is situated on Pleistocene-Holocene marine and nonmarine (continental) sedimentary rocks (Q). Based on the California Department of Conservation's Geological Survey maps, the site is not located in an Alquist-Priolo (earthquake fault) Special Study Zone. Nearby active earthquake faults include the following:

Kern Front	5.6	miles/	9.0	kilometers
White Wolf	15.5	miles/	25.0	kilometers
Pleito Thrust	24.3	miles/	39.1	kilometers
Garlock (West)	35.2	miles/	56.6	kilometers
San Andreas – Whole M-1a and other segments	35.7	miles/	57.4	kilometers
Big Pine	37.0	miles/	59.6	kilometers
San Gabriel	45.1	miles/	72.6	kilometers
San Andreas – Cholame M-1c-1	48.3	miles/	77.7	kilometers

Major fault systems and their distances from the site are given in the EQFault Summary attached in Appendix D, Geologic Hazard Study. The largest estimated peak site acceleration, based on deterministic methods, is 0.3146-g from a magnitude 6.3 earthquake on the Kern Front fault located approximately 5.6 miles from the site.

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C. SUBSURFACE CONDITIONS

Surface soils encountered in our field investigation consisted predominately of upper layers of loose to medium dense Silty Sands (SM), and Poorly Graded Sands (SP) and soft to stiff Sandy Silts in the upper 18' below the ground surface (bgs). From approximately 18' to 51.5' bgs, alternating soil layers of medium dense to dense Silty Sands (SM), Poorly Graded Sands (SP), and Poorly Graded Sands with low fine content were encountered with occasional very stiff Sandy Silt (ML) and Clayey Sand (SC) soil layers present. Groundwater was encountered in B-1 at the approximate depth of 41' bgs. These soils are classified as SM, SP, SP-SM, ML and SC, respectively in the Unified Soil Classification System (USCS).

Testing performed in our laboratory showed Expansion Index (EI) of 0, which indicates very low potential expansion. Expansive soils are defined in the 2022 California Building Code (CBC), Section 1803A.5.3. Soils are considered to be expansive when the EI result is greater than 20, per ASTM D4829, Expansion Index of Soils. Design of foundations for structures shall be designed in accordance with the 2022 CBC, Sections 1808A.6.1, & 1808A.6.2.

Detailed descriptions of the various soils encountered during our field investigation are shown on Figures 2 through 14 in Appendix B, "Field Investigation." A "Key to Symbols" legend describing the symbols in the boring logs is also attached.

D. GROUNDWATER

Groundwater was encountered in the soil boring B-1 at the approximate depth of 41' bgs. The SGMA Data Viewer presenting California Department of Water Resources data indicates a depth to water of 170 bgs in the Spring of 2012 and 239' bgs in the Spring of 2024.

E. DRAINAGE BASIN STUDY

Boring B-3 was drilled to a maximum depth of 31.5 feet below existing ground surface in the proposed basin area. Cohesionless sandy material was encountered at the invert level (see Figure 4 in Appendix B) consisting of Silty Sand and Poorly-Graded Sand, classified as SM and SP, respectively, in the Unified Soils Classification System (USCS).

Based on our field investigation, it is our engineering opinion that the majority of the sump area can be expected to have permeable subsurface soils (See Percolation Test Data Log, Table 1, shown at the end of Appendix B) as shown on the boring logs, attached. Accordingly, the proposed sump shall drain in seven days or less.

To maintain an adequate absorption rate, a maintenance program will be required. Annual maintenance should include annual removal of sediment collected at the bottom of the sump. Vegetation within the basin should be stripped or removed.

If impermeable cohesive soil layers are encountered during the sump construction, these materials shall be excavated and replaced with clean cohesionless sand. Our field representative will review the construction process of the proposed sump. A letter can be issued stating compliance with these requirements when the construction of the sump is completed.

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F. SEISMIC DESIGN VALUES

The seismic design values presented in the table below are based on the 2022 CBC. The Site Class for the proposed project is a Site Class "D" in accordance with the 2022 CBC §1613.2.2, soil boring data and local knowledge. The site is not located within an Alquist-Priolo (earthquake fault) Special Study Zone.

SEISMIC DESIGN CRITERIA		VALUE	SOURCE
Risk Category		**III**	2022 CBC Table 1604.5 or 1604*A*.5
Site Class		**D**	2022 CBC § 1613.2.2 or 1613*A*.2.2; ASCE 7-16 Table. 20.3-1; Site Specific Soils Report
Mapped MCE_R Spectral Response Acceleration, short period	**S_S**	**0.941g**	SEAOC-OSHPD software; 2022 CBC Figure 1613.2.1(1)
Mapped MCE_R Spectral Response Acceleration, at 1-sec. Period	**S_1**	**0.34g**	SEAOC-OSHPD software; 2022 CBC Figure 1613.2.1(2)
Site Coefficient	**F_a**	**1.124**	SEAOC- OSHPD software; 2022 CBC Table 1613.2.3(1) or 1613*A*.2.3(1)
Site Coefficient	**F_v***	**1.96***	2022 CBC Table 1613.2.3(2) or 1613*A*.2.3(2)
Adjusted MCE_R Spectral Response Acceleration, short period, F_a * S_s	**S_{MS}**	**1.057g**	SEAOC- OSHPD software; 2022 CBC § 1613.2.3 or 1613*A*.2.3
Adjusted MCE_R Spectral Response Acceleration, 1-sec. period, F_v * S_1* * 1.5	**S_{M1}***	**1.000g***	2022 CBC § 1613.2.3 or 1613*A*.2.3, ASCE 7-16, Supplement 3, § 11.4.8
Design Spectral Response Acceleration, short period, 2/3 * S_{MS}	**S_{DS}**	**0.705g**	SEAOC- OSHPD software; 2022 CBC § 1613.2.4 or 1613*A*.2.4
Design Spectral Response Acceleration, 1-sec. period, 2/3 * S_{MI}	**S_{D1}***	**0.666g***	2022 CBC § 1613.2.4 or 1613*A*.2.4
Peak Ground Acceleration for Max. Considered Earthquake (MCE_G)	**PGA**	**0.408g**	SEAOC- OSHPD software; ASCE 7-16 Fig 22-9
Site Coefficient, F_{PGA} = 1.192, F_{PGA}* PGA	**PGA_M**	**0.486g**	SEAOC- OSHPD software; ASCE 7-16 § 11.8.3.2
Seismic Design Category, short period		**D**	2022 CBC § 1613.2.5
Seismic Design Category, 1second period *		**D***	2022 CBC § 1613.2.5
*See requirements for site-specific ground motions in Section 11.4.8. The values tabulated above for SM1, SD1, and the Seismic Design Category/1-second period are based on the site coefficient, Fv, interpolated from 2022 CBC Table 1613.2.3(2) or 1613A.2.3(2) and Supplement 3, § 11.4.8.			
MCE_R = Maximum Considered Earthquake (risk targeted) MCE_G = Maximum Considered Earthquake (geometric mean)			

G. LIQUEFACTION & SEISMIC SETTLEMENT

Shallow groundwater was encountered at the depth of 41’ bgs in one soil boring (B-1) which could be perched water. Based on current and historical information acquired from the Kern County Water Agency and DWR water well data presented on the SGMA Data Viewer, the highest depth to water is 16’ in 1941 and 1946 in two wells approximately 0.44-miles and 0.74-miles northwest of the site (see Attachment B for a Historical Depth to Water Map). Blowcounts in the two (2) soil borings ranged from 3.36 to 39 blow counts per foot to a depth of 51.5’, indicating loose to dense

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material. The lithology encountered in the subsurface includes silty sand, poorly graded sand, poorly graded sand with low fine content and sandy silt layers in the borings. A liquefaction analysis was performed on the boring B-1 and B-2 utilizing the program LiquefyPro (version 5.10). Site-specific information was used in this analysis including; SPT blow counts per foot, grain-size analysis, wet weight densities, the moment magnitude earthquake and the PGAm for the MCEg earthquake motion (0.486g) and a very conservative depth to water of 16'. The liquefaction potential at this site appears to be low in both B-1 and B-2 with only a very thin liquefiable zone at 16' to 18' based on groundwater being at a very conservative depth of 16'. See attached LiquefyPro data in Appendix D, Geological Hazard Study for more detail.

Settlement

The estimated amount of dynamic settlement that would occur at this site during a major earthquake is approximately 1.89" (B-2) to 2.3" (B-1) based on the lithology encountered, the SPT blowcounts recorded during sampling and the settlement analysis conducted on boring B-1 and B-2 utilizing the program LiquefyPro. The estimated amount of differential settlement is 0.41" over a span of 335 feet between borings B-1 and B-2 according to the program LiquefyPro results. These settlement values appear to be acceptable for the proposed development as long as the over-excavation and replacement with engineered fill recommended by the Geotechnical Engineer is implemented. See attached Liquefaction Analysis Calculation Sheets and graphs in Appendix D, Geological Hazard Study for more detail.

EARTHWORK RECOMMENDATIONS

"Earthwork Specifications," in Appendix A are provided for general guidance in preparing site grading plans. In addition, the following specific recommendations are provided and supersede the latter wherever discrepancies may exist:

A. COMPACTION AND OPTIMUM MOISTURE

Unless otherwise specified herein, the terms, "Compaction," or "Compacted," wherever used or implied within this report should be interpreted as compaction to 90 percent of the maximum density obtainable by ASTM Test Method D1557. The term, "Optimum Moisture," wherever used or implied within this report, should be interpreted as that obtained by the above-described test method.

B. STRIPPING

Prior to soil compaction, existing ground surfaces should be stripped of surface vegetation. A stripping depth of one inch should be adequate. In no instance should stripped material be used in engineered fill or blended with and compacted in original ground.

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C. GROUND SURFACE PREPARATION

Proposed Structure Areas:

1. Excavate earth material in the proposed structure area to a minimum depth of five (5) feet below existing grade or two (2) feet below bottom of foundations, whichever is deeper.

2. The bottom of the excavation shall be reviewed by the soil engineer or his representative prior to any backfill operations. *The top eight inches of materials exposed at the bottom of the excavation shall be scarified and compacted to a minimum of 90 percent of ASTM D-1557.*

3. Moisten soils to near the optimum moisture or to a moisture consistent with effective compaction and soil stability. Compact moistened soils to a minimum of 90 percent of the maximum density obtained by ASTM Test Method D1557.

4. Work to lines at least five (5) feet beyond the outside edges of exterior footings. Where excavation may undermine or damage adjacent structures or utilities the geotechnical engineer shall be consulted.

Proposed CMU Trash Enclosure and Screen Wall:

1. Excavate earth material in the proposed structure area to a minimum depth of one (1) foot below existing grade or one (1) foot below bottom of foundations, whichever is deeper.

2. The bottom of the excavation shall be reviewed by the soil engineer or his representative prior to any backfill operations. *The top eight inches of materials exposed at the bottom of the excavation shall be scarified and compacted to a minimum of 90 percent of ASTM D-1557.*

3. Moisten soils to near the optimum moisture or to a moisture consistent with effective compaction and soil stability. Compact moistened soils to a minimum of 90 percent of the maximum density obtained by ASTM Test Method D1557.

4. Work to lines at least two (2) feet beyond the outside edges of exterior.

Review of Excavation Bottoms:

Prior to placement of backfill, excavation bottoms shall be reviewed for indications of loose-fill, discoloration, or loose, compressible, native materials. Where these are encountered, they should be excavated and removed, or excavated and compacted as directed by the geotechnical engineer. Fill placement in excavations shall not proceed until the geotechnical engineer or his representative on the site has reviewed, tested as described above and accepted materials exposed at the bottom of the excavation.

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Pavement Areas:

Ground surfaces to receive concrete driveway and bituminous pavements should be scarified and compacted to a minimum depth of 12 inches below the grading plane in cut areas or to 12 inches in areas to receive fill. Engineered fill placed in proposed pavement areas should conform to the requirements of section 5.4, "Placing, Spreading and Compacting Fill Materials," of Appendix A.

Compaction in proposed pavement areas should be a minimum of 90 percent of the maximum density as obtained to ASTM Test Method D1557, and should extend to a minimum of two feet beyond the outside edges of pavements.

Utility Lines:

Backfill for utility lines traversing areas proposed for facilities, pavements, concrete slabs-on-grade, or areas to receive engineered fill for future construction should be compacted in accordance with the same requirements for adjacent and/or overlying fill materials.

Compaction should include haunch area, spring line and from top of pipe to finished subgrade. The haunch area up to one foot above the top of the pipe should be backfilled with "cohesionless" material.

Cohesionless native materials may be used for trench and pipe or conduit backfill. The term "cohesionless," as used herein, is defined as material which, when dry, will flow readily in the haunch areas of the pipe trench.

Pipe backfill materials should not contain rocks larger than two inches in maximum dimension. Where adjacent native materials exposed on the trench bottoms contain protruding rock fragments larger than two inches in maximum dimension, conduits and pipelines should be laid on a bedding consisting of clean, cohesionless sand (SP), in the Unified Soils Classification System.

Compaction Requirements – where not otherwise specified in our plans or in these recommendations, the following compaction requirements are applicable to all electrical, gas or water conduits:

TABLE A
COMPACTION REQUIREMENTS BY DEPTH

Area	Haunch to 1 ft. Above Top of Pipe	1 ft. Above Top of Pipe to 2.5 ft. Below Finished Grade	2.5 ft. Below Finished Grade to Finished Subgrade
Structures	90%	90%	90%
Pavements	90%	90%	90%
Non-Structural	90%	90%	90%

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D. ENGINEERED FILL

Earth materials obtained on-site are acceptable for use as engineered fill provided that all grasses, weeds and other deleterious debris are first removed. Engineered fill materials should be placed in thin layers (less than ten inches uncompacted thickness), brought to near the optimum moisture content or to a moisture content commensurate with effective compaction and soil stability, and compacted to a minimum of 90 percent of the maximum density obtainable by ASTM Test Method D1557, "Placing, Spreading and Compacting Fill Materials," in Appendix A.

E. IMPORTED FILL

The table shown below provides general guidelines for acceptance of import engineered fill. Materials of equal or better quality than on-site material could be reviewed by the Geotechnical Engineer on a case-by-case basis. No soil materials shall be imported onto the project site without prior approval by the Geotechnical Engineer. Any deviation from the specifications given below shall be approved by the Geotechnical Engineer prior to import operations.

MAXIMUM PERCENT PASSING #200 SIEVE	40
MAXIMUM PERCENT RETAINED 3" SIEVE	0
MAXIMUM PERCENT RETAINED 1½" SIEVE *FOR BUILDING AREAS.*	15
MAXIMUM PERCENT RETAINED ¾" SIEVE FOR LANDSCAPE AREAS	5
MAXIMUM LIQUID LIMIT	40
MAXIMUM PLASTICITY INDEX	14
MINIMUM R-VALUE FOR PAVEMENT AREAS	50
MAXIMUM EXPANSION INDEX	20

Furthermore, the soils proposed for import shall be generally homogenous and shall not contain cemented or clayey and/or silty lumps larger than one inch. When such lumps are present, they shall not represent more than ten percent (10%) of the material by dry weight.

Where a proposed import source contains obviously variable soils, such as clay and/or silt layers, the soils which do not meet the above requirements shall be segregated and not used for this project or the various layers shall be thoroughly mixed prior to acceptance testing by the Geotechnical Engineer. The contractor shall provide sufficient advance notice, prior to import operations, to allow testing and evaluation of the proposed import materials. Because of the time needed to perform the above tests, the contractor shall provide a means by which the Geotechnical Engineer or others can verify that the soil(s) which was sampled and tested is the same soil(s) which is being imported to the project.

F. DRAINAGE

Finished ground grades adjacent to the proposed structures should be sloped to provide positive free drainage away from the foundations. No areas should be constructed that would allow drainage generated on the site, or water impinging upon the site from outside sources, to pond near footings and slabs or behind curbs.

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Where ground surfaces adjacent to subsurface walls are to be landscaped, walls should be waterproofed. Installation of gravel-filled drains to route subsurface drainage away from walls will reduce the thickness of damp-proofing resulting in considerable savings.

G. SLOPES

Both fill and cut slopes should be constructed at 2:1 (horizontal to vertical) in accordance with the 2022 California Building Code.

Finished slopes nearer than five feet from building foundations should be graded no steeper than five horizontal to one vertical (5:1). A slope ratio of two horizontal to one vertical (2:1) should provide adequate stability for slopes farther than five feet from footing lines.

The fill slopes shall be compacted to a minimum of 90% of ASTM D1557 and in accordance with the Guide Specifications for Earthwork, Appendix A. This may be achieved by overfilling the constructed slope and trimming to a compacted finished surface, rolling the slope face with a sheepsfoot as the level of the fill is raised, or any method that achieves the desired product.

The cut portion of the slope should be constructed first. Prior to construction of the fill slope, incompetent surface soils should be removed from the top of the cut.

Areas to receive fill or to support structures, slabs or pavements should be removed of all vegetation, debris and disturbed soils. All existing uncertified fill soils should be excavated to expose competent native soils.

Existing underground pipelines, private sewage disposal systems and any water or oil wells, if encountered during grading, should be removed or capped in accordance with procedures considered acceptable by the appropriate governing agency. Tree roots to 2 inches in diameter should be removed.

Both fill and cut slopes will be subject to erosion immediately after grading and should be designed to reduce surficial sloughing by implementing a permanent slope maintenance program as soon as practical after completion of slope construction.

Slope maintenance should include proper care of erosion and drainage control devices, rodent control, and immediate planting with deep-rooting, lightweight, drought-resistant vegetation. An erosion control geotextile may also be used in combination with vegetation to control erosion. Experience has shown that slope performance is largely dependent upon proper slope maintenance (i.e., planting, proper watering, clearing of drainage devices, etc.). Slopes properly placed and conscientiously maintained are not expected to display excessive raveling or sloughing.

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FOUNDATIONS RECOMMENDATIONS

Spread Footings – The proposed foundation could be supported on continuous spread footings in accordance with the following Table B:

TABLE B
FOUNDATION DESIGN CRITERIA

Footing Type	Minimum Width (ft.)	Minimum Depth Below Lowest Adjacent Subgrade (ft.)	Maximum Allowable Soil Bearing Pressure (lbs. / sq. ft.)
Continuous	1	1	2500
Isolated	1	1	2500

Bearing pressures given are for the minimum widths and depths shown above.

Bearing pressures given above are for dead and sustained (loads acting most of the time) live loads; they may be increased by one-third for wind and/or seismic loading conditions.

The proposed foundations shall be reinforced in accordance with the structural engineer's recommendations.

Settlement:

Provided maximum allowable soil bearing pressures given above are not exceeded, total settlement should not exceed one inch. A major portion, two-thirds to one-half, of total settlement should occur before the end of construction. Differential settlements should occur before the end of construction. Differential settlements should, accordingly, be less than one-half of an inch for a horizontal span of twenty feet.

MODULUS OF SUBGRADE REACTION

Modulus of subgrade reaction for use in design of foundations is based on ranges of values for soil types provided by Foundation Analysis and Design by Joseph E Bowles.[1] Equation 1 should be used for footings on sandy soils.

Foundations on clay soils should employ Equation 2. Equation 3 is for rectangular footings having dimensions w= **b** (width) and l = **mb** (length) the variable "m" being the ratio of the length to the width of the foundation**.** **K_s1** is the modulus of subgrade reaction from the source referenced above based on a 1 foot x 1 foot square plate. For general guidance K_s1 of 150 kcf may be used for the subsurface soils.

[1] Bowles, Joseph E; FOUNDATION ANALYSIS AND DESIGN; McGraw-Hill Book Company (1977); Table 9-1 pg 269

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Equation (1) $k_{sf} = K_{s1} \times \left(\frac{B+1}{2B}\right)^2$

Equation (2) $k_{sf} = K_{s1} \times B$

Equation (3) $k_{sf} = K_{s1} \times \frac{m+.5}{1.5 \times m}$

Values given above should be used for guidance. Local values may be higher or lower and should be based on results of in-situ plate bearing tests performed in accordance with ASTM Test Method D1194.

LATERAL EARTH PRESSURES

Lateral earth pressures and friction coefficients for determining the passive lateral resistance of foundations against lateral movement and the active lateral forces against retaining walls and subsurface walls, expressed as equivalent fluid pressures, are given below in Table C. Lateral earth pressures were computed assuming that backfill materials are essentially free draining and level; and that no surcharge loads or sloping backfills are present within a distance from the wall equal to or less than the height (H)* of the wall.

(H)* = the height of backfill above the lowest adjacent ground surface.

TABLE C
LATERAL EARTH PRESSURE

Case	Lateral Earth Pressures
Active	38 P.C.F.
Passive	400 P.C.F.
At-Rest	50 P.C.F.

Active Case: Active lateral earth pressures should be used when computing forces against free standing retaining walls, unrestrained at the tops. Active pressures should not be used where tilting outward of the walls is greater than .002H would not be desirable.

Passive Case: Passive lateral earth pressures should be used when computing the lateral resistance provided by undisturbed or compacted native soils against the movement of footing. When computing passive resistance, the upper one foot of embedment depth should be discounted.

At-Rest Case: At-rest pressures should be used for subsurface walls restrained at their tops by floor diaphragms or tie-backs and for retaining walls where tilting outward greater than .002 H would not be desirable.

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Frictional Resistance: A friction coefficient of **0.42** may be used when computing the frictional resistance to sliding of footings, grade beams, and slabs-on-grade. Frictional resistance and passive lateral soil resistance may be combined without reduction.

SLABS-ON-GROUND

Slabs-on-grade can be adequately supported by compacted native soils or by compacted import materials of equal or superior quality.

We recommend that moisture protection be provided for interior concrete slabs-on-ground that will receive moisture-sensitive floor coverings, or where moisture-sensitive equipment, products, or environments may be present. For exceptions to slab moisture protection, refer to the 2022 California Building Code, Section 1907.1. The project designer should provide specific details regarding construction of the concrete slab-on-ground, including the moisture barrier or vapor retarder/barrier, capillary break (if included), and blotter material (if included). The American Concrete Institute recommends a minimum moisture vapor retarder of 10 mil thick polyethylene. The vapor retarder should be protected from damage. Punctures and tears should be repaired prior to concrete placement.

It has been common local practice to use a sandy material as a blotter layer between the moisture barrier and the concrete to absorb some of the bleed water and to potentially reduce slab curling. However, a blotter layer may act as a moisture reservoir and all apparent advantages of its use are then negated. Therefore, it should not be incorporated into the section design for moisture-sensitive slabs if it cannot be kept dry prior to concrete placement or if water may migrate into the layer after slab construction (eg. wet curing, rainfall). If the slab-on-ground section is to include a blotter layer between the moisture barrier and the concrete, it is our recommendation that the blotter material consist of crusher fines (rock dust) or sand with angular, interlocking grains. The material should be easily compacted and should be screened so that 100% of the material is finer than ¼". Do not use blotter material which may be potentially reactive with the alkalis in the concrete or which has high sulfate content. At the time of concrete placement, the blotter material should be dry to damp, compact, and smooth. For slabs which are to be water-cured, a blotter layer should not be used. For further consideration, refer to the American Concrete Institute *Manual of Concrete Practice 302.1R and 360.*

Slab thicknesses, reinforcing, and the concrete characteristics should be in accordance with the project designer's recommendations. The 2022 California Building Code, Section 1907.1 requires that the slab thickness be not less than 3½". Pressurized water lines should not be placed beneath slabs.

Porosity is directly related to the amount of extra water added to the concrete mix of the slab when it was created. The extra water creates permanent space in the slab. Once it is evacuated, that space remains moist and easily passes vapor through it. Creating a slab with the lowest possible permeability starts with keeping a low water/cement ratio.

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SOIL CORROSIVITY

Soluble Sulfates (SO_4)

The highest Sulfate (SO_4) concentration measured was 180 ppm.

Based on Table 19.3.1.1 "Exposure categories and classes" of ACI 318-14 "Building Code Requirements for Structural Concrete" the soil exposure is classified as S1. Per Table 19.3.2.1 "Requirement for Concrete by Exposure Class" of the same reference, Type II cement should be used.

Chlorides (Cl)

The highest Chloride (Cl) concentration measured was 390 ppm. Generally, chloride concentrations greater than 500 ppm are considered to be corrosive to foundation elements. (Ref: Caltrans Corrosion Guidelines / Version 1.0)

pH

The soil pH results were measured between 7.83 and 8.61. Generally, a pH level less than 5.5 are considered to be corrosive to foundation elements. (Ref: Caltrans Corrosion Guidelines / Version 1.0)

Although preliminary test results indicate that soil corrosivity at the locations and depths tested is low to negligible, if the site grading operations will result in a blend of native and/or imported materials at finished subgrade elevations, additional tests should be performed after rough grading has been completed and prior to concrete and/or mechanical design.

The authors of this report are not experts in the field of soil corrosivity. Should detailed analysis of soil corrosivity be required, it is our recommendation to contract a corrosion engineer.

PAVEMENT FIELD INVESTIGATION & DESIGN DATA

A total of six (6) borings were drilled to a maximum depth of five (5) feet below existing grade. Bore locations are shown on the attached Boring Location Map, Figure 1.

Hot Mix Asphalt (HMA) pavement shall be designed based on the Resistant (R) Value of 50. The results ranged from 34 through 66 according to our testing program. The laboratory test reports are provided as Figures D-1 through D-6.

HMA Pavement Sections:

TI of 5	3.0 inches of AC and 5.0 inches of AB
TI of 6	3.5 inches of AC and 5.0 inches of AB
TI of 7	4.0 inches of AC and 5.0 inches of AB
TI of 8	5.0 inches of AC and 6.0 inches of AB
TI of 9	5.5 inches of AC and 7.0 inches of AB

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HMA design should meet the requirements of the 2010 or newer, State of California, Standard Specifications Manual (SSM), Section 39. Aggregate Base should also meet the Class 2 requirements of the SSM, Section 26.

Ground surfaces to receive HMA pavement should be scarified and compacted to a minimum depth of 12 inches below the grading plane in cut areas or to 12 inches in areas to receive fill. Engineered fill placed in proposed pavement areas should conform to the requirements of section 5.4, “Placing, Spreading and Compacting Fill Materials,” of Appendix A.

Compaction in proposed pavement areas should be a minimum of 90 percent of the maximum density as obtained to ASTM Test Method D1557 and should extend to a minimum of two feet beyond the outside edges of pavements.

These recommendations are valid only if the pavement is properly drained and shoulder areas are graded to prevent water ponding at pavement edges. All construction should be subject to adequate tests and observations to verify conformance with these recommendations.

LIMITATIONS, OBSERVATION AND TESTING

Conclusions and recommendations in this report are given for the Vista Continuation High School located at 35.357194, -119.010650 | 200 P Street, Bakersfield, Kern County, California and are based on the following:

a. The information retrieved from thirteen (13) exploratory boring drilled at the subject site to a maximum depth of 51.5 feet below the existing ground surface.

b. Our laboratory testing program results.
c. Our engineering analysis based on the information defined in this report.

d. Our experience in the Kern County area.

Variations in soil type, strength and consistency may exist between specific boring locations. These variations may not become evident until after the start of construction. If such variations appear, a re-evaluation of the soils test data and recommendations may be necessary. Unless a Geotechnical Engineer of this firm is afforded the opportunity to review plans and specifications, we accept no responsibility for compliance with design concepts or interpretations made by others with regard to foundation support, fill selection, fill placement or other recommendations presented in this report.

Changes in conditions of the subject property can occur with time because of natural processes or the works of man on the subject site or on adjacent properties. Changes in applicable engineering and construction standards can also occur as the result of legislation or from the broadening of knowledge. Accordingly, the finding of this report may be invalidated, wholly or in part, by changes beyond our control. Therefore, this report is subject to review and should not be relied upon without review after a period of two years or after any modifications to the site.

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REVIEW OF EARTHWORK OPERATIONS

Review of earthwork operations relating to site clearing, ground stabilization, placement and compaction of fill materials, and finished grading is critical to the structural integrity of building foundation and floor systems.

While the preliminary Geotechnical investigation and report provide guidelines which are used by the design team, i.e., architects, grading engineers, structural engineers, landscape engineers, etc., in completing their respective tasks, review of plans and site review and testing during earthwork operations are vital adjuncts to the completion of the Geotechnical engineer's tasks. The most prevalent cause of failure of a structure foundation system is lack of adequate review and testing during the earthwork phase of the project. Projects rarely reach completion without some alteration being required such as may result from a change in subsurface conditions, an amendment in the size and scope of the project, a revision of the grading plans or a variation in structural details. Occasionally, even minor changes can significantly affect the performance of foundations. The most prevalent secondary cause for foundation failure is inadequate implementation of Geotechnical recommendations during the formulation of foundation designs and grading plans. The error in a foundation design or an omission of a key element from a grading plan occurs most often as a result of inadequate communication between the various project consultants and -- when a change in consultants occurs -- improper transfer of authority and responsibility[2]. It is imperative, therefore, that any revisions to the project scope, any change in structural detail, or change in consultant, be brought to the attention of Soils Engineering, Inc. to allow for timely review and revision of recommendations and for an orderly transfer of responsibility and approval.

It is the responsibility of the owner or his representative to ensure that a representative of our firm is present at all times during earthwork operations relating to site preparation and grading, so that relative compaction tests can be performed, earthwork operations can be observed and compliance with the recommendations provided herein can be established.

This engineering report has been prepared within the limits prescribed to us by the client or his representative, in accordance with the generally accepted principles and practices of Geotechnical engineering. No other warranty, expressed or implied, is included or intended in this report.

Respectfully submitted,
SOILS ENGINEERING, INC.

[2] If the civil engineer, the soils engineer, the engineering geologist or the testing agency of record is changed during the course of the work, the work shall be stopped until the replacement has agreed to accept the responsibility within the area of his technical competence for approval upon completion of the work.

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APPENDIX A

GENERAL GUIDE SPECIFICATIONS FOR EARTHWORK

1. GENERAL

1.1 Scope

These specifications and plans include all earthwork pertaining to site rough grading including, but not limited to furnishing all labor and equipment necessary for clearing and grubbing; stripping; preparation of ground surfaces to receive fill; excavation; placement and compaction of structural and non-structural fill; disposal of excess materials and products of clearing, grubbing, and stripping; and any other work necessary to bring ground elevations to the lines and grades shown on the project plans.

1.2 Performance:

It shall be the responsibility of the contractor to complete all earthwork in accordance with project plans and specifications. No variance from plans and specifications shall be permitted without written approval of the Engineer-of-Record, hereinafter referred to as the “engineer” or his designated representative, hereinafter referred to as the “soils engineer.” Earthwork shall not be considered complete until the “engineer” has issued a written statement confirming substantial compliance of earthwork operations to these specifications and to the project plans.

The contractor shall assume sole responsibility for job site conditions during the course of earthwork operations on the project, including safety of all persons and preservation of all property; this requirement shall apply continuously and not be limited to normal working hours. The contractor shall defend, indemnify, and hold harmless the owners, engineer, and soils engineer from any and all liability and claims, real or alleged, arising out of performance of earthwork on this project, except from liability incurred through sole negligence of the owner, engineers, or soils engineers.

2. DEFINITIONS

2.1 Excavations:

Excavation shall be defined within the content of these specifications as earth material excavated for the purpose of constructing fill embankment; grading the site to elevations shown on project plans; or placing underground pipelines, conduits, or other subsurface utilities or minor structures.

Excavations shall be made true to the lines shown on project plans and to within plus or minus one-tenth (0.1) of a foot, of grades shown on the accepted site grading plans.

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2.2 Engineered Fill:

Engineered fill shall be construed within the body of these specifications as earth materials conforming to specifications provided in the soils or geotechnical report placed to raise the grade of the site, to backfill excavations, or to construct asphaltic concrete or Portland cement concrete pavement; and upon which the soils engineer has performed sufficient tests and has made sufficient observation during placement and compaction to enable him to issue a written statement confirming substantial conformance of the work to project earthwork specifications.

2.3 On-Site Material:

On-site material is earth material obtained in excavation made on the project site.

2.4 Imported Material:

Imported materials are earth materials obtained off the site, hauled in, and placed as fill.

2.5 "Compaction" or "Compacted:"

Wherever expressed or implied within the context of these specifications shall be interpreted as compaction to ninety (90) percent of the maximum density obtainable by ASTM Test Method D1557.

2.6 Grading Plane:

The grading Plane is the surface of the basement material upon which the lowest layer of subbase, base, asphaltic or Portland cement concrete, surfacing, or other specified layer is placed.

3. SITE CONDITIONS

The contractor shall visit the site, prior to bid submittal, to determine existing soil and topographic conditions, and the nature of materials that may be encountered during the course of the work under this contract, and make his own interpretation of the contents of the Geotechnical Report, as they pertain to said conditions.

The contractor shall assume all liability under the contract for any loss sustained as a result of variations which may exist between specific soil boring locations or changed conditions resulting from natural or man-made circumstances occurring after the date of the Preliminary Field Investigations.

4. CLEARING AND GRUBBING

4.1 Clearing and Grubbing

Clearing and grubbing shall consist of removing all debris such as metal, broken concrete, trash, vegetation growth and other biodegradable substances, from all

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areas to be graded. Existing obstructions below shall be removed in accordance with the following procedures:

4.1.1 **Slabs and Pavements** – Shall be completely removed. Asphaltic or Portland Cement, concrete fragments may be used in engineered fills provided they are broken down to a maximum dimension of six (6.0) inches and thoroughly dispersed within a friable soil matrix. Engineered fill containing said fragments should not be placed above the elevation of the bottom of the lowest structure footing.

4.1.2 **Foundations** – existing at the time of grading shall be removed to a depth not less than two (2.0) feet below the bottom of the lowest structure footing.

4.1.3 **Basements, Septic Tanks** – buried concrete containers of similar construction located within areas destined to receive pavements, structures, or engineered fills should be completely removed and disposed of off the site. Basements, septic tanks, etc., situated outside structures, or structural fill areas shall be disposed of by breaking an opening in bottoms to permit drainage, and by breaking walls down to not less than two (2.0) feet below finished subgrade.

4.1.4 **Buried Utilities** – such as sewer, water and gas lines or electrical conduits to remain in service shall be re-routed to pass no closer than four (4.0) feet to the outside edge of proposed exterior footings of structures. Lines to be abandoned shall be completely removed to a minimum depth of two (2.0) feet below finished building pad grade. Concrete lines deeper than two (2.0) feet below finished building pad grade and having diameters less than six (6.0) inches can be crushed in place.

4.1.5 **Root Systems** – shall be completely removed to a minimum depth of two (2.0) feet below the bottom of the lowest proposed structure footing or to two (2.0) feet below finished subgrade, whichever depth is lower. Root systems deeper than the elevation indicated above shall be excavated to allow no roots larger than two (2.0) inches in diameter.

4.1.6 **Cavities** – resulting from clearing and grubbing or cavities existing on the site as a result of man-made or natural activity shall be backfilled with earth materials placed and compacted in accordance with Sections 5.3 and 5.4 of these specifications.

4.1.7 **Preservation or Monuments, Construction Stakes, Property Corner Stakes**, or other temporary or permanent horizontal or vertical control reference points shall be the responsibility of the contractor. Where these markers are disturbed, they shall be replaced at the contractor's expense.

5. SITE GRADING

Site grading shall consist of excavation and placement of fills to lines and grades shown on the project plans and in accordance with project specifications and recommendations

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of the Preliminary Soils Report, whichever is more stringent. The following are recommendations issued in this report.

5.1 Areas to Receive Fill:

5.1.1 Surfaces to receive fill shall be scarified to a depth of at least six (6.0) inches, or as recommended in this report, whichever is greater, until the surface is free from ruts, hummocks or other uneven features which would tend to prevent uniform compaction by the equipment to be used.

5.1.2 After the area to receive fill has been cleared and scarified, it shall be moistened and compacted to a depth of at least six (6.0) inches in accordance with specifications for compacting fill material in paragraph 5.4, below.

5.2 Excavation:

5.2.1 Excavations shall be cut to elevations plus or minus 0.1 foot of the grades shown on the accepted plans.

5.2.2 When excavated materials are to be used in engineered fill, the excavation shall be made in a manner to produce as much mixing of the excavated materials as practicable.

5.2.3 When excavations are to backfilled, and where surfaces exposed by excavation are to support structures or concrete floor slabs, the exposed surfaces shall be scarified, moistened and compacted, as stated above for areas to receive fill. Over excavation below specified depths will not eliminate the requirement for exposed surface compaction.

5.3 Fill Materials:

5.3.1 Materials obtained from on-site excavations will be considered satisfactory for construction of on-site engineered fills unless otherwise stated in the Soils Report or Foundation Investigation. If unexpected pockets of poor or weak materials are encountered in excavations, and they cannot be upgraded by mixing with other materials or by other means, they may be rejected by the soils engineer for use in engineered fill.

Rocks larger than 12 inches in size in any dimension shall not be allowed in the proposed building area. If a large amount of rocks greater than 12 inches in size in any dimension is encountered a rock disposal area shall be located on the grading plan. Rocks shall be mixed with well graded soils to assure that the voids in these areas will fill properly.

5.3.2 When imported fill materials are necessary to bring the site up to planned grades, no material shall be imported prior to its approval and acceptance by the soils engineer.

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5.3.3 The soils engineer shall be given notice of the proposed source of imported materials with adequate time allowance for his testing of the proposed materials. The time required for testing will vary with different types of materials, job conditions, and ultimate function of filled areas. Under best conditions the time requirement will not be less than 48 hours.

5.4 Placing, Spreading, and Compacting Fill Material:

5.4.1 The fill materials shall be placed in layers which, when compacted, shall not exceed six (6.0) inches in thickness. Each layer shall be spread evenly and shall be thoroughly mixed during the spreading to insure uniformity of material in each layer. Increased thickness of layers may be approved by the soils engineer when conditions warrant.

5.4.2 All fills shall be placed in level layers; layers shall be continuous over the area of any structural unit, and all portions of the fill shall be brought up simultaneously within the area of any structural unit. When imported material is used, it must be placed so that its thickness is as uniform as possible within the area of any structural unit.

5.4.3 When materials are to be excavated and replaced in a compacted condition, segmented, or leap-frogging of cut-fill operation within the area of any structural unit will not be permitted unless the method is specifically described by the soils engineer.

5.4.4 When the moisture content of fill material is below the lower limit specified by the Soils Engineer, water shall be added until the moisture content is as specified; and when it is above the upper limit specified, the material shall be aerated by blading or other satisfactory methods until the moisture content is as specified.

5.4.5 After each layer has been placed, mixed, and spread evenly, it shall be thoroughly compacted to not less than ninety (90) percent of maximum density in accordance with ASTM Density Test Method D1557. Compaction shall be by equipment of such design that it will be able to compact the fill to specified density. When the soils engineer specifies a specific type of compaction equipment to be used, such equipment shall be used as specified.

5.4.6 Compaction of each layer shall be continuous over its entire area and the equipment shall make sufficient trips to insure that the desired density has been obtained.

5.4.7 Field density tests shall be made by the soils engineer. The compaction of each layer of fill shall be subject to testing. Where sheepsfoot rollers are used, the soil may be disturbed to a depth of several inches. Density tests shall be taken in the compacted material below the disturbed surface. When tests indicate the density of any layer of fill or portion thereof is below

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the required ninety (90) percent density, the particular layer or portion shall be re-worked until the required density has been obtained.

5.4.8 When the soils engineer specifies compaction to other standards or to percentages other than ninety (90) percent, such specification, with respect to the particular items shall supersede these specifications.

5.4.9 The fill operation shall be continued in six (6) inch compacted layers, as specified above, until the fill has been brought to within 0.1 foot, plus or minus of the finished slopes and grades, as shown on the accepted plans. The finished surface of fill areas shall be graded or bladed to a smooth and uniform surface and no loose material shall be left on the surface.

5.4.10 No fill materials shall be placed, spread, or compacted while it is frozen or thawing or during unfavorable weather conditions. When work is interrupted by weather conditions, fill operations shall not be resumed until the soils engineer indicates that moisture content and density of previously placed fill are satisfactory.

5.5 Observations and Testing:

The soils engineer shall be provided with a 48-hour advance notice, in order that he may be present at the site during all earthwork activities related to excavation, tree root removal, stripping, backfill, and compaction and filling of the site and to perform periodic compaction tests so that substantial conformance to these recommendations can be established.

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APPENDIX B

FIELD INVESTIGATION

Thirteen (13) test borings were drilled at the subject site and terminated at a maximum depth of 51.5 feet below the existing ground surface. Borings were advanced using an eight (8.0) inch hollow-stem auger. Test data and descriptions from these holes form the basis of the conclusions and recommendations contained in this report.

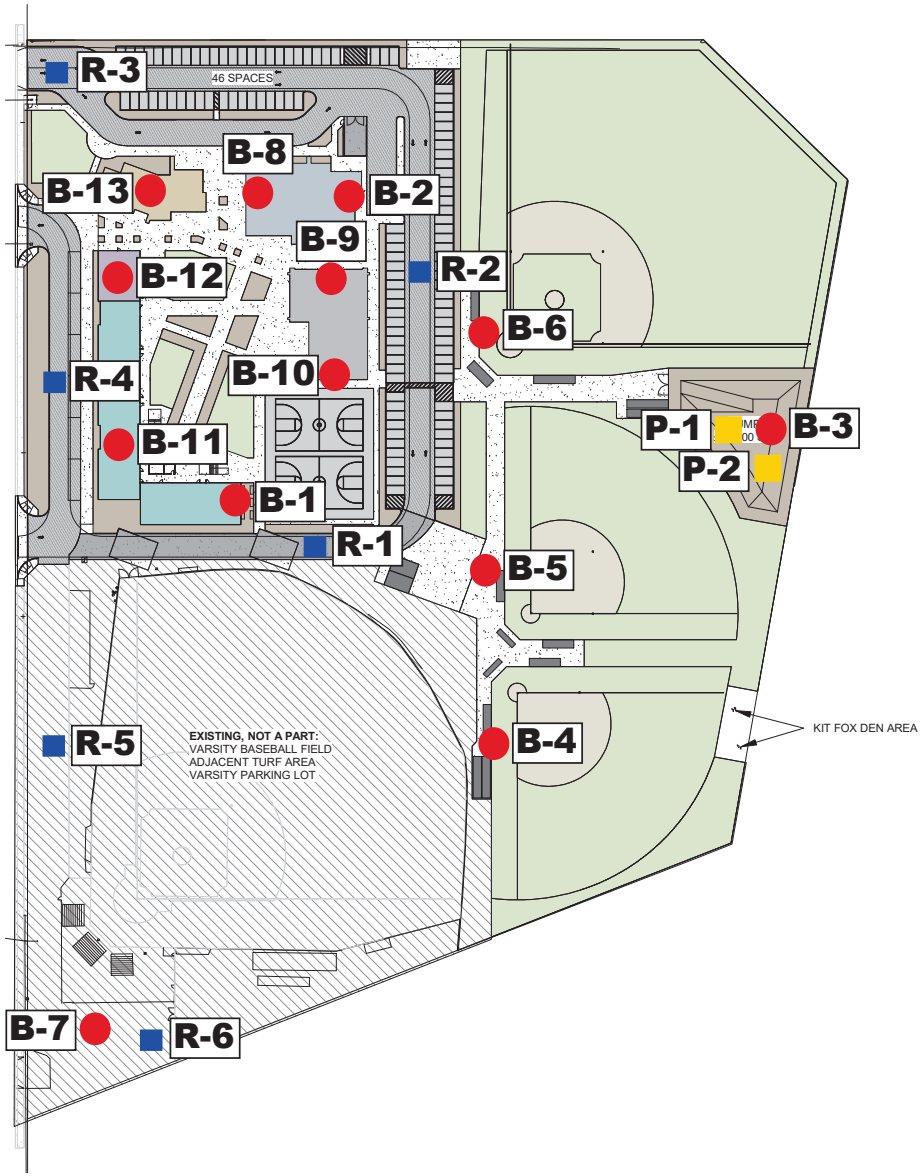
Undisturbed samples and disturbed bulk samples were obtained. Undisturbed samples were taken using either a 2-3/8” (inside diameter) split-barrel sampler or a 1-3/8” (inside diameter), 2” (outside diameter) Standard Penetration Sampler (SPT). Penetration resistance of undisturbed soils was obtained by driving the above-described sampler using a one-hundred-forty-pound hammer falling thirty inches (30"). Blow counts for each six inch (6") driven increment was recorded and are reported on the Test Borings Logs. In addition, bulk soil samples, selected as most representative of near surface soils encountered, were taken for laboratory testing.

As drilling progressed, earth materials encountered were logged and classified in accordance with the Unified Soils Classification System and presented graphically on Logs of Test Borings, Figures 2 through 14, along with the Legend. Approximate locations of test borings are shown on the Boring Location Map, Figure 1.

In addition to the borings, field percolation tests were performed at two separate locations. Tests were performed at approximately five [5] feet below the existing ground surface and were conducted in accordance with Kern County requirements. Percolation test results are presented on Table 1.

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Boring
R-Value
Percolation Test



LEGEND

- EXISTING, NOT A PART
- HEAVY DUTY CONCRETE
- CONCRETE
- HEAVY DUTY AC PAVING
- AC PAVING
- PLANTER
- TURF
- PLAY FIELD

Boring Location Map
SEI File No. 25-20342
Figure 1

Proj. No. 24-13004.00

VISTA CONTINUATION HIGH SCHOOL

KERN HIGH SCHOOL DISTRICT

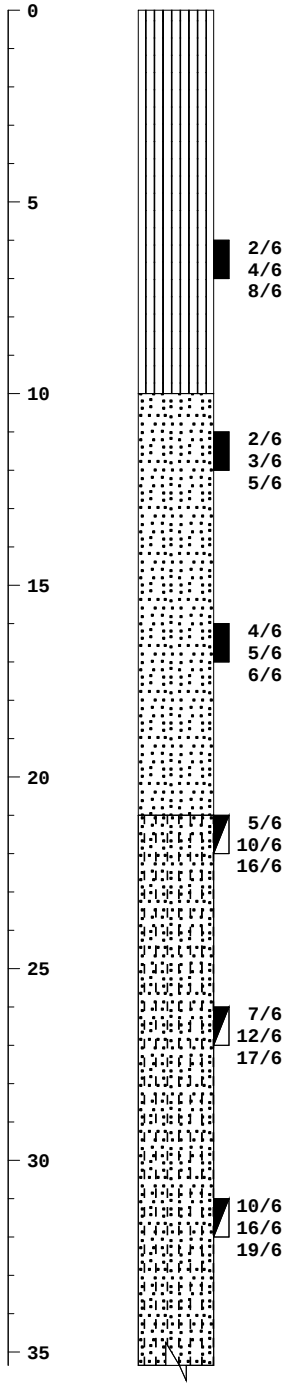
0' 120'

OVERALL SITE PLAN S1

04/04/25

LOG OF TEST BORING
BORING B-1

PROJECT: *Vista Continuation High School*
FILE NO: *20342*
BORING DATE: *06/03/25*
ELEV.:
BORING LOCATION: *See Boring Location Map, Figure 1*
START: *06/03/25*
DRILL METHOD: *4.25" I.D. Hollow-Stem Auger*
FINISH: *06/03/25*
DESCRIPTION: *Geotechnical Engineering Services*
DEPTH TO WATER - ▼ **:** *41'* **CAVING -** ⬟ **:** *N/A*
LOGGER: *EM*

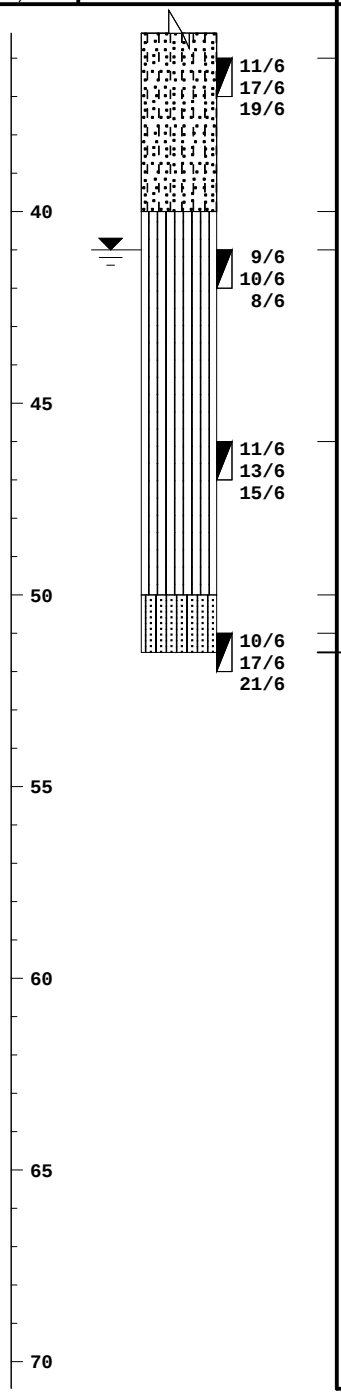


ELEVATION/ DEPTH (feet)	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	Description	Remarks	Density pcf	Moisture %
		ML	SANDY SILT; light yellowish brown, dry, fine grained.			
			Brown, moist, loose.		93.5	9.9
		SP	POORLY GRADED SAND; light yellowish brown, dry.		98.4	2.1
					90.1	1.3
		SP-SM	POORLY GRADED SAND WITH SILT; light yellowish brown, dry, medium dense, gravel.			1.1
			Moist.			3.3
						2.2

Figure Number 2

LOG OF TEST BORING
BORING B-1

PROJECT: *Vista Continuation High School*
FILE NO: *20342*
BORING DATE: *06/03/25*
ELEV.:
BORING LOCATION: *See Boring Location Map, Figure 1*
START: *06/03/25*
DRILL METHOD: *4.25" I.D. Hollow-Stem Auger*
FINISH: *06/03/25*
DESCRIPTION: *Geotechnical Engineering Services*
DEPTH TO WATER - ▼ **:** *41'* **CAVING -** ▰ **:** *N/A*
LOGGER: *EM*

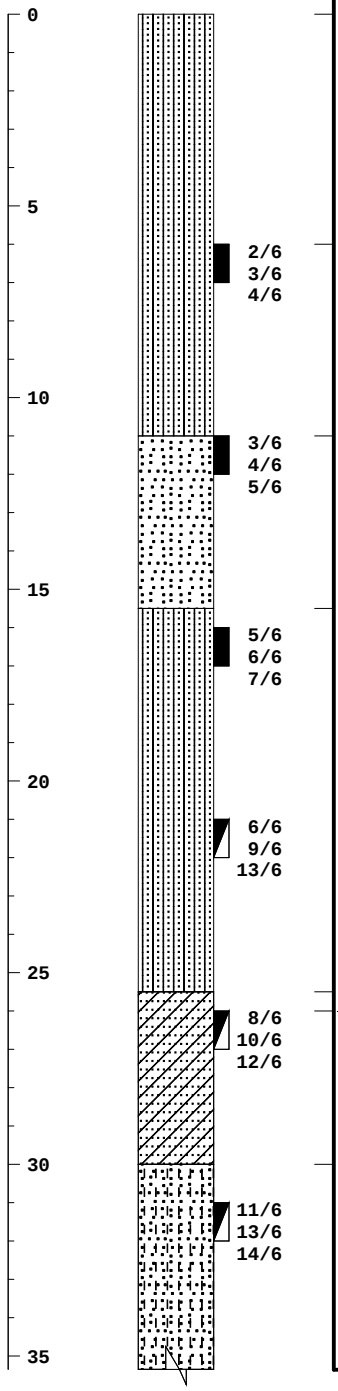


ELEVATION/ DEPTH (feet)	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	Description	Remarks	Density pcf	Moisture %
			Brown, wet, coarse grained.			14.2
40		ML	SANDY SILT; dark yellowish brown, wet, fine to medium grained. Water encountered.			21.4
45			Very stiff, traces of clay.			19.6
50		SM	SILTY SAND; brown, moist, fine to medium grained, traces of clay. Medium dense.			13.4
			BOTTOM.			

Figure Number 2

LOG OF TEST BORING
BORING B-2

PROJECT: *Vista Continuation High School*
FILE NO: *20342*
BORING DATE: *06/03/25*
ELEV.:
BORING LOCATION: *See Boring Location Map, Figure 1*
START: *06/03/25*
DRILL METHOD: *4.25" I.D. Hollow-Stem Auger*
FINISH: *06/03/25*
DESCRIPTION: *Geotechnical Engineering Services*
DEPTH TO WATER - ▼ **:** *N/A* **CAVING -** ▰ **:** *N/A*
LOGGER: *EM*



ELEVATION/ DEPTH (feet)	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	Description	Remarks	Density pcf	Moisture %
		SM	SILTY SAND; dark brown, dry.			
	2/6 3/6 4/6		Light yellowish brown, loose.		97.2	3.0
	3/6 4/6 5/6	SP	POORLY GRADED SAND; brown, dry, gravel.		101.9	3.1
	5/6 6/6 7/6	SM	SILTY SAND; brown, moist, fine grained.		100.5	21.1
	6/6 9/6 13/6	SM				2.5
	8/6 10/6 12/6	SC	CLAYEY SAND; reddish brown, moist, fine to medium grained. Medium dense.			9.7
	11/6 13/6 14/6	SP-SM SP-SM	POORLY GRADED SAND WITH SILT; light yellowish brown, damp, coarse grained, gravel.			2.8

Figure Number 3

LOG OF TEST BORING
BORING B-2

PROJECT: *Vista Continuation High School*
FILE NO: *20342*
BORING DATE: *06/03/25*
ELEV.:
BORING LOCATION: *See Boring Location Map, Figure 1*
START: *06/03/25*
DRILL METHOD: *4.25" I.D. Hollow-Stem Auger*
FINISH: *06/03/25*
DESCRIPTION: *Geotechnical Engineering Services*
DEPTH TO WATER - ▼ **:** *N/A* **CAVING -** ▰ **:** *N/A*
LOGGER: *EM*

ELEVATION/ DEPTH (feet)	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	Description	Remarks	Density pcf	Moisture %
	10/6 19/6 18/6					3.8
40	12/6 17/6 19/6					2.7
45	20/6 22/6 17/6	SM	SILTY SAND; brown, moist, fine grained.			11.2
50	9/6 11/6 13/6	ML	SANDY SILT; light yellowish brown, moist, very stiff.			16.6
			BOTTOM.			
55						
60						
65						
70						

Figure Number 3

LOG OF TEST BORING
BORING B-3

PROJECT: *Vista Continuation High School*
FILE NO: *20342*
BORING DATE: *06/04/25*
ELEV.:
BORING LOCATION: *See Boring Location Map, Figure 1*
START: *06/04/25*
DRILL METHOD: *4.25" I.D. Hollow-Stem Auger*
FINISH: *06/04/25*
DESCRIPTION: *Geotechnical Engineering Services*
DEPTH TO WATER - ▼ **:** *N/A* **CAVING -** ▰ **:** *N/A*
LOGGER: *LW*

ELEVATION/ DEPTH (feet)	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	Description	Remarks	Density pcf	Moisture %
0		SM	SILTY SAND; brown, moist, fine grained, cohesive.			
5	3/6 3/6 3/6	SP	Loose. POORLY GRADED SAND; light brown, moist, fine grained.		89.6	19.2
10	4/6 8/6 10/6		Medium dense, fine to medium grained.		97.3	2.0
15	6/6 7/6 9/6				96.5	4.2
20	6/6 8/6 10/6				93.5	3.6
25	9/6 19/6 29/6	SM	SILTY SAND; brown, fine grained, cohesive. Dense. Gravel.		107.6	8.6
30	5/6 14/6 21/6		BOTTOM.		105.7	4.9
35						

Hand augered to 5 feet to avoid possible underground lines.

Figure Number 4

LOG OF TEST BORING
BORING B-4

PROJECT: *Vista Continuation High School*
FILE NO: *20342*
BORING DATE: *06/03/25*
ELEV.:
BORING LOCATION: *See Boring Location Map, Figure 1*
START: *06/03/25*
DRILL METHOD: *4.25" I.D. Hollow-Stem Auger*
FINISH: *06/03/25*
DESCRIPTION: *Geotechnical Engineering Services*
DEPTH TO WATER - ▼ **:** *N/A* **CAVING -** ▰ **:** *N/A*
LOGGER: *MW*

ELEVATION/ DEPTH (feet)	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	Description	Remarks	Density pcf	Moisture %
0		SM	SILTY SAND; yellowish brown, dry, fine grained.			
5	3/6 4/6 6/6		Loose.		107.1	6.0
10	3/6 4/6 5/6				97.9	3.2
15	5/6 11/6 14/6		Medium dense.		98.2	2.6
20	7/6 9/6 10/6	SM	SILTY SAND; light yellowish brown, dry, fine grained.		96.0	2.8
25	8/6 16/6 19/6		BOTTOM.		89.0	20.9
30						
35						

Hand augered to 5 feet to avoid possible underground lines.

Figure Number 5

LOG OF TEST BORING
BORING B-5

PROJECT: *Vista Continuation High School*
FILE NO: *20342*
BORING DATE: *06/03/25*
ELEV.:
BORING LOCATION: *See Boring Location Map, Figure 1*
START: *06/03/25*
DRILL METHOD: *4.25" I.D. Hollow-Stem Auger*
FINISH: *06/03/25*
DESCRIPTION: *Geotechnical Engineering Services*
DEPTH TO WATER - ▼ **:** *N/A* **CAVING -** ▰ **:** *N/A*
LOGGER: *MW*

ELEVATION/ DEPTH (feet)	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	Description	Remarks	Density pcf	Moisture %
0		SM	SILTY SAND; light brown, dry, fine grained.			
5	6/6 6/6 6/6	SP	POORLY GRADED SAND; light yellowish brown, dry, fine to coarse grained, traces of fine gravel. Loose.		99.4	1.7
10	5/6 5/6 6/6				96.3	2.4
15	7/6 9/6 10/6		Medium dense.		105.9	1.5
20	10/6 13/6 14/6				101.0	1.3
25	12/6 17/6 23/6	SM	SILTY SAND; yellowish brown, dry, fine grained. BOTTOM.		97.6	2.3
30						
35						

Hand augered to 5 feet to avoid possible underground lines.

Figure Number 6

LOG OF TEST BORING
BORING B-6

PROJECT: *Vista Continuation High School*
FILE NO: *20342*
BORING DATE: *06/03/25*
ELEV.:
BORING LOCATION: *See Boring Location Map, Figure 1*
START: *06/03/25*
DRILL METHOD: *4.25" I.D. Hollow-Stem Auger*
FINISH: *06/03/25*
DESCRIPTION: *Geotechnical Engineering Services*
DEPTH TO WATER - ▼ **:** *N/A* **CAVING -** ▰ **:** *N/A*
LOGGER: *MW*

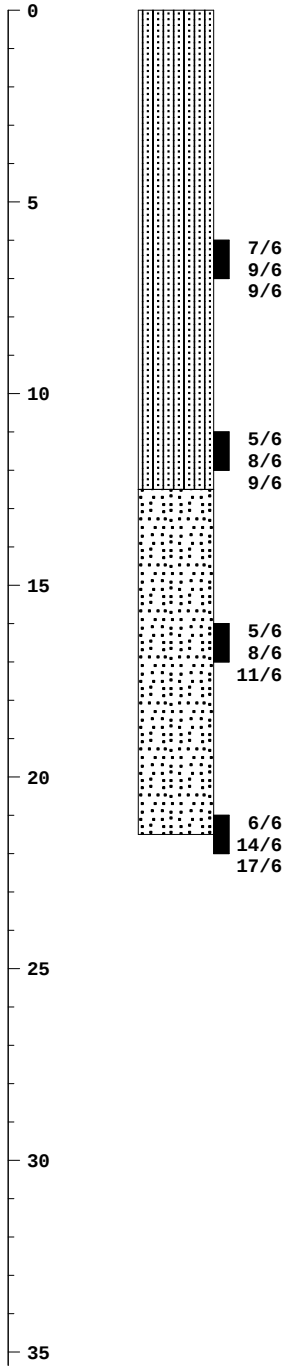
ELEVATION/ DEPTH (feet)	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	Description	Remarks	Density pcf	Moisture %
0		SM	**SILTY SAND; light brown, dry, fine grained.**			
5	4/6 4/6 6/6		**Loose, traces of gravel.**		104.5	1.2
10	4/6 5/6 6/6				93.3	2.0
15	6/6 7/6 9/6		**Medium dense.**		98.4	1.8
20	8/6 14/6 16/6				103.8	1.1
25	9/6 16/6 16/6				100.2	2.8
			BOTTOM.			
30						
35						

Hand augered to 5 feet to avoid possible underground lines.

Figure Number 7

LOG OF TEST BORING
BORING B-7

PROJECT: *Vista Continuation High School*
FILE NO: *20342*
BORING DATE: *06/03/25*
ELEV.:
BORING LOCATION: *See Boring Location Map, Figure 1*
START: *06/03/25*
DRILL METHOD: *4.25" I.D. Hollow-Stem Auger*
FINISH: *06/03/25*
DESCRIPTION: *Geotechnical Engineering Services*
DEPTH TO WATER - ▽ **:** *N/A* **CAVING -** ▰ **:** *N/A*
LOGGER: *MW*



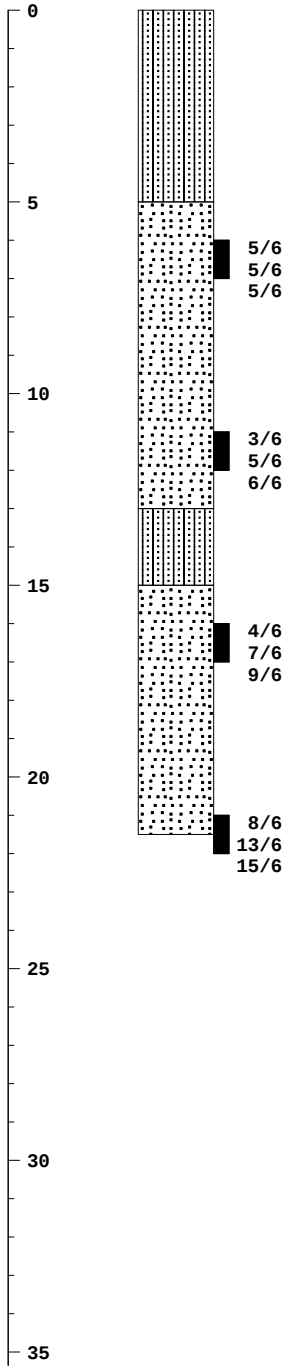
ELEVATION/ DEPTH (feet)	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	Description	Remarks	Density pcf	Moisture %
		SM	**SILTY SAND; yellowish brown, dry, fine grained.**			
			Medium dense.		105.0	2.6
					102.3	6.1
		SP	**POORLY GRADED SAND; light yellowish brown, dry to damp, fine grained.**			
					96.2	2.2
					101.5	7.5
			BOTTOM.			

Hand augered to 5 feet to avoid possible underground lines.

Figure Number 8

LOG OF TEST BORING
BORING B-8

PROJECT: *Vista Continuation High School*
FILE NO: *20342*
BORING DATE: *06/04/25*
ELEV.:
BORING LOCATION: *See Boring Location Map, Figure 1*
START: *06/04/25*
DRILL METHOD: *4.25" I.D. Hollow-Stem Auger*
FINISH: *06/04/25*
DESCRIPTION: *Geotechnical Engineering Services*
DEPTH TO WATER - ▼ **:** *N/A* **CAVING -** ▰ **:** *N/A*
LOGGER: *EM*



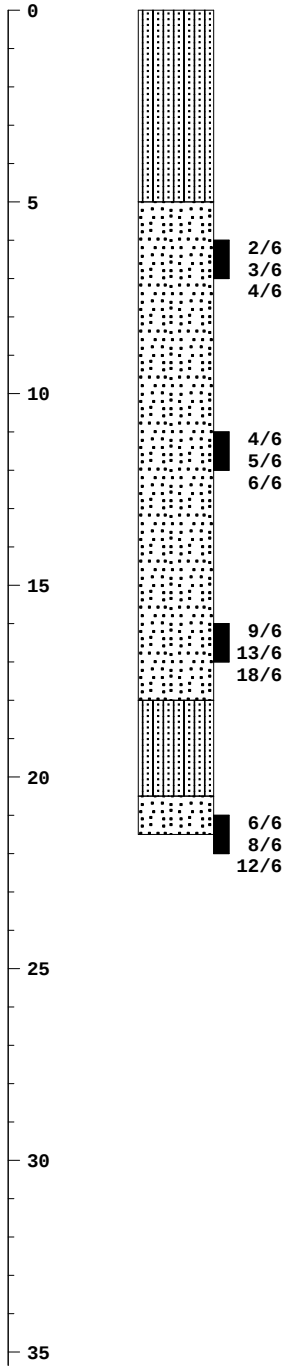
ELEVATION/ DEPTH (feet)	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	Description	Remarks	Density pcf	Moisture %
		SM	SILTY SAND; brown, moist, medium to fine grained.			
		SP	POORLY GRADED SAND; light yellowish brown, damp. Loose.		102.1	1.4
			Gravel, coarse grained.		106.6	2.2
		SM	SILTY SAND; brown, dry, fine to medium grained.			
		SP	POORLY GRADED SAND; light yellowish brown, damp. Medium dense.		101.7	1.4
			BOTTOM.		103.5	2.2

Hand augered to 5 feet to avoid possible underground lines.

Figure Number 9

LOG OF TEST BORING
BORING B-9

PROJECT: *Vista Continuation High School*
FILE NO: *20342*
BORING DATE: *06/04/25*
ELEV.:
BORING LOCATION: *See Boring Location Map, Figure 1*
START: *06/04/25*
DRILL METHOD: *4.25" I.D. Hollow-Stem Auger*
FINISH: *06/04/25*
DESCRIPTION: *Geotechnical Engineering Services*
DEPTH TO WATER - ▽ **:** *N/A* **CAVING -** ▰ **:** *N/A*
LOGGER: *EM*



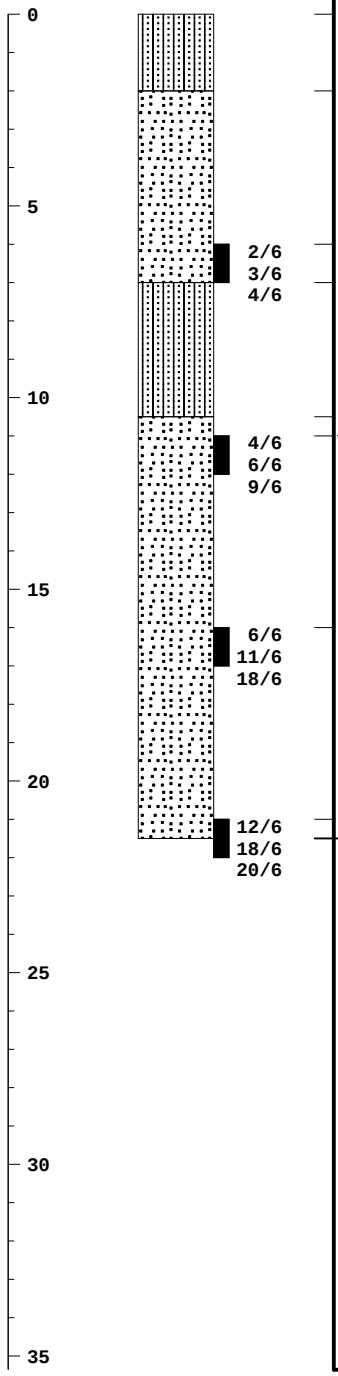
ELEVATION/ DEPTH (feet)	USCS	Description	Remarks	Density pcf	Moisture %
0	SM	SILTY SAND; brown, damp, fine to medium grained.			
5	SP	POORLY GRADED SAND; light yellowish brown, dry. Loose.		101.8	0.2
10				100.3	1.0
15		Medium dense, gravel, coarse grained.		118.4	0.2
	SM	SILTY SAND; brown, moist, fine to medium grained.			
20	SP	POORLY GRADED SAND; light yellowish brown, dry.		92.4	1.9
		BOTTOM.			
25					
30					
35					

Hand augered to 5 feet to avoid possible underground lines.

Figure Number 10

LOG OF TEST BORING
BORING B-10

PROJECT: *Vista Continuation High School*
FILE NO: *20342*
BORING DATE: *06/04/25*
ELEV.:
BORING LOCATION: *See Boring Location Map, Figure 1*
START: *06/04/25*
DRILL METHOD: *4.25" I.D. Hollow-Stem Auger*
FINISH: *06/04/25*
DESCRIPTION: *Geotechnical Engineering Services*
DEPTH TO WATER - ▼ : **CAVING - ⬢ :** **LOGGER:**



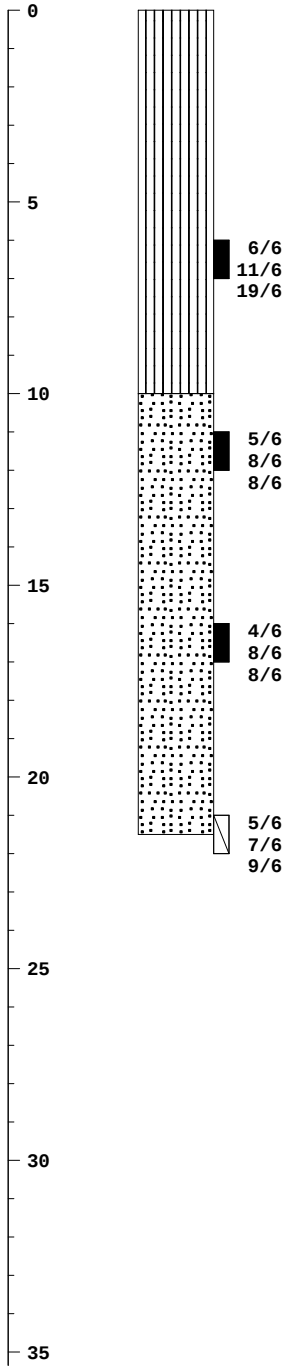
ELEVATION/ DEPTH (feet)	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	Description	Remarks	Density pcf	Moisture %
		SM	SILTY SAND; light yellowish brown, dry, fine grained.			
		SP	POORLY GRADED SAND; light yellowish brown, dry, fine grained.			
	2/6 3/6 4/6		Loose.		86.8	1.5
		SM	SILTY SAND; brown, dry, fine grained, roots.			
	4/6 6/6 9/6	SP	POORLY GRADED SAND; yellowish brown, damp, gravel. Medium dense.		89.4	2.6
	6/6 11/6 18/6		Damp, coarse gravel.		116.4	1.9
	12/6 18/6 20/6		Light yellowish brown, dry.		90.3	2.2
			BOTTOM.			

Hand augered to 5 feet to avoid possible underground lines.

Figure Number 11

LOG OF TEST BORING
BORING B-11

PROJECT: *Vista Continuation High School*
FILE NO: *20342*
BORING DATE: *06/04/25*
ELEV.:
BORING LOCATION: *See Boring Location Map, Figure 1*
START: *06/04/25*
DRILL METHOD: *4.25" I.D. Hollow-Stem Auger*
FINISH: *06/04/25*
DESCRIPTION: *Geotechnical Engineering Services*
DEPTH TO WATER - ▽ **:** *N/A* **CAVING -** ▰ **:** *N/A*
LOGGER: *MW*



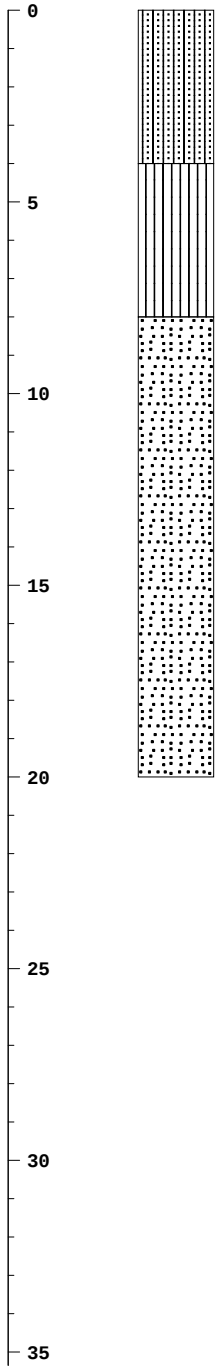
ELEVATION/ DEPTH (feet)	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	Description	Remarks	Density pcf	Moisture %
		ML	**SANDY SILT; light yellowish brown, dry, fine grained, low plasticity.**			
			Very stiff.		98.3	5.8
		SP	**POORLY GRADED SAND; light yellowish brown, dry, fine to coarse grained. Medium dense.**		98.5	1.4
			Traces of gravel.		96.3	0.2
			BOTTOM.			1.8

Hand augered to 5 feet to avoid possible underground lines.

Figure Number 12

LOG OF TEST BORING
BORING B-12

PROJECT: *Vista Continuation High School*
FILE NO: *20342*
BORING DATE: *06/04/25*
ELEV.:
BORING LOCATION: *See Boring Location Map, Figure 1*
START: *06/04/25*
DRILL METHOD: *4.25" I.D. Hollow-Stem Auger*
FINISH: *06/04/25*
DESCRIPTION: *Geotechnical Engineering Services*
DEPTH TO WATER - ▼ **:** *N/A* **CAVING -** ▰ **:** *N/A*
LOGGER: *MW*



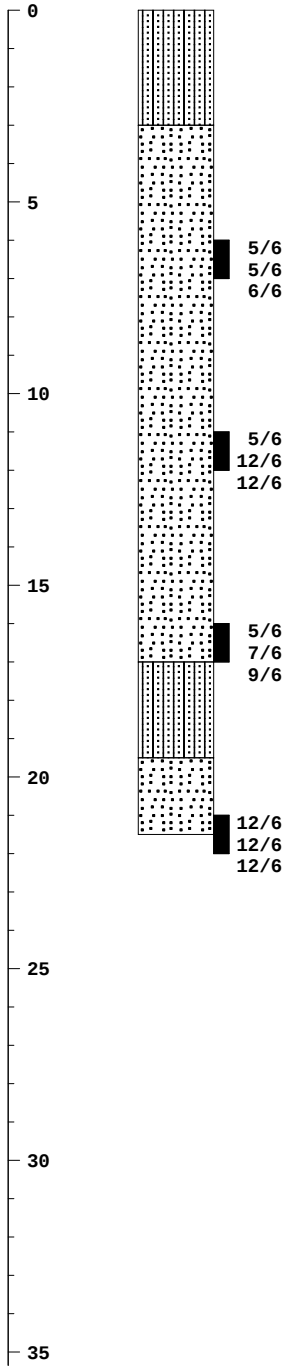
ELEVATION/ DEPTH (feet)	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	Description	Remarks	Density pcf	Moisture %
		SM	**SILTY SAND; light yellowish brown, dry, fine grained.**			
		ML	**SANDY SILT; brown, damp, low plasticity.**			
		SP	**POORLY GRADED SAND; light yellowish brown, dry, fine grained.**			
			BOTTOM.			

Hand augered to 5 feet to avoid possible underground lines.

Figure Number 13

LOG OF TEST BORING
BORING B-13

PROJECT: *Vista Continuation High School*
FILE NO: *20342*
BORING DATE: *06/04/25*
ELEV.:
BORING LOCATION: *See Boring Location Map, Figure 1*
START: *06/04/25*
DRILL METHOD: *4.25" I.D. Hollow-Stem Auger*
FINISH: *06/04/25*
DESCRIPTION: *Geotechnical Engineering Services*
DEPTH TO WATER - ▽ **:** *N/A* **CAVING -** ▰ **:** *N/A*
LOGGER: *EM*



ELEVATION/ DEPTH (feet)	USCS	Description	Remarks	Density pcf	Moisture %
	SM	SILTY SAND; brown, dry, fine to medium grained.			
	SP	POORLY GRADED SAND; brown, moist, coarse grained.			
		Light yellowish brown, damp, loose, gravel.		95.1	3.1
		Medium dense.		92.4	2.9
				89.1	3.6
	SM	SILTY SAND; brown, damp, fine to medium grained.			
	SP	POORLY GRADED SAND; light yellowish brown, damp.			
		BOTTOM.		83.6	4.1

Hand augered to 5 feet to avoid possible underground lines.

Figure Number 14

KEY TO SYMBOLS

Symbol	Description
Strata symbols	
	Silt
	Poorly graded sand
	Poorly graded sand with silt
	Silty sand
Misc. Symbols	
	Boring continues
	Water table at boring completion
Soil Samplers	
	California sampler
	Standard penetration test

Notes:

1. Thirteen (13) exploratory borings were drilled between 06/02/2025 and 06/04/2025 using an 8-inch outside diameter hollow-stem auger.

2. Free groundwater was encountered in B-1 at a depth of 41.5'.

3. Boring locations are shown on the Boring Location Map, Figure 1.

4. These logs are subject to the limitations, conclusions, and recommendations in this report.

5. Results of tests conducted on samples recovered are reported on the logs.

TABLE 1 - PERCOLATION TEST DATA LOG SEI File No. 25-20342

SITE ADDRESS: 35.357194, -119.010650 | 200 P Street, Bakersfield, CA 93304

TEST PERFORMED BY: Soils Engineering, Inc. (SEI)

TEST DATE: June 4, 2025

HOLE #	Percolation # 1 (P-1)				Percolation # 2 (P-2)				N/A			
DEPTH	5 FEET				5 FEET				-- FEET			
	TIME (MIN)		WATER LEVEL DROP (IN)	PERC RATE (MIN/IN)	TIME (MIN)		WATER LEVEL DROP (IN)	PERC RATE (MIN/IN)	TIME (MIN)		WATER LEVEL DROP (IN)	PERC RATE (MIN/IN)
	INITIAL	FINAL			INITIAL	FINAL			INITIAL	FINAL		
	TEST # 1				**TEST # 1**				**N/A**			
	0	--	6.75		0	--	7.75					
	0	6	6.75	0.89	0	7	7.75	0.90				
	TEST # 2				**TEST # 2**				**N/A**			
	0	--	6.75		0	--	7.50					
	0	7	6.75	1.04	0	6	7.50	0.80				
	TEST # 3				**TEST # 3**				**N/A**			
	0	--	7.75		0	--	6.25					
	0	7	7.75	0.90	0	6	6.25	0.96				
	TEST # 4				**TEST # 4**				**N/A**			
	0	--	8.25		0	--	6.75					
	0	8	8.25	0.97	0	8	6.75	1.19				
	TEST # 5				**TEST # 5**				**N/A**			
	0	--	8.25		0	--	7.75					
	0	9	8.25	1.09	0	9	7.75	1.16				
	N/A				**N/A**				**N/A**			

FINAL RATE TO BE USED IN DESIGN: __1__ MINUTES PER INCH. SOIL TYPE

1	2	3	4	5

SIGNATURE OF QUALIFIED PROFESSIONAL: _____

REGISTERED PROFESSIONAL ENGINEER
ON MAN LAU
GE2644
EXP. 12-31-2025
GEOTECHNICAL
STATE OF CALIFORNIA

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APPENDIX C

SOIL TEST DATA

SIEVE ANALYSES (ASTM D422 and/or ASTM D1140)

Grain size distributions for samples selected as most representative of sub-soils encountered in our test borings were determined by sieve analysis. Test results are shown in Figures A-1 through A-4.

IN-SITU DENSITY & MOISTURE RELATIONSHIPS (ASTM D2216 & D2937)

Moisture & density data for undisturbed native soils was obtained by use of a 2-3/8-inch (inside diameter) split-barrel sampler. Test results are given on the Logs of Test Borings, Figures 2 through 14.

CONSOLIDATION TESTS (ASTM D2435)

Compressibility of soils was determined on saturated, undisturbed samples of native materials. Consolidation Test Diagrams, Figures B-1 and B-2, graphically express the relationship of vertical strain vs. applied vertical (normal) load for earth materials selected as most representative of the soil strata within the anticipated zone of influence of foundation loads.

DIRECT SHEAR TESTS (ASTM D3080)

Quick-consolidated direct shear test was performed on an undisturbed, saturated sample of native earth materials. This test provides information on soil shear strength vs. normal load and is used to determine the angle of internal friction and cohesion of earth materials under essentially drained conditions. Test results are presented on Figures C-1 through C-7.

EXPANSION INDEX (ASTM D4829)

The Expansion Index test is designed to measure a basic index property of soil and in this respect is comparable to other index tests such as the Atterberg Limits. In formulating the test procedures, no attempt has been made to duplicate any particular moisture or loading conditions which may occur in the field. Rather, an attempt has been made to control all variables which influence the expansive characteristics of a particular soil and still retain a practical test for general engineering usage. Three samples of near surface soil were obtained and tested for expansiveness. Test results are presented on the Laboratory Testing Recap Table 2.

R-VALUE TESTS (CTM-301)

R-Value tests were performed to obtain flexible pavement design data. Test results are presented on Figures D-1 through D-6.

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SOIL CORROSIVITY (SO4 / pH / Chlorides)

Tests for Soluble Sulfates (SO4), Soluble Chlorides (Cl), and pH values were performed on samples taken from the upper 0-5 feet to determine the corrosion potential of the soils. Corrosion prevention measures and the extent to which measures should be taken (if any) should be addressed with the corrosion engineer. Soluble Sulfates and Soluble Chlorides values were determined according to EPA 300.0M. The pH values were determined according to EPA 9045C. Results of all the constituent(s) are discussed in the Soil Corrosivity section.

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Kern High School District

Geotechnical Engineering Services
Vista Continuation High School
35.357194, -119.010650 | 200 P Street, Bakersfield, CA 93304

SOILS ENGINEERING, INC.

SEI File No. 25-20342
July 3, 2025

TABLE 2

TEST LOCATION	USCS	% < # 200	CONSOLIDATION				DIRECT SHEAR		E.I.	MINIMUM RESISITIVITY	ATTERBERG LIMITS			R-VALUE @ 300 psi		MAXIMUM DENSITY	
			C_C	C_S	S.P. (psf)	HV %	C, (ksf)	F.A.			LL	PL	PI	R.V.	E.P. (psi)	MDD (pcf)	O.M.
B-1 @ 0-5'	ML	57							0								
B-1 @ 6'	ML		0.13	0.02	0	-1.4											
B-1 @ 11'	SP	4.7															
B-1 @ 21'	SP-SM	5.9															
B-1 @ 31'	SP-SM	5.5															
B-1 @ 41'	ML	87															
B-1 @ 46'	ML	86															
B-1 @ 51'	SC	46															
B-2 @ 0-5'	SM	35							0								
B-2 @ 6'	SM						0.31	35.2									
B-2 @ 11'	SP	2.7															
B-2 @ 21'	SM	14															
B-2 @ 31'	SP-SM	6.7															
B-2 @ 41'	SP-SM	9.4															
B-2 @ 46'	SM	42															
B-2 @ 51'	ML	59															
B-4 @ 6'	SM						0.34	36.7									
B-5 @ 6'	SP						0.15	35.7									
B-6 @ 0-5'	SM	32															
B-6 @ 6'	SM						0.34	34.7									
B-7 @ 6'	SM	13					0.31	31.7									
B-8 @ 0-5'	SM	35							0								
B-8 @ 6'	SP						0.12	37.5									
B-10 @ 0-5'	SM	15							0								
B-10 @ 6'	SP						0.15	35.4									
B-11 @ 0-5'	ML	61							0								
B-11 @ 6'	ML		0.26	0.02	0	-1.4											
R-1 @ 0-5'	SM	23												66			
R-2 @ 0-5'	SM	36												34	0		
R-3 @ 0-5'	SM	26												54			
R-4 @ 0-5'	SM	23												65			
R-5 @ 0-5'	SM	33												50			
R-6 @ 0-5'	SM	41												50	0.03		

CONSOLIDATION
Cc - Compression Index
Cs - Swell Index
S.P. (psf) - Swell Pressure
HV % - Heave Percentage / Collapse

E.I. - EXPANSION INDEX
ATTERBERG LIMITS
LL - Liquid Limit
PL - Plastic Limit
PI - Plasticity Index

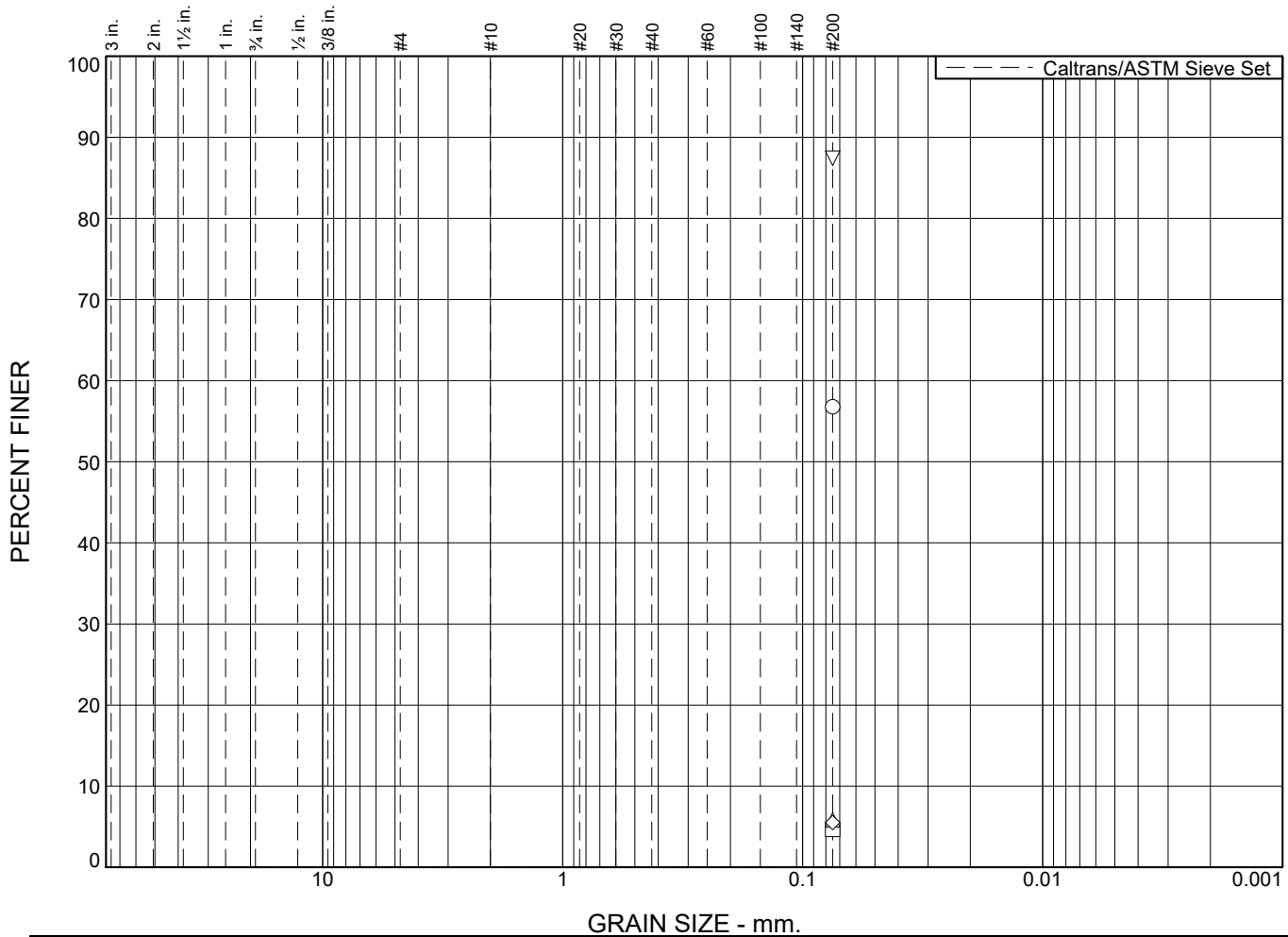
DIRECT SHEAR
C (ksf) - Cohesion
F.A. - Friction Angle

RESISTANCE VALUE (R-VALUE)
RV - R-Value @ 300 psi
EP - Expansion Press @ 300 psi
MINIMUM RESISITIVITY - (ohm-cm)

MAXIMUM DENSITY
MDD (pcf) - Max Dry Density
O.M. - Optimum Moisture

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Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○							56.8	
□							4.7	
△							5.9	
◇							5.5	
▽							87.4	

SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	Material Description	USCS
○			0-5'	SANDY SILT (B-1)	ML
□	B-1		11'	POORLY GRADED SAND	SP
△	B-1		21'	POORLY GRADED SAND WITH SILT	SP-SM
◇	B-1		31'	POORLY GRADED SAND WITH SILT	SP-SM
▽	B-1		41'	SANDY SILT	ML

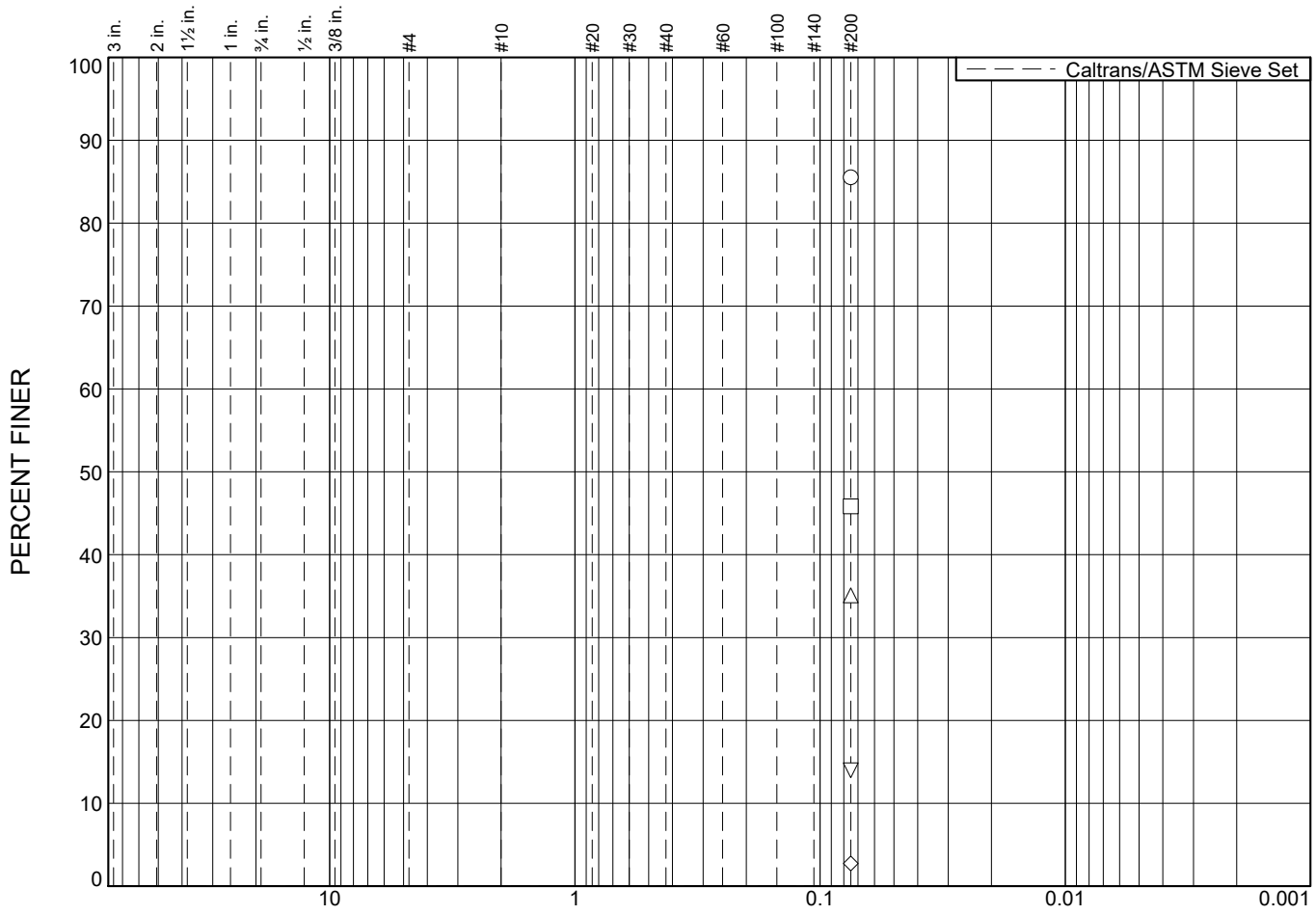
SOILS ENGINEERING, INC.

Client: Kern High School District

Project: Vista Continuation High School

Project No.: 20342 **Figure** A-1

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○							85.5	
□							45.8	
△							35.1	
◇							2.7	
▽							14.0	

SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	Material Description	USCS
○	B-1		46'	SANDY SILT	ML
□	B-1		51'	SILTY SAND	SM
△			0-5'	SILTY SAND (B-2)	SM
◇	B-2		11'	POORLY GRADED SAND	SP
▽	B-2		21'	SILTY SAND	SM

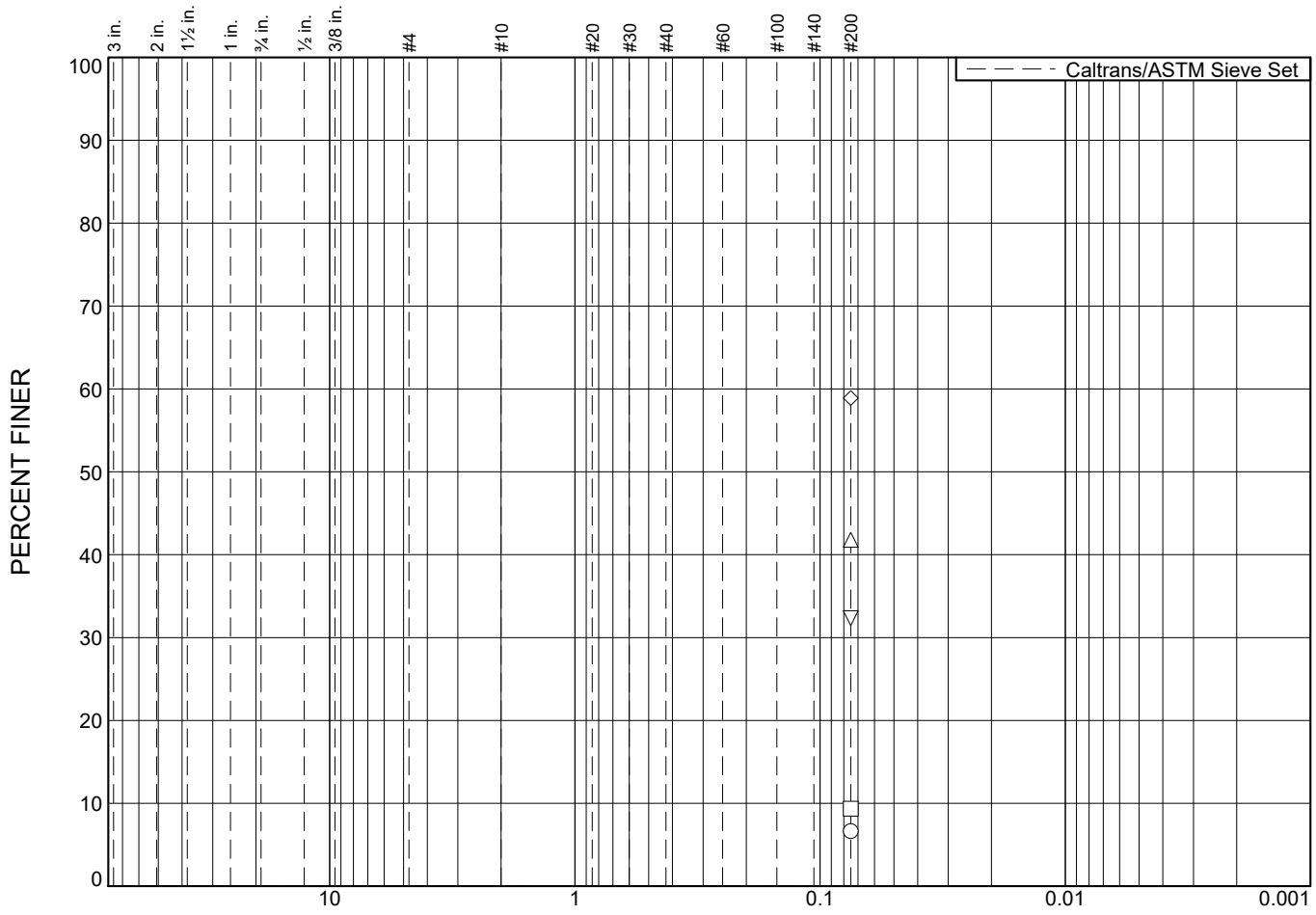
SOILS ENGINEERING, INC.

Client: Kern High School District

Project: Vista Continuation High School

Project No.: 20342 **Figure** A-2

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○							6.7	
□							9.4	
△							41.8	
◇							58.9	
▽							32.3	

SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	Material Description	USCS
○	B-2		31'	POORLY GRADED SAND WITH SILT	SP-SM
□	B-2		41'	POORLY GRADED SAND WITH SILT	SP-SM
△	B-2		46'	SILTY SAND	SM
◇	B-2		51'	SANDY SILT	ML
▽			0-5'	SILTY SAND (B-6)	SM

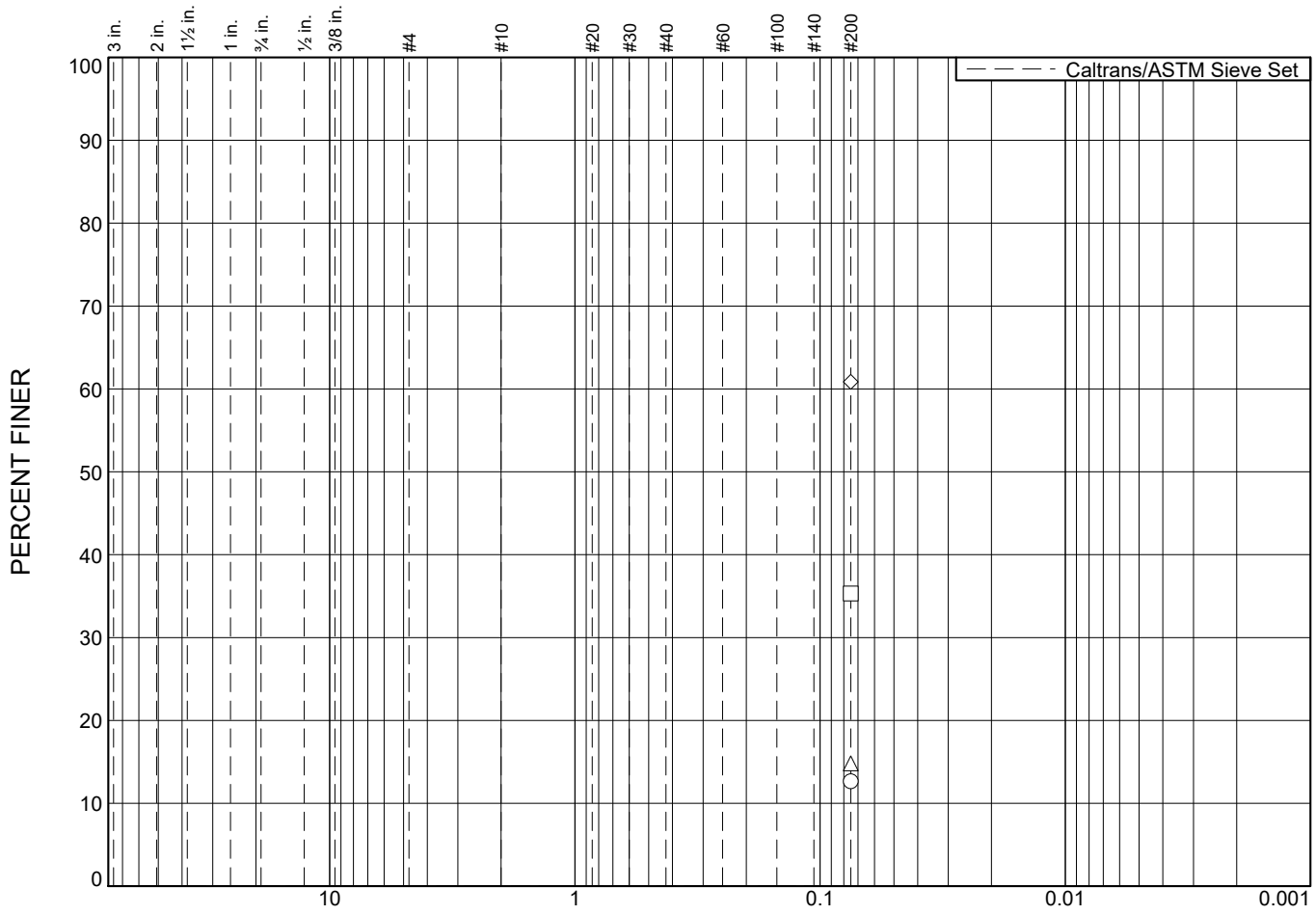
SOILS ENGINEERING, INC.

Client: Kern High School District

Project: Vista Continuation High School

Project No.: 20342 **Figure** A-3

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○							12.7	
□							35.3	
△							14.8	
◇							60.8	

SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	Material Description	USCS
○	B-7		6'	SILTY SAND	SM
□			0-5'	SILTY SAND (B-8)	SM
△			0-5'	SILTY SAND (B-10)	SM
◇			0-5'	SANDY SILT (B-11)	ML

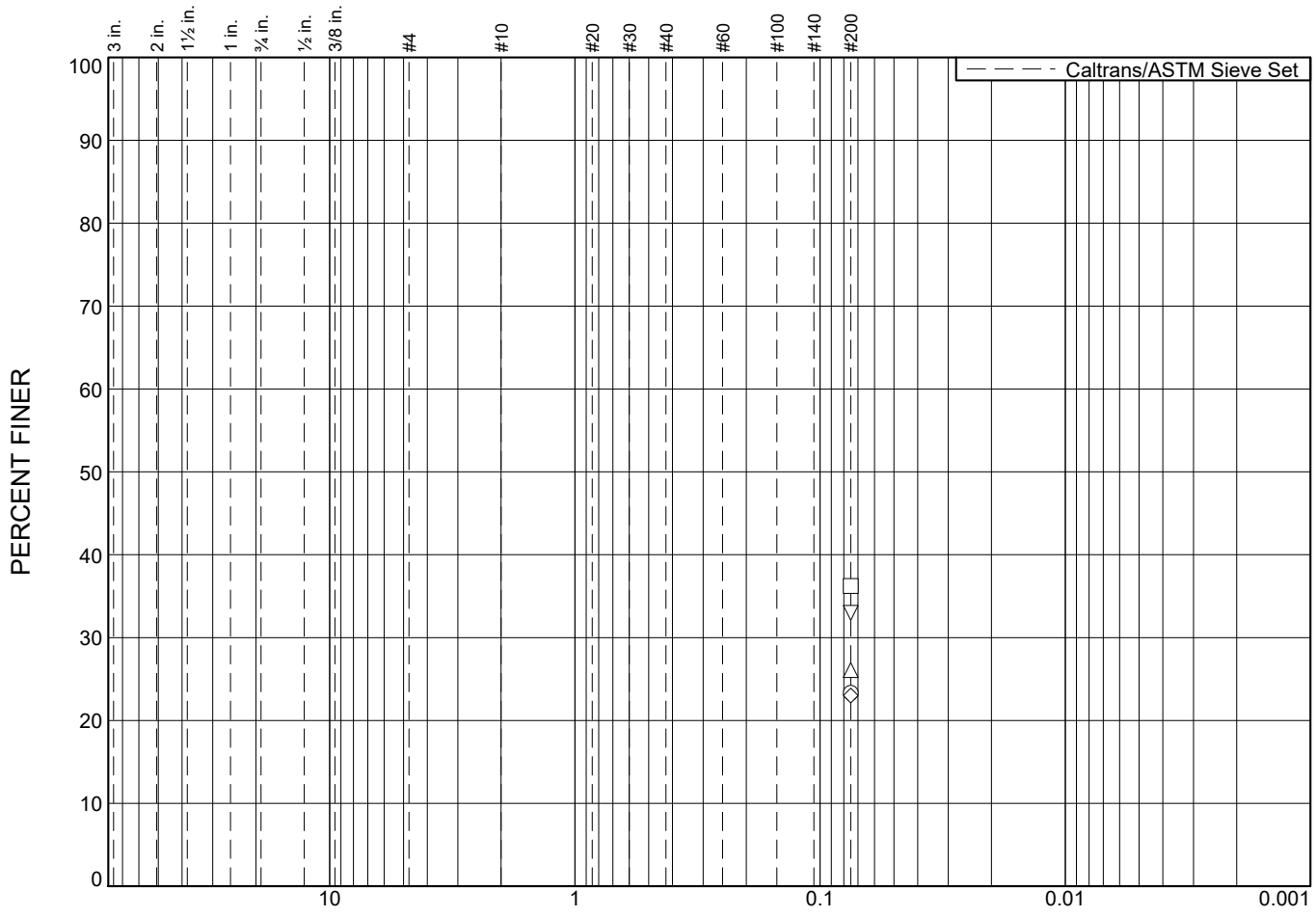
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Client: Kern High School District

Project: Vista Continuation High School

Project No.: 20342 **Figure** A-4

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○							23.3	
□							36.2	
△							26.1	
◇							23.0	
▽							33.0	

SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	Material Description	USCS
○			0-5'	SILTY SAND (R-1)	SM
□			0-5'	SILTY SAND (R-2)	SM
△			0-5'	SILTY SAND (R-3)	SM
◇			0-5'	SILTY SAND (R-4)	SM
▽			0-5'	SILTY SAND (R-5)	SM

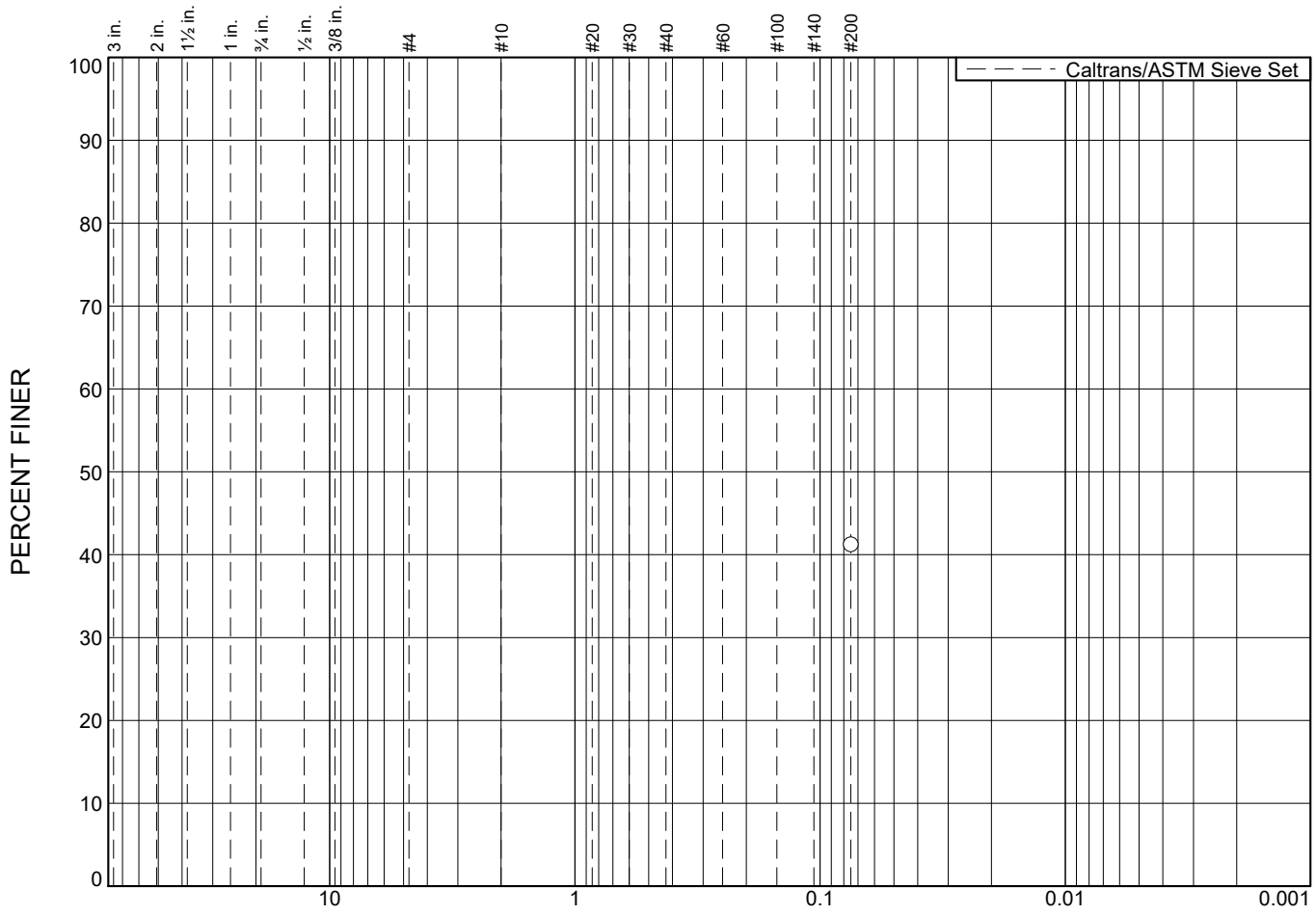
SOILS ENGINEERING, INC.

Client: Kern High School District

Project: Vista Continuation High School

Project No.: 20342 **Figure** A-5

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○							41.3	

SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	Material Description	USCS
○			0-5'	SILTY SAND (R-6)	SM

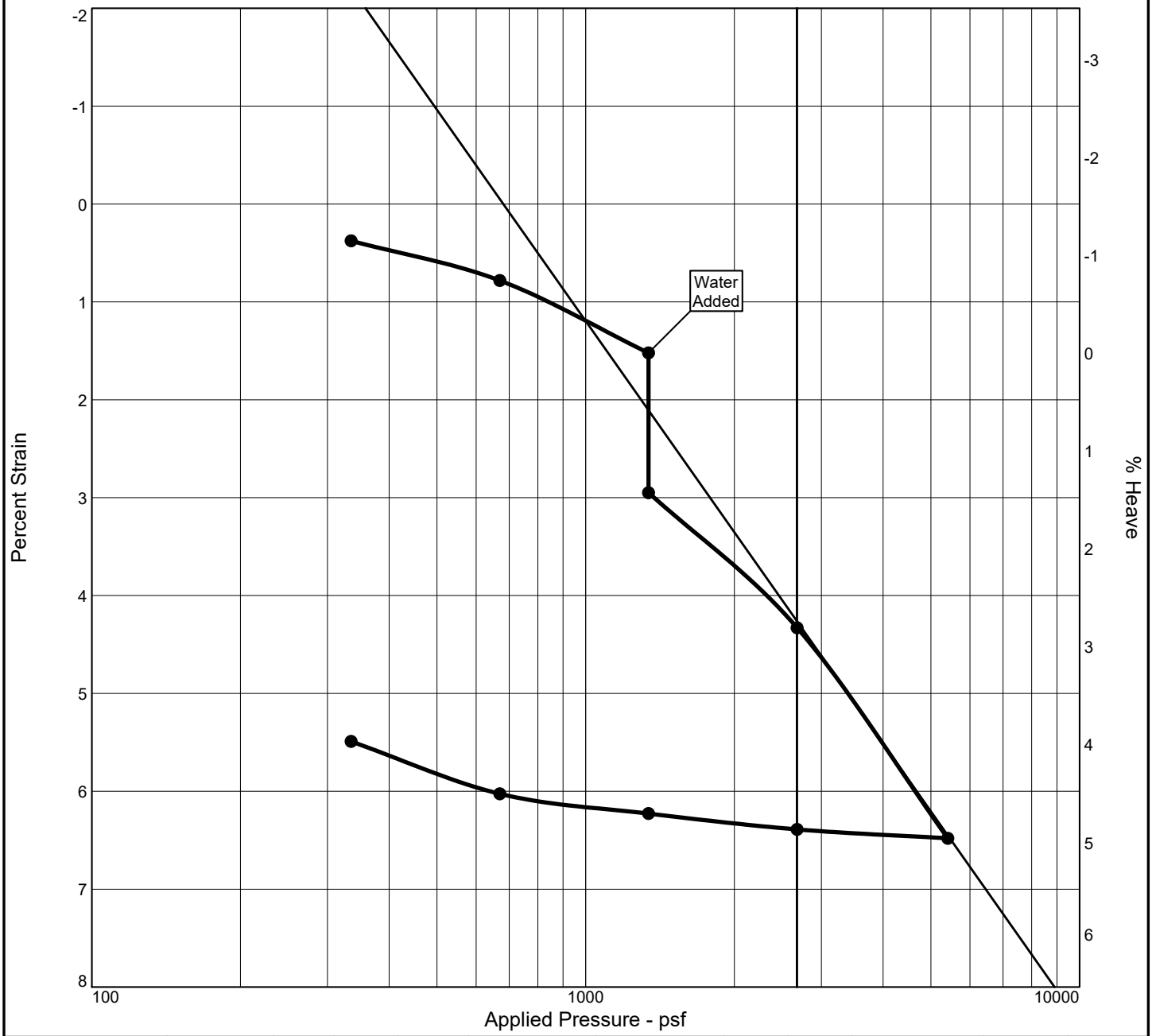
SOILS ENGINEERING, INC.

Client: Kern High School District

Project: Vista Continuation High School

Project No.: 20342 **Figure** A-6

CONSOLIDATION TEST REPORT



Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	Overburden (psf)	P_c (psf)	C_c	C_s	Swell Press. (psf)	Heave %	e_o
Sat.	Moist.											
15.5 %	5.0 %	89.0	N/A	N/A	2.65	336	2774	0.13	0.02		-1.4	0.858

MATERIAL DESCRIPTION	USCS	AASHTO
SANDY SILT	ML	N/A

Project No. 20342 **Client:** Kern High School District

Project: Vista Continuation High School

Source of Sample: B-1 **Depth:** 6'

Remarks:

Test Date: 06/23/25

Sample No. 25-3890-02

SOILS ENGINEERING, INC.

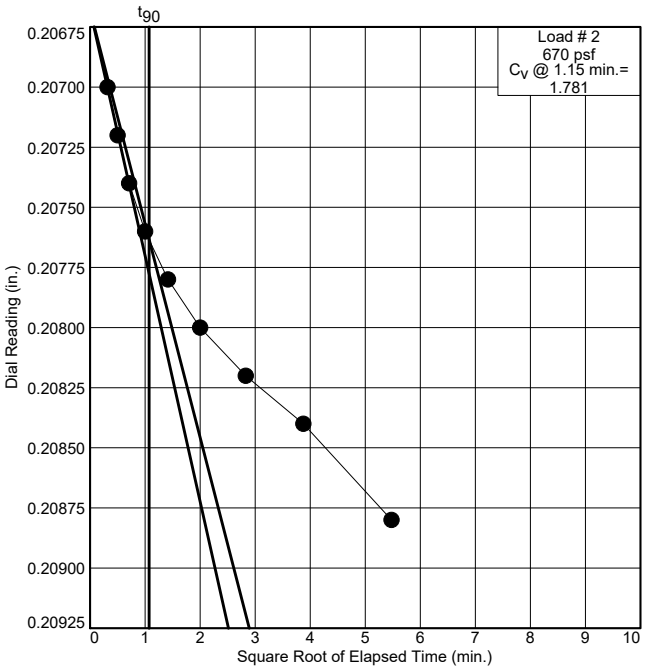
Figure B-1

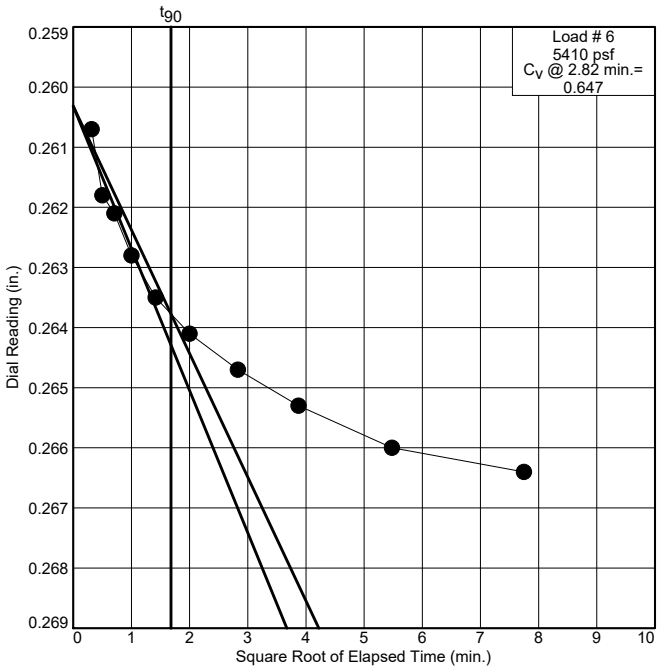
Tested By: CP

Dial Reading vs. Time

Project No.: 20342
Project: Vista Continuation High School

Source of Sample: B-1 Depth: 6'

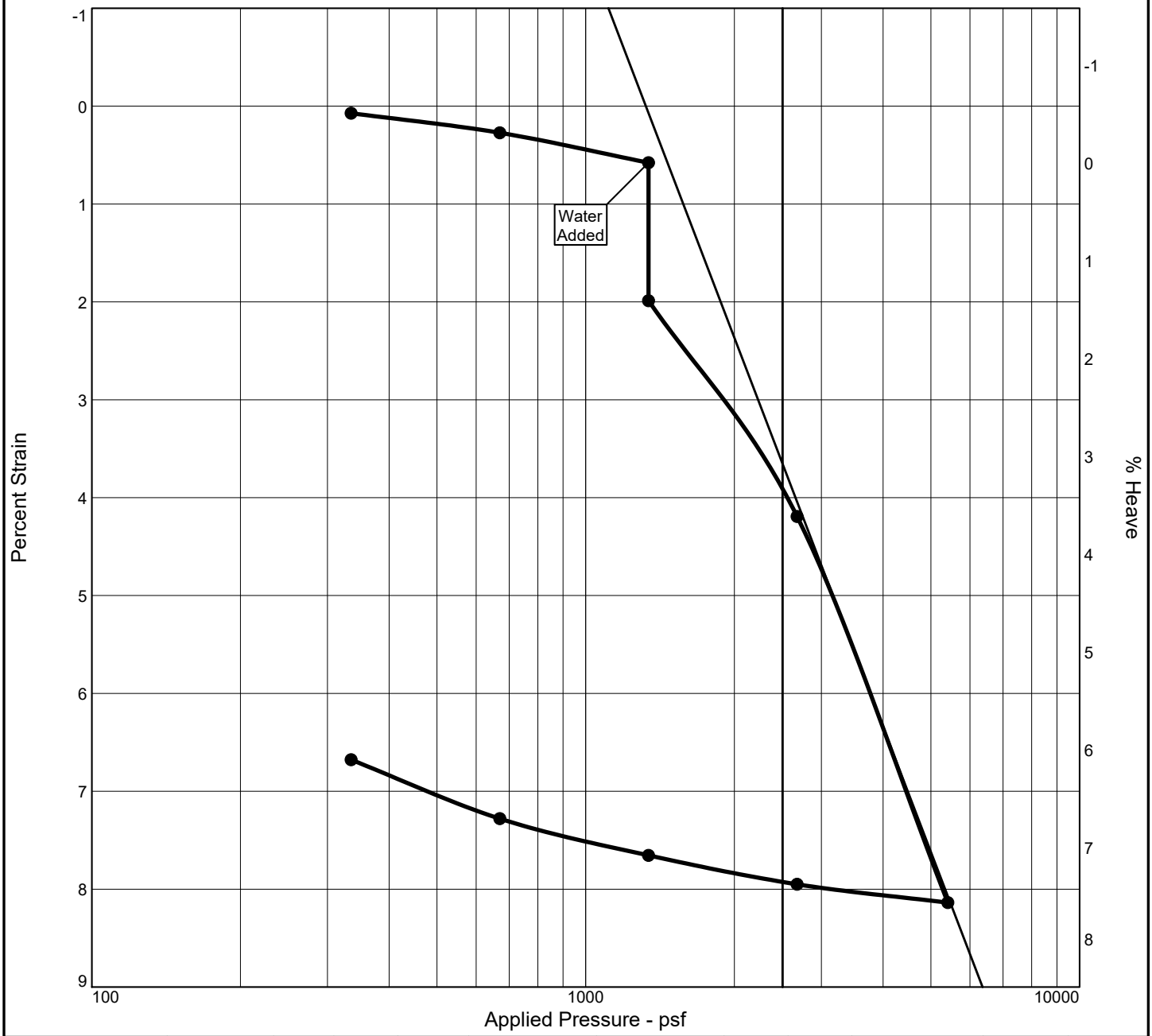




SOILS ENGINEERING, INC.

Figure B-1

CONSOLIDATION TEST REPORT



Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	Overburden (psf)	P_c (psf)	C_c	C_s	Swell Press. (psf)	Heave %	e_o
Sat.	Moist.											
23.6 %	8.3 %	85.5	N/A	N/A	2.65	336	2680	0.26	0.02		-1.4	0.935

MATERIAL DESCRIPTION	USCS	AASHTO
SANDY SILT	ML	N/A

Project No. 20342 **Client:** Kern High School District

Project: Vista Continuation High School

Source of Sample: B-11 **Depth:** 6'

Remarks:

Test Date: 06/26/25

Sample No. 25-3963-22

SOILS ENGINEERING, INC.

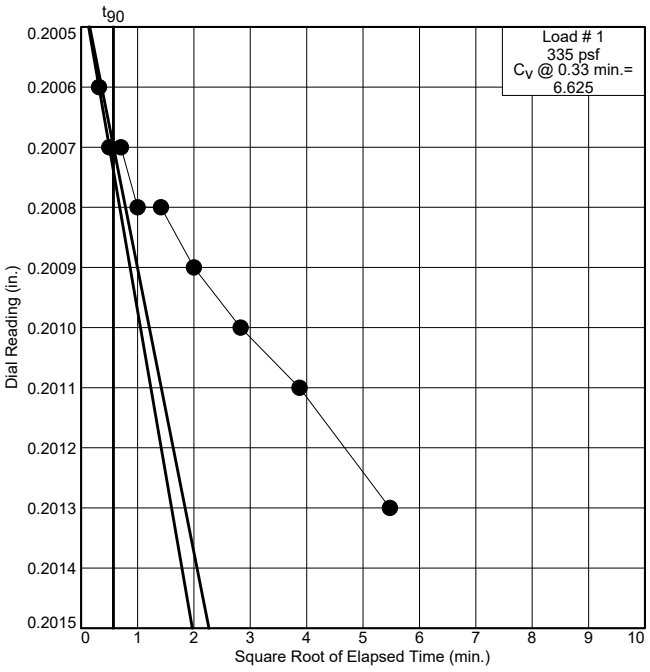
Figure B-2

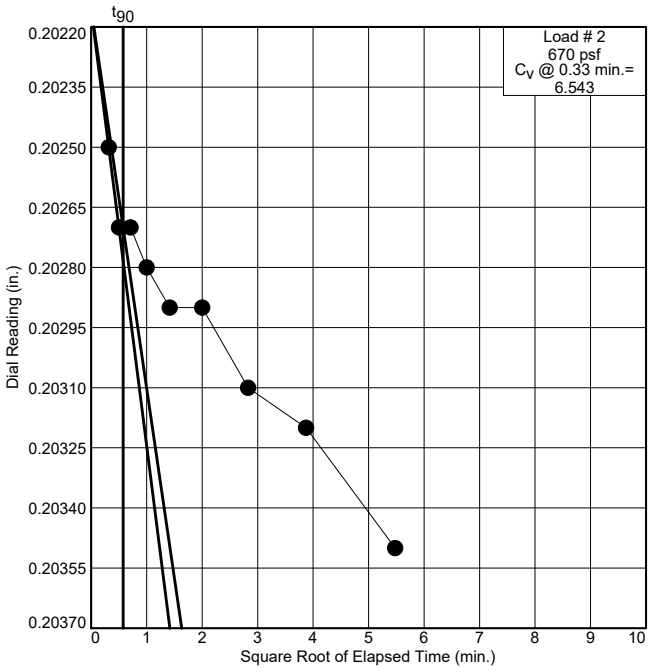
Tested By: CP

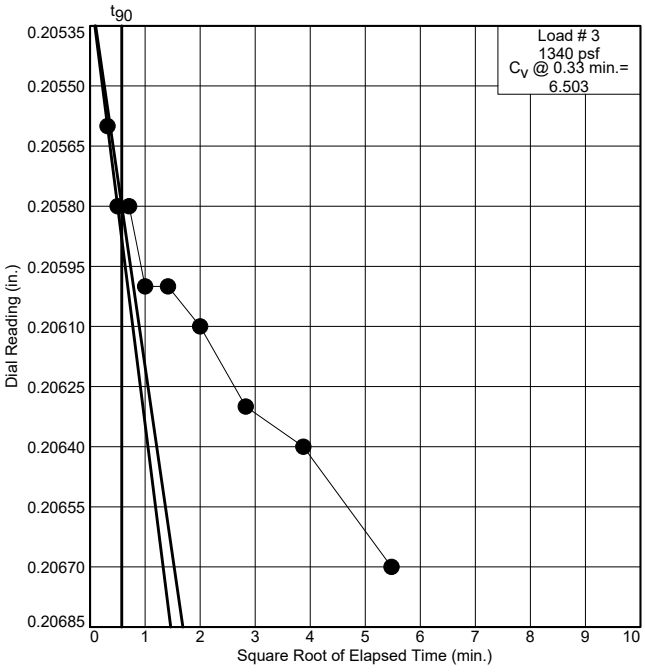
Dial Reading vs. Time

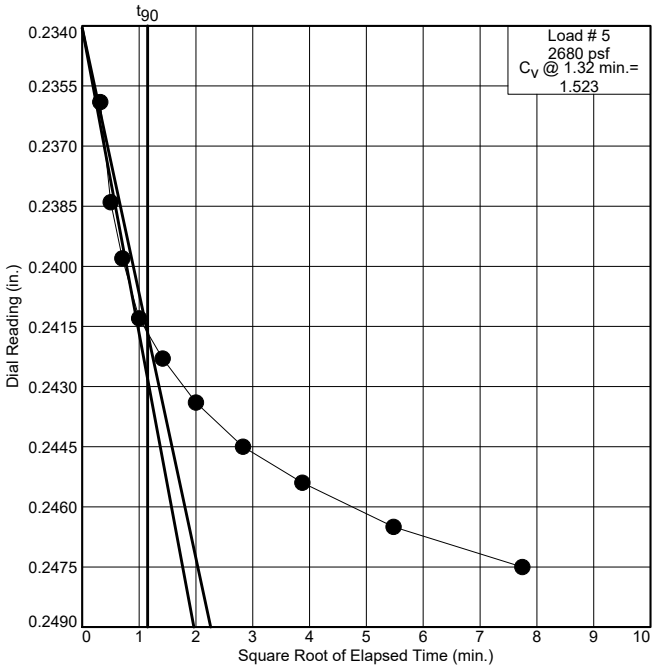
Project No.: 20342
Project: Vista Continuation High School

Source of Sample: B-11 Depth: 6'









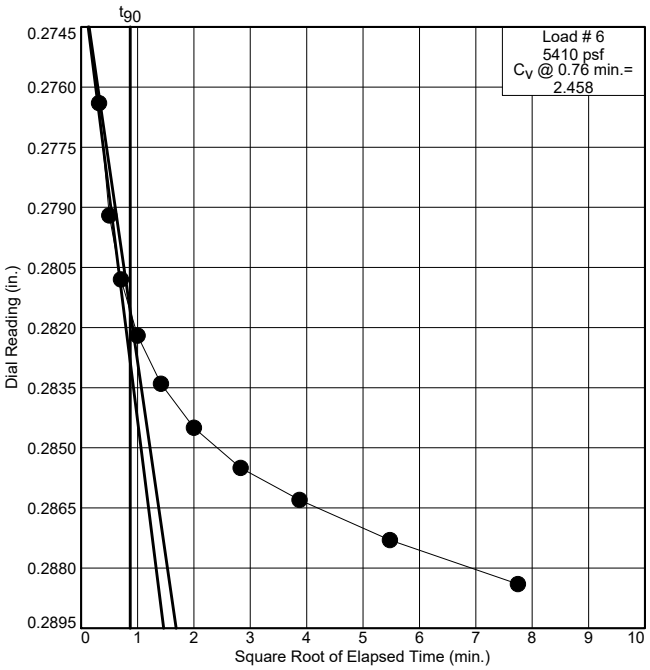
SOILS ENGINEERING, INC.

Figure B-2

Dial Reading vs. Time

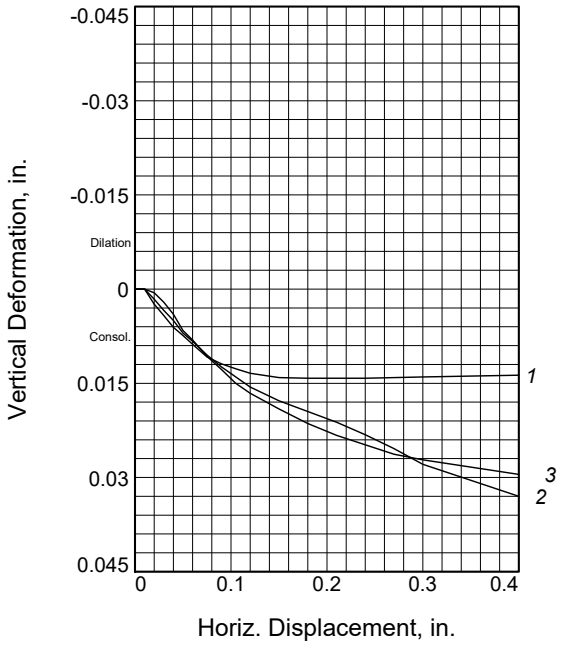
Project No.: 20342
Project: Vista Continuation High School

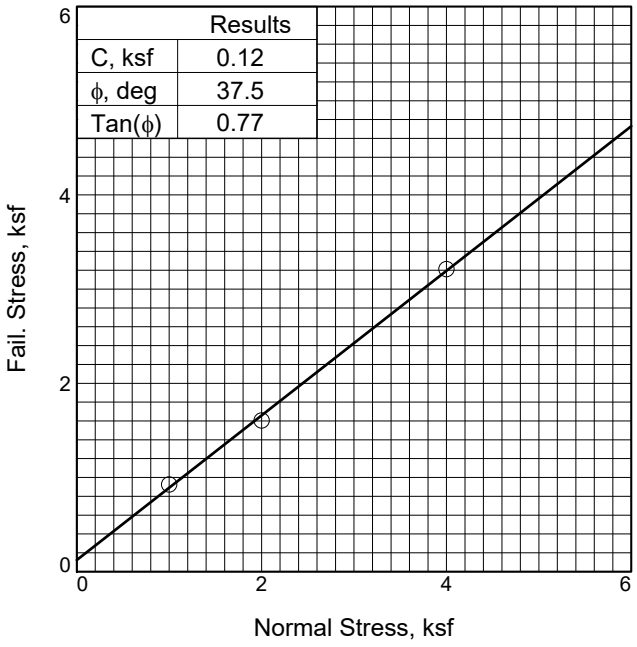
Source of Sample: B-11 Depth: 6'

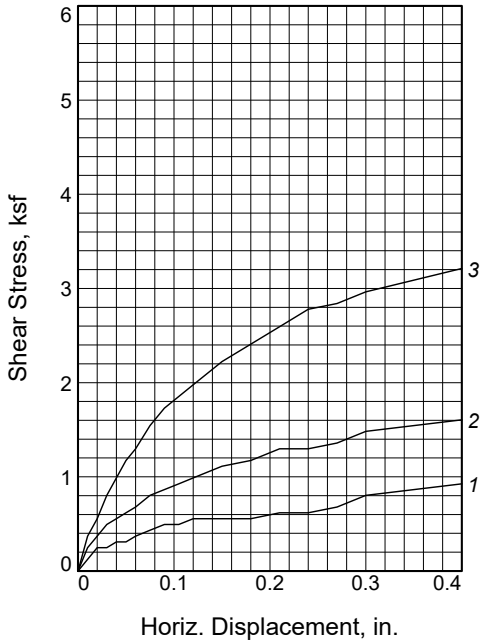


SOILS ENGINEERING, INC.

Figure B-2







Sample No.		1	2	3
Initial	Water Content, %	7.4	6.5	5.6
	Dry Density, pcf	84.3	86.9	86.1
	Saturation, %	20.5	19.1	16.1
	Void Ratio	0.9631	0.9048	0.9219
	Diameter, in.	2.38	2.38	2.38
	Height, in.	1.00	1.00	1.00
At Test	Water Content, %	28.4	29.0	28.1
	Dry Density, pcf	84.3	86.9	86.1
	Saturation, %	78.1	85.0	80.7
	Void Ratio	0.9631	0.9048	0.9219
	Diameter, in.	2.38	2.38	2.38
	Height, in.	1.00	1.00	1.00
Normal Stress, ksf		1.00	2.00	4.00
Fail. Stress, ksf		0.93	1.61	3.21
Displacement, in.		0.40	0.40	0.40
Ult. Stress, ksf				
Displacement, in.				
Strain rate, in./min.		N/A	N/A	N/A

Sample Type: 2.5" X 6" TUBE
Description: POORLY GRADED SAND; light yellowish brown, damp.
LL= N/A **PI=** N/A
Assumed Specific Gravity= 2.65
Remarks: Test Date: 07/01/25

Client: Kern High School District

Project: Vista Continuation High School

Source of Sample: B-8 **Depth:** 6'

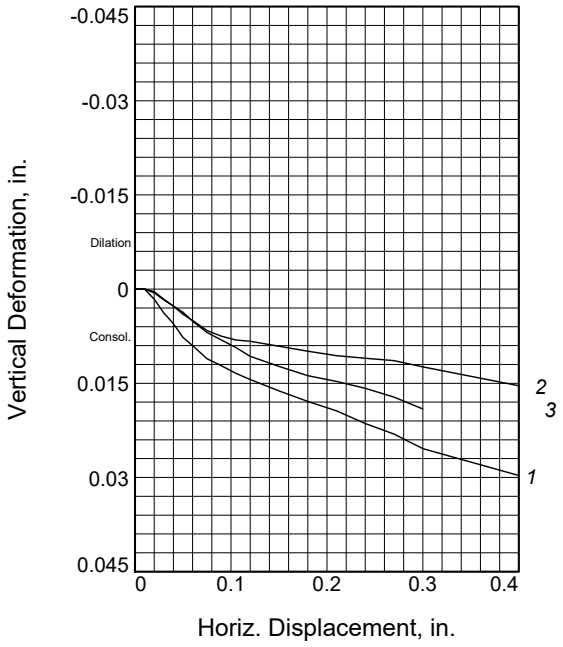
Proj. No.: 20342 **Date Sampled:** 06/04/25

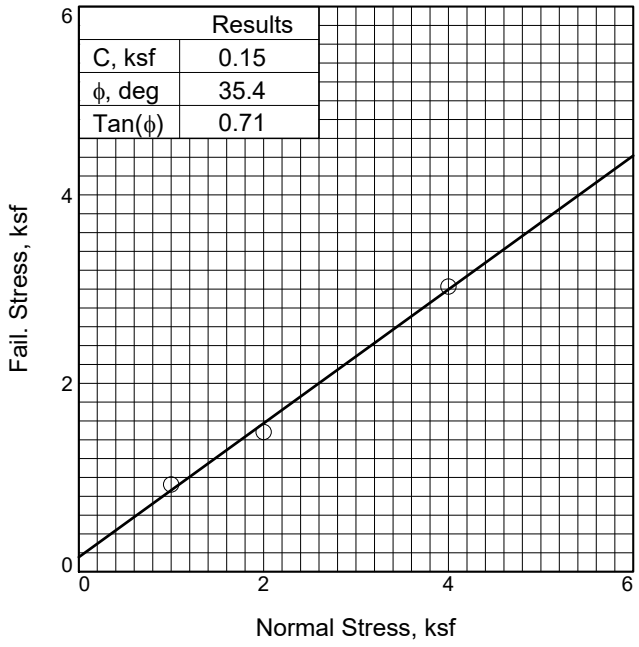
DIRECT SHEAR TEST REPORT

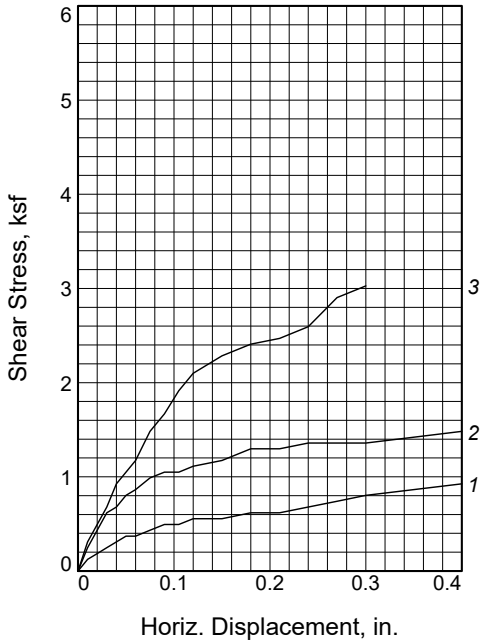
SOILS ENGINEERING, INC.

Figure C-1

Tested By: MY







Sample No.		1	2	3
Initial	Water Content, %	6.7	7.5	6.1
	Dry Density, pcf	84.4	86.9	88.2
	Saturation, %	18.6	22.0	18.6
	Void Ratio	0.9611	0.9048	0.8751
	Diameter, in.	2.38	2.38	2.38
	Height, in.	1.00	1.00	1.00
At Test	Water Content, %	28.4	26.2	27.4
	Dry Density, pcf	84.4	86.9	88.2
	Saturation, %	78.4	76.8	82.9
	Void Ratio	0.9611	0.9048	0.8751
	Diameter, in.	2.38	2.38	2.38
	Height, in.	1.00	1.00	1.00
Normal Stress, ksf		1.00	2.00	4.00
Fail. Stress, ksf		0.93	1.48	3.03
Displacement, in.		0.40	0.40	0.30
Ult. Stress, ksf				
Displacement, in.				
Strain rate, in./min.		N/A	N/A	N/A

Sample Type: 2.5" X 6" TUBE
Description: POORLY GRADED SAND; light yellowish brown, dry, fine grained.
LL= N/A **PI=** N/A
Assumed Specific Gravity= 2.65
Remarks: Test Date: 07/01/25

Figure C-2

Client: Kern High School District

Project: Vista Continuation High School

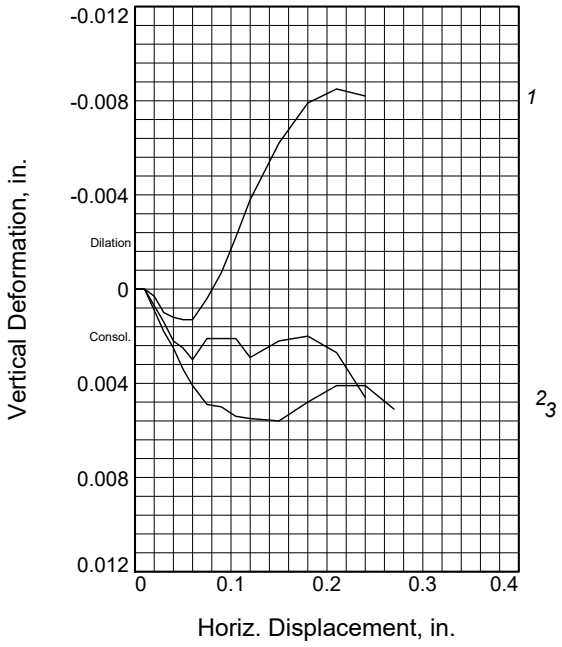
Source of Sample: B-10 **Depth:** 6'

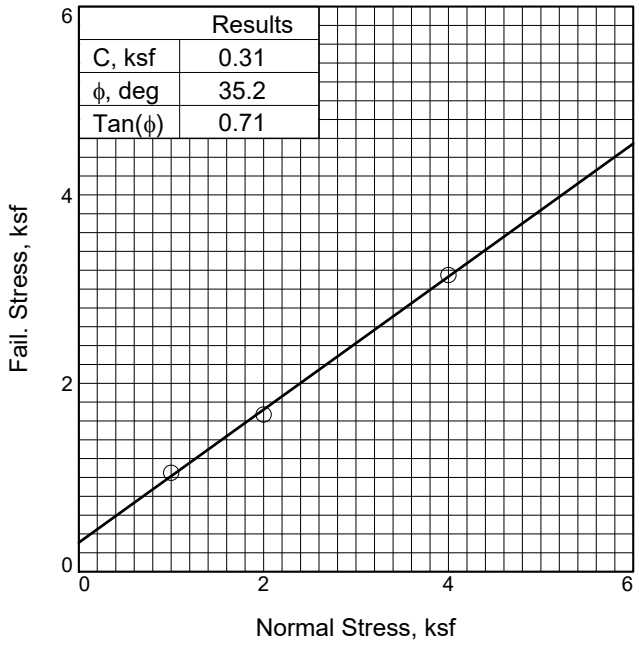
Proj. No.: 20342 **Date Sampled:** 06/04/25

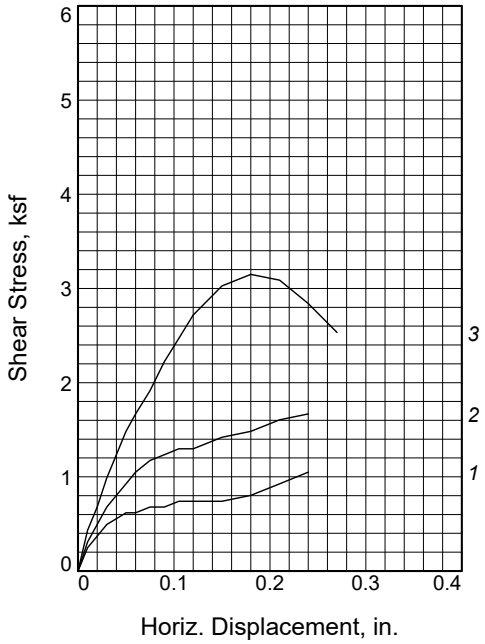
DIRECT SHEAR TEST REPORT

SOILS ENGINEERING, INC.

Tested By: MY







Sample No.		1	2	3
Initial	Water Content, %	5.3	5.0	4.8
	Dry Density, pcf	86.1	87.7	90.3
	Saturation, %	15.2	15.0	15.2
	Void Ratio	0.9219	0.8861	0.8322
	Diameter, in.	2.38	2.38	2.38
	Height, in.	1.00	1.00	1.00
At Test	Water Content, %	30.9	29.9	27.0
	Dry Density, pcf	86.1	87.7	90.3
	Saturation, %	88.7	89.4	86.1
	Void Ratio	0.9219	0.8861	0.8322
	Diameter, in.	2.38	2.38	2.38
	Height, in.	1.00	1.00	1.00
Normal Stress, ksf		1.00	2.00	4.00
Fail. Stress, ksf		1.05	1.67	3.15
Displacement, in.		0.24	0.24	0.18
Ult. Stress, ksf				
Displacement, in.				
Strain rate, in./min.		N/A	N/A	N/A

Sample Type: 2.5" X 6" TUBE
Description: SILTY SAND; greyish brown, damp, cohesive.
LL= N/A **PI=** N/A
Assumed Specific Gravity= 2.65
Remarks: Test Date: 06/30/25

Client: Kern High School District

Project: Vista Continuation High School

Source of Sample: B-2 **Depth:** 6'

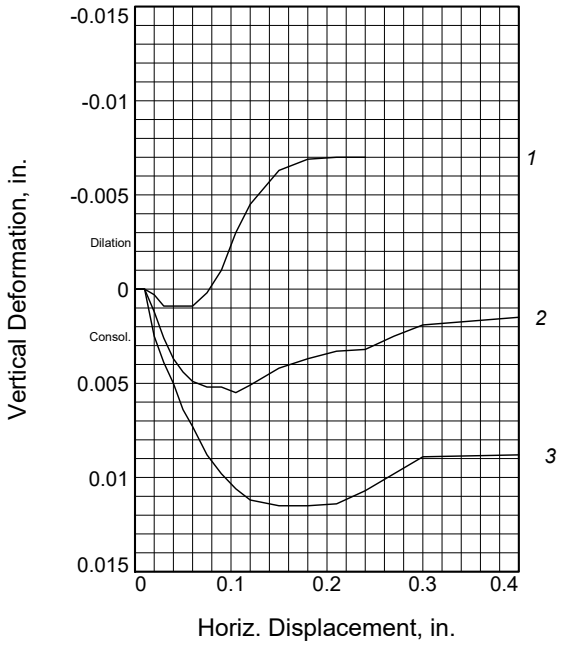
Proj. No.: 20342 **Date Sampled:** 06/03/25

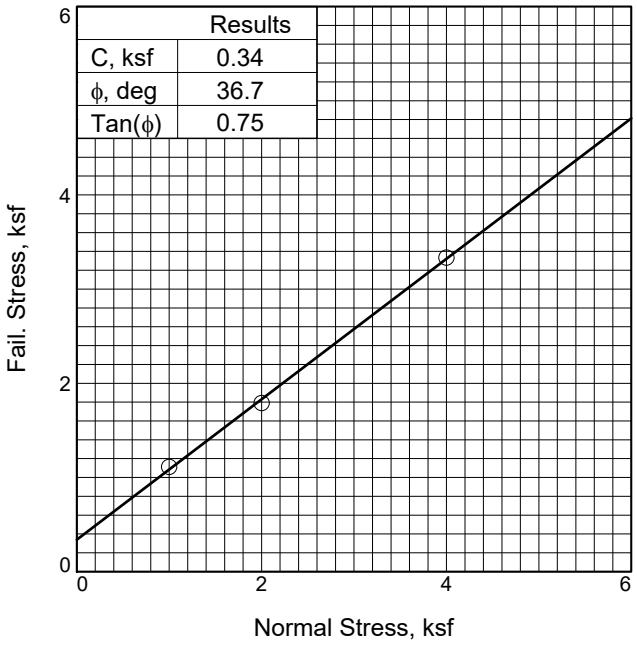
DIRECT SHEAR TEST REPORT

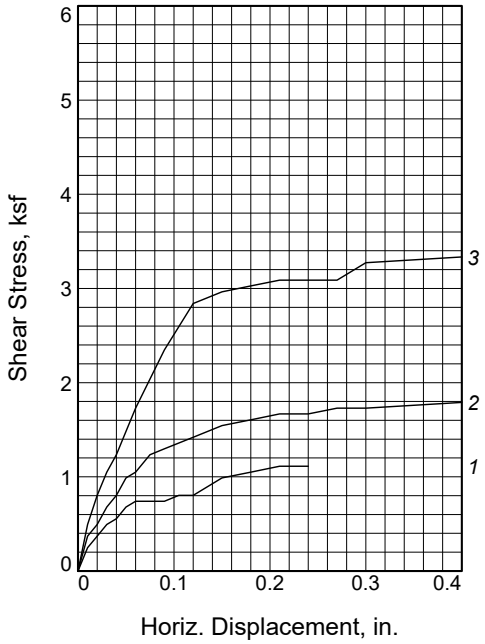
SOILS ENGINEERING, INC.

Figure C-3

Tested By: SC







Sample No.		1	2	3
Initial	Water Content, %	7.6	9.1	7.4
	Dry Density, pcf	101.0	98.9	102.9
	Saturation, %	31.5	36.0	32.4
	Void Ratio	0.6373	0.6729	0.6072
	Diameter, in.	2.38	2.38	2.38
	Height, in.	1.00	1.00	1.00
At Test	Water Content, %	20.4	22.6	21.6
	Dry Density, pcf	101.0	98.9	102.9
	Saturation, %	84.9	89.0	94.1
	Void Ratio	0.6373	0.6729	0.6072
	Diameter, in.	2.38	2.38	2.38
	Height, in.	1.00	1.00	1.00
Normal Stress, ksf		1.00	2.00	4.00
Fail. Stress, ksf		1.11	1.79	3.33
Displacement, in.		0.21	0.40	0.40
Ult. Stress, ksf				
Displacement, in.				
Strain rate, in./min.		N/A	N/A	N/A

Sample Type: 2.5" X 6" TUBE
Description: SILTY SAND; light yellowish brown, dry, fine grained.
LL= N/A **PI=** N/A
Assumed Specific Gravity= 2.65
Remarks: Test Date: 06/30/25

Client: Kern High School District

Project: Vista Continuation High School

Source of Sample: B-4 **Depth:** 6'

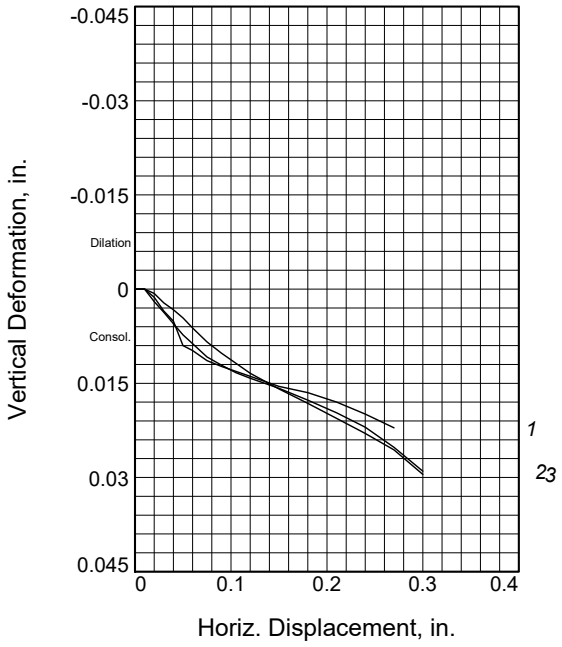
Proj. No.: 20342 **Date Sampled:** 06/03/25

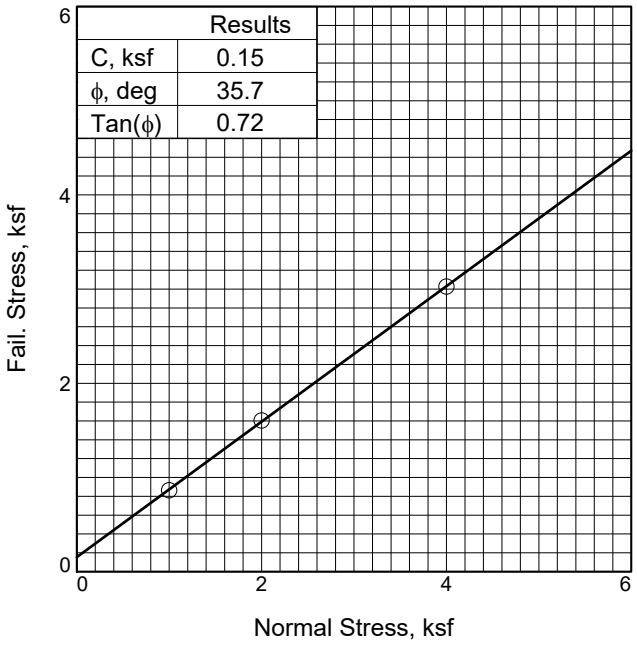
DIRECT SHEAR TEST REPORT

SOILS ENGINEERING, INC.

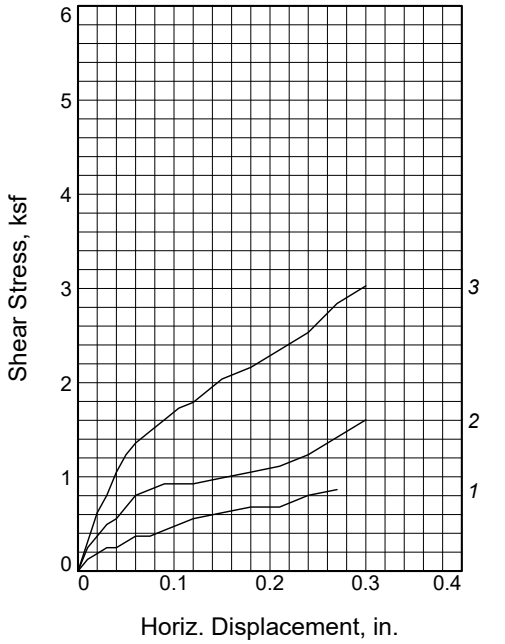
Figure C-4

Tested By: SC





Results	
C, ksf	0.15
ϕ, deg	35.7
Tan(ϕ)	0.72



Sample No.		1	2	3
Initial	Water Content, %	6.5	6.0	5.8
	Dry Density, pcf	88.0	87.0	90.0
	Saturation, %	19.4	17.7	18.4
	Void Ratio	0.8806	0.9010	0.8375
	Diameter, in.	2.38	2.38	2.38
	Height, in.	1.00	1.00	1.00
At Test	Water Content, %	27.6	26.9	25.5
	Dry Density, pcf	88.0	87.0	90.0
	Saturation, %	83.0	79.1	80.7
	Void Ratio	0.8806	0.9010	0.8375
	Diameter, in.	2.38	2.38	2.38
	Height, in.	1.00	1.00	1.00
Normal Stress, ksf		1.00	2.00	4.00
Fail. Stress, ksf		0.86	1.61	3.03
Displacement, in.		0.27	0.30	0.30
Ult. Stress, ksf				
Displacement, in.				
Strain rate, in./min.		N/A	N/A	N/A

Sample Type: 2.5" X 6" TUBE
Description: POORLY GRADED SAND; light yellowish brown, dry.
LL= N/A **PI=** N/A
Assumed Specific Gravity= 2.65
Remarks: Test Date: 07/02/25

Client: Kern High School District

Project: Vista Continuation High School

Source of Sample: B-5 **Depth:** 6'

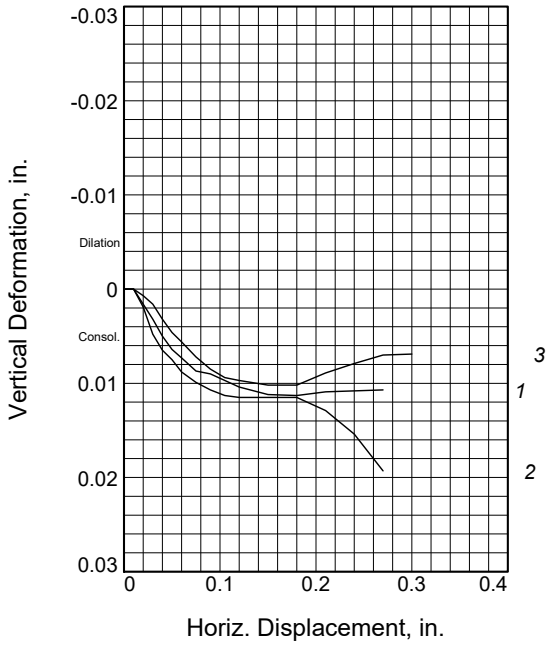
Proj. No.: 20342 **Date Sampled:** 06/03/25

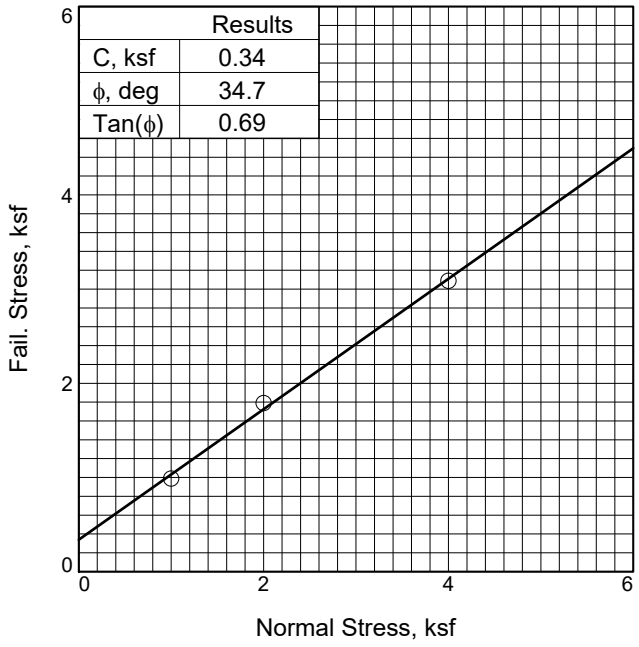
DIRECT SHEAR TEST REPORT

SOILS ENGINEERING, INC.

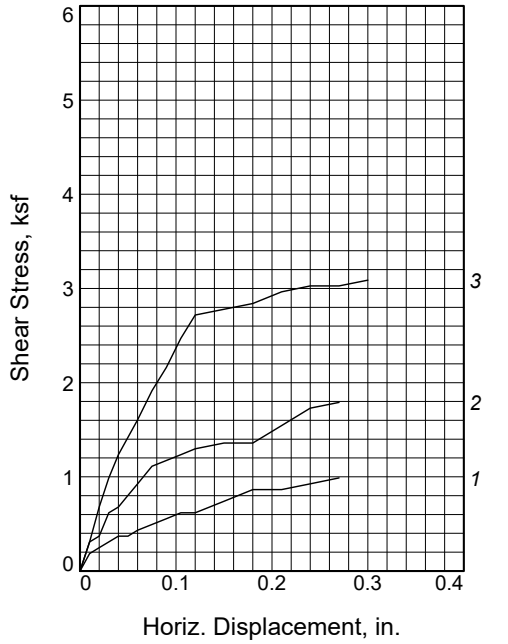
Figure C-5

Tested By: MY





Results	
C, ksf	0.34
ϕ, deg	34.7
Tan(ϕ)	0.69



Sample No.		1	2	3
Initial	Water Content, %	4.6	4.3	3.7
	Dry Density, pcf	103.8	103.5	103.6
	Saturation, %	20.7	19.1	16.2
	Void Ratio	0.5939	0.5979	0.5965
	Diameter, in.	2.38	2.38	2.38
	Height, in.	1.00	1.00	1.00
At Test	Water Content, %	19.7	20.7	20.7
	Dry Density, pcf	103.8	103.5	103.6
	Saturation, %	88.0	91.7	91.8
	Void Ratio	0.5939	0.5979	0.5965
	Diameter, in.	2.38	2.38	2.38
	Height, in.	1.00	1.00	1.00
Normal Stress, ksf		1.00	2.00	4.00
Fail. Stress, ksf		0.99	1.79	3.09
Displacement, in.		0.27	0.27	0.30
Ult. Stress, ksf				
Displacement, in.				
Strain rate, in./min.		N/A	N/A	N/A

Sample Type: 2.5" X 6" TUBE
Description: SILTY SAND; light yellowish brown, dry, traces of gravel.
LL= N/A **PI=** N/A
Assumed Specific Gravity= 2.65
Remarks: Test Date: 07/02/25

Client: Kern High School District

Project: Vista Continuation High School

Source of Sample: B-6 **Depth:** 6'

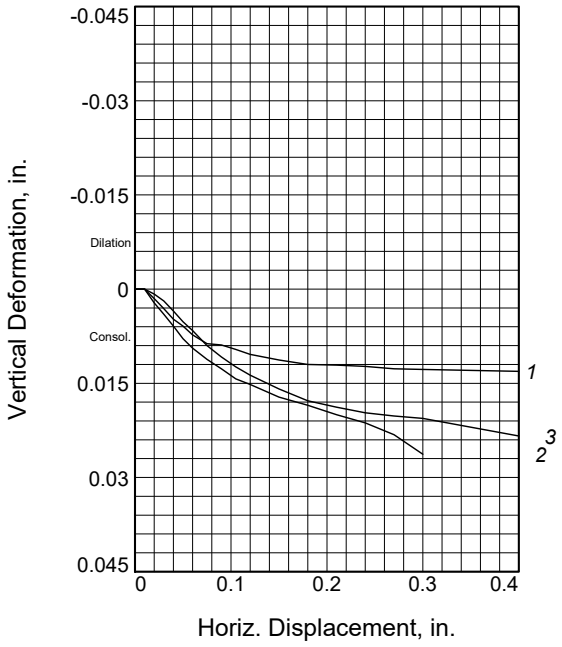
Proj. No.: 20342 **Date Sampled:** 06/03/25

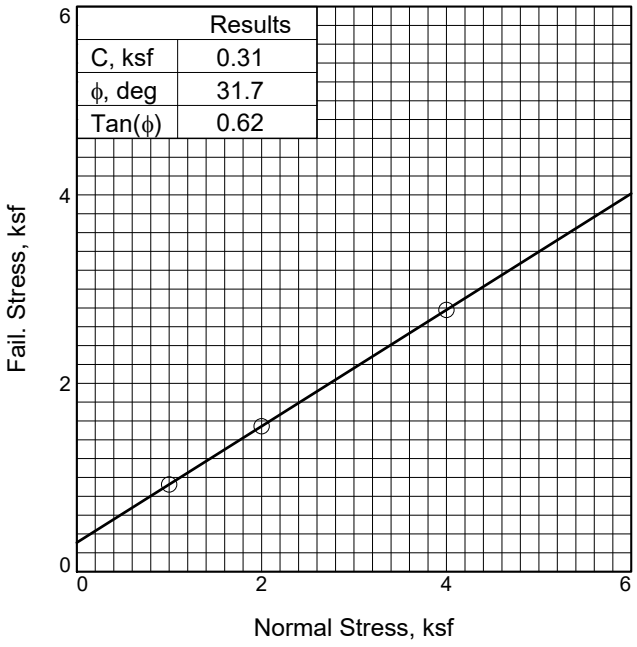
DIRECT SHEAR TEST REPORT

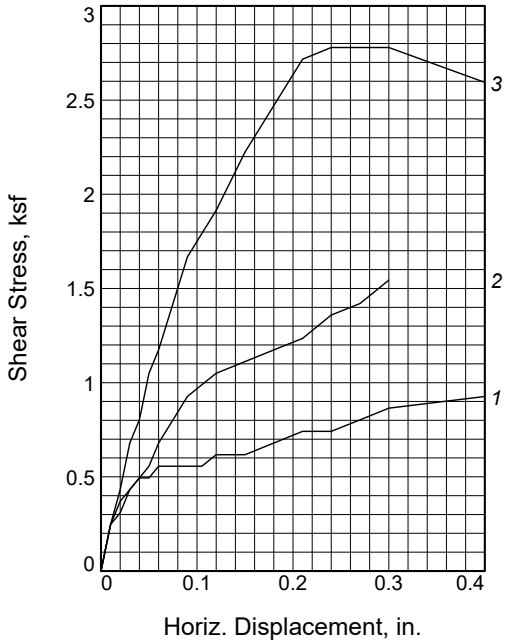
SOILS ENGINEERING, INC.

Figure C-6

Tested By: MY







Sample No.		1	2	3
Initial	Water Content, %	5.8	5.0	5.7
	Dry Density, pcf	93.0	97.2	95.4
	Saturation, %	19.8	19.0	20.5
	Void Ratio	0.7780	0.7025	0.7347
	Diameter, in.	2.38	2.38	2.38
	Height, in.	1.00	1.00	1.00
At Test	Water Content, %	25.9	22.7	24.1
	Dry Density, pcf	93.0	97.2	95.4
	Saturation, %	88.1	85.5	86.8
	Void Ratio	0.7780	0.7025	0.7347
	Diameter, in.	2.38	2.38	2.38
	Height, in.	1.00	1.00	1.00
Normal Stress, ksf		1.00	2.00	4.00
Fail. Stress, ksf		0.93	1.54	2.78
Displacement, in.		0.40	0.30	0.24
Ult. Stress, ksf				
Displacement, in.				
Strain rate, in./min.		N/A	N/A	N/A

Sample Type: 2.5" X 6" TUBE
Description: SILTY SAND; light yellowish brown, dry.
LL= N/A **PI=** N/A
Assumed Specific Gravity= 2.65
Remarks: Test Date: 07/02/25

Client: Kern High School District

Project: Vista Continuation High School

Source of Sample: B-7 **Depth:** 6'

Proj. No.: 20342 **Date Sampled:** 06/03/25

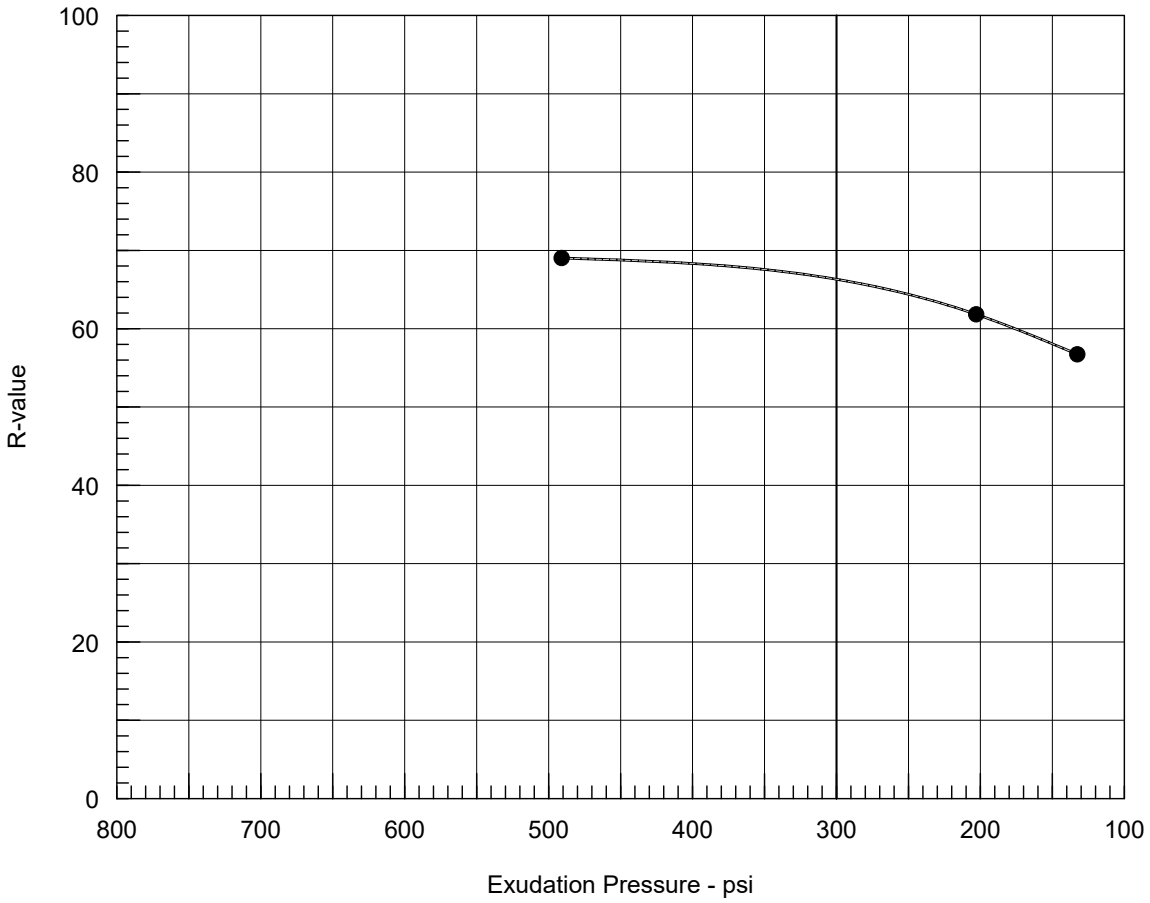
DIRECT SHEAR TEST REPORT

SOILS ENGINEERING, INC.

Figure C-7

Tested By: MY

R-VALUE TEST REPORT



Resistance R-Value and Expansion Pressure - Cal Test 301

No.	Compact. Pressure psi	Density pcf	Moist. %	Expansion Pressure psi	Horizontal Press. psi @ 160 psi	Sample Height in.	Exud. Pressure psi	R Value	R Value Corr.
1	350	125.7	9.2	0.00	28	2.47	491	69	69
2	350	124.0	10.2	0.00	35	2.54	203	62	62
3	350	121.1	11.2	0.00	40	2.46	133	57	57

Test Results	Material Description
R-value at 300 psi exudation pressure = 66	SILTY SAND (R-1)

Project No.: 20342
Project: Vista Continuation High School
Location: R-1
Depth: 0-5'
Date: 7/14/2025

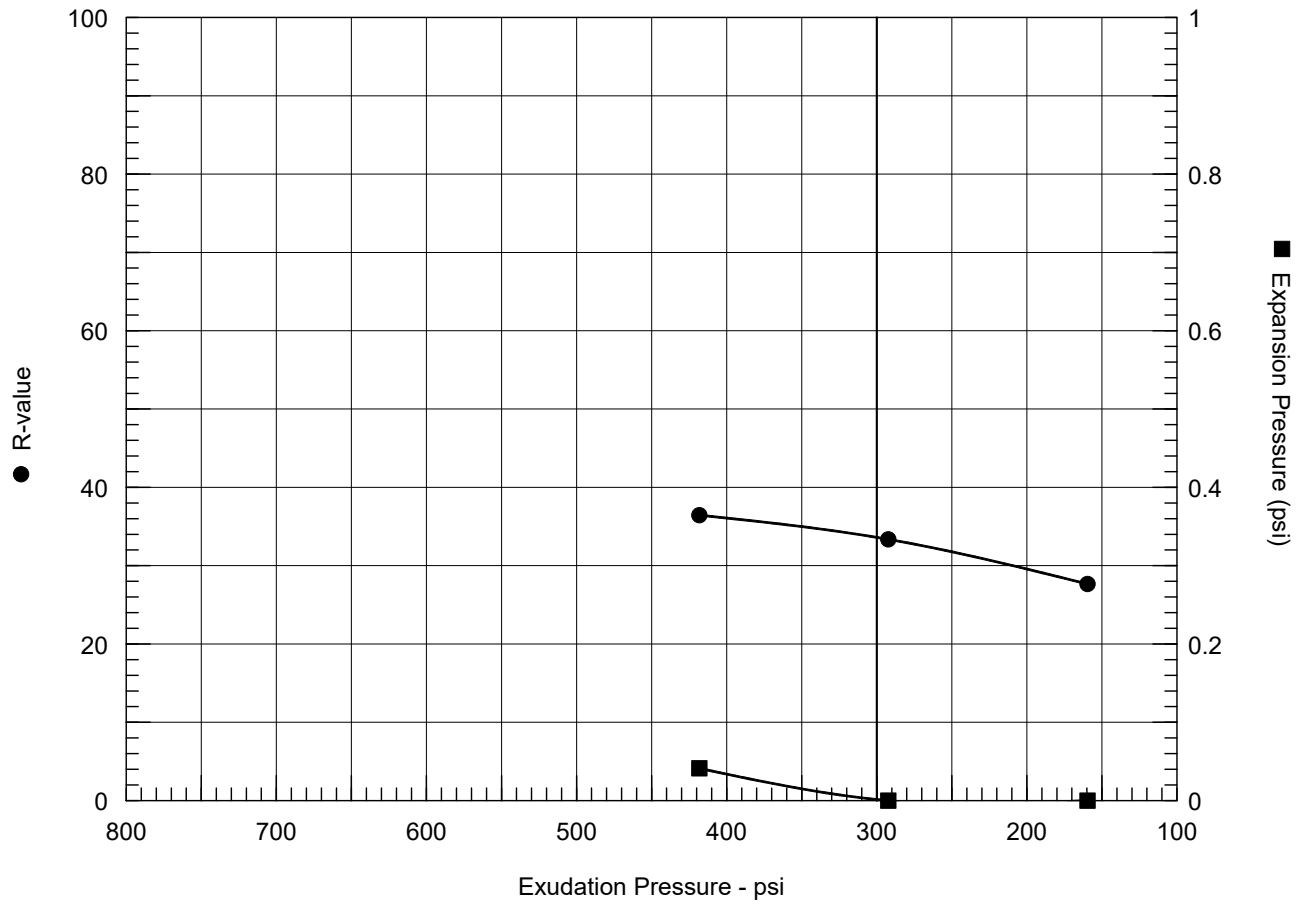
Tested by: RC
Checked by:
Remarks:
Test Date: 06/25/25

R-VALUE TEST REPORT

SOILS ENGINEERING, INC.

Figure D-1

R-VALUE TEST REPORT



Resistance R-Value and Expansion Pressure - Cal Test 301

No.	Compact. Pressure psi	Density pcf	Moist. %	Expansion Pressure psi	Horizontal Press. psi @ 160 psi	Sample Height in.	Exud. Pressure psi	R Value	R Value Corr.
1	350	119.9	13.5	0.04	67	2.44	418	38	36
2	180	116.6	14.5	0.00	73	2.56	292	32	33
3	90	114.8	15.5	0.00	87	2.57	160	26	28

Test Results	Material Description
R-value at 300 psi exudation pressure = 34 **Exp. pressure at 300 psi exudation pressure =** 0.00 psi	SILTY SAND (R-2)

Project No.: 20342
Project: Vista Continuation High School
Location: R-2
Depth: 0-5'
Date: 7/14/2025

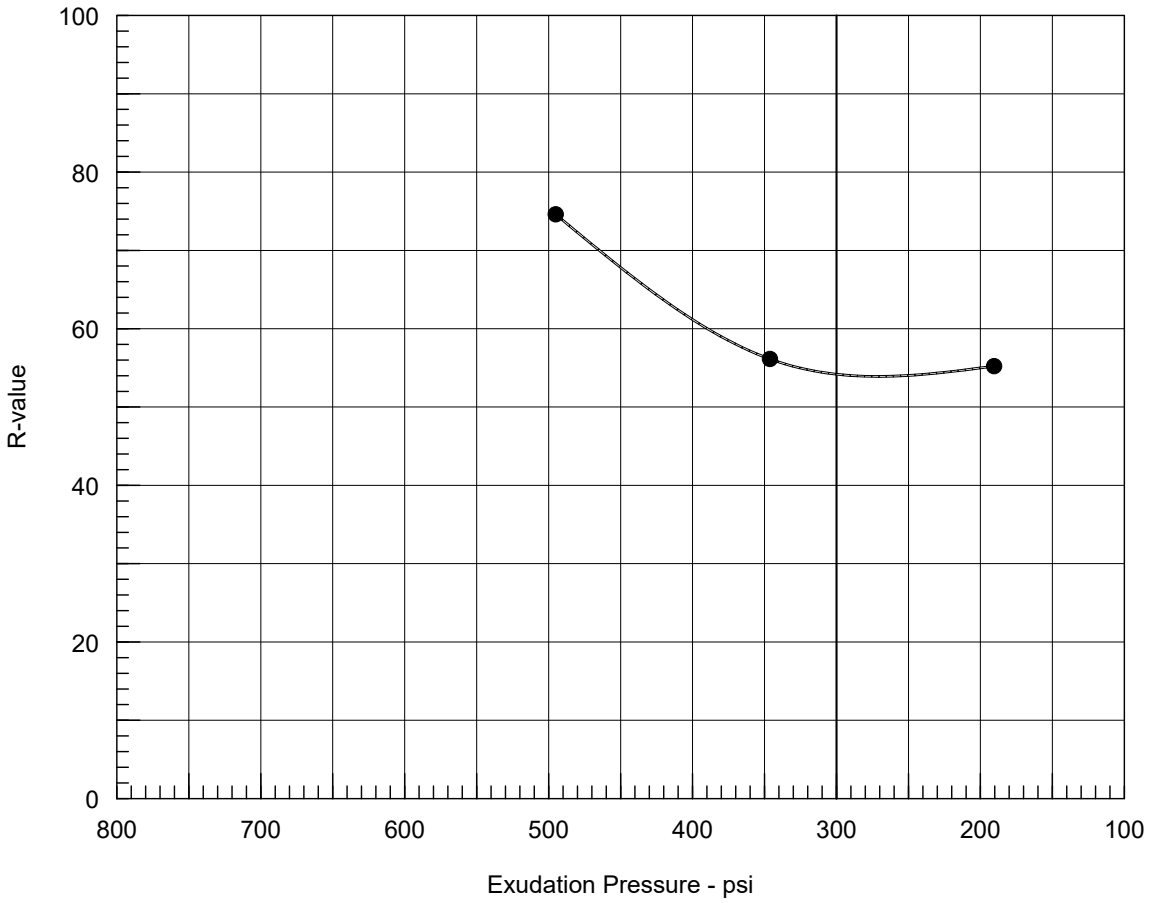
Tested by: RC
Checked by:
Remarks:
Test Date: 07/02/25

R-VALUE TEST REPORT

SOILS ENGINEERING, INC.

Figure D-2

R-VALUE TEST REPORT



Resistance R-Value and Expansion Pressure - Cal Test 301

No.	Compact. Pressure psi	Density pcf	Moist. %	Expansion Pressure psi	Horizontal Press. psi @ 160 psi	Sample Height in.	Exud. Pressure psi	R Value	R Value Corr.
1	350	129.8	8.7	0.00	22	2.49	495	75	75
2	350	128.7	9.8	0.00	36	2.40	346	59	56
3	270	127.5	10.8	0.00	42	2.44	191	57	55

Test Results	Material Description
R-value at 300 psi exudation pressure = 54	SILTY SAND (R-3)

Project No.: 20342
Project: Vista Continuation High School
Location: R-3
Depth: 0-5'
Date: 7/14/2025

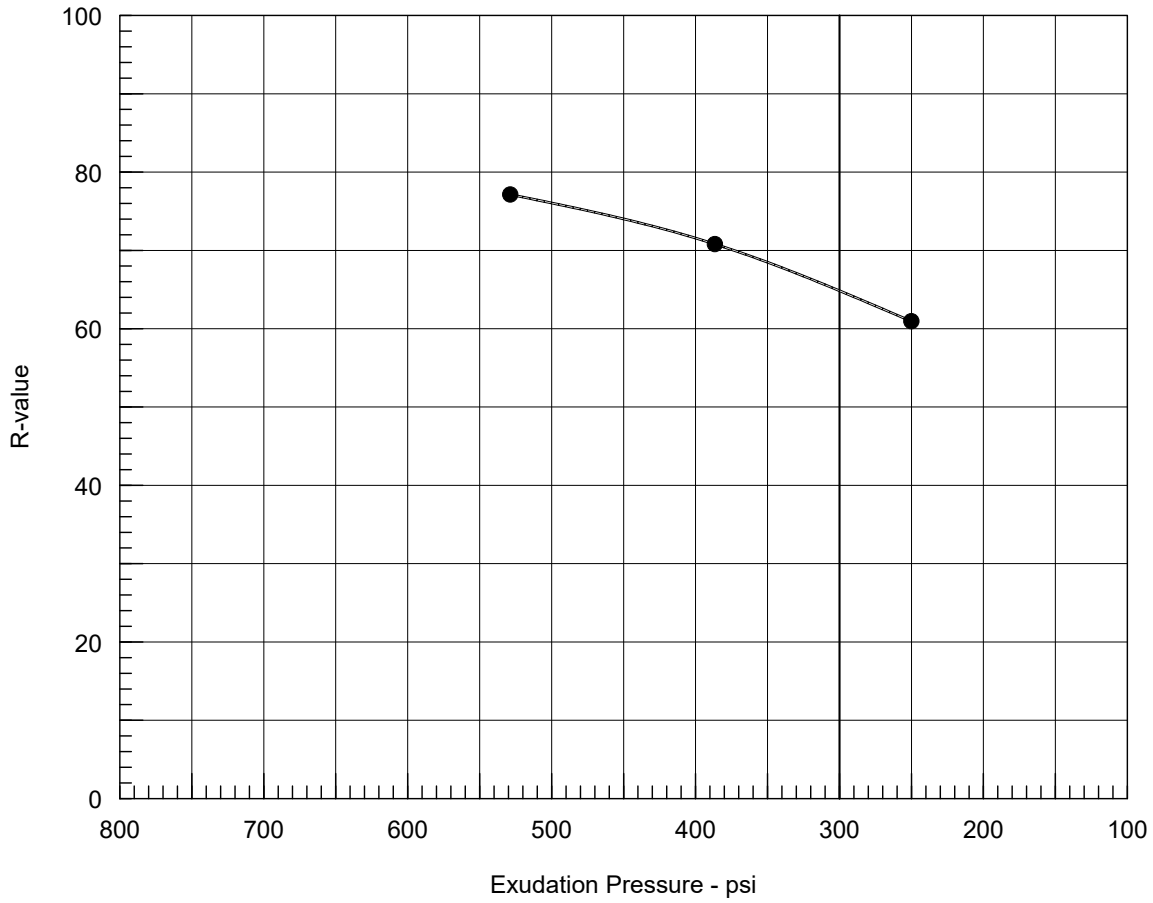
Tested by: RC
Checked by:
Remarks:
Test Date: 07/02/25

R-VALUE TEST REPORT

SOILS ENGINEERING, INC.

Figure D-3

R-VALUE TEST REPORT



Resistance R-Value and Expansion Pressure - Cal Test 301

No.	Compact. Pressure psi	Density pcf	Moist. %	Expansion Pressure psi	Horizontal Press. psi @ 160 psi	Sample Height in.	Exud. Pressure psi	R Value	R Value Corr.
1	240	122.5	8.2	0.00	20	2.57	529	76	77
2	350	127.9	9.3	0.00	24	2.39	387	73	71
3	350	124.5	10.3	0.00	35	2.49	250	61	61

Test Results	Material Description
R-value at 300 psi exudation pressure = 65	SILTY SAND (R-4)

Project No.: 20342
Project: Vista Continuation High School
Location: R-4
Depth: 0-5'
Date: 7/9/2025

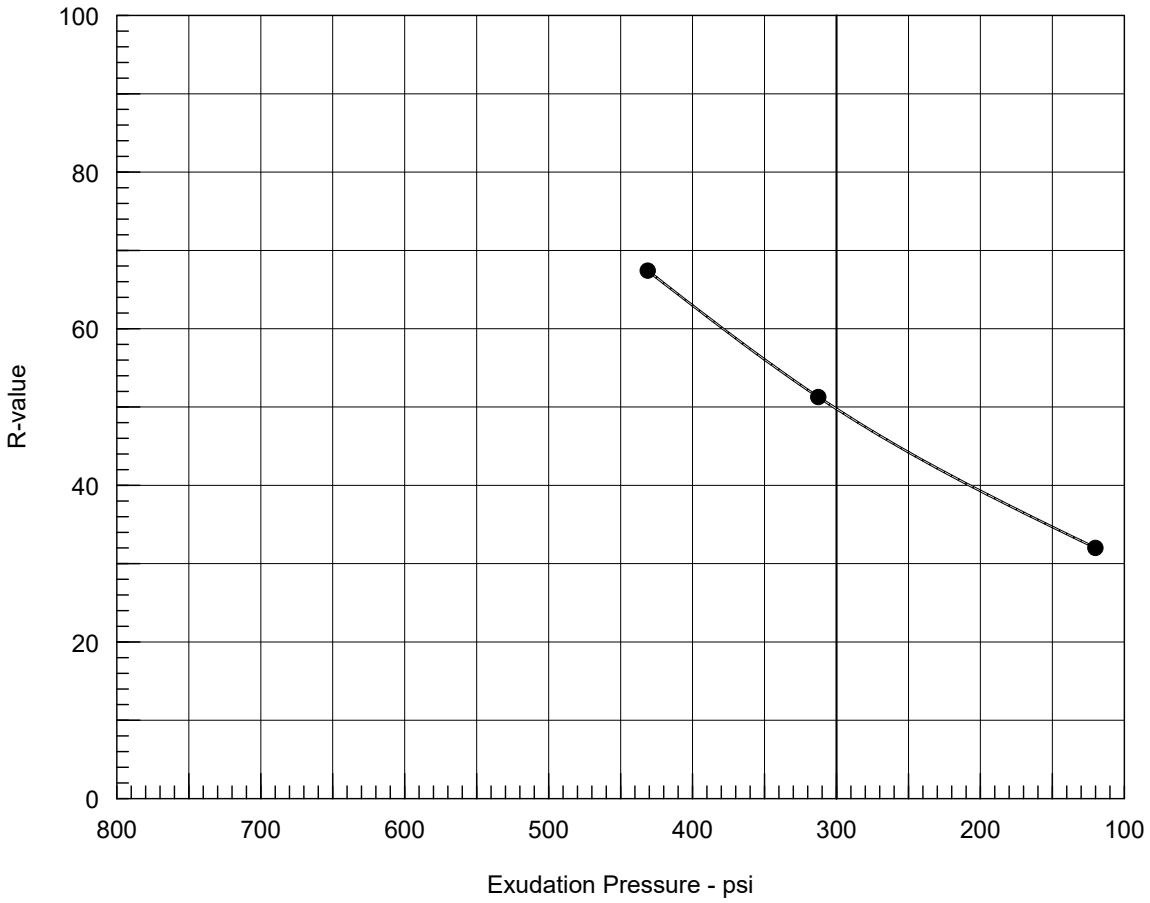
Tested by: RC
Checked by:
Remarks:
Test Date: 06/25/25

R-VALUE TEST REPORT

SOILS ENGINEERING, INC.

Figure D-4

R-VALUE TEST REPORT



Resistance R-Value and Expansion Pressure - Cal Test 301

No.	Compact. Pressure psi	Density pcf	Moist. %	Expansion Pressure psi	Horizontal Press. psi @ 160 psi	Sample Height in.	Exud. Pressure psi	R Value	R Value Corr.
1	350	127.9	9.6	0.00	31	2.46	431	67	67
2	350	126.2	10.7	0.00	45	2.41	313	54	51
3	120	123.8	11.8	0.00	78	2.54	120	32	32

Test Results	Material Description
R-value at 300 psi exudation pressure = 50	SILTY SAND (R-5)

Project No.: 20342
Project: Vista Continuation High School
Location: R-5
Depth: 0-5'
Date: 7/14/2025

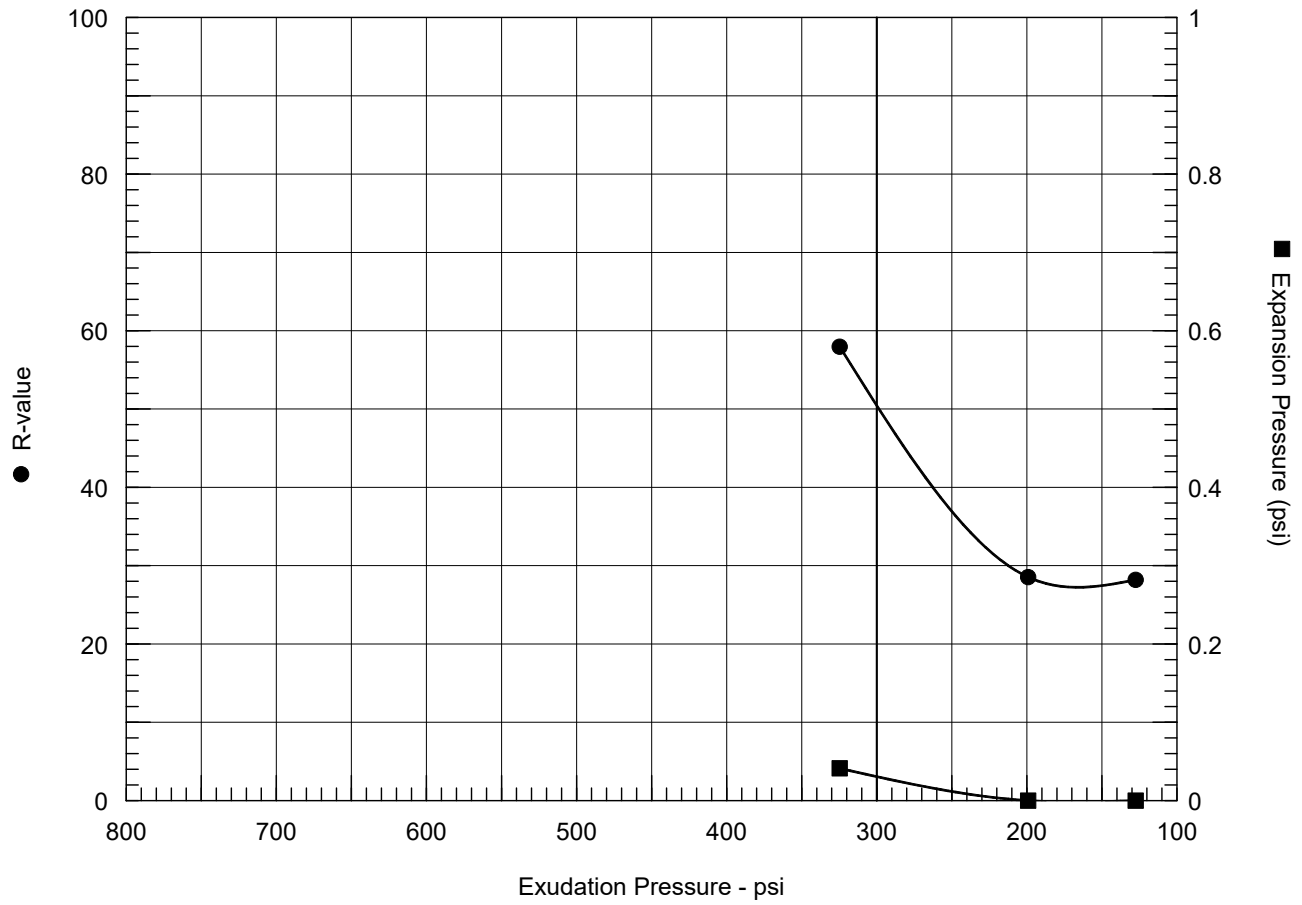
Tested by: RC
Checked by:
Remarks:
Test Date: 07/02/25

R-VALUE TEST REPORT

SOILS ENGINEERING, INC.

Figure D-5

R-VALUE TEST REPORT



Resistance R-Value and Expansion Pressure - Cal Test 301

No.	Compact. Pressure psi	Density pcf	Moist. %	Expansion Pressure psi	Horizontal Press. psi @ 160 psi	Sample Height in.	Exud. Pressure psi	R Value	R Value Corr.
1	350	123.6	12.5	0.04	40	2.53	325	58	58
2	120	121.4	13.6	0.00	79	2.55	199	29	29
3	50	118.5	14.6	0.00	84	2.68	127	25	28

Test Results	Material Description
R-value at 300 psi exudation pressure = 50 **Exp. pressure at 300 psi exudation pressure =** 0.03 psi	SILTY SAND (R-6)

Project No.: 20342
Project: Vista Continuation High School
Location: R-6
Depth: 0-5'
Date: 7/14/2025

Tested by: RC
Checked by:
Remarks:
Test Date: 07/02/25

R-VALUE TEST REPORT

SOILS ENGINEERING, INC.

Figure D-6

APPENDIX D

SEISMIC INVESTIGATION & GEOLOGICAL HAZARD STUDY

SEISMIC DESIGN INFORMATION
USGS Design Map Summary and Detail Report

EQFAULT
Version 3.00

California Fault Map

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GEOLOGICAL HAZARD STUDY

For

Kern High School District,

Vista Continuation High School

200 P Street

Bakersfield, California

Prepared For:

Kern High School District
801 S. Mt. Vernon Avenue
Bakersfield, CA 93307

Attention: John Cohrs

File No. 25-20342

Prepared By:

Soils Engineering, Inc.
4400 Yeager Way
Bakersfield, CA. 93313

July 2025

Soils Engineering Inc.

July 9, 2025 File No. 25-20342

Kern High School District
801 S. Mt. Vernon Avenue
Bakersfield, CA 93307

Subject: Geological Hazard Study
For Vista Continuation High School
35.357194, -119.010650 | 200 P. Street
Bakersfield, California

In accordance with your request and authorization, Soils Engineering, Inc. (SEI) has performed a Geological Hazards Study for the above described subject property in Bakersfield, California (site). This study was conducted in compliance with the California Code of Regulations, Title 24, Chapters 16, 18 and 33 of the 2022 California Building Code.

Our Geological Hazards Assessment indicates that there is a low probability for liquefaction to occur during a major earthquake at the site and that the maximum peak ground acceleration at the site would be 0.3146g for a 6.3 magnitude earthquake on the Kern Front Fault approximately 9.0 kilometers away. The computer-modeling program Eqsearchwin estimated that a ground motion of 0.243 g occurred at the site from a 5.8 magnitude earthquake on the Bakersfield Quake (Aftershock of Arvin/Tehachapi) on August 22,1952. The proposed structures should be built to withstand this magnitude of an earthquake and ground motions.

The site-specific design acceleration values to be utilized for the proposed improvements should be 0.705g for short periods (S_{Ds}) and 0.666g for the 1 second period (S_{D1}). The seismic design category is a D for both short and 1-second periods per the 2022 CBC.

In the event of a major earthquake, there is a very low potential for rock falls or landslides to impact the site. The Lake Isabella Dam Flood Plain & Damn Inundation Area Map for the Bakersfield Area indicates the site is inside of the flood area. It will take approximately 6-8 hours for a foot of water to be at the site and the peak inundation depth is predicted to be 10’ to 20’ if the dam fails. The threat of a dam break has lessened considerably from these values above since the dam has been recently repaired and improved by the US Army Corps of Engineers. The subject site and all of Bakersfield, Kern County, California is outside of the Tsunami Hazard Area. Therefore, the threat of a Tsunami impacting the subject site is minimal.

The estimated amount of total dynamic settlement that would occur at this site during a major earthquake is approximately 1.89” (B-2) to 2.3” (B-2). The estimated amount of differential settlement is 0.41” over a span of 335 feet between borings B-1 and B-2 using a very conservative

depth to groundwater of 16' according to the program LiquefyPro results. These settlement values appear to be acceptable for the proposed development with no mitigation required beyond the Geotechnical Engineers recommendations in the Geotechnical Investigation.

There is a PG&E high-pressure natural gas transmission pipeline (10" diameter) approximately 1215' east of the site. A Pipeline Risk Analysis may be required by the CDE since there is a high pressure natural gas pipeline within 1500' of the site. The nearest oil wells ever drilled are far enough away from the site that it is not likely that any significant subsurface oilfield related gases (hydrogen sulfide, methane etc.) are present beneath the site.

No other geologic assessment or mitigation is recommended at this time.

The accompanying report is an instrument of service of ***Soils Engineering, Inc.***. The report summarizes our findings and relates our opinions with respect to the potential for geological hazards to affect the site. Note that our findings and opinions are based on information that we obtained on given dates, through records review, site review, and related activities. It is possible that other information exists or subsequently has become known, just as it is possible for conditions we observed to have changed after our observation.

Soils Engineering, Inc. will be pleased to provide more information in this regard. Please call us for assistance at (661) 831-5100.

Sincerely,
SOILS ENGINEERING, INC.

CERTIFIED ENGINEERING GEOLOGIST
ROBERT J. BECKER
No. 2238
REN 2/28/27
STATE OF CALIFORNIA

REGISTERED PROFESSIONAL ENGINEER
ON MAN LAU
GE2644
EXP. 12-31-2025
GEOTECHNICAL
STATE OF CALIFORNIA

Robert J. Becker, R.G. 5670, C.E.G. 2238
Expires 2/28/27

On Man Lau, GE
Engineering Manager

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Attachment A: EQFAULTWIN data , EQSEARCHWIN data . Seismic Design Maps SEAOC/OSHPD, and USGS Earthquake Hazard Toolbox Results.

Attachment B: Boring Logs, Flood Insurance Rate Map, Lake Isabella Inundation Maps, Tsunami Hazard Area Map, National Pipeline Map, Historical Depth To Groundwater Map, LiquefyPro Results, Lab Data Table

GEOLOGICAL HAZARD STUDY
For
Kern High School District, Vista Continuation High School
200 P Street
in
Bakersfield, California

July 2025

1.0 Introduction

Soils Engineering, Inc. (SEI) has conducted a Geological Hazards Study for the proposed improvements for the Vista Continuation High School, located at 200 P St., in Bakersfield, California (see Location Map, Plate 1). The site location coordinates are approximately 35.357194° north, latitude, and -119.010650° west, longitude. The following is an Executive Summary of the investigation conducted between June 3, 2025, and July 9, 2025.

A site reconnaissance, which consisted of walking the property and evaluating the surrounding geological features, was conducted by SEI personnel in June 2025. Currently, the proposed main improvements for the project site are to construct multiple buildings (administration building, multi-purpose building, gym, classrooms, concessions/restroom building) totaling 47,000 SF, new parking lots, parent drop-off area, bus drop-off area, sport courts, utilities, drainage sump, and a baseball field and two softball fields with associated infrastructure. Current improvements include campus buildings on the northeast portion of the site, softball and baseball fields on the southern and western portion of the site, paved driveways along the northern border of the site, and paved parking with a solar canopy directly adjacent to the west of the campus buildings. The project site area is bordered P Street to the west, Emerson Middle School to the north, McKinley Elementary School to the northeast, and the Kern Island Canal to the east and south.

2.0 Geology and Hydrology

2.1 Geologic Setting

The site has generally flat relief. The project site rests on Quaternary Fan deposits (Qf) within the southern portion of the San Joaquin Valley. See the attached Geologic Map (Plate 2A), as interpreted from on-site soil borings and the Bakersfield Sheet of the Geologic Map of California (Smith, Department of Conservation Division of Mines and Geology (CDMG), 1964) and the 2010 Geologic Map of California (CGS). Active faults within 50 miles include the Kern Front Fault located approximately 9.0 kilometers to the north; the White Wolf Fault located approximately 25.0 kilometers to the southeast; the Pleito Thrust Fault located approximately 39.1 kilometers to the south; the Garlock (West) Fault located

approximately 56.6 kilometers to the southeast; the San Andreas Fault—Whole M-1a located approximately 57.4 kilometers to the west; the Big Pine Fault located approximately 59.6 kilometers to the south-southwest; the San Gabiel Fault located approximately 72.6 kilometers to the south-southeast; and the San Andreas Fault—Cholame M-1c-1 located approximately 77.7 kilometers to the southwest. The site is not located within an Alquist-Priolo Special Study Zone (Earthquake Fault Zone). The Seismic Hazard Atlas maps of the Gosford Quadrangle, Oil Center, and Lamont Quadrangles are presented on Plate 3A and show no active faults near the site. Nearby active faults are shown on the Fault Activity Map of California (CGS, 2010) within the general area of the site (Plate 5A) and on the EQFault California Fault Map (Plate 5).

Near surface soils within the zone of influence of future developments consist of interbedded silty sand, poorly graded sand, poorly graded sand w/low fine content, and sandy silt layers overlying bedrock, which is located several thousand feet below the surface. These sediments were derived in the Sierra Nevada Mountains to the east of the site and deposited by local drainage and the meandering Kern River.

2.2 Surface Lithology

Earth materials identified in the thirteen (13) onsite soil borings conducted in June 2025 consisted, generally, of intervals of Silty Sand (SM), Poorly Graded Sand (SP), Poorly Graded Sand with low fine content (SP-SM), and Sandy Silt (ML) in the top 21.5’ to 51.5 feet below ground surface (bgs). These soils are classified as SM, SP, SP-SM, and ML, respectively, in the Unified Soils Classification System. Shallow groundwater was encountered at 41’ below the ground surface (bgs) within one boring (B-1). No other ground water was encountered in any of the other soil borings, advanced to a depth of up to 51.5’. See attached boring logs included in Attachment B for more detail.

2.3 Hydrology

Unconfined Aquifer - The depth to the unconfined aquifer as shown on maps prepared by the Kern County Water Agency (KCWA), and DWR water well data presented on the SGMA Data Viewer, was approximately 170 bgs in the Spring of 2012 and 239’ bgs in the Spring of 2024. Historical depth to water data (Department of Water Resources (DWR) database and KCWA maps) indicates that the highest depth to groundwater has been 16’ in 1941 and 1946 within two wells within 1-mile of the site. See Attachment B for a Historical Depth to Water Map.

Perched Water, Ground Water or Seepage - Shallow ground water beneath the site is not shown on available KCWA groundwater maps. Groundwater was encountered at 41’ bgs within soil boring B-1 which could be perched water. No groundwater was encountered in any of the other soil borings at the site to a depth of up to 51.5’.

3.0 Seismic and Fault Hazards

3.1 Seismic History

There have been a number of historic earthquakes that may have affected the Bakersfield area. The following is a short summary of the major known events:

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- 1/9/1857 - Fort Tejon Earthquake - San Andreas Fault, Estimated Magnitude 8.2+, 30 feet of slippage over a 200 mile area, widespread damage.

- 7/21/1952 - Arvin/Tehachapi - White Wolf Fault, Magnitude 7.7, extensive damage to buildings and highways.

- 8/22/1952 - Bakersfield Quake (Aftershock of Arvin/Tehachapi) - 6 miles ESE of Bakersfield, Magnitude 5.8. Closest aftershock to Bakersfield that caused extensive damage to already weakened buildings. Multiple surface fissures were created from the 1952 earthquakes.

SEI utilized the software program EQSEARCHWIN version 3.0 (Thomas F. Blake) to evaluate historical earthquakes in the area of the site over the last 200 years. The Earthquake Epicenter Map (Plate 3) shows earthquake magnitudes and the epicentral distance from the site. The majority of the seismic activity in the area of the site has been along the White Wolf Fault and the San Andreas Fault. The closest earthquake to the site with a magnitude of at least 5.0 was 8.9 kilometers away, at a magnitude of 5.8 in August 1952. The largest earthquake within 100 miles was 7.9 on the San Andreas Fault in 1857. The largest estimated site acceleration is 0.243 g from a 5.8 magnitude earthquake on the Bakersfield Quake (Aftershock of Arvin/Tehachapi) on August 22,1952. The EQSEARCHWIN estimation of Peak Acceleration from California Earthquake Catalogs Table, Earthquake Recurrence Curve, Earthquake Epicenter Map and a graph of the Number of Earthquakes (N) above Magnitude (M) are presented in Attachment A.

3.2 Seismic Evaluation

The site is located within the Gosford Quadrangle and is in the southeast 1/4 portion of Section 31, Township 29 South, Range 28 East and is not located in an Alquist-Priolo Special Studies Zone (California Fault Zone, Plate 3A). Local faults and general geology are also shown on the Gosford Quadrangle, Lamont Quadrangle, and Oil Center Quadrangle, Seismic Hazard Atlas Maps prepared for the Kern County Council of Governments (Plate 3A).

The nearest active fault, as indicated by the computer-modeling program EQFault version 3.00, is the Kern Front Fault, which is approximately 9.0 kilometers to the north. The White Wolf Fault is approximately 25.0 kilometers to the southeast. The Pleito Fault is located approximately 39.1 kilometers south. The Garlock (West) Fault is approximately 56.6 kilometers to the southeast of the site. The San Andreas Fault zone (Whole M-1a) is approximately 57.4 kilometers to the west of the site. The Big Pine Fault is approximately 59.6 to the south-southwest. The San Gabiel Fault located approximately 72.6 kilometers to the south-southeast of the site. The San Andreas Fault—Cholame M-1c-1 located approximately 77.7 km to the southwest of the site. Regional faults in relation to the site location are presented on Plate 5A and are from the Fault Activity Map of California (CGS,2010).

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3.3 Seismic Design

The seismic design values presented in the table below are based on the 2022 CBC. The Site Class for the proposed project is a Site Class "D" in accordance with the 2022 CBC §1613.2.2, soil boring data and local knowledge. The site is not located within an Alquist-Priolo (earthquake fault) Special Study Zone.

SEISMIC DESIGN CRITERIA		VALUE	SOURCE
Risk Category		**III**	2022 CBC Table 1604.5 or 1604*A*.5
Site Class		**D**	2022 CBC § 1613.2.2 or 1613*A*.2.2; ASCE 7-16 Table. 20.3-1; Site Specific Soils Report
Mapped MCE_R Spectral Response Acceleration, short period	**S_S**	**0.941g**	SEAOC-OSHPD software; 2022 CBC Figure 1613.2.1(1)
Mapped MCE_R Spectral Response Acceleration, at 1-sec. Period	**S_1**	**0.34g**	SEAOC-OSHPD software; 2022 CBC Figure 1613.2.1(2)
Site Coefficient	**F_a**	**1.124**	SEAOC- OSHPD software; 2022 CBC Table 1613.2.3(1) or 1613*A*.2.3(1)
Site Coefficient	**F_v***	**1.96***	2022 CBC Table 1613.2.3(2) or 1613*A*.2.3(2)
Adjusted MCE_R Spectral Response Acceleration, short period, $F_a * S_s$	**S_{MS}**	**1.057g**	SEAOC- OSHPD software; 2022 CBC § 1613.2.3 or 1613*A*.2.3
Adjusted MCE_R Spectral Response Acceleration, 1-sec. period, $F_v * S_{1*} * 1.5$	**S_{M1}***	**1.000g***	2022 CBC § 1613.2.3 or 1613*A*.2.3, ASCE 7-16, Supplement 3, § 11.4.8
Design Spectral Response Acceleration, short period, 2/3 * S_{MS}	**S_{DS}**	**0.705g**	SEAOC- OSHPD software; 2022 CBC § 1613.2.4 or 1613*A*.2.4
Design Spectral Response Acceleration, 1-sec. period, 2/3 * S_{MI}	**S_{D1}***	**0.666g***	2022 CBC § 1613.2.4 or 1613*A*.2.4
Peak Ground Acceleration for Max. Considered Earthquake (MCE_G)	**PGA**	**0.408g**	SEAOC- OSHPD software; ASCE 7-16 Fig 22-9
Site Coefficient, F_{PGA} = 1.192, F_{PGA}* PGA	**PGA_M**	**0.486g**	SEAOC- OSHPD software; ASCE 7-16 § 11.8.3.2
Seismic Design Category, short period		**D**	2022 CBC § 1613.2.5
Seismic Design Category, 1second period *		**D***	2022 CBC § 1613.2.5
*See requirements for site-specific ground motions in Section 11.4.8. The values tabulated above for SM1, SD1, and the Seismic Design Category/1-second period are based on the site coefficient, Fv, interpolated from 2022 CBC Table 1613.2.3(2) or 1613A.2.3(2) and Supplement 3, § 11.4.8.			
MCE_R = Maximum Considered Earthquake (risk targeted) MCE_G = Maximum Considered Earthquake (geometric mean)			

See attached SEAOC/OSHPD seismic design data in Attatchment A.

3.4 Seismology & Calculation of Earthquake Ground Motion

The site is not located within or directly adjacent to a mapped Alquist-Priolo (AP) Earthquake Zone and is not a Seismic Design Category E or F. The site qualifies for the Site-Specific Ground Motion Hazard Analysis exemption under Section 11.4.8 of ASCE 7-16, Supplement 3. The above seismic design information in Section 3.3 will be utilized for this project.

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3.5 Possible Earthquake Effects

A number of active faults are located within a 50-mile radius of the subject site. To evaluate the affect a major earthquake might have on the site, the computer modeling program EQFaultwin vers. 3.0 (Thomas Blake) was utilized. Site-specific parameters were inputted and the programs computed the maximum peak site ground accelerations resulting from an earthquake. Because ground accelerations are based largely on fault distance and magnitude, we have focused our analysis on those faults which are close to the site, or that have large maximum credible magnitudes, or a combination of the two. The result of this analysis is presented below in Table A.

TABLE A

FAULT	Approximate Distance (Km)	Maximum Earthquake Magnitude (Mw)	Maximum Peak Ground Acceleration (g)	Estimated Site Intensity (MM)
Kern Front	**9.0**	6.3	**0.315**	**IX**
White Wolf	25.0	7.3	0.268	**IX**
Pleito Thrust	39.1	7.0	0.163	VIII
Garlock Fault (West)	56.6	7.3	0.118	VII
San Andreas (Whole M-1a and other segments)	57.4	7.4 to **8.0**	0.123 to 0.169	VII-VIII
Big Pine	59.6	6.9	0.092	VII
San Gabriel	72.6	7.2	0.093	VII
San Andreas – Cholame M-1c-1	77.7	7.3	0.093	VII

This analysis estimates that a maximum peak ground acceleration of 0.3146 g would be felt at the site as a result of a maximum earthquake of magnitude 6.3 on the Kern Front Fault, approximately 9.0 kilometers away. See attached Deterministic Site Parameters for a full listing of computed values for faults within a 100-mile radius of the site in Attachment A. Also attached is a California Fault Map showing nearby faults in relationship to the site (Plate 5).

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3.6 Potential for Ground Rupture, Ground Shaking, Ground Failure

Ground rupture may occur along a fault trace in a major earthquake. Since this site is not located within 500 feet of a suspected active fault, it is unlikely that ground rupture would occur here. Moderate to strong ground shaking is likely at this site, in the event of a major earthquake on one of the nearby faults. Based on the predicted maximum horizontal accelerations at the site and the soil types identified in this investigation, ground failure is highly unlikely at this site.

3.7 Potential for Earthquake-Induced Flooding, Flood Zone & Tsunami Hazard

The potential for earthquake-induced flooding at the site appears to be low since groundwater is currently over 40' below the ground surface. The site is located within flood Zone X with minimal potential flooding according to the Flood Insurance Rate Map covering the site area (see Attachment B for map). The Lake Isabella Dam Flood Plain & Dam Inundation Area Map indicates the site is inside of the flood area. It will take approximately 6-8 hours for a foot of water to be at the site and the peak inundation depth is predicted to be 10'-20' (see Attachment B for map).

Repair and improvement to the Lake Isabella Dam by the Army Corps of Engineers is now complete (2023) and has significantly lessened the potential for a major dam release.

The subject site and all of Bakersfield, Kern, California is outside of the Tsunami Hazard Area as shown on the attached Map in Attachment B. Therefore, the threat of a Tsunami impacting the subject site is minimal.

The school has a detailed Emergency Response Plan which includes protocols for responses to earthquakes, flooding, fire and other hazards.

3.8 Liquefaction Potential

Shallow groundwater was encountered at the depth of 41' bgs in one soil boring (B-1) which could be perched water. Based on current and historical information acquired from the Kern County Water Agency and DWR water well data presented on the SGMA Data Viewer, the highest depth to water is 16' in 1941 and 1946 in two wells approximately 0.44-miles and 0.74-miles northwest of the site (see Attachment B for a Historical Depth to Water Map). Blowcounts in the two (2) soil borings ranged from 3.36 to 39 blow counts per foot to a depth of 51.5', indicating loose to dense material. The lithology encountered in the subsurface includes silty sand, poorly graded sand, poorly graded sand with low fine content and sandy silt layers in the borings. A liquefaction analysis was performed on the boring B-1 and B-2 utilizing the program LiquefyPro (version 5.10). Site-specific information was used in this analysis including; SPT blow counts per foot, grain-size analysis, wet weight densities, the moment magnitude earthquake and the PGAm for the MCEg earthquake motion (0.486g) and a very conservative depth to water of 16'. The liquefaction potential at this site appears to be low in both B-1 and B-2 with only a very thin liquefiable zone at 16' to 18' based on groundwater being at a very conservative depth of 16'. See attached LiquefyPro data in Attachment B and boring logs for more detail.

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3.9 Slope Stability

The site is located in an area with minimal slope to the south. No evidence of historic landslides or creep was observed in this area. There is a very low potential for rockfalls or landslides to impact the site in the event of a major earthquake. Overall, the site appears to be very stable.

3.10 Settlement

The estimated amount of dynamic settlement that would occur at this site during a major earthquake is approximately 1.89" (B-2) to 2.3" (B-1) based on the lithology encountered, the SPT blowcounts recorded during sampling and the settlement analysis conducted on boring B-1 and B-2 utilizing the program LiquefyPro. The estimated amount of differential settlement is 0.41" over a span of 335 feet between borings B-1 and B-2 according to the program LiquefyPro results. These settlement values appear to be acceptable for the proposed development. See attached Liquefaction Analysis Calculation Sheets and graphs in Attachment B for more detail.

3.11 Expansive Soil and Hydrocollapse Potential

Based on the lithology encountered in the top 10 feet in the soil borings, it appears unlikely that highly expansive surface soils will be present at this site. Expansion Index (EI) tests on five shallow (0 to 5') soil samples were all 0, indicating a very low expansion potential. Consolidation testing on samples B1 @ 6' and B11-6' were both -1.4% which indicates a low to moderate potential for hydrocollapse. See Lab Result Table in Attachment B for more detail.

The Kern County General Plan Safety Element includes a discussion on land subsidence potential in the Bakersfield area. The main causes of land subsidence are Tectonic Subsidence, Oil & Gas Fluid Extraction, Groundwater Withdrawal and Hydrocompaction of Moisture Deficient Alluvial Deposits. Figure 15 in the Kern County General Plan Safety Element shows the areas of significant subsidence within the Bakersfield area. The school site is located outside of the area where historic land subsidence has occurred and is outside of the area of hydrocompaction as shown on attached Plate 7. In addition, the school site is in an area where oil & gas activity is minor, and agricultural activities are not occurring within the vicinity, so groundwater withdrawal appears to be decreasing. Based on this information it appears that regional subsidence should not be an issue at this site requiring any special mitigation or requirements.

4.0 High-Pressure Pipelines & Hazardous Materials

4.1 High-Pressure Pipelines

According to field observations, the National Pipeline Mapping System, and representatives of Pacific Gas & Electric, the Gas Company, and the State Fire Marshal's Office, there is a PG&E high-pressure natural gas transmission pipeline approximately 1215' east of the site. This 10" diameter pipeline appears to be far enough away to be a significant threat to the site area. See the National Pipeline Map attached in Attachment B.

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4.2 Hazardous Materials

The site is not within an active oil or gas field. The closest oil wells ever drilled near the site appear to be over 1,350 feet in all major directions from the site. It is unlikely that oil field activities have impacted the subsurface soil or soil gas beneath the subject site with chemicals of concern (methane, H2S, etc.) No facilities appear to be located within ¼-mile of the site, which may have the potential to impact the subject site with hazardous emissions or releases. See Plate 6 for the locations of these nearest oil wells.

5.0 Conclusions & Recommendations

Our Geological Hazards Assessment indicates that there is a low probability for liquefaction to occur during a major earthquake at the site and that the maximum peak ground acceleration at the site would be 0.3146g for a 6.3 magnitude earthquake on the Kern Front Fault approximately 9.0 kilometers away. The computer-modeling program Eqsearchwin estimated that a ground motion of 0.243 g occurred at the site from a 5.8 magnitude earthquake on the Bakersfield Quake (Aftershock of Arvin/Tehachapi) on August 22,1952. The proposed structures should be built to withstand this magnitude of an earthquake and ground motions.

The site-specific design acceleration values to be utilized for the proposed improvements should be 0.705g for short periods (S_{Ds}) and 0.666g for the 1 second period (S_{D1}). The seismic design category is a D for both short and 1-second periods per the 2022 CBC.

In the event of a major earthquake, there is a very low potential for rock falls or landslides to impact the site. The Lake Isabella Dam Flood Plain & Damn Inundation Area Map for the Bakersfield Area indicates the site is inside of the flood area. It will take approximately 6-8 hours for a foot of water to be at the site and the peak inundation depth is predicted to be 10’ to 20’ if the dam fails. The threat of a dam break has lessened considerably from these values above since the dam has been recently repaired and improved by the US Army Corps of Engineers. The subject site and all of Bakersfield, Kern County, California is outside of the Tsunami Hazard Area. Therefore, the threat of a Tsunami impacting the subject site is minimal.

The estimated amount of total dynamic settlement that would occur at this site during a major earthquake is approximately 1.89” (B-2) to 2.3” (B-2). The estimated amount of differential settlement is 0.41” over a span of 335 feet between borings B-1 and B-2 using a very conservative depth to groundwater of 16’ according to the program LiquefyPro results. These settlement values appear to be acceptable for the proposed development with no mitigation required beyond the Geotechnical Engineers recommendations in the Geotechnical Investigation.

There is a PG&E high-pressure natural gas transmission pipeline (10” diameter) approximately 1215’ east of the site. A Pipeline Risk Analysis may be required by the CDE since there is a high pressure natural gas pipeline within 1500’ of the site. The nearest oil wells ever drilled are far enough away from the site that it is not likely that any significant subsurface oilfield related gases (hydrogen sulfide, methane etc.) are present beneath the site.

No other geologic assessment or mitigation is recommended at this time.

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6.0 Attachments

6.1 Location Map- Plate 1, "Location Map" shows the location of the site with relationship to roads and land features**.**

6.2 Plot Plan - Plate 2, "PLOT PLAN" shows the location and lot configuration of the property.

6.2.1 Plate 2A, Boring Location & Geologic Map shows the site geology related to streets and nearby surficial features.

6.2.2 Plates 2B, cross-section that show the possible subsurface geology correlations among the 4 boreholes done on site.

6.3 Earthquake Epicenter Map - Plate 3, shows the site location on an earthquake epicenter map of historical earthquakes with magnitudes >5.0, from the Eqsearchwin computer modeling program.

6.3.1 Seismic Hazard Atlas Map- Plate 3A, shows local geology and faults within the Gosford, Lamont, and Oil Center Quadrangles that are near the site.

6.4 Depth to Groundwater Map - Plate 4, shows the site location in relation to a Depth to Water Map of the regional area prepared by the Kern County Water Agency.

6.5 Fault Location Map- Plate 5, shows the site in relation to the nearest active faults within 100 miles, based on the EQFault program.

6.5.1 Plate 5A shows the Regional Faults based on the Fault Activity Map of California and Adjacent Areas, Jennings, 1994.

6.6 CalGEM Oil Map - Plate 6, shows the site in relation to the nearest oil wells.

6.7 Regional Land Subsidence Map, Plate 7, Shows the site location on a Map that presents the areas of known regional subsidence and hydrocompaction in the site area.

6.8 Attachment A - Deterministic Site Parameters - EQFAULTWIN data determined for the site for faults within 100 miles. EQSEARCHWIN data concerning the distance and magnitude of earthquakes within 100 miles of the site is attached. Seismic Design Maps SEAOC/OSHPD, and USGS Earthquake Hazard Toolbox Results.

6.9 Attachment B - Presents the Boring Logs, the Flood Insurance Rate Map, Lake Isabella Inundation Maps, Tsunami Hazard Area Map, National Pipeline Map, Historical Depth To Groundwater Map, LiquefyPro Results, and Lab Data Table.

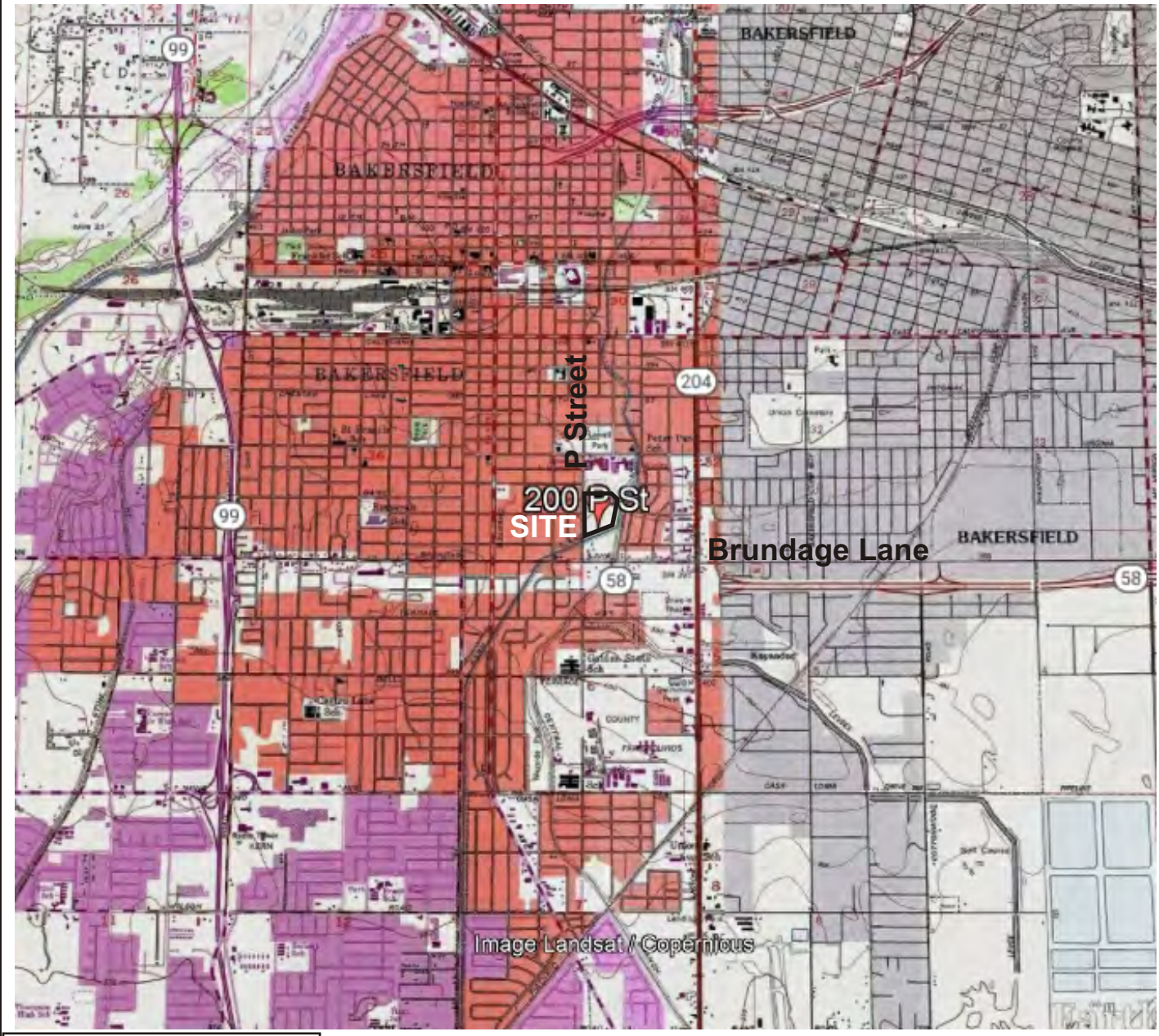
7.0 References

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- EQFaultwin, ver. 3.0, Thomas F. Blake, Thomas F. Blake;

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- EQSEARCHWIN, ver. 3.0, Thomas F. Blake
- Blake, Thomas, Empirical Prediction of Earthquake Induced Liquefaction Potential.
- Kern County Water Agency, Zach Smith, Depth to Water Data Table for Section 8, T29S, R27E, Kern County, CA, 1966 to 1995.
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- California Fault Parameters, 1996 Draft, California Department of Conservation, Division of Mines and Geology**.**
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- Department of Water Resources, SGMA Data Viewer Groundwater Levels Map
- USGS Earthquake Hazard Toolbox; https://earthquake.usgs.gov/nshmp/
- County of Kern Public Online Mapping, Kern County, California GIS Mapping Disclaimer, web page: http://www.co.kern.ca.us/gis/mapping_disclaimer.asp
- National Pipeline Mapping System: Public Viewer, pvnpms.phmsa.dot.gov/PublicViewer/

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SOILS ENGINEERING, INC.
4400 Yeager Way
Bakersfield, CA 93313
(661) 831 - 5100

DATE: 7/25
PROJECT: 20342

Vista Continuation High School
200 P Street
Bakrsfield, CA

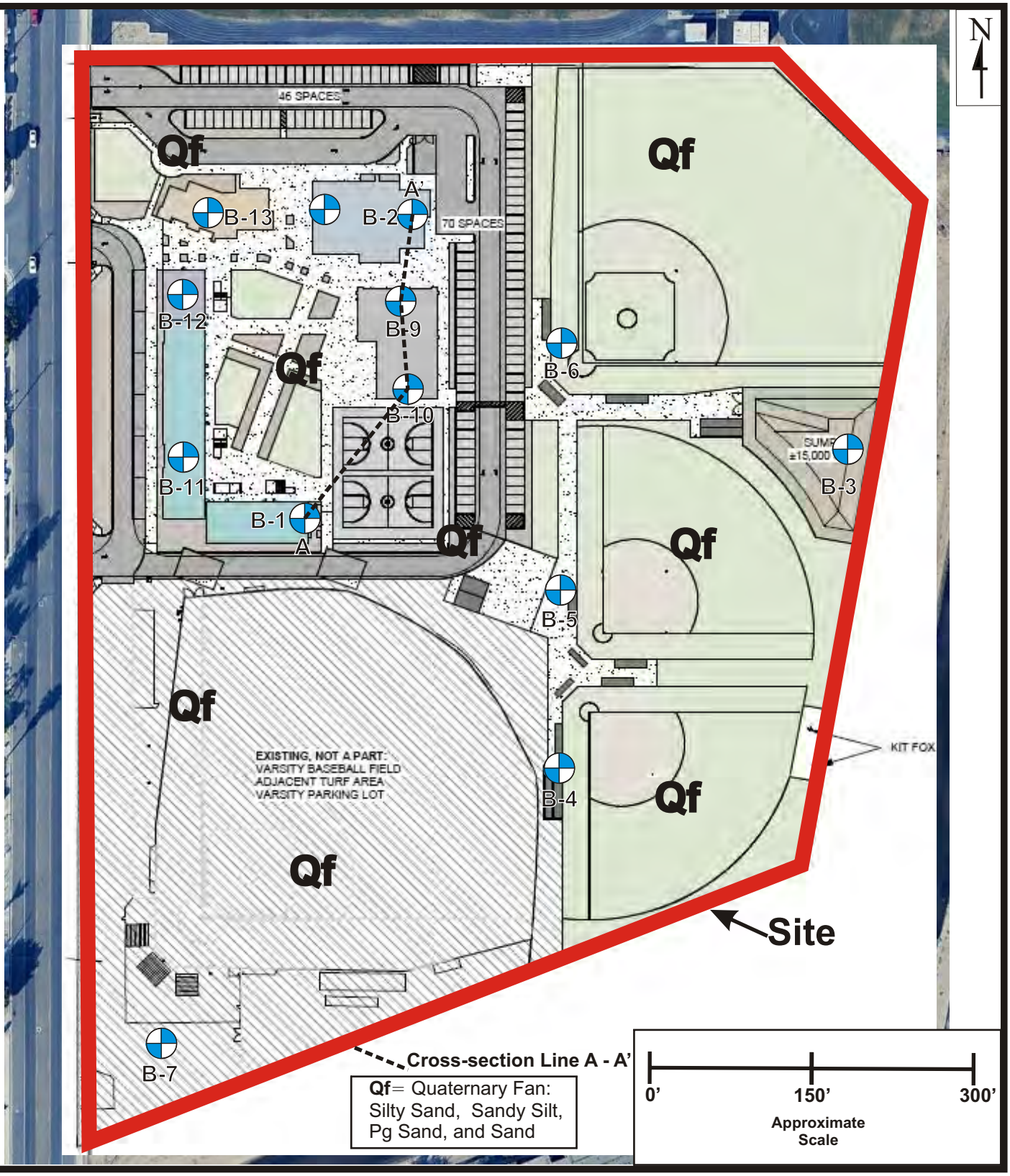
Location Map

PLATE

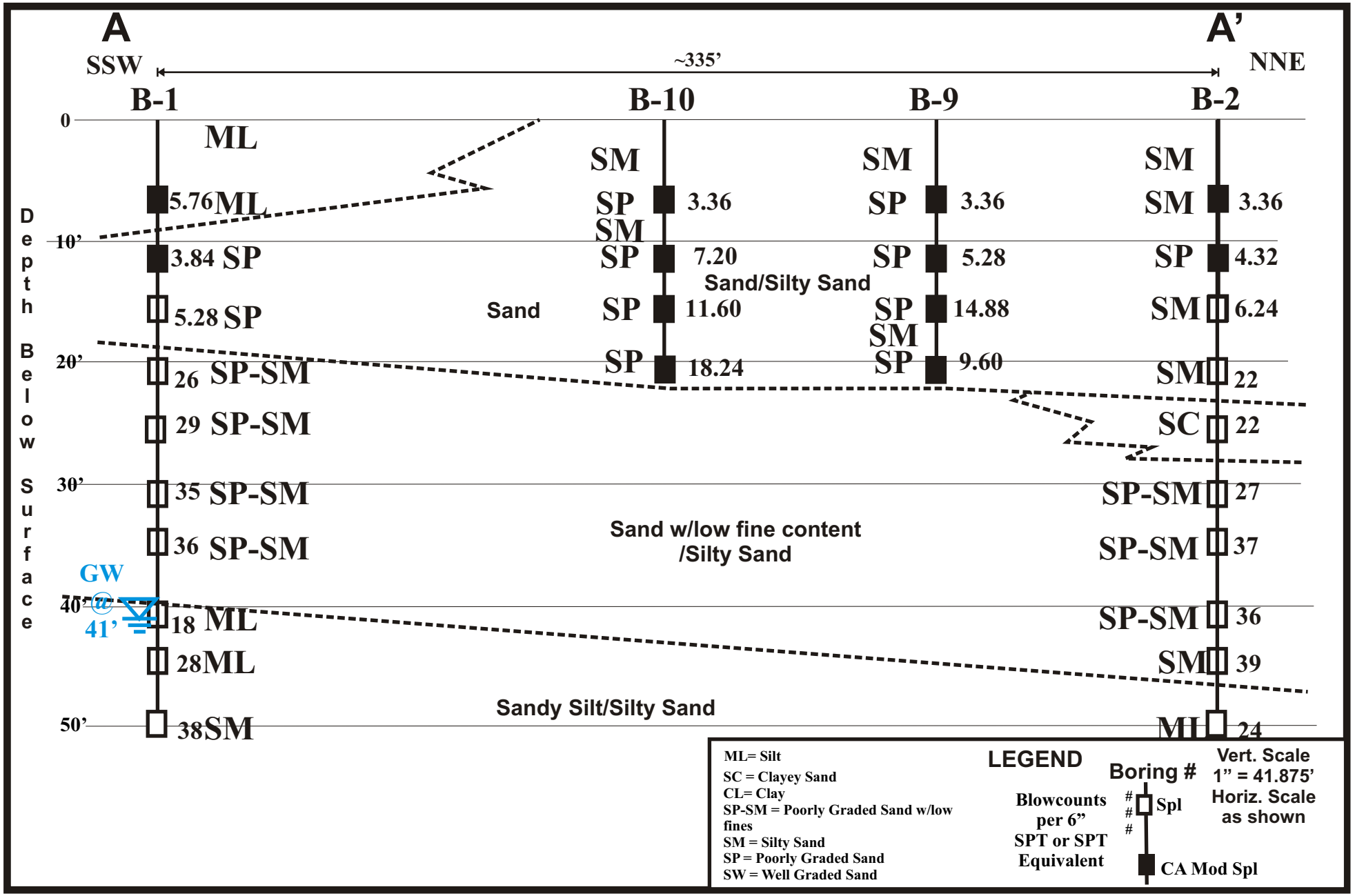
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SOILS ENGINEERING, INC. **4400 Yeager Way** **Bakersfield, CA 93313** **(661) 831 - 5100** DATE: 7/25 PROJECT: 20342	**Vista Continuation High School** **200 P Street** **Bakrsfield, CA** **Plot Plan**	**PLATE** **2**



SOILS ENGINEERING, INC. **4400 Yeager Way** **Bakersfield, CA 93313** **(661) 831 - 5100** DATE: 7/25 PROJECT: 20342	**Vista Continuation High School** **200 P Street** **Bakrsfield, CA** **Boring Location/Geologic Map**	**PLATE** **2A**



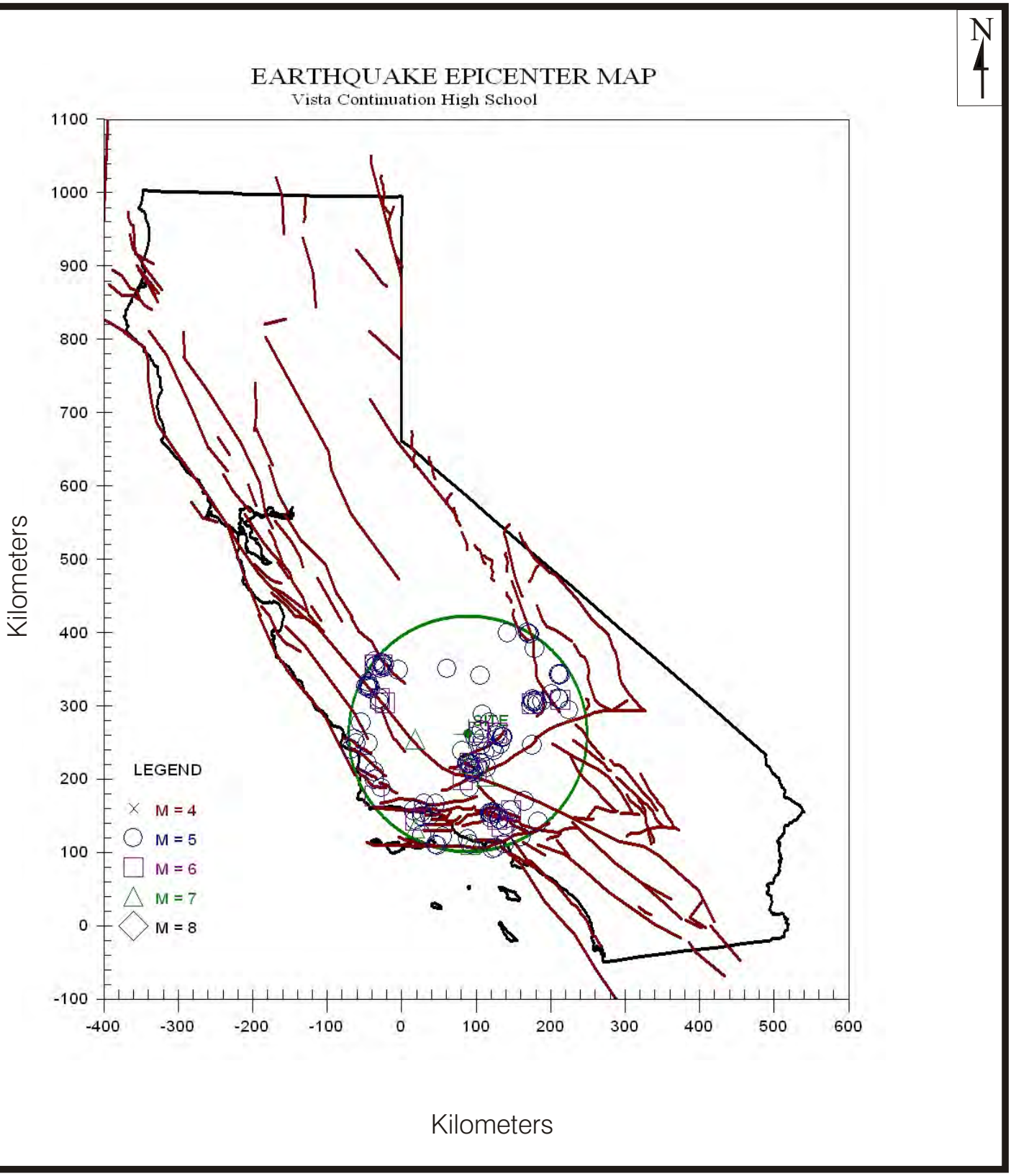
SOILS ENGINEERING, INC.
4400 Yeager Way
Bakersfield, CA 93313
(661) 831 - 5100

DATE: 7/25
PROJECT: 20342

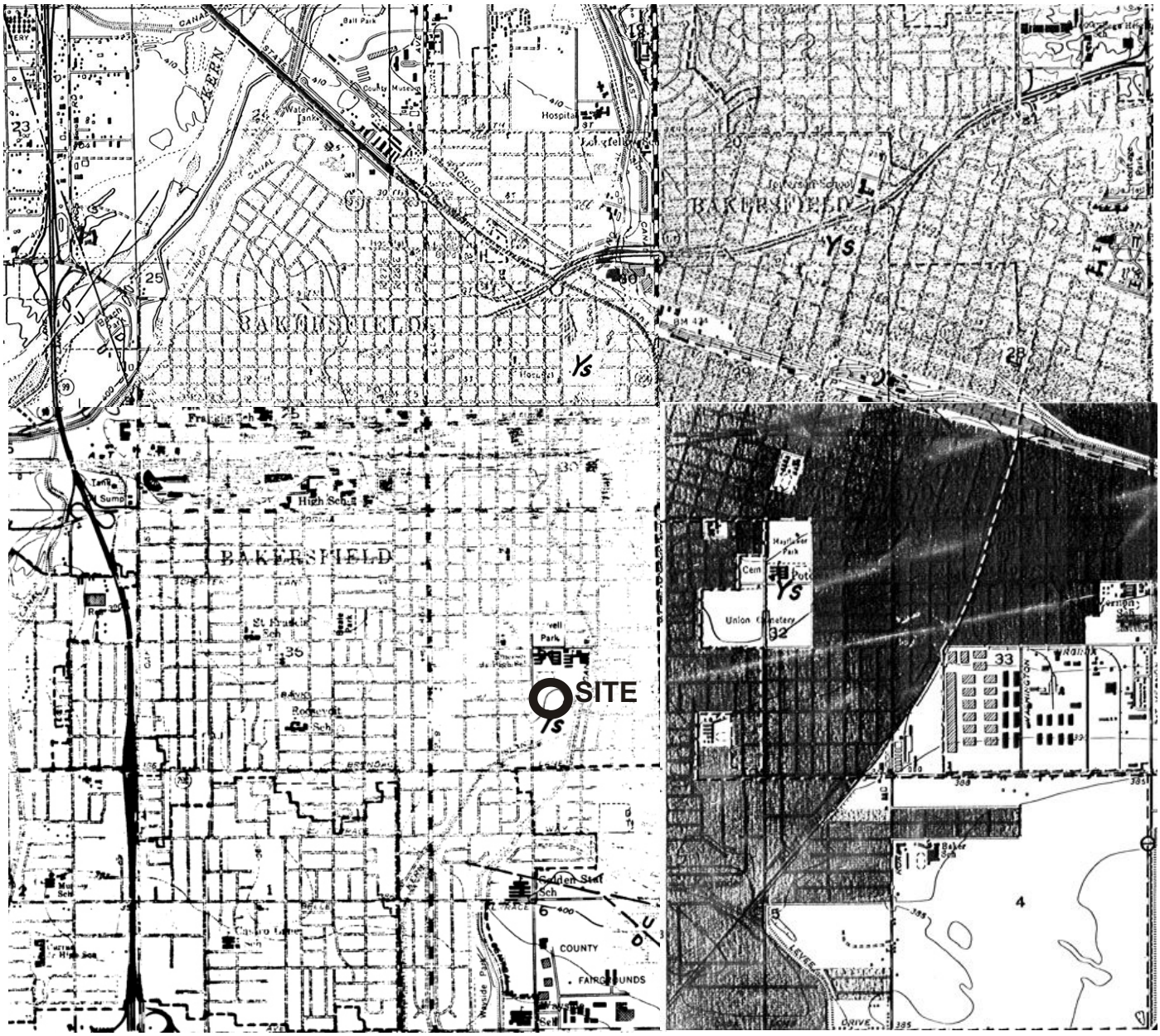
Vista Continuation High School
200 P Street
Bakrsfield, CA

Geologic Cross-section A' to A

PLATE
2B

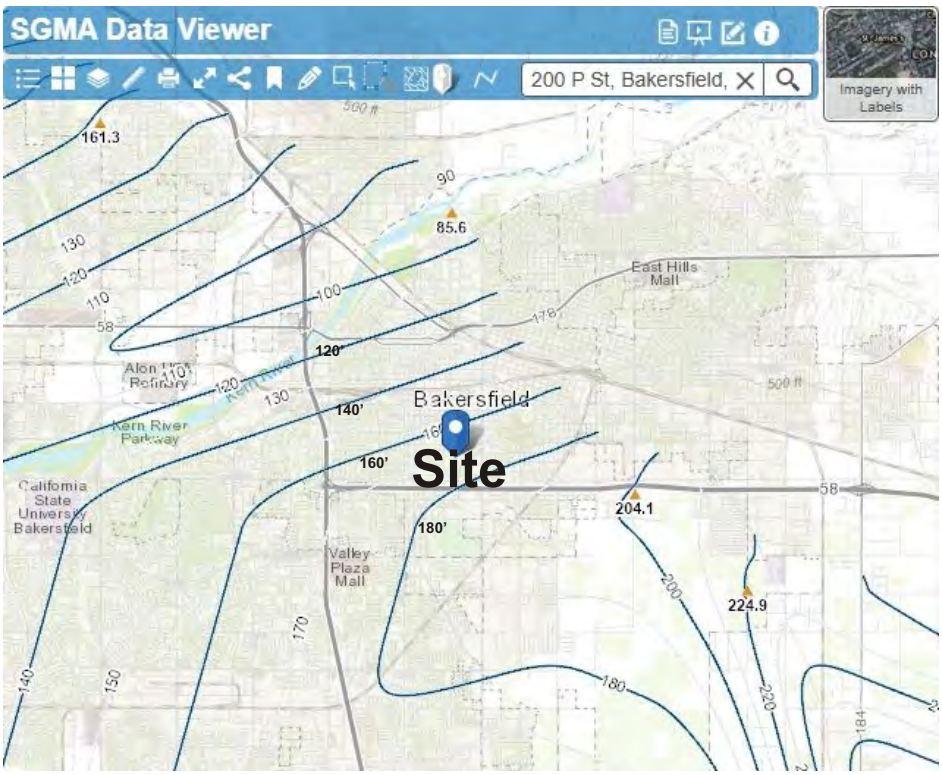


SOILS ENGINEERING, INC. **4400 Yeager Way** **Bakersfield, CA 93313** **(661) 831 - 5100** DATE: 7/25 PROJECT: 20342	**Vista Continuation High School** **200 P Street** **Bakrsfield, CA** Earthquake Epicenter Map	**PLATE** 3

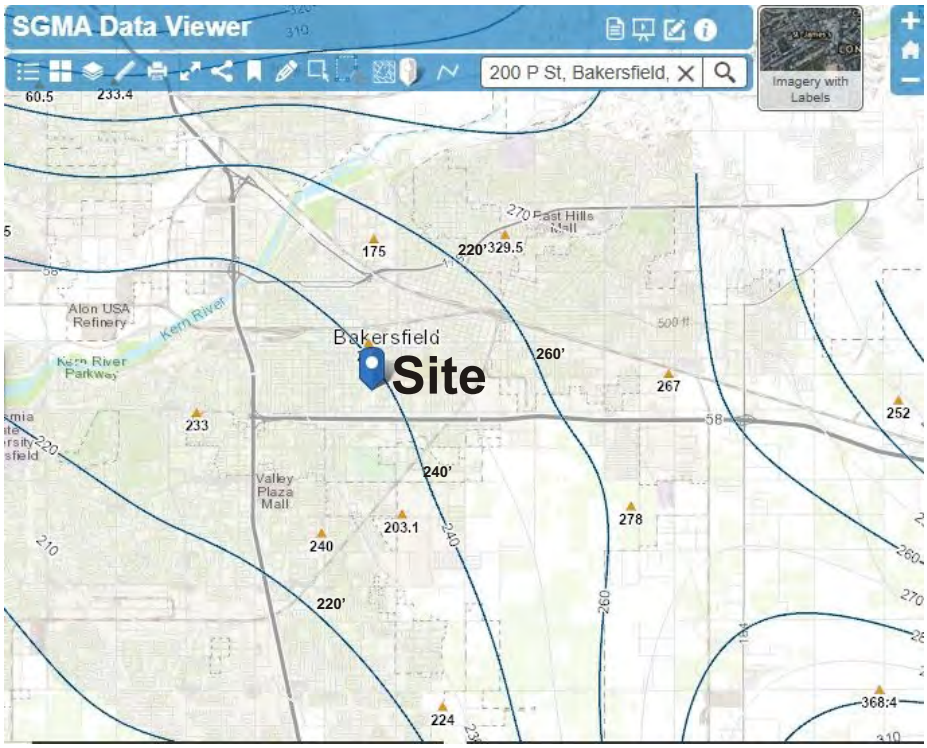


SOURCE: Gosford, Oildale, Lamont & Oil Center Quadrangles Seismic Hazard Atlas Maps, Kern County Council of Govt.

SOILS ENGINEERING, INC. **4400 Yeager Way** **Bakersfield, CA 93313** **(661) 831 - 5100** DATE: 7/25 PROJECT: 20342	**Vista Continuation High School** **200 P Street** **Bakrsfield, CA** Seismic Hazard Zone Atlas Map	**PLATE** **3A**

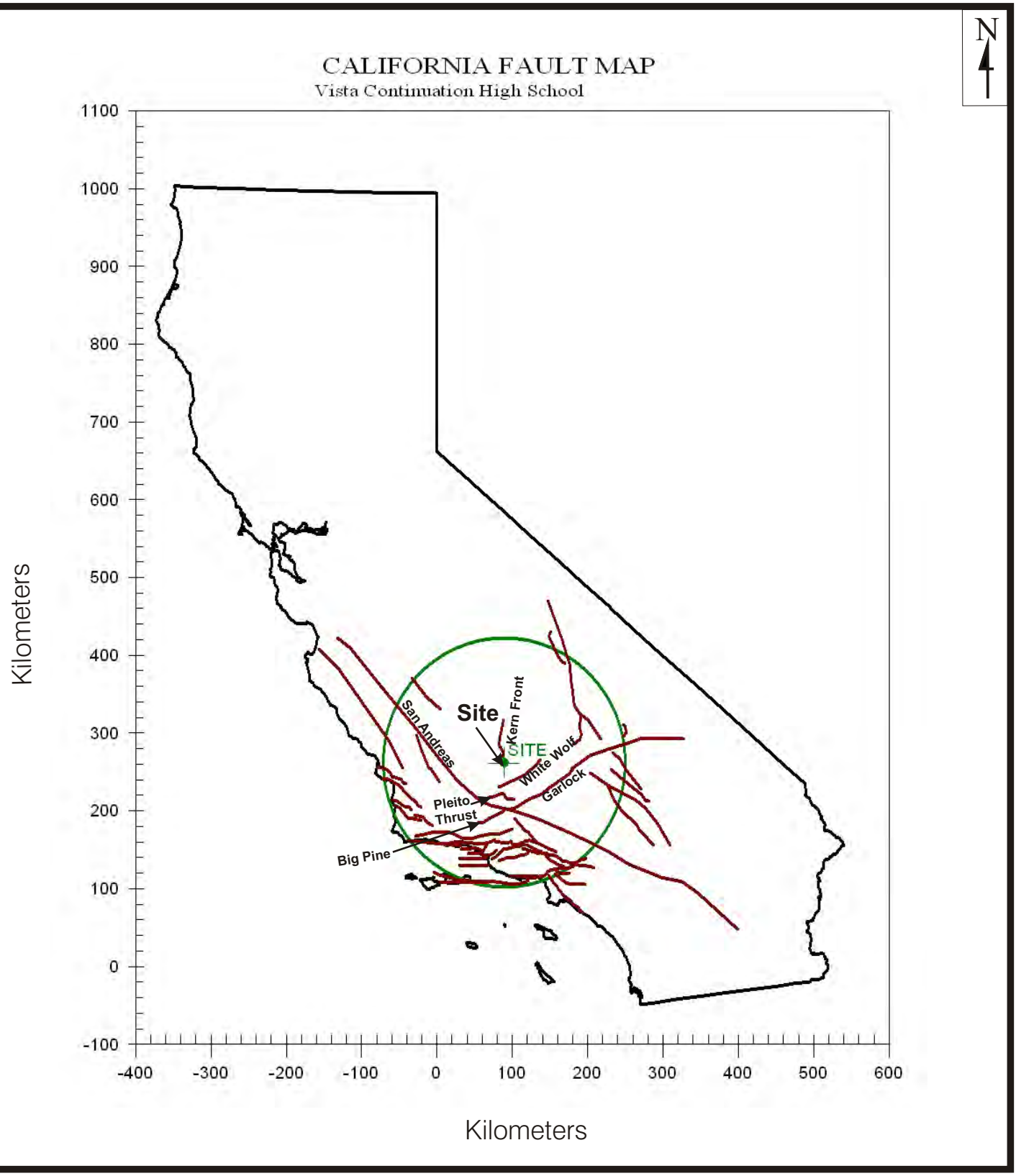


Spring 2012, SGMA Data Viewer



Spring 2024, SGMA Data Viewer

SOILS ENGINEERING, INC. **4400 Yeager Way** **Bakersfield, CA 93313** **(661) 831 - 5100** DATE: 7/25 PROJECT: 20342	**Vista Continuation High School** **200 P Street** **Bakrsfield, CA** **Depth To Water Map**	**PLATE** **4**



SOILS ENGINEERING, INC. **4400 Yeager Way** **Bakersfield, CA 93313** **(661) 831 - 5100** DATE: 7/25 PROJECT: 20342	**Vista Continuation High School** **200 P Street** **Bakrsfield, CA** Fault Location Map	**PLATE** 5

FAULT CLASSIFICATION COLOR CODE
(Indicating Recency of Movement)

Fault along which historic (last 200 years) displacement has occurred.

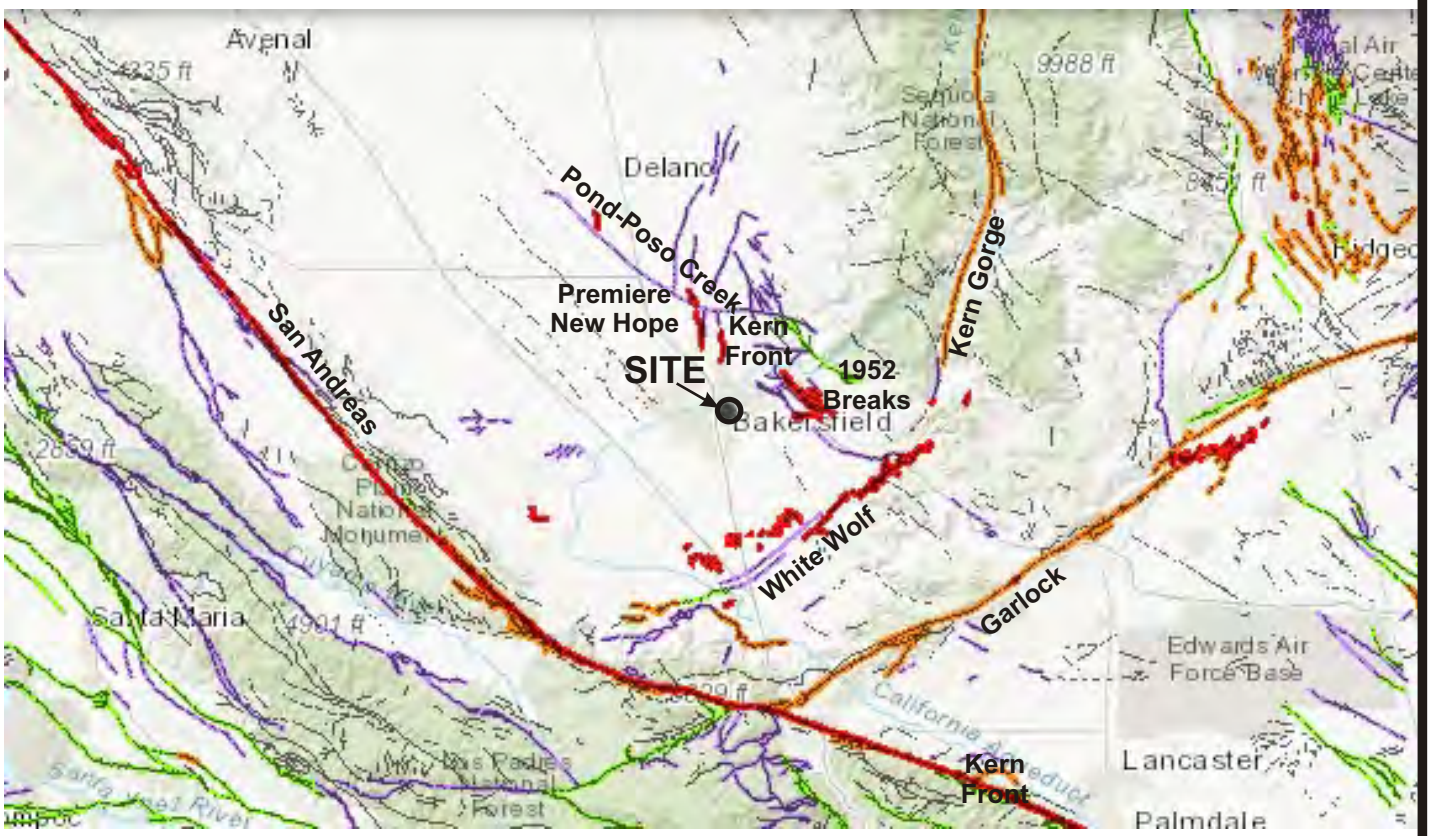
Holocene fault displacement (during past 11,700 years) without historic record.

Late Quaternary fault displacement (during past 700,000 years).

Quaternary fault (age undifferentiated).

Pre-Quaternary fault (older that 1.6 million years) or fault without recognized Quaternary displacement.

N

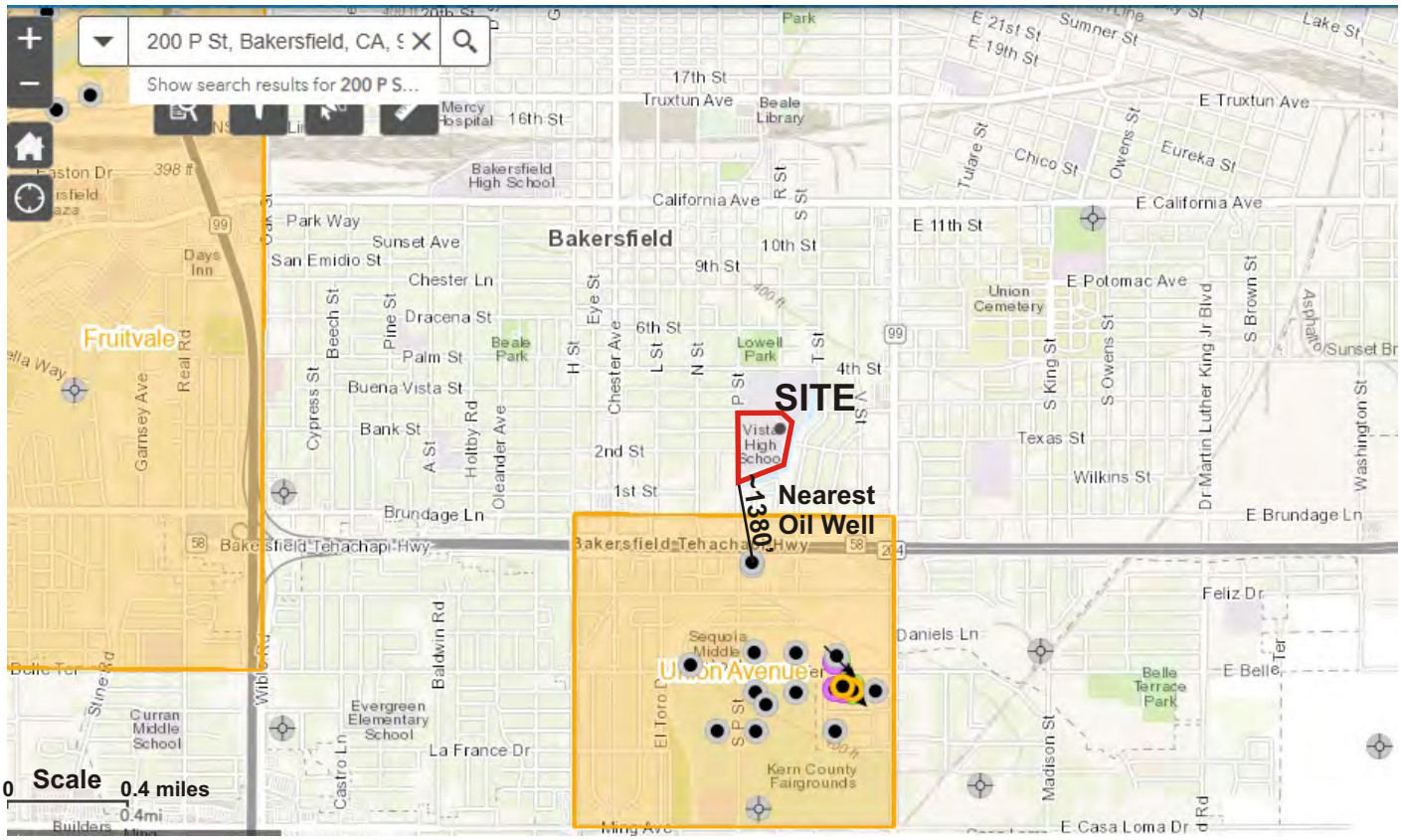


SOILS ENGINEERING, INC. **4400 Yeager Way** **Bakersfield, CA 93313** **(661) 831 - 5100** DATE: 7/25 PROJECT: 20342	**Vista Continuation High School** **200 P Street** **Bakrsfield, CA** **REGIONAL FAULT MAP**	**PLATE** **5A**

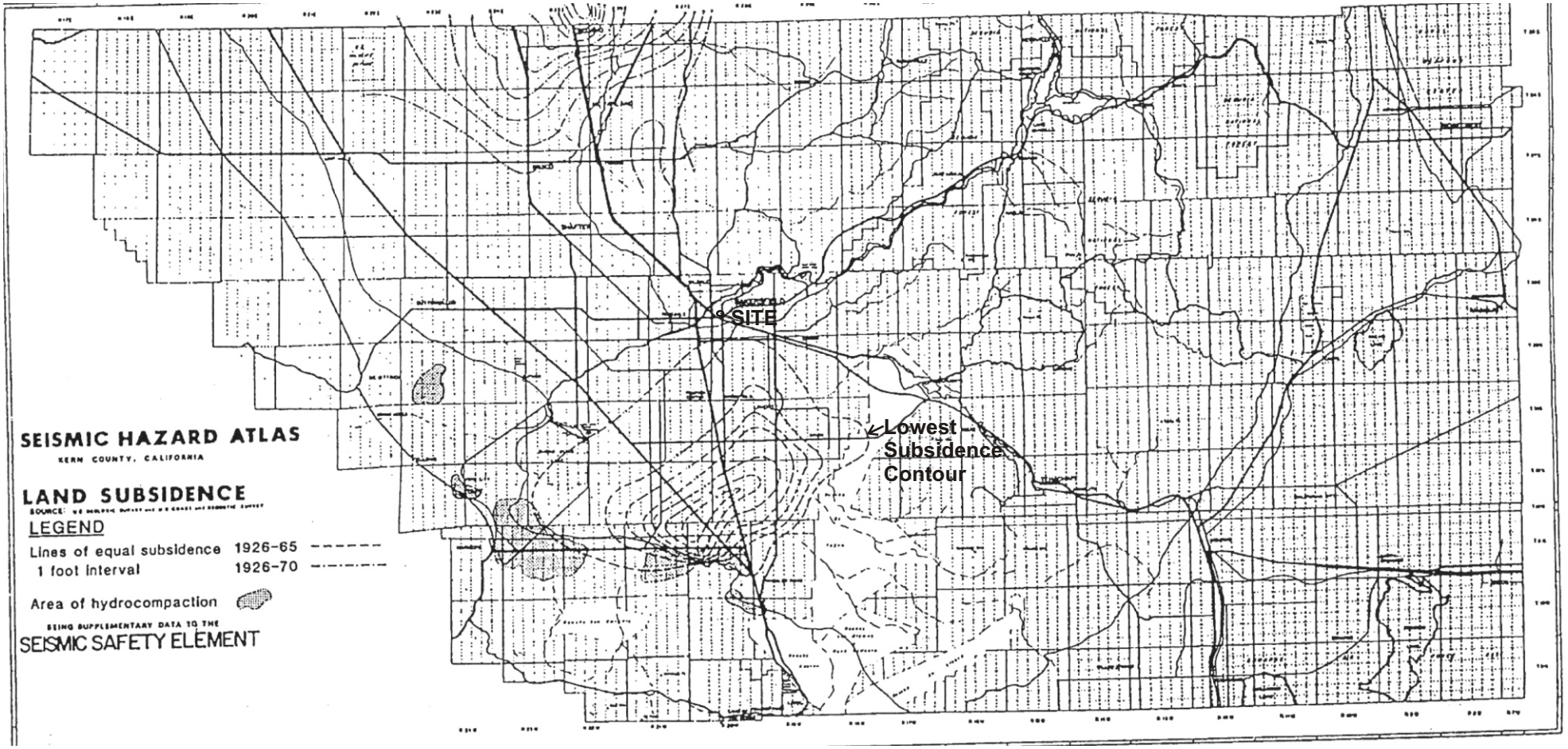
Basic Well Symbols	
Well Status or Type	**Symbol**
Active	
New	
Idle	
Plugged	
Unknown	
Canceled	
Oil, Gas	
Dry Gas	
Injector	
Cyclic Steam	
Gas Storage	
Observation	O
Water Source	W
Multi	M
Unknown	?

Plugged/Abandoned Oil Well

N



SOILS ENGINEERING, INC. **4400 Yeager Way** **Bakersfield, CA 93313** **(661) 831 - 5100** DATE: 7/25 PROJECT: 20342	**Vista Continuation High School** **200 P Street** **Bakrsfield, CA** **CalGEM Map**	**PLATE** **6**



Regional Land Subsidence Map

From City of Bakersfield Safety Element (Figure 15)

Plate 7

Attachment A

EQFAULTWIN data, EQSEARCHWIN data, Seismic Design Maps SEAOC/OSHPD, and USGS Earthquake Hazard Toolbox Results.

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*    E Q F A U L T   *
*                    *
*    Version 3.00    *
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DETERMINISTIC ESTIMATION OF
PEAK ACCELERATION FROM DIGITIZED FAULTS

JOB NUMBER: 20342

DATE: 06-25-2025

JOB NAME: Vista Continuation High School

CALCULATION NAME: Test Run Analysis

FAULT-DATA-FILE NAME: CGSFLTE.DAT

SITE COORDINATES:
SITE LATITUDE: 35.3572
SITE LONGITUDE: 119.0107

SEARCH RADIUS: 100 mi

ATTENUATION RELATION: 3) Boore et al. (1997) Horiz. - NEHRP D (250)
UNCERTAINTY (M=Median, S=Sigma): M Number of Sigmas: 0.0
DISTANCE MEASURE: cd_2drp
SCOND: 0
Basement Depth: 5.00 km Campbell SSR: Campbell SHR:
COMPUTE PEAK HORIZONTAL ACCELERATION

FAULT-DATA FILE USED: CGSFLTE.DAT

MINIMUM DEPTH VALUE (km): 0.0

EQFAULT SUMMARY

DETERMINISTIC SITE PARAMETERS

ABBREVIATED FAULT NAME	APPROXIMATE DISTANCE mi (km)	ESTIMATED MAX. EARTHQUAKE EVENT: MAXIMUM EARTHQUAKE MAG.(Mw)	ESTIMATED MAX. EARTHQUAKE EVENT: PEAK SITE ACCEL. g	ESTIMATED MAX. EARTHQUAKE EVENT: EST. SITE INTENSITY MOD.MERC.
Kern Front	5.6(9.0)	6.3	0.315	IX
WHITE WOLF	15.5(25.0)	7.3	0.268	IX
PLEITO THRUST	24.3(39.1)	7.0	0.163	VIII
GARLOCK (West)	35.2(56.6)	7.3	0.118	VII
SAN ANDREAS - Whole M-1a	35.7(57.4)	8.0	0.169	VIII
SAN ANDREAS - Carrizo M-1c-2	35.7(57.4)	7.4	0.123	VII
SAN ANDREAS - 1857 Rupture M-2a	35.7(57.4)	7.8	0.152	VIII
SAN ANDREAS - Cho-Moj M-1b-1	35.7(57.4)	7.8	0.152	VIII
BIG PINE	37.0(59.6)	6.9	0.092	VII
SAN GABRIEL	45.1(72.6)	7.2	0.093	VII
SAN ANDREAS - Cholame M-1c-1	48.3(77.7)	7.3	0.093	VII
SANTA YNEZ (East)	53.6(86.2)	7.1	0.077	VII
SAN ANDREAS - Mojave M-1c-3	53.6(86.2)	7.4	0.090	VII
SAN JUAN	55.4(89.2)	7.1	0.075	VII
GARLOCK (East)	55.9(89.9)	7.5	0.092	VII
SAN CAYETANO	58.2(93.7)	7.0	0.083	VII
M.RIDGE-ARROYO PARIDA-SANTA ANA	58.5(94.2)	7.2	0.092	VII
So. SIERRA NEVADA	59.2(95.2)	7.3	0.096	VII
NORTH CHANNEL SLOPE	64.1(103.2)	7.4	0.095	VII
SANTA SUSANA	65.1(104.7)	6.7	0.065	VI
HOLSER	65.1(104.8)	6.5	0.059	VI
RED MOUNTAIN	66.1(106.3)	7.0	0.076	VII
OAK RIDGE (Onshore)	67.4(108.4)	7.0	0.074	VII
SANTA YNEZ (West)	67.7(108.9)	7.1	0.064	VI
NORTHRIDGE (E. Oak Ridge)	68.0(109.4)	7.0	0.074	VII
VENTURA - PITAS POINT	68.8(110.8)	6.9	0.069	VI
GREAT VALLEY 14	69.1(111.2)	6.4	0.053	VI
SIMI-SANTA ROSA	70.0(112.7)	7.0	0.072	VI
LENWOOD-LOCKHART-OLD WOMAN SPRGS	71.0(114.3)	7.5	0.076	VII
SIERRA MADRE (San Fernando)	71.3(114.8)	6.7	0.061	VI
SAN LUIS RANGE (S. Margin)	72.4(116.5)	7.2	0.078	VII
OAK RIDGE MID-CHANNEL STRUCTURE	72.6(116.8)	6.6	0.057	VI
LITTLE LAKE	74.3(119.5)	6.9	0.054	VI
CHANNEL IS. THRUST (Eastern)	76.5(123.1)	7.5	0.088	VII
SAN ANDREAS - Parkfield	77.6(124.9)	6.5	0.042	VI
LOS ALAMOS-W. BASELINE	77.7(125.1)	6.9	0.063	VI
VERDUGO	78.9(126.9)	6.9	0.062	VI
LIONS HEAD	81.5(131.2)	6.6	0.052	VI
OWENS VALLEY	81.6(131.4)	7.6	0.072	VII
SIERRA MADRE	82.1(132.2)	7.2	0.071	VI

DETERMINISTIC SITE PARAMETERS

ABBREVIATED FAULT NAME	APPROXIMATE DISTANCE mi (km)	ESTIMATED MAX. EARTHQUAKE EVENT: MAXIMUM EARTHQUAKE MAG.(Mw)	ESTIMATED MAX. EARTHQUAKE EVENT: PEAK SITE ACCEL. g	ESTIMATED MAX. EARTHQUAKE EVENT: EST. SITE INTENSITY MOD.MERC.
ANACAPA-DUME	82.7(133.1)	7.5	0.083	VII
OAK RIDGE(Blind Thrust Offshore)	83.0(133.5)	7.1	0.067	VI
LOS OSOS	83.1(133.7)	7.0	0.063	VI
GREAT VALLEY 13	83.9(135.1)	6.5	0.048	VI
RINCONADA	84.5(136.0)	7.5	0.067	VI
CASMALIA (Orcutt Frontal Fault)	85.1(136.9)	6.5	0.048	VI
HELENDALE - S. LOCKHARDT	87.5(140.8)	7.3	0.058	VI
GRAVEL HILLS - HARPER LAKE	88.0(141.6)	7.1	0.052	VI
MALIBU COAST	88.2(141.9)	6.7	0.052	VI
BLACKWATER	90.3(145.3)	7.1	0.051	VI
HOLLYWOOD	91.1(146.6)	6.4	0.043	VI
CLAMSHELL-SAWPIT	91.4(147.1)	6.5	0.045	VI
SANTA MONICA	92.4(148.7)	6.6	0.047	VI
UPPER ELYSIAN PARK BLIND THRUST	93.0(149.7)	6.4	0.042	VI
PUENTE HILLS BLIND THRUST	94.1(151.4)	7.1	0.060	VI
RAYMOND	94.3(151.8)	6.5	0.044	VI
INDEPENDENCE	94.5(152.1)	7.1	0.060	VI
NEWPORT-INGLEWOOD (L.A.Basin)	97.3(156.6)	7.1	0.048	VI
TANK CANYON	97.9(157.6)	6.4	0.041	V
SAN ANDREAS (Creeping)	98.1(157.8)	6.2	0.030	V
SANTA CRUZ ISLAND	98.7(158.8)	7.0	0.055	VI

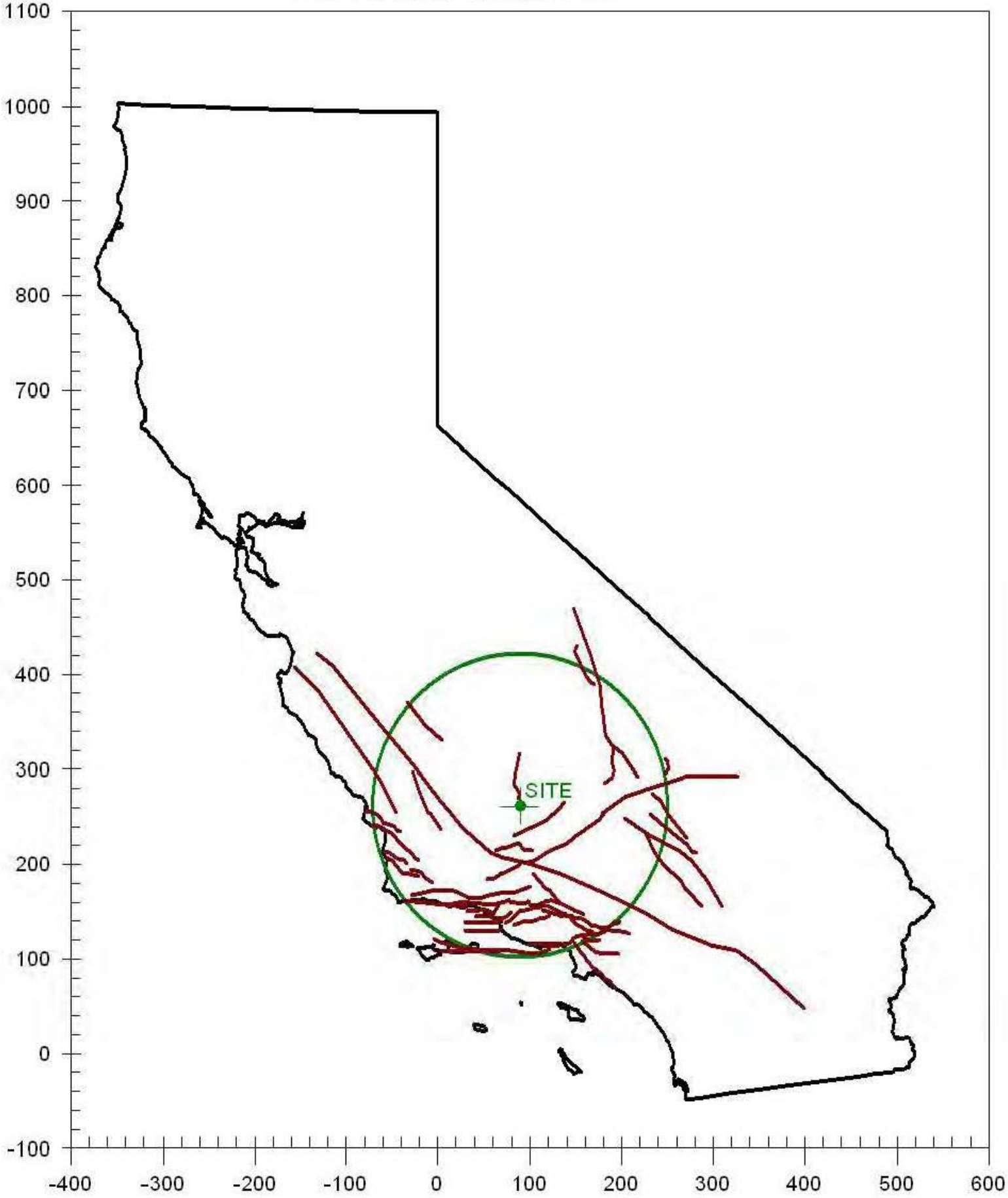
-END OF SEARCH- 61 FAULTS FOUND WITHIN THE SPECIFIED SEARCH RADIUS.

THE Kern Front FAULT IS CLOSEST TO THE SITE.
IT IS ABOUT 5.6 MILES (9.0 km) AWAY.

LARGEST MAXIMUM-EARTHQUAKE SITE ACCELERATION: 0.3146 g

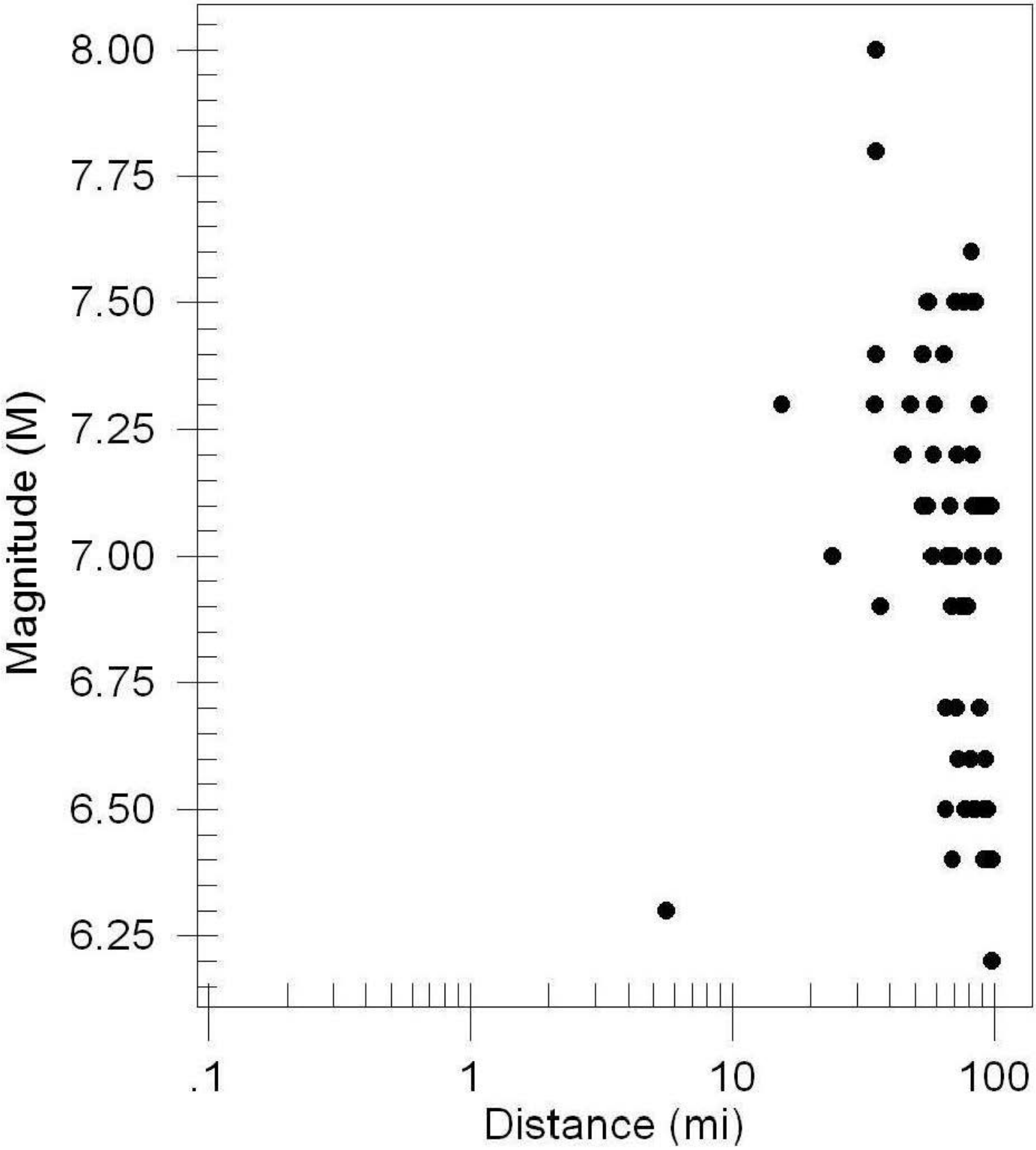
CALIFORNIA FAULT MAP

Vista Continuation High School



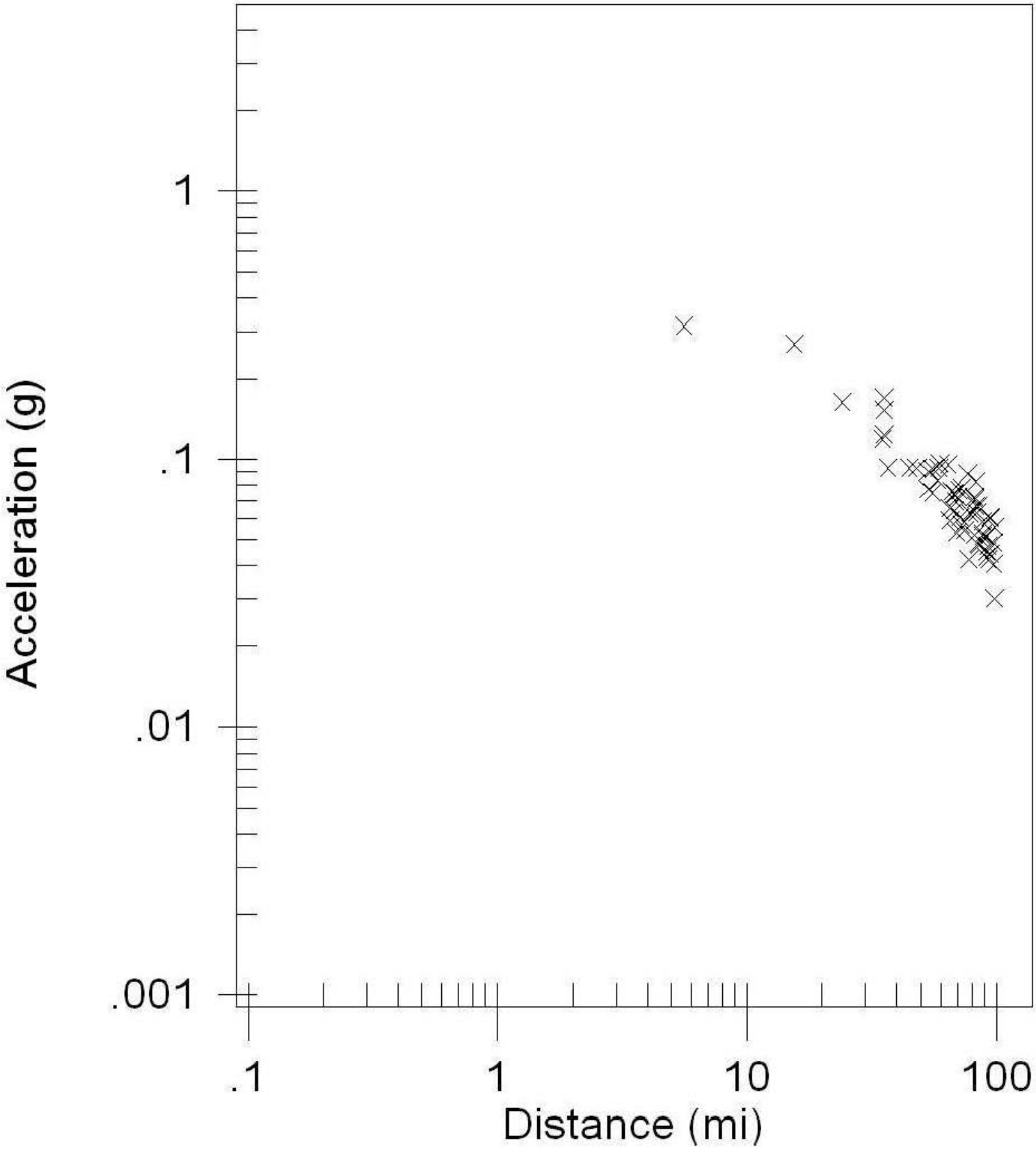
EARTHQUAKE MAGNITUDES & DISTANCES

Vista Continuation High School



MAXIMUM EARTHQUAKES

Vista Continuation High School



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*    E Q S E A R C H    *
*                       *
*     Version 3.00      *
*                       *
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      ESTIMATION OF
   PEAK ACCELERATION FROM
CALIFORNIA EARTHQUAKE CATALOGS


JOB NUMBER: 20342
                                                DATE: 06-25-2025

JOB NAME: Vista Continuation High School

EARTHQUAKE-CATALOG-FILE NAME: ALLQUAKE.DAT

SITE COORDINATES:
   SITE LATITUDE:  35.3572
   SITE LONGITUDE:  119.0107

SEARCH DATES:
           START DATE:   1800
           END DATE:   2010

SEARCH RADIUS:
           100.0 mi
           160.9 km

ATTENUATION RELATION:   3) Boore et al. (1997) Horiz. - NEHRP D (250)
   UNCERTAINTY (M=Median, S=Sigma): M       Number of Sigmas:  0.0
   ASSUMED SOURCE TYPE:  DS [SS=Strike-slip, DS=Reverse-slip, BT=Blind-
thrust]
   SCOND:   0  Depth Source:  A
   Basement Depth:  5.00 km     Campbell SSR:        Campbell SHR:
   COMPUTE PEAK HORIZONTAL ACCELERATION

MINIMUM DEPTH VALUE (km):  0.0
```

EARTHQUAKE SEARCH RESULTS

Page 1

FILE CODE	LAT. NORTH	LONG. WEST	DATE	TIME (UTC) H M Sec	DEPTH (km)	QUAKE MAG.	SITE ACC. g	SITE MM INT.	APPROX. DISTANCE mi [km]
DMG	35.3330	118.9170	08/22/1952	224124.0	0.0	5.80	0.243	IX	5.5(8.9)
DMG	35.3830	118.8500	07/29/1952	7 347.0	0.0	6.10	0.207	VIII	9.2(14.8)
DMG	35.4000	118.8170	07/29/1952	8 146.0	0.0	5.10	0.106	VII	11.3(18.2)
DMG	35.3000	118.8000	12/23/1905	2223 0.0	0.0	5.00	0.093	VII	12.5(20.1)
DMG	35.2170	118.8170	07/23/1952	1317 5.0	0.0	5.70	0.121	VII	14.6(23.5)
GSP	35.1490	119.1040	05/28/1993	044740.6	21.0	5.20	0.090	VII	15.3(24.6)
DMG	35.5000	118.7000	01/06/1905	1430 0.0	0.0	5.00	0.066	VI	20.1(32.3)
DMG	35.6000	118.8000	06/30/1926	1331 0.0	0.0	5.00	0.065	VI	20.5(33.0)
DMG	35.1330	118.7670	07/21/1952	194122.0	0.0	5.50	0.084	VII	20.7(33.3)
DMG	35.3330	118.6000	07/31/1952	12 9 9.0	0.0	5.80	0.090	VII	23.2(37.3)
DMG	35.1830	118.6500	07/21/1952	151358.0	0.0	5.10	0.061	VI	23.6(38.0)
DMG	35.3670	118.5830	07/23/1952	31923.0	0.0	5.00	0.057	VI	24.1(38.8)
DMG	35.3670	118.5830	07/23/1952	03832.0	0.0	6.10	0.102	VII	24.1(38.8)
DMG	35.0000	119.0170	07/21/1952	115214.0	0.0	7.70	0.234	IX	24.7(39.7)
DMG	35.0000	119.0170	01/12/1954	233349.0	0.0	5.90	0.090	VII	24.7(39.7)
DMG	35.0000	119.0000	02/16/1919	1557 0.0	0.0	5.00	0.056	VI	24.7(39.7)
DMG	35.0000	119.0000	07/21/1952	12 531.0	0.0	6.40	0.118	VII	24.7(39.7)
DMG	35.0000	119.0330	07/21/1952	12 2 0.0	0.0	5.60	0.077	VII	24.7(39.7)
DMG	35.1500	118.6330	01/27/1954	141948.0	0.0	5.00	0.055	VI	25.7(41.3)
DMG	34.9830	118.9830	05/23/1954	235243.0	0.0	5.10	0.057	VI	25.9(41.6)
DMG	35.0000	118.8330	07/23/1952	75319.0	0.0	5.40	0.066	VI	26.6(42.8)
DMG	35.0000	118.8330	07/23/1952	181351.0	0.0	5.20	0.059	VI	26.6(42.8)
DMG	35.3150	118.5160	07/25/1952	194323.7	11.2	5.70	0.074	VII	28.0(45.1)
DMG	35.2330	118.5330	07/21/1952	174244.0	0.0	5.10	0.053	VI	28.2(45.5)
DMG	34.9410	118.9870	11/15/1961	53855.5	10.7	5.00	0.050	VI	28.8(46.3)
DMG	35.3110	118.4990	07/25/1952	1313 8.2	2.8	5.00	0.050	VI	29.0(46.7)
DMG	35.3170	118.4940	07/25/1952	19 944.6	5.5	5.70	0.071	VI	29.2(47.0)
DMG	34.9500	118.8670	07/21/1952	121936.0	0.0	5.30	0.058	VI	29.3(47.1)
DMG	34.9320	118.9760	03/01/1963	02557.9	13.9	5.00	0.049	VI	29.4(47.3)
T-A	34.9200	118.9200	01/20/1857	0 0 0.0	0.0	5.00	0.048	VI	30.6(49.3)
T-A	34.9200	118.9200	05/23/1857	0 0 0.0	0.0	5.00	0.048	VI	30.6(49.3)
DMG	34.9000	118.9500	08/01/1952	13 430.0	0.0	5.10	0.049	VI	31.7(51.1)
DMG	34.9000	118.9000	10/23/1916	244 0.0	0.0	6.00	0.078	VII	32.2(51.8)
PAS	34.9430	118.7430	06/10/1988	23 643.0	6.8	5.40	0.056	VI	32.3(52.0)
DMG	34.8670	118.9330	09/21/1941	1953 7.2	0.0	5.20	0.049	VI	34.1(54.9)
DMG	34.8000	119.1000	09/05/1883	1230 0.0	0.0	6.00	0.067	VI	38.8(62.4)
T-A	34.8300	118.7500	11/27/1852	0 0 0.0	0.0	7.00	0.113	VII	39.3(63.2)
DMG	35.3000	119.8000	01/09/1857	16 0 0.0	0.0	7.90	0.164	VIII	44.6(71.8)
DMG	34.7000	119.0000	10/23/1916	254 0.0	0.0	5.50	0.046	VI	45.4(73.0)
DMG	36.0800	118.8200	05/29/1915	646 0.0	0.0	5.00	0.032	V	51.0(82.1)
GSP	35.2100	118.0660	07/11/1992	181416.2	10.0	5.70	0.044	VI	54.2(87.2)
DMG	35.7150	118.0740	03/15/1946	14 035.4	0.0	5.30	0.034	V	58.1(93.6)
T-A	36.1700	119.3200	07/25/1868	230 0.0	0.0	5.00	0.029	V	58.7(94.5)
DMG	35.7250	118.0550	03/15/1946	134935.9	22.0	6.30	0.057	VI	59.4(95.6)
DMG	35.7450	118.0390	03/16/1946	94617.9	0.0	5.10	0.030	V	60.8(97.8)
DMG	35.7780	118.0490	01/28/1961	81246.2	5.5	5.30	0.033	V	61.3(98.7)
DMG	35.7510	118.0290	03/15/1946	215433.4	0.0	5.20	0.031	V	61.5(98.9)
DMG	35.7140	117.9770	03/15/1946	191853.6	0.0	5.40	0.034	V	63.1(101.5)
DMG	35.7530	117.9860	03/15/1946	1321 0.9	0.0	5.20	0.030	V	63.7(102.5)
DMG	34.5000	119.5000	08/05/1930	1125 0.0	0.0	5.00	0.027	V	65.3(105.2)
DMG	34.5000	119.5000	06/29/1926	2321 0.0	0.0	5.50	0.035	V	65.3(105.2)
DMG	35.7470	117.9080	03/18/1946	155042.6	4.4	5.30	0.030	V	67.5(108.7)
GSP	34.3940	118.6690	06/26/1995	084028.9	13.0	5.00	0.025	V	69.3(111.5)

EARTHQUAKE SEARCH RESULTS

FILE CODE	LAT. NORTH	LONG. WEST	DATE	TIME (UTC) H M Sec	DEPTH (km)	QUAKE MAG.	SITE ACC. g	SITE MM INT.	APPROX. DISTANCE mi [km]
GSB	34.3790	118.7110	01/19/1994	210928.6	14.0	5.50	0.033	V	69.6(112.1)
GSP	34.3770	118.6980	01/18/1994	004308.9	11.0	5.20	0.028	V	70.0(112.6)
T-A	34.5000	119.6700	06/01/1893	12 0 0.0	0.0	5.00	0.025	V	70.0(112.6)
GSP	34.3690	118.6720	04/26/1997	103730.7	16.0	5.10	0.026	V	70.9(114.1)
GSP	34.3780	118.6180	01/19/1994	211144.9	11.0	5.10	0.026	V	71.2(114.5)
GSP	34.3260	118.6980	01/17/1994	233330.7	9.0	5.60	0.033	V	73.4(118.1)
DMG	34.4110	118.4010	02/09/1971	141028.0	8.0	5.30	0.028	V	73.9(118.9)
DMG	34.4110	118.4010	02/09/1971	14 1 8.0	8.0	5.80	0.037	V	73.9(118.9)
DMG	34.4110	118.4010	02/09/1971	14 244.0	8.0	5.80	0.037	V	73.9(118.9)
DMG	34.4110	118.4010	02/09/1971	14 041.8	8.4	6.40	0.050	VI	73.9(118.9)
DMG	34.5190	118.1980	08/23/1952	10 9 7.1	13.1	5.00	0.024	V	73.9(119.0)
DMG	35.7500	120.2500	03/10/1922	112120.0	0.0	6.50	0.053	VI	74.7(120.2)
DMG	34.3670	119.5830	07/01/1941	75054.8	0.0	5.90	0.038	V	75.7(121.8)
DMG	34.3000	118.6000	04/04/1893	1940 0.0	0.0	6.00	0.040	V	76.6(123.3)
GSP	34.3050	118.5790	01/29/1994	112036.0	1.0	5.10	0.025	V	76.7(123.4)
MGI	34.4000	119.7000	03/25/1806	8 0 0.0	0.0	5.00	0.023	IV	76.8(123.5)
GSB	34.3010	118.5650	01/17/1994	204602.4	9.0	5.20	0.026	V	77.2(124.2)
DMG	35.8310	117.7610	10/19/1961	5 943.9	-2.0	5.20	0.026	V	77.4(124.6)
DMG	35.7500	120.3300	08/18/1922	512 0.0	0.0	5.00	0.023	IV	78.9(127.0)
DMG	34.3080	118.4540	02/09/1971	144346.7	6.2	5.20	0.025	V	79.0(127.1)
T-A	34.4200	119.8200	00/00/1862	0 0 0.0	0.0	5.70	0.033	V	79.3(127.6)
PAS	34.3470	119.6960	08/13/1978	225453.4	12.8	5.10	0.024	V	79.8(128.5)
PAS	36.1510	120.0490	08/04/1985	12 156.0	6.0	5.80	0.035	V	79.9(128.6)
DMG	35.8000	120.3300	06/05/1934	2148 0.0	0.0	5.00	0.023	IV	80.1(129.0)
DMG	35.8000	120.3300	06/08/1934	447 0.0	0.0	6.00	0.038	V	80.1(129.0)
DMG	35.8000	120.3300	06/08/1934	430 0.0	0.0	5.00	0.023	IV	80.1(129.0)
DMG	35.8000	120.3300	12/28/1939	121538.0	0.0	5.00	0.023	IV	80.1(129.0)
GSP	35.7760	117.6620	08/17/1995	223959.0	5.0	5.40	0.028	V	81.1(130.5)
GSP	35.7660	117.6490	01/07/1996	143253.1	5.0	5.20	0.025	V	81.5(131.2)
GSB	35.7610	117.6390	09/20/1995	232736.3	5.0	6.10	0.040	V	81.9(131.9)
GSP	34.2130	118.5370	01/17/1994	123055.4	18.0	6.70	0.054	VI	83.4(134.3)
GSP	34.2310	118.4750	03/20/1994	212012.3	13.0	5.30	0.026	V	83.5(134.3)
MGI	35.2500	120.5000	07/09/1917	2238 0.0	0.0	5.30	0.026	V	84.2(135.6)
MGI	35.2500	120.5000	07/10/1917	045 0.0	0.0	5.30	0.026	V	84.2(135.6)
MGI	35.2500	120.5000	07/10/1917	043 0.0	0.0	5.30	0.026	V	84.2(135.6)
MGI	35.2500	120.5000	07/09/1917	2222 0.0	0.0	5.00	0.022	IV	84.2(135.6)
MGI	34.9000	120.4000	03/29/1928	625 0.0	0.0	5.30	0.025	V	84.6(136.1)
MGI	34.3000	119.8000	07/03/1925	1821 0.0	0.0	5.30	0.025	V	85.6(137.8)
MGI	34.3000	119.8000	07/03/1925	1638 0.0	0.0	5.30	0.025	V	85.6(137.8)
DMG	34.3000	119.8000	06/29/1925	144216.0	0.0	6.25	0.042	VI	85.6(137.8)
DMG	34.7000	120.3000	01/12/1915	431 0.0	0.0	5.50	0.028	V	85.9(138.2)
DMG	34.7000	120.3000	07/31/1902	920 0.0	0.0	5.50	0.028	V	85.9(138.2)
DMG	35.6310	117.5130	09/17/1938	1423 4.1	-2.0	5.00	0.021	IV	86.3(138.9)
MGI	34.8000	120.4000	12/12/1902	0 0 0.0	0.0	5.70	0.031	V	87.4(140.7)
MGI	35.0000	120.5000	11/19/1927	332 0.0	0.0	5.00	0.021	IV	87.6(141.0)
DMG	34.0650	119.0350	02/21/1973	144557.3	8.0	5.90	0.033	V	89.2(143.6)
DMG	34.1000	119.4000	05/19/1893	035 0.0	0.0	5.50	0.027	V	89.6(144.1)
MGI	35.5000	120.6000	01/01/1830	0 0 0.0	0.0	5.00	0.021	IV	90.0(144.8)
GSB	35.9170	120.4650	12/20/1994	102747.2	8.0	5.00	0.021	IV	90.3(145.3)
PAS	36.1820	120.2680	02/14/1987	72650.8	6.0	5.10	0.022	IV	90.6(145.8)
GSP	36.0750	117.6500	11/27/1996	201724.1	1.0	5.30	0.024	V	91.0(146.4)
GSP	36.0670	117.6380	03/06/1998	054740.3	1.0	5.20	0.023	IV	91.2(146.8)
DMG	35.9300	120.4800	12/24/1934	1626 0.0	0.0	5.00	0.020	IV	91.4(147.1)

EARTHQUAKE SEARCH RESULTS

FILE CODE	LAT. NORTH	LONG. WEST	DATE	TIME (UTC) H M Sec	DEPTH (km)	QUAKE MAG.	SITE ACC. g	SITE MM INT.	APPROX. DISTANCE mi [km]
DMG	35.9500	120.4700	11/16/1956	323 9.0	0.0	5.00	0.020	IV	91.5(147.3)
DMG	36.4000	118.0000	07/05/1871	21 6 0.0	0.0	5.20	0.023	IV	91.5(147.3)
DMG	34.2000	119.8000	12/21/1812	19 0 0.0	0.0	7.00	0.059	VI	91.6(147.4)
BRK	36.2200	120.2600	09/09/1983	91614.0	0.0	5.40	0.025	V	91.9(147.9)
MGI	36.6000	118.4000	09/04/1868	0 0 0.0	0.0	5.00	0.020	IV	92.3(148.6)
DMG	36.1700	120.3200	12/27/1926	919 0.0	0.0	5.00	0.020	IV	92.4(148.6)
GSP	36.0760	117.6180	03/07/1998	003646.8	1.0	5.00	0.020	IV	92.5(148.9)
DMG	35.9500	120.5000	06/28/1966	42613.4	0.0	5.50	0.026	V	93.0(149.7)
BRK	36.2200	120.2900	05/02/1983	234239.0	0.0	6.70	0.049	VI	93.2(149.9)
BRK	36.2200	120.2900	05/02/1983	2346 6.0	0.0	5.60	0.028	V	93.2(149.9)
DMG	35.9700	120.5000	06/28/1966	4 856.2	0.0	5.10	0.021	IV	93.6(150.7)
MGI	34.0000	119.0000	12/14/1912	0 0 0.0	0.0	5.70	0.029	V	93.7(150.8)
DMG	34.0000	119.0000	09/24/1827	4 0 0.0	0.0	7.00	0.058	VI	93.7(150.8)
T-A	35.2500	120.6700	12/17/1852	0 0 0.0	0.0	5.70	0.029	V	93.8(150.9)
T-A	35.2500	120.6700	00/00/1830	0 0 0.0	0.0	5.70	0.029	V	93.8(150.9)
BRK	36.2400	120.2900	05/09/1983	24912.0	0.0	5.20	0.022	IV	94.1(151.4)
DMG	34.1180	119.7020	07/05/1968	04517.2	5.9	5.20	0.022	IV	94.1(151.5)
MGI	34.6000	120.4000	07/28/1902	657 0.0	0.0	6.30	0.040	V	94.4(151.9)
MGI	34.6000	120.4000	08/01/1902	330 0.0	0.0	6.30	0.040	V	94.4(151.9)
DMG	35.9500	120.5300	06/29/1966	195325.9	0.0	5.00	0.020	IV	94.6(152.2)
DMG	36.0000	120.5000	03/03/1901	745 0.0	0.0	5.50	0.026	V	94.6(152.2)
DMG	36.0000	120.5000	02/02/1881	011 0.0	0.0	5.60	0.027	V	94.6(152.2)
GSP	34.2620	118.0020	06/28/1991	144354.5	11.0	5.40	0.025	V	94.8(152.6)
MGI	35.3000	120.7000	12/07/1906	640 0.0	0.0	5.90	0.032	V	95.2(153.3)
BRK	36.2100	120.3800	07/25/1983	223140.0	0.0	5.10	0.021	IV	96.7(155.6)
BRK	36.2000	120.4000	07/22/1983	343 2.0	0.0	5.00	0.020	IV	97.2(156.4)
DMG	34.0000	119.5000	02/18/1926	1818 0.0	0.0	5.00	0.019	IV	97.7(157.3)
MGI	34.0800	118.2600	07/16/1920	18 8 0.0	0.0	5.00	0.019	IV	97.9(157.6)
BRK	36.2200	120.4000	07/22/1983	23955.0	0.0	6.00	0.033	V	98.0(157.7)
MGI	34.0000	118.5000	11/19/1918	2018 0.0	0.0	5.00	0.019	IV	98.1(157.9)
DMG	34.0000	118.5000	08/04/1927	1224 0.0	0.0	5.00	0.019	IV	98.1(157.9)
DMG	33.9860	119.4750	08/06/1973	232917.0	16.9	5.00	0.019	IV	98.3(158.1)
MGI	35.1700	120.7500	12/01/1916	2253 0.0	0.0	5.70	0.028	V	98.9(159.2)
MGI	36.5800	118.0800	07/06/1917	11 1 0.0	0.0	5.70	0.028	V	99.2(159.6)
PAS	33.9440	118.6810	01/01/1979	231438.9	11.3	5.00	0.019	IV	99.4(159.9)
T-A	36.5800	118.0700	04/18/1872	0 0 0.0	0.0	5.00	0.019	IV	99.5(160.0)
T-A	36.5800	118.0700	08/13/1882	0 0 0.0	0.0	5.00	0.019	IV	99.5(160.0)
DMG	33.9500	118.6320	08/31/1930	04036.0	0.0	5.20	0.021	IV	99.5(160.1)
BRK	36.2600	120.4000	07/09/1983	74052.0	0.0	5.30	0.022	IV	99.7(160.4)
MGI	36.6000	118.1000	05/17/1872	21 0 0.0	0.0	5.00	0.019	IV	99.8(160.5)

****

-END OF SEARCH- 146 EARTHQUAKES FOUND WITHIN THE SPECIFIED SEARCH AREA.

TIME PERIOD OF SEARCH: 1800 TO 2010

LENGTH OF SEARCH TIME: 211 years

THE EARTHQUAKE CLOSEST TO THE SITE IS ABOUT 5.5 MILES (8.9 km) AWAY.

LARGEST EARTHQUAKE MAGNITUDE FOUND IN THE SEARCH RADIUS: 7.9

LARGEST EARTHQUAKE SITE ACCELERATION FROM THIS SEARCH: 0.243 g

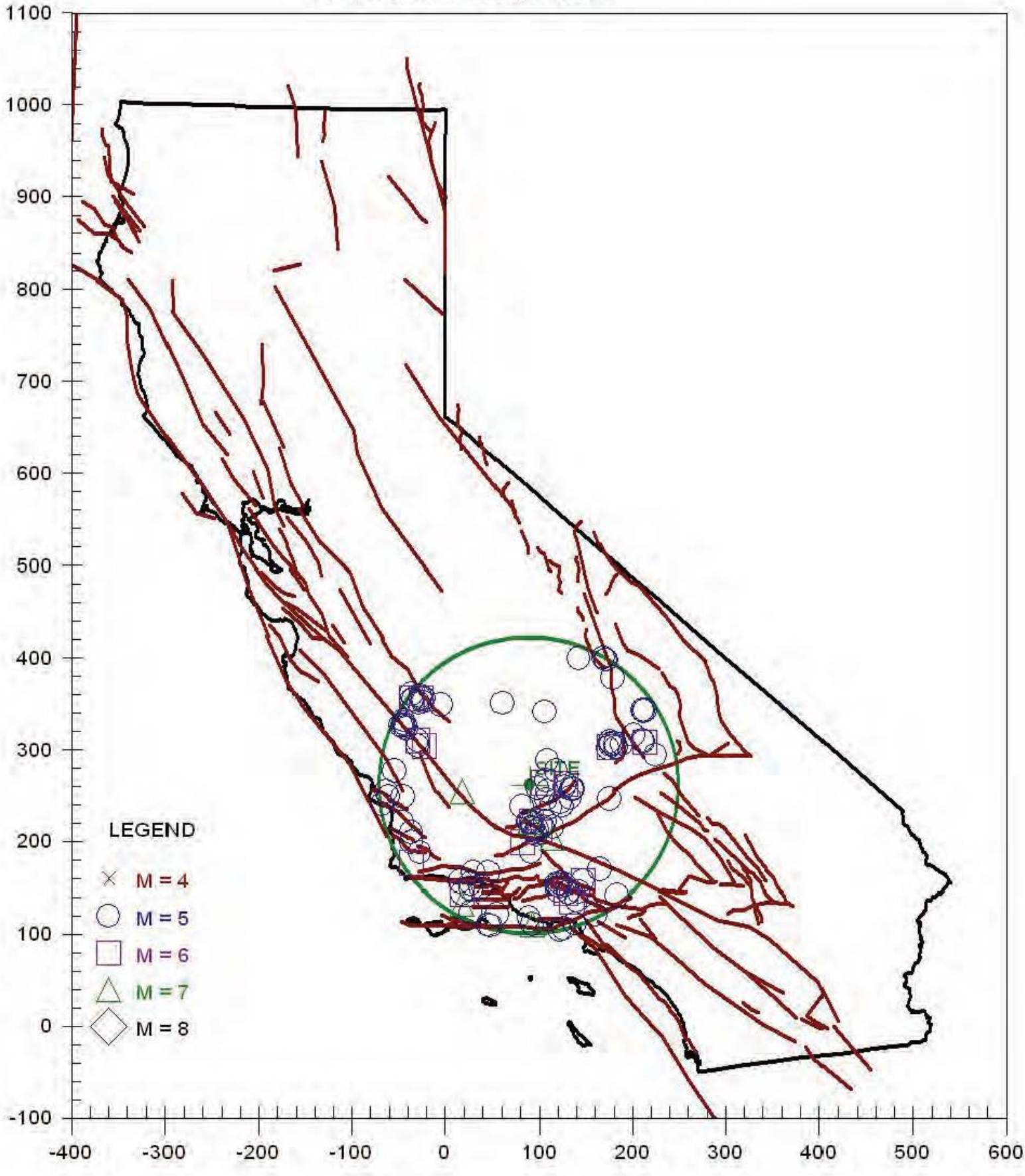
COEFFICIENTS FOR GUTENBERG & RICHTER RECURRENCE RELATION:
  a-value= 1.659
  b-value= 0.414
  beta-value= 0.952

TABLE OF MAGNITUDES AND EXCEEDANCES:

Earthquake Magnitude	Number of Times Exceeded	Cumulative No. / Year
4.0	146	0.69524
4.5	146	0.69524
5.0	146	0.69524
5.5	55	0.26190
6.0	22	0.10476
6.5	8	0.03810
7.0	5	0.02381
7.5	2	0.00952

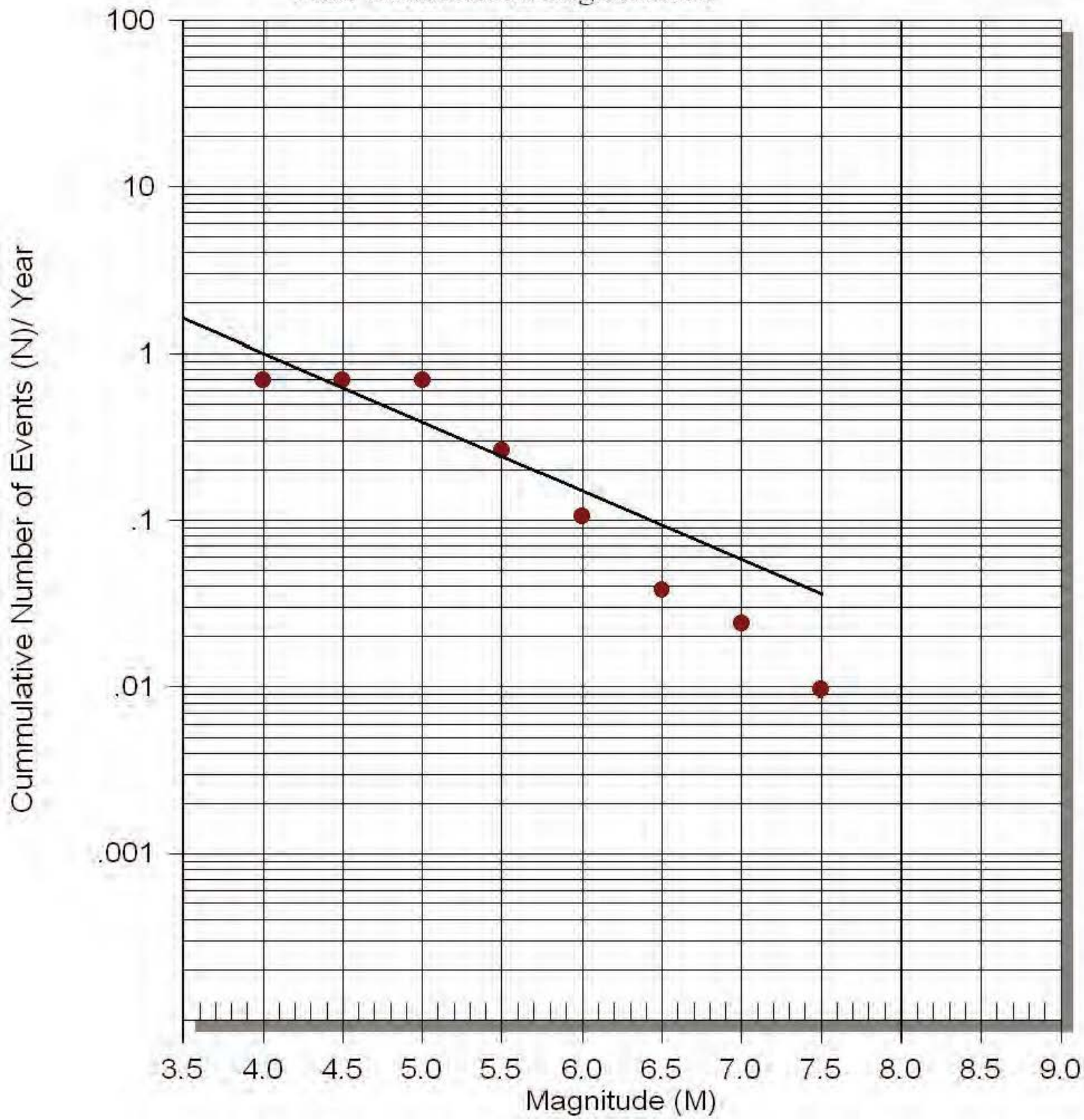
EARTHQUAKE EPICENTER MAP

Vista Continuation High School



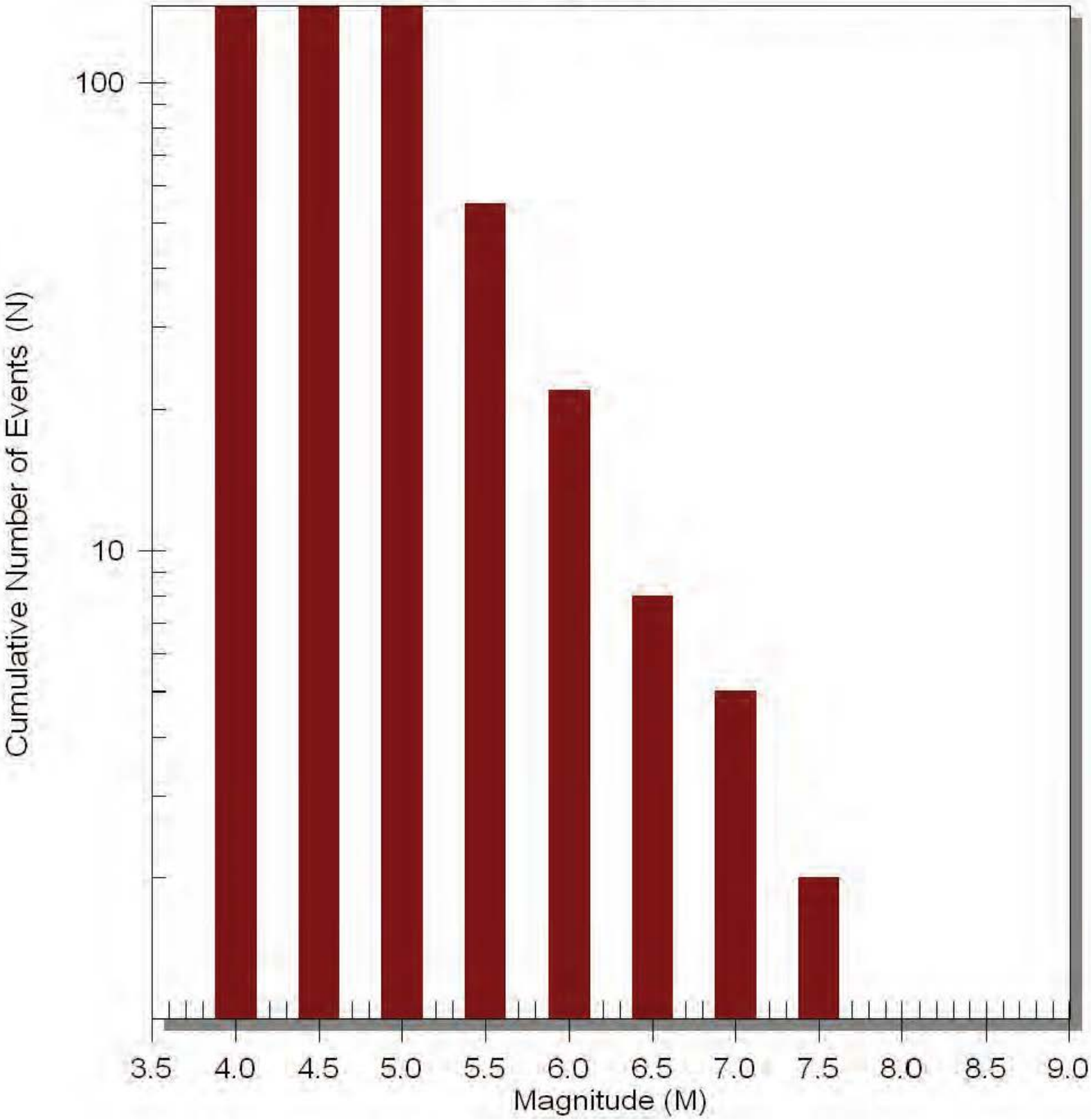
EARTHQUAKE RECURRENCE CURVE

Vista Continuation High School



Number of Earthquakes (N) Above Magnitude (M)

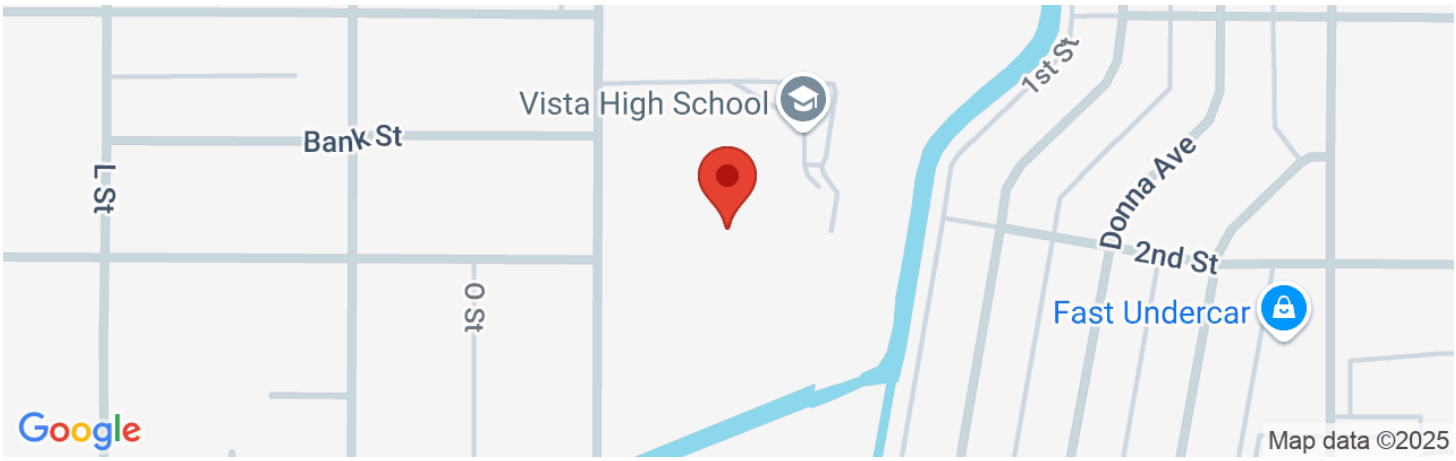
Vista Continuation High School



Announcement
ASCE 7-22 is now available.

20342 Vista Continuation High School

Latitude, Longitude: 35.357194, -119.010650



Date	6/25/2025, 3:59:14 PM
Design Code Reference Document	ASCE7-16
Risk Category	III
Site Class	D

Type	Value	Description
S_S	0.941	MCE_R ground motion. (for 0.2 second period)
S_1	0.34	MCE_R ground motion. (for 1.0s period)
S_{MS}	1.057	Site-modified spectral acceleration value
S_{M1}	null -See Section 11.4.8	Site-modified spectral acceleration value
S_{DS}	0.705	Numeric seismic design value at 0.2 second SA
S_{D1}	null -See Section 11.4.8	Numeric seismic design value at 1.0 second SA

Type	Value	Description
SDC	null -See Section 11.4.8	Seismic design category
F_a	1.124	Site amplification factor at 0.2 second
F_v	null -See Section 11.4.8	Site amplification factor at 1.0 second
PGA	0.408	MCE_G peak ground acceleration
F_{PGA}	1.192	Site amplification factor at PGA
PGA_M	0.486	Site modified peak ground acceleration
T_L	12	Long-period transition period in seconds
SsRT	0.941	Probabilistic risk-targeted ground motion. (0.2 second)
SsUH	1.021	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration
SsD	1.5	Factored deterministic acceleration value. (0.2 second)
S1RT	0.34	Probabilistic risk-targeted ground motion. (1.0 second)
S1UH	0.37	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration.
S1D	0.6	Factored deterministic acceleration value. (1.0 second)
PGAd	0.5	Factored deterministic acceleration value. (Peak Ground Acceleration)

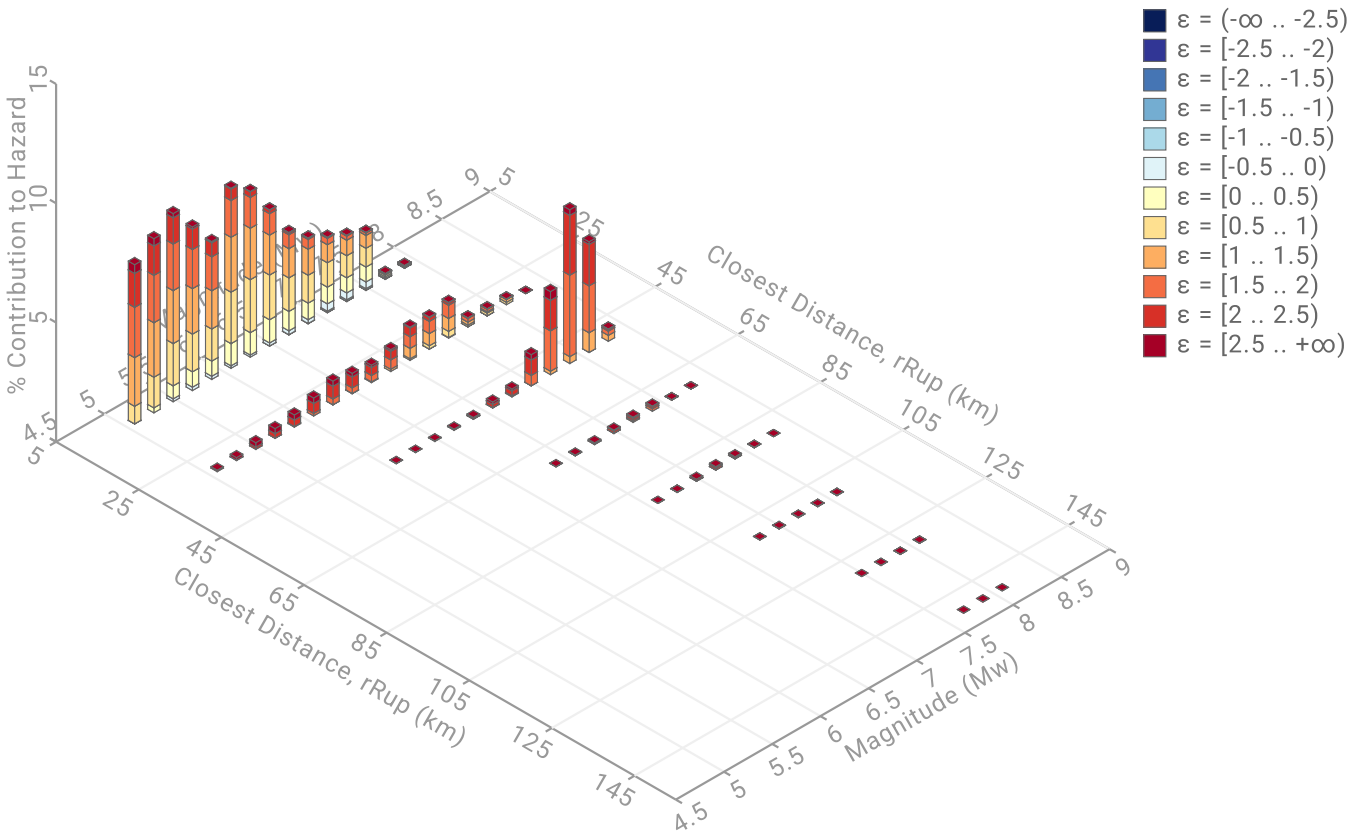
Type	Value	Description
PGA_{UH}	0.408	Uniform-hazard (2% probability of exceedance in 50 years) Peak Ground Acceleration
C_{RS}	0.922	Mapped value of the risk coefficient at short periods
C_{R1}	0.919	Mapped value of the risk coefficient at a period of 1 s
C_V	1.271	Vertical coefficient

DISCLAIMER

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Disaggregation Report

Disaggregation



Geographical Disaggregation



Sources: Maxar, Airbus DS, USGS, NGA, NASA, CGIAR, GEBCO, N Robinson, NCEAS, NLS, OS, NMA, Geodatasty... Powered by Esri

Parameter Summary

Model: NSHM Conterminous U.S. 2023

Latitude: 35.357194 °

Longitude: -119.01065 °

Site Class: D (Vs30 260)

Intensity Measure Type: PGA

Return Period: 2475 (2% in 50)

Component: Total

Disaggregation Summary: Total

Disaggregation targets

Return period : 2475 yrs

Exceedance rate : 4.040e-4 yr^{-1}

PGA ground motion : 5.705e-1 g

Recovered targets

Return period : 2394.6433 yrs

Exceedance rate : 4.176e-4 yr^{-1}

Totals

Binned : 100 %

Residual : 0 %

Trace : 0.19 %

Mean (over all sources)

m : 6.48

r : 19.99 km

ε_0 : 1.39 σ

Mode (largest m-r bin)

m : 5.5

r : 9.62 km

ε_0 : 1.34 σ

Contribution : 7.88 %

Mode (largest m-r-ε_0 bin)

m : 7.9

r : 56.36 km

ε_0 : 1.74 σ

Contribution : 3.42 %

Discretization

r : min = 0.0, max = 1000.0, Δ = 20.0 km

m : min = 4.4, max = 9.4, Δ = 0.2

ε : min = -3.0, max = 3.0, Δ = 0.5 σ

Epsilon keys

ε0 : [-∞ .. -2.5)

ε1 : [-2.5 .. -2.0)

ε2 : [-2.0 .. -1.5)

ε3 : [-1.5 .. -1.0)

ε4 : [-1.0 .. -0.5)

ε5 : [-0.5 .. 0.0)

ε6 : [0.0 .. 0.5)

ε7 : [0.5 .. 1.0)

ε8 : [1.0 .. 1.5)

ε9 : [1.5 .. 2.0)

ε10 : [2.0 .. 2.5)

ε11 : [2.5 .. +∞]

Disaggregation Contributions: Total

Source Set ↳ Source	Type	r	m	ε_0	lon	lat	az	%
WUS Branch Average (opt)	Grid							80.54
PointSourceFinite: -119.011, 35.407		6.56	5.82	0.94	119.011°W	35.407°N	0.00	2.81
PointSourceFinite: -119.011, 35.416		7.14	5.86	1.01	119.011°W	35.416°N	0.00	2.72
PointSourceFinite: -119.011, 35.434		8.38	5.93	1.13	119.011°W	35.434°N	0.00	2.66
PointSourceFinite: -119.011, 35.407		7.77	5.84	0.98	119.011°W	35.407°N	0.00	2.51
PointSourceFinite: -119.011, 35.398		6.01	5.79	0.87	119.011°W	35.398°N	0.00	2.51
PointSourceFinite: -119.011, 35.425		7.75	5.90	1.07	119.011°W	35.425°N	0.00	2.48
PointSourceFinite: -119.011, 35.416		8.41	5.87	1.04	119.011°W	35.416°N	0.00	2.41
PointSourceFinite: -119.011, 35.443		9.03	5.97	1.19	119.011°W	35.443°N	0.00	2.39
PointSourceFinite: -119.011, 35.434		9.73	5.95	1.17	119.011°W	35.434°N	0.00	2.36
PointSourceFinite: -119.011, 35.389		5.51	5.76	0.80	119.011°W	35.389°N	0.00	2.32
PointSourceFinite: -119.011, 35.398		7.16	5.80	0.91	119.011°W	35.398°N	0.00	2.26
PointSourceFinite: -119.011, 35.425		9.06	5.91	1.11	119.011°W	35.425°N	0.00	2.2
PointSourceFinite: -119.011, 35.389		6.56	5.77	0.83	119.011°W	35.389°N	0.00	2.12
PointSourceFinite: -119.011, 35.443		10.41	5.99	1.23	119.011°W	35.443°N	0.00	2.11
PointSourceFinite: -119.011, 35.452		9.52	6.06	1.29	119.011°W	35.452°N	0.00	2.04
PointSourceFinite: -119.011, 35.461		10.17	6.11	1.34	119.011°W	35.461°N	0.00	1.86
PointSourceFinite: -119.011, 35.452		11.00	6.08	1.32	119.011°W	35.452°N	0.00	1.79
PointSourceFinite: -119.011, 35.380		5.09	5.73	0.73	119.011°W	35.380°N	0.00	1.78
PointSourceFinite: -119.011, 35.380		6.01	5.74	0.77	119.011°W	35.380°N	0.00	1.65
PointSourceFinite: -119.011, 35.470		10.82	6.15	1.38	119.011°W	35.470°N	0.00	1.64
PointSourceFinite: -119.011, 35.461		11.67	6.13	1.36	119.011°W	35.461°N	0.00	1.64
PointSourceFinite: -119.011, 35.479		11.48	6.20	1.42	119.011°W	35.479°N	0.00	1.56
PointSourceFinite: -119.011, 35.470		12.35	6.17	1.40	119.011°W	35.470°N	0.00	1.45
PointSourceFinite: -119.011, 35.479		13.03	6.22	1.44	119.011°W	35.479°N	0.00	1.37
PointSourceFinite: -119.011, 35.497		12.79	6.29	1.50	119.011°W	35.497°N	0.00	1.34
PointSourceFinite: -119.011, 35.488		12.13	6.24	1.46	119.011°W	35.488°N	0.00	1.33
PointSourceFinite: -119.011, 35.497		14.37	6.32	1.50	119.011°W	35.497°N	0.00	1.19
PointSourceFinite: -119.011, 35.488		13.70	6.27	1.47	119.011°W	35.488°N	0.00	1.17
PointSourceFinite: -119.011, 35.371		4.77	5.71	0.68	119.011°W	35.371°N	0.00	1.17
PointSourceFinite: -119.011, 35.371		5.50	5.72	0.71	119.011°W	35.371°N	0.00	1.11
PointSourceFinite: -119.011, 35.506		13.46	6.33	1.54	119.011°W	35.506°N	0.00	1.11
WUS Branch Average	FaultSystem							19.46
San Andreas (Big Bend) (3)		57.57	7.92	1.98	119.157°W	34.854°N	193.40	11.45
Garlock (west) (3)		56.65	7.91	1.97	118.699°W	34.916°N	149.84	1.81
White Wolf (3)		29.45	7.48	1.60	118.778°W	35.173°N	134.14	1.49
Pleito (2)		40.47	7.62	1.85	119.058°W	34.996°N	186.18	1.24
Pleito (3)		42.05	7.89	1.69	119.036°W	34.980°N	183.18	1.18

Application Metadata

Application: Disaggregation
URL: https://earthquake.usgs.gov/nshmp/hazard/disagg

Repository: nshmp-apps
Version: 19.11.0
URL: https://code.usgs.gov/ghsc/nshmp/nshmp-apps

Repository : nshmp-haz
Version: 2.6.11
URL: https://code.usgs.gov/ghsc/nshmp/nshmp-haz

Repository : nshmp-lib
Version: 1.7.7
URL: https://code.usgs.gov/ghsc/nshmp/nshmp-lib

Repository : nshm-conus
Version: 6.1.1
URL: https://code.usgs.gov/ghsc/nshmp/nshms/nshm-conus.git

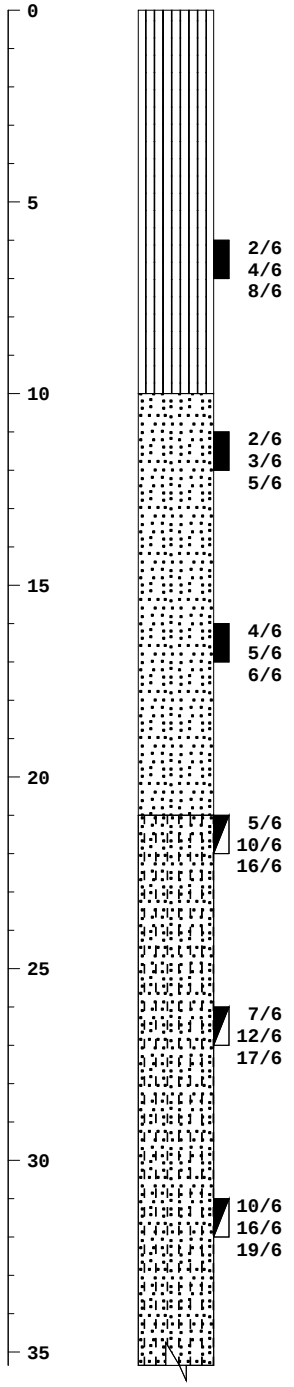
June 30, 2025, 10:24 AM

Attachment B

Boring Logs, the Flood Insurance Rate Map, the Flood Inundation Map for Lake Isabella, the Tsunami Hazard Area Map, the National Pipeline Map, Historical Depth to Water Map, LiquefyPro plot and calculation sheet for liquefaction and settlement. Lab Result Table.

LOG OF TEST BORING
BORING B-1

PROJECT: *Vista Continuation High School*
FILE NO: *20342*
BORING DATE: *06/03/25*
ELEV.:
BORING LOCATION: *See Boring Location Map, Figure 1*
START: *06/03/25*
DRILL METHOD: *4.25" I.D. Hollow-Stem Auger*
FINISH: *06/03/25*
DESCRIPTION: *Geotechnical Engineering Services*
DEPTH TO WATER - ▼ **:** *41'* **CAVING -** ⬢ **:** *N/A*
LOGGER: *EM*

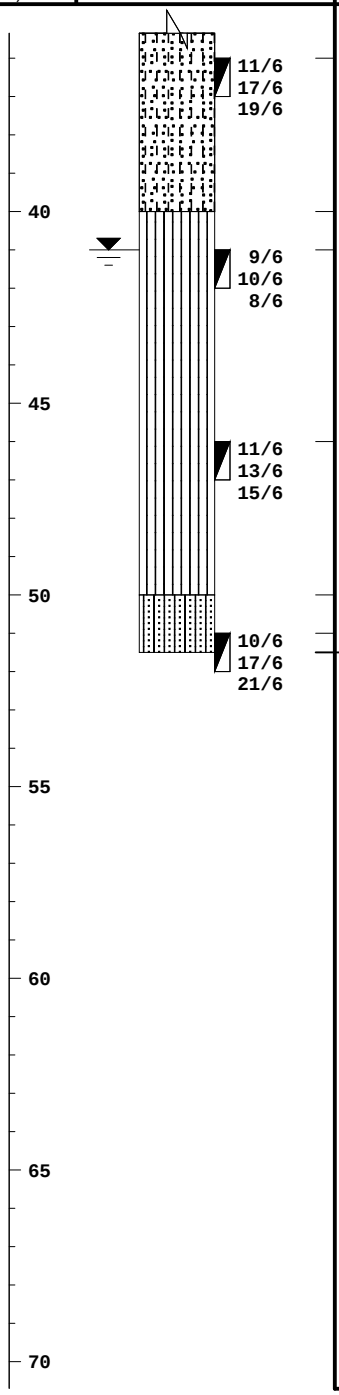


ELEVATION/ DEPTH (feet)	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	Description	Remarks	Density pcf	Moisture %
		ML	SANDY SILT; light yellowish brown, dry, fine grained.			
			Brown, moist, loose.		93.5	9.9
		SP	POORLY GRADED SAND; light yellowish brown, dry.		98.4	2.1
					90.1	1.3
		SP-SM	POORLY GRADED SAND WITH SILT; light yellowish brown, dry, medium dense, gravel.			1.1
			Moist.			3.3
						2.2

Figure Number 2

LOG OF TEST BORING
BORING B-1

PROJECT: *Vista Continuation High School*
FILE NO: *20342*
BORING DATE: *06/03/25*
ELEV.:
BORING LOCATION: *See Boring Location Map, Figure 1*
START: *06/03/25*
DRILL METHOD: *4.25" I.D. Hollow-Stem Auger*
FINISH: *06/03/25*
DESCRIPTION: *Geotechnical Engineering Services*
DEPTH TO WATER - ▼ **:** *41'* **CAVING -** ▰ **:** *N/A*
LOGGER: *EM*

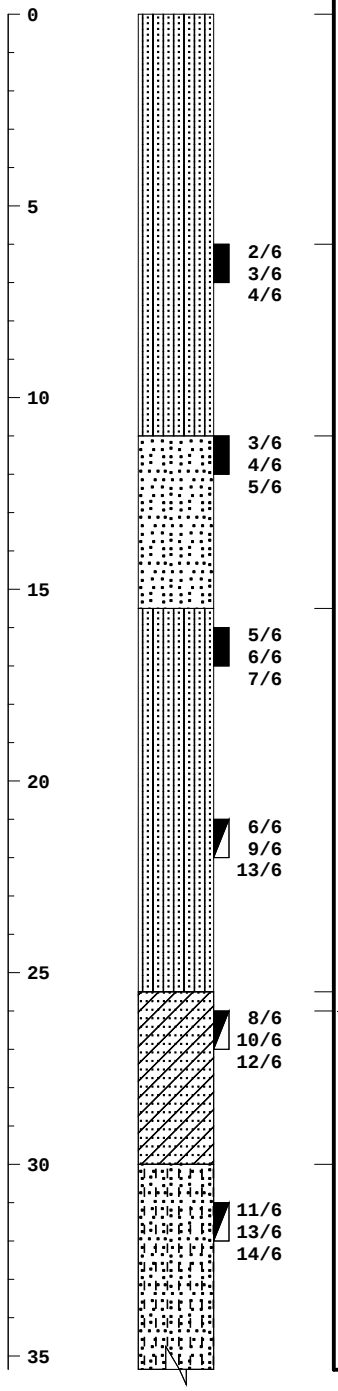


ELEVATION/ DEPTH (feet)	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	Description	Remarks	Density pcf	Moisture %
			Brown, wet, coarse grained.			14.2
		ML	**SANDY SILT; dark yellowish brown, wet, fine to medium grained.**			21.4
			Water encountered.			
			Very stiff, traces of clay.			19.6
		SM	**SILTY SAND; brown, moist, fine to medium grained, traces of clay.**			13.4
			Medium dense.			
			BOTTOM.			

Figure Number 2

LOG OF TEST BORING
BORING B-2

PROJECT: *Vista Continuation High School*
FILE NO: *20342*
BORING DATE: *06/03/25*
ELEV.:
BORING LOCATION: *See Boring Location Map, Figure 1*
START: *06/03/25*
DRILL METHOD: *4.25" I.D. Hollow-Stem Auger*
FINISH: *06/03/25*
DESCRIPTION: *Geotechnical Engineering Services*
DEPTH TO WATER - ▼ **:** *N/A* **CAVING -** ▰ **:** *N/A*
LOGGER: *EM*



ELEVATION/ DEPTH (feet)	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	Description	Remarks	Density pcf	Moisture %
		SM	SILTY SAND; dark brown, dry.			
			Light yellowish brown, loose.		97.2	3.0
		SP	POORLY GRADED SAND; brown, dry, gravel.		101.9	3.1
		SM	SILTY SAND; brown, moist, fine grained.		100.5	21.1
		SM				2.5
		SC	CLAYEY SAND; reddish brown, moist, fine to medium grained. Medium dense.			9.7
		SP-SM SP-SM	POORLY GRADED SAND WITH SILT; light yellowish brown, damp, coarse grained, gravel.			2.8

Figure Number 3

LOG OF TEST BORING
BORING B-2

PROJECT: *Vista Continuation High School*
FILE NO: *20342*
BORING DATE: *06/03/25*
ELEV.:
BORING LOCATION: *See Boring Location Map, Figure 1*
START: *06/03/25*
DRILL METHOD: *4.25" I.D. Hollow-Stem Auger*
FINISH: *06/03/25*
DESCRIPTION: *Geotechnical Engineering Services*
DEPTH TO WATER - ▼ **:** *N/A* **CAVING -** ▰ **:** *N/A*
LOGGER: *EM*

ELEVATION/ DEPTH (feet)	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	Description	Remarks	Density pcf	Moisture %
	10/6 19/6 18/6					3.8
40						
	12/6 17/6 19/6					2.7
45		SM	SILTY SAND; brown, moist, fine grained.			
	20/6 22/6 17/6					11.2
50						
	9/6 11/6 13/6	ML	SANDY SILT; light yellowish brown, moist, very stiff.			16.6
			BOTTOM.			
55						
60						
65						
70						

Figure Number 3

LOG OF TEST BORING
BORING B-3

PROJECT: *Vista Continuation High School*
FILE NO: *20342*
BORING DATE: *06/04/25*
ELEV.:
BORING LOCATION: *See Boring Location Map, Figure 1*
START: *06/04/25*
DRILL METHOD: *4.25" I.D. Hollow-Stem Auger*
FINISH: *06/04/25*
DESCRIPTION: *Geotechnical Engineering Services*
DEPTH TO WATER - ▼ **:** *N/A* **CAVING -** ▰ **:** *N/A*
LOGGER: *LW*

ELEVATION/ DEPTH (feet)	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	Description	Remarks	Density pcf	Moisture %
0		SM	SILTY SAND; brown, moist, fine grained, cohesive.			
5	3/6 3/6 3/6	SP	Loose. POORLY GRADED SAND; light brown, moist, fine grained.		89.6	19.2
10	4/6 8/6 10/6		Medium dense, fine to medium grained.		97.3	2.0
15	6/6 7/6 9/6				96.5	4.2
20	6/6 8/6 10/6				93.5	3.6
25	9/6 19/6 29/6	SM	SILTY SAND; brown, fine grained, cohesive. Dense. Gravel.		107.6	8.6
30	5/6 14/6 21/6		BOTTOM.		105.7	4.9
35						

Hand augered to 5 feet to avoid possible underground lines.

Figure Number 4

LOG OF TEST BORING
BORING B-4

PROJECT: *Vista Continuation High School*
FILE NO: *20342*
BORING DATE: *06/03/25*
ELEV.:
BORING LOCATION: *See Boring Location Map, Figure 1*
START: *06/03/25*
DRILL METHOD: *4.25" I.D. Hollow-Stem Auger*
FINISH: *06/03/25*
DESCRIPTION: *Geotechnical Engineering Services*
DEPTH TO WATER - ▼ **:** *N/A* **CAVING -** ▰ **:** *N/A*
LOGGER: *MW*

ELEVATION/ DEPTH (feet)	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	Description	Remarks	Density pcf	Moisture %
0		SM	SILTY SAND; yellowish brown, dry, fine grained.			
5	3/6 4/6 6/6		Loose.		107.1	6.0
10	3/6 4/6 5/6				97.9	3.2
15	5/6 11/6 14/6		Medium dense.		98.2	2.6
20	7/6 9/6 10/6	SM	SILTY SAND; light yellowish brown, dry, fine grained.		96.0	2.8
25	8/6 16/6 19/6		BOTTOM.		89.0	20.9
30						
35						

Hand augered to 5 feet to avoid possible underground lines.

Figure Number 5

LOG OF TEST BORING
BORING B-5

PROJECT: *Vista Continuation High School*
FILE NO: *20342*
BORING DATE: *06/03/25*
ELEV.:
BORING LOCATION: *See Boring Location Map, Figure 1*
START: *06/03/25*
DRILL METHOD: *4.25" I.D. Hollow-Stem Auger*
FINISH: *06/03/25*
DESCRIPTION: *Geotechnical Engineering Services*
DEPTH TO WATER - ▼ **:** *N/A* **CAVING -** ▰ **:** *N/A*
LOGGER: *MW*

ELEVATION/ DEPTH (feet)	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	Description	Remarks	Density pcf	Moisture %
0		SM	SILTY SAND; light brown, dry, fine grained.			
5	6/6 6/6 6/6	SP	POORLY GRADED SAND; light yellowish brown, dry, fine to coarse grained, traces of fine gravel. Loose.		99.4	1.7
10	5/6 5/6 6/6				96.3	2.4
15	7/6 9/6 10/6		Medium dense.		105.9	1.5
20	10/6 13/6 14/6				101.0	1.3
25	12/6 17/6 23/6	SM	SILTY SAND; yellowish brown, dry, fine grained. BOTTOM.		97.6	2.3
30						
35						

Hand augered to 5 feet to avoid possible underground lines.

Figure Number 6

LOG OF TEST BORING
BORING B-6

PROJECT: *Vista Continuation High School*
FILE NO: *20342*
BORING DATE: *06/03/25*
ELEV.:
BORING LOCATION: *See Boring Location Map, Figure 1*
START: *06/03/25*
DRILL METHOD: *4.25" I.D. Hollow-Stem Auger*
FINISH: *06/03/25*
DESCRIPTION: *Geotechnical Engineering Services*
DEPTH TO WATER - ▼ **:** *N/A* **CAVING -** ▶ **:** *N/A*
LOGGER: *MW*

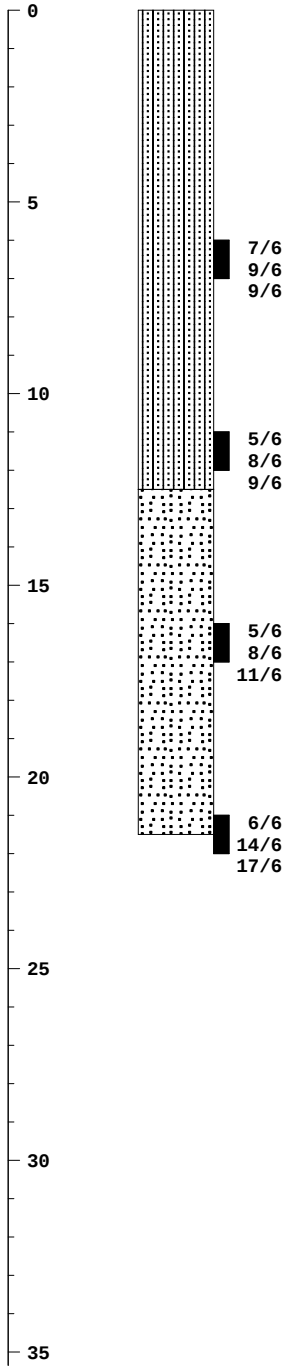
ELEVATION/ DEPTH (feet)	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	Description	Remarks	Density pcf	Moisture %
0		SM	**SILTY SAND; light brown, dry, fine grained.**			
5	4/6 4/6 6/6		**Loose, traces of gravel.**		104.5	1.2
10	4/6 5/6 6/6				93.3	2.0
15	6/6 7/6 9/6		**Medium dense.**		98.4	1.8
20	8/6 14/6 16/6				103.8	1.1
25	9/6 16/6 16/6				100.2	2.8
			BOTTOM.			
30						
35						

Hand augered to 5 feet to avoid possible underground lines.

Figure Number 7

LOG OF TEST BORING
BORING B-7

PROJECT: *Vista Continuation High School*
FILE NO: *20342*
BORING DATE: *06/03/25*
ELEV.:
BORING LOCATION: *See Boring Location Map, Figure 1*
START: *06/03/25*
DRILL METHOD: *4.25" I.D. Hollow-Stem Auger*
FINISH: *06/03/25*
DESCRIPTION: *Geotechnical Engineering Services*
DEPTH TO WATER - ▼ **:** *N/A* **CAVING -** ▶ **:** *N/A*
LOGGER: *MW*



ELEVATION/ DEPTH (feet)	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	Description	Remarks	Density pcf	Moisture %
		SM	**SILTY SAND; yellowish brown, dry, fine grained.**			
			Medium dense.		105.0	2.6
					102.3	6.1
		SP	**POORLY GRADED SAND; light yellowish brown, dry to damp, fine grained.**			
					96.2	2.2
			BOTTOM.		101.5	7.5

Hand augered to 5 feet to avoid possible underground lines.

Figure Number 8

LOG OF TEST BORING
BORING B-8

PROJECT: *Vista Continuation High School*
FILE NO: *20342*
BORING DATE: *06/04/25*
ELEV.:
BORING LOCATION: *See Boring Location Map, Figure 1*
START: *06/04/25*
DRILL METHOD: *4.25" I.D. Hollow-Stem Auger*
FINISH: *06/04/25*
DESCRIPTION: *Geotechnical Engineering Services*
DEPTH TO WATER - ▼ **:** *N/A* **CAVING -** ▰ **:** *N/A*
LOGGER: *EM*

ELEVATION/ DEPTH (feet)	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	Description	Remarks	Density pcf	Moisture %
0		SM	SILTY SAND; brown, moist, medium to fine grained.			
5	5/6 5/6 5/6	SP	POORLY GRADED SAND; light yellowish brown, damp. Loose.		102.1	1.4
10	3/6 5/6 6/6		Gravel, coarse grained.		106.6	2.2
		SM	SILTY SAND; brown, dry, fine to medium grained.			
15	4/6 7/6 9/6	SP	POORLY GRADED SAND; light yellowish brown, damp. Medium dense.		101.7	1.4
20	8/6 13/6 15/6		BOTTOM.		103.5	2.2
25						
30						
35						

Hand augered to 5 feet to avoid possible underground lines.

Figure Number 9

LOG OF TEST BORING
BORING B-9

PROJECT: *Vista Continuation High School*
FILE NO: *20342*
BORING DATE: *06/04/25*
ELEV.:
BORING LOCATION: *See Boring Location Map, Figure 1*
START: *06/04/25*
DRILL METHOD: *4.25" I.D. Hollow-Stem Auger*
FINISH: *06/04/25*
DESCRIPTION: *Geotechnical Engineering Services*
DEPTH TO WATER - ▽ **:** *N/A* **CAVING -** ▰ **:** *N/A*
LOGGER: *EM*

ELEVATION/ DEPTH (feet)	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	Description	Remarks	Density pcf	Moisture %
0		SM	SILTY SAND; brown, damp, fine to medium grained.			
5	2/6 3/6 4/6	SP	POORLY GRADED SAND; light yellowish brown, dry. Loose.		101.8	0.2
10	4/6 5/6 6/6				100.3	1.0
15	9/6 13/6 18/6		Medium dense, gravel, coarse grained.		118.4	0.2
		SM	SILTY SAND; brown, moist, fine to medium grained.			
20	6/6 8/6 12/6	SP	POORLY GRADED SAND; light yellowish brown, dry. BOTTOM.		92.4	1.9
25						
30						
35						

Hand augered to 5 feet to avoid possible underground lines.

Figure Number 10

LOG OF TEST BORING
BORING B-10

PROJECT: *Vista Continuation High School*
FILE NO: *20342*
BORING DATE: *06/04/25*
ELEV.:
BORING LOCATION: *See Boring Location Map, Figure 1*
START: *06/04/25*
DRILL METHOD: *4.25" I.D. Hollow-Stem Auger*
FINISH: *06/04/25*
DESCRIPTION: *Geotechnical Engineering Services*
DEPTH TO WATER - ▼ : **CAVING - ⬢ :** **LOGGER:**

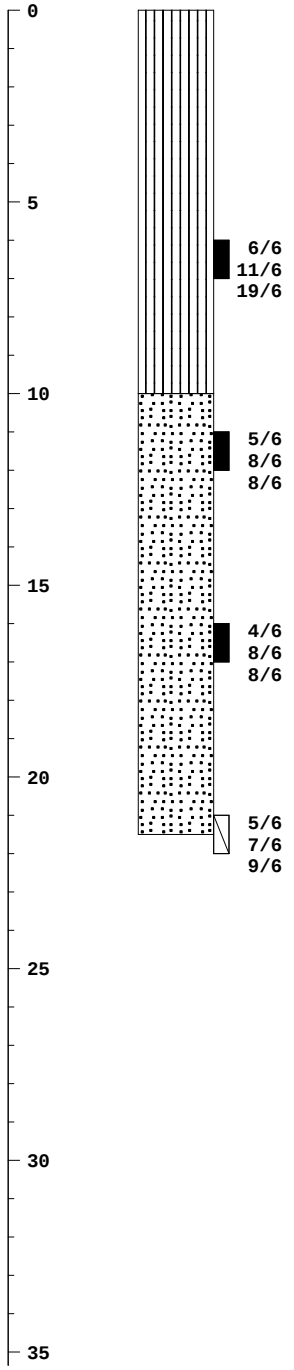
ELEVATION/ DEPTH (feet)	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	Description	Remarks	Density pcf	Moisture %
0		SM	SILTY SAND; light yellowish brown, dry, fine grained.			
		SP	POORLY GRADED SAND; light yellowish brown, dry, fine grained.			
5	2/6 3/6 4/6		Loose.		86.8	1.5
		SM	SILTY SAND; brown, dry, fine grained, roots.			
10	4/6 6/6 9/6	SP	POORLY GRADED SAND; yellowish brown, damp, gravel. Medium dense.		89.4	2.6
15	6/6 11/6 18/6		Damp, coarse gravel.		116.4	1.9
20	12/6 18/6 20/6		Light yellowish brown, dry. BOTTOM.		90.3	2.2
25						
30						
35						

Hand augered to 5 feet to avoid possible underground lines.

Figure Number 11

LOG OF TEST BORING
BORING B-11

PROJECT: *Vista Continuation High School*
FILE NO: *20342*
BORING DATE: *06/04/25*
ELEV.:
BORING LOCATION: *See Boring Location Map, Figure 1*
START: *06/04/25*
DRILL METHOD: *4.25" I.D. Hollow-Stem Auger*
FINISH: *06/04/25*
DESCRIPTION: *Geotechnical Engineering Services*
DEPTH TO WATER - ▽ **:** *N/A* **CAVING -** ▰ **:** *N/A*
LOGGER: *MW*



ELEVATION/ DEPTH (feet)	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	Description	Remarks	Density pcf	Moisture %
		ML	**SANDY SILT; light yellowish brown, dry, fine grained, low plasticity.**			
			Very stiff.		98.3	5.8
		SP	**POORLY GRADED SAND; light yellowish brown, dry, fine to coarse grained. Medium dense.**		98.5	1.4
			Traces of gravel.		96.3	0.2
			BOTTOM.			1.8

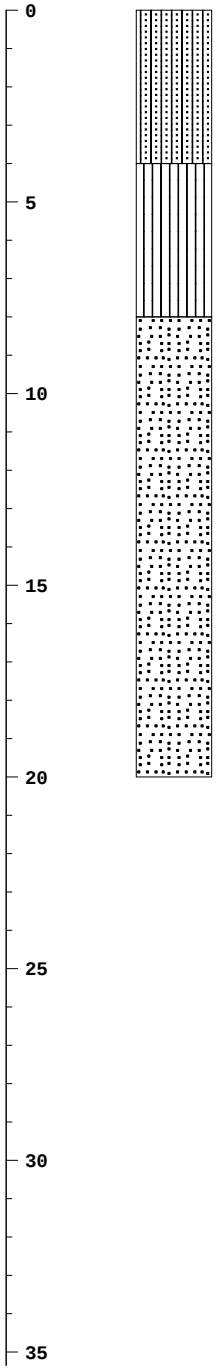
Hand augered to 5 feet to avoid possible underground lines.

Figure Number 12

LOG OF TEST BORING
BORING B-12

PROJECT: *Vista Continuation High School*
BORING DATE: *06/04/25*
BORING LOCATION: *See Boring Location Map, Figure 1*
DRILL METHOD: *4.25" I.D. Hollow-Stem Auger*
DESCRIPTION: *Geotechnical Engineering Services*
DEPTH TO WATER - ▼ **:** *N/A* **CAVING -** ▰ **:** *N/A*

FILE NO: *20342*
ELEV.:
START: *06/04/25*
FINISH: *06/04/25*
LOGGER: *MW*



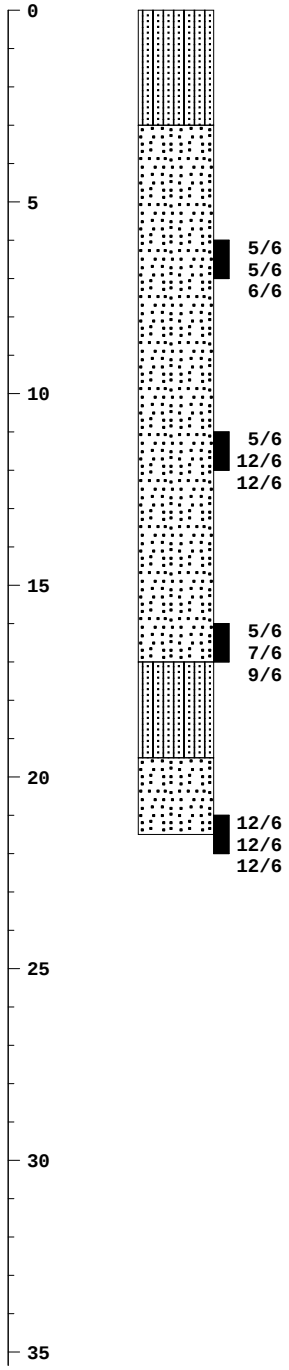
ELEVATION/ DEPTH (feet)	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	Description	Remarks	Density pcf	Moisture %
		SM	**SILTY SAND; light yellowish brown, dry, fine grained.**			
		ML	**SANDY SILT; brown, damp, low plasticity.**			
		SP	**POORLY GRADED SAND; light yellowish brown, dry, fine grained.**			
			BOTTOM.			

Hand augered to 5 feet to avoid possible underground lines.

Figure Number 13

LOG OF TEST BORING
BORING B-13

PROJECT: *Vista Continuation High School*
FILE NO: *20342*
BORING DATE: *06/04/25*
ELEV.:
BORING LOCATION: *See Boring Location Map, Figure 1*
START: *06/04/25*
DRILL METHOD: *4.25" I.D. Hollow-Stem Auger*
FINISH: *06/04/25*
DESCRIPTION: *Geotechnical Engineering Services*
DEPTH TO WATER - ▽ **:** *N/A* **CAVING -** ▰ **:** *N/A*
LOGGER: *EM*



ELEVATION/ DEPTH (feet)	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	Description	Remarks	Density pcf	Moisture %
		SM	SILTY SAND; brown, dry, fine to medium grained.			
		SP	POORLY GRADED SAND; brown, moist, coarse grained.			
			Light yellowish brown, damp, loose, gravel.		95.1	3.1
			Medium dense.		92.4	2.9
					89.1	3.6
		SM	SILTY SAND; brown, damp, fine to medium grained.			
		SP	POORLY GRADED SAND; light yellowish brown, damp.			
			BOTTOM.		83.6	4.1

Hand augered to 5 feet to avoid possible underground lines.

Figure Number 14

KEY TO SYMBOLS

Symbol Description

Strata symbols



Silt



Poorly graded sand



Poorly graded sand with silt



Silty sand



Clayey sand

Misc. Symbols



Boring continues



Water table at boring completion

Soil Samplers



California sampler



Standard penetration test



No recovery

Notes:

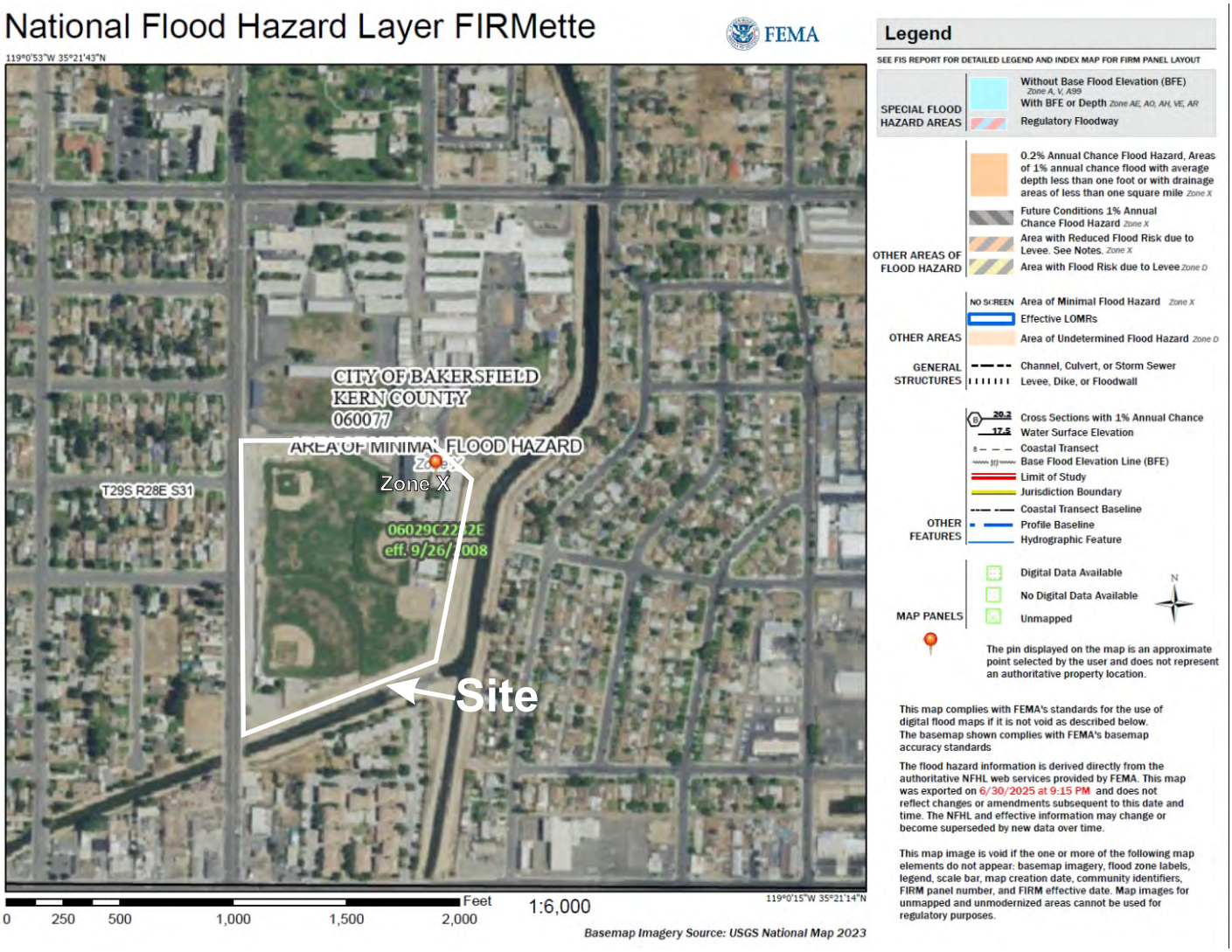
1. Thirteen (13) exploratory borings were drilled between 06/02/2025 and 06/04/2025 using an 8-inch outside diameter hollow-stem auger.

2. No free groundwater was encountered to the maximum depth drilled of 51.5'.

3. Boring locations are shown on the Boring Location Map, Figure 1.

4. These logs are subject to the limitations, conclusions, and recommendations in this report.

5. Results of tests conducted on samples recovered are reported on the logs.

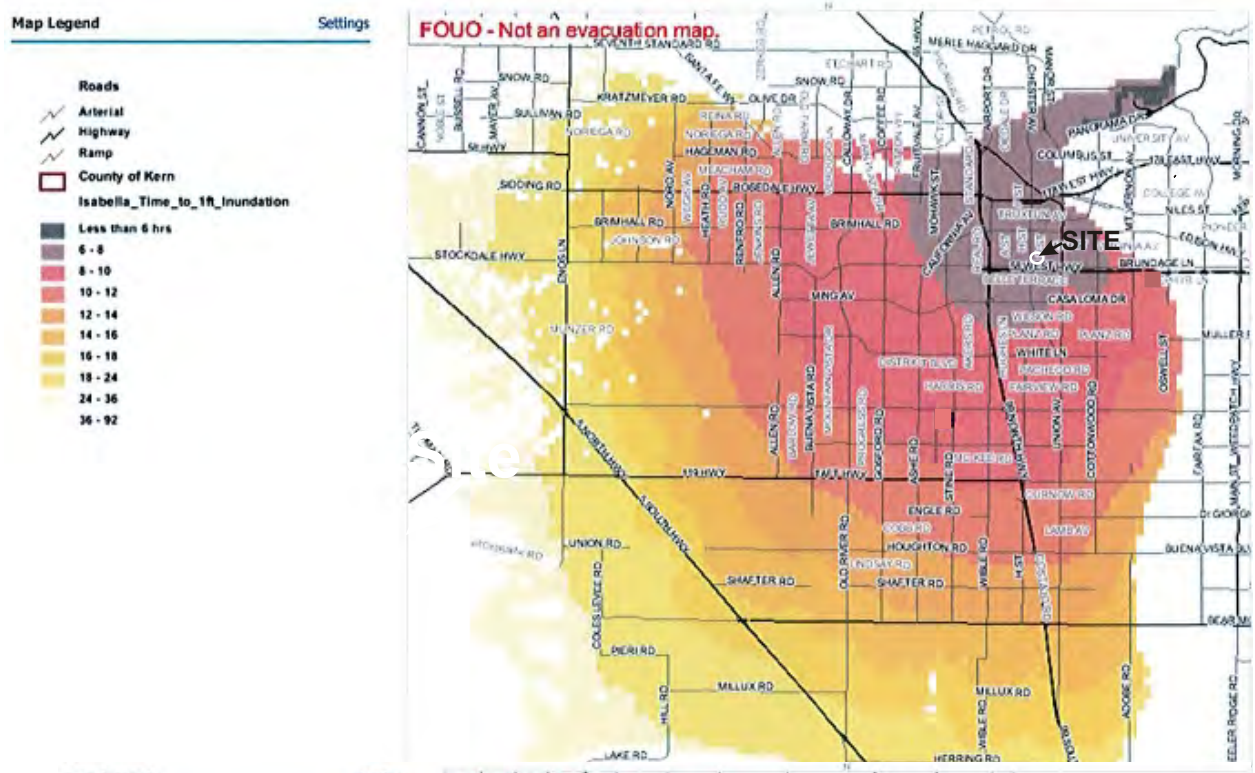


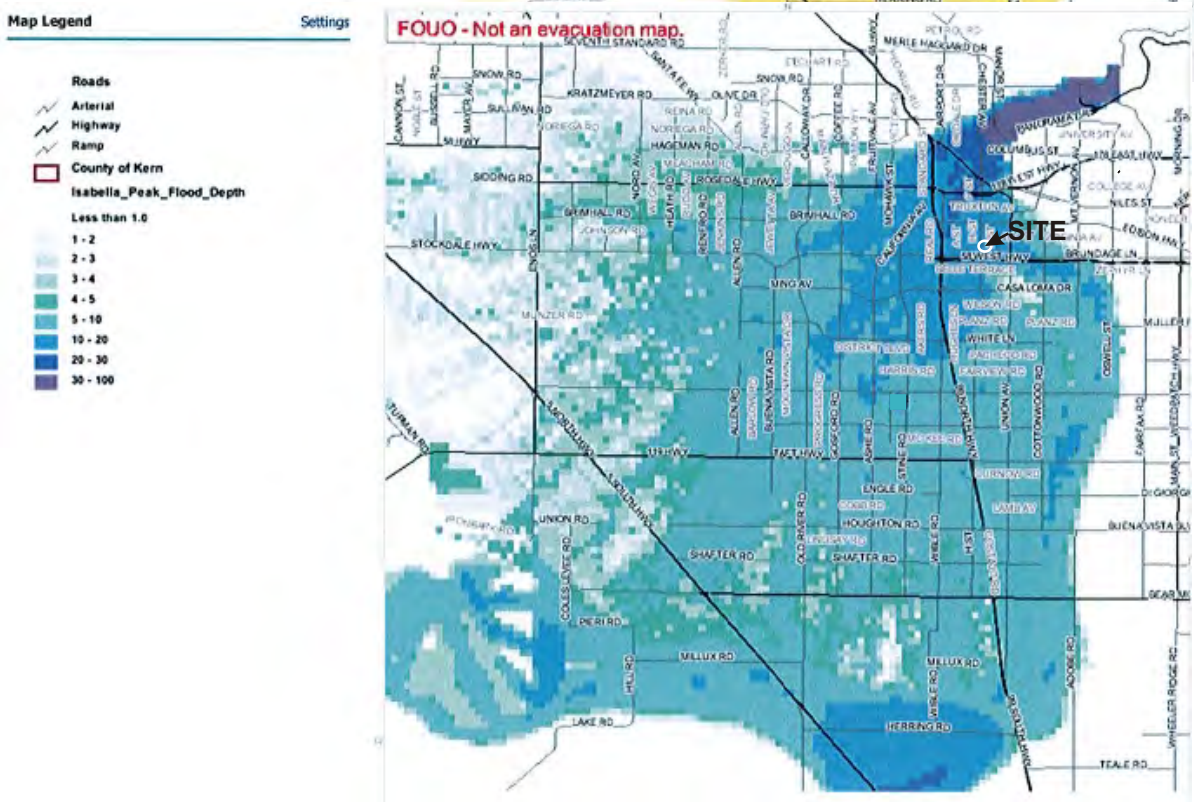
SOILS ENGINEERING, INC.
4400 Yeager Way
Bakersfield, CA 93313
(661) 831 - 5100

DATE: 7/25
PROJECT: 20342

Vista Continuation High School
200 P Street
Bakrsfield, CA

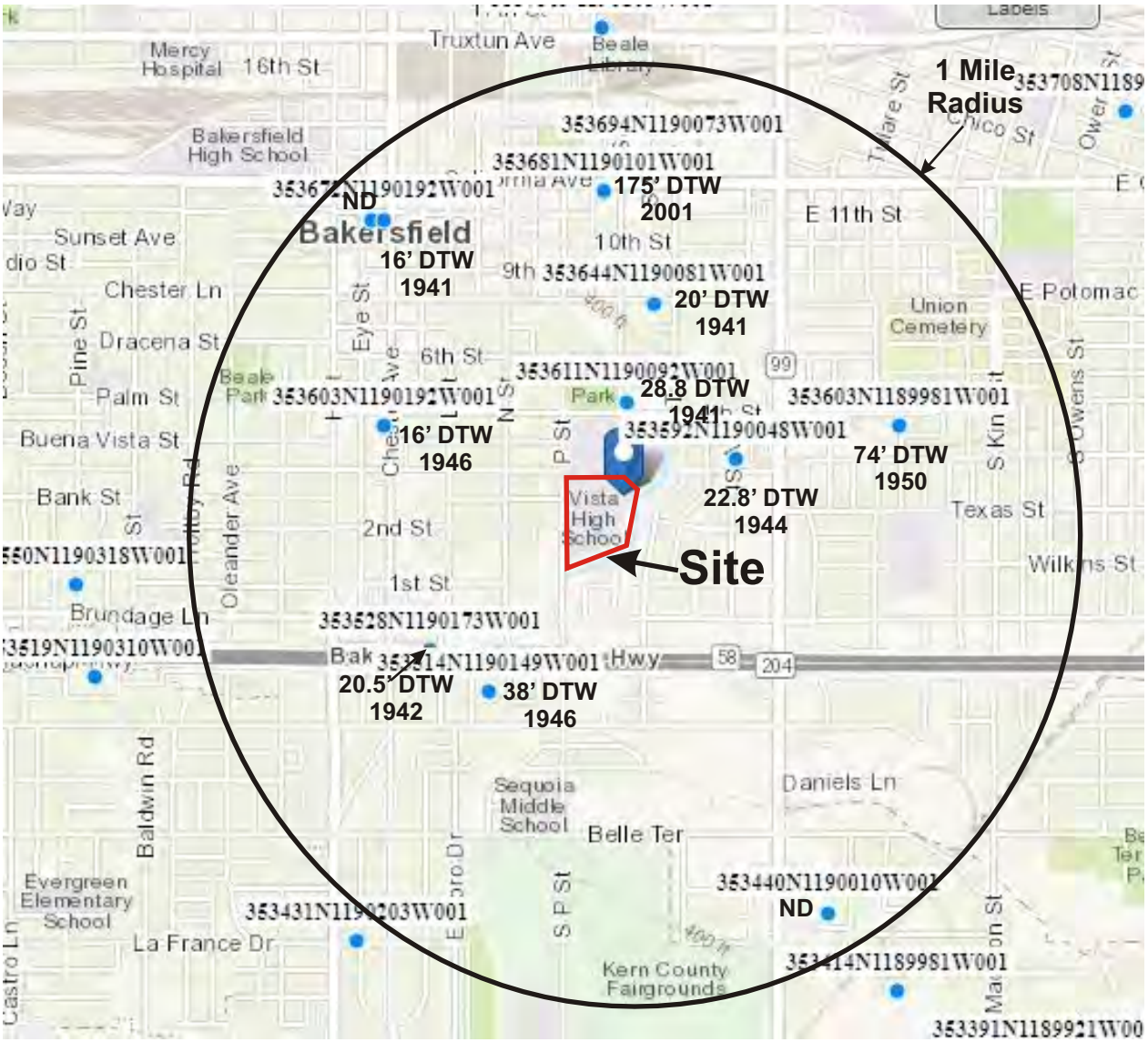
FEMA Flood Insurance Rate Map





Source: Kern County Map Info System, US Army Corps of Engineers Preliminary Flood Results

SOILS ENGINEERING, INC. **4400 Yeager Way** **Bakersfield, CA 93313** **(661) 831 - 5100** DATE: 7/25 PROJECT: 20342	**Vista Continuation High School** **200 P Street** **Bakrsfield, CA** **Lake Isabella-Flood Inundation Map**	



Well
Highest Depth To Water (DTW) & Year Recorded Shown
ND = No Data

Source: SGMA Data Viewer/DWR Water Data

SOILS ENGINEERING, INC. **4400 Yeager Way** **Bakersfield, CA 93313** **(661) 831 - 5100** DATE: 7/25 PROJECT: 20342	**Vista Continuation High School** **200 P Street** **Bakrsfield, CA** **Historical Depth to Water Map**	



Source: CGS Information Warehouse: Tsunami Hazard Area Map

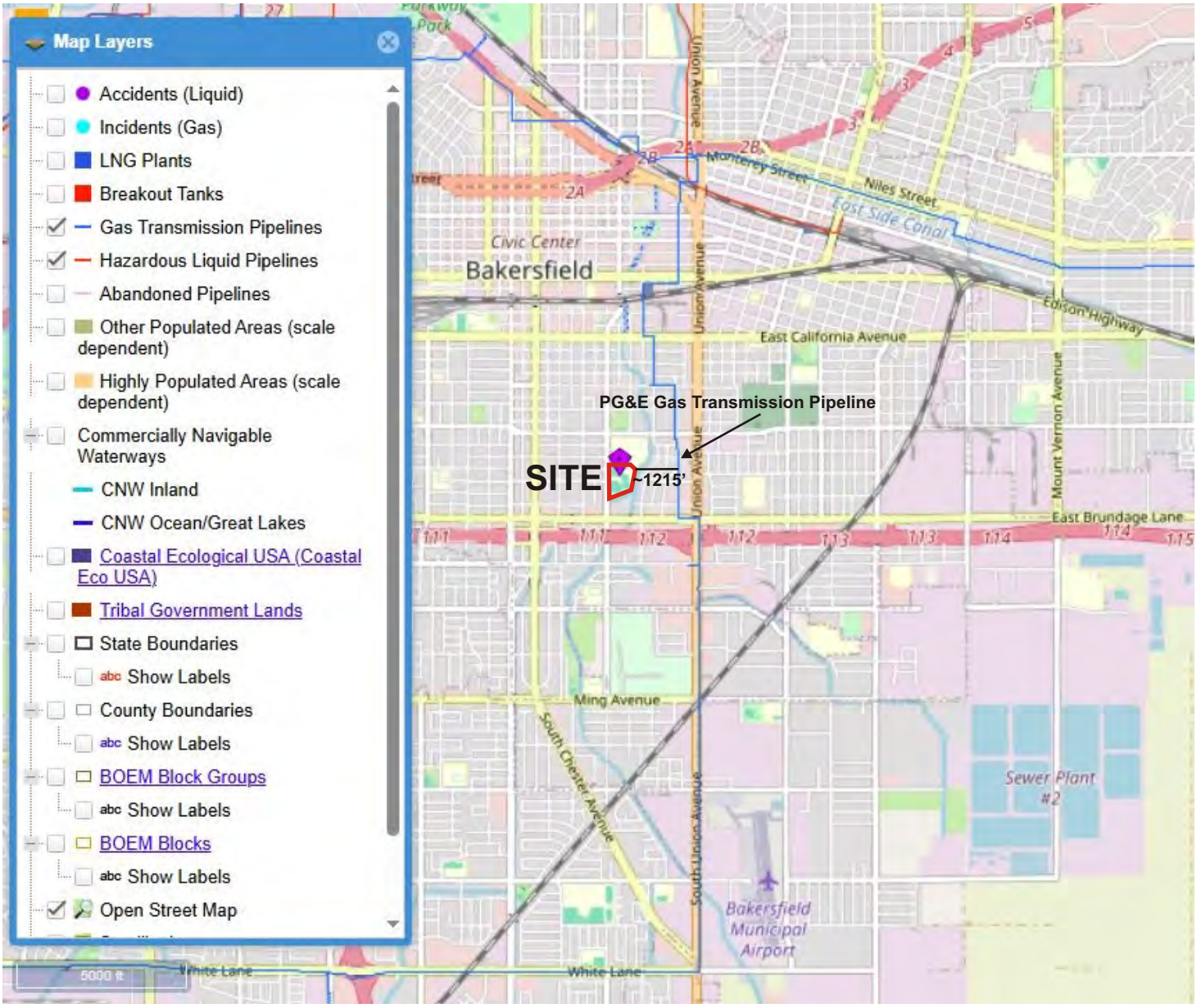
SOILS ENGINEERING, INC.
4400 Yeager Way
Bakersfield, CA 93313
(661) 831 - 5100

DATE: 7/25
PROJECT: 20342

Vista Continuation High School
200 P Street
Bakrsfield, CA

PLATE

Tsunami Hazard Area Map



Source: National Pipeline Mapping System - Public Viewer

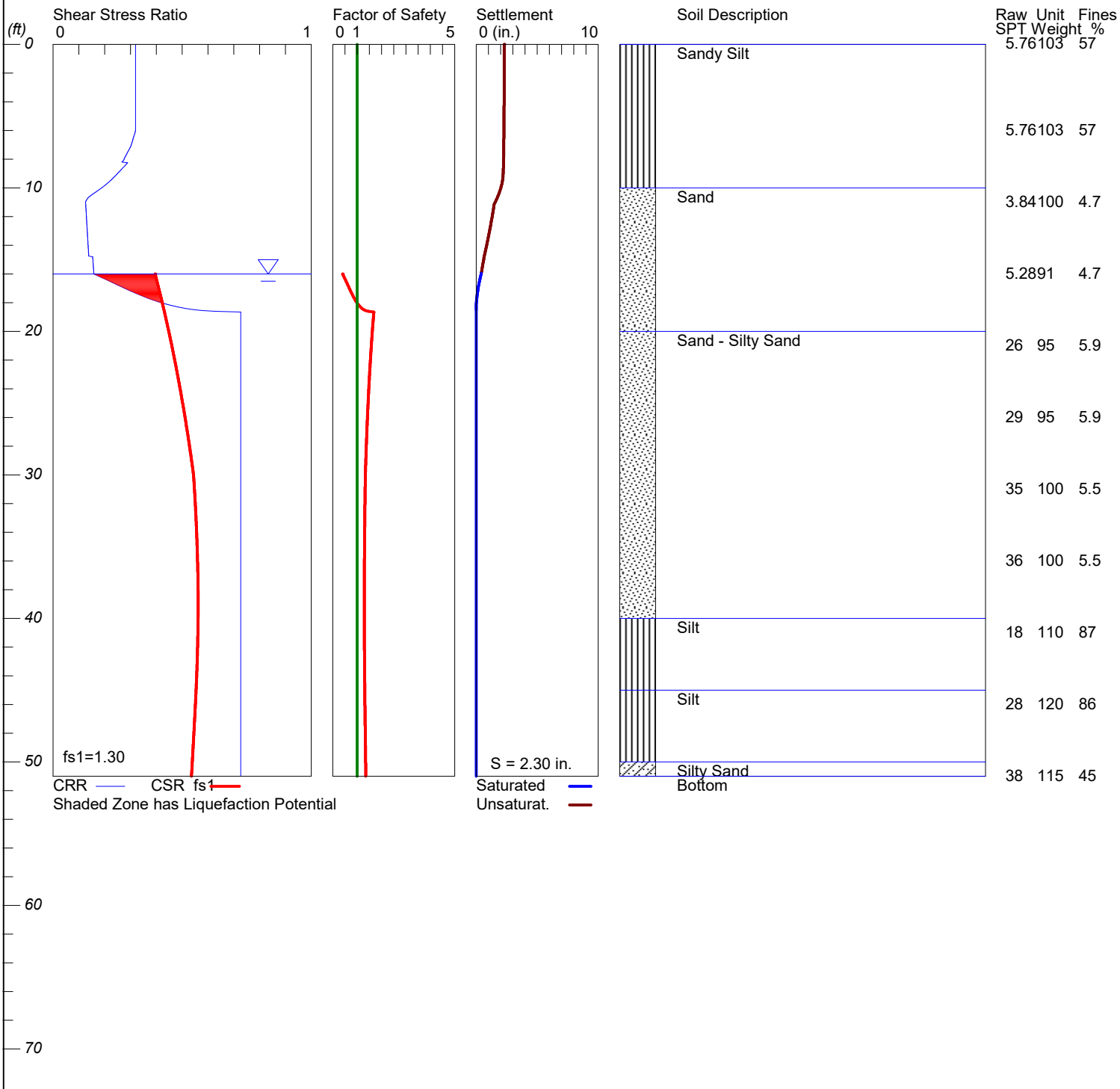
SOILS ENGINEERING, INC. **4400 Yeager Way** **Bakersfield, CA 93313** **(661) 831 - 5100** DATE: 7/25 PROJECT: 20342	**Vista Continuation High School** **200 P Street** **Bakrsfield, CA** **National Pipeline Map**	**PLATE**

LIQUEFACTION ANALYSIS

20342 KHSD Vista Cont HS

Hole No.=B-1 Water Depth=16 ft

Magnitude=6.48
Acceleration=0.486g



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****
LIQUEFACTION ANALYSIS SUMMARY
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Input File Name: C:\Users\rbeck\OneDrive\Documents\work files\20342 KHSD Vista Cont HS\20342 B1 Liqufey.liq
Title: 20342 KHSD Vista Cont HS
Subtitle: 20342 B-1

Surface Elev.=
Hole No.=B-1
Depth of Hole= 51.00 ft
Water Table during Earthquake= 16.00 ft
Water Table during In-Situ Testing= 16.00 ft
Max. Acceleration= 0.49 g
Earthquake Magnitude= 6.48

Input Data:
Surface Elev.=
Hole No.=B-1
Depth of Hole=51.00 ft
Water Table during Earthquake= 16.00 ft
Water Table during In-Situ Testing= 16.00 ft
Max. Acceleration=0.49 g
Earthquake Magnitude=6.48
No-Liquefiable Soils: CL, OL are Non-Liq. Soil

1. SPT or BPT Calculation.
2. Settlement Analysis Method: Tokimatsu, M-correction
3. Fines Correction for Liquefaction: Idriss/Seed
4. Fine Correction for Settlement: During Liquefaction*
5. Settlement Calculation in: All zones*
6. Hammer Energy Ratio, Ce = 1.45
7. Borehole Diameter, Cb= 1
8. Sampling Method, Cs= 1.2
9. User request factor of safety (apply to CSR) , User= 1.3
   Plot one CSR curve (fs1=User)
10. Use Curve Smoothing: Yes*
* Recommended Options

In-Situ Test Data:

Depth ft	SPT	gamma pcf	Fines %
0.00	5.76	103.00	57.00
6.00	5.76	103.00	57.00
11.00	3.84	100.00	4.70
16.00	5.28	91.00	4.70
21.00	26.00	95.00	5.90
26.00	29.00	95.00	5.90
31.00	35.00	100.00	5.50
36.00	36.00	100.00	5.50
41.00	18.00	110.00	87.00
46.00	28.00	120.00	86.00
51.00	38.00	115.00	45.00

Output Results:

Settlement of Saturated Sands=0.41 in.
Settlement of Unsaturated Sands=1.90 in.
Total Settlement of Saturated and Unsaturated Sands=2.30 in.
Differential Settlement=1.152 to 1.520 in.

Depth ft	CRRm	CSRfs	F.S.	S_sat. in.	S_dry in.	S_all in.
0.00	0.32	0.41	5.00	0.41	1.90	2.30
0.05	0.32	0.41	5.00	0.41	1.90	2.30
0.10	0.32	0.41	5.00	0.41	1.90	2.30
0.15	0.32	0.41	5.00	0.41	1.90	2.30
0.20	0.32	0.41	5.00	0.41	1.90	2.30
0.25	0.32	0.41	5.00	0.41	1.90	2.30
0.30	0.32	0.41	5.00	0.41	1.90	2.30
0.35	0.32	0.41	5.00	0.41	1.90	2.30
0.40	0.32	0.41	5.00	0.41	1.90	2.30
0.45	0.32	0.41	5.00	0.41	1.90	2.30
0.50	0.32	0.41	5.00	0.41	1.90	2.30
0.55	0.32	0.41	5.00	0.41	1.90	2.30
0.60	0.32	0.41	5.00	0.41	1.90	2.30
0.65	0.32	0.41	5.00	0.41	1.90	2.30
0.70	0.32	0.41	5.00	0.41	1.90	2.30
0.75	0.32	0.41	5.00	0.41	1.90	2.30
0.80	0.32	0.41	5.00	0.41	1.90	2.30
0.85	0.32	0.41	5.00	0.41	1.90	2.30
0.90	0.32	0.41	5.00	0.41	1.90	2.30
0.95	0.32	0.41	5.00	0.41	1.90	2.30
1.00	0.32	0.41	5.00	0.41	1.90	2.30
1.05	0.32	0.41	5.00	0.41	1.90	2.30
1.10	0.32	0.41	5.00	0.41	1.90	2.30
1.15	0.32	0.41	5.00	0.41	1.90	2.30
1.20	0.32	0.41	5.00	0.41	1.90	2.30
1.25	0.32	0.41	5.00	0.41	1.90	2.30
1.30	0.32	0.41	5.00	0.41	1.90	2.30
1.35	0.32	0.41	5.00	0.41	1.90	2.30

1.40	0.32	0.41	5.00	0.41	1.89	2.30
1.45	0.32	0.41	5.00	0.41	1.89	2.30
1.50	0.32	0.41	5.00	0.41	1.89	2.30
1.55	0.32	0.41	5.00	0.41	1.89	2.30
1.60	0.32	0.41	5.00	0.41	1.89	2.30
1.65	0.32	0.41	5.00	0.41	1.89	2.30
1.70	0.32	0.41	5.00	0.41	1.89	2.30
1.75	0.32	0.41	5.00	0.41	1.89	2.30
1.80	0.32	0.41	5.00	0.41	1.89	2.30
1.85	0.32	0.41	5.00	0.41	1.89	2.30
1.90	0.32	0.41	5.00	0.41	1.89	2.30
1.95	0.32	0.41	5.00	0.41	1.89	2.30
2.00	0.32	0.41	5.00	0.41	1.89	2.30
2.05	0.32	0.41	5.00	0.41	1.89	2.30
2.10	0.32	0.41	5.00	0.41	1.89	2.30
2.15	0.32	0.41	5.00	0.41	1.89	2.30
2.20	0.32	0.41	5.00	0.41	1.89	2.30
2.25	0.32	0.41	5.00	0.41	1.89	2.30
2.30	0.32	0.41	5.00	0.41	1.89	2.30
2.35	0.32	0.41	5.00	0.41	1.89	2.30
2.40	0.32	0.41	5.00	0.41	1.89	2.30
2.45	0.32	0.41	5.00	0.41	1.89	2.30
2.50	0.32	0.41	5.00	0.41	1.89	2.30
2.55	0.32	0.41	5.00	0.41	1.89	2.30
2.60	0.32	0.41	5.00	0.41	1.89	2.30
2.65	0.32	0.41	5.00	0.41	1.89	2.30
2.70	0.32	0.41	5.00	0.41	1.89	2.29
2.75	0.32	0.41	5.00	0.41	1.89	2.29
2.80	0.32	0.41	5.00	0.41	1.89	2.29
2.85	0.32	0.41	5.00	0.41	1.89	2.29
2.90	0.32	0.41	5.00	0.41	1.89	2.29
2.95	0.32	0.41	5.00	0.41	1.89	2.29
3.00	0.32	0.41	5.00	0.41	1.89	2.29
3.05	0.32	0.41	5.00	0.41	1.89	2.29
3.10	0.32	0.41	5.00	0.41	1.89	2.29
3.15	0.32	0.41	5.00	0.41	1.89	2.29
3.20	0.32	0.41	5.00	0.41	1.89	2.29
3.25	0.32	0.41	5.00	0.41	1.89	2.29
3.30	0.32	0.41	5.00	0.41	1.89	2.29
3.35	0.32	0.41	5.00	0.41	1.89	2.29
3.40	0.32	0.41	5.00	0.41	1.89	2.29
3.45	0.32	0.41	5.00	0.41	1.88	2.29
3.50	0.32	0.41	5.00	0.41	1.88	2.29
3.55	0.32	0.41	5.00	0.41	1.88	2.29
3.60	0.32	0.41	5.00	0.41	1.88	2.29
3.65	0.32	0.41	5.00	0.41	1.88	2.29
3.70	0.32	0.41	5.00	0.41	1.88	2.29
3.75	0.32	0.41	5.00	0.41	1.88	2.29
3.80	0.32	0.41	5.00	0.41	1.88	2.29
3.85	0.32	0.41	5.00	0.41	1.88	2.29
3.90	0.32	0.41	5.00	0.41	1.88	2.29
3.95	0.32	0.41	5.00	0.41	1.88	2.29
4.00	0.32	0.41	5.00	0.41	1.88	2.29
4.05	0.32	0.41	5.00	0.41	1.88	2.29

4.10	0.32	0.41	5.00	0.41	1.88	2.29
4.15	0.32	0.41	5.00	0.41	1.88	2.29
4.20	0.32	0.41	5.00	0.41	1.88	2.28
4.25	0.32	0.41	5.00	0.41	1.88	2.28
4.30	0.32	0.41	5.00	0.41	1.88	2.28
4.35	0.32	0.41	5.00	0.41	1.88	2.28
4.40	0.32	0.41	5.00	0.41	1.88	2.28
4.45	0.32	0.41	5.00	0.41	1.88	2.28
4.50	0.32	0.41	5.00	0.41	1.88	2.28
4.55	0.32	0.41	5.00	0.41	1.88	2.28
4.60	0.32	0.41	5.00	0.41	1.88	2.28
4.65	0.32	0.41	5.00	0.41	1.88	2.28
4.70	0.32	0.41	5.00	0.41	1.87	2.28
4.75	0.32	0.41	5.00	0.41	1.87	2.28
4.80	0.32	0.41	5.00	0.41	1.87	2.28
4.85	0.32	0.41	5.00	0.41	1.87	2.28
4.90	0.32	0.41	5.00	0.41	1.87	2.28
4.95	0.32	0.41	5.00	0.41	1.87	2.28
5.00	0.32	0.41	5.00	0.41	1.87	2.28
5.05	0.32	0.41	5.00	0.41	1.87	2.28
5.10	0.32	0.41	5.00	0.41	1.87	2.28
5.15	0.32	0.41	5.00	0.41	1.87	2.28
5.20	0.32	0.41	5.00	0.41	1.87	2.28
5.25	0.32	0.41	5.00	0.41	1.87	2.28
5.30	0.32	0.41	5.00	0.41	1.87	2.28
5.35	0.32	0.41	5.00	0.41	1.87	2.28
5.40	0.32	0.41	5.00	0.41	1.87	2.27
5.45	0.32	0.41	5.00	0.41	1.87	2.27
5.50	0.32	0.41	5.00	0.41	1.87	2.27
5.55	0.32	0.41	5.00	0.41	1.87	2.27
5.60	0.32	0.41	5.00	0.41	1.87	2.27
5.65	0.32	0.41	5.00	0.41	1.87	2.27
5.70	0.32	0.41	5.00	0.41	1.87	2.27
5.75	0.32	0.41	5.00	0.41	1.87	2.27
5.80	0.32	0.41	5.00	0.41	1.87	2.27
5.85	0.32	0.41	5.00	0.41	1.87	2.27
5.90	0.32	0.41	5.00	0.41	1.87	2.27
5.95	0.32	0.40	5.00	0.41	1.86	2.27
6.00	0.32	0.40	5.00	0.41	1.86	2.27
6.05	0.32	0.40	5.00	0.41	1.86	2.27
6.10	0.32	0.40	5.00	0.41	1.86	2.27
6.15	0.32	0.40	5.00	0.41	1.86	2.27
6.20	0.32	0.40	5.00	0.41	1.86	2.27
6.25	0.32	0.40	5.00	0.41	1.86	2.27
6.30	0.31	0.40	5.00	0.41	1.86	2.27
6.35	0.31	0.40	5.00	0.41	1.86	2.27
6.40	0.31	0.40	5.00	0.41	1.86	2.27
6.45	0.31	0.40	5.00	0.41	1.86	2.27
6.50	0.31	0.40	5.00	0.41	1.86	2.27
6.55	0.31	0.40	5.00	0.41	1.86	2.27
6.60	0.31	0.40	5.00	0.41	1.86	2.26
6.65	0.31	0.40	5.00	0.41	1.86	2.26
6.70	0.31	0.40	5.00	0.41	1.86	2.26
6.75	0.31	0.40	5.00	0.41	1.86	2.26

6.80	0.31	0.40	5.00	0.41	1.86	2.26
6.85	0.31	0.40	5.00	0.41	1.86	2.26
6.90	0.30	0.40	5.00	0.41	1.86	2.26
6.95	0.30	0.40	5.00	0.41	1.85	2.26
7.00	0.30	0.40	5.00	0.41	1.85	2.26
7.05	0.30	0.40	5.00	0.41	1.85	2.26
7.10	0.30	0.40	5.00	0.41	1.85	2.26
7.15	0.30	0.40	5.00	0.41	1.85	2.26
7.20	0.30	0.40	5.00	0.41	1.85	2.26
7.25	0.30	0.40	5.00	0.41	1.85	2.26
7.30	0.30	0.40	5.00	0.41	1.85	2.26
7.35	0.29	0.40	5.00	0.41	1.85	2.26
7.40	0.29	0.40	5.00	0.41	1.85	2.25
7.45	0.29	0.40	5.00	0.41	1.85	2.25
7.50	0.29	0.40	5.00	0.41	1.85	2.25
7.55	0.29	0.40	5.00	0.41	1.85	2.25
7.60	0.29	0.40	5.00	0.41	1.85	2.25
7.65	0.28	0.40	5.00	0.41	1.84	2.25
7.70	0.28	0.40	5.00	0.41	1.84	2.25
7.75	0.28	0.40	5.00	0.41	1.84	2.25
7.80	0.28	0.40	5.00	0.41	1.84	2.25
7.85	0.28	0.40	5.00	0.41	1.84	2.25
7.90	0.28	0.40	5.00	0.41	1.84	2.24
7.95	0.28	0.40	5.00	0.41	1.84	2.24
8.00	0.27	0.40	5.00	0.41	1.84	2.24
8.05	0.27	0.40	5.00	0.41	1.84	2.24
8.10	0.27	0.40	5.00	0.41	1.83	2.24
8.15	0.27	0.40	5.00	0.41	1.83	2.24
8.20	0.27	0.40	5.00	0.41	1.83	2.24
8.25	0.29	0.40	5.00	0.41	1.83	2.24
8.30	0.29	0.40	5.00	0.41	1.83	2.23
8.35	0.28	0.40	5.00	0.41	1.83	2.23
8.40	0.28	0.40	5.00	0.41	1.83	2.23
8.45	0.28	0.40	5.00	0.41	1.82	2.23
8.50	0.28	0.40	5.00	0.41	1.82	2.23
8.55	0.27	0.40	5.00	0.41	1.82	2.23
8.60	0.27	0.40	5.00	0.41	1.82	2.23
8.65	0.27	0.40	5.00	0.41	1.82	2.22
8.70	0.27	0.40	5.00	0.41	1.82	2.22
8.75	0.26	0.40	5.00	0.41	1.81	2.22
8.80	0.26	0.40	5.00	0.41	1.81	2.22
8.85	0.26	0.40	5.00	0.41	1.81	2.22
8.90	0.25	0.40	5.00	0.41	1.81	2.21
8.95	0.25	0.40	5.00	0.41	1.80	2.21
9.00	0.25	0.40	5.00	0.41	1.80	2.21
9.05	0.25	0.40	5.00	0.41	1.80	2.20
9.10	0.24	0.40	5.00	0.41	1.79	2.20
9.15	0.24	0.40	5.00	0.41	1.79	2.20
9.20	0.24	0.40	5.00	0.41	1.79	2.19
9.25	0.24	0.40	5.00	0.41	1.78	2.19
9.30	0.23	0.40	5.00	0.41	1.78	2.18
9.35	0.23	0.40	5.00	0.41	1.77	2.18
9.40	0.23	0.40	5.00	0.41	1.76	2.17
9.45	0.22	0.40	5.00	0.41	1.76	2.16

9.50	0.22	0.40	5.00	0.41	1.75	2.15
9.55	0.22	0.40	5.00	0.41	1.74	2.15
9.60	0.22	0.40	5.00	0.41	1.73	2.13
9.65	0.21	0.40	5.00	0.41	1.72	2.12
9.70	0.21	0.40	5.00	0.41	1.70	2.11
9.75	0.21	0.40	5.00	0.41	1.69	2.09
9.80	0.20	0.40	5.00	0.41	1.67	2.08
9.85	0.20	0.40	5.00	0.41	1.66	2.06
9.90	0.20	0.40	5.00	0.41	1.64	2.05
9.95	0.19	0.40	5.00	0.41	1.62	2.03
10.00	0.19	0.40	5.00	0.41	1.61	2.01
10.05	0.18	0.40	5.00	0.41	1.59	1.99
10.10	0.18	0.40	5.00	0.41	1.57	1.98
10.15	0.18	0.40	5.00	0.41	1.55	1.96
10.20	0.17	0.40	5.00	0.41	1.53	1.94
10.25	0.17	0.40	5.00	0.41	1.51	1.92
10.30	0.16	0.40	5.00	0.41	1.49	1.90
10.35	0.16	0.40	5.00	0.41	1.47	1.88
10.40	0.16	0.40	5.00	0.41	1.45	1.86
10.45	0.15	0.40	5.00	0.41	1.43	1.84
10.50	0.15	0.40	5.00	0.41	1.41	1.81
10.55	0.14	0.40	5.00	0.41	1.39	1.79
10.60	0.14	0.40	5.00	0.41	1.36	1.77
10.65	0.14	0.40	5.00	0.41	1.34	1.74
10.70	0.14	0.40	5.00	0.41	1.31	1.72
10.75	0.13	0.40	5.00	0.41	1.28	1.69
10.80	0.13	0.40	5.00	0.41	1.26	1.66
10.85	0.13	0.40	5.00	0.41	1.23	1.64
10.90	0.13	0.40	5.00	0.41	1.20	1.61
10.95	0.13	0.40	5.00	0.41	1.18	1.58
11.00	0.13	0.40	5.00	0.41	1.15	1.55
11.05	0.13	0.40	5.00	0.41	1.12	1.52
11.10	0.13	0.40	5.00	0.41	1.09	1.50
11.15	0.13	0.40	5.00	0.41	1.06	1.47
11.20	0.13	0.40	5.00	0.41	1.05	1.46
11.25	0.13	0.40	5.00	0.41	1.04	1.45
11.30	0.13	0.40	5.00	0.41	1.03	1.44
11.35	0.13	0.40	5.00	0.41	1.03	1.43
11.40	0.13	0.40	5.00	0.41	1.02	1.42
11.45	0.13	0.40	5.00	0.41	1.01	1.41
11.50	0.13	0.40	5.00	0.41	1.00	1.40
11.55	0.13	0.40	5.00	0.41	0.99	1.39
11.60	0.13	0.40	5.00	0.41	0.98	1.38
11.65	0.13	0.40	5.00	0.41	0.97	1.37
11.70	0.13	0.40	5.00	0.41	0.96	1.36
11.75	0.13	0.40	5.00	0.41	0.95	1.35
11.80	0.13	0.40	5.00	0.41	0.94	1.35
11.85	0.13	0.40	5.00	0.41	0.93	1.34
11.90	0.13	0.40	5.00	0.41	0.92	1.33
11.95	0.13	0.40	5.00	0.41	0.91	1.32
12.00	0.13	0.40	5.00	0.41	0.90	1.31
12.05	0.13	0.40	5.00	0.41	0.89	1.30
12.10	0.13	0.40	5.00	0.41	0.88	1.28
12.15	0.13	0.40	5.00	0.41	0.87	1.27

12.20	0.13	0.40	5.00	0.41	0.86	1.26
12.25	0.13	0.40	5.00	0.41	0.85	1.25
12.30	0.13	0.40	5.00	0.41	0.84	1.24
12.35	0.13	0.40	5.00	0.41	0.83	1.23
12.40	0.13	0.40	5.00	0.41	0.82	1.22
12.45	0.13	0.40	5.00	0.41	0.81	1.21
12.50	0.13	0.40	5.00	0.41	0.80	1.20
12.55	0.13	0.40	5.00	0.41	0.78	1.19
12.60	0.13	0.40	5.00	0.41	0.77	1.18
12.65	0.13	0.40	5.00	0.41	0.76	1.17
12.70	0.13	0.40	5.00	0.41	0.75	1.16
12.75	0.13	0.40	5.00	0.41	0.74	1.15
12.80	0.13	0.40	5.00	0.41	0.73	1.14
12.85	0.13	0.40	5.00	0.41	0.72	1.12
12.90	0.13	0.40	5.00	0.41	0.71	1.11
12.95	0.13	0.40	5.00	0.41	0.70	1.10
13.00	0.13	0.40	5.00	0.41	0.69	1.09
13.05	0.13	0.40	5.00	0.41	0.67	1.08
13.10	0.13	0.40	5.00	0.41	0.66	1.07
13.15	0.13	0.40	5.00	0.41	0.65	1.06
13.20	0.13	0.40	5.00	0.41	0.64	1.05
13.25	0.13	0.40	5.00	0.41	0.63	1.03
13.30	0.13	0.40	5.00	0.41	0.62	1.02
13.35	0.13	0.40	5.00	0.41	0.61	1.01
13.40	0.13	0.40	5.00	0.41	0.59	1.00
13.45	0.13	0.40	5.00	0.41	0.58	0.99
13.50	0.13	0.40	5.00	0.41	0.57	0.98
13.55	0.13	0.40	5.00	0.41	0.56	0.96
13.60	0.13	0.40	5.00	0.41	0.55	0.95
13.65	0.13	0.40	5.00	0.41	0.53	0.94
13.70	0.13	0.40	5.00	0.41	0.52	0.93
13.75	0.13	0.40	5.00	0.41	0.51	0.92
13.80	0.14	0.40	5.00	0.41	0.50	0.90
13.85	0.14	0.40	5.00	0.41	0.49	0.89
13.90	0.14	0.40	5.00	0.41	0.47	0.88
13.95	0.14	0.40	5.00	0.41	0.46	0.87
14.00	0.14	0.40	5.00	0.41	0.45	0.85
14.05	0.14	0.40	5.00	0.41	0.44	0.84
14.10	0.14	0.40	5.00	0.41	0.42	0.83
14.15	0.14	0.40	5.00	0.41	0.41	0.82
14.20	0.14	0.40	5.00	0.41	0.40	0.80
14.25	0.14	0.40	5.00	0.41	0.38	0.79
14.30	0.14	0.40	5.00	0.41	0.37	0.78
14.35	0.14	0.40	5.00	0.41	0.36	0.76
14.40	0.14	0.40	5.00	0.41	0.35	0.75
14.45	0.14	0.40	5.00	0.41	0.33	0.74
14.50	0.14	0.40	5.00	0.41	0.32	0.73
14.55	0.14	0.40	5.00	0.41	0.31	0.71
14.60	0.14	0.40	5.00	0.41	0.29	0.70
14.65	0.14	0.40	5.00	0.41	0.28	0.69
14.70	0.14	0.40	5.00	0.41	0.27	0.67
14.75	0.14	0.40	5.00	0.41	0.25	0.66
14.80	0.15	0.40	5.00	0.41	0.24	0.65
14.85	0.15	0.40	5.00	0.41	0.23	0.64

14.90	0.15	0.40	5.00	0.41	0.22	0.63
14.95	0.15	0.40	5.00	0.41	0.21	0.62
15.00	0.15	0.40	5.00	0.41	0.20	0.61
15.05	0.15	0.40	5.00	0.41	0.19	0.60
15.10	0.15	0.40	5.00	0.41	0.18	0.59
15.15	0.15	0.40	5.00	0.41	0.17	0.58
15.20	0.15	0.40	5.00	0.41	0.16	0.57
15.25	0.16	0.40	5.00	0.41	0.15	0.56
15.30	0.16	0.40	5.00	0.41	0.14	0.55
15.35	0.16	0.40	5.00	0.41	0.13	0.54
15.40	0.16	0.40	5.00	0.41	0.12	0.53
15.45	0.16	0.40	5.00	0.41	0.11	0.52
15.50	0.16	0.40	5.00	0.41	0.10	0.51
15.55	0.16	0.40	5.00	0.41	0.09	0.50
15.60	0.16	0.40	5.00	0.41	0.08	0.49
15.65	0.16	0.40	5.00	0.41	0.07	0.48
15.70	0.16	0.40	5.00	0.41	0.06	0.47
15.75	0.16	0.40	5.00	0.41	0.05	0.46
15.80	0.16	0.40	5.00	0.41	0.04	0.45
15.85	0.16	0.40	5.00	0.41	0.03	0.44
15.90	0.16	0.40	5.00	0.41	0.02	0.43
15.95	0.16	0.40	5.00	0.41	0.01	0.42
16.00	0.16	0.40	0.40*	0.41	0.00	0.41
16.05	0.16	0.40	0.41*	0.39	0.00	0.39
16.10	0.17	0.40	0.43*	0.38	0.00	0.38
16.15	0.18	0.40	0.44*	0.36	0.00	0.36
16.20	0.18	0.40	0.46*	0.35	0.00	0.35
16.25	0.19	0.40	0.47*	0.33	0.00	0.33
16.30	0.19	0.40	0.49*	0.32	0.00	0.32
16.35	0.20	0.40	0.50*	0.30	0.00	0.30
16.40	0.21	0.40	0.51*	0.29	0.00	0.29
16.45	0.21	0.40	0.53*	0.28	0.00	0.28
16.50	0.22	0.40	0.54*	0.27	0.00	0.27
16.55	0.22	0.40	0.56*	0.25	0.00	0.25
16.60	0.23	0.40	0.57*	0.24	0.00	0.24
16.65	0.24	0.40	0.58*	0.23	0.00	0.23
16.70	0.24	0.41	0.60*	0.22	0.00	0.22
16.75	0.25	0.41	0.61*	0.21	0.00	0.21
16.80	0.25	0.41	0.63*	0.20	0.00	0.20
16.85	0.26	0.41	0.64*	0.19	0.00	0.19
16.90	0.27	0.41	0.65*	0.18	0.00	0.18
16.95	0.27	0.41	0.67*	0.16	0.00	0.16
17.00	0.28	0.41	0.68*	0.16	0.00	0.16
17.05	0.28	0.41	0.69*	0.15	0.00	0.15
17.10	0.29	0.41	0.71*	0.14	0.00	0.14
17.15	0.30	0.41	0.72*	0.13	0.00	0.13
17.20	0.30	0.41	0.73*	0.12	0.00	0.12
17.25	0.31	0.41	0.75*	0.11	0.00	0.11
17.30	0.32	0.41	0.76*	0.10	0.00	0.10
17.35	0.32	0.41	0.78*	0.09	0.00	0.09
17.40	0.33	0.41	0.79*	0.09	0.00	0.09
17.45	0.33	0.42	0.80*	0.08	0.00	0.08
17.50	0.34	0.42	0.82*	0.07	0.00	0.07
17.55	0.35	0.42	0.83*	0.06	0.00	0.06

17.60	0.36	0.42	0.85*	0.06	0.00	0.06
17.65	0.36	0.42	0.87*	0.05	0.00	0.05
17.70	0.37	0.42	0.88*	0.04	0.00	0.04
17.75	0.38	0.42	0.90*	0.04	0.00	0.04
17.80	0.39	0.42	0.92*	0.03	0.00	0.03
17.85	0.39	0.42	0.93*	0.02	0.00	0.02
17.90	0.40	0.42	0.95*	0.02	0.00	0.02
17.95	0.41	0.42	0.97*	0.02	0.00	0.02
18.00	0.42	0.42	0.99*	0.01	0.00	0.01
18.05	0.43	0.42	1.01	0.01	0.00	0.01
18.10	0.44	0.42	1.03	0.01	0.00	0.01
18.15	0.45	0.42	1.06	0.01	0.00	0.01
18.20	0.46	0.43	1.08	0.00	0.00	0.00
18.25	0.47	0.43	1.11	0.00	0.00	0.00
18.30	0.48	0.43	1.13	0.00	0.00	0.00
18.35	0.50	0.43	1.16	0.00	0.00	0.00
18.40	0.51	0.43	1.20	0.00	0.00	0.00
18.45	0.53	0.43	1.24	0.00	0.00	0.00
18.50	0.55	0.43	1.28	0.00	0.00	0.00
18.55	0.58	0.43	1.35	0.00	0.00	0.00
18.60	0.63	0.43	1.46	0.00	0.00	0.00
18.65	0.73	0.43	1.68	0.00	0.00	0.00
18.70	0.73	0.43	1.68	0.00	0.00	0.00
18.75	0.73	0.43	1.68	0.00	0.00	0.00
18.80	0.73	0.43	1.68	0.00	0.00	0.00
18.85	0.73	0.43	1.67	0.00	0.00	0.00
18.90	0.73	0.43	1.67	0.00	0.00	0.00
18.95	0.73	0.44	1.67	0.00	0.00	0.00
19.00	0.73	0.44	1.67	0.00	0.00	0.00
19.05	0.73	0.44	1.66	0.00	0.00	0.00
19.10	0.73	0.44	1.66	0.00	0.00	0.00
19.15	0.73	0.44	1.66	0.00	0.00	0.00
19.20	0.73	0.44	1.66	0.00	0.00	0.00
19.25	0.73	0.44	1.66	0.00	0.00	0.00
19.30	0.73	0.44	1.65	0.00	0.00	0.00
19.35	0.73	0.44	1.65	0.00	0.00	0.00
19.40	0.73	0.44	1.65	0.00	0.00	0.00
19.45	0.73	0.44	1.65	0.00	0.00	0.00
19.50	0.73	0.44	1.64	0.00	0.00	0.00
19.55	0.73	0.44	1.64	0.00	0.00	0.00
19.60	0.73	0.44	1.64	0.00	0.00	0.00
19.65	0.73	0.44	1.64	0.00	0.00	0.00
19.70	0.73	0.44	1.63	0.00	0.00	0.00
19.75	0.73	0.45	1.63	0.00	0.00	0.00
19.80	0.73	0.45	1.63	0.00	0.00	0.00
19.85	0.73	0.45	1.63	0.00	0.00	0.00
19.90	0.73	0.45	1.63	0.00	0.00	0.00
19.95	0.73	0.45	1.62	0.00	0.00	0.00
20.00	0.73	0.45	1.62	0.00	0.00	0.00
20.05	0.73	0.45	1.62	0.00	0.00	0.00
20.10	0.73	0.45	1.62	0.00	0.00	0.00
20.15	0.73	0.45	1.61	0.00	0.00	0.00
20.20	0.73	0.45	1.61	0.00	0.00	0.00
20.25	0.73	0.45	1.61	0.00	0.00	0.00

20.30	0.73	0.45	1.61	0.00	0.00	0.00
20.35	0.73	0.45	1.61	0.00	0.00	0.00
20.40	0.73	0.45	1.60	0.00	0.00	0.00
20.45	0.73	0.45	1.60	0.00	0.00	0.00
20.50	0.73	0.45	1.60	0.00	0.00	0.00
20.55	0.73	0.45	1.60	0.00	0.00	0.00
20.60	0.73	0.46	1.60	0.00	0.00	0.00
20.65	0.73	0.46	1.59	0.00	0.00	0.00
20.70	0.73	0.46	1.59	0.00	0.00	0.00
20.75	0.73	0.46	1.59	0.00	0.00	0.00
20.80	0.73	0.46	1.59	0.00	0.00	0.00
20.85	0.73	0.46	1.59	0.00	0.00	0.00
20.90	0.73	0.46	1.58	0.00	0.00	0.00
20.95	0.73	0.46	1.58	0.00	0.00	0.00
21.00	0.73	0.46	1.58	0.00	0.00	0.00
21.05	0.73	0.46	1.58	0.00	0.00	0.00
21.10	0.73	0.46	1.58	0.00	0.00	0.00
21.15	0.73	0.46	1.57	0.00	0.00	0.00
21.20	0.73	0.46	1.57	0.00	0.00	0.00
21.25	0.73	0.46	1.57	0.00	0.00	0.00
21.30	0.73	0.46	1.57	0.00	0.00	0.00
21.35	0.73	0.46	1.57	0.00	0.00	0.00
21.40	0.73	0.46	1.56	0.00	0.00	0.00
21.45	0.73	0.47	1.56	0.00	0.00	0.00
21.50	0.73	0.47	1.56	0.00	0.00	0.00
21.55	0.73	0.47	1.56	0.00	0.00	0.00
21.60	0.73	0.47	1.56	0.00	0.00	0.00
21.65	0.73	0.47	1.56	0.00	0.00	0.00
21.70	0.73	0.47	1.55	0.00	0.00	0.00
21.75	0.73	0.47	1.55	0.00	0.00	0.00
21.80	0.73	0.47	1.55	0.00	0.00	0.00
21.85	0.73	0.47	1.55	0.00	0.00	0.00
21.90	0.73	0.47	1.55	0.00	0.00	0.00
21.95	0.73	0.47	1.54	0.00	0.00	0.00
22.00	0.73	0.47	1.54	0.00	0.00	0.00
22.05	0.73	0.47	1.54	0.00	0.00	0.00
22.10	0.73	0.47	1.54	0.00	0.00	0.00
22.15	0.73	0.47	1.54	0.00	0.00	0.00
22.20	0.73	0.47	1.54	0.00	0.00	0.00
22.25	0.73	0.47	1.53	0.00	0.00	0.00
22.30	0.73	0.47	1.53	0.00	0.00	0.00
22.35	0.73	0.47	1.53	0.00	0.00	0.00
22.40	0.73	0.48	1.53	0.00	0.00	0.00
22.45	0.73	0.48	1.53	0.00	0.00	0.00
22.50	0.73	0.48	1.52	0.00	0.00	0.00
22.55	0.73	0.48	1.52	0.00	0.00	0.00
22.60	0.73	0.48	1.52	0.00	0.00	0.00
22.65	0.73	0.48	1.52	0.00	0.00	0.00
22.70	0.73	0.48	1.52	0.00	0.00	0.00
22.75	0.73	0.48	1.52	0.00	0.00	0.00
22.80	0.73	0.48	1.51	0.00	0.00	0.00
22.85	0.73	0.48	1.51	0.00	0.00	0.00
22.90	0.73	0.48	1.51	0.00	0.00	0.00
22.95	0.73	0.48	1.51	0.00	0.00	0.00

23.00	0.73	0.48	1.51	0.00	0.00	0.00
23.05	0.73	0.48	1.51	0.00	0.00	0.00
23.10	0.73	0.48	1.50	0.00	0.00	0.00
23.15	0.73	0.48	1.50	0.00	0.00	0.00
23.20	0.73	0.48	1.50	0.00	0.00	0.00
23.25	0.73	0.48	1.50	0.00	0.00	0.00
23.30	0.73	0.48	1.50	0.00	0.00	0.00
23.35	0.73	0.49	1.50	0.00	0.00	0.00
23.40	0.73	0.49	1.50	0.00	0.00	0.00
23.45	0.73	0.49	1.49	0.00	0.00	0.00
23.50	0.73	0.49	1.49	0.00	0.00	0.00
23.55	0.73	0.49	1.49	0.00	0.00	0.00
23.60	0.73	0.49	1.49	0.00	0.00	0.00
23.65	0.73	0.49	1.49	0.00	0.00	0.00
23.70	0.73	0.49	1.49	0.00	0.00	0.00
23.75	0.73	0.49	1.48	0.00	0.00	0.00
23.80	0.73	0.49	1.48	0.00	0.00	0.00
23.85	0.73	0.49	1.48	0.00	0.00	0.00
23.90	0.73	0.49	1.48	0.00	0.00	0.00
23.95	0.73	0.49	1.48	0.00	0.00	0.00
24.00	0.73	0.49	1.48	0.00	0.00	0.00
24.05	0.73	0.49	1.48	0.00	0.00	0.00
24.10	0.73	0.49	1.47	0.00	0.00	0.00
24.15	0.73	0.49	1.47	0.00	0.00	0.00
24.20	0.73	0.49	1.47	0.00	0.00	0.00
24.25	0.73	0.49	1.47	0.00	0.00	0.00
24.30	0.73	0.50	1.47	0.00	0.00	0.00
24.35	0.73	0.50	1.47	0.00	0.00	0.00
24.40	0.73	0.50	1.46	0.00	0.00	0.00
24.45	0.73	0.50	1.46	0.00	0.00	0.00
24.50	0.73	0.50	1.46	0.00	0.00	0.00
24.55	0.73	0.50	1.46	0.00	0.00	0.00
24.60	0.73	0.50	1.46	0.00	0.00	0.00
24.65	0.73	0.50	1.46	0.00	0.00	0.00
24.70	0.73	0.50	1.46	0.00	0.00	0.00
24.75	0.73	0.50	1.45	0.00	0.00	0.00
24.80	0.73	0.50	1.45	0.00	0.00	0.00
24.85	0.73	0.50	1.45	0.00	0.00	0.00
24.90	0.73	0.50	1.45	0.00	0.00	0.00
24.95	0.73	0.50	1.45	0.00	0.00	0.00
25.00	0.73	0.50	1.45	0.00	0.00	0.00
25.05	0.73	0.50	1.45	0.00	0.00	0.00
25.10	0.73	0.50	1.45	0.00	0.00	0.00
25.15	0.73	0.50	1.44	0.00	0.00	0.00
25.20	0.73	0.50	1.44	0.00	0.00	0.00
25.25	0.73	0.50	1.44	0.00	0.00	0.00
25.30	0.73	0.50	1.44	0.00	0.00	0.00
25.35	0.73	0.51	1.44	0.00	0.00	0.00
25.40	0.73	0.51	1.44	0.00	0.00	0.00
25.45	0.73	0.51	1.44	0.00	0.00	0.00
25.50	0.73	0.51	1.43	0.00	0.00	0.00
25.55	0.73	0.51	1.43	0.00	0.00	0.00
25.60	0.73	0.51	1.43	0.00	0.00	0.00
25.65	0.73	0.51	1.43	0.00	0.00	0.00

25.70	0.73	0.51	1.43	0.00	0.00	0.00
25.75	0.73	0.51	1.43	0.00	0.00	0.00
25.80	0.73	0.51	1.43	0.00	0.00	0.00
25.85	0.73	0.51	1.43	0.00	0.00	0.00
25.90	0.73	0.51	1.42	0.00	0.00	0.00
25.95	0.73	0.51	1.42	0.00	0.00	0.00
26.00	0.73	0.51	1.42	0.00	0.00	0.00
26.05	0.73	0.51	1.42	0.00	0.00	0.00
26.10	0.73	0.51	1.42	0.00	0.00	0.00
26.15	0.73	0.51	1.42	0.00	0.00	0.00
26.20	0.73	0.51	1.42	0.00	0.00	0.00
26.25	0.73	0.51	1.42	0.00	0.00	0.00
26.30	0.73	0.51	1.41	0.00	0.00	0.00
26.35	0.73	0.51	1.41	0.00	0.00	0.00
26.40	0.73	0.51	1.41	0.00	0.00	0.00
26.45	0.73	0.52	1.41	0.00	0.00	0.00
26.50	0.73	0.52	1.41	0.00	0.00	0.00
26.55	0.73	0.52	1.41	0.00	0.00	0.00
26.60	0.73	0.52	1.41	0.00	0.00	0.00
26.65	0.73	0.52	1.41	0.00	0.00	0.00
26.70	0.73	0.52	1.40	0.00	0.00	0.00
26.75	0.73	0.52	1.40	0.00	0.00	0.00
26.80	0.73	0.52	1.40	0.00	0.00	0.00
26.85	0.73	0.52	1.40	0.00	0.00	0.00
26.90	0.73	0.52	1.40	0.00	0.00	0.00
26.95	0.73	0.52	1.40	0.00	0.00	0.00
27.00	0.73	0.52	1.40	0.00	0.00	0.00
27.05	0.73	0.52	1.40	0.00	0.00	0.00
27.10	0.73	0.52	1.39	0.00	0.00	0.00
27.15	0.73	0.52	1.39	0.00	0.00	0.00
27.20	0.73	0.52	1.39	0.00	0.00	0.00
27.25	0.73	0.52	1.39	0.00	0.00	0.00
27.30	0.73	0.52	1.39	0.00	0.00	0.00
27.35	0.73	0.52	1.39	0.00	0.00	0.00
27.40	0.73	0.52	1.39	0.00	0.00	0.00
27.45	0.73	0.52	1.39	0.00	0.00	0.00
27.50	0.73	0.52	1.39	0.00	0.00	0.00
27.55	0.73	0.52	1.38	0.00	0.00	0.00
27.60	0.73	0.53	1.38	0.00	0.00	0.00
27.65	0.73	0.53	1.38	0.00	0.00	0.00
27.70	0.73	0.53	1.38	0.00	0.00	0.00
27.75	0.73	0.53	1.38	0.00	0.00	0.00
27.80	0.73	0.53	1.38	0.00	0.00	0.00
27.85	0.73	0.53	1.38	0.00	0.00	0.00
27.90	0.73	0.53	1.38	0.00	0.00	0.00
27.95	0.73	0.53	1.38	0.00	0.00	0.00
28.00	0.73	0.53	1.37	0.00	0.00	0.00
28.05	0.73	0.53	1.37	0.00	0.00	0.00
28.10	0.73	0.53	1.37	0.00	0.00	0.00
28.15	0.73	0.53	1.37	0.00	0.00	0.00
28.20	0.73	0.53	1.37	0.00	0.00	0.00
28.25	0.73	0.53	1.37	0.00	0.00	0.00
28.30	0.73	0.53	1.37	0.00	0.00	0.00
28.35	0.73	0.53	1.37	0.00	0.00	0.00

28.40	0.73	0.53	1.37	0.00	0.00	0.00
28.45	0.73	0.53	1.37	0.00	0.00	0.00
28.50	0.73	0.53	1.36	0.00	0.00	0.00
28.55	0.73	0.53	1.36	0.00	0.00	0.00
28.60	0.73	0.53	1.36	0.00	0.00	0.00
28.65	0.73	0.53	1.36	0.00	0.00	0.00
28.70	0.73	0.53	1.36	0.00	0.00	0.00
28.75	0.73	0.53	1.36	0.00	0.00	0.00
28.80	0.73	0.53	1.36	0.00	0.00	0.00
28.85	0.73	0.54	1.36	0.00	0.00	0.00
28.90	0.73	0.54	1.36	0.00	0.00	0.00
28.95	0.73	0.54	1.36	0.00	0.00	0.00
29.00	0.73	0.54	1.35	0.00	0.00	0.00
29.05	0.73	0.54	1.35	0.00	0.00	0.00
29.10	0.73	0.54	1.35	0.00	0.00	0.00
29.15	0.73	0.54	1.35	0.00	0.00	0.00
29.20	0.73	0.54	1.35	0.00	0.00	0.00
29.25	0.73	0.54	1.35	0.00	0.00	0.00
29.30	0.73	0.54	1.35	0.00	0.00	0.00
29.35	0.73	0.54	1.35	0.00	0.00	0.00
29.40	0.73	0.54	1.35	0.00	0.00	0.00
29.45	0.73	0.54	1.35	0.00	0.00	0.00
29.50	0.73	0.54	1.34	0.00	0.00	0.00
29.55	0.73	0.54	1.34	0.00	0.00	0.00
29.60	0.73	0.54	1.34	0.00	0.00	0.00
29.65	0.73	0.54	1.34	0.00	0.00	0.00
29.70	0.73	0.54	1.34	0.00	0.00	0.00
29.75	0.73	0.54	1.34	0.00	0.00	0.00
29.80	0.73	0.54	1.34	0.00	0.00	0.00
29.85	0.73	0.54	1.34	0.00	0.00	0.00
29.90	0.73	0.54	1.34	0.00	0.00	0.00
29.95	0.73	0.54	1.34	0.00	0.00	0.00
30.00	0.73	0.54	1.34	0.00	0.00	0.00
30.05	0.73	0.54	1.34	0.00	0.00	0.00
30.10	0.73	0.54	1.33	0.00	0.00	0.00
30.15	0.73	0.54	1.33	0.00	0.00	0.00
30.20	0.73	0.54	1.33	0.00	0.00	0.00
30.25	0.73	0.54	1.33	0.00	0.00	0.00
30.30	0.73	0.55	1.33	0.00	0.00	0.00
30.35	0.73	0.55	1.33	0.00	0.00	0.00
30.40	0.73	0.55	1.33	0.00	0.00	0.00
30.45	0.73	0.55	1.33	0.00	0.00	0.00
30.50	0.73	0.55	1.33	0.00	0.00	0.00
30.55	0.73	0.55	1.33	0.00	0.00	0.00
30.60	0.73	0.55	1.33	0.00	0.00	0.00
30.65	0.73	0.55	1.33	0.00	0.00	0.00
30.70	0.73	0.55	1.33	0.00	0.00	0.00
30.75	0.73	0.55	1.33	0.00	0.00	0.00
30.80	0.73	0.55	1.33	0.00	0.00	0.00
30.85	0.73	0.55	1.33	0.00	0.00	0.00
30.90	0.73	0.55	1.33	0.00	0.00	0.00
30.95	0.73	0.55	1.33	0.00	0.00	0.00
31.00	0.73	0.55	1.33	0.00	0.00	0.00
31.05	0.73	0.55	1.33	0.00	0.00	0.00

31.10	0.73	0.55	1.33	0.00	0.00	0.00
31.15	0.73	0.55	1.33	0.00	0.00	0.00
31.20	0.73	0.55	1.33	0.00	0.00	0.00
31.25	0.73	0.55	1.32	0.00	0.00	0.00
31.30	0.73	0.55	1.32	0.00	0.00	0.00
31.35	0.73	0.55	1.32	0.00	0.00	0.00
31.40	0.73	0.55	1.32	0.00	0.00	0.00
31.45	0.73	0.55	1.32	0.00	0.00	0.00
31.50	0.73	0.55	1.32	0.00	0.00	0.00
31.55	0.73	0.55	1.32	0.00	0.00	0.00
31.60	0.73	0.55	1.32	0.00	0.00	0.00
31.65	0.73	0.55	1.32	0.00	0.00	0.00
31.70	0.73	0.55	1.32	0.00	0.00	0.00
31.75	0.73	0.55	1.32	0.00	0.00	0.00
31.80	0.73	0.55	1.32	0.00	0.00	0.00
31.85	0.73	0.55	1.32	0.00	0.00	0.00
31.90	0.73	0.55	1.32	0.00	0.00	0.00
31.95	0.73	0.55	1.32	0.00	0.00	0.00
32.00	0.73	0.55	1.32	0.00	0.00	0.00
32.05	0.73	0.55	1.32	0.00	0.00	0.00
32.10	0.73	0.55	1.32	0.00	0.00	0.00
32.15	0.73	0.55	1.32	0.00	0.00	0.00
32.20	0.73	0.55	1.32	0.00	0.00	0.00
32.25	0.73	0.55	1.32	0.00	0.00	0.00
32.30	0.73	0.55	1.32	0.00	0.00	0.00
32.35	0.73	0.55	1.32	0.00	0.00	0.00
32.40	0.73	0.55	1.32	0.00	0.00	0.00
32.45	0.73	0.55	1.32	0.00	0.00	0.00
32.50	0.73	0.55	1.32	0.00	0.00	0.00
32.55	0.73	0.55	1.32	0.00	0.00	0.00
32.60	0.73	0.55	1.32	0.00	0.00	0.00
32.65	0.73	0.55	1.31	0.00	0.00	0.00
32.70	0.73	0.55	1.31	0.00	0.00	0.00
32.75	0.73	0.55	1.31	0.00	0.00	0.00
32.80	0.73	0.55	1.31	0.00	0.00	0.00
32.85	0.73	0.55	1.31	0.00	0.00	0.00
32.90	0.73	0.55	1.31	0.00	0.00	0.00
32.95	0.73	0.55	1.31	0.00	0.00	0.00
33.00	0.73	0.55	1.31	0.00	0.00	0.00
33.05	0.73	0.55	1.31	0.00	0.00	0.00
33.10	0.73	0.55	1.31	0.00	0.00	0.00
33.15	0.73	0.55	1.31	0.00	0.00	0.00
33.20	0.73	0.55	1.31	0.00	0.00	0.00
33.25	0.73	0.55	1.31	0.00	0.00	0.00
33.30	0.73	0.55	1.31	0.00	0.00	0.00
33.35	0.73	0.55	1.31	0.00	0.00	0.00
33.40	0.73	0.55	1.31	0.00	0.00	0.00
33.45	0.73	0.55	1.31	0.00	0.00	0.00
33.50	0.73	0.55	1.31	0.00	0.00	0.00
33.55	0.73	0.55	1.31	0.00	0.00	0.00
33.60	0.73	0.56	1.31	0.00	0.00	0.00
33.65	0.73	0.56	1.31	0.00	0.00	0.00
33.70	0.73	0.56	1.31	0.00	0.00	0.00
33.75	0.73	0.56	1.31	0.00	0.00	0.00

33.80	0.73	0.56	1.31	0.00	0.00	0.00
33.85	0.73	0.56	1.31	0.00	0.00	0.00
33.90	0.73	0.56	1.31	0.00	0.00	0.00
33.95	0.73	0.56	1.31	0.00	0.00	0.00
34.00	0.73	0.56	1.31	0.00	0.00	0.00
34.05	0.73	0.56	1.31	0.00	0.00	0.00
34.10	0.73	0.56	1.31	0.00	0.00	0.00
34.15	0.73	0.56	1.31	0.00	0.00	0.00
34.20	0.73	0.56	1.31	0.00	0.00	0.00
34.25	0.73	0.56	1.31	0.00	0.00	0.00
34.30	0.73	0.56	1.31	0.00	0.00	0.00
34.35	0.73	0.56	1.31	0.00	0.00	0.00
34.40	0.73	0.56	1.30	0.00	0.00	0.00
34.45	0.73	0.56	1.30	0.00	0.00	0.00
34.50	0.73	0.56	1.30	0.00	0.00	0.00
34.55	0.73	0.56	1.30	0.00	0.00	0.00
34.60	0.73	0.56	1.30	0.00	0.00	0.00
34.65	0.73	0.56	1.30	0.00	0.00	0.00
34.70	0.73	0.56	1.30	0.00	0.00	0.00
34.75	0.73	0.56	1.30	0.00	0.00	0.00
34.80	0.73	0.56	1.30	0.00	0.00	0.00
34.85	0.73	0.56	1.30	0.00	0.00	0.00
34.90	0.73	0.56	1.30	0.00	0.00	0.00
34.95	0.73	0.56	1.30	0.00	0.00	0.00
35.00	0.73	0.56	1.30	0.00	0.00	0.00
35.05	0.73	0.56	1.30	0.00	0.00	0.00
35.10	0.73	0.56	1.30	0.00	0.00	0.00
35.15	0.73	0.56	1.30	0.00	0.00	0.00
35.20	0.73	0.56	1.30	0.00	0.00	0.00
35.25	0.73	0.56	1.30	0.00	0.00	0.00
35.30	0.73	0.56	1.30	0.00	0.00	0.00
35.35	0.73	0.56	1.30	0.00	0.00	0.00
35.40	0.73	0.56	1.30	0.00	0.00	0.00
35.45	0.73	0.56	1.30	0.00	0.00	0.00
35.50	0.73	0.56	1.30	0.00	0.00	0.00
35.55	0.73	0.56	1.30	0.00	0.00	0.00
35.60	0.73	0.56	1.30	0.00	0.00	0.00
35.65	0.73	0.56	1.30	0.00	0.00	0.00
35.70	0.73	0.56	1.30	0.00	0.00	0.00
35.75	0.73	0.56	1.30	0.00	0.00	0.00
35.80	0.73	0.56	1.30	0.00	0.00	0.00
35.85	0.73	0.56	1.30	0.00	0.00	0.00
35.90	0.73	0.56	1.30	0.00	0.00	0.00
35.95	0.73	0.56	1.30	0.00	0.00	0.00
36.00	0.73	0.56	1.30	0.00	0.00	0.00
36.05	0.73	0.56	1.30	0.00	0.00	0.00
36.10	0.73	0.56	1.30	0.00	0.00	0.00
36.15	0.73	0.56	1.30	0.00	0.00	0.00
36.20	0.73	0.56	1.30	0.00	0.00	0.00
36.25	0.73	0.56	1.30	0.00	0.00	0.00
36.30	0.73	0.56	1.30	0.00	0.00	0.00
36.35	0.73	0.56	1.30	0.00	0.00	0.00
36.40	0.73	0.56	1.30	0.00	0.00	0.00
36.45	0.73	0.56	1.30	0.00	0.00	0.00

36.50	0.73	0.56	1.30	0.00	0.00	0.00
36.55	0.73	0.56	1.30	0.00	0.00	0.00
36.60	0.73	0.56	1.30	0.00	0.00	0.00
36.65	0.73	0.56	1.30	0.00	0.00	0.00
36.70	0.73	0.56	1.30	0.00	0.00	0.00
36.75	0.73	0.56	1.30	0.00	0.00	0.00
36.80	0.73	0.56	1.30	0.00	0.00	0.00
36.85	0.73	0.56	1.30	0.00	0.00	0.00
36.90	0.73	0.56	1.30	0.00	0.00	0.00
36.95	0.73	0.56	1.30	0.00	0.00	0.00
37.00	0.73	0.56	1.30	0.00	0.00	0.00
37.05	0.73	0.56	1.30	0.00	0.00	0.00
37.10	0.73	0.56	1.30	0.00	0.00	0.00
37.15	0.73	0.56	1.30	0.00	0.00	0.00
37.20	0.73	0.56	1.30	0.00	0.00	0.00
37.25	0.73	0.56	1.30	0.00	0.00	0.00
37.30	0.73	0.56	1.30	0.00	0.00	0.00
37.35	0.73	0.56	1.29	0.00	0.00	0.00
37.40	0.73	0.56	1.29	0.00	0.00	0.00
37.45	0.73	0.56	1.29	0.00	0.00	0.00
37.50	0.73	0.56	1.29	0.00	0.00	0.00
37.55	0.73	0.56	1.29	0.00	0.00	0.00
37.60	0.73	0.56	1.29	0.00	0.00	0.00
37.65	0.73	0.56	1.29	0.00	0.00	0.00
37.70	0.73	0.56	1.29	0.00	0.00	0.00
37.75	0.73	0.56	1.29	0.00	0.00	0.00
37.80	0.73	0.56	1.29	0.00	0.00	0.00
37.85	0.73	0.56	1.29	0.00	0.00	0.00
37.90	0.73	0.56	1.29	0.00	0.00	0.00
37.95	0.73	0.56	1.29	0.00	0.00	0.00
38.00	0.73	0.56	1.29	0.00	0.00	0.00
38.05	0.73	0.56	1.29	0.00	0.00	0.00
38.10	0.73	0.56	1.29	0.00	0.00	0.00
38.15	0.73	0.56	1.29	0.00	0.00	0.00
38.20	0.73	0.56	1.29	0.00	0.00	0.00
38.25	0.73	0.56	1.29	0.00	0.00	0.00
38.30	0.73	0.56	1.29	0.00	0.00	0.00
38.35	0.73	0.56	1.29	0.00	0.00	0.00
38.40	0.73	0.56	1.29	0.00	0.00	0.00
38.45	0.73	0.56	1.29	0.00	0.00	0.00
38.50	0.73	0.56	1.29	0.00	0.00	0.00
38.55	0.73	0.56	1.29	0.00	0.00	0.00
38.60	0.73	0.56	1.29	0.00	0.00	0.00
38.65	0.73	0.56	1.29	0.00	0.00	0.00
38.70	0.73	0.56	1.29	0.00	0.00	0.00
38.75	0.73	0.56	1.29	0.00	0.00	0.00
38.80	0.73	0.56	1.29	0.00	0.00	0.00
38.85	0.73	0.56	1.29	0.00	0.00	0.00
38.90	0.73	0.56	1.29	0.00	0.00	0.00
38.95	0.73	0.56	1.29	0.00	0.00	0.00
39.00	0.73	0.56	1.29	0.00	0.00	0.00
39.05	0.73	0.56	1.29	0.00	0.00	0.00
39.10	0.73	0.56	1.29	0.00	0.00	0.00
39.15	0.73	0.56	1.29	0.00	0.00	0.00

39.20	0.73	0.56	1.29	0.00	0.00	0.00
39.25	0.73	0.56	1.29	0.00	0.00	0.00
39.30	0.73	0.56	1.29	0.00	0.00	0.00
39.35	0.73	0.56	1.29	0.00	0.00	0.00
39.40	0.73	0.56	1.29	0.00	0.00	0.00
39.45	0.73	0.56	1.29	0.00	0.00	0.00
39.50	0.73	0.56	1.29	0.00	0.00	0.00
39.55	0.73	0.56	1.29	0.00	0.00	0.00
39.60	0.73	0.56	1.29	0.00	0.00	0.00
39.65	0.73	0.56	1.29	0.00	0.00	0.00
39.70	0.73	0.56	1.29	0.00	0.00	0.00
39.75	0.73	0.56	1.29	0.00	0.00	0.00
39.80	0.73	0.56	1.29	0.00	0.00	0.00
39.85	0.73	0.56	1.29	0.00	0.00	0.00
39.90	0.73	0.56	1.29	0.00	0.00	0.00
39.95	0.73	0.56	1.29	0.00	0.00	0.00
40.00	0.73	0.56	1.29	0.00	0.00	0.00
40.05	0.73	0.56	1.29	0.00	0.00	0.00
40.10	0.73	0.56	1.29	0.00	0.00	0.00
40.15	0.73	0.56	1.29	0.00	0.00	0.00
40.20	0.73	0.56	1.29	0.00	0.00	0.00
40.25	0.73	0.56	1.29	0.00	0.00	0.00
40.30	0.73	0.56	1.29	0.00	0.00	0.00
40.35	0.73	0.56	1.29	0.00	0.00	0.00
40.40	0.73	0.56	1.29	0.00	0.00	0.00
40.45	0.73	0.56	1.29	0.00	0.00	0.00
40.50	0.73	0.56	1.29	0.00	0.00	0.00
40.55	0.73	0.56	1.29	0.00	0.00	0.00
40.60	0.73	0.56	1.29	0.00	0.00	0.00
40.65	0.73	0.56	1.29	0.00	0.00	0.00
40.70	0.73	0.56	1.30	0.00	0.00	0.00
40.75	0.73	0.56	1.30	0.00	0.00	0.00
40.80	0.73	0.56	1.30	0.00	0.00	0.00
40.85	0.73	0.56	1.30	0.00	0.00	0.00
40.90	0.73	0.56	1.30	0.00	0.00	0.00
40.95	0.73	0.56	1.30	0.00	0.00	0.00
41.00	0.73	0.56	1.30	0.00	0.00	0.00
41.05	0.73	0.56	1.30	0.00	0.00	0.00
41.10	0.73	0.56	1.30	0.00	0.00	0.00
41.15	0.73	0.56	1.30	0.00	0.00	0.00
41.20	0.73	0.56	1.30	0.00	0.00	0.00
41.25	0.73	0.56	1.30	0.00	0.00	0.00
41.30	0.73	0.56	1.30	0.00	0.00	0.00
41.35	0.73	0.56	1.30	0.00	0.00	0.00
41.40	0.73	0.56	1.30	0.00	0.00	0.00
41.45	0.73	0.56	1.30	0.00	0.00	0.00
41.50	0.73	0.56	1.30	0.00	0.00	0.00
41.55	0.73	0.56	1.30	0.00	0.00	0.00
41.60	0.73	0.56	1.30	0.00	0.00	0.00
41.65	0.73	0.56	1.30	0.00	0.00	0.00
41.70	0.73	0.56	1.30	0.00	0.00	0.00
41.75	0.73	0.56	1.30	0.00	0.00	0.00
41.80	0.73	0.56	1.30	0.00	0.00	0.00
41.85	0.73	0.56	1.30	0.00	0.00	0.00

41.90	0.73	0.56	1.30	0.00	0.00	0.00
41.95	0.73	0.56	1.30	0.00	0.00	0.00
42.00	0.73	0.56	1.30	0.00	0.00	0.00
42.05	0.73	0.56	1.30	0.00	0.00	0.00
42.10	0.73	0.56	1.30	0.00	0.00	0.00
42.15	0.73	0.56	1.30	0.00	0.00	0.00
42.20	0.73	0.56	1.30	0.00	0.00	0.00
42.25	0.73	0.56	1.30	0.00	0.00	0.00
42.30	0.73	0.56	1.30	0.00	0.00	0.00
42.35	0.73	0.56	1.30	0.00	0.00	0.00
42.40	0.73	0.56	1.30	0.00	0.00	0.00
42.45	0.73	0.56	1.30	0.00	0.00	0.00
42.50	0.73	0.56	1.30	0.00	0.00	0.00
42.55	0.73	0.56	1.30	0.00	0.00	0.00
42.60	0.73	0.56	1.30	0.00	0.00	0.00
42.65	0.73	0.56	1.30	0.00	0.00	0.00
42.70	0.73	0.56	1.30	0.00	0.00	0.00
42.75	0.73	0.56	1.30	0.00	0.00	0.00
42.80	0.73	0.56	1.30	0.00	0.00	0.00
42.85	0.73	0.56	1.30	0.00	0.00	0.00
42.90	0.73	0.56	1.30	0.00	0.00	0.00
42.95	0.73	0.56	1.30	0.00	0.00	0.00
43.00	0.73	0.56	1.30	0.00	0.00	0.00
43.05	0.73	0.56	1.30	0.00	0.00	0.00
43.10	0.73	0.56	1.30	0.00	0.00	0.00
43.15	0.73	0.56	1.30	0.00	0.00	0.00
43.20	0.73	0.56	1.30	0.00	0.00	0.00
43.25	0.73	0.56	1.30	0.00	0.00	0.00
43.30	0.73	0.56	1.30	0.00	0.00	0.00
43.35	0.73	0.56	1.30	0.00	0.00	0.00
43.40	0.73	0.56	1.30	0.00	0.00	0.00
43.45	0.73	0.56	1.30	0.00	0.00	0.00
43.50	0.73	0.56	1.30	0.00	0.00	0.00
43.55	0.73	0.56	1.30	0.00	0.00	0.00
43.60	0.73	0.56	1.30	0.00	0.00	0.00
43.65	0.73	0.56	1.30	0.00	0.00	0.00
43.70	0.73	0.56	1.30	0.00	0.00	0.00
43.75	0.73	0.56	1.31	0.00	0.00	0.00
43.80	0.73	0.56	1.31	0.00	0.00	0.00
43.85	0.73	0.56	1.31	0.00	0.00	0.00
43.90	0.73	0.56	1.31	0.00	0.00	0.00
43.95	0.73	0.56	1.31	0.00	0.00	0.00
44.00	0.73	0.56	1.31	0.00	0.00	0.00
44.05	0.73	0.56	1.31	0.00	0.00	0.00
44.10	0.73	0.56	1.31	0.00	0.00	0.00
44.15	0.73	0.56	1.31	0.00	0.00	0.00
44.20	0.73	0.56	1.31	0.00	0.00	0.00
44.25	0.73	0.56	1.31	0.00	0.00	0.00
44.30	0.73	0.56	1.31	0.00	0.00	0.00
44.35	0.73	0.56	1.31	0.00	0.00	0.00
44.40	0.73	0.56	1.31	0.00	0.00	0.00
44.45	0.73	0.56	1.31	0.00	0.00	0.00
44.50	0.73	0.56	1.31	0.00	0.00	0.00
44.55	0.73	0.56	1.31	0.00	0.00	0.00

44.60	0.73	0.55	1.31	0.00	0.00	0.00
44.65	0.73	0.55	1.31	0.00	0.00	0.00
44.70	0.73	0.55	1.31	0.00	0.00	0.00
44.75	0.73	0.55	1.31	0.00	0.00	0.00
44.80	0.73	0.55	1.31	0.00	0.00	0.00
44.85	0.73	0.55	1.31	0.00	0.00	0.00
44.90	0.73	0.55	1.31	0.00	0.00	0.00
44.95	0.73	0.55	1.31	0.00	0.00	0.00
45.00	0.73	0.55	1.31	0.00	0.00	0.00
45.05	0.73	0.55	1.31	0.00	0.00	0.00
45.10	0.73	0.55	1.31	0.00	0.00	0.00
45.15	0.73	0.55	1.31	0.00	0.00	0.00
45.20	0.73	0.55	1.31	0.00	0.00	0.00
45.25	0.73	0.55	1.31	0.00	0.00	0.00
45.30	0.73	0.55	1.31	0.00	0.00	0.00
45.35	0.73	0.55	1.31	0.00	0.00	0.00
45.40	0.73	0.55	1.31	0.00	0.00	0.00
45.45	0.73	0.55	1.31	0.00	0.00	0.00
45.50	0.73	0.55	1.31	0.00	0.00	0.00
45.55	0.73	0.55	1.32	0.00	0.00	0.00
45.60	0.73	0.55	1.32	0.00	0.00	0.00
45.65	0.73	0.55	1.32	0.00	0.00	0.00
45.70	0.73	0.55	1.32	0.00	0.00	0.00
45.75	0.73	0.55	1.32	0.00	0.00	0.00
45.80	0.73	0.55	1.32	0.00	0.00	0.00
45.85	0.73	0.55	1.32	0.00	0.00	0.00
45.90	0.73	0.55	1.32	0.00	0.00	0.00
45.95	0.73	0.55	1.32	0.00	0.00	0.00
46.00	0.73	0.55	1.32	0.00	0.00	0.00
46.05	0.73	0.55	1.32	0.00	0.00	0.00
46.10	0.73	0.55	1.32	0.00	0.00	0.00
46.15	0.73	0.55	1.32	0.00	0.00	0.00
46.20	0.73	0.55	1.32	0.00	0.00	0.00
46.25	0.73	0.55	1.32	0.00	0.00	0.00
46.30	0.73	0.55	1.32	0.00	0.00	0.00
46.35	0.73	0.55	1.32	0.00	0.00	0.00
46.40	0.73	0.55	1.32	0.00	0.00	0.00
46.45	0.73	0.55	1.32	0.00	0.00	0.00
46.50	0.73	0.55	1.32	0.00	0.00	0.00
46.55	0.73	0.55	1.32	0.00	0.00	0.00
46.60	0.73	0.55	1.32	0.00	0.00	0.00
46.65	0.73	0.55	1.32	0.00	0.00	0.00
46.70	0.73	0.55	1.32	0.00	0.00	0.00
46.75	0.73	0.55	1.32	0.00	0.00	0.00
46.80	0.73	0.55	1.32	0.00	0.00	0.00
46.85	0.73	0.55	1.32	0.00	0.00	0.00
46.90	0.73	0.55	1.32	0.00	0.00	0.00
46.95	0.73	0.55	1.32	0.00	0.00	0.00
47.00	0.73	0.55	1.33	0.00	0.00	0.00
47.05	0.73	0.55	1.33	0.00	0.00	0.00
47.10	0.73	0.55	1.33	0.00	0.00	0.00
47.15	0.73	0.55	1.33	0.00	0.00	0.00
47.20	0.73	0.55	1.33	0.00	0.00	0.00
47.25	0.73	0.55	1.33	0.00	0.00	0.00

47.30	0.73	0.55	1.33	0.00	0.00	0.00
47.35	0.73	0.55	1.33	0.00	0.00	0.00
47.40	0.73	0.55	1.33	0.00	0.00	0.00
47.45	0.73	0.55	1.33	0.00	0.00	0.00
47.50	0.73	0.55	1.33	0.00	0.00	0.00
47.55	0.73	0.55	1.33	0.00	0.00	0.00
47.60	0.73	0.55	1.33	0.00	0.00	0.00
47.65	0.73	0.55	1.33	0.00	0.00	0.00
47.70	0.73	0.55	1.33	0.00	0.00	0.00
47.75	0.73	0.55	1.33	0.00	0.00	0.00
47.80	0.73	0.55	1.33	0.00	0.00	0.00
47.85	0.73	0.55	1.33	0.00	0.00	0.00
47.90	0.73	0.55	1.33	0.00	0.00	0.00
47.95	0.73	0.55	1.33	0.00	0.00	0.00
48.00	0.73	0.55	1.33	0.00	0.00	0.00
48.05	0.73	0.55	1.33	0.00	0.00	0.00
48.10	0.73	0.55	1.33	0.00	0.00	0.00
48.15	0.73	0.54	1.33	0.00	0.00	0.00
48.20	0.73	0.54	1.33	0.00	0.00	0.00
48.25	0.73	0.54	1.33	0.00	0.00	0.00
48.30	0.73	0.54	1.33	0.00	0.00	0.00
48.35	0.73	0.54	1.33	0.00	0.00	0.00
48.40	0.73	0.54	1.34	0.00	0.00	0.00
48.45	0.73	0.54	1.34	0.00	0.00	0.00
48.50	0.73	0.54	1.34	0.00	0.00	0.00
48.55	0.73	0.54	1.34	0.00	0.00	0.00
48.60	0.73	0.54	1.34	0.00	0.00	0.00
48.65	0.73	0.54	1.34	0.00	0.00	0.00
48.70	0.73	0.54	1.34	0.00	0.00	0.00
48.75	0.73	0.54	1.34	0.00	0.00	0.00
48.80	0.73	0.54	1.34	0.00	0.00	0.00
48.85	0.73	0.54	1.34	0.00	0.00	0.00
48.90	0.73	0.54	1.34	0.00	0.00	0.00
48.95	0.73	0.54	1.34	0.00	0.00	0.00
49.00	0.73	0.54	1.34	0.00	0.00	0.00
49.05	0.73	0.54	1.34	0.00	0.00	0.00
49.10	0.73	0.54	1.34	0.00	0.00	0.00
49.15	0.73	0.54	1.34	0.00	0.00	0.00
49.20	0.73	0.54	1.34	0.00	0.00	0.00
49.25	0.73	0.54	1.34	0.00	0.00	0.00
49.30	0.73	0.54	1.34	0.00	0.00	0.00
49.35	0.73	0.54	1.34	0.00	0.00	0.00
49.40	0.73	0.54	1.34	0.00	0.00	0.00
49.45	0.73	0.54	1.34	0.00	0.00	0.00
49.50	0.73	0.54	1.34	0.00	0.00	0.00
49.55	0.73	0.54	1.34	0.00	0.00	0.00
49.60	0.73	0.54	1.34	0.00	0.00	0.00
49.65	0.73	0.54	1.34	0.00	0.00	0.00
49.70	0.73	0.54	1.35	0.00	0.00	0.00
49.75	0.73	0.54	1.35	0.00	0.00	0.00
49.80	0.73	0.54	1.35	0.00	0.00	0.00
49.85	0.73	0.54	1.35	0.00	0.00	0.00
49.90	0.73	0.54	1.35	0.00	0.00	0.00
49.95	0.73	0.54	1.35	0.00	0.00	0.00

50.00	0.73	0.54	1.35	0.00	0.00	0.00
50.05	0.73	0.54	1.35	0.00	0.00	0.00
50.10	0.73	0.54	1.35	0.00	0.00	0.00
50.15	0.73	0.54	1.35	0.00	0.00	0.00
50.20	0.73	0.54	1.35	0.00	0.00	0.00
50.25	0.73	0.54	1.35	0.00	0.00	0.00
50.30	0.73	0.54	1.35	0.00	0.00	0.00
50.35	0.73	0.54	1.35	0.00	0.00	0.00
50.40	0.73	0.54	1.35	0.00	0.00	0.00
50.45	0.73	0.54	1.35	0.00	0.00	0.00
50.50	0.73	0.54	1.35	0.00	0.00	0.00
50.55	0.73	0.54	1.35	0.00	0.00	0.00
50.60	0.73	0.54	1.35	0.00	0.00	0.00
50.65	0.73	0.54	1.35	0.00	0.00	0.00
50.70	0.73	0.54	1.35	0.00	0.00	0.00
50.75	0.73	0.54	1.35	0.00	0.00	0.00
50.80	0.73	0.54	1.35	0.00	0.00	0.00
50.85	0.73	0.54	1.35	0.00	0.00	0.00
50.90	0.73	0.54	1.35	0.00	0.00	0.00
50.95	0.73	0.54	1.36	0.00	0.00	0.00
51.00	0.73	0.54	1.36	0.00	0.00	0.00

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* F.S.<1, Liquefaction Potential Zone
(F.S. is limited to 5, CRR is limited to 2, CSR is limited to 2)

Units: Welcome to LiquefyPro!

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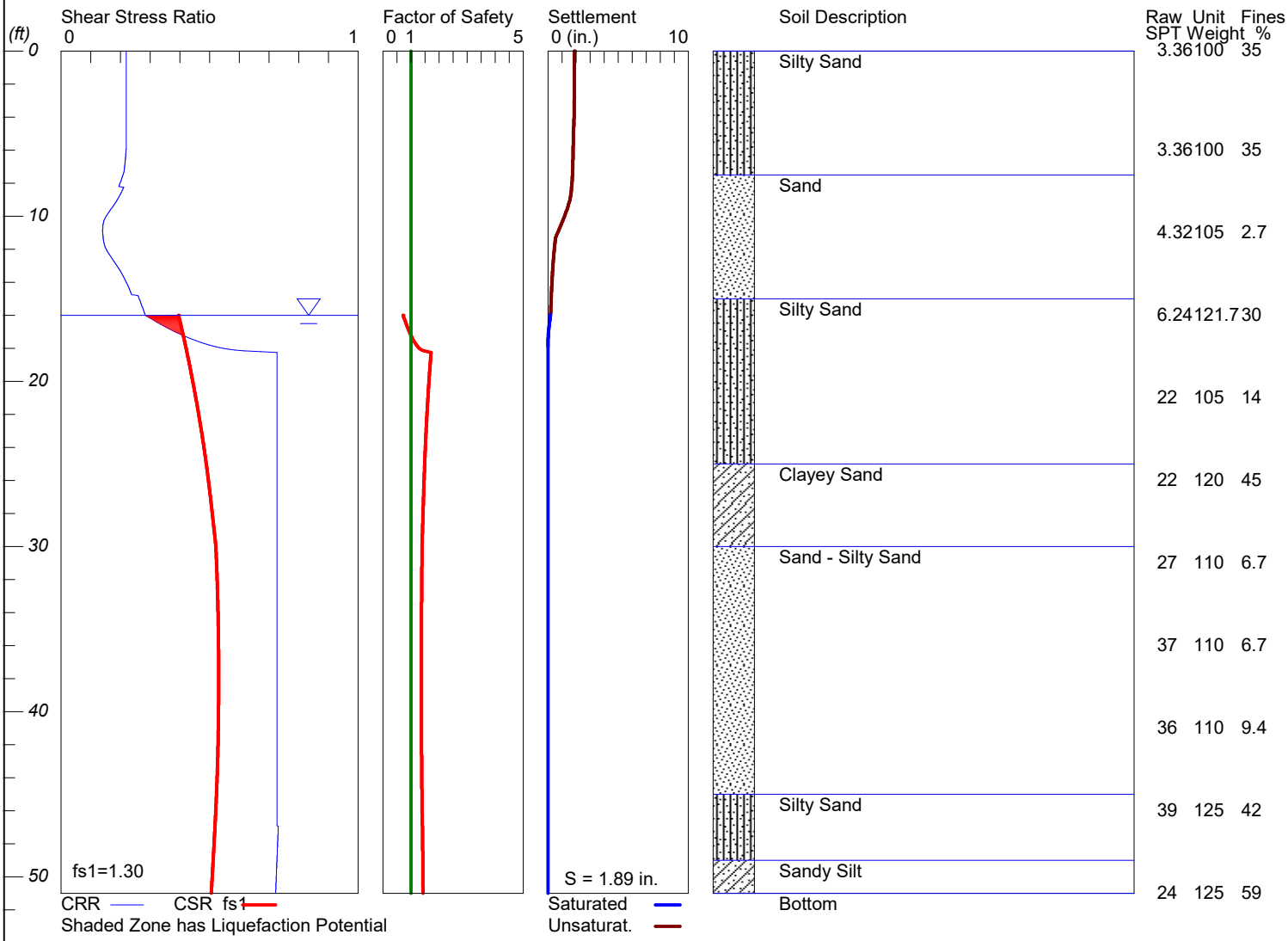
1 atm (atmosphere) = 1 tsf (ton/ft2)
CRRm Cyclic resistance ratio from soils
CSRsf Cyclic stress ratio induced by a given earthquake (with user request factor of safety)
F.S. Factor of Safety against liquefaction, F.S.=CRRm/CSRsf
S_sat Settlement from saturated sands
S_dry Settlement from Unsaturated Sands
S_all Total Settlement from Saturated and Unsaturated Sands
NoLiq No-Liquefy Soils

LIQUEFACTION ANALYSIS

20342 KHSD Vista Cont HS

Hole No.=B-2 Water Depth=16 ft

Magnitude=6.48
Acceleration=0.486g



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****
LIQUEFACTION ANALYSIS SUMMARY
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Input File Name: C:\Users\rbeck\OneDrive\Documents\work files\20342 KHSD Vista Cont HS\20342 B2 Liqufey.liq
Title: 20342 KHSD Vista Cont HS
Subtitle: 20342 B-2

Surface Elev.=
Hole No.=B-2
Depth of Hole= 51.00 ft
Water Table during Earthquake= 16.00 ft
Water Table during In-Situ Testing= 16.00 ft
Max. Acceleration= 0.49 g
Earthquake Magnitude= 6.48

Input Data:
Surface Elev.=
Hole No.=B-2
Depth of Hole=51.00 ft
Water Table during Earthquake= 16.00 ft
Water Table during In-Situ Testing= 16.00 ft
Max. Acceleration=0.49 g
Earthquake Magnitude=6.48
No-Liquefiable Soils: CL, OL are Non-Liq. Soil

1. SPT or BPT Calculation.
2. Settlement Analysis Method: Tokimatsu, M-correction
3. Fines Correction for Liquefaction: Idriss/Seed
4. Fine Correction for Settlement: During Liquefaction*
5. Settlement Calculation in: All zones*
6. Hammer Energy Ratio, Ce = 1.45
7. Borehole Diameter, Cb= 1
8. Sampling Method, Cs= 1.2
9. User request factor of safety (apply to CSR) , User= 1.3
   Plot one CSR curve (fs1=User)
10. Use Curve Smoothing: Yes*
* Recommended Options

In-Situ Test Data:

Depth ft	SPT	gamma pcf	Fines %
0.00	3.36	100.00	35.00
6.00	3.36	100.00	35.00
11.00	4.32	105.00	2.70
16.00	6.24	121.70	30.00
21.00	22.00	105.00	14.00
26.00	22.00	120.00	45.00
31.00	27.00	110.00	6.70
36.00	37.00	110.00	6.70
41.00	36.00	110.00	9.40
46.00	39.00	125.00	42.00
51.00	24.00	125.00	59.00

Output Results:

Settlement of Saturated Sands=0.18 in.
Settlement of Unsaturated Sands=1.71 in.
Total Settlement of Saturated and Unsaturated Sands=1.89 in.
Differential Settlement=0.946 to 1.249 in.

Depth ft	CRRm	CSRfs	F.S.	S_sat. in.	S_dry in.	S_all in.
0.00	0.22	0.41	5.00	0.18	1.71	1.89
0.05	0.22	0.41	5.00	0.18	1.71	1.89
0.10	0.22	0.41	5.00	0.18	1.71	1.89
0.15	0.22	0.41	5.00	0.18	1.71	1.89
0.20	0.22	0.41	5.00	0.18	1.71	1.89
0.25	0.22	0.41	5.00	0.18	1.71	1.89
0.30	0.22	0.41	5.00	0.18	1.71	1.89
0.35	0.22	0.41	5.00	0.18	1.71	1.89
0.40	0.22	0.41	5.00	0.18	1.71	1.89
0.45	0.22	0.41	5.00	0.18	1.71	1.89
0.50	0.22	0.41	5.00	0.18	1.71	1.89
0.55	0.22	0.41	5.00	0.18	1.71	1.89
0.60	0.22	0.41	5.00	0.18	1.71	1.89
0.65	0.22	0.41	5.00	0.18	1.71	1.89
0.70	0.22	0.41	5.00	0.18	1.71	1.89
0.75	0.22	0.41	5.00	0.18	1.71	1.89
0.80	0.22	0.41	5.00	0.18	1.71	1.89
0.85	0.22	0.41	5.00	0.18	1.71	1.89
0.90	0.22	0.41	5.00	0.18	1.71	1.89
0.95	0.22	0.41	5.00	0.18	1.71	1.89
1.00	0.22	0.41	5.00	0.18	1.71	1.89
1.05	0.22	0.41	5.00	0.18	1.71	1.89
1.10	0.22	0.41	5.00	0.18	1.71	1.89
1.15	0.22	0.41	5.00	0.18	1.71	1.89
1.20	0.22	0.41	5.00	0.18	1.71	1.89
1.25	0.22	0.41	5.00	0.18	1.71	1.89
1.30	0.22	0.41	5.00	0.18	1.71	1.89
1.35	0.22	0.41	5.00	0.18	1.71	1.89

1.40	0.22	0.41	5.00	0.18	1.71	1.89
1.45	0.22	0.41	5.00	0.18	1.70	1.89
1.50	0.22	0.41	5.00	0.18	1.70	1.89
1.55	0.22	0.41	5.00	0.18	1.70	1.88
1.60	0.22	0.41	5.00	0.18	1.70	1.88
1.65	0.22	0.41	5.00	0.18	1.70	1.88
1.70	0.22	0.41	5.00	0.18	1.70	1.88
1.75	0.22	0.41	5.00	0.18	1.70	1.88
1.80	0.22	0.41	5.00	0.18	1.70	1.88
1.85	0.22	0.41	5.00	0.18	1.70	1.88
1.90	0.22	0.41	5.00	0.18	1.70	1.88
1.95	0.22	0.41	5.00	0.18	1.70	1.88
2.00	0.22	0.41	5.00	0.18	1.70	1.88
2.05	0.22	0.41	5.00	0.18	1.70	1.88
2.10	0.22	0.41	5.00	0.18	1.70	1.88
2.15	0.22	0.41	5.00	0.18	1.70	1.88
2.20	0.22	0.41	5.00	0.18	1.70	1.88
2.25	0.22	0.41	5.00	0.18	1.70	1.88
2.30	0.22	0.41	5.00	0.18	1.70	1.88
2.35	0.22	0.41	5.00	0.18	1.70	1.88
2.40	0.22	0.41	5.00	0.18	1.70	1.88
2.45	0.22	0.41	5.00	0.18	1.70	1.88
2.50	0.22	0.41	5.00	0.18	1.70	1.88
2.55	0.22	0.41	5.00	0.18	1.70	1.88
2.60	0.22	0.41	5.00	0.18	1.70	1.88
2.65	0.22	0.41	5.00	0.18	1.70	1.88
2.70	0.22	0.41	5.00	0.18	1.69	1.88
2.75	0.22	0.41	5.00	0.18	1.69	1.87
2.80	0.22	0.41	5.00	0.18	1.69	1.87
2.85	0.22	0.41	5.00	0.18	1.69	1.87
2.90	0.22	0.41	5.00	0.18	1.69	1.87
2.95	0.22	0.41	5.00	0.18	1.69	1.87
3.00	0.22	0.41	5.00	0.18	1.69	1.87
3.05	0.22	0.41	5.00	0.18	1.69	1.87
3.10	0.22	0.41	5.00	0.18	1.69	1.87
3.15	0.22	0.41	5.00	0.18	1.69	1.87
3.20	0.22	0.41	5.00	0.18	1.69	1.87
3.25	0.22	0.41	5.00	0.18	1.69	1.87
3.30	0.22	0.41	5.00	0.18	1.69	1.87
3.35	0.22	0.41	5.00	0.18	1.69	1.87
3.40	0.22	0.41	5.00	0.18	1.69	1.87
3.45	0.22	0.41	5.00	0.18	1.69	1.87
3.50	0.22	0.41	5.00	0.18	1.68	1.87
3.55	0.22	0.41	5.00	0.18	1.68	1.86
3.60	0.22	0.41	5.00	0.18	1.68	1.86
3.65	0.22	0.41	5.00	0.18	1.68	1.86
3.70	0.22	0.41	5.00	0.18	1.68	1.86
3.75	0.22	0.41	5.00	0.18	1.68	1.86
3.80	0.22	0.41	5.00	0.18	1.68	1.86
3.85	0.22	0.41	5.00	0.18	1.68	1.86
3.90	0.22	0.41	5.00	0.18	1.68	1.86
3.95	0.22	0.41	5.00	0.18	1.68	1.86
4.00	0.22	0.41	5.00	0.18	1.67	1.86
4.05	0.22	0.41	5.00	0.18	1.67	1.85

4.10	0.22	0.41	5.00	0.18	1.67	1.85
4.15	0.22	0.41	5.00	0.18	1.67	1.85
4.20	0.22	0.41	5.00	0.18	1.67	1.85
4.25	0.22	0.41	5.00	0.18	1.67	1.85
4.30	0.22	0.41	5.00	0.18	1.67	1.85
4.35	0.22	0.41	5.00	0.18	1.66	1.84
4.40	0.22	0.41	5.00	0.18	1.66	1.84
4.45	0.22	0.41	5.00	0.18	1.66	1.84
4.50	0.22	0.41	5.00	0.18	1.66	1.84
4.55	0.22	0.41	5.00	0.18	1.65	1.83
4.60	0.22	0.41	5.00	0.18	1.65	1.83
4.65	0.22	0.41	5.00	0.18	1.65	1.83
4.70	0.22	0.41	5.00	0.18	1.64	1.82
4.75	0.22	0.41	5.00	0.18	1.64	1.82
4.80	0.22	0.41	5.00	0.18	1.64	1.82
4.85	0.22	0.41	5.00	0.18	1.63	1.81
4.90	0.22	0.41	5.00	0.18	1.63	1.81
4.95	0.22	0.41	5.00	0.18	1.63	1.81
5.00	0.22	0.41	5.00	0.18	1.63	1.81
5.05	0.22	0.41	5.00	0.18	1.63	1.81
5.10	0.22	0.41	5.00	0.18	1.62	1.80
5.15	0.22	0.41	5.00	0.18	1.62	1.80
5.20	0.22	0.41	5.00	0.18	1.62	1.80
5.25	0.22	0.41	5.00	0.18	1.62	1.80
5.30	0.22	0.41	5.00	0.18	1.62	1.80
5.35	0.22	0.41	5.00	0.18	1.62	1.80
5.40	0.22	0.41	5.00	0.18	1.62	1.80
5.45	0.22	0.41	5.00	0.18	1.62	1.80
5.50	0.22	0.41	5.00	0.18	1.62	1.80
5.55	0.22	0.41	5.00	0.18	1.62	1.80
5.60	0.22	0.41	5.00	0.18	1.62	1.80
5.65	0.22	0.41	5.00	0.18	1.62	1.80
5.70	0.22	0.41	5.00	0.18	1.61	1.79
5.75	0.22	0.41	5.00	0.18	1.61	1.79
5.80	0.22	0.41	5.00	0.18	1.61	1.79
5.85	0.22	0.41	5.00	0.18	1.61	1.79
5.90	0.22	0.41	5.00	0.18	1.61	1.79
5.95	0.22	0.40	5.00	0.18	1.61	1.79
6.00	0.22	0.40	5.00	0.18	1.61	1.79
6.05	0.22	0.40	5.00	0.18	1.61	1.79
6.10	0.22	0.40	5.00	0.18	1.61	1.79
6.15	0.22	0.40	5.00	0.18	1.61	1.79
6.20	0.22	0.40	5.00	0.18	1.60	1.78
6.25	0.22	0.40	5.00	0.18	1.60	1.78
6.30	0.22	0.40	5.00	0.18	1.60	1.78
6.35	0.22	0.40	5.00	0.18	1.60	1.78
6.40	0.22	0.40	5.00	0.18	1.60	1.78
6.45	0.22	0.40	5.00	0.18	1.60	1.78
6.50	0.22	0.40	5.00	0.18	1.60	1.78
6.55	0.22	0.40	5.00	0.18	1.60	1.78
6.60	0.22	0.40	5.00	0.18	1.59	1.77
6.65	0.22	0.40	5.00	0.18	1.59	1.77
6.70	0.22	0.40	5.00	0.18	1.59	1.77
6.75	0.22	0.40	5.00	0.18	1.59	1.77

6.80	0.22	0.40	5.00	0.18	1.59	1.77
6.85	0.21	0.40	5.00	0.18	1.59	1.77
6.90	0.21	0.40	5.00	0.18	1.58	1.77
6.95	0.21	0.40	5.00	0.18	1.58	1.76
7.00	0.21	0.40	5.00	0.18	1.58	1.76
7.05	0.21	0.40	5.00	0.18	1.58	1.76
7.10	0.21	0.40	5.00	0.18	1.58	1.76
7.15	0.21	0.40	5.00	0.18	1.58	1.76
7.20	0.21	0.40	5.00	0.18	1.57	1.75
7.25	0.21	0.40	5.00	0.18	1.57	1.75
7.30	0.21	0.40	5.00	0.18	1.57	1.75
7.35	0.21	0.40	5.00	0.18	1.57	1.75
7.40	0.21	0.40	5.00	0.18	1.56	1.74
7.45	0.21	0.40	5.00	0.18	1.56	1.74
7.50	0.21	0.40	5.00	0.18	1.56	1.74
7.55	0.21	0.40	5.00	0.18	1.56	1.74
7.60	0.21	0.40	5.00	0.18	1.55	1.73
7.65	0.21	0.40	5.00	0.18	1.55	1.73
7.70	0.20	0.40	5.00	0.18	1.55	1.73
7.75	0.20	0.40	5.00	0.18	1.54	1.72
7.80	0.20	0.40	5.00	0.18	1.54	1.72
7.85	0.20	0.40	5.00	0.18	1.54	1.72
7.90	0.20	0.40	5.00	0.18	1.53	1.71
7.95	0.20	0.40	5.00	0.18	1.53	1.71
8.00	0.20	0.40	5.00	0.18	1.52	1.70
8.05	0.20	0.40	5.00	0.18	1.52	1.70
8.10	0.20	0.40	5.00	0.18	1.51	1.69
8.15	0.20	0.40	5.00	0.18	1.51	1.69
8.20	0.19	0.40	5.00	0.18	1.50	1.68
8.25	0.21	0.40	5.00	0.18	1.50	1.68
8.30	0.21	0.40	5.00	0.18	1.49	1.67
8.35	0.21	0.40	5.00	0.18	1.49	1.67
8.40	0.21	0.40	5.00	0.18	1.48	1.66
8.45	0.21	0.40	5.00	0.18	1.48	1.66
8.50	0.20	0.40	5.00	0.18	1.47	1.65
8.55	0.20	0.40	5.00	0.18	1.46	1.65
8.60	0.20	0.40	5.00	0.18	1.46	1.64
8.65	0.20	0.40	5.00	0.18	1.45	1.63
8.70	0.20	0.40	5.00	0.18	1.44	1.62
8.75	0.20	0.40	5.00	0.18	1.44	1.62
8.80	0.20	0.40	5.00	0.18	1.43	1.61
8.85	0.19	0.40	5.00	0.18	1.42	1.60
8.90	0.19	0.40	5.00	0.18	1.41	1.59
8.95	0.19	0.40	5.00	0.18	1.39	1.58
9.00	0.19	0.40	5.00	0.18	1.38	1.56
9.05	0.19	0.40	5.00	0.18	1.37	1.55
9.10	0.19	0.40	5.00	0.18	1.35	1.53
9.15	0.18	0.40	5.00	0.18	1.33	1.51
9.20	0.18	0.40	5.00	0.18	1.32	1.50
9.25	0.18	0.40	5.00	0.18	1.30	1.48
9.30	0.18	0.40	5.00	0.18	1.28	1.46
9.35	0.18	0.40	5.00	0.18	1.26	1.44
9.40	0.17	0.40	5.00	0.18	1.24	1.42
9.45	0.17	0.40	5.00	0.18	1.22	1.40

9.50	0.17	0.40	5.00	0.18	1.20	1.38
9.55	0.17	0.40	5.00	0.18	1.18	1.36
9.60	0.17	0.40	5.00	0.18	1.16	1.34
9.65	0.16	0.40	5.00	0.18	1.14	1.32
9.70	0.16	0.40	5.00	0.18	1.12	1.30
9.75	0.16	0.40	5.00	0.18	1.10	1.28
9.80	0.16	0.40	5.00	0.18	1.08	1.26
9.85	0.16	0.40	5.00	0.18	1.06	1.24
9.90	0.16	0.40	5.00	0.18	1.04	1.22
9.95	0.15	0.40	5.00	0.18	1.02	1.20
10.00	0.15	0.40	5.00	0.18	0.99	1.17
10.05	0.15	0.40	5.00	0.18	0.97	1.15
10.10	0.15	0.40	5.00	0.18	0.95	1.13
10.15	0.15	0.40	5.00	0.18	0.92	1.10
10.20	0.15	0.40	5.00	0.18	0.90	1.08
10.25	0.14	0.40	5.00	0.18	0.88	1.06
10.30	0.14	0.40	5.00	0.18	0.85	1.03
10.35	0.14	0.40	5.00	0.18	0.83	1.01
10.40	0.14	0.40	5.00	0.18	0.80	0.98
10.45	0.14	0.40	5.00	0.18	0.78	0.96
10.50	0.14	0.40	5.00	0.18	0.76	0.94
10.55	0.14	0.40	5.00	0.18	0.73	0.91
10.60	0.14	0.40	5.00	0.18	0.71	0.89
10.65	0.14	0.40	5.00	0.18	0.68	0.86
10.70	0.14	0.40	5.00	0.18	0.66	0.84
10.75	0.14	0.40	5.00	0.18	0.63	0.81
10.80	0.14	0.40	5.00	0.18	0.61	0.79
10.85	0.14	0.40	5.00	0.18	0.58	0.76
10.90	0.14	0.40	5.00	0.18	0.56	0.74
10.95	0.14	0.40	5.00	0.18	0.53	0.71
11.00	0.14	0.40	5.00	0.18	0.51	0.69
11.05	0.14	0.40	5.00	0.18	0.48	0.66
11.10	0.14	0.40	5.00	0.18	0.46	0.64
11.15	0.14	0.40	5.00	0.18	0.43	0.61
11.20	0.14	0.40	5.00	0.18	0.41	0.59
11.25	0.14	0.40	5.00	0.18	0.38	0.56
11.30	0.14	0.40	5.00	0.18	0.36	0.54
11.35	0.14	0.40	5.00	0.18	0.35	0.53
11.40	0.14	0.40	5.00	0.18	0.34	0.52
11.45	0.14	0.40	5.00	0.18	0.34	0.52
11.50	0.14	0.40	5.00	0.18	0.33	0.51
11.55	0.14	0.40	5.00	0.18	0.32	0.51
11.60	0.14	0.40	5.00	0.18	0.32	0.50
11.65	0.14	0.40	5.00	0.18	0.31	0.49
11.70	0.15	0.40	5.00	0.18	0.31	0.49
11.75	0.15	0.40	5.00	0.18	0.30	0.48
11.80	0.15	0.40	5.00	0.18	0.29	0.47
11.85	0.15	0.40	5.00	0.18	0.29	0.47
11.90	0.15	0.40	5.00	0.18	0.28	0.46
11.95	0.15	0.40	5.00	0.18	0.27	0.45
12.00	0.15	0.40	5.00	0.18	0.27	0.45
12.05	0.15	0.40	5.00	0.18	0.26	0.44
12.10	0.16	0.40	5.00	0.18	0.26	0.44
12.15	0.16	0.40	5.00	0.18	0.25	0.43

12.20	0.16	0.40	5.00	0.18	0.24	0.42
12.25	0.16	0.40	5.00	0.18	0.24	0.42
12.30	0.16	0.40	5.00	0.18	0.23	0.41
12.35	0.16	0.40	5.00	0.18	0.23	0.41
12.40	0.17	0.40	5.00	0.18	0.22	0.40
12.45	0.17	0.40	5.00	0.18	0.22	0.40
12.50	0.17	0.40	5.00	0.18	0.21	0.39
12.55	0.17	0.40	5.00	0.18	0.21	0.39
12.60	0.17	0.40	5.00	0.18	0.20	0.38
12.65	0.18	0.40	5.00	0.18	0.20	0.38
12.70	0.18	0.40	5.00	0.18	0.19	0.37
12.75	0.18	0.40	5.00	0.18	0.19	0.37
12.80	0.18	0.40	5.00	0.18	0.18	0.37
12.85	0.18	0.40	5.00	0.18	0.18	0.36
12.90	0.18	0.40	5.00	0.18	0.18	0.36
12.95	0.19	0.40	5.00	0.18	0.17	0.35
13.00	0.19	0.40	5.00	0.18	0.17	0.35
13.05	0.19	0.40	5.00	0.18	0.16	0.34
13.10	0.19	0.40	5.00	0.18	0.16	0.34
13.15	0.19	0.40	5.00	0.18	0.16	0.34
13.20	0.20	0.40	5.00	0.18	0.15	0.33
13.25	0.20	0.40	5.00	0.18	0.15	0.33
13.30	0.20	0.40	5.00	0.18	0.15	0.33
13.35	0.20	0.40	5.00	0.18	0.14	0.32
13.40	0.20	0.40	5.00	0.18	0.14	0.32
13.45	0.20	0.40	5.00	0.18	0.13	0.32
13.50	0.21	0.40	5.00	0.18	0.13	0.31
13.55	0.21	0.40	5.00	0.18	0.13	0.31
13.60	0.21	0.40	5.00	0.18	0.12	0.30
13.65	0.21	0.40	5.00	0.18	0.12	0.30
13.70	0.21	0.40	5.00	0.18	0.12	0.30
13.75	0.21	0.40	5.00	0.18	0.11	0.29
13.80	0.21	0.40	5.00	0.18	0.11	0.29
13.85	0.22	0.40	5.00	0.18	0.11	0.29
13.90	0.22	0.40	5.00	0.18	0.10	0.29
13.95	0.22	0.40	5.00	0.18	0.10	0.28
14.00	0.22	0.40	5.00	0.18	0.10	0.28
14.05	0.22	0.40	5.00	0.18	0.10	0.28
14.10	0.22	0.40	5.00	0.18	0.09	0.27
14.15	0.22	0.40	5.00	0.18	0.09	0.27
14.20	0.22	0.40	5.00	0.18	0.09	0.27
14.25	0.23	0.40	5.00	0.18	0.08	0.26
14.30	0.23	0.40	5.00	0.18	0.08	0.26
14.35	0.23	0.40	5.00	0.18	0.08	0.26
14.40	0.23	0.40	5.00	0.18	0.07	0.25
14.45	0.23	0.40	5.00	0.18	0.07	0.25
14.50	0.23	0.40	5.00	0.18	0.07	0.25
14.55	0.23	0.40	5.00	0.18	0.07	0.25
14.60	0.23	0.40	5.00	0.18	0.06	0.24
14.65	0.24	0.40	5.00	0.18	0.06	0.24
14.70	0.24	0.40	5.00	0.18	0.06	0.24
14.75	0.24	0.40	5.00	0.18	0.05	0.23
14.80	0.26	0.40	5.00	0.18	0.05	0.23
14.85	0.26	0.40	5.00	0.18	0.05	0.23

14.90	0.26	0.40	5.00	0.18	0.05	0.23
14.95	0.26	0.40	5.00	0.18	0.04	0.23
15.00	0.26	0.40	5.00	0.18	0.04	0.22
15.05	0.26	0.40	5.00	0.18	0.04	0.22
15.10	0.27	0.40	5.00	0.18	0.04	0.22
15.15	0.27	0.40	5.00	0.18	0.04	0.22
15.20	0.27	0.40	5.00	0.18	0.03	0.21
15.25	0.27	0.40	5.00	0.18	0.03	0.21
15.30	0.27	0.40	5.00	0.18	0.03	0.21
15.35	0.27	0.40	5.00	0.18	0.03	0.21
15.40	0.27	0.40	5.00	0.18	0.03	0.21
15.45	0.27	0.40	5.00	0.18	0.02	0.20
15.50	0.27	0.40	5.00	0.18	0.02	0.20
15.55	0.27	0.40	5.00	0.18	0.02	0.20
15.60	0.28	0.40	5.00	0.18	0.02	0.20
15.65	0.28	0.40	5.00	0.18	0.01	0.20
15.70	0.28	0.40	5.00	0.18	0.01	0.19
15.75	0.28	0.40	5.00	0.18	0.01	0.19
15.80	0.28	0.40	5.00	0.18	0.01	0.19
15.85	0.28	0.40	5.00	0.18	0.01	0.19
15.90	0.28	0.40	5.00	0.18	0.00	0.18
15.95	0.28	0.40	5.00	0.18	0.00	0.18
16.00	0.28	0.40	0.72*	0.18	0.00	0.18
16.05	0.29	0.40	0.73*	0.17	0.00	0.17
16.10	0.29	0.40	0.74*	0.16	0.00	0.16
16.15	0.30	0.40	0.75*	0.15	0.00	0.15
16.20	0.30	0.40	0.76*	0.15	0.00	0.15
16.25	0.31	0.40	0.77*	0.14	0.00	0.14
16.30	0.31	0.40	0.78*	0.13	0.00	0.13
16.35	0.32	0.40	0.79*	0.12	0.00	0.12
16.40	0.32	0.40	0.80*	0.11	0.00	0.11
16.45	0.33	0.40	0.81*	0.11	0.00	0.11
16.50	0.33	0.40	0.82*	0.10	0.00	0.10
16.55	0.34	0.40	0.83*	0.09	0.00	0.09
16.60	0.34	0.40	0.85*	0.08	0.00	0.08
16.65	0.35	0.40	0.86*	0.08	0.00	0.08
16.70	0.35	0.40	0.87*	0.07	0.00	0.07
16.75	0.36	0.41	0.88*	0.06	0.00	0.06
16.80	0.36	0.41	0.89*	0.06	0.00	0.06
16.85	0.37	0.41	0.90*	0.05	0.00	0.05
16.90	0.37	0.41	0.92*	0.04	0.00	0.04
16.95	0.38	0.41	0.93*	0.04	0.00	0.04
17.00	0.38	0.41	0.94*	0.03	0.00	0.03
17.05	0.39	0.41	0.95*	0.03	0.00	0.03
17.10	0.40	0.41	0.97*	0.02	0.00	0.02
17.15	0.40	0.41	0.98*	0.02	0.00	0.02
17.20	0.41	0.41	0.99*	0.02	0.00	0.02
17.25	0.41	0.41	1.01	0.01	0.00	0.01
17.30	0.42	0.41	1.02	0.01	0.00	0.01
17.35	0.43	0.41	1.04	0.01	0.00	0.01
17.40	0.43	0.41	1.05	0.01	0.00	0.01
17.45	0.44	0.41	1.07	0.01	0.00	0.01
17.50	0.45	0.41	1.08	0.01	0.00	0.01
17.55	0.46	0.42	1.10	0.01	0.00	0.01

17.60	0.46	0.42	1.12	0.00	0.00	0.00
17.65	0.47	0.42	1.13	0.00	0.00	0.00
17.70	0.48	0.42	1.15	0.00	0.00	0.00
17.75	0.49	0.42	1.17	0.00	0.00	0.00
17.80	0.50	0.42	1.19	0.00	0.00	0.00
17.85	0.51	0.42	1.22	0.00	0.00	0.00
17.90	0.52	0.42	1.24	0.00	0.00	0.00
17.95	0.53	0.42	1.27	0.00	0.00	0.00
18.00	0.55	0.42	1.30	0.00	0.00	0.00
18.05	0.56	0.42	1.34	0.00	0.00	0.00
18.10	0.58	0.42	1.38	0.00	0.00	0.00
18.15	0.62	0.42	1.46	0.00	0.00	0.00
18.20	0.67	0.42	1.59	0.00	0.00	0.00
18.25	0.73	0.42	1.71	0.00	0.00	0.00
18.30	0.73	0.42	1.71	0.00	0.00	0.00
18.35	0.73	0.42	1.71	0.00	0.00	0.00
18.40	0.73	0.43	1.71	0.00	0.00	0.00
18.45	0.73	0.43	1.71	0.00	0.00	0.00
18.50	0.73	0.43	1.70	0.00	0.00	0.00
18.55	0.73	0.43	1.70	0.00	0.00	0.00
18.60	0.73	0.43	1.70	0.00	0.00	0.00
18.65	0.73	0.43	1.70	0.00	0.00	0.00
18.70	0.73	0.43	1.69	0.00	0.00	0.00
18.75	0.73	0.43	1.69	0.00	0.00	0.00
18.80	0.73	0.43	1.69	0.00	0.00	0.00
18.85	0.73	0.43	1.69	0.00	0.00	0.00
18.90	0.73	0.43	1.69	0.00	0.00	0.00
18.95	0.73	0.43	1.68	0.00	0.00	0.00
19.00	0.73	0.43	1.68	0.00	0.00	0.00
19.05	0.73	0.43	1.68	0.00	0.00	0.00
19.10	0.73	0.43	1.68	0.00	0.00	0.00
19.15	0.73	0.43	1.67	0.00	0.00	0.00
19.20	0.73	0.43	1.67	0.00	0.00	0.00
19.25	0.73	0.44	1.67	0.00	0.00	0.00
19.30	0.73	0.44	1.67	0.00	0.00	0.00
19.35	0.73	0.44	1.67	0.00	0.00	0.00
19.40	0.73	0.44	1.66	0.00	0.00	0.00
19.45	0.73	0.44	1.66	0.00	0.00	0.00
19.50	0.73	0.44	1.66	0.00	0.00	0.00
19.55	0.73	0.44	1.66	0.00	0.00	0.00
19.60	0.73	0.44	1.66	0.00	0.00	0.00
19.65	0.73	0.44	1.65	0.00	0.00	0.00
19.70	0.73	0.44	1.65	0.00	0.00	0.00
19.75	0.73	0.44	1.65	0.00	0.00	0.00
19.80	0.73	0.44	1.65	0.00	0.00	0.00
19.85	0.73	0.44	1.65	0.00	0.00	0.00
19.90	0.73	0.44	1.64	0.00	0.00	0.00
19.95	0.73	0.44	1.64	0.00	0.00	0.00
20.00	0.73	0.44	1.64	0.00	0.00	0.00
20.05	0.73	0.44	1.64	0.00	0.00	0.00
20.10	0.73	0.44	1.64	0.00	0.00	0.00
20.15	0.73	0.44	1.63	0.00	0.00	0.00
20.20	0.73	0.45	1.63	0.00	0.00	0.00
20.25	0.73	0.45	1.63	0.00	0.00	0.00

20.30	0.73	0.45	1.63	0.00	0.00	0.00
20.35	0.73	0.45	1.63	0.00	0.00	0.00
20.40	0.73	0.45	1.62	0.00	0.00	0.00
20.45	0.73	0.45	1.62	0.00	0.00	0.00
20.50	0.73	0.45	1.62	0.00	0.00	0.00
20.55	0.73	0.45	1.62	0.00	0.00	0.00
20.60	0.73	0.45	1.62	0.00	0.00	0.00
20.65	0.73	0.45	1.61	0.00	0.00	0.00
20.70	0.73	0.45	1.61	0.00	0.00	0.00
20.75	0.73	0.45	1.61	0.00	0.00	0.00
20.80	0.73	0.45	1.61	0.00	0.00	0.00
20.85	0.73	0.45	1.61	0.00	0.00	0.00
20.90	0.73	0.45	1.61	0.00	0.00	0.00
20.95	0.73	0.45	1.60	0.00	0.00	0.00
21.00	0.73	0.45	1.60	0.00	0.00	0.00
21.05	0.73	0.45	1.60	0.00	0.00	0.00
21.10	0.73	0.45	1.60	0.00	0.00	0.00
21.15	0.73	0.46	1.60	0.00	0.00	0.00
21.20	0.73	0.46	1.60	0.00	0.00	0.00
21.25	0.73	0.46	1.59	0.00	0.00	0.00
21.30	0.73	0.46	1.59	0.00	0.00	0.00
21.35	0.73	0.46	1.59	0.00	0.00	0.00
21.40	0.73	0.46	1.59	0.00	0.00	0.00
21.45	0.73	0.46	1.59	0.00	0.00	0.00
21.50	0.73	0.46	1.58	0.00	0.00	0.00
21.55	0.73	0.46	1.58	0.00	0.00	0.00
21.60	0.73	0.46	1.58	0.00	0.00	0.00
21.65	0.73	0.46	1.58	0.00	0.00	0.00
21.70	0.73	0.46	1.58	0.00	0.00	0.00
21.75	0.73	0.46	1.58	0.00	0.00	0.00
21.80	0.73	0.46	1.57	0.00	0.00	0.00
21.85	0.73	0.46	1.57	0.00	0.00	0.00
21.90	0.73	0.46	1.57	0.00	0.00	0.00
21.95	0.73	0.46	1.57	0.00	0.00	0.00
22.00	0.73	0.46	1.57	0.00	0.00	0.00
22.05	0.73	0.46	1.57	0.00	0.00	0.00
22.10	0.73	0.46	1.57	0.00	0.00	0.00
22.15	0.73	0.46	1.56	0.00	0.00	0.00
22.20	0.73	0.47	1.56	0.00	0.00	0.00
22.25	0.73	0.47	1.56	0.00	0.00	0.00
22.30	0.73	0.47	1.56	0.00	0.00	0.00
22.35	0.73	0.47	1.56	0.00	0.00	0.00
22.40	0.73	0.47	1.56	0.00	0.00	0.00
22.45	0.73	0.47	1.55	0.00	0.00	0.00
22.50	0.73	0.47	1.55	0.00	0.00	0.00
22.55	0.73	0.47	1.55	0.00	0.00	0.00
22.60	0.73	0.47	1.55	0.00	0.00	0.00
22.65	0.73	0.47	1.55	0.00	0.00	0.00
22.70	0.73	0.47	1.55	0.00	0.00	0.00
22.75	0.73	0.47	1.55	0.00	0.00	0.00
22.80	0.73	0.47	1.54	0.00	0.00	0.00
22.85	0.73	0.47	1.54	0.00	0.00	0.00
22.90	0.73	0.47	1.54	0.00	0.00	0.00
22.95	0.73	0.47	1.54	0.00	0.00	0.00

23.00	0.73	0.47	1.54	0.00	0.00	0.00
23.05	0.73	0.47	1.54	0.00	0.00	0.00
23.10	0.73	0.47	1.54	0.00	0.00	0.00
23.15	0.73	0.47	1.53	0.00	0.00	0.00
23.20	0.73	0.47	1.53	0.00	0.00	0.00
23.25	0.73	0.47	1.53	0.00	0.00	0.00
23.30	0.73	0.48	1.53	0.00	0.00	0.00
23.35	0.73	0.48	1.53	0.00	0.00	0.00
23.40	0.73	0.48	1.53	0.00	0.00	0.00
23.45	0.73	0.48	1.53	0.00	0.00	0.00
23.50	0.73	0.48	1.52	0.00	0.00	0.00
23.55	0.73	0.48	1.52	0.00	0.00	0.00
23.60	0.73	0.48	1.52	0.00	0.00	0.00
23.65	0.73	0.48	1.52	0.00	0.00	0.00
23.70	0.73	0.48	1.52	0.00	0.00	0.00
23.75	0.73	0.48	1.52	0.00	0.00	0.00
23.80	0.73	0.48	1.52	0.00	0.00	0.00
23.85	0.73	0.48	1.51	0.00	0.00	0.00
23.90	0.73	0.48	1.51	0.00	0.00	0.00
23.95	0.73	0.48	1.51	0.00	0.00	0.00
24.00	0.73	0.48	1.51	0.00	0.00	0.00
24.05	0.73	0.48	1.51	0.00	0.00	0.00
24.10	0.73	0.48	1.51	0.00	0.00	0.00
24.15	0.73	0.48	1.51	0.00	0.00	0.00
24.20	0.73	0.48	1.51	0.00	0.00	0.00
24.25	0.73	0.48	1.50	0.00	0.00	0.00
24.30	0.73	0.48	1.50	0.00	0.00	0.00
24.35	0.73	0.48	1.50	0.00	0.00	0.00
24.40	0.73	0.48	1.50	0.00	0.00	0.00
24.45	0.73	0.48	1.50	0.00	0.00	0.00
24.50	0.73	0.48	1.50	0.00	0.00	0.00
24.55	0.73	0.49	1.50	0.00	0.00	0.00
24.60	0.73	0.49	1.50	0.00	0.00	0.00
24.65	0.73	0.49	1.49	0.00	0.00	0.00
24.70	0.73	0.49	1.49	0.00	0.00	0.00
24.75	0.73	0.49	1.49	0.00	0.00	0.00
24.80	0.73	0.49	1.49	0.00	0.00	0.00
24.85	0.73	0.49	1.49	0.00	0.00	0.00
24.90	0.73	0.49	1.49	0.00	0.00	0.00
24.95	0.73	0.49	1.49	0.00	0.00	0.00
25.00	0.73	0.49	1.49	0.00	0.00	0.00
25.05	0.73	0.49	1.49	0.00	0.00	0.00
25.10	0.73	0.49	1.48	0.00	0.00	0.00
25.15	0.73	0.49	1.48	0.00	0.00	0.00
25.20	0.73	0.49	1.48	0.00	0.00	0.00
25.25	0.73	0.49	1.48	0.00	0.00	0.00
25.30	0.73	0.49	1.48	0.00	0.00	0.00
25.35	0.73	0.49	1.48	0.00	0.00	0.00
25.40	0.73	0.49	1.48	0.00	0.00	0.00
25.45	0.73	0.49	1.48	0.00	0.00	0.00
25.50	0.73	0.49	1.48	0.00	0.00	0.00
25.55	0.73	0.49	1.47	0.00	0.00	0.00
25.60	0.73	0.49	1.47	0.00	0.00	0.00
25.65	0.73	0.49	1.47	0.00	0.00	0.00

25.70	0.73	0.49	1.47	0.00	0.00	0.00
25.75	0.73	0.49	1.47	0.00	0.00	0.00
25.80	0.73	0.49	1.47	0.00	0.00	0.00
25.85	0.73	0.49	1.47	0.00	0.00	0.00
25.90	0.73	0.50	1.47	0.00	0.00	0.00
25.95	0.73	0.50	1.47	0.00	0.00	0.00
26.00	0.73	0.50	1.47	0.00	0.00	0.00
26.05	0.73	0.50	1.46	0.00	0.00	0.00
26.10	0.73	0.50	1.46	0.00	0.00	0.00
26.15	0.73	0.50	1.46	0.00	0.00	0.00
26.20	0.73	0.50	1.46	0.00	0.00	0.00
26.25	0.73	0.50	1.46	0.00	0.00	0.00
26.30	0.73	0.50	1.46	0.00	0.00	0.00
26.35	0.73	0.50	1.46	0.00	0.00	0.00
26.40	0.73	0.50	1.46	0.00	0.00	0.00
26.45	0.73	0.50	1.46	0.00	0.00	0.00
26.50	0.73	0.50	1.46	0.00	0.00	0.00
26.55	0.73	0.50	1.45	0.00	0.00	0.00
26.60	0.73	0.50	1.45	0.00	0.00	0.00
26.65	0.73	0.50	1.45	0.00	0.00	0.00
26.70	0.73	0.50	1.45	0.00	0.00	0.00
26.75	0.73	0.50	1.45	0.00	0.00	0.00
26.80	0.73	0.50	1.45	0.00	0.00	0.00
26.85	0.73	0.50	1.45	0.00	0.00	0.00
26.90	0.73	0.50	1.45	0.00	0.00	0.00
26.95	0.73	0.50	1.45	0.00	0.00	0.00
27.00	0.73	0.50	1.45	0.00	0.00	0.00
27.05	0.73	0.50	1.44	0.00	0.00	0.00
27.10	0.73	0.50	1.44	0.00	0.00	0.00
27.15	0.73	0.50	1.44	0.00	0.00	0.00
27.20	0.73	0.50	1.44	0.00	0.00	0.00
27.25	0.73	0.50	1.44	0.00	0.00	0.00
27.30	0.73	0.50	1.44	0.00	0.00	0.00
27.35	0.73	0.50	1.44	0.00	0.00	0.00
27.40	0.73	0.51	1.44	0.00	0.00	0.00
27.45	0.73	0.51	1.44	0.00	0.00	0.00
27.50	0.73	0.51	1.44	0.00	0.00	0.00
27.55	0.73	0.51	1.44	0.00	0.00	0.00
27.60	0.73	0.51	1.43	0.00	0.00	0.00
27.65	0.73	0.51	1.43	0.00	0.00	0.00
27.70	0.73	0.51	1.43	0.00	0.00	0.00
27.75	0.73	0.51	1.43	0.00	0.00	0.00
27.80	0.73	0.51	1.43	0.00	0.00	0.00
27.85	0.73	0.51	1.43	0.00	0.00	0.00
27.90	0.73	0.51	1.43	0.00	0.00	0.00
27.95	0.73	0.51	1.43	0.00	0.00	0.00
28.00	0.73	0.51	1.43	0.00	0.00	0.00
28.05	0.73	0.51	1.43	0.00	0.00	0.00
28.10	0.73	0.51	1.43	0.00	0.00	0.00
28.15	0.73	0.51	1.42	0.00	0.00	0.00
28.20	0.73	0.51	1.42	0.00	0.00	0.00
28.25	0.73	0.51	1.42	0.00	0.00	0.00
28.30	0.73	0.51	1.42	0.00	0.00	0.00
28.35	0.73	0.51	1.42	0.00	0.00	0.00

28.40	0.73	0.51	1.42	0.00	0.00	0.00
28.45	0.73	0.51	1.42	0.00	0.00	0.00
28.50	0.73	0.51	1.42	0.00	0.00	0.00
28.55	0.73	0.51	1.42	0.00	0.00	0.00
28.60	0.73	0.51	1.42	0.00	0.00	0.00
28.65	0.73	0.51	1.42	0.00	0.00	0.00
28.70	0.73	0.51	1.42	0.00	0.00	0.00
28.75	0.73	0.51	1.41	0.00	0.00	0.00
28.80	0.73	0.51	1.41	0.00	0.00	0.00
28.85	0.73	0.51	1.41	0.00	0.00	0.00
28.90	0.73	0.51	1.41	0.00	0.00	0.00
28.95	0.73	0.51	1.41	0.00	0.00	0.00
29.00	0.73	0.52	1.41	0.00	0.00	0.00
29.05	0.73	0.52	1.41	0.00	0.00	0.00
29.10	0.73	0.52	1.41	0.00	0.00	0.00
29.15	0.73	0.52	1.41	0.00	0.00	0.00
29.20	0.73	0.52	1.41	0.00	0.00	0.00
29.25	0.73	0.52	1.41	0.00	0.00	0.00
29.30	0.73	0.52	1.41	0.00	0.00	0.00
29.35	0.73	0.52	1.40	0.00	0.00	0.00
29.40	0.73	0.52	1.40	0.00	0.00	0.00
29.45	0.73	0.52	1.40	0.00	0.00	0.00
29.50	0.73	0.52	1.40	0.00	0.00	0.00
29.55	0.73	0.52	1.40	0.00	0.00	0.00
29.60	0.73	0.52	1.40	0.00	0.00	0.00
29.65	0.73	0.52	1.40	0.00	0.00	0.00
29.70	0.73	0.52	1.40	0.00	0.00	0.00
29.75	0.73	0.52	1.40	0.00	0.00	0.00
29.80	0.73	0.52	1.40	0.00	0.00	0.00
29.85	0.73	0.52	1.40	0.00	0.00	0.00
29.90	0.73	0.52	1.40	0.00	0.00	0.00
29.95	0.73	0.52	1.40	0.00	0.00	0.00
30.00	0.73	0.52	1.39	0.00	0.00	0.00
30.05	0.73	0.52	1.39	0.00	0.00	0.00
30.10	0.73	0.52	1.39	0.00	0.00	0.00
30.15	0.73	0.52	1.39	0.00	0.00	0.00
30.20	0.73	0.52	1.39	0.00	0.00	0.00
30.25	0.73	0.52	1.39	0.00	0.00	0.00
30.30	0.73	0.52	1.39	0.00	0.00	0.00
30.35	0.73	0.52	1.39	0.00	0.00	0.00
30.40	0.73	0.52	1.39	0.00	0.00	0.00
30.45	0.73	0.52	1.39	0.00	0.00	0.00
30.50	0.73	0.52	1.39	0.00	0.00	0.00
30.55	0.73	0.52	1.39	0.00	0.00	0.00
30.60	0.73	0.52	1.39	0.00	0.00	0.00
30.65	0.73	0.52	1.39	0.00	0.00	0.00
30.70	0.73	0.52	1.39	0.00	0.00	0.00
30.75	0.73	0.52	1.39	0.00	0.00	0.00
30.80	0.73	0.52	1.39	0.00	0.00	0.00
30.85	0.73	0.52	1.39	0.00	0.00	0.00
30.90	0.73	0.52	1.39	0.00	0.00	0.00
30.95	0.73	0.52	1.39	0.00	0.00	0.00
31.00	0.73	0.52	1.39	0.00	0.00	0.00
31.05	0.73	0.52	1.39	0.00	0.00	0.00

31.10	0.73	0.52	1.39	0.00	0.00	0.00
31.15	0.73	0.52	1.39	0.00	0.00	0.00
31.20	0.73	0.52	1.39	0.00	0.00	0.00
31.25	0.73	0.52	1.39	0.00	0.00	0.00
31.30	0.73	0.52	1.39	0.00	0.00	0.00
31.35	0.73	0.52	1.39	0.00	0.00	0.00
31.40	0.73	0.52	1.39	0.00	0.00	0.00
31.45	0.73	0.52	1.39	0.00	0.00	0.00
31.50	0.73	0.52	1.39	0.00	0.00	0.00
31.55	0.73	0.52	1.39	0.00	0.00	0.00
31.60	0.73	0.52	1.39	0.00	0.00	0.00
31.65	0.73	0.52	1.39	0.00	0.00	0.00
31.70	0.73	0.52	1.38	0.00	0.00	0.00
31.75	0.73	0.52	1.38	0.00	0.00	0.00
31.80	0.73	0.52	1.38	0.00	0.00	0.00
31.85	0.73	0.53	1.38	0.00	0.00	0.00
31.90	0.73	0.53	1.38	0.00	0.00	0.00
31.95	0.73	0.53	1.38	0.00	0.00	0.00
32.00	0.73	0.53	1.38	0.00	0.00	0.00
32.05	0.73	0.53	1.38	0.00	0.00	0.00
32.10	0.73	0.53	1.38	0.00	0.00	0.00
32.15	0.73	0.53	1.38	0.00	0.00	0.00
32.20	0.73	0.53	1.38	0.00	0.00	0.00
32.25	0.73	0.53	1.38	0.00	0.00	0.00
32.30	0.73	0.53	1.38	0.00	0.00	0.00
32.35	0.73	0.53	1.38	0.00	0.00	0.00
32.40	0.73	0.53	1.38	0.00	0.00	0.00
32.45	0.73	0.53	1.38	0.00	0.00	0.00
32.50	0.73	0.53	1.38	0.00	0.00	0.00
32.55	0.73	0.53	1.38	0.00	0.00	0.00
32.60	0.73	0.53	1.38	0.00	0.00	0.00
32.65	0.73	0.53	1.38	0.00	0.00	0.00
32.70	0.73	0.53	1.38	0.00	0.00	0.00
32.75	0.73	0.53	1.38	0.00	0.00	0.00
32.80	0.73	0.53	1.38	0.00	0.00	0.00
32.85	0.73	0.53	1.38	0.00	0.00	0.00
32.90	0.73	0.53	1.38	0.00	0.00	0.00
32.95	0.73	0.53	1.38	0.00	0.00	0.00
33.00	0.73	0.53	1.38	0.00	0.00	0.00
33.05	0.73	0.53	1.38	0.00	0.00	0.00
33.10	0.73	0.53	1.38	0.00	0.00	0.00
33.15	0.73	0.53	1.38	0.00	0.00	0.00
33.20	0.73	0.53	1.38	0.00	0.00	0.00
33.25	0.73	0.53	1.38	0.00	0.00	0.00
33.30	0.73	0.53	1.38	0.00	0.00	0.00
33.35	0.73	0.53	1.38	0.00	0.00	0.00
33.40	0.73	0.53	1.38	0.00	0.00	0.00
33.45	0.73	0.53	1.38	0.00	0.00	0.00
33.50	0.73	0.53	1.38	0.00	0.00	0.00
33.55	0.73	0.53	1.38	0.00	0.00	0.00
33.60	0.73	0.53	1.38	0.00	0.00	0.00
33.65	0.73	0.53	1.38	0.00	0.00	0.00
33.70	0.73	0.53	1.38	0.00	0.00	0.00
33.75	0.73	0.53	1.38	0.00	0.00	0.00

33.80	0.73	0.53	1.38	0.00	0.00	0.00
33.85	0.73	0.53	1.38	0.00	0.00	0.00
33.90	0.73	0.53	1.38	0.00	0.00	0.00
33.95	0.73	0.53	1.38	0.00	0.00	0.00
34.00	0.73	0.53	1.38	0.00	0.00	0.00
34.05	0.73	0.53	1.38	0.00	0.00	0.00
34.10	0.73	0.53	1.38	0.00	0.00	0.00
34.15	0.73	0.53	1.38	0.00	0.00	0.00
34.20	0.73	0.53	1.37	0.00	0.00	0.00
34.25	0.73	0.53	1.37	0.00	0.00	0.00
34.30	0.73	0.53	1.37	0.00	0.00	0.00
34.35	0.73	0.53	1.37	0.00	0.00	0.00
34.40	0.73	0.53	1.37	0.00	0.00	0.00
34.45	0.73	0.53	1.37	0.00	0.00	0.00
34.50	0.73	0.53	1.37	0.00	0.00	0.00
34.55	0.73	0.53	1.37	0.00	0.00	0.00
34.60	0.73	0.53	1.37	0.00	0.00	0.00
34.65	0.73	0.53	1.37	0.00	0.00	0.00
34.70	0.73	0.53	1.37	0.00	0.00	0.00
34.75	0.73	0.53	1.37	0.00	0.00	0.00
34.80	0.73	0.53	1.37	0.00	0.00	0.00
34.85	0.73	0.53	1.37	0.00	0.00	0.00
34.90	0.73	0.53	1.37	0.00	0.00	0.00
34.95	0.73	0.53	1.37	0.00	0.00	0.00
35.00	0.73	0.53	1.37	0.00	0.00	0.00
35.05	0.73	0.53	1.37	0.00	0.00	0.00
35.10	0.73	0.53	1.37	0.00	0.00	0.00
35.15	0.73	0.53	1.37	0.00	0.00	0.00
35.20	0.73	0.53	1.37	0.00	0.00	0.00
35.25	0.73	0.53	1.37	0.00	0.00	0.00
35.30	0.73	0.53	1.37	0.00	0.00	0.00
35.35	0.73	0.53	1.37	0.00	0.00	0.00
35.40	0.73	0.53	1.37	0.00	0.00	0.00
35.45	0.73	0.53	1.37	0.00	0.00	0.00
35.50	0.73	0.53	1.37	0.00	0.00	0.00
35.55	0.73	0.53	1.37	0.00	0.00	0.00
35.60	0.73	0.53	1.37	0.00	0.00	0.00
35.65	0.73	0.53	1.37	0.00	0.00	0.00
35.70	0.73	0.53	1.37	0.00	0.00	0.00
35.75	0.73	0.53	1.37	0.00	0.00	0.00
35.80	0.73	0.53	1.37	0.00	0.00	0.00
35.85	0.73	0.53	1.37	0.00	0.00	0.00
35.90	0.73	0.53	1.37	0.00	0.00	0.00
35.95	0.73	0.53	1.37	0.00	0.00	0.00
36.00	0.73	0.53	1.37	0.00	0.00	0.00
36.05	0.73	0.53	1.37	0.00	0.00	0.00
36.10	0.73	0.53	1.37	0.00	0.00	0.00
36.15	0.73	0.53	1.37	0.00	0.00	0.00
36.20	0.73	0.53	1.37	0.00	0.00	0.00
36.25	0.73	0.53	1.37	0.00	0.00	0.00
36.30	0.73	0.53	1.37	0.00	0.00	0.00
36.35	0.73	0.53	1.37	0.00	0.00	0.00
36.40	0.73	0.53	1.37	0.00	0.00	0.00
36.45	0.73	0.53	1.37	0.00	0.00	0.00

36.50	0.73	0.53	1.37	0.00	0.00	0.00
36.55	0.73	0.53	1.37	0.00	0.00	0.00
36.60	0.73	0.53	1.37	0.00	0.00	0.00
36.65	0.73	0.53	1.37	0.00	0.00	0.00
36.70	0.73	0.53	1.37	0.00	0.00	0.00
36.75	0.73	0.53	1.37	0.00	0.00	0.00
36.80	0.73	0.53	1.37	0.00	0.00	0.00
36.85	0.73	0.53	1.37	0.00	0.00	0.00
36.90	0.73	0.53	1.37	0.00	0.00	0.00
36.95	0.73	0.53	1.37	0.00	0.00	0.00
37.00	0.73	0.53	1.37	0.00	0.00	0.00
37.05	0.73	0.53	1.37	0.00	0.00	0.00
37.10	0.73	0.53	1.37	0.00	0.00	0.00
37.15	0.73	0.53	1.37	0.00	0.00	0.00
37.20	0.73	0.53	1.37	0.00	0.00	0.00
37.25	0.73	0.53	1.37	0.00	0.00	0.00
37.30	0.73	0.53	1.37	0.00	0.00	0.00
37.35	0.73	0.53	1.37	0.00	0.00	0.00
37.40	0.73	0.53	1.37	0.00	0.00	0.00
37.45	0.73	0.53	1.37	0.00	0.00	0.00
37.50	0.73	0.53	1.37	0.00	0.00	0.00
37.55	0.73	0.53	1.37	0.00	0.00	0.00
37.60	0.73	0.53	1.37	0.00	0.00	0.00
37.65	0.73	0.53	1.37	0.00	0.00	0.00
37.70	0.73	0.53	1.37	0.00	0.00	0.00
37.75	0.73	0.53	1.37	0.00	0.00	0.00
37.80	0.73	0.53	1.37	0.00	0.00	0.00
37.85	0.73	0.53	1.37	0.00	0.00	0.00
37.90	0.73	0.53	1.37	0.00	0.00	0.00
37.95	0.73	0.53	1.37	0.00	0.00	0.00
38.00	0.73	0.53	1.37	0.00	0.00	0.00
38.05	0.73	0.53	1.37	0.00	0.00	0.00
38.10	0.73	0.53	1.37	0.00	0.00	0.00
38.15	0.73	0.53	1.37	0.00	0.00	0.00
38.20	0.73	0.53	1.37	0.00	0.00	0.00
38.25	0.73	0.53	1.37	0.00	0.00	0.00
38.30	0.73	0.53	1.37	0.00	0.00	0.00
38.35	0.73	0.53	1.37	0.00	0.00	0.00
38.40	0.73	0.53	1.37	0.00	0.00	0.00
38.45	0.73	0.53	1.37	0.00	0.00	0.00
38.50	0.73	0.53	1.37	0.00	0.00	0.00
38.55	0.73	0.53	1.37	0.00	0.00	0.00
38.60	0.73	0.53	1.37	0.00	0.00	0.00
38.65	0.73	0.53	1.37	0.00	0.00	0.00
38.70	0.73	0.53	1.37	0.00	0.00	0.00
38.75	0.73	0.53	1.37	0.00	0.00	0.00
38.80	0.73	0.53	1.37	0.00	0.00	0.00
38.85	0.73	0.53	1.37	0.00	0.00	0.00
38.90	0.73	0.53	1.37	0.00	0.00	0.00
38.95	0.73	0.53	1.37	0.00	0.00	0.00
39.00	0.73	0.53	1.37	0.00	0.00	0.00
39.05	0.73	0.53	1.37	0.00	0.00	0.00
39.10	0.73	0.53	1.37	0.00	0.00	0.00
39.15	0.73	0.53	1.37	0.00	0.00	0.00

39.20	0.73	0.53	1.37	0.00	0.00	0.00
39.25	0.73	0.53	1.37	0.00	0.00	0.00
39.30	0.73	0.53	1.37	0.00	0.00	0.00
39.35	0.73	0.53	1.37	0.00	0.00	0.00
39.40	0.73	0.53	1.37	0.00	0.00	0.00
39.45	0.73	0.53	1.37	0.00	0.00	0.00
39.50	0.73	0.53	1.37	0.00	0.00	0.00
39.55	0.73	0.53	1.37	0.00	0.00	0.00
39.60	0.73	0.53	1.37	0.00	0.00	0.00
39.65	0.73	0.53	1.37	0.00	0.00	0.00
39.70	0.73	0.53	1.37	0.00	0.00	0.00
39.75	0.73	0.53	1.37	0.00	0.00	0.00
39.80	0.73	0.53	1.37	0.00	0.00	0.00
39.85	0.73	0.53	1.37	0.00	0.00	0.00
39.90	0.73	0.53	1.37	0.00	0.00	0.00
39.95	0.73	0.53	1.37	0.00	0.00	0.00
40.00	0.73	0.53	1.37	0.00	0.00	0.00
40.05	0.73	0.53	1.37	0.00	0.00	0.00
40.10	0.73	0.53	1.37	0.00	0.00	0.00
40.15	0.73	0.53	1.37	0.00	0.00	0.00
40.20	0.73	0.53	1.37	0.00	0.00	0.00
40.25	0.73	0.53	1.37	0.00	0.00	0.00
40.30	0.73	0.53	1.37	0.00	0.00	0.00
40.35	0.73	0.53	1.37	0.00	0.00	0.00
40.40	0.73	0.53	1.37	0.00	0.00	0.00
40.45	0.73	0.53	1.37	0.00	0.00	0.00
40.50	0.73	0.53	1.37	0.00	0.00	0.00
40.55	0.73	0.53	1.37	0.00	0.00	0.00
40.60	0.73	0.53	1.37	0.00	0.00	0.00
40.65	0.73	0.53	1.37	0.00	0.00	0.00
40.70	0.73	0.53	1.37	0.00	0.00	0.00
40.75	0.73	0.53	1.37	0.00	0.00	0.00
40.80	0.73	0.53	1.37	0.00	0.00	0.00
40.85	0.73	0.53	1.37	0.00	0.00	0.00
40.90	0.73	0.53	1.37	0.00	0.00	0.00
40.95	0.73	0.53	1.37	0.00	0.00	0.00
41.00	0.73	0.53	1.37	0.00	0.00	0.00
41.05	0.73	0.53	1.37	0.00	0.00	0.00
41.10	0.73	0.53	1.37	0.00	0.00	0.00
41.15	0.73	0.53	1.37	0.00	0.00	0.00
41.20	0.73	0.53	1.37	0.00	0.00	0.00
41.25	0.73	0.53	1.37	0.00	0.00	0.00
41.30	0.73	0.53	1.37	0.00	0.00	0.00
41.35	0.73	0.53	1.37	0.00	0.00	0.00
41.40	0.73	0.53	1.37	0.00	0.00	0.00
41.45	0.73	0.53	1.37	0.00	0.00	0.00
41.50	0.73	0.53	1.37	0.00	0.00	0.00
41.55	0.73	0.53	1.37	0.00	0.00	0.00
41.60	0.73	0.53	1.37	0.00	0.00	0.00
41.65	0.73	0.53	1.37	0.00	0.00	0.00
41.70	0.73	0.53	1.37	0.00	0.00	0.00
41.75	0.73	0.53	1.37	0.00	0.00	0.00
41.80	0.73	0.53	1.37	0.00	0.00	0.00
41.85	0.73	0.53	1.37	0.00	0.00	0.00

41.90	0.73	0.53	1.38	0.00	0.00	0.00
41.95	0.73	0.53	1.38	0.00	0.00	0.00
42.00	0.73	0.53	1.38	0.00	0.00	0.00
42.05	0.73	0.53	1.38	0.00	0.00	0.00
42.10	0.73	0.53	1.38	0.00	0.00	0.00
42.15	0.73	0.53	1.38	0.00	0.00	0.00
42.20	0.73	0.53	1.38	0.00	0.00	0.00
42.25	0.73	0.53	1.38	0.00	0.00	0.00
42.30	0.73	0.53	1.38	0.00	0.00	0.00
42.35	0.73	0.53	1.38	0.00	0.00	0.00
42.40	0.73	0.53	1.38	0.00	0.00	0.00
42.45	0.73	0.53	1.38	0.00	0.00	0.00
42.50	0.73	0.53	1.38	0.00	0.00	0.00
42.55	0.73	0.53	1.38	0.00	0.00	0.00
42.60	0.73	0.53	1.38	0.00	0.00	0.00
42.65	0.73	0.53	1.38	0.00	0.00	0.00
42.70	0.73	0.53	1.38	0.00	0.00	0.00
42.75	0.73	0.53	1.38	0.00	0.00	0.00
42.80	0.73	0.53	1.38	0.00	0.00	0.00
42.85	0.73	0.53	1.38	0.00	0.00	0.00
42.90	0.73	0.53	1.38	0.00	0.00	0.00
42.95	0.73	0.53	1.38	0.00	0.00	0.00
43.00	0.73	0.53	1.38	0.00	0.00	0.00
43.05	0.73	0.53	1.38	0.00	0.00	0.00
43.10	0.73	0.53	1.38	0.00	0.00	0.00
43.15	0.73	0.53	1.38	0.00	0.00	0.00
43.20	0.73	0.53	1.38	0.00	0.00	0.00
43.25	0.73	0.53	1.38	0.00	0.00	0.00
43.30	0.73	0.53	1.38	0.00	0.00	0.00
43.35	0.73	0.53	1.38	0.00	0.00	0.00
43.40	0.73	0.53	1.38	0.00	0.00	0.00
43.45	0.73	0.53	1.38	0.00	0.00	0.00
43.50	0.73	0.53	1.38	0.00	0.00	0.00
43.55	0.73	0.53	1.38	0.00	0.00	0.00
43.60	0.73	0.53	1.38	0.00	0.00	0.00
43.65	0.73	0.53	1.38	0.00	0.00	0.00
43.70	0.73	0.53	1.38	0.00	0.00	0.00
43.75	0.73	0.53	1.38	0.00	0.00	0.00
43.80	0.73	0.53	1.38	0.00	0.00	0.00
43.85	0.73	0.53	1.38	0.00	0.00	0.00
43.90	0.73	0.53	1.38	0.00	0.00	0.00
43.95	0.73	0.53	1.38	0.00	0.00	0.00
44.00	0.73	0.53	1.38	0.00	0.00	0.00
44.05	0.73	0.53	1.38	0.00	0.00	0.00
44.10	0.73	0.53	1.38	0.00	0.00	0.00
44.15	0.73	0.52	1.38	0.00	0.00	0.00
44.20	0.73	0.52	1.38	0.00	0.00	0.00
44.25	0.73	0.52	1.38	0.00	0.00	0.00
44.30	0.73	0.52	1.39	0.00	0.00	0.00
44.35	0.73	0.52	1.39	0.00	0.00	0.00
44.40	0.73	0.52	1.39	0.00	0.00	0.00
44.45	0.73	0.52	1.39	0.00	0.00	0.00
44.50	0.73	0.52	1.39	0.00	0.00	0.00
44.55	0.73	0.52	1.39	0.00	0.00	0.00

44.60	0.73	0.52	1.39	0.00	0.00	0.00
44.65	0.73	0.52	1.39	0.00	0.00	0.00
44.70	0.73	0.52	1.39	0.00	0.00	0.00
44.75	0.73	0.52	1.39	0.00	0.00	0.00
44.80	0.73	0.52	1.39	0.00	0.00	0.00
44.85	0.73	0.52	1.39	0.00	0.00	0.00
44.90	0.73	0.52	1.39	0.00	0.00	0.00
44.95	0.73	0.52	1.39	0.00	0.00	0.00
45.00	0.73	0.52	1.39	0.00	0.00	0.00
45.05	0.73	0.52	1.39	0.00	0.00	0.00
45.10	0.73	0.52	1.39	0.00	0.00	0.00
45.15	0.73	0.52	1.39	0.00	0.00	0.00
45.20	0.73	0.52	1.39	0.00	0.00	0.00
45.25	0.73	0.52	1.39	0.00	0.00	0.00
45.30	0.73	0.52	1.39	0.00	0.00	0.00
45.35	0.73	0.52	1.39	0.00	0.00	0.00
45.40	0.73	0.52	1.39	0.00	0.00	0.00
45.45	0.73	0.52	1.39	0.00	0.00	0.00
45.50	0.73	0.52	1.39	0.00	0.00	0.00
45.55	0.73	0.52	1.39	0.00	0.00	0.00
45.60	0.73	0.52	1.39	0.00	0.00	0.00
45.65	0.73	0.52	1.39	0.00	0.00	0.00
45.70	0.73	0.52	1.39	0.00	0.00	0.00
45.75	0.73	0.52	1.39	0.00	0.00	0.00
45.80	0.73	0.52	1.39	0.00	0.00	0.00
45.85	0.73	0.52	1.39	0.00	0.00	0.00
45.90	0.73	0.52	1.40	0.00	0.00	0.00
45.95	0.73	0.52	1.40	0.00	0.00	0.00
46.00	0.73	0.52	1.40	0.00	0.00	0.00
46.05	0.73	0.52	1.40	0.00	0.00	0.00
46.10	0.73	0.52	1.40	0.00	0.00	0.00
46.15	0.73	0.52	1.40	0.00	0.00	0.00
46.20	0.73	0.52	1.40	0.00	0.00	0.00
46.25	0.73	0.52	1.40	0.00	0.00	0.00
46.30	0.73	0.52	1.40	0.00	0.00	0.00
46.35	0.73	0.52	1.40	0.00	0.00	0.00
46.40	0.73	0.52	1.40	0.00	0.00	0.00
46.45	0.73	0.52	1.40	0.00	0.00	0.00
46.50	0.73	0.52	1.40	0.00	0.00	0.00
46.55	0.73	0.52	1.40	0.00	0.00	0.00
46.60	0.73	0.52	1.40	0.00	0.00	0.00
46.65	0.73	0.52	1.40	0.00	0.00	0.00
46.70	0.73	0.52	1.40	0.00	0.00	0.00
46.75	0.73	0.52	1.40	0.00	0.00	0.00
46.80	0.73	0.52	1.40	0.00	0.00	0.00
46.85	0.73	0.52	1.40	0.00	0.00	0.00
46.90	0.73	0.52	1.40	0.00	0.00	0.00
46.95	0.73	0.52	1.41	0.00	0.00	0.00
47.00	0.73	0.52	1.41	0.00	0.00	0.00
47.05	0.73	0.52	1.41	0.00	0.00	0.00
47.10	0.73	0.52	1.41	0.00	0.00	0.00
47.15	0.73	0.52	1.41	0.00	0.00	0.00
47.20	0.73	0.52	1.41	0.00	0.00	0.00
47.25	0.73	0.52	1.41	0.00	0.00	0.00

47.30	0.73	0.52	1.41	0.00	0.00	0.00
47.35	0.73	0.52	1.41	0.00	0.00	0.00
47.40	0.73	0.52	1.41	0.00	0.00	0.00
47.45	0.73	0.52	1.41	0.00	0.00	0.00
47.50	0.73	0.52	1.41	0.00	0.00	0.00
47.55	0.73	0.52	1.41	0.00	0.00	0.00
47.60	0.73	0.52	1.41	0.00	0.00	0.00
47.65	0.73	0.52	1.41	0.00	0.00	0.00
47.70	0.73	0.52	1.41	0.00	0.00	0.00
47.75	0.73	0.52	1.41	0.00	0.00	0.00
47.80	0.73	0.52	1.41	0.00	0.00	0.00
47.85	0.73	0.52	1.41	0.00	0.00	0.00
47.90	0.73	0.52	1.41	0.00	0.00	0.00
47.95	0.73	0.52	1.41	0.00	0.00	0.00
48.00	0.73	0.52	1.42	0.00	0.00	0.00
48.05	0.73	0.51	1.42	0.00	0.00	0.00
48.10	0.73	0.51	1.42	0.00	0.00	0.00
48.15	0.73	0.51	1.42	0.00	0.00	0.00
48.20	0.73	0.51	1.42	0.00	0.00	0.00
48.25	0.73	0.51	1.42	0.00	0.00	0.00
48.30	0.73	0.51	1.42	0.00	0.00	0.00
48.35	0.73	0.51	1.42	0.00	0.00	0.00
48.40	0.73	0.51	1.42	0.00	0.00	0.00
48.45	0.73	0.51	1.42	0.00	0.00	0.00
48.50	0.73	0.51	1.42	0.00	0.00	0.00
48.55	0.73	0.51	1.42	0.00	0.00	0.00
48.60	0.73	0.51	1.42	0.00	0.00	0.00
48.65	0.73	0.51	1.42	0.00	0.00	0.00
48.70	0.73	0.51	1.42	0.00	0.00	0.00
48.75	0.73	0.51	1.42	0.00	0.00	0.00
48.80	0.73	0.51	1.42	0.00	0.00	0.00
48.85	0.73	0.51	1.42	0.00	0.00	0.00
48.90	0.73	0.51	1.42	0.00	0.00	0.00
48.95	0.73	0.51	1.42	0.00	0.00	0.00
49.00	0.73	0.51	1.42	0.00	0.00	0.00
49.05	0.73	0.51	1.42	0.00	0.00	0.00
49.10	0.73	0.51	1.42	0.00	0.00	0.00
49.15	0.73	0.51	1.42	0.00	0.00	0.00
49.20	0.73	0.51	1.42	0.00	0.00	0.00
49.25	0.73	0.51	1.42	0.00	0.00	0.00
49.30	0.73	0.51	1.42	0.00	0.00	0.00
49.35	0.73	0.51	1.42	0.00	0.00	0.00
49.40	0.73	0.51	1.42	0.00	0.00	0.00
49.45	0.73	0.51	1.42	0.00	0.00	0.00
49.50	0.73	0.51	1.42	0.00	0.00	0.00
49.55	0.73	0.51	1.42	0.00	0.00	0.00
49.60	0.73	0.51	1.42	0.00	0.00	0.00
49.65	0.73	0.51	1.42	0.00	0.00	0.00
49.70	0.73	0.51	1.42	0.00	0.00	0.00
49.75	0.72	0.51	1.42	0.00	0.00	0.00
49.80	0.72	0.51	1.42	0.00	0.00	0.00
49.85	0.72	0.51	1.42	0.00	0.00	0.00
49.90	0.72	0.51	1.42	0.00	0.00	0.00
49.95	0.72	0.51	1.42	0.00	0.00	0.00

50.00	0.72	0.51	1.42	0.00	0.00	0.00
50.05	0.72	0.51	1.42	0.00	0.00	0.00
50.10	0.72	0.51	1.42	0.00	0.00	0.00
50.15	0.72	0.51	1.42	0.00	0.00	0.00
50.20	0.72	0.51	1.42	0.00	0.00	0.00
50.25	0.72	0.51	1.42	0.00	0.00	0.00
50.30	0.72	0.51	1.43	0.00	0.00	0.00
50.35	0.72	0.51	1.43	0.00	0.00	0.00
50.40	0.72	0.51	1.43	0.00	0.00	0.00
50.45	0.72	0.51	1.43	0.00	0.00	0.00
50.50	0.72	0.51	1.43	0.00	0.00	0.00
50.55	0.72	0.51	1.43	0.00	0.00	0.00
50.60	0.72	0.51	1.43	0.00	0.00	0.00
50.65	0.72	0.51	1.43	0.00	0.00	0.00
50.70	0.72	0.51	1.43	0.00	0.00	0.00
50.75	0.72	0.51	1.43	0.00	0.00	0.00
50.80	0.72	0.51	1.43	0.00	0.00	0.00
50.85	0.72	0.51	1.43	0.00	0.00	0.00
50.90	0.72	0.51	1.43	0.00	0.00	0.00
50.95	0.72	0.51	1.43	0.00	0.00	0.00
51.00	0.72	0.51	1.43	0.00	0.00	0.00

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* F.S.<1, Liquefaction Potential Zone
(F.S. is limited to 5, CRR is limited to 2, CSR is limited to 2)

Units: Welcome to LiquefyPro!

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1 atm (atmosphere) = 1 tsf (ton/ft2)
CRRm Cyclic resistance ratio from soils
CSRsf Cyclic stress ratio induced by a given earthquake (with user request factor of safety)
F.S. Factor of Safety against liquefaction, F.S.=CRRm/CSRsf
S_sat Settlement from saturated sands
S_dry Settlement from Unsaturated Sands
S_all Total Settlement from Saturated and Unsaturated Sands
NoLiq No-Liquefy Soils

Kern High School District

Geotechnical Engineering Services
Vista Continuation High School
35.357194, -119.010650 | 200 P Street, Bakersfield, CA 93304

SOILS ENGINEERING, INC.

SEI File No. 25-20342
July 3, 2025

TABLE 1

TEST LOCATION	USCS	% < # 200	CONSOLIDATION				DIRECT SHEAR		E.I.	MINIMUM RESISITIVITY	ATTERBERG LIMITS			R-VALUE @ 300 psi		MAXIMUM DENSITY	
			C_C	C_S	S.P. (psf)	HV %	C, (ksf)	F.A.			LL	PL	PI	R.V.	E.P. (psi)	MDD (pcf)	O.M.
B-1 @ 0-5'	ML	57							0								
B-1 @ 6'	ML		0.13	0.02	0	-1.4											
B-1 @ 11'	SP	4.7															
B-1 @ 21'	SP-SM	5.9															
B-1 @ 31'	SP-SM	5.5															
B-1 @ 41'	ML	87															
B-1 @ 46'	ML	86															
B-1 @ 51'	SC	46															
B-2 @ 0-5'	SM	35							0								
B-2 @ 6'	SM						0.31	35.2									
B-2 @ 11'	SP	2.7															
B-2 @ 21'	SM	14															
B-2 @ 31'	SP-SM	6.7															
B-2 @ 41'	SP-SM	9.4															
B-2 @ 46'	SM	42															
B-2 @ 51'	ML	59															
B-4 @ 6'	SM						0.34	36.7									
B-5 @ 6'	SP						0.15	35.7									
B-6 @ 0-5'	SM	32															
B-6 @ 6'	SM						0.34	34.7									
B-7 @ 6'	SM	13					0.31	31.7									
B-8 @ 0-5'	SM	35							0								
B-8 @ 6'	SP						0.12	37.5									
B-10 @ 0-5'	SM	15							0								
B-10 @ 6'	SP						0.15	35.4									
B-11 @ 0-5'	ML	61							0								
B-11 @ 6'	ML		0.26	0.02	0	-1.4											
R-1 @ 0-5'	SM	23												66			
R-2 @ 0-5'	SM	36												34	0		
R-3 @ 0-5'	SM	26												54			
R-4 @ 0-5'	SM	23												65			
R-5 @ 0-5'	SM	33												50			
R-6 @ 0-5'	SM	41												50	0.03		

CONSOLIDATION
Cc - Compression Index
Cs - Swell Index
S.P. (psf) - Swell Pressure
HV % - Heave Percentage / Collapse

E.I. - EXPANSION INDEX

ATTERBERG LIMITS
LL - Liquid Limit
PL - Plastic Limit
PI - Plasticity Index

DIRECT SHEAR
C (ksf) - Cohesion
F.A. - Friction Angle

RESISTANCE VALUE (R-VALUE)
RV - R-Value @ 300 psi
EP - Expansion Press @ 300 psi

MINIMUM RESISITIVITY - (ohm-cm)

MAXIMUM DENSITY
MDD (pcf) - Max Dry Density
O.M. - Optimum Moisture

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