

North Locust Tree Road Solar Project, PA-2500420 (C)

Initial Study – Mitigated Negative Declaration

prepared by

San Joaquin County
Community Development Department
1810 East Hazelton Avenue
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RINCON CONSULTANTS

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Initial Study

1 Project Title

North Locust Tree Road Solar Project, PA-2500420 (C)

2 Lead Agency Name and Address

San Joaquin County
Community Development Department
1810 East Hazelton Avenue
Stockton, California 95205

3 Contact Person and Phone Number

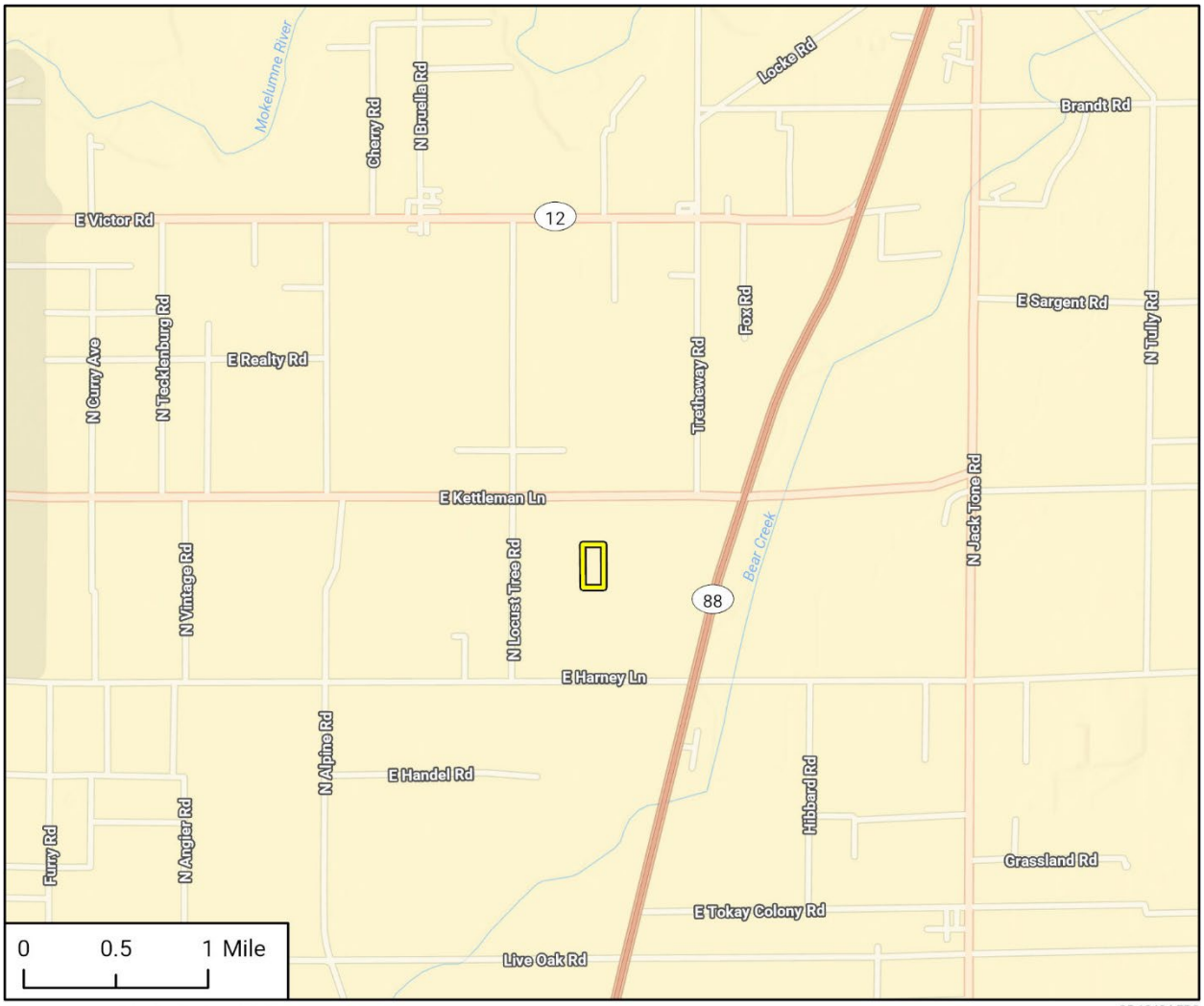
Jessica Leal, Associate Planner
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1810 East Hazelton Avenue
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209-468-3140

4 Project Location

The North Locust Tree Road Solar Project (Project) would be located on approximately 18.5 acres of an approximately 20-acre parcel (Project Site) (Assessor's Parcel Number: 063-150-16) approximately four miles east of the City of Lodi in unincorporated San Joaquin County. The Project Site is located approximately 0.38 miles east of North Locust Tree Road, south of East Kettleman Lane and north of East Harney Lane. The Project Site is landlocked and would be accessed either by an existing private right-of-way from the San Joaquin County-maintained North Locust Tree Road (Access Road A), from an unnamed rural road extending from East Kettleman Lane (Access Road B), or both. Figure 1 shows the Project's regional location and Figure 2 shows the Project Site's boundary, zoning, and the zoning and land uses of surrounding parcels as well as Access Road A and Access Road B.

The Project Site is within the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP). The SJMSCP is a comprehensive conservation planning strategy that addresses the needs of multiple plant and animal species while protecting the region's agricultural interests as the population increases over the next 50 years (2001–2051). The SJMSCP is administered by the San Joaquin Council of Governments, Inc., which is a non-profit corporation established by San Joaquin County and the cities of Escalon, Lathrop, Lodi, Manteca, Ripon, Stockton and Tracy. The SJMSCP provides coverage for impacts to biological resources pursuant to the California Environmental Quality Act (CEQA), the California Endangered Species Act (CESA), and Federal Endangered Species Act (ESA), and is approved and authorized by the California Department of Fish and Wildlife (CDFW) and United States Fish and Wildlife Service (USFWS). The Applicant has opted into the SJMSCP and therefore would implement all applicable incidental take permit minimization measures included therein. These would be included as conditions of the Conditional Use Permit (CUP).

Figure 1 Regional Location



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Map created by Rincon Consultants, Inc., 2026.

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Fig 1 Regional Location

Project Site

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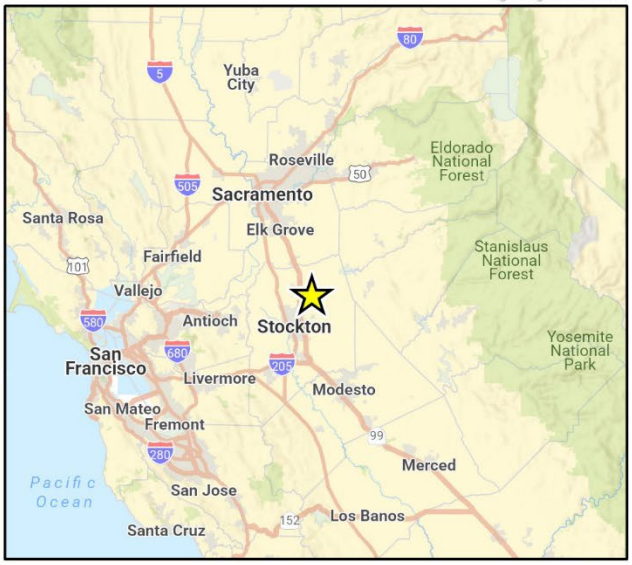
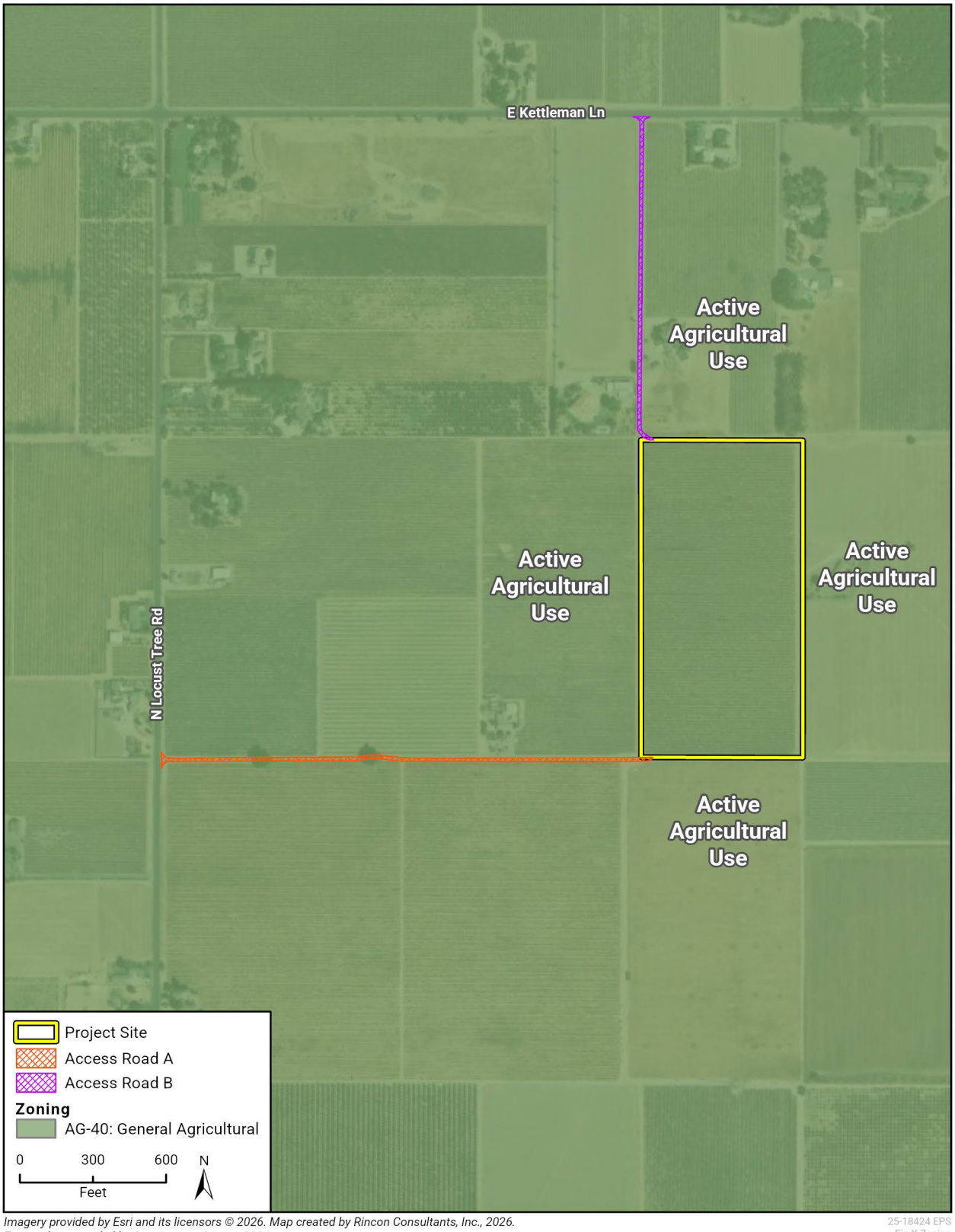


Figure 2 Project Site Location, Zoning, and Surrounding Land Uses



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Zoning data provided by San Joaquin County, 2026.

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Fig X Zoning

5 Project Applicant Name and Address

RPCA Solar 25, LLC
Brendan Conboy, Permitting Manager
44 Montgomery Street, Suite 3150
San Francisco, California 94104

6 General Plan Designation

The Project Site has a land use designation of General Agriculture (A/G).

7 Zoning

The Project Site is zoned AG-40 (General Agriculture, 40-acre minimum)

8 Description of Project

RPCA Solar 25, LLC (Applicant) proposes to construct, operate, maintain, and decommission a ground-mounted solar photovoltaic (PV) energy generation facility and associated equipment and infrastructure (North Locust Tree Road Solar Project or Project). Once constructed, the Project would generate approximately 4 megawatts (MW) of alternating current (AC) of clean, reliable solar energy by utilizing PV solar modules, inverters, and appurtenant electrical equipment to convert the sun's energy to usable power distributed to the electrical grid. The Project meets the San Joaquin County (County) definition of a Solar Energy System, which according to Chapter 9-203.020 of the San Joaquin County Code, is an allowed use on this site subject to a CUP in compliance with Chapter 9-804.

Descriptions of the major Project components are provided below.

Photovoltaic Modules and Arrays

The Project would use solar PV technology that converts the sun's light energy into electrical energy within the PV solar panels, referred to as "modules." Modules consist of photovoltaic cells (typically silicon) encapsulated between protective layers of glass and back sheet material; all housed within an aluminum frame. The PV modules installed would have an anti-reflective coating on the glass. The PV modules can be mounted together in different configurations or arrays, depending on the equipment selected and on a common support framework.

The Project would include solar modules (each measuring approximately 4 feet x 7.5 feet), which would be mounted on a steel racking system employing single-axis tracker technology that efficiently tracks the sun's movement throughout the day and maximizes the efficiency of solar collection. The rows of modules would be anchored in the ground using driven piers to a depth of approximately 12 feet. For maximum efficiency, panels are typically installed between 12 and 24 inches off the ground when at their lowest point, which would result in a height of approximately 9 feet from ground level. However, engineering constraints and/or topography may require an increase in height for some panels; therefore, it is assumed that maximum height of the panels may be approximately 10 to 15 feet to the top from ground level once installed. The arrays would be arranged in a north to south orientation with approximately 9.2 feet of spacing between each row. Because solar energy technologies continue to evolve at a rapid rate, the exact arrangement and specifications of the PV systems would be determined during the final design. The Project would be set back 30 feet from the property line, 105 feet from an adjacent existing off-site structure, and 50 feet from an existing overhead line along the northern edge of the Project Site.

Inverter Stations

The direct current (DC) output from the PV arrays would be transmitted to approximately two Skidded String Medium Voltage Stations, each containing 8 inverters. The inverter stations (rated 250 kilowatts [kW]) are where the energy is converted to AC and then transmitted to a medium-voltage transformer. The inverter stations consist of DC collection equipment and utility-scale string inverters. The number of modules connected to each inverter would depend on the specific model of modules, inverters, and their capacities, which would be determined in the final design.

Electrical Collection System

Power from the inverter stations would be transmitted to a medium voltage transformer where the power would be stepped up to 21 kilovolts (kV) and transferred to the existing Pacific Gas and Electric (PG&E) electrical distribution system that is located immediately northwest of the Project Site via an underground medium voltage electrical collection line and pole mounted infrastructure. The MV collection line would be buried in approximately 5-foot-deep trenches and would parallel the planned on-site access road, traveling west from the center of the Project Site then north paralleling the western site boundary to the northwestern extent of the Project Site. The Project would also include the construction of five new utility poles on the northwestern corner of the site. The point of interconnection (POI) to the existing PG&E electrical distribution system would be via this new on-site pole mounted infrastructure and an approximately 31-foot overhead wiretap to the existing 21 kV transmission line located immediately north of the Project Site. The line tap would occur just beyond the approximately 20-acre Project Site boundary to the north. With the exception of site access and necessary reconductoring work on existing overhead lines owned and operated by Pacific Gas & Electric (PG&E) near the Project Site, all other Project work would occur on site. Site Access improvements would require minimal ground disturbance to complete minor access improvements and the PG&E reconductoring work would not require any ground disturbance. Therefore, activities associated with minor site access improvements, PG&E reconductoring work, and establishment of the point of interconnection are analyzed as part of construction impacts throughout this document.

Ancillary Facilities

Site Access

The Project would include a new gravel access road that would be constructed in accordance with San Joaquin County's *Fire Apparatus Access Road Standard* (San Joaquin County 2015) to provide ingress and egress to the solar facility. The access road would either travel approximately 2,000 feet off-site from North Locust Tree Road east to the Project Site (Access Road A as included in Figure 2), where it would provide access along the western boundary of the Project Site and to the center of the Project Site or access would be provided using East Kettleman Lane and an unnamed rural road to the north of the Project Site (Access Road B as included in Figure 2), or both. There would be a locked gate at the entrance to the fenced solar array area on site that would provide access to the solar facility with one remotely operated security camera.

Perimeter Fence

The perimeter of the Project’s solar arrays would be permanently fenced to restrict public access during construction and operations. The fence posts would be set in concrete or driven into the ground, and the chain-link fence would be installed to the ground. The chain-link fence would be 6 feet tall with an additional 1 foot of security wiring mounted on top.

Monitoring Systems

The Project would include a solar meteorological station[1], supervisory control and data acquisition system[2], and telecommunications system that would be skid mounted in the center of the site. The meteorological station and associated camera would be mounted on a pole that is 10 feet in height.

Lighting

The Project may require minimal nighttime security lighting near the transformer, which would be down shielded, if nighttime lighting is required.

Landscaping

The Project would include a 10-foot landscape buffer that may consist of ground cover or other landscaping material consistent with Section 9-409.430(b)(10) of the San Joaquin County Code, which requires utility-scale solar energy systems to provide a 10-foot-wide landscape buffer along any facility fencing and between such fencing and the public right-of-way and adjacent residential and agricultural uses.

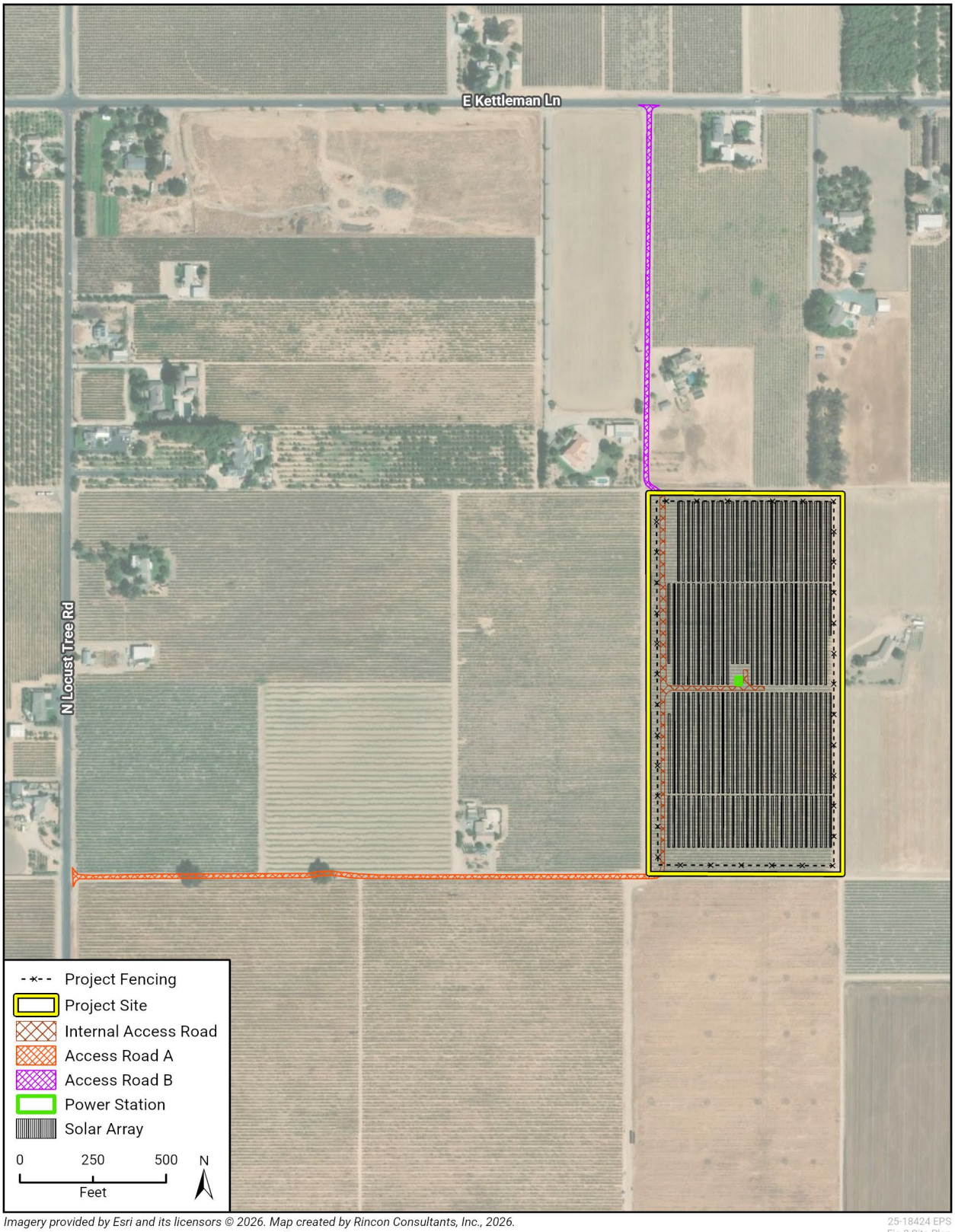
Other

The Project does not include on-site restroom facilities because there would be no occupied facilities or permanent on-site personnel. No new water or wastewater facilities would be constructed as part of the Project. Additionally, in accordance with San Joaquin County Code Section 9-409.430(b)(7), the Project would include creation and implementation of a fire prevention plan.

Figure 3 shows the Project Site plan.

[1] Solar meteorological stations typically measure solar irradiance, ambient temperature, wind speed and direction, humidity, and other atmospheric parameters.
[2] A computer-based system used at a solar facility to monitor and control facility operations by collecting real-time data from solar panels, inverters, weather stations, and electrical equipment, and enabling operators to remotely oversee performance, respond to alarms, and optimize energy generation.

Figure 3 Project Site Plan



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Fig 3 Site Plan

Construction

It is estimated that construction of the facility would take approximately six (6) months to complete with a workforce of 5 to 50 workers, depending on the phase. The average number of workers on site during construction would be 15 individuals.

Ground-disturbing activities associated with Project construction include site preparation, on-site and off-site surface grading for the access road(s), trenching for the underground medium voltage utility line, installation of solar panel pile mounts, installation of five utility poles, and installation of fencing. Trenching on site would be at a maximum depth of 5 feet and 3 feet wide. Installation of solar panel pile mounts would be at a maximum depth of 12 feet. Installation of utility poles would be at a maximum depth of 8 feet. Utility pad installation would be at a maximum depth of 3 feet. Installation of fence posts would be at a maximum depth of 4 feet. Construction would not require export of soil as all soil would be used to backfill on site. Limited import of soil may be needed for trench backfill if existing soil is not sufficient.

The solar PV modules would be manufactured at an off-site location and transported to the Project Site via truck. It is estimated there would be up to a maximum of 104 daily construction vehicle trips during installation which would be the most trip-intensive construction phase. Construction traffic would use either Access Road A (providing access to the site from N. Locust Tree Road) or Access Road B (providing access to the site from East Kettleman Lane), or both. Construction worker parking and construction staging would occur within the Project Site. Project construction would not require roadway or lane closures.

During construction, restroom facilities would be provided by portable units to be serviced by licensed providers. A small amount of solid waste would be produced from Project construction activities. This may include paper, wood, glass, plastics from packing material, waste lumber, insulation, scrap metal and concrete, empty nonhazardous containers, and vegetation waste. Waste would be segregated, where practical, for recycling. Non-recyclable waste would be placed in covered dumpsters and removed on a regular basis by a certified waste-handling contractor for disposal at a Class III landfill. The nearest Class III landfill is North County Recycling Center and Sanitary Landfill, located approximately five miles southeast of the Project Site.

Small quantities of hazardous waste, which would be typical for most construction projects of this type, would likely be generated over the course of construction. These wastes may include waste paint, spent construction solvents, waste cleaners, waste oil, oily rags, waste batteries, and spent welding materials. Workers would be trained to properly identify and handle all hazardous materials. Hazardous waste would be either recycled or disposed of at a permitted and licensed treatment or disposal facility. All hazardous waste shipped offsite for recycling or disposal would be transported by a licensed and permitted hazardous waste hauler and disposed of at an approved location.

Operation

The Project is expected to be commercially operational in June 2027. Power generated by the Project would be sold to PG&E through their Renewable Market Adjusting Tariff program. Hours of operation for solar generation would be expected to span from 5:30 A.M. to 8:30 P.M. seven days per week under the most ideal conditions (i.e. sunny conditions).

Once constructed, the Project would require minimal regularly planned maintenance and would be operated remotely. An average of 20 annual operations and maintenance visits are expected for the Project, typically involving two employees traveling to and from the Project Site in one light to medium duty truck. Included in the annual operational trip estimate are two panel washings per year, each involving two light- to medium-duty trucks, four employees, and a mobile water tank trailer. Panel washing activities and water for the landscaping buffer, are expected to generate an annual water demand of 65,000 gallons per year, on average. Water for panel washing would be obtained from a commercially available source. Vegetation on site would be mowed periodically and managed in accordance with the California Fire Code.

The Project would produce a small amount of waste associated with maintenance activities, which could include broken and rusted metal, defective or malfunctioning modules, electrical materials, empty containers, and other miscellaneous solid waste, including the typical refuse generated by workers. Most of these materials would be collected and returned to the manufacturer or delivered to recyclers. Nonrecyclable waste would be removed on a regular basis by workers for disposal at a Class III landfill.

Decommissioning

The Project Site would be reclaimed and fully restored to original conditions upon the closure of the facility at the end of its anticipated 35-year life span, and Project infrastructure would be removed in compliance with San Joaquin County Code Section 9-409.430 (b)(2) which requires a decommissioning plan to be created and followed by the Applicant, and enforced by the County. Removal of Project infrastructure would be similar in process, scale, and duration to Project construction, excluding site preparation activities such as site clearing. Decommissioning would involve the removal of all above ground components and the removal of piers up to 12 feet below grade. Solar panels would be recycled to the extent feasible. Water demand for decommissioning would be similar to that of construction and would come from a commercially available source.

9 Surrounding Land Uses and Setting

As noted above, the Project would occupy approximately 18.5 acres of an approximately 20-acre parcel (Project Site) (Assessor's Parcel Number: 063-150-16) approximately four miles east of the City of Lodi in unincorporated San Joaquin County. The Project Site is zoned as AG-40 (General Agriculture, 40-acre minimum) and has a General Plan land use designation of General Agriculture (A/G). The Project Site is characterized as agriculture and has a vineyard that is not actively being farmed. The inactive vineyard on site would be removed prior to construction activities, and there are no plans to continue agricultural operations on site. The site is relatively flat and does not include any existing structures or trees. The Project Site is classified as Prime Farmland on the California Department of Conservation's Farmland Mapping and Monitoring Program. As described above, the Project Site is also within the SJMSCP, which provides coverage for impacts to biological resources pursuant to CEQA, the CESA, and the ESA, and is approved and authorized by CDFW and USFWS. An existing irrigation well is located within the northern portion of the Project site, which is not planned for use as part of the Project.

The Project Site is located in an area that is primarily agricultural in nature. The Project Site is surrounded on all sides by active agriculture, orchards, and scattered rural residences. Existing sub-transmission lines are located adjacent to the northern extent of the Project. The Project Site is located approximately 0.6 mile west of State Route 88. The location of the Project Site is shown on Figure 1 and Figure 2.

10 Required Entitlements and Public Agencies Whose Approval is Required

- San Joaquin County Conditional Use Permit (CUP)
- San Joaquin Valley Air Pollution Control District (SJVAPCD)
- San Joaquin Council of Governments (SJCOG)
- State Water Resources Control Board (SWRCB)

At this time federal funds are not anticipated to be used for this Project, but should they be in the future the Project would be subject to United States Department of Agriculture (USDA) approval.

11 Have California Native American Tribes Traditionally and Culturally Affiliated with the Project Area Requested Consultation Pursuant to Public Resources Code Section 21080.3.1?

On May 6, 2026, San Joaquin County sent Assembly Bill (AB) 52 notification letters via certified mail to Native American tribes who requested notification under AB 52, including the California Native American Heritage Commission, California Valley Miwok Tribe, California Tribal Temporary Assistance for Needy Families (TANF) Partnership, North Valley Yokuts Tribe, and United Auburn Indian Community. Under AB 52, Native American tribes have 30 days to respond and request further Project information and request formal consultation. The County did not receive a request for formal consultation under AB 52.

Environmental Factors Potentially Affected

This project would potentially affect the environmental factors checked below, involving at least one impact that is “Potentially Significant” or “Less than Significant with Mitigation Incorporated” as indicated by the checklist on the following pages.

☐	Aesthetics	☐	Agriculture and Forestry Resources	■	Air Quality
■	Biological Resources	■	Cultural Resources	☐	Energy
■	Geology and Soils	☐	Greenhouse Gas Emissions	☐	Hazards and Hazardous Materials
☐	Hydrology and Water Quality	☐	Land Use and Planning	☐	Mineral Resources
■	Noise	☐	Population and Housing	☐	Public Services
☐	Recreation	☐	Transportation	☐	Tribal Cultural Resources
☐	Utilities and Service Systems	☐	Wildfire	■	Mandatory Findings of Significance

Determination

Based on this initial evaluation:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

■ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions to the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a “potentially significant impact” or “less than significant with mitigation incorporated” impact on the environment, but at least one effect (1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and (2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potential significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Jessica Leal — Signature

9/24/24 — Date

Jessica Leal — Printed Name

Associate Planner — Title

Environmental Checklist

1 Aesthetics

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than - Significant Impact	No Impact
Except as provided in Public Resources Code Section 21099, would the project:				
a. Have a substantial adverse effect on a scenic vista?	☐	☐	☐	■
b. Substantially damage scenic resources, including but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	■
c. In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from a publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	■	☐
d. Create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area?	☐	☐	☐	■

a. Would the project have a substantial adverse effect on a scenic vista?

A scenic vista is generally defined as a view from a public place that is expansive and considered by the County to be important. It can be seen from an elevated position or from a roadway with a longer-range view of the landscape.

The San Joaquin County General Plan states that views of the Delta, agriculturally rich valley floor, and Coast Ranges and Sierra Nevada mountains serve as the primary scenic resources within the county (San Joaquin County 2016). Views of the Sierra Nevada mountains from the Project Site are largely obscured due to atmospheric haze and intervening vegetation from existing orchards located east of the Project Site. Further, due to distance, atmospheric haze, and existing agricultural use and orchards located to the west, views of the Delta and the Coast Ranges are completely obscured from the Project Site. There are no expansive views of agricultural resources in the Project vicinity due to the intervening vegetation and orchards. In addition, there are no scenic vistas through the Project Site. Public views of the Project site are limited as the site is surrounded by low-traffic, unmaintained dirt roads. Therefore, the Project would not have a substantial adverse effect on a scenic vista. No impact related to scenic vistas would occur.

NO IMPACT

b. Would the project substantially damage scenic resources, including but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

According to the California Department of Transportation State Scenic Highway System Map, there are no State-designated scenic highways in the vicinity of the Project Site. The nearest designated scenic highway is Route 160, located approximately 26 miles northwest of the Project Site, and the nearest eligible scenic highway is Route 49, located approximately 28 miles northeast of the Project Site (California Department of Transportation 2018). These portions of Route 160 and Route 49 are not visible

from the Project Site due to distance and existing intervening vegetation and development. Furthermore, the Project Site has historically been used for agricultural production and is currently an inactive vineyard. The Project would not include the removal of existing trees, and there are no rock outcroppings or historic buildings on the Project Site. Additionally, as described in the Figure NCR-1 included in the Natural and Cultural Resources Element of the San Joaquin County General Plan, the nearest locally designated scenic roadways are SR 88 and SR 12 (San Joaquin County 2016). SR 88 is approximately 0.6 miles east of the Project Site and SR 12 is approximately 1.96 miles northeast of the Project Site. Due to intervening landscaping, the Project Site is not visible from SR 88. Due to distance and intervening landscaping and development, the Project Site is not visible from SR 12. Therefore, the Project would not result in damage to scenic resources within a designated, or eligible State Scenic Highway or a locally designated scenic roadway. No impact related to scenic resources, including but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway, would occur.

NO IMPACT

c. *Would the project, in non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from a publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?*

The Project Site is in a non-urbanized area;[3] therefore, this discussion analyzes the Project's potential to substantially degrade the existing visual character or quality of public views of the Project Site and its surroundings.

The Project Site currently consists of a vineyard that is not actively being farmed, surrounded by active agriculture, orchards, fallow land, and scattered rural residences in all directions. The Project involves the construction and operation of a ground-mounted solar PV energy generation facility, which would interconnect to the existing PG&E electrical distribution system located immediately northwest of the Project Site. Under present conditions, there are limited views of the Project Site, as the roads surrounding the Project consist of privately-owned low-traffic, unmaintained dirt roads. The nearest public viewpoint is 0.25 mile north along East Kettleman Lane.

While the Project would introduce a moderate degree of change in local visual quality (from inactive vineyard to solar facility), given that the Project Site is landlocked and the nearest County-maintained road is 0.25 miles north of the Project, the low-to-moderate visual sensitivity of motorists traveling along the roads and short duration, impacts to visual character and quality from this vantage point would be less than significant.

LESS-THAN-SIGNIFICANT IMPACT

d. *Would the project create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area?*

Due to the rural nature of the area around the Project Site, existing light and glare in the area is minimal with most light and glare coming from existing residences or cars traveling on public roads in the vicinity, including East Kettleman Road, located approximately 0.25 mile north of the Project Site. Construction and future decommissioning of the Project would occur during daylight hours and would not require lighting. During operation, the Project may require minimal nighttime lighting near the transformer. If nighttime lighting is required, this lighting would be down shielded resulting in no light spillover beyond the Project boundaries in compliance with Section 9-403.050 of the San Joaquin County Code. Therefore, the Project would not create a new source of substantial light that would adversely affect daytime or nighttime views in the area and no impact would occur.

[3] California Public Resources Code Section 21071 defines an unincorporated area as an "Urbanized area" only when the area is completely surrounded by one or more incorporated cities, or located within an urban growth boundary and has an existing residential population of at least 5,000 persons per square mile. The nearest city to the Project Site is Stockton which does not surround the Project Site. The site is also not within the City's sphere of influence (San Joaquin LAFCO 2022).

Solar PV generation systems are inherently designed to absorb rather than reflect solar rays. Further, the solar modules used for the Project have an anti-reflective coating that would limit the potential to cause glare. This would ensure the Project would not introduce new sources of light and glare visible from neighboring residences or roadways. Additionally, as discussed above, Project design would include screening around all sides of the Project comprised of either landscaping or privacy slats which would further shield nearby motorists and land uses from any light or glare on the Project Site. Therefore, the Project would not create a new source of substantial glare that would adversely affect daytime or nighttime views in the area, and no impact related to light or glare would occur.

NO IMPACT

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2 Agriculture and Forestry Resources

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than - Significant Impact	No Impact
Would the project:				
a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	■	☐
b. Conflict with existing zoning for agricultural use or a Williamson Act contract?	☐	☐	■	☐
c. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)); timberland (as defined by Public Resources Code Section 4526); or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?	☐	☐	☐	■
d. Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	■
e. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	■	☐

a. Would the project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

The Project Site is classified by the California Department of Conservation (DOC) as Prime Farmland (DOC 2022a). Prime Farmland is defined as land with the best combination of physical and chemical characteristics for the production of crops and must have the soil quality, growing season, and moisture supply needed to produce sustained high yields of crops when treated and managed according to current farming methods (DOC 2026a). The Project Site overlies the Eastern San Joaquin Subbasin, which is part of the San Joaquin Valley Groundwater Basin (California SWRCB 2006). Groundwater level measurements within the Eastern San Joaquin Subbasin have been in continuous decline over the last 40 years (San Joaquin County 2014). As of 2022, the DOC mapped approximately 378,055 acres of Prime Farmland in the County (DOC 2022b); the Project Site represents approximately 0.005 percent of the County's Prime Farmland. The San Joaquin County General Plan includes Policy NCR-5.6 which discourages the placement of energy facilities on Prime Farmland. However, the Project Site is currently a vineyard that is not actively being farmed, and was last irrigated in October 2025, with no future agricultural use of the site anticipated. The Project involves the construction, operation, and decommissioning of a solar PV facility on approximately 18.5 acres of the 20-acre Project Site. The chemical and physical soil properties of the soil would remain substantially the same under Project conditions. Soil must meet the physical and chemical criteria for Prime Farmland or Farmland of Statewide Importance as determined by the United States Department of Agriculture Natural Resources Conservation Service (NRCS). Factors considered in qualification of a soil by NRCS include, but are not limited to, acid-alkali balance, soil sodium content, erodibility, rock fragment content, and water moisture regimes (DOC 2026b). For the reasons explained below, Project construction, operation and maintenance would have a less-than-significant impact on the physical and chemical composition of onsite soils which underly the Project at the end of the Project's

anticipated 35-year lifespan. No application of fertilizers or other soil amendments, which would alter the chemical composition of the existing soil by adding supplemental nutrients, is proposed. Water-based dust suppression or appropriate soil stabilizers would be used for dust suppression, limiting onsite erosion and maintaining present erodibility. Upon decommissioning, Project infrastructure would be removed and the Project Site returned to a condition suitable for agricultural use pursuant to the requirements of a County-approved Decommissioning Plan and all applicable federal, state, and County regulations. The access road(s) and other areas that were compacted during construction, operations, and decommissioning would be tilled to restore the sub-grade material to match the depth and density of surrounding properties pursuant to the required decommissioning plan. Therefore, the Project would not permanently impact the agricultural value of the Project Site. Additionally, as stated above, the Project Site is not currently actively used for agriculture. The Project would not remove any active agricultural uses and would not preclude future agricultural uses at the Site. Overall, the Project would not affect the Project Site's long-term suitability for agricultural use or permanently convert Prime Farmland to a non-agricultural use. As such, impacts related to conversion of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance would be less than significant.

LESS-THAN-SIGNIFICANT IMPACT

b. Would the project conflict with existing zoning for agricultural use or a Williamson Act contract?

The Project Site is zoned AG-40 (General Agriculture,40-acre minimum) and has a General Plan land use designation of General Agriculture (A/G) (San Joaquin County 2025a). Solar energy facilities within the AG-40 (General Agriculture,40-acre minimum) zoning district are conditionally permitted uses in San Joaquin County according to San Joaquin County Ordinance Code, Chapter 9-203.020, and require approval of a CUP in compliance with Chapter 9-804. As such, the Project would not conflict with existing agricultural zoning, with compliance with applicable County development standards and CUP conditions of approval. While the Project Site is designated as Prime Farmland, it does not currently support active agricultural use. As discussed throughout this section, implementation of the Project would not adversely affect or preclude future agricultural production on the Project Site following the Project's anticipated 35-year lifetime in accordance with San Joaquin County Code Section 9-409.430(b)(5), Farmland Protection.

San Joaquin County participates in the Williamson Act program; however, the Project Site (Assessor's Parcel Number [APN] 063-150-16) is not subject to a Williamson Act contract (DOC 2023). Therefore, the Project would not conflict with existing zoning for agricultural use or a Williamson Act contract and impacts related to existing zoning for agricultural use and existing Williamson Act contracts would be less than significant.

LESS-THAN-SIGNIFICANT IMPACT

c. Would the project conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)); timberland (as defined by Public Resources Code Section 4526); or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?

d. Would the project result in the loss of forest land or conversion of forest land to non-forest use?

The Project Site does not contain any forest land or timberland, and the Project Site is not zoned as forest land, timberland, or timberland zoned Timberland Production. Additionally, the surrounding properties are not zoned as forest land, timberland, or timberland zoned Timberland Production; and the surrounding properties do not contain any forest land or timberland. Therefore, there would be no impact related to forest land, timberland, or timberland zoned Timberland Production.

NO IMPACT

e. *Would the project involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?*

The Project Site is surrounded on all sides by active agriculture, orchards, fallow land, and associated residences, and the parcels adjacent to the Site are classified as Prime Farmland and Farmland of Local Importance. The Project would temporarily convert approximately 18.5 acres of land classified as Prime Farmland to solar energy use. The solar energy use is temporary (35-year Project life), reversible upon decommissioning, and limited in scope, as described under criterion 2(a). Therefore, agricultural operations could resume on the Project Site after Project decommissioning and the Project would not impact the Site's ability to be used for agricultural operations. No induced or indirect conversion of additional farmland beyond the Project boundary would occur. The Project Site does not contain agricultural support infrastructure, such as agricultural processing facilities, and would not cause the closure of these offsite. Additionally, no new uses proposed within the Project Site would inhibit or preclude present or future agricultural use in the surrounding area. For example, implementation of the Project would not divide or physically interfere with an existing agricultural operation, would not degrade existing soil quality, and would yield relatively low water consumption compared to surrounding agricultural uses. As no forest land exists on or adjacent to the Project Site, there would be no conversion of forest land to non-forest use. Overall, impacts related to conversion of Farmland to non-agricultural use would be less than significant.

LESS-THAN-SIGNIFICANT IMPACT

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3 Air Quality

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than - Significant Impact	No Impact
Would the project:				
a. Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	■	☐
b. 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?	☐	☐	■	☐
c. Expose sensitive receptors to substantial pollutant concentrations?	☐	■	☐	☐
d. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	■	☐

Criteria air pollutant emissions generated by Project construction and operation were estimated using the California Emissions Estimator Model (CalEEMod), version 2022.1. CalEEMod uses Project-specific information, including the Project's land use and location to model a project's construction and operational emissions. The calculation methodology and input data used in CalEEMod can be found in the CalEEMod User's Guide Appendices C, D, and G (California Air Pollution Control Officers Associated [CAPCOA] 2022). The analysis reflects the construction and operation of the Project as described in the Project Description.

Project construction would primarily generate temporary criteria pollutant from construction equipment operation on-site, construction worker vehicle trips to and from the site, and export of demolished materials off-site. Construction of the proposed Project was assumed to occur over six months, beginning in October 2026 and ending in May 2027. Applicant-provided information was used to populate the construction schedule and their respective equipment lists. Where specific information was not available, CalEEMod default information was utilized. Construction emissions account for emissions generated by construction equipment used on-site and emissions generated by vehicle trips associated with construction, such as worker and vendor trips. CalEEMod estimates construction emissions by multiplying the amount of time equipment is in operation by emission factors. Because decommissioning would utilize the same equipment for roughly the same duration, decommissioning emissions are estimated to be equal to those of construction.

Operational emissions modeled include mobile source emissions from trips from 20 annual operations and maintenance visits and two annual panel washings. Because operation of the solar arrays would generate electricity, there would not be any criteria pollutant emissions attributed to energy use. The following analysis is based upon the calculations found in Appendix A.

a. Would the project conflict with or obstruct implementation of the applicable air quality plan?

The Project Site is in the San Joaquin Valley Air Basin (SJVAB) and is under the jurisdiction of the SJVAPCD. The SJVAPCD is in non-attainment for ozone, particulate matter with diameters less than 10 microns (PM_{10}), and particulate matter with diameters less than 2.5 microns ($PM_{2.5}$). The SJVAPCD has prepared several air quality attainment plans to achieve ozone and particulate matter standards, the most recent of which include the *2020 Reasonably Available Control Technology Demonstration for the 2015 8-Hour Ozone Standard* and the *2013 Plan for the Revoked 1-Hour Ozone Standard, 2007 PM_{10} Maintenance Plan and Request for Re-designation, 2012 $PM_{2.5}$ Plan,* and *2015 Plan for the 1997 $PM_{2.5}$ Standard*. The

SJVAB is in attainment for carbon monoxide (CO), sulfur dioxide, and lead, and there are no attainment plans for those pollutants.

Construction, operation, and decommissioning of the Project would result in emissions of criteria pollutants including ozone precursors (such as reactive organic compounds [ROG] and nitrogen oxides [NO_X]) and particulate matter. Per Section 7.12 of the *Guide for Assessing and Mitigating Air Quality Impacts* (GAMAQI,) the SJVAPCD has determined that projects with emissions above the thresholds of significance for criteria pollutants would conflict with/obstruct implementation of the SJVAPCD's air quality plans (SJVAPCD 2015). As discussed under criterion 3(b), below, Project construction, operation, and decommissioning would not exceed regulatory thresholds and therefore would not have significant impacts with respect to criteria pollutant emissions. Therefore, the Project emissions would not conflict with, or obstruct implementation of, existing air quality plans at a local level. As such, impacts related to the applicable air quality plan would be less-than-significant.

LESS-THAN-SIGNIFICANT IMPACT

b. Would the project 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?

Air pollution is largely a cumulative impact. The nonattainment status of the SJVAPCD for regional pollutants is a result of past and present development, and SJVAPCD develops and implements plans for the future attainment of ambient air quality standards. Using the emissions levels required based on the air quality management plans, the SJVAPCD has developed emissions thresholds under which individual Projects would not be anticipated to hinder the SJVAPCD's attainment of the ambient air quality standards. Based on these considerations, Project-level thresholds of significance for criteria pollutants are relevant in the determination of whether a project's individual emissions would have a cumulatively significant impact on air quality.

The SJVAB is a nonattainment area for ozone, PM_{10}, and $PM_{2.5}$ under the National Ambient Air Quality Standards (NAAQS) and/or California Ambient Air Quality Standards (CAAQS). The current air quality in the SJVAB is the result of cumulative emissions from motor vehicles, off-road equipment, commercial and industrial facilities, and other emission sources. Projects that emit these pollutants or their precursors (i.e., ROG and NO_X for ozone) potentially contribute to poor air quality.

The SJVAPCD provides quantitative thresholds to determine the significance of temporary construction-related pollutant emissions and long-term operational-related pollutant emissions. These thresholds are shown in Table 1.

Table 1 SJVAPCD Air Quality Significance Thresholds

Pollutant	Construction Thresholds (Tons per Year)	Operation Thresholds (Tons Per Year)
NO_X	10	10
ROG[1]	10	10
PM_{10}	15	15
$PM_{2.5}$	15	15
SO_X	27	27
CO	100	100

NO_X= nitrous oxides; ROG = reactive organic gases; PM_{10} = particulate matter with a diameter of 10 microns or less; $PM_{2.5}$ = particulate matter with a diameter of 2.5 microns or less; SOx = sulfur oxide; CO = carbon monoxide

[1] ROG are formed during combustion and evaporation of organic solvents. ROG are also referred to as VOC.

Source: San Joaquin Valley Air Pollution Control District 2015

In addition to the criteria pollutant thresholds outlined above, the SJVAPCD has published the *Ambient Air Quality Analysis Project Daily Emissions Assessment* guidance, which is summarized in Section 8.4.2, *Ambient Air Quality Screening Tools*, of the GAMAQI. The GAMAQI provides a screening threshold of 100 pounds per day of any of the following pollutants: NO_X, ROG, PM_{10}, $PM_{2.5}$, sulfur oxide, and CO. The screening threshold was used to evaluate localized construction activities and operational activities separately. The District recommends that an ambient air quality analysis be performed when the increase in on-site emissions from construction activities exceeds the 100 pounds per day screening level of any criteria pollutant. Pursuant to SJVAPCD's GAMAQI and Rule 9510 – Indirect Source Review, when assessing the significance of Project-related impacts on local air quality, the impacts may be significant if on-site emissions from construction or operational activities exceed the 100 pounds per day screening level after implementation of all enforceable mitigation measures (SJVAPCD 2015). The Project would be subject to Rule 9510, because it would develop more than 9,000 square feet, which is the ambient air quality analysis screening level threshold for unconventional land use developments not identified as residential, commercial, or industrial (e.g., a solar facility).

Construction and Decommissioning Emissions

Annual Criteria Air Pollutant Emissions

Project construction would generate air pollutant emissions from entrained dust, off-road equipment uses, vehicle emissions, and architectural coatings. Off-site emissions would be generated by construction workers' daily commute trips and heavy-duty diesel haul and vendor truck trips. Project construction is assumed to occur over approximately 6 months between October 2026 through May 2027. Construction emissions would vary substantially from day-to-day, depending on the level of activity, the specific type of operation, and, for dust, the prevailing weather conditions.

At the time of preparation of this environmental document, the nature of the equipment available at the time of decommissioning is unknown, as is the extent of activities that would be required during decommissioning. Therefore, for this analysis, it was assumed that decommissioning activities would be similar to those of construction activities and therefore emissions from decommissioning would be equal to that of construction emissions. It is likely that decommissioning activities would be less intensive than construction especially given the fact that decommissioning would commence approximately 35 years into the future, and the efficiency of vehicles and equipment would be better and emit fewer pollutants.

Table 2 shows the estimated annual construction and decommissioning emissions by construction phase. Most particulate matter emissions are fugitive emissions. As shown, the annual construction and decommissioning emissions would not exceed the SJVAPCD's annual significance thresholds for any criteria pollutant. As such, impacts related to criteria pollutants would be less-than-significant.

Table 2 Annual Construction and Decommissioning Emissions

	Emissions (Tons per Year by Phase)					
Construction Year	**ROG**	**NO_X**	**CO**	**SO_X**	**PM_{10}**	**$PM_{2.5}$**
2026	<1	<1	<1	<1	<1	<1
2027	<1	<1	1	<1	<1	<1
Full Duration of Construction	<1	1	1	<1	<1	<1
Full Duration of Decommissioning	<1	1	1	<1	<1	<1
Significance Threshold	10	10	100	27	15	15
Exceed Significance Threshold?	No	No	No	No	No	No

ROG = reactive organic gases; NO_X = nitrous oxides; CO = carbon monoxide; SO_x = sulfur oxide; PM_{10} = particulate matter with a diameter of 10 microns or less; $PM_{2.5}$ = particulate matter with a diameter of 2.5 microns or less

Notes: Rounded values shown; columns may not total exactly. See Appendix A for calculations.

Furthermore, the Project would comply with SJVAPCD Rule 9510, Indirect Source Review, which requires large development projects to reduce exhaust emissions from construction equipment by 20 percent for NO_X and 45 percent for PM_{10} compared to the statewide average or demonstrate use of a clean fleet (such as United States Environmental Protection Agency [USEPA] Tier 4 equipment).[4] Compliance with SJVAPCD Rule 9510 could result in additional emissions reductions that were conservatively not included in Project estimates. In addition, the Project Applicant would create a dust control plan and implement dust control measures pursuant to SJVAPCD Rule 8021 which would further reduce dust emissions.

Daily Criteria Air Pollutant Emissions

Construction and decommissioning activities would not exceed the SJVAPCD's recommended 100 pounds per day screening threshold during construction, as shown in Table 3. Because daily emissions from Project construction and decommissioning would not exceed screening thresholds, the Project would not contribute cumulatively to a net increase in criteria pollutants.

Table 3 Maximum Daily Construction and Decommissioning Emissions

	Emissions (pounds/day) by Phase					
Construction Year	**ROG**	**NO_X**	**CO**	**SO_X**	**PM_{10}[1]**	**$PM_{2.5}$[1]**
2026	1.1	10.4	16.0	<1	1.1	0.5
2027	1.1	10.1	16.2	<1	1.1	0.4
Maximum Emissions						
Maximum Daily Emissions (Construction)	1.1	10.4	16.2	<1	1.1	0.5
Maximum Daily Emissions (Decommissioning)	1.1	10.4	16.2	<1	1.1	0.5
Screening Threshold	100	100	100	100	100	100
Exceed Screening Threshold?	No	No	No	No	No	No

ROG = reactive organic gases; NO_X = nitrous oxides; CO = carbon monoxide; SO_x = sulfur oxide; PM_{10} = particulate matter with a diameter of 10 microns or less; $PM_{2.5}$ = particulate matter with a diameter of 2.5 microns or less

[1] Includes compliance with Rule 8021 dust control measures, which accounts for watering.

Source: Appendix A

Operational Impacts

Annual and Daily Criteria Air Pollutants

The Project would generate criteria pollutants during operations resulting from area sources (e.g., consumer products used during maintenance activities), and mobile sources (e.g., vehicle emissions). California Emissions Estimator Model (CalEEMod) default values for operations were used for the most conservative estimates for emissions, and would generally overestimate the amount of vehicle trips, water usage, energy usage, etc. for Project operations. As shown in Table 4, operational emissions from the Project would not exceed SJVAPCD annual significance thresholds for any criteria pollutant. In addition, Table 5 demonstrates that daily operational emissions would not exceed SJVAPCD daily screening thresholds for any criteria pollutant. As such, impacts related to criteria air pollutants would be less-than-significant.

[4] While the Project may use construction equipment outfitted with engines that meet the USEPA Tier 4 standard, modeling assumed default engine tiers for the most conservative estimates.

Table 4 Estimated Annual Operational Emissions

Source	Emissions (tons/year)					
	ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Area[1]	<1	<1	<1	<1	<1	<1
Energy	0	0	0	0	0	0
Mobile	<1	<1	<1	<1	<1	<1
Total	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**
Significance Threshold	10	10	27	100	15	15
Exceed Significance Threshold?	No	No	No	No	No	No

ROG = reactive organic gases; NO_X= nitrous oxides; CO= carbon monoxide; SO_x = sulfur oxide; PM_{10} = particulate matter with a diameter of 10 microns or less; $PM_{2.5}$ = particulate matter with a diameter of 2.5 microns or less

[1]Area source emissions are associated with emissions of consumer products used for cleaning and landscaping emissions, and are conservatively included for this analysis

Totals may not add up due to rounding vehicles. See Appendix A for calculations.

Table 5 Estimated Daily Operational Emissions

Source	Emissions (lbs/day)					
	ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Combined Total Daily Operations	<1	<1	<1	<1	<1	<1
SJVAPCD Operational Screening Threshold	100	100	100	100	100	100
Exceed Screening Threshold?	No	No	No	No	No	No

ROG = reactive organic gases; NO_X = nitrous oxides; CO = carbon monoxide; SO_x = sulfur oxide; PM_{10} = particulate matter with a diameter of 10 microns or less; $PM_{2.5}$ = particulate matter with a diameter of 2.5 microns or less

Totals may not add up due to rounding vehicles. See Appendix A for calculations.

Furthermore, renewable energy projects, such as the Project, assist utilities like PG&E and the State of California in achieving criteria air pollutant emission reductions by providing the means of generating electricity as a source of renewable energy. By expanding access to renewable energy systems, the Project would support reducing the need for additional electricity to be generated by fossil fuel power plants. The energy conservation achieved by the Project would reduce fossil fuel consumption, thereby reducing criteria air pollutant emissions from the electricity sector. As such, impacts related to criteria pollutants would be less than significant.

LESS-THAN-SIGNIFICANT IMPACT

c. Would the project expose sensitive receptors to substantial pollutant concentrations?

The nearest sensitive offsite receptor to the Project Site is a residential property 80 feet east of the Project Site border. Other nearby offsite receptors include residences to the north, approximately 350 feet away from the Project Site; to the northwest, approximately 250 feet away from the Project Site, adjacent to Access Road B, and to the west, approximately 520 feet away from the Project Site, adjacent to Access Road A. Air quality varies based on the amount of pollutants emitted into the atmosphere, the size and topography of the air basin, and the prevailing meteorological conditions. Air quality problems leading to health impacts arise when the rate of pollutant emissions exceeds the rate of dispersion. Some land uses are more sensitive to changes in air quality than others, depending on the population groups and the activities involved. Sensitive receptors that are most likely to be affected by air pollution include children, the elderly, athletes, and people with cardiovascular and chronic respiratory diseases (CARB 2026a, SJVAPCD 2015). Potential harmful airborne pollutants that could be generated by the Project are toxic air contaminants (TAC), CO, and spore-containing fugitive dust that can cause Valley Fever. Therefore, each of these is addressed under this criterion with respect to the Project.

Toxic Air Contaminants

TACs are airborne substances that are a diverse group of air pollutants that may cause or contribute to an increase in deaths or serious illness, or that may pose a present or potential hazard to human health. TAC impacts are described by carcinogenic risk and by chronic (i.e., long duration) and acute (i.e., severe but of short duration) adverse effects on human health.

Construction and Decommissioning

The greatest potential for TAC emissions during construction and decommissioning would be diesel particulate matter (DPM) emissions associated with heavy-duty equipment during the 6-month construction period and decommissioning activities. Generation of DPM from construction projects typically occurs in a single area for a short period. The dose to which the receptors are exposed is the primary factor used to determine health risk. Dose is a function of the concentration of a substance or substances in the environment and the extent of exposure that a person has with the substance. Dose is positively correlated with time, meaning that a longer exposure period would result in a higher exposure level for the Maximally Exposed Individual. The risks estimated for a Maximally Exposed Individual are higher if a fixed exposure occurs over a longer period of time. According to the Office of Environmental Health Hazard Assessment (OEHHA), health risk assessments, which determine the exposure of sensitive receptors to toxic emissions, should be based on a 30-year exposure period, the approximate time that a person spends in a household. Construction and decommissioning of the Project would occur over 6 months, which is less than 2 percent of the 30-year exposure period and would limit the impact of TAC emission exposure to sensitive receptors around the Project Site.

As seen in Table 2 and Table 3, the total PM10 emissions[5] from construction would be well below the SJVAPCD annual and maximum daily significance thresholds. As DPM is a component of PM_{10} exhaust that contributes to the total PM_{10} emissions, DPM emissions would be anticipated to be low as well. Furthermore, as construction and decommissioning of the Project would occur across the 18.5-acre Project Site, emissions from these activities also would be diluted across large Project Site. In addition, the most intensive construction activities would occur where the solar arrays would be installed, which would be at least 80 feet away from the nearest sensitive receptors. Air pollutants concentrations from Project construction and decommissioning would also drop off rapidly as air dispersion occurs, minimizing potential exposure and potential health risks to sensitive receptors. The Project would adhere to applicable SJVAPCD requirements and control strategies intended to reduce emissions from construction equipment and activities, including all rules under Regulation VIII, *Fugitive PM_{10} Prohibitions,* and Rule 9510, *Indirect Source Review*. Furthermore, the Project would comply with the CARB Air Toxics Control Measure that limits diesel powered equipment and vehicle idling to no more than five minutes at a location, and the CARB In-Use Off-Road Diesel Vehicle Regulation; compliance with these would minimize emissions of TACs during construction. Therefore, due to the short-term nature of construction and decommissioning activities and the time between construction and decommissioning activities, air quality impacts related to construction and decommissioning generated TAC emissions would be less than significant.

Operation

CARB's *Air Quality and Land Use Handbook: A Community Health Perspective* (CARB 2005) recommends against siting sensitive receptors within 500 feet of a freeway, urban roads with 100,000 vehicles/day, or rural roads with 50,000 vehicles/day, and within 1,000 feet of industrial land uses such as warehouses and distribution centers with more than 100 truck trips per day. These distances are used as general guidance for the recommended distance between sensitive receptors and sources of TAC emissions, with the primary source of TAC emissions coming from DPM. The solar Project is not a land use typically associated with high health risk, and there are no stationary sources of TAC. The Project would result in trips from 20 annual operations and maintenance visits, including two panel washings, which would

[5] Total PM_{10} emissions reported in Table 2 and Table 3 are comprised of PM_{10} from fugitive dust and PM_{10} from engine exhaust, which are particulate emissions from combustion engines and would include DPM.

generate minor amounts of DPM to be emitted from maintenance vehicles that will occasionally access the site. Furthermore, TACs would not be generated by operation of the solar panels at the Project Site. Therefore, the level of emissions and duration of exposure would be minimal and the Project would not emit substantial amounts of TACs during normal operations, as seen in Table 5. As such, Project operations would not expose sensitive receptors to substantial TAC concentrations and impacts would be less-than-significant.

Carbon Monoxide Hotspots

A CO hotspot is a localized concentration of CO that is above a CO ambient air quality standard and is associated with long-term operational emissions. Localized CO hotspots can occur at intersections with heavy peak hour traffic. Specifically, hotspots can be created at intersections where traffic levels are sufficiently high such that the local CO concentration exceeds the federal one-hour standard of 35 parts per million or the federal and State eight-hour standard of 9 parts per million (CARB 2026b). The entire SJVAB is in conformance with State and federal CO standards and no air quality monitoring stations report CO levels in the SJVAPCD jurisdiction. Additionally, CARB no longer reports CO concentrations anywhere in California. Based on the low background level of CO in the SJVAB (indicated by the lack of monitoring at State or local levels), the low and the ever-improving emissions standards for new sources in accordance with State and federal regulations, and the fact that the Project would result in 20 annual operations and maintenance visits, including two panel washings per year, the Project would not result in a CO hotspot. Additionally, as demonstrated under criterion 3(b), above, CO emissions during construction, operation, and decommissioning for the overall Project, including mobile sources, would not exceed ambient air quality standards. Therefore, the Project would not expose sensitive receptors to substantial CO concentrations, and localized air quality impacts related to CO hot spots would be less-than-significant.

Valley Fever

Construction activities that include ground disturbance can result in fugitive dust, which can cause fungus *Coccidioides* spores to become airborne if they are present in the soil. These spores can cause Valley Fever, which is a lung infection caused by the fungus *Coccidioides* that is found in the soil in some parts of the United States. Workers who disturb soil where fungal spores are found, whether by digging, operating earthmoving equipment, driving vehicles, or by working in dusty, wind-blown areas, are more likely to breathe in spores and become infected. It is not a contagious disease, and secondary infections are rare. The Project is located in San Joaquin County, which reported 119 preliminary[6] cases between January 1, 2026 and May 31, 2026 (California Department of Public Health 2026).

Construction and decommissioning activities associated with the Project would include ground-disturbing activities that could result in an increased potential for exposure of nearby residents and on-site workers to airborne spores, if they are present. Compliance with dust control measures required by SJVAPCD Rule 8021 would minimize personnel and public exposure to Valley Fever and reduce the potential risk of nearby resident and on-site worker exposure to Valley Fever. In addition, the Project would adhere to the California Code of Regulations (CCR), Title 8, Sections 342, 3203, 5141, 5144, and 14300, related to Valley Fever protection and exposure, which would reduce potential risks by requiring incident reporting; requiring implementation of an Injury and Illness Prevention Program; and providing respiratory protection guidance. However, impacts related to Valley Fever resulting from the Project may still be potentially significant. Therefore, a mitigation measure is necessary to provide for protection beyond the regulatory requirements in order to reduce this potentially significant impact to a less- than-significant level. As such, implementation of Mitigation Measure AQ-1 would be required to reduce impacts to a less-than-significant level.

[6] Preliminary cases include confirmed, probable, and suspected cases that are not yet finalized or confirmed by California local health jurisdictions.

Mitigation Measures

AQ-1 Minimize Personnel and Public Exposure to Valley Fever

Prior to site preparation, grading activities, or ground disturbance, the Project Applicant shall prepare a Fugitive Dust Control Plan for the Project. The Fugitive Dust Control Plan shall include the following at a minimum:

- Equipment, vehicles, and other items shall be cleaned thoroughly of dust before they are moved off-site to other work locations.
- Wherever possible, grading, and trenching work shall be phased, so that earth-moving equipment works well ahead or down-wind of workers on the ground.
- The area immediately behind grading or trenching equipment shall be sprayed with water before ground workers move into the area.
- If a water truck runs out of water before dust is dampened sufficiently, ground workers exposed to dust are to leave the area until a full truck resumes water spraying.
- All heavy-duty earth-moving vehicles shall be closed-cab and equipped with a High Efficiency Particulate Arrestance-filtered air system, or High Efficiency masks that can be worn by the vehicle operators.
- N95 respirators shall be available to on-site workers for the duration of the construction period.
- Workers shall receive training to recognize the symptoms of Valley Fever and shall be instructed to promptly report suspected symptoms of work-related Valley Fever to a supervisor. Evidence of training shall be kept on-site for review as required by regulatory agencies.
- Valley Fever information shall be available on-site for all construction personnel. The information shall provide, at a minimum, a description of the symptoms, health effects, preventative measures, and treatment.

Significance After Mitigation

Mitigation Measure AQ-1 would ensure that construction worker exposure to Valley Fever is less-than-significant by requiring the preparation and implementation of a Fugitive Dust Control Plan for the Project which includes dust suppression measures, respiratory protection for workers, and Valley Fever awareness and training to minimize worker exposure to airborne dust. Overall, impacts would be less than significant after mitigation.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

d. Would the project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

The Project would generate oil and diesel fuel odors during construction from equipment use. The odors would be limited to the construction and/or decommissioning period and would be intermittent and temporary. Furthermore, these odors would dissipate rapidly with distance from in-use construction equipment. With respect to operation, CARB's *Air Quality and Land Use Handbook: A Community Health Perspective* (CARB 2005) provides recommendations regarding the siting of new sensitive land uses near potential sources of odors (e.g., sewage treatment plants, landfills, recycling facilities, biomass operations, autobody shops, fiberglass manufacturing, and livestock operations). Project Site solar energy operations are not identified on this list and would not have odor sources during normal operations. Therefore, the Project would not generate objectionable odors affecting a substantial number of people, and impacts would be less-than-significant.

LESS-THAN-SIGNIFICANT IMPACT

4 Biological Resources

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than - Significant Impact	No Impact
Would the project:				
a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	■	☐	☐
b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☐	☐	■
c. Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	■
d. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☐	■
e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	■
f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	■

The following analysis is based upon the Biological Resources Assessment (BRA) prepared for the Project by Rincon Consultants dated May 2026 (Appendix B).

a. *Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?*

Critical Habitat is a term defined and used in the federal ESA to specify geographic areas that contain features essential to the conservation of an endangered or threatened species, and that may require special management and protection. Critical Habitat may also include areas that are not currently occupied by the species but will be needed for its recovery.

The Project Site does not fall within Critical Habitat limits for any special-status wildlife or plant species (USFWS 2026b). The nearest mapped Critical Habitat is approximately 11 miles west of the Project Site for Delta smelt (*Hypomesus transpacificus*).

Special-Status Plant Species

As discussed in Appendix B, results of the USFWS Information for Planning and Consultation (IPaC), the CDFW California Natural Diversity Database (CNDDB), and California Native Plant Society (CNPS) searches identified 17 special-status plant species known to occur within the 2-mile/nine-quad search radius of the Project Site (CNPS 2026, CDFW 2026b, USFWS 2026a). None of these are expected to occur on the Project Site due to a lack of suitable habitat or because the Project Site is outside of the species known elevation range. In addition, the disturbed nature of the Project Site is likely to prohibit the establishment of special-status plants from occurring due to agricultural management practices. Therefore, the Project would result in no impact to special-status plant species.

At the time of the biological field survey, Access Road B was not being considered, as the Project Applicant had not yet received direction from the Fire Department to consider this access route. This road is a developed/compacted dirt agricultural road, surrounded by rural residences, vineyards, and other ongoing agriculture and human-related disturbance. As such, special-status plant species are not expected to occur along the road shoulders. Therefore, should the site be accessed via Access Road B and minor improvements to the road are necessary, the improvements would not result in impacts to special-status plant species.

Special-Status Wildlife Species

Results of the CNDDB and IPaC searches indicated 25 special-status wildlife species are known to occur within the 2-mile/nine-quad search radius of the Project Site (CNDDB 2026, USFWS 2026a). Of these, one species has a moderate potential to occur in the Project Site and is discussed further below. The remaining 24 species, including Crotch's bumble bee (*Bombus crotchii*) and tricolored blackbird (*Agelaius tricolor*) are not expected to occur or have a low potential to occur due to a lack of suitable habitat or because the Project Site is outside of the species' known range. Therefore, these 24 species were removed from further consideration.

Swainson's hawk (*Buteo swainsoni*; state threatened) breeds in grasslands with scattered trees, juniper-sage flats, riparian areas, savannahs, and agricultural or ranch lands with groves or rows of trees. Swainson's hawk requires suitable foraging areas within 10–12 miles of a nest site, such as grasslands, alfalfa, or grain fields that support small mammal populations. Swainson's hawks are known to nest in single trees on agricultural landscapes and occasionally in orchards.

Suitable foraging habitat in the vicinity of the Project Site is present in the scattered surrounding agricultural fields. Trees that may support nesting are present in adjacent rural residential areas; however, no trees are present on the Project Site. In addition, there are several documented occurrences of Swainson's hawk within five miles of the Project Site (CNDDB 2026). This species is covered under the SJMSCP.

As the Swainson's hawk is a Covered Species under the SJMSCP, the Project Applicant would be required to comply with all provisions of the SJMSCP, which includes incidental take minimization measures to protect Swainson's Hawk, such as protecting nest trees and foraging habitat. Specifically, "[i]f the Project Proponent elects to retain a nest tree, and in order to encourage tree retention, the following Incidental Take Minimization Measure shall be implemented during construction activities:

> If a nest tree becomes occupied during construction activities, then all construction activities shall remain a distance of two times the dripline of the tree, measured from the nest.
>
> If the Project Proponent elects to remove a nest tree, then nest trees may be removed between September 1 and February 15, when the nests are unoccupied."

With implementation of these measures as included in the SJMSCP, potential impacts to Swainson's hawk would be mitigated to less than significant by ensuring construction and operation activities are conducted a safe distance from the active nests and foraging habitat is preserved.

Nesting Bird Species. Native nesting birds protected by the Migratory Bird Treaty Act or the California Department of Fish and Game code may use the Project Site and surrounding habitat during the breeding season (typically February 1 through August 31). These species could be impacted by vegetation removal (herbaceous species in the Project Site, including grape vines and grasses), as well as grading and other construction activities on the Project Site. Therefore, impacts to nesting birds are potentially significant and Mitigation Measure BIO-1 is required.

Mitigation Measures

BIO-1 Preconstruction Nesting Bird Surveys

A preconstruction nesting bird survey shall be performed by a qualified biologist no earlier than one week prior to any ground disturbance or vegetation removal activities that start during the nesting season (February 1–August 31) to determine if any native birds are nesting on or near the Project Site (including a 250-foot buffer for raptors, where accessible). Should the Project be accessed via Access Road B and improvements to the road are necessary, the nesting bird survey shall be extended to incorporate Access Road B , and shall include a 250-foot buffer for raptors, as accessible. If any active nests are detected during surveys, a suitable avoidance buffer from the nests shall be determined by a qualified biologist based on species, location, and extent and type of planned construction activity. These nests would be avoided until the chicks have fledged and/or the nests are no longer active, as determined by the qualified biologist.

Any ground disturbance or suitable nesting habitat (i.e., trees and vegetation) that would need to be removed under the Project shall occur outside of the bird breeding season (September 1–January 31) to avoid impacts to nesting birds, when feasible.

Significance After Mitigation

Mitigation Measure BIO-1 would reduce potential impacts to nesting birds to a less-than-significant level by requiring the completion of nesting bird surveys prior to the start of any ground disturbance conducted within the nesting season, enacting nest avoidance buffers for any active nests, and by removing suitable nesting material outside of the nesting season. Therefore, impacts would be less than significant after mitigation.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

b. Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

The Project Site has been developed as an inactive vineyard, with non-native grasses and forbs occurring throughout. No sensitive habitats or sensitive vegetation communities were observed during the field survey, nor have any been mapped by CDFW or USFWS in the Project area (Appendix B).

No wetlands or other waters have been mapped in or adjacent to the Project Site by the National Wetlands Inventory (USFWS 2026c), and no wetlands, waters, or other potentially jurisdictional aquatic features that could support riparian vegetation were observed in the Project Site during the field survey.

Therefore, there would be no impacts to riparian habitat or sensitive natural communities.

NO IMPACT

c. Would the project have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

No wetlands or other waters have been mapped in or adjacent to the Project Site by the National Wetlands Inventory (USFWS 2026c), and no wetlands, waters, or other potentially jurisdictional aquatic features were observed in the Project Site during the field survey.

Thus, the Project would not impact waters or wetlands.

NO IMPACT

d. Would the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

Wildlife corridors are linear features that connect large patches of natural open space and provide avenues for the migration of animals. Habitat linkages are small patches that join larger blocks of habitat and help reduce the adverse effects of habitat fragmentation; they may be continuous habitat or discrete habitat islands that function as stepping-stones for wildlife dispersal.

The Project Site is not recognized as an important wildlife corridor by any regional or state agency or jurisdiction and is not considered critical to the ecological functioning of adjoining open space areas (CDFW 2026a). Due to the disturbed nature of the Site and level of development and human disturbance surrounding the Site, common wildlife species like raccoon (*Procyon lotor*) may pass through the Site to access adjacent patches of cover and foraging habitat, but migratory wildlife use of the Site is unlikely. Therefore, no impacts to wildlife movement would occur.

NO IMPACT

e. Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

The Project would not conflict with San Joaquin County policies or ordinances protecting biological resources. There are no existing trees within the Project Site. There are two oak trees (*Quercus* spp.) along Access Road A. The Project would be developed in compliance with the San Joaquin County General Plan (San Joaquin County 2016), including Natural and Cultural Resources (NCR) Elements NCR-2, NCR-5, and NCR-6. Additionally, the Project would comply with all applicable County ordinances and guidelines protecting significant oak woodlands and heritage trees. Therefore, the Project would result in no impact related to local policies or ordinances.

NO IMPACT

f. Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

The SJMSCP is a comprehensive conservation planning strategy that addresses the needs of multiple plant and animal species while protecting the region's agricultural interests as the population increases over a period of 50 years (2001–2051). The SJMSCP is administered by the San Joaquin Council of Governments, Inc., which is a non-profit corporation established by San Joaquin County and the cities of Escalon, Lathrop, Lodi, Manteca, Ripon, Stockton and Tracy.

The SJMSCP provides coverage for impacts to biological resources pursuant to CEQA, the California Endangered Species Act (CESA), and the Endangered Species Act (ESA), and is approved and authorized by the CDFW and USFWS. The Applicant has opted into the SJMSCP and therefore would be required to comply with all provisions of the SJMSCP, including implementation of applicable Incidental Take Minimization Measures and payment of mitigation fees. These fees must be paid prior to the initiation of construction activities to ensure compliance with the plan and to mitigate potential impacts to covered

species and habitats. Additionally, the implementation of applicable Incidental Take Minimization Measures would be conditions of approval for the Project's CUP entitlement. With compliance with these regulatory measures, implementation of the Project would not conflict with provisions of the SJMSCP, and, therefore, no impacts related to conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan would occur.

NO IMPACT

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5 Cultural Resources

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than - Significant Impact	No Impact
Would the project:				
a. Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?	☐	☐	☐	■
b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	■	☐	☐
c. Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	■	☐

The analysis in this section is informed by the Cultural Resources Technical Report prepared by Rincon Consultants dated May 2026 (Appendix C).

a. Would the project cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?

As detailed in the Cultural Resources Technical Report (Appendix C), the Area of Potential Effects (APE) for the Project includes the entire 18.5-acre Project footprint. As described in Appendix C, no previously recorded historical resources have been documented within or immediately adjacent to the APE. The Project would not result in a substantial adverse change in the significance of any known or potential historical resource pursuant to CEQA Guidelines Section 15064.5. No impact would occur.

NO IMPACT

b. Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?

The Cultural Resources Technical Report records search of the Sacred Lands File (SLF) and the archaeological field survey identified no known archaeological resources within the APE. The records search of the California Historical Resources Information System (CHRIS) identified one (1) cultural resources study within a 0.5-mile radius of the APE. This study (SJ-09734, *Cultural Resources Inventory Report for the PG&E Northern San Joaquin 230 kV Transmission Project, San Joaquin County, California*) overlaps the southern boundary of the APE and included a records search, archival review, Native American SLF search and outreach, and a field survey, which identified three previously recorded historic-period resources, including two railroad segments (P-39-004457 and P-39-000002) and one bridge (Bridge #29C-341) within 0.25-mile of the study area (Scott and Higgins 2021). No new archaeological or built environment resources were identified as a result of the field survey. Study SJ-09734 overlaps approximately five percent of the current APE along the southern boundary. None of the three cultural resources identified as a result of Study SJ-09734 are located within or immediately adjacent to the current APE. The CHRIS records search did not identify any cultural resources within 0.5-mile of the APE. No previously recorded precontact or historic-period archaeological resources have been previously recorded within or immediately adjacent to the APE or within the 0.5-mile search radius. The geologic unit mapped within the Project Site consists of Late Pleistocene-aged Lower Modesto Formation alluvial sand deposited on river terraces and alluvial fans of the Mokelumne River system. Based on information presented in the Cultural Resources Technical Report, the overall archaeological sensitivity of the APE is considered low for both surficial and subsurface precontact and historic-period archaeological deposits. Based on the high-sensitivity soil mapping, the absence of buried A horizons, negative background research, and negative pedestrian survey results, the potential for intact surface precontact

archaeological resources is considered low. Further, based on geological, geomorphological, ethnographic, and historical evidence, the potential for intact precontact subsurface archaeological deposits is considered low.

In addition, no surface evidence of historic-period cultural materials was evident during the pedestrian field survey. Additionally, the preservation potential of such deposits, if any existed, is compromised by the agricultural land use documented since the 1950s. Deep ripping, a standard practice for orchard preparation in the San Joaquin Valley to breach the hardpan, typically impacts the upper 3 to 6 feet of the soil column, depths that would intercept most historical domestic features. Consequently, while isolated historical refuse may be present in the plow zone, the potential for intact, eligible historical archaeological deposits is considered low.

Project-related ground disturbing activities associated with trenching (3 to 5 feet below ground surface), utility pole installation (6 to 8 feet below ground surface), utility pad installation (2 to 3 feet below ground surface) installation of solar panel pier foundations (12 feet below ground surface), and fence post installation (3 to 4 feet below ground surface) may extend into underlying native soils and there is the potential to inadvertently encounter intact archaeological materials. While the potential for the Project to encounter archaeological resources is low, there is still a potential for the unanticipated discovery of resources. In addition, at the time of the cultural resources field survey, Access Road B was not being considered because the Project Applicant had not yet received direction from the Fire Department to consider this route. If Access Road B is utilized and improvements to the road and its shoulders are necessary, those improvements would involve additional ground disturbance along a developed agricultural road corridor where archaeological resources could be present. Therefore, this impact is considered potentially significant, and implementation of Mitigation Measures CUL-1 through CUL-3 would be required to reduce impacts to a less-than-significant level

Mitigation Measures

CUL-1 Workers' Environmental Awareness Program (WEAP)

Prior to the start of ground-disturbing activities, including grading, trenching, excavation for utility poles and equipment pads, fence installation, and construction of Access Road B if required, the Project Applicant shall retain a qualified archaeologist to develop and deliver a Workers' Environmental Awareness Program (WEAP) training for all construction personnel. The WEAP shall describe the types of archaeological and tribal cultural resources that may occur in the Project area, summarize the legal obligations for protecting such resources (including CEQA Guidelines Section 15064.5 and Public Resources Code Sections 5097.5 and 5097.98), and explain the procedures to be followed in the event of an unanticipated discovery, including immediate work stoppage within the vicinity of the find and notification of the qualified archaeologist and appropriate agencies. Documentation of WEAP attendance shall be maintained on site during construction and provided to the County upon request.

CUL-2 Preconstruction Survey of Access Road B and Unanticipated Discovery of Cultural Resources

Should the site be accessed via Access Road B, and improvements to that road are necessary, a preconstruction pedestrian survey for archaeological resources shall be conducted by a qualified archaeologist no later than 60 days prior to the start of construction along Access Road B, including a minimum 30-foot buffer on either side of the road where accessible. Results of the pedestrian survey would be presented in an addendum to cultural resources technical report and submitted to the lead agency for approval prior to construction. Once approved, the addendum report will be submitted to the Central California Information Center at California State University, Stanislaus.

If no archaeological resources are detected during the survey, no further archaeological mitigation would be required for improvements to Access Road B. If archaeological resources are identified, the qualified archaeologist shall record the resource, evaluate its potential significance, and recommend appropriate treatment. If the resource is determined to be a historical resource or unique archaeological resource pursuant to CEQA Guidelines Section 15064.5, Project redesign to avoid the resource shall be considered

where feasible; if avoidance is not feasible, additional treatment such as data recovery or other measures shall be implemented as recommended by the qualified archaeologist and approved by the County.

CUL-3 Unanticipated Discovery of Cultural Resources

In the event that archaeological resources are unexpectedly encountered during ground-disturbing activities, work within 50 feet of the find shall halt and an archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards for archaeology (National Park Service 1983) shall be contacted immediately to evaluate the resource. If the resource is determined by the qualified archaeologist to be precontact, then a Native American representative shall also be contacted to participate in the evaluation of the resource. The qualified archaeologist will evaluate the resource for its eligibility as a historical resource or unique archaeological resource under the California Environmental Quality Act (CEQA) through appropriate means, such as archaeological testing and/or additional research, based on the nature of the find. the resource proves to be eligible for the California Register of Historical Resources (CRHR) and significant impacts to the resource cannot be avoided via Project redesign, a qualified archaeologist shall prepare a data recovery plan tailored to the physical nature and characteristics of the resource, per the requirements of the California Environmental Quality Act (CEQA) Guidelines Section 15126.4(b)(3)(C). The data recovery plan shall identify data recovery excavation methods, measurable objectives, and data thresholds to reduce any significant impacts to cultural resources related to the resource. Pursuant to the data recovery plan, the qualified archaeologist and Native American representative, as appropriate, shall recover and document the scientifically consequential information that justifies the resource's significance. The County shall review and approve the treatment plan and archaeological testing as appropriate, and the resulting documentation shall be submitted to the regional repository of the California Historical Resources Information System, per CEQA Guidelines Section 15126.4(b)(3)(C).

Significance After Mitigation

Implementation of Mitigation Measure CUL-1 through CUL-3 would reduce potential impacts to archaeological resources to a less-than-significant level by implementing standard procedures in the event archaeological resources are unexpectedly encountered during ground-disturbing activities.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

c. Would the project disturb any human remains, including those interred outside of formal cemeteries?

No human remains are known to be present within the Project Site. However, the discovery of human remains is always a possibility during ground-disturbing activities, which would be required for the Project and include grading, trenching and excavation for utility poles, equipment pads and fence posts. If human remains are found, the State of California Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to Public Resources Code (PRC) Section 5097.98. In the event of an unanticipated discovery of human remains, the County Coroner must be notified immediately. If the human remains are determined to be of Native American origin, the Coroner will notify the Native American Heritage Commission (NAHC), which would determine and notify a Most Likely Descendent. The Most Likely Descendent has 48 hours from being granted site access to make recommendations for the disposition of the remains. If the Most Likely Descendent does not make recommendations within 48 hours, the landowner shall reinter the remains in an area of the property secure from subsequent disturbance. With adherence to these regulations, the Project would have a less-than-significant impact related to disturbance of human remains.

LESS-THAN-SIGNIFICANT IMPACT

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6 Energy

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than - Significant Impact	No Impact
Would the project:				
a. Result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	☐	☐	■	☐
b. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☐	■

a. Would the project result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

Construction and Decommissioning

Construction and future decommissioning of the Project would result in fuel (diesel and gasoline) and electricity consumption from the use of construction tools and equipment, vendor truck trips, and vehicle trips generated from workers traveling to and from the Project Site[7]. The consumption of energy would be temporary in nature, as construction and decommissioning would each last approximately six months, and would not present a significant demand for available supplies. The Project Site features no unusual Project characteristics or construction or decommissioning processes that would require inordinately higher amounts of energy than for neighboring comparable activities; or equipment that would not conform to current emissions standards (and related fuel efficiencies). In addition, as required by CCR Title 13 Sections 2449 and 2485, idling times of construction vehicles are limited to no more than five minutes, thereby minimizing, or eliminating unnecessary and wasteful consumption of fuel due to unproductive idling of construction equipment. Equipment employed in the construction and future decommissioning of the Project would therefore not result in wasteful, inefficient, or unnecessary consumption of energy resources, and impacts during construction and future decommissioning would be less-than-significant.

Operation

Once the Project is operational, up to 4 MW of energy would be generated at the ground-mounted solar PV energy generation site. Electricity would be required during operation and maintenance, such as for appurtenant electrical equipment. In addition, gasoline and diesel fuel would be required for occasional maintenance equipment and trips. As described in the Project Description, routine maintenance is expected to necessitate approximately two workers to travel to the facility up to 20 times per year, including two annual panel washings. Operations would also require up to two workers in a medium-duty utility truck to visit the substation up to 20 times per year and a crew may need to periodically visit the site to address any maintenance issues picked up by the remote monitoring system. The associated fuel consumption would be minimal and would not be considered an inefficient use of fuel, given that it would be associated with a renewable energy generation facility. Thus, although irreversible commitments of small quantities of nonrenewable resources would occur during operation of the Project, the amount of diesel and gasoline fuel consumed during Project operation would be relatively minimal and would not be considered an inefficient use.

[7] Equipment mix by construction activity as well as worker, vendor, and hauling trips may be found in Appendix A.

Furthermore, as a solar facility sited to generate renewable energy, the Project would result in a beneficial impact to renewable energy availability within the state. Therefore, due to the inherent nature of the Project as a solar facility, the Project would not result in a wasteful use of energy. Operational impacts related to wasteful, inefficient, or unnecessary consumption of energy resources would be less-than-significant.

LESS-THAN-SIGNIFICANT IMPACT

b. Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

The Project would assist the State in meeting its energy goals, including those identified in CARB's 2022 Scoping Plan Update (CARB 2022), the Renewables Portfolio Standard, and Senate Bill (SB) 100 by implementing a solar PV facility sited to support future renewable energy Project, and thereby assisting in the increased supply of renewable solar energy within the state.

The Project would be consistent with the following specific electricity goals outlined in CARB's 2022 Scoping Plan Update:

- Scale up renewable energy and electric grid infrastructure to handle increased demand.
- Meet increased demand for electrification without new fossil gas-fired resources.

Additionally, the Project would be consistent with SB 100. SB 100 accelerated the state's Renewables Portfolio Standard Program by increasing California's procurement of electricity from renewable sources to 33 percent of total retail sales by 2020, 60 percent by 2030, and 100 percent by 2045. The Project would generate up to 4 MW of solar energy. Overall, the Project would increase the amount of renewable energy generated for the PG&E system that would be compliant with the Renewables Portfolio Standard Program. Contributing renewable energy to the existing transmission network would improve California's ability to supply renewable energy to end-use customers, specifically within the greater PG&E service area, and to achieve statewide renewable energy goals. The additional energy generated by the Project would be added to the power grid and would directly support energy goals under SB 100.

The SJVAPCD adopted the Climate Change Action Plan in August 2008. The Climate Change Action Plan directed the District Air Pollution Control Officer to develop guidance to assist lead agencies, Project proponents, permit applicants, and interested parties in assessing and reducing the impacts of Project specific GHG emissions on global climate change (SJVAPCD 2009a). In December 2009, the SJVAPCD adopted the guidance: *Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA* and the policy: *District Policy – Addressing GHG Emission Impacts for Stationary Source Projects Under CEQA When Serving as the Lead Agency* (SJVAPCD 2009a, SJVAPCD 2009b). The guidance includes Best Performance Standards which focus on measures that improve energy efficiency. The Project would help facilitate the expansion of renewable energy into PG&E's energy mix which serves San Joaquin County. Therefore, the Project would help implement the guidance from SJVAPCD and thereby would not conflict with their adopted policy and guidance documents.

Additionally, the San Joaquin County General Plan Public Health and Safety Element sets reduction targets and provides strategies to reduce GHG emissions and associated impacts. In particular, Policy PHS-6.3 (GHG Reduction Strategies) states "[t]he County shall promote greenhouse gas emission reductions by encouraging efficient farming methods (e.g., no-till farming, crop rotation, cover cropping); supporting the installation of renewable energy technologies; and protecting grasslands, open space, oak woodlands, riparian forest and farmlands from conversion to urban uses" (San Joaquin County 2016). The Project would help facilitate the expansion of renewable energy into PG&E's energy mix, which serves San Joaquin County. Therefore, the Project would not conflict with the County's General Plan.

For the reasons described above, the Project would have no impacts related to conflicts with or obstruction of a State or local plan for renewable energy or energy efficiency.

NO IMPACT

7 Geology and Soils

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than - Significant Impact	No Impact
Would the project:				
a. Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
1. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?	☐	☐	☐	■
2. Strong seismic ground shaking?	☐	☐	■	☐
3. Seismic-related ground failure, including liquefaction?	☐	☐	■	☐
4. Landslides?	☐	☐	■	☐
b. Result in substantial soil erosion or the loss of topsoil?	☐	☐	■	☐
c. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	☐	☐	■	☐
d. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	☐	☐	■	☐
e. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	■
f. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	■	☐	☐

The following analysis is based upon the Geotechnical Report prepared for the Project by Salem Engineering Group, Inc. in July 2026 (Appendix D).

a.1. Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?

Alquist-Priolo Earthquake Fault Zones are regulatory zones established throughout California by the California Geological Survey. These zones identify areas where potential surface rupture along an active fault could prove hazardous and identify where special studies are required to characterize the fault rupture hazard potential to habitable structures. According to the Geotechnical Report, there are no

known active earthquake fault zones on the Project Site, as delineated on the most recent DOC Alquist-Priolo Earthquake Fault Zoning Map (DOC 2021). The Geotechnical Report further confirms the nearest active fault segment in the region is the Marsh-Greenville section of the Greenville Fault, located approximately 38.5 miles southwest of the Project Site as demarcated by the DOC (DOC 2021). The Project is a solar facility that does not involve the construction of habitable structures or placement of permanent on-site personnel. Therefore, the Project would not directly or indirectly cause the risk of loss, injury, or death involving rupture of a known earthquake fault. No impact would occur.

NO IMPACT

a.2. Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking?

There are no fault lines on the Project Site. The nearest active fault in the region is the Marsh Creek-Greenville section of the Greenville Fault located approximately 38.5 miles southwest of the Project Site as demarcated by the DOC (DOC 2021). As determined in the Geotechnical Report prepared for the Project, the Project site could be impacted by relatively low to moderate levels of seismic ground shaking in the event of a large regional earthquake.

The Project is an unmanned solar facility. The Project would be designed and constructed in accordance with the seismic safety requirements of the California Building Code (CBC), which is adopted as part of Title 8 Division 1 of the San Joaquin County Code. It requires that all improvements be constructed to withstand anticipated ground shaking from regional fault sources. The CBC requires that a licensed geotechnical engineer be retained to design the Project components to withstand probable seismically induced ground shaking and consolidate recommendations into a site-specific geotechnical report. The CBC requires that a final geotechnical investigation be performed after Project design plans are finalized and prior to construction, and that a final geotechnical report be completed to provide engineering and design requirements. All construction would adhere to the specifications, procedures, and site conditions contained in the final design plans, which would comply with the seismic recommendations of a California-registered, professional geotechnical engineer contained in the geotechnical report in accordance with the CBC. The final structural design would be subject to approval and follow-up inspection by the City. Final design requirements would be provided to the on-site construction supervisor and the County Building Inspector to ensure compliance. Implementation of the applicable CBC requirements (including design requirements provided in a site-specific geotechnical report) and local agency enforcement would ensure that the Project would not directly or indirectly cause substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking. Therefore, impacts related to ground shaking would be less than significant

LESS-THAN-SIGNIFICANT IMPACT

a.3. Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving seismic-related ground failure, including liquefaction?

a.4. Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving landslides?

c. Would the project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?

The Project Site is relatively flat and surrounded by flat land, and therefore is not subject to landslide risk. Additionally, the Project Site is not located within a liquefaction zone (DOC 2021). The Project would not create steep slopes or otherwise increase the risk of landslides at the Project Site. Project design and construction would incorporate standard safety measures from the CBC to address potential seismic hazards, including lateral spreading, subsidence, liquefaction and collapse. Further, as detailed in the Geotechnical Report prepared for the Project, subsurface soils encountered in borings are not considered susceptible to liquefaction and seismic induced settlement is expected to be negligible due to the low

potential of liquefaction. The potential for seismically induced slope instability is considered low due to the flat topographic setting of the site. Since soil liquefaction at the Project area is unlikely, the potential for both lateral spreading and lateral flow is also considered low. Compliance with the CBC would ensure the Project would result in less than significant impacts related to unstable soils and directly or indirectly causing the risk of loss, injury, or death related to liquefaction or landslides. Therefore, impacts related to seismic-related ground failure, liquefaction, landslides, lateral spread, subsidence, or collapse would be less than significant.

LESS-THAN-SIGNIFICANT IMPACT

b. Would the project result in substantial soil erosion or the loss of topsoil?

Soil erosion is the removal of soil by water, wind, and gravity. Ground-disturbing activities associated with Project construction would include vegetation clearing, surface grading for the access road(s), installation of solar panel pile mounts, and installation of fencing. Construction of the Project would require minimal cut and fill of soils during ground disturbing activities. As further discussed in Section 10, *Hydrology and Water Quality*, the Project would be required to obtain coverage under a Construction Stormwater General Permit to comply with all established regulations of the National Pollutant Discharge Elimination System (NPDES) permitting program to control construction stormwater discharges. Compliance with the conditions of the Construction Stormwater General Permit would require the developer to develop and implement a Stormwater Pollution Prevention Plan (SWPPP) to reduce potential erosion and loss of topsoil during Project construction activities. Typical Best Management Practices (BMP) required by a SWPPP would include covering of inactive stockpiles, silt fences and gravel bag berms to trap sediments, inlet protection, and slope stabilization to limit discharge of eroded soils from the construction site and sedimentation of surface waters off-site. Pursuant to Title 5 Division 10 of the San Joaquin County Code, applicable BMPs are required to be implemented to reduce erosion and other stormwater impacts. With adherence to these State and local regulations, the Project would not result in substantial soil erosion or the loss of topsoil, and this impact would be less-than-significant.

LESS-THAN-SIGNIFICANT IMPACT

d. Would the project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?

The Project Site is underlain by Acampo sandy loam, 0 to 2 percent slopes, Kingdon fine sandy loam, 0 to 2 percent slopes, and Tokay fine sandy loam, 0 to 2 percent slopes (USDA NRCS 2025). Acampo sandy loam, 0 to 2 percent slopes, has a low clay content, which is indicative of a low shrink-swell potential. Kingdon fine sandy loam, 0 to 2 percent slopes, has a low clay content, which is indicative of a low shrink-swell potential. Tokay fine sandy loam, 0 to 2 percent slopes, has a low clay content, which is indicative of a low shrink-swell potential (USDA NRCS 2025). The Geotechnical Report prepared for the Project confirms this, stating that based on the results of laboratory testing, the soils encountered at the site are considered to have a low risk for post construction shrink/swell movement (low expansion potential). Although the Project does not involve the construction of habitable structures or placement of permanent on-site personnel, it would still be required to comply with San Joaquin County Code Title 8, which adopts the CBC by reference, because the Project requires a building permit from the County. Chapter 18 of the CBC provides criteria for geotechnical and structural considerations for design and installation of foundation systems, as well as requirements for soil investigations and site preparation (also refer to the discussion under criterion a2). With adherence to the CBC, impacts related to expansive soil would be less than significant.

LESS-THAN-SIGNIFICANT IMPACT

e. Would the project have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

The Project does not include septic tanks or alternative wastewater disposal systems. Therefore, no impact related to soil support regarding septic tanks or wastewater disposal systems would occur.

NO IMPACT

f. Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Paleontological resources, or fossils, are the evidence of once-living organisms preserved in the rock record. They include both the fossilized remains of ancient plants and animals and the traces thereof (e.g., trackways, imprints, burrows, etc.). Paleontological resources are not found in "soil" but are contained within the geologic deposits or bedrock that underlies the soil layer. Typically, fossils are greater than 11,700 years old (i.e., Pleistocene or older) and are typically preserved in sedimentary rocks. Although rare, fossils can also be preserved in volcanic rocks and low-grade metamorphic rocks under certain conditions (Society of Vertebrate Paleontology [SVP] 2025). Fossils occur in a non-continuous and often unpredictable distribution within some sedimentary units, and the potential for fossils to occur within sedimentary units depends on several factors. It is possible to evaluate the potential for geologic units to contain scientifically important paleontological resources, and therefore evaluate the potential for impacts to those resources and provide mitigation for paleontological resources if they are discovered during construction of a development project.

Rincon evaluated the paleontological sensitivity of the geologic units that underlie the Project Site to assess the Project's potential for significant impacts to scientifically important paleontological resources. The analysis was based on the results of a review of existing information in the scientific literature regarding known fossils within geologic units mapped at the Project Site. In the absence of other sensitivity criteria required by certain federal, state, or local regulatory agencies, the SVP's Fossil Prediction Map System (FPMS) is used to assign paleontological sensitivity to geologic units (SVP 2025). FPMS assignments are based on rock units within which vertebrate or significant invertebrate fossils have been determined by previous studies to be present or likely to be present. Fossil occurrences are correlated with the geologic units that contain them, so the history of a geologic unit in producing fossils can be used to predict its potential for producing fossils in the future. The FPMS is a 5-tier scale ranging from FPMS 1 (Very Low Potential) to FPMS 5 (Very High Potential) geologic units along with other rankings for geologic units with unknown potential or areas covered by water or ice. Following the literature review, a paleontological sensitivity classification was assigned to each geologic unit mapped within the Project Site. This criterion is based on rock units within which vertebrate or significant invertebrate fossils have been determined by previous studies to be present or likely to be present. The potential for impacts to significant paleontological resources is based on the potential for ground disturbance to directly impact paleontologically sensitive geologic units.

The Project is located in the Great Valley geomorphic province (CGS 2002). The Great Valley is an elongate lowland approximately 50 miles wide and 400 miles long. It is bounded to the east by the Sierra Nevada Range and to the west by the Coast Range. A relatively undeformed basin, the Great Valley rises from about sea level to approximately 400 feet in elevation at the north and south ends. The northern portion of the valley, referred to as the Sacramento Valley, is drained by the Sacramento River, while the southern portion of the valley, referred to as the San Joaquin Valley, is drained by the San Joaquin River. Consequently, the Great Valley is predominantly alluvial, flood, and delta plains formed by these two major river systems (Weissmann et al. 2005).

The Project is located in the *Waterloo* United States Geological Survey 7.5-minute topographic quadrangle(s). The geology of the region surrounding the Project was mapped by Dawson (2009), who identified a single geologic unit, the Modesto Formation, underlying the Project Site.

The Modesto Formation underlies the entire Project Site. The Modesto Formation is late Pleistocene in age and consists of poorly consolidated, poorly sorted sandy sediments with minor amounts of gravel

and silt (Dawson 2009). The Modesto Formation has produced scientifically significant resources including mammoth (*Mammuthus*), ground sloth (*Megalonyx*), and bison (*Bison*) (Jefferson 2010; University of California Museum of Paleontology 2026). Although the Modesto Formation is known to preserve paleontological resources, such discoveries are not incredibly common given the wide geographic distribution of this geologic unit. Therefore, the Modesto Formation is assigned FPMS 3 (Moderate) paleontological sensitivity. However, aerial imagery shows the Project Site has been previously used for agriculture, which is assumed to have disturbed the uppermost 2 feet of sediment. Disturbed and/or fill sediments are not considered paleontologically sensitive, so they are assigned FPMS 1 (Very Low) paleontological sensitivity. Therefore, the Project Site is assigned FPMS 1 (Very Low) paleontological sensitivity from the surface to 2 feet below the surface and FPMS 3 (Moderate) paleontological sensitivity greater than 2 feet below the surface.

Ground-disturbing activities for the Project would include driving piles to mount PV panels, trenching for underground electric transmission cables, installation of five utility poles, and, potentially, excavations for drainage infrastructure. Pile-driving does not produce spoils capable of preserving significant paleontological resources, so this activity would not significantly impact paleontological resources. Installation of utility poles below 3 feet in diameter are too narrow to produce spoils capable of preserving significant paleontological resources, so this activity would also not significantly impact paleontological resources. Trenching for underground cables and potential excavations for infrastructure would require excavations up to 12 feet below the surface. Therefore, these activities would likely impact previously undisturbed sediments with FPMS 3 (Moderate) paleontological sensitivity and could significantly impact paleontological resources.

This impact related to unique paleontological resources or unique geologic features would be potentially significant and implementation of Mitigation Measure GEO-1 is required.

Mitigation Measures

GEO-1 Unanticipated Fossil Discovery

Paleontological Worker Environmental Awareness Program. Prior to the start of construction, a Paleontological Principal Investigator, as defined by the SVP, or their designee shall prepare and conduct a paleontological Worker Environmental Awareness Program (WEAP) training for construction personnel regarding the appearance of fossils and the procedures for notifying paleontological staff should fossils be discovered by construction personnel. The WEAP shall discuss the potential to discover paleontological resources in the Project Site, legal obligations to protect paleontological resources, examples of paleontological resources that may be found in the Project Site, procedures in case a paleontological resource is discovered, and contact information for the Paleontological Principal Investigator.

Unanticipated Discovery of Paleontological Resources. The Project Applicant shall include a standard inadvertent discovery clause in every construction contract to inform contractors of this requirement: If a potential fossil is discovered during Project construction, construction activity within 50 feet of the find shall cease until the discovery is examined by a Paleontological Principal Investigator.

If the find is determined to be significant, the Paleontological Principal Investigator shall direct all mitigation efforts related to paleontological resources consistent with SVP standards, which may include, but are not limited to: paleontological monitoring; fossil salvage, preparation, and curation; and reporting to summarize the paleontological mitigation efforts that would be submitted to the lead CEQA agency.

Significance After Mitigation

Mitigation Measure GEO-1 would ensure that impacts to paleontological resources would be less-than-significant by requiring the preparation and implementation of a paleontological WEAP and including a standard inadvertent discovery clause for the Project. Implementation of Mitigation Measure GEO-1 would reduce potential impacts to paleontological resources to less than significant level and would

effectively mitigate the Project's impacts to these resources through the recovery, identification, and curation of previously unrecovered fossils. Therefore, impacts would be less than significant after mitigation.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

8 Greenhouse Gas Emissions

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than - Significant Impact	No Impact
Would the project:				
a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	■	☐
b. Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	■	☐

Methodology for Project modeling may be found in Section 3, *Air Quality*. Construction GHG emissions are amortized over the estimated 35-year lifetime of the Project, as described under *Description of Project*. The following analysis is based upon the calculations found in Appendix A.

a. Would the project generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?

Construction, operation, and decommissioning of the Project would generate GHG emissions. This analysis considers the combined impact of GHG emissions from construction, operation, and decommissioning.

Construction and Decommissioning Emissions

Construction and decommissioning of the Project would result in GHG emissions, which are primarily associated with use of off-road equipment, on-road vendor and haul trucks, and worker vehicles. GHG emissions associated with the Project were modeled in CalEEMod. As shown in Table 6, construction and decommissioning of the Project would result in a total of approximately 325 metric tons (MT) of carbon dioxide equivalents (CO_2e) for the 6-month construction period. Emissions were then amortized over the lifetime of the Project (i.e., 35 years). Amortized construction plus decommissioning emissions would be approximately 18 MT CO_2e per year. It is assumed that decommissioning GHG emissions would be similar to construction GHG emissions. In actuality, decommissioning emissions would be lower than construction emissions due to the reduced earthwork required and cleaner equipment available during decommissioning of the Project.

Table 6 Estimated Construction GHG Emissions

Year	Project Emissions (MT CO_2e Per Year)
Total Construction GHG Emissions	325
Total Decommissioning GHG Construction	325
Total Amortized over 35 Years	18

MT = metric tons; CO2e = carbon dioxide equivalents
See Appendix A for CalEEMod worksheets.

Operational Emissions

The Project would generate GHG emissions during operation from minimal area source, energy consumption, and mobile emissions.[8] As shown in Table 7, the Project would generate approximately 31 MT of CO_2e per year from the operation of the Project.[9]

Over the Project's up to 35-year operational life—including amortized construction and decommissioning activities—total GHG emissions are estimated at 1,084 MT CO_2e (31 MT CO_2e times 35 years). The Project is expected to offset approximately 13,115 MT CO_2e over the same period, or 375 MT CO_2e annually through the generation of renewable energy. [10]

Table 7 Combined Annual Emissions of Greenhouse Gases

Emission Source	Annual Emissions (MT CO_2e per year)
Construction and Decommissioning	18
Operational	
Mobile	8
Area	<1
Energy	3
Water	<1
Waste	<1
Refrigerants	<1
Total	**31**
Annual GHG Offset by Solar Panels	**375**
Net Annual GHG Emissions	**(344)**

MT = metric tons; CO_2e = carbon dioxide equivalent

May not add directly due to rounding. Parenthetical notation indicates a negative number.

See Appendix A for CalEEMod worksheets.

By generating up to 4 MW of solar energy, the Project would support growing renewable energy demand and is expected to result in a net reduction in GHG emissions. Electricity supplied to meet consumer demand is generated from both renewable sources (such as solar) and non-renewable sources (such as natural gas combustion). Additional renewable generation reduces the need for electricity produced from non-renewable sources, which would generate GHG emissions. The estimated displaced emissions represent the amount of GHGs that would otherwise be generated by non-renewable energy sources but are avoided due to the Project. Because the Project would generate electricity from renewable sources and would offset greenhouse gas emissions associated with construction and operation of the Project, the Project would result in net negative annual GHG emissions and an overall reduction in GHG emissions relative to existing conditions. As such, impacts related to the generation of GHG emissions would be less than significant.

LESS-THAN-SIGNIFICANT IMPACT

[8] Area sources for this Project refer to consumer products (such as aerosol cleaners), and architectural coating (maintenance re-coating activities for the Project).
[9] Annual GHG produced includes annual operational emissions as well as construction and decommissioning emissions amortized over the 35-year Project lifetime.
[10] Calculations for GHG offsets may be found in Appendix A. Emissions reductions assumes a robust renewable mix, with the energy generated by the Project only displacing emissions from natural gas and coal.

b. Would the project conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

The Project is a renewable energy project and would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions. California's primary GHG reduction framework—such as AB 32, SB 32, and the 2022 Scoping Plan prepared by CARB—focuses on reducing GHG emissions through increased energy efficiency, transportation improvements, and expanded use of renewable energy sources.

The Project consists of a 4 MW solar PV facility that would generate clean, renewable electricity and displace electricity that would otherwise be produced by fossil fuel–based generation. As such, the Project directly supports statewide goals to increase renewable energy generation and reduce reliance on GHG-intensive energy sources.

In addition, the Project would be consistent with the San Joaquin County 2035 General Plan, which serves as the County's framework for reducing GHG emissions through land use planning, energy efficiency, and promotion of renewable energy systems (San Joaquin County 2016). For example, the Project would be consistent with Goal LU-6.8, *Sustainable Technologies*, and Goal NCR-H, *Solar Energy Ordinance*, as it would involve installation of solar arrays to generate renewable electricity. The Project also would support Goal IS -3.6, *Clean Energy and Fuel Sources*, and Goal NCR-5.2, *Alternative Energy*, as it would provide a source of renewable energy for operations throughout the County. By providing up to 4 MW of renewable energy, the Project would contribute to reducing GHG emissions and advancing California's and the County's climate policy objectives.

Therefore, the Project would not conflict with applicable GHG reduction plans, policies, or regulations, and impacts would be less than significant.

LESS-THAN-SIGNIFICANT IMPACT

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9 Hazards and Hazardous Materials

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than - Significant Impact	No Impact
Would the project:				
a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	■	☐
b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	■	☐
c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school?	☐	☐	☐	■
d. Be located on a site that is included on a list of hazardous material sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	■
e. For a project located in an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	☐	☐	☐	■
f. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	■	☐
g. Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?	☐	☐	☐	■

a. Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

b. Would the project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

Construction and operation of the proposed 4 MW solar PV facility would involve the limited use of hazardous materials typical of similar construction and maintenance activities. These materials would primarily include fuels (e.g., diesel), lubricants, hydraulic fluids, and small quantities of solvents or cleaning agents. During operation, solar PV systems do not require fuel combustion or chemical processing, and therefore would not involve the routine use of substantial quantities of hazardous materials.

The transport, handling, storage, and disposal of hazardous materials associated with the Project would be subject to a comprehensive regulatory framework. At the federal level, hazardous wastes and

materials are regulated under the Resource Conservation and Recovery Act (RCRA; 40 CFR Parts 260–273), which governs the generation, transport, and disposal of hazardous waste. Worker safety and hazardous materials handling during construction are regulated under Occupational Safety and Health Administration standards (29 CFR Part 1926). In addition, hazardous materials transportation is regulated by the United States. Department of Transportation (49 CFR Parts 171–180).

At the state level, hazardous materials management is governed by the California Hazardous Waste Control Law (Health and Safety Code Section 25100 et seq.) and CCR, Title 22, which establishes requirements for hazardous waste identification, handling, and disposal. The California Environmental Protection Agency's Unified Program further regulates hazardous materials through the Hazardous Materials Business Plan (HMBP) requirements (Health and Safety Code Section 25500 et seq.) and the California Accidental Release Prevention Program. Locally, the San Joaquin County Environmental Health Department, acting as the Certified Unified Program Agency, enforces these programs, including the HMBP, Hazardous Waste Generator Program, and petroleum storage requirements. Facilities handling reportable quantities of hazardous materials must prepare and maintain an HMBP to ensure proper management and emergency response procedures. However, the Project would not require handling reportable quantities of hazardous materials.

There is a limited potential for accidental releases of hazardous materials during construction, such as spills of fuel or hydraulic fluids from construction equipment or storage containers. However, such incidents would be short-term, localized, and minimized through implementation of standard BMPs including proper storage and labeling, secondary containment, spill prevention measures, and worker training.

Federal and state regulations require that construction activities implement spill prevention and response procedures, including measures to prevent the discharge of pollutants from spills and leaks (e.g., as required under federal construction stormwater regulations, 40 CFR Section 450.21). In addition, applicable spill prevention requirements, such as the Spill Prevention, Control, and Countermeasure Rule (40 CFR Part 112), would apply where relevant.

During operation, the solar facility would not use or store substantial quantities of hazardous materials, and therefore would not present a meaningful risk of accidental release. Solar panels generate electricity without combustion or chemical reactions and do not pose a risk of large-scale hazardous material releases. Routine maintenance activities would involve only small quantities of materials, which would be managed in accordance with applicable regulations and manufacturers' instructions.

In the unlikely event of an accidental release, adherence to regulatory requirements and BMPs—including spill containment, cleanup procedures, and emergency response planning—would ensure that impacts are minimized and promptly addressed.

Decommissioning activities would similarly involve standard construction practices with minimal hazardous material use, and would be subject to the same regulatory controls described above.

Therefore, the Project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials or create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment and related impacts would be less than significant.

LESS-THAN-SIGNIFICANT IMPACT

c. Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school?

There are no existing or proposed schools within 0.25 mile of the Project Site. The nearest school to the Project Site is Victor Elementary School, located approximately 2.2 miles to the northwest. In addition, the Project would not involve the handling of hazardous materials and would not generate hazardous emissions. There would be no impact related to the presence of hazardous materials in the vicinity of an existing or proposed school.

NO IMPACT

d. Would the project be located on a site that is included on a list of hazardous material sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

Government Code Section 65962.5 requires the California Environmental Protection Agency to develop an updated Hazardous Waste and Substances Sites List, also known as the Cortese List. The California Department of Toxic Substances Control (DTSC) is responsible for a portion of the information contained in the Cortese List; other state and local government agencies are also required to provide additional hazardous material release information for the Cortese List. The following resources were reviewed on June 23, 2026, to obtain hazardous material release information:

- California State Water Resources Control Board (SWRCB) GeoTracker database (SWRCB 2026)
- California Department of Toxic Substances Control EnviroStor database (DTSC 2026)

Based on the database review, the Project Site and properties in its immediate vicinity are not included on the list of hazardous material sites compiled pursuant to Government Code Section 65962.5. According to the SWRCB GeoTracker database, the nearest listing is a Cleanup Program Site, located approximately 1.1 miles northwest of the Project Site. The Cleanup Program Site, known as Mettler Farms Lodi, involved a 2015 diesel leak from an aboveground storage tank, and the status of the site is Open. Due to distance from the Project Site, the Cleanup Program Site does not pose an environmental concern to the Project, and no impact related to hazardous material sites would occur.

NO IMPACT

e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?

The Project Site is not located within two miles of a public or public use airport. The closest airport to the Project Site is the Lodi Airport, located approximately 7.3 miles northwest of the Project Site. According to San Joaquin County's Aviation System Airport Land Use Compatibility Plan, the Project Site is not located within the Airport Influence Area of the Lodi Airport (San Joaquin County 2018a). Therefore, the Project would not result in a safety hazard or excessive noise for people residing or working in the area, and no impact related to an adopted airport land use plan would occur.

NO IMPACT

f. Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

The Project Site is within the jurisdiction of the San Joaquin County Local Hazard Mitigation Plan (San Joaquin County 2023).

The Project would not involve the development of structures or infrastructure that would potentially impair implementation of or physically interfere with this plan. The proposed 18.5-acre solar facility would be developed on a relatively small, discrete site and would not introduce substantial new population, traffic, or barriers that could hinder emergency access or evacuation. The Project would include an

internal access road that would be designed to accommodate emergency vehicles and would maintain compliance with applicable fire code requirements. The access road(s) associated with the Project be improved with gravel and would be designed to meet San Joaquin County's *Fire Apparatus Access Road Standard* (San Joaquin County 2015). Driveway access to the Project Site would be maintained at all times to ensure that emergency responders can enter and exit the Site without obstruction in compliance with Section 9-409.430(9) of the San Joaquin County Code.

During construction, there may be a temporary increase in traffic from construction workers and equipment; however, construction activities would be short-term and would not substantially affect surrounding roadway operations or regional evacuation routes. Project construction, including installation of the POI is not anticipated to result in a partial or full closure of North Locust Tree Road or East Kettleman Lane. Any potential partial or full road closure associated with the Project would be subject to the requirements and permitting of the San Joaquin County Public Works Department. Additionally, any potential closure would be temporary in nature, similar to construction traffic. Construction equipment and construction worker vehicles would be staged on the Project Site and would not result in substantial delays on North Locust Tree Road, East Kettleman Lane, or unnamed rural roadways in the vicinity of the Project.

Operation of the solar facility would generate minimal traffic, limited to periodic maintenance visits, and would not materially affect roadway capacity or circulation patterns. The Project would not require road closures, permanent re-routing of traffic, or installation of structures that would obstruct existing public streets or designated emergency evacuation routes.

The minimal, infrequent vehicle trips associated with construction and operation and maintenance activities would not disturb traffic patterns on North Locust Tree Road or East Kettleman Lane in such a manner that could affect emergency response or evacuations.

As required by San Joaquin County Code Section 9-409.430(b)(7), a Fire Prevention Plan would be developed and implemented for the Project, which would be approved by the County Fire Marshal and local fire protection district. The Fire Prevention Plan would include procedures including, but not limited to, emergency vehicle access and turnaround at the Project Site, vegetation management, and fire break maintenance around all structures.

Because the Project would not obstruct roadways, would maintain adequate site access for emergency vehicles, and would not interfere with regional evacuation routes or emergency response operations, it would not impair implementation of adopted emergency response or evacuation plans, and potential impacts on emergency response would be less-than-significant.

LESS-THAN-SIGNIFICANT IMPACT

g. Would the project expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?

As described in Section 20, *Wildfire*, the Project Site is not within a State Responsibility Area or lands classified as a Very High Fire Hazard Severity Zone (FHSZ), as delineated by the California Department of Forestry and Fire Protection's (CAL FIRE) Fire Hazard Severity Zone Viewer (CAL FIRE 2024). The Project Site is not located within a FHSZ, and is within a Local Responsibility Area (LRA). The nearest FHSZ is a Moderate FHSZ located approximately 6.3 miles northeast of the Project Site, on the east side of Clements Road. Vacant lands and existing agricultural development, roads, North Paddy Creek, and Bear Creek separate the Moderate FHSZ from the Project Site. The Project would also be operated remotely, which would eliminate the potential for exposure of any on-site employees to wildland fire risks. The Project Site is located within the central valley in an area of predominately agricultural use, and is not located in the vicinity of wildlands. Thus, the Project would not expose people or structures to a risk of loss, injury, or death involving wildland fires. No impact related to wildland fires would occur.

NO IMPACT

10 Hydrology and Water Quality

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than - Significant Impact	No Impact
Would the project:				
a. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	☐	☐	■	☐
b. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	■	☐
c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:				
(i) Result in substantial erosion or siltation on- or off-site;	☐	☐	■	☐
(ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;	☐	☐	■	☐
(iii) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	☐	☐	■	☐
(iv) Impede or redirect flood flows?	☐	☐	■	☐
d. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☐	■
e. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	■	☐

a. Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?

Construction activities associated with the Project have the potential to affect water quality because stormwater runoff over disturbed soil surfaces can pick up sediment, debris, and contaminants and convey them to downstream receiving waters. Ground-disturbing activities such as clearing, grading, trenching, and foundation installation would temporarily increase the potential for erosion and sedimentation. If construction or future decommissioning occurs during the rainy season or storm events, exposed soils could be mobilized and transported off-site. In addition, construction materials such as fuels, lubricants, paints, solvents, and concrete-related waste could be spilled or leaked and carried in stormwater runoff if not properly managed.

There is an existing irrigation well in the northern portion of the Project Site which would not be used by the Project. No new water supply or wastewater infrastructure would be constructed as part of the Project. However, construction and future decommissioning activities would generate typical

construction-related pollutants (e.g., sediment, debris, and trace amounts of chemicals) that could affect surface water quality in the absence of appropriate controls.

Because the Project would disturb more than one acre, it would be required to comply with the SWRCB's NPDES Construction Stormwater General Permit (Order No. 2022-0057-DWQ). Compliance with this permit requires preparation and implementation of a SWPPP that identifies potential pollutant sources and prescribes BMPs to minimize pollutant discharge. BMPs would include, but are not limited to, erosion and sediment control measures (e.g., silt fencing, stabilized construction entrances, and soil stabilization) and good housekeeping practices (e.g., proper material storage, spill prevention, and waste management) designed to prevent off-site transport of pollutants.

In addition, the Project would be required to comply with San Joaquin County Code Title 5, Division 10 (Stormwater Management and Discharge Control), which prohibits unauthorized discharges to the stormwater system, requires implementation of BMPs, and mandates spill prevention and response measures. Adherence to these regulatory requirements would ensure that construction-related discharges do not violate applicable water quality standards or waste discharge requirements.

Operational impacts on water quality would be minimal. As described above, an existing irrigation well is located within the northern portion of the Project site, which is not planned to be utilized as part of the Project. Operation of the solar facility would not involve process wastewater discharges or the routine use of substantial quantities of hazardous materials. Periodic panel washing would use small water quantities that would percolate into the soil onsite, and no offsite runoff would occur. Additionally, operational water use would be required to comply with applicable County stormwater regulations and BMPs to further prevent runoff-related impacts. As a result, operation of the Project would not result in stormwater pollution or degradation of surface or groundwater quality.

With implementation of required regulatory measures, including preparation and adherence to a SWPPP and compliance with state and local stormwater regulations, the Project would not violate water quality standards or waste discharge requirements, nor would it otherwise substantially degrade surface or groundwater quality, and impacts would be less-than-significant.

LESS-THAN-SIGNIFICANT IMPACT

b. Would the project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

The Project Site overlies the Eastern San Joaquin Subbasin, which is part of the San Joaquin Valley Groundwater Basin (California SWRCB 2006). The Eastern San Joaquin Subbasin is not adjudicated, although it is in condition of critical overdraft (Department of Water Resources [DWR] 2026). The subbasin is managed through the Eastern San Joaquin Groundwater Subbasin Groundwater Sustainability Plan which was adopted by the Eastern San Joaquin Groundwater Authority in November 2024.

The Project would require a water supply during construction, operation, and decommissioning. During construction and decommissioning, nominal amounts of water would be used for dust suppression and earthwork. During operation, solar panel washings would occur twice per year, and water would be used for landscaping, generating an annual water demand of approximately 65,000 gallons. Water for these purposes would be trucked to the Project Site from an external source. While groundwater from the San Joaquin Valley Basin supplies approximately 30 percent of water in the region (USGS 2024), groundwater level measurements within the Eastern San Joaquin Subbasin have been in continuous decline over the last 40 years (San Joaquin County 2014). The amount of water required during construction and decommissioning of the Project would be temporary and nominal. Water to be used during operation would be obtained from an external source, and would not affect groundwater supplies directly within the Project area. Therefore, the Project would not substantially decrease groundwater supplies or impede sustainable groundwater management of the basin.

The Project would not substantially increase impervious surface areas on the Project Site such that development of the site would affect groundwater recharge. Project construction and decommissioning is not anticipated to require substantial amounts of groundwater dewatering such that regional supplies or sustainable groundwater management of the basin would be inhibited. Project operation would not extract groundwater on-site.

Overall, the Project would not substantially decrease groundwater supplies or substantially interfere with groundwater recharge and, therefore, impacts to groundwater management would be less-than-significant.

LESS-THAN-SIGNIFICANT IMPACT

c.(i) Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would result in substantial erosion or siltation on- or off-site?

c.(ii) Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?

c.(iii) Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner that would create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

c.(iv) Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would impede or redirect flood flows?

The Project Site is generally flat. The Project would not substantially increase impervious surface areas on the Project, as the ground beneath the proposed solar array components would be left in existing conditions, and the new access road on the Project Site would be gravel-covered which is semi-pervious. Introduction of the new gravel access road would not substantially alter existing drainage on site since the access road would cover a relatively small area of the Project Site. To prepare the Project Site for use as solar facility, site clearing, excavation, and grading would occur. However, the Project would not involve any activities which could alter drainage patterns on site or alter the course of nearby waterways.

Given the Project Site's relatively flat topography, erosion during construction and decommissioning is unlikely to be substantial. However, the implementation of the BMPs required for the previously discussed SWPPP would control any erosion and siltation during construction. Hazardous materials used during construction, operation, maintenance, and decommissioning would be properly stored, used, and disposed of as discussed under criterion 9(a).

Because pervious surfaces would continue to exist at the Project Site following Project implementation, natural stormwater infiltration would continue. Therefore, any potential drainage alterations associated with the Project would not result in substantial erosion or siltation and would not provide substantial additional sources of polluted runoff and would not exceed the capacity of existing or planned stormwater drainage systems.

According to the Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Map, the Project Site is located in Zone X, an area of minimal flood hazard (FEMA 2009). Given that the Project is not located in a flood hazard area, would not increase the rate of surface runoff, and would only result in a marginal increase in runoff volume, the Project would not impede or redirect flood flows or result in on- or off-site flood impacts.

Overall, impacts associated with existing drainage patterns for the Project would be less than significant.

LESS-THAN-SIGNIFICANT IMPACT

d. In flood hazard, tsunami, or seiche zones, would the project risk release of pollutants due to project inundation?

As described above under criterion 10(c), the Project Site is not located within a flood hazard zone. The Project Site is located approximately 76 miles northeast of the Pacific Ocean and 11.4 miles southwest of the nearest lake, the Camanche Reservoir. Accordingly, the Project Site is not subject to inundation from tsunamis or seiche. No impact related to pollutant release inundation caused by flood hazards, tsunami, or seiche zones would occur.

NO IMPACT

e. Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

The Project Site is within the jurisdiction of the Water Quality Control Plan for the Sacramento River Basin and San Joaquin River Basin and the Eastern San Joaquin Groundwater Subbasin Groundwater Sustainability Plan (California RWQCB 2019, Eastern San Joaquin Groundwater Authority 2024). As described in criterion 10(a), the Project would not violate water quality standards with adherence to regulations such as the NPDES Construction Stormwater General Permit and the San Joaquin County Code. The water quality goals of the Water Quality Control Plan for the Sacramento River Basin and San Joaquin River Basin are enforced through these policies. With adherence to these regulatory requirements, the Project would not interfere with or obstruct achievement of the water quality goals within the Water Quality Control Plan for the Sacramento River Basin and San Joaquin River Basin.

As described under criterion 10(b), the Project would require water usage during construction, operation, and future decommissioning. Water to be used for these phases would be trucked to the Project Site from an external source. If groundwater were provided to the Project, the groundwater would be distributed in compliance with the management requirements of the *Eastern San Joaquin Subbasin Groundwater Sustainability Plan*. Accordingly, the Project's use of groundwater would not conflict with or obstruct implementation of a sustainable groundwater management plan. Therefore, this impact related to existing water quality control plans or sustainable groundwater management plans would be less-than-significant.

LESS-THAN-SIGNIFICANT IMPACT

11 Land Use and Planning

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than - Significant Impact	No Impact
Would the project:				
a. Physically divide an established community?	☐	☐	☐	■
b. Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	■	☐

a. Would the project physically divide an established community?

Types of projects that have the potential to divide an established community include the construction of a new freeway or highway through an established neighborhood. The Project consists of the construction, operation, and decommissioning of a ground-mounted solar PV facility on an agricultural parcel that is currently an inactive vineyard. The Project Site is surrounded on all sides by active agriculture, orchards, fallow land, and scattered rural residences. The Project does not involve construction of freeways, walls, or other features that would divide an established community. Therefore, no impact related to the division of an established community would occur.

NO IMPACT

b. Would the project cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

The applicable plans and policies relating to a conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the Project (including, but not limited to, the General Plan and County Development Title) adopted for the purpose of avoiding or mitigating an environmental effect are summarized below.

San Joaquin County General Plan

Community Development Element

The Project Site is located within the jurisdiction of the County's General Plan and subject to the policies of the General Plan Community Development Element. The Project is consistent with the goals and policies of the General Plan related to renewable energy development and continued agricultural land stewardship due to the fact that it would not permanently alter the land such that agricultural uses would not be feasible onsite and due to the renewable energy it would generate over the course of its 35-year lifespan. Therefore, the proposed use would not conflict with the Community Development Element of the General Plan.

Public Facilities and Services

The County's Public Facilities and Services Element includes goals and policies related to transportation and mobility, and infrastructure and services. The Project would not result in substantial impacts to transportation and mobility or public infrastructure and services. Refer to Environmental Checklist Section 17, *Transportation*, for further discussion on the Project's potential impacts to transportation and mobility. Refer to Environmental Checklist Section 15, *Public Services*, and Section 19, *Utilities and Service Systems,* for further discussion on the Project's potential impacts to public infrastructure and services. For the

reasons discussed in those sections, the Project would not conflict with the Public Facilities and Services Element of the General Plan.

Public Health and Safety

The County's Public Health and Safety Element includes policies related to air quality, geologic hazards, flooding, hazardous materials, noise, and wildfire. These environmental topics have been addressed under the applicable section throughout this analysis. For the reasons discussed in those sections, the Project would not conflict with the Public Health and Safety Element of the General Plan.

Natural and Cultural Resources Element

The County's Natural and Cultural Resources Element contains policies addressing agricultural resources, biological resources, water quality, energy, cultural and historic resources, scenic resources, and recreation. These environmental topics have been addressed under the applicable section throughout this analysis. In cases where impacts were identified as potentially significant, mitigation is identified to reduce impacts to a less-than-significant level. For the reasons discussed in those sections, the Project would not conflict with the Natural and Cultural Resources Element of the General Plan.

San Joaquin County Code

The Project Site is zoned AG-40 (General Agriculture; 40-acre minimum). Pursuant to the San Joaquin County Development Title Update, most recently updated in June of 2025, utility scale solar generation facilities are permitted in the A/G zone with approval of a CUP by the Planning Commission (San Joaquin County 2025b). The Project must comply with the applicable provisions set forth in the County Development Title. Additionally, the Project would satisfy Code Section 9-409.430(b)(5) requirement regarding farmland protection by returning the land to its current state after Project decommissioning which would allow for future agricultural uses on the land as described under threshold a in Section 2, *Agriculture and Forestry Resources*. Therefore, the Project would not conflict with the San Joaquin County Code.

In summary, the Project would not cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect and this impact would be less than significant.

LESS-THAN-SIGNIFICANT IMPACT

12 Mineral Resources

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than - Significant Impact	No Impact
Would the project:				
a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	■
b. Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	☐	☐	☐	■

a. Would the project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

b. Would the project result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?

The San Joaquin County General Plan indicates there are sand and gravel deposits of regional significance in the County, primarily in rivers and creeks (San Joaquin County 2016). The Project Site is not located within a Mineral Land Classification area (CGS 2025). The nearest Mineral Land Classification area to the Project Site, known as the Stockton-Lodi Production-Consumption Region for Portland Cement aggregate site, is located 1.8 miles to the north. There are no known mineral resources or resource recovery sites on or in the vicinity of the Project Site (DMR 2025). Further, the Project would not involve substantial excavation or mineral extraction. Therefore, the Project would not result in the loss of availability of a known mineral resource or locally important mineral resource recovery site and, as such, there would be no impact related to mineral resources.

NO IMPACT

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13 Noise

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than - Significant Impact	No Impact
Would the project result in:				
a. Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	■	☐	☐
b. Generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	■	☐
c. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	■

a. *Would the Project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the Project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?*

Construction and Decommissioning

The significance of construction noise impacts is determined through compliance with the San Joaquin County Code. Per Section 9-404.020(c), noise associated with construction and decommissioning, provided such activities do not take place before 6:00 a.m. or after 9:00 p.m. on any day or at any time on Sunday or federal holidays, is exempt from the County's noise ordinance. Project construction and decommissioning would not occur within these hours or on Sunday or federal holidays. Therefore, construction noise impacts would be less than significant. Construction noise levels are provided below for informational purposes.

Construction noise was estimated at nearby uses with the FHWA Roadway Construction Noise Model (RCNM). RCNM predicts construction noise levels for a variety of construction operations based on empirical data and the application of acoustical propagation formulas. RCNM provides reference noise levels for standard construction equipment, with an attenuation rate of 6 dBA per doubling of distance for stationary equipment.

Variation in power imposes additional complexity in characterizing the noise source level from construction equipment. Power variation is accounted for by describing the noise at a reference distance from the equipment operating at full power and adjusting it based on the duty cycle of the activity to determine the L_{eq} of the operation (FHWA 2006). Each phase of construction has a specific equipment mix, depending on the work to be accomplished during that phase. Each phase also has its own noise characteristics; some will have higher continuous noise levels than others, and some have high-impact noise levels.

Construction activity would result in temporary noise in the Project site vicinity, exposing nearby receivers to increased noise levels. Using the three loudest pieces of construction equipment during each phase, construction noise would typically be higher during the more intensive phases of construction (i.e., solar equipment installation) and would be lower during the less intensive construction phases (i.e., paving and

staging). Per information provided by the Applicant, heavy construction equipment during solar equipment installation could include a pile driver, backhoe, and manlift. The less intensive phases of paving and staging could include roller, excavator and backhoe and would have lower construction noise levels. It is assumed diesel engines would power all construction equipment.

The closest residences to Project construction during building construction would be a single-family residence to the east at 14300 N. Locust Tree Road (approximately 70 feet from the nearest pile driver activity to the property line) and single-family residences to the northwest at 10250 E. Kettleman Lane (approximately 130 feet from the nearest pile driver activity to the property line). Table 8 summarizes construction noise associated with each phase of construction at the nearest residences, based on the equipment list provided by the applicant. As shown in Table 8, construction noise levels would be up to 91 dBA L_{eq} at the nearest residences during building construction.

Table 8 Construction Noise Levels

Phase	Noise Level at Nearest Residences (dBA L_{eq})		
	RCNM Reference Noise Level (50 feet)	Single-Family Residential – 14300 N. Locust Tree Road (70 feet) [1]	Single-Family Residential – 10250 E. Kettleman Lane (130 feet) [1]
Site Preparation	78	75	70
Solar Equipment Installation	94	91	86
Paving	73	70	65
Staging	76	73	68

See Appendix E for RCNM worksheets.

[1] Distance from the nearest use of pile driver activity.

Decommissioning activities would involve the removal of Project components using construction-type equipment similar to, but generally less intensive than that used during Project construction. Temporary decommissioning noise levels would therefore be comparable to or lower than the construction noise levels shown in Table 8 and would occur over a limited duration. As discussed above, decommissioning activities would be conducted within the allowable hours specified in San Joaquin County Code Section 9-404.020(c) and would therefore be exempt from the County's noise ordinance. Accordingly, temporary decommissioning noise impacts would also be less than significant. (Manufacturer specification sheets for inverter and Skidded String Medium Voltage Station located in Appendix E).

Operational Equipment

The Project would generate operational noise from the inverters housed within each Skidded String Medium Voltage Station. As described in the Project Description, the Project would include two Skidded String Medium Voltage Stations, each with eight inverters. Operational noise is measured from the nearest Skidded String Medium Voltage Station to off site sensitive receptors. To represent Project inverter noise emissions, the Project Applicant provided specifications for a CPS FlexOM Gateway (CPS SCH250K-T-US-600), a 250-kW, 600-volt inverter. According to the manufacturer’s specifications, each inverter has a noise level of 80 dBA at a reference distance of 1 meter (3.3 feet). When operating simultaneously, the combined noise level of the eight inverters would be approximately 89 dBA Leq at 1 meter (3.3 feet).

San Joaquin County’s nighttime exterior noise standard for stationary noise sources at residential receptors is 45 dBA Leq. Noise from an inverter is steady and broadband, generated primarily by cooling fans and electrical components, and occurs only during daylight hours when the solar array is producing power. However, while inverters typically operate only during daytime hours (7 a.m. to 10 p.m.), this analysis applies the more restrictive nighttime standard to account for the possibility that the equipment could operate or emit residual noise outside of daytime hours.

Using standard attenuation of 6 dBA per doubling of distance, the combined inverter noise level of 89 dBA at 3.3 feet would attenuate to 52 dBA Leq at a distance of 245 feet to the nearest sensitive receptor to the east (14300 N. Locust Tree Road). The operational noise level of 52 dBA Leq would exceed the County's 45 dBA Leq exterior noise standard by 7 dBA. Therefore, operational noise impacts would be potentially significant and Mitigation Measure NOI-1 would be required.

Mitigation Measures

NOI-1 Final Design Noise Verification

Prior to issuance of building permits, the Project applicant shall prepare a final design-level noise analysis completed by an acoustical engineer to verify operational noise levels at the nearest sensitive receptors do not exceed the County's 45 dBA L_{eq} exterior noise standard. The Project applicant shall achieve consistency with the noise limits by implementing one of the following measures:

- Install a solid barrier around the inverters to break the line of sight between the inverters and the nearest residences;
- Select inverters that generate lower noise levels; or
- Site the equipment further from the residences

Significance After Mitigation

With implementation of Mitigation Measure NOI-1, operational noise levels would be reduced to comply with applicable County noise standards and would not exceed the County's nighttime noise standard of 45 dBA L_{eq} at the nearest sensitive receptor. For example, use of a solid barrier such as a concrete block wall can reduce noise levels by 10 to 15 dBA L_{eq}, which would reduce noise levels to 37 to 42 dBA L_{eq}. Therefore, operational noise impacts would be less than significant after mitigation.

Construction and Decommissioning Traffic Noise

San Joaquin County does not have quantified traffic noise significance thresholds. A project normally has a significant effect on the environment related to noise if it substantially increases the ambient noise levels for adjoining areas. Changes of less than 1 dBA are usually indiscernible. Changes of 1 to 3 dBA are detectable under quiet, controlled conditions. Most people can detect changes in sound levels of approximately 3 dBA under normal, quiet conditions. A change of 5 dBA is readily discernible to most people in an exterior environment. Therefore, less of an increase from roadway noise is allowed. Based on similar criteria from the Federal Aviation Administration (FAA)(FICON 2020), the following thresholds of significance are used to assess roadway vehicle noise impacts at sensitive receiver locations:

- Greater than 1.5 dBA CNEL increase for ambient noise environments of 65 dBA CNEL and higher;
- Greater than 3 dBA CNEL increase for ambient noise environments of 60-64 dBA CNEL;
- Greater than 5 dBA CNEL increase for ambient noise environments of less than 60 dBA CNEL and where the resulting future noise level would exceed 60 dBA CNEL.

As described in the Project Description, the Project could generate up to a maximum of 104 daily construction vehicle trips during the installation phase. which is the most intensive phase of construction. Daily trips associated with decommissioning activities would be similar or lower than this at the most intensive phase of decommissioning. Construction and decommissioning traffic would primarily use N. Locust Tree Road and/or East Kettleman Lane in addition to Access Road A, Access Road B, or both. N. Locust Road has an existing average daily traffic (ADT) volume of 52 vehicles (Replica 2025). The addition of construction and decommissioning traffic would result in an increase of approximately 4.8 dBA CNEL. In addition, East Kettleman Lane has an existing average daily traffic (ADT) volume of 3,744 vehicles (Replica 2025). The addition of Project construction and decommissioning traffic would result in an increase of approximately 0.1 dBA CNEL.

The Project is located in a rural area of San Joaquin County where ambient noise levels are expected to be below 60 dBA CNEL. Therefore, the applicable significance threshold is a 5 dBA CNEL increase. Because the estimated increase of 4.8 dBA CNEL would remain below this threshold, off-site construction traffic noise impacts would be less than significant.

Operational Traffic Noise

Routine operations and maintenance visits, including approximately two annual water truck trips for panel washing, would require up to two workers in a light to medium-duty utility truck to visit the facility up to 20 times per year. Operational vehicle activity would primarily consist of light-duty pickup trucks, utility vehicles, and infrequent water truck visits. Although water trucks generate more noise than passenger vehicles, the limited number of annual trips would result in only temporary and localized noise increases. Given the infrequent nature of these trips, they would not measurably increase ambient noise levels. Therefore, operational traffic noise and impacts would be less than significant.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

b. Would the project result in generation of excessive groundborne vibration or groundborne noise levels?

Construction and Decommissioning

Project construction and decommissioning could use equipment that would temporarily result in groundborne vibration, such as a vibratory roller. Based on Caltrans *Transportation and Construction Vibration Guidance Manual* recommendations, limiting vibration levels to below 0.5 in/sec PPV inches per second at older residential structures would prevent structural damage regardless of building construction type (Caltrans 2020). The nearest off-site sensitive receptor is located approximately 135 feet away from the nearest Project component where pile driving would occur. In addition, other construction activities could occur within 110 feet from the off-site residence. Construction vibration levels from pile driving and other construction equipment are shown Table 9. As shown in the table, an impact pile driver creates a vibration level of approximately 0.465 in/sec PPV at 55 feet. Additionally, a vibratory roller creates a vibration level of 0.127 in/sec PPV at 35 feet. At these distances, vibration levels from construction equipment would be below the 0.5 in/sec PPV threshold for architectural damage to older residential structures.

Therefore, Project construction and decommissioning would not result in excessive ground-borne vibration or ground-borne noise, and impacts would be less than significant.

Table 9 Groundborne Vibration Levels

Equipment	Approximate Vibration Level (in/sec PPV)
Distance	**110 feet**
Vibratory Roller	0.104
Large Bulldozer	0.044
Loaded Truck	0.076
Small Bulldozer	0.001
Distance	**135 feet**
Impact Pile Driver	0.292

in/sec = inch per second; PPV = peak particle velocity
Source: Caltrans 2020

Operation

Operation of the proposed solar facility would not include any substantial vibration sources; therefore, operational vibration impacts would be less-than-significant.

LESS-THAN-SIGNIFICANT IMPACT

c. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

The Project Site is not located within an airport land use plan or within two miles of a public or private airport (San Joaquin 2018). The closest airport to the Project Site is the Lodi Airport, located approximately 7.3 miles northwest of the Project Site. Therefore, the Project would not expose people residing or working in the Project area to excessive noise levels related to airstrip/airport operation. No impact would occur related to an existing airport or airport land use compatibility plan.

NO IMPACT

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14 Population and Housing

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than - Significant Impact	No Impact
Would the project:				
a. Induce substantial unplanned population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)?	☐	☐	■	☐
b. Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	■

a. Would the project induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

The Project is a proposed solar facility that does not include any housing or business development that would directly induce population growth. The Project would not create housing, employment centers, or other land uses that would attract new permanent residents or businesses. Construction and decommissioning activities would require a temporary workforce; however, these workers would be drawn from the existing regional labor pool and would not result in long-term population increases.

Operation of the Project would require two workers to visit the Project Site up to 20 times per year. It is anticipated that maintenance workers would live locally and would not relocate to the area. If workers were required to relocate to the area, the additional population would not represent a substantial population change.

The Project also would not indirectly induce population growth. It would not require or result in the extension of major infrastructure—such as roads, water supply systems, wastewater facilities, or other urban services—that could facilitate additional development or growth in the surrounding area. The Project would primarily consist of energy generation equipment and associated minor infrastructure necessary to interconnect with the existing electrical grid.

While the Project would contribute renewable energy to meet existing and forecasted electricity demand, including demand associated with anticipated regional growth, it would not itself drive or accelerate growth. Rather, it would support the reliability of the existing electrical system and help accommodate planned development consistent with adopted land use plans. Because the Project would not directly or indirectly induce substantial unplanned population growth, impacts would be less than significant.

LESS-THAN-SIGNIFICANT IMPACT

b. Would the project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

The Project would not displace any existing housing or people as the Project Site as there are no existing residences on the Project Site. Therefore, no impact related to the need for replacement housing would occur.

NO IMPACT

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15 Public Services

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than - Significant Impact	No Impact
a. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
1 Fire protection?	☐	☐	☐	■
2 Police protection?	☐	☐	☐	■
3 Schools?	☐	☐	☐	■
4 Parks?	☐	☐	☐	■
5 Other public facilities?	☐	☐	☐	■

a.1. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered fire protection facilities, or the need for new or physically altered fire protection facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives?

a.2. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered police protection facilities, or the need for new or physically altered police protection facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives?

a.3. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered schools, or the need for new or physically altered schools, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios or other performance objectives?

a.4. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered parks, or the need for new or physically altered parks, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios or other performance objectives?

a.5. Would the project result in substantial adverse physical impacts associated with the provision of other new or physically altered public facilities, or the need for other new or physically altered public facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives?

The Project is an unmanned solar facility that does not include the need for new or physically altered governmental facilities. The Project does not include the construction of residential structures, nor would it induce population growth on the Project Site or in the surrounding area. As discussed under criterion 14(a), operation of the Project would not require daily on-site employees and construction and decommissioning phases would be short term in nature. Construction workers are anticipated to be drawn from the existing regional labor pool and would not result in long-term population increases. As such, the Project would not increase the need for new or physically altered governmental services, including fire protection services, police protection services, schools, parks, and other facilities, to maintain acceptable service ratios, response times or other performance objectives. No impacts related to public services would occur.

NO IMPACT

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16 Recreation



	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than - Significant Impact	No Impact
a. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	■
b. Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	■

a. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

As described in Section 14, *Population and Housing*, the Project does not include development of housing or businesses that would directly or indirectly result in population growth. Therefore, the Project would not increase the population served by local recreation facilities or otherwise result in increased demand for or degradation of those facilities. No impact to existing neighborhood and regional parks or other recreational facilities would occur.

NO IMPACT

b. Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

As described in Section 14, *Population and Housing*, the Project does not include development of housing or businesses that would directly or indirectly result in population growth. Therefore, the Project would not increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated. In addition, the Project would not include or require the construction or expansion of recreational facilities, the construction of which could have an adverse physical effect on the environment. Therefore, no impact related to the construction or expansion of recreational facilities would occur.

NO IMPACT

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17 Transportation

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than - Significant Impact	No Impact
Would the project:				
a. Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	☐	☐	■	☐
b. Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	☐	☐	■	☐
c. Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible use (e.g., farm equipment)?	☐	☐	☐	■
d. Result in inadequate emergency access?	☐	☐	☐	■

a. Would the project conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?

Regional and local plans addressing the circulation system include the SJCOG 2022 Regional Transportation Plan and Sustainable Communities Strategy (RTP/SCS), and San Joaquin Regional Transit District's (SJRTD) San Joaquin Coordinated Public Transportation Plan (SJCOG 2022, SJRTD 2025). Main access to the Project Site during construction, operation, and decommissioning would be provided by either Access Road A, Access Road B, or both. There are no transit stops located adjacent to the Project Site; the nearest transit stop is located approximately 3.9 miles west of the Project Site near the eastern edge of the city limits of Lodi. The nearest existing bicycle facility is a public bicycle rack located approximately 3.6 miles west-northwest of the Project Site just north of East Kettleman Lane, and none are proposed for future installation on the portions of North Locust Tree Road and East Kettleman Lane nearest to the Project Site. The portions of North Locust Tree Road and East Kettleman Lane adjacent to the Project Site do not contain sidewalks; the nearest sidewalk on East Kettleman Lane is located approximately 3.3 miles west-northwest of the Project Site in the city limits of Lodi.

On average approximately 15 construction workers would be on the Project Site during construction, with up to 104 daily construction vehicle trips total during solar equipment installation, which would be the most trip-intensive construction phase. Construction traffic would be temporary and limited to the duration of the approximately 6-month construction schedule. During construction, construction equipment and construction worker vehicles would be staged on the Project Site. Project construction, including installation of the POI is not anticipated to result in a partial or full closure of North Locust Road or East Kettleman Lane. Any potential partial or full road closure associated with the Project would be subject to the requirements and permitting of the San Joaquin County Public Works Department. Additionally, any potential closure would be temporary in nature, similar to construction traffic. During the decommissioning phase, removal of Project infrastructure would be similar in process, scale, and duration to Project construction, excluding site preparation activities such as site clearing, and thus worker and truck trip generation would be similar to that for Project construction.

After construction is complete, operation of the Project would not generate substantial amounts of traffic, because the Project would be operated remotely. Routine Project operations would require up to 20 operations and maintenance visits per year. The minimal level of additional trips generated would not have the potential to conflict with a program, plan, ordinance or policy addressing the circulation system,

including transit, roadway, bicycle and pedestrian facilities. Therefore, impacts related to a program, plan, ordinance or policy addressing the circulation system would be less-than-significant.

LESS-THAN-SIGNIFICANT IMPACT

b. Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?

CEQA Guidelines Section 15064.3(b) identifies criteria for evaluating transportation impacts. Specifically, the guidelines state VMT exceeding an applicable threshold of significance may indicate a significant impact. In 2018, the Governor's Office of Land Use and Climate Innovation (LCI)[11] published the *Technical Advisory on Evaluating Transportation Impacts in CEQA* which provides on evaluating the potential significance of a Project's VMT impacts. As stated in the Technical Advisory, Projects that generate or attract fewer than 110 passenger vehicle trips per day generally are assumed to have a less-than-significant impact related to VMT (OPR 2018).

Overall, the Project is expected to generate an average of 15 worker trips and a peak of 104 construction vehicle trips per day during solar equipment installation, which would be the most trip-intensive construction phase. Trip generation during the decommissioning phase is anticipated to be similar to that of the construction phase. The estimated number of construction-phase trips is based on the planned work activities, construction schedule, and Applicant experience on similar Projects. After construction is complete, the Project would function as an unmanned facility that is controlled remotely from an off-site location. No daily operational trips would typically be generated by the Project. Routine operations and maintenance would require up to two workers in a medium-duty utility truck to visit the Project facility up to 20 times per year during the operational lifespan of the Project. Included in these trips are two anticipated panel washings per year. Accordingly, vehicle trips would not exceed the OPR threshold of 110 passenger vehicle trips per day, and, therefore, the Project would result in a less-than-significant VMT impact without conducting a detailed traffic study based on OPR's recommendations for small Projects. Therefore, the Project would not conflict or be inconsistent with CEQA Guidelines Section 15064.3(b), and this impact would be less than significant.

LESS-THAN-SIGNIFICANT IMPACT

c. Would the project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible use (e.g., farm equipment)?

d. Would the project result in inadequate emergency access?

The Project would be accessed via either Access Road A, Access Road B, or both. The access road(s) would be improved with gravel. Driveways associated with the Project would comply with existing County requirements which would ensure that sharp curves, dangerous intersections, or other roadway design features that could increase traffic hazards would not be introduced. Construction and decommissioning activities would involve temporary delivery trucks and equipment; however, these vehicles would use established routes and comply with applicable traffic safety requirements, and their presence would not create long-term hazards or conflicts with existing uses, including agricultural operations. Operation of the facility would generate minimal traffic, limited to periodic maintenance visits, and would not interfere with surrounding land uses. In addition, the Project would be designed to comply with San Joaquin County Code standards related to emergency access, including Chapter 4-1006, which sets standards for emergency access for fire apparatuses and emergency vehicles based on San Joaquin County's *Fire Apparatus Access Road Standard*. The Project would not block or restrict existing roadways or access points, and emergency responders would be able to enter and exit the site without obstruction. Therefore, the Project would not increase transportation hazards or impede emergency access.

NO IMPACT

[11] The Governor's Office of Land Use and Climate Innovation was formerly known as the Governor's Office of Planning and Research (OPR) at the time the *Technical Advisory on Evaluating Transportation Impacts in CEQA* was published.

18 Tribal Cultural Resources

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than - Significant Impact	No Impact
Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in a Public Resources Code Section 21074 as either a site, feature, place, or cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
a. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k)?	☐	☐	■	☐
b. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1? In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☐	■	☐

On July 1, 2015, California AB 52 went into effect, expanding CEQA by defining a new resource category of "tribal cultural resources." AB 52 establishes that "a Project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a Project that may have a significant effect on the environment" (PRC Section 21084.2). It further states the lead agency shall establish measures to avoid impacts that would alter the significant characteristics of a tribal cultural resource, when feasible (PRC Section 21084.3). PRC Section 21074 (a)(1) (A-B) defines tribal cultural resources as "sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe" and is:

1. Listed or eligible for listing in the CRHR, or in a local register of historical resources as defined in PRC Section 5020.1(k), or
2. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in PRC Section 5024.1(c). In applying these criteria, the lead agency shall consider the significance of the resource to a California Native American Tribe.

AB 52 establishes a formal consultation process for California Tribes regarding those resources. The consultation process must be completed before a CEQA document can be certified. Under AB 52, lead agencies are required to "begin consultation with a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the Project," specifically with those Native American Tribes that have requested notice of Projects proposed within the jurisdiction of the lead agency. Consultation begins with a written notification that must include a brief description of the Project, the Project's location, the lead CEQA agency contact information, and notification that the California Native American Tribe has 30 days to request consultation. Upon receipt of a written response from a California Native American Tribe requesting consultation, the lead CEQA agency and the California Native American Tribe requesting consultation shall begin the AB 52 process.

a. *Would the project cause a substantial adverse change in the significance of a tribal cultural resource as defined in Public Resources Code Section 21074 that is listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k)?*

b. *Would the project cause a substantial adverse change in the significance of a tribal cultural resource as defined in Public Resources Code 21074 that is a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1?*

On May 6, 2026, the San Joaquin County Community Development Department initiated early consultation and agency referral for the proposed Conditional Use Permit (PA-2500420 [C]) for the Project. As part of this referral, the County transmitted project information and an opportunity to comment to multiple California Native American tribes and tribal-related entities traditionally and culturally affiliated with the project area, consistent with PRC Section 21080.3.1.

The AB 52 notice and application referral were sent to the California Native American Heritage Commission, California Tribal TANF Partnership, California Valley Miwok Tribe, North Valley Yokuts Tribe, United Auburn Indian Community, and Buena Vista Rancheria. The referral described the project, its location, and provided contact information for the project planner, along with a response deadline of June 3, 2026. The notice advised that recommendations and/or comments received after that date may not be considered in the analysis.

As of preparation of this Initial Study -Mitigated Negative Declaration, no tribe has requested formal AB 52 consultation for the project, and no tribal cultural resources, as defined in PRC Section 21074, have been identified through the referral process or other outreach efforts. Based on the absence of requested consultation and the lack of identified tribal cultural resources within the Project Site, the lead agency finds that the project would not cause a substantial adverse change in the significance of a tribal cultural resource that is listed or eligible for listing in the California Register of Historical Resources or a local register, nor in a resource determined by the lead agency to be significant pursuant to PRC Section 5024.1(c).

If human burials found to be of Native American origin are encountered during project construction, all work shall halt in the vicinity of the discovery and the San Joaquin County Coroner shall be notified immediately. At the same time, a qualified archaeologist shall be contacted to evaluate the find. If the remains are determined to be Native American, the Coroner shall notify the Native American Heritage Commission and the Most Likely Descendant shall be identified, and treatment of the remains shall follow the requirements of Health and Safety Code Section 7050.5 and PRC Section 5097.98, as well as the procedures set forth in State CEQA Guidelines Section 15064.5. Implementation of these procedures would ensure that any unanticipated discovery of Native American human remains is handled in a respectful and legally compliant manner and would avoid or substantially lessen potential impacts to tribal cultural resources. Therefore, impacts to tribal cultural resources would be less than significant.

LESS-THAN-SIGNIFICANT IMPACT

19 Utilities and Service Systems

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than - Significant Impact	No Impact
Would the project:				
a. Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☐	■	☐
b. Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	☐	☐	■	☐
c. Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	■
d. Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	■	☐
e. Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	■	☐

a. Would the project require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?

The Project is an 18.5-acre solar facility that would not require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects. The Project would include the installation of five new utility poles that would require minimal ground disturbance, which have been analyzed as part of Project construction throughout the environmental analysis contained within this document. The PG&E point of interconnection associated with the Project and required reconductoring work of existing overhead lines near the Project Site, would not necessitate the use of substantial construction equipment or include ground disturbance or intensive construction activities. Therefore, impacts related to public utility infrastructure interconnections associated with the Project would not have a substantial environmental effect. The Project is a solar generation facility that would provide new electricity to the existing energy grid through a proposed connection to an existing transmission line, the construction of which is evaluated throughout this document along with total Project construction and decommissioning impacts. No additional impacts related to electric power facilities would occur.

LESS-THAN-SIGNIFICANT IMPACT

b. Would the project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?

As discussed in the Project Description, the Project would not require permanent on-site personnel and does not include the installation of potable water service connections or groundwater wells. Water required for construction and decommissioning for dust suppression would be delivered to the site by truck by a local purveyor. Groundwater from the San Joaquin Valley Basin supplies approximately 30 percent of water in the region (USGS 2024).

As discussed in Section 10, *Hydrology and Water Quality*, the Project Site overlies the Eastern San Joaquin Subbasin, which is part of the San Joaquin Valley Groundwater Basin (California SWRCB 2006). The Eastern San Joaquin Subbasin is not adjudicated, although it is in condition of critical overdraft (DWR 2026). Groundwater level measurements within the Eastern San Joaquin Subbasin have been in continuous decline over the last 40 years (San Joaquin County 2014).

The amount of water required during construction and decommissioning of the Project would be temporary and nominal. Once operational, the Project would require up to 65,000 gallons of water per year, which includes water required for maintenance of the landscape buffer. Operational water would be obtained from an external commercially available source and would not affect groundwater supplies directly within the Project area. The minimal quantities of water required during construction, operation, and decommissioning would not substantially impact regional water supplies. Therefore, the Project would have sufficient water supplies available to serve the Project and reasonably foreseeable future development during normal, dry and multiple dry years, and impacts would be less-than-significant.

LESS-THAN-SIGNIFICANT IMPACT

c. Would the project result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

The Project is an unmanned solar facility that does not include wastewater treatment connections. Therefore, no impact related to wastewater treatment capacity would occur.

NO IMPACT

d. Would the project generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?

e. Would the project comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

The Project Site is currently developed as an inactive vineyard and would not require any demolition during construction. Construction and eventual decommissioning of the solar facility would generate typical construction-related waste (e.g., packaging materials, scrap metal, and minor debris), which would be temporary and disposed of at permitted facilities. Waste would be segregated, where practical, for recycling. Non-recyclable wastes would be placed in covered dumpsters and removed on a regular basis by a certified waste-handling contractor for disposal at a Class III landfill. The nearest Class III landfill to the Project Site is the North County Landfill & Recycling Center, located approximately 4.8 miles east-southeast of the Project Site. The North County Landfill & Recycling Center has a remaining capacity of 35.4 million cubic yards and operations are projected to continue through 2048 (CalRecycle 2010). Construction of the Project would result in a minimal quantity of waste, which could be accommodated by the remaining capacities of the North County Landfill & Recycling Center. Furthermore, the construction contractor would adhere to State regulations pertaining to construction waste and recycling requirements, such as the California Green Building Standards Code, which requires diversion of at least 65 percent of construction debris.

Operation of the Project would generate minimal solid waste, limited to small amounts of maintenance-related materials, and would not place a measurable demand on local landfill capacity.

While decommissioning would involve the removal of all above ground components and the removal of piers up to 12 feet below grade, solar panels and accessory infrastructure would be recycled to the extent feasible. Therefore, the Project would not generate solid waste in excess of State or local standards, local infrastructure capacity, or otherwise impair the attainment of solid waste regulation goals and would comply with applicable statutes and regulations related to solid waste. These impacts related to adherence to existing regulatory requirements would be less-than-significant.

LESS-THAN-SIGNIFICANT IMPACT

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20 Wildfire

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than - Significant Impact	No Impact
If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:				
a. Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	■
b. Due to slope, prevailing winds, and other factors, exacerbate wildfire risks and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☐	☐	☐	■
c. Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	☐	☐	☐	■
d. Expose people or structures to significant risks, including downslopes or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	☐	■

a. *If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project substantially impair an adopted emergency response plan or emergency evacuation plan?*

b. *If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project, due to slope, prevailing winds, and other factors, exacerbate wildfire risks and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?*

c. *If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?*

d. *If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project expose people or structures to significant risks, including downslopes or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?*

The Project Site is not within a State Responsibility Area or lands classified as a Very High FHSZ, as delineated by CAL FIRE's FHSZ Viewer (CAL FIRE 2024). The nearest fire hazard zone is a Moderate FHSZ located approximately 6.3 miles northeast of the Project Site, on the east side of Clements Road. Vacant lands and existing agricultural development, roads, North Paddy Creek, and Bear Creek separate the moderate fire hazard zone from the Project Site. The Project Site is not near lands classified as a Very High FHSZ within a State Responsibility Area and would therefore not substantially impair an adopted emergency response plan or emergency evacuation plan, exacerbate wildfire risks, or expose people or structures to significant risks such as flooding, slope instability, or drainage changes. Therefore, no impact associated with wildfires would occur.

NO IMPACT

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21 Mandatory Findings of Significance

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than - Significant Impact	No Impact
Does the project:				
a. Have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	■	☐	☐
b. Have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☐	■	☐
c. Have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	■	☐	☐

a. *Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?*

As discussed in Section 4, *Biological Resources*, the Project would not impact the total mapped habitat area of a species or result in the loss of a locally or regionally important population of any of these species with implementation of Mitigation Measure BIO-1. Therefore, the Project would not have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, or substantially reduce the number or restrict the range of a rare or endangered plant or animal.

As discussed in Section 5, *Cultural Resources*, no previously recorded historical resources have been documented within or immediately adjacent to the Project APE, and no known archaeological or cultural resources were identified within the APE. The Project would not substantially impact cultural resources on-site with the implementation of Mitigation Measures CUL-1 through CUL-3. Therefore, the Project would not eliminate important examples of the major periods of California history or prehistory. Impacts would be less-than-significant with mitigation incorporated.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

b. Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?

As described throughout the Initial Study/Mitigated Negative Declaration with respect to all environmental issues, the Project would not result in significant and unmitigable impacts to the environment. All anticipated impacts associated with Project construction, operation, and decommissioning would be either less-than-significant or less than significant with mitigation incorporated. The Project would have no impact on aesthetics (scenic vistas, scenic resources within a State Scenic Highway, new sources of substantial light or glare), forestry resources (conflict with existing zoning or result in the loss of forest land or timberland), biological resources (riparian habitats, protected wetlands, migratory species, and conflict with local policies and ordinances or an adopted habitat plan), cultural resources (significance of historical resources), energy (conflict with a state or local plan for energy efficiency or renewable energy), geology and soils (rupture of a known earthquake fault and septic tanks or alternative wastewater disposal systems), hazards and hazardous materials (hazards within 0.25 mile of a school, location on a hazardous materials site, hazards within two miles of an airport, and exposure to wildland fire risks), hydrology and water quality (release of pollutants due to inundation), land use and planning (physically divide an established community), mineral resources, noise (exposure within two miles of an airport), population and housing (displacement of people or housing), public services, recreation, transportation (conflict with *CEQA Guidelines* 15064.3, subdivision (b), hazards due to geometric design or incompatible uses, and inadequate emergency access), utilities and service systems (relocation or expansion utility infrastructure or wastewater treatment capacity), or wildfire. Thus, the Project would not contribute to cumulative impacts for these resource topics and these topics are not discussed further.

Section 15355 of the *CEQA Guidelines* defines a cumulative impact as the condition under which "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts. The cumulative impact from several projects is the change in the environment which results from the incremental impact of the Project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time" (CCR Section 15355). A list of projects within a 5-mile radius of the Project site are included in Table 10, below.

Table 10 Planned and Pending Projects within 5 Miles of Project

Project Name/Description	Agency	Project Description[1]	Distance from Project Site (in miles)	Status
SR 99 / SR 12 West (Kettleman Lane) Interchange Reconstruction	City of Lodi	Reconstruct interchange and widen to free flowing interchange	4.08	Unknown
SR 99 / Harney Lane Interchange Reconstruction	City of Lodi	Reconstruct interchange to provide 6 through lanes on SR 99, 4 lanes on Harney between Reynolds Ranch Pkwy and SR 99 and modify onramps and off-ramps	3.86	Unknown
Harney Lane Widening	City of Lodi	Widen from 2/3 lane collector to 4 lane divided arterial, from Hutchins Street to Lower Sacramento Road	4.86	Unknown

Project Name/Description	Agency	Project Description[1]	Distance from Project Site (in miles)	Status
Victor Road (SR-12) Widening & Improvements	City of Lodi	Widen from 2 to 4 lanes. Add center dual left turn lane, turn pockets at intersections and median separation with landscape, Between SR 99 to Central California Traction railroad tracks	4.08	Unknown
Grapeline Operations	City of Lodi	Operations, City of Lodi	3.24	Unknown
Grapeline Capital - Purchase Replacement Buses	City of Lodi	Grapeline Capital - Purchase Replacement Buses, City of Lodi	3.24	Unknown
Grapeline Facility Maintenance	City of Lodi	Grapeline Facility Maintenance, City of Lodi	3.24	Unknown
Grapeline Facility Development	City of Lodi	Grapeline Facility Development, City of Lodi	3.24	Unknown
Valley Rail Passenger Rail Expansion: Lodi Station and Trackwork	San Joaquin Regional Rail Commission (SJRRC)	Lodi Station and Trackwork, City of Lodi	4.71	Unknown
SR 99 Ramp Meters and ITS Elements	Caltrans	Install ramp meters and ITS elements on SR 99 at various locations from Hammer Lane to Armstong Road, in San Joaquin County on SR 99 from Hammer Lane Road to Armstrong Road	4.11	Unknown
SR 99 Ramp Meters and ITS Elements	Caltrans	Install ramp meters and ITS elements on SR 99 at various locations from Armstrong Road to River, in San Joaquin County on SR 99 from Armstrong Road to River North of Turner Road	4.11	Unknown
SR 99 Ramp Meters and ITS Elements	Caltrans	Install ramp meters and ITS elements on SR 99 at various locations from River North of Turner Road to North of Acampo Road, in San Joaquin County on SR 99 from River North of Turner Road to North of Acampo Road	4.11	Unknown
SR-12 ADA Upgrade (EA 1G580)	Caltrans	Upgrade curb ramps, sidewalks, driveways, accessible pedestrian signals, and push buttons to current ADA standards, in San Joaquin County in Lodi, on SR 12 between Westgate Dr to South Stockton Street (PM 14.9 / 17.44)	4.36	Unknown

Project Name/Description	Agency	Project Description[1]	Distance from Project Site (in miles)	Status
SR-88 Pavement Anchor Project (EA 1M590)	Caltrans	Pavement rehabilitation, Bridge rail upgrading, ADA improvements, Guardrail upgrading, Sign panel replacement in San Joaquin County, East of Stockton from 0.3 km E of Comstock Rd to W JCT RTE 12 (PM 5.1 / 16.4)	0.61	Unknown
SR-99 Roadside Rehab at Various Locations (EA 1Q640)	Caltrans	Roadside rehabilitation measures to upgrade the existing remote irrigation control systems communication components, in San Joaquin County, on SR-99 and other various locations	3.77	Unknown
Pezzi Road Over Calaveras River Bridge Replacement	San Joaquin County	Pezzi Road Over Calaveras River, 0.8 mi. S/O Eight Mile Road. Replace 2-Lane Bridge with Standard 2-Lane Bridge,	4.46	Unknown
Eight Mile Road Resurfacing	San Joaquin County	Roadway resurfacing of Eight Mile Road (North SR 99 Frontage Road to Jack Tone Road)	3.55	Unknown
Jack Tone Road Resurfacing	San Joaquin County	Roadway resurfacing of Jack Tone Road (SR 26 to Eight Mile Road)	4.01	Unknown
Lodi Avenue Resurfacing	City of Lodi	Pavement reconstruction, slurry seal, and necessary ADA improvements of Lodi Ave (Beckman Road to Commerce Street), Lodi Ave	3.48	Unknown
Variance PA-2500134; Minor Subdivision Application PA-2500133	San Joaquin County	11052 E Weigum St, Lodi	1.31	Plan Review
Waiver Application PA-2600032 (Side Yard Setback Reduction, Garage Construction)	San Joaquin County	16454 N Fox Rd, Lodi	1.35	Plan Review
Variance PA-2400223; Major Subdivision Application PA-2300266	San Joaquin County	17400 N Tretheway RD, Lockeford	1.80	Approved with Conditions
Appeal for Variance PA-2400350 (Front Yard Setback)	San Joaquin County	11500 N Alpine Rd, Stockton	2.59	In Review
Map Amendment/ Rezoning PA-2500411; Administrative Use Permit PA-2500412	San Joaquin County	5440 E Harney Ln, Lodi	3.27	Plan Review
Conditional Use Authorization PA-2500214 (Recreational Vehicle Sales and Repair Facility)	San Joaquin County	13244 Locke RD, Lockeford	3.71	Plan Review

Project Name/Description	Agency	Project Description[1]	Distance from Project Site (in miles)	Status
Zone Reclassification PA-2200124; Major Subdivision Application PA-2200125	San Joaquin County	14372 E State Route 88, Lockeford; 14380 E State Route 88, Lockeford; 19260 N Tully Rd, Lockeford; 19390 N Tully Rd, Lockeford Rd; 19480 N Tully Rd, Lockeford	4.02	Active
Variance PA-2600102; Subdivision Application PA-2600101	San Joaquin County	4910 E Clarksdale Rd, Acampo	4.61	Plan Review
Variance PA-2500284; Subdivision Application PA-2500285	San Joaquin County	6950 E Acampo Rd, Acampo	4.76	Plan Review
Revisions of Approved Actions PA-2500318 (Homesite Parcel for Financing Purposes)	San Joaquin County	18853 N State Route 99 W Frontage Rd, Acampo	4.87	Not Appealed

[1] Cumulative project details were sources from: San Joaquin Council of Governments 2026, San Joaquin County 2026

Project impacts are primarily temporary or localized effects that would occur from Project construction. The potential for the Project to contribute to cumulative impacts would be limited to the temporary periods of Project construction activities and would be limited to the following issues:

Aesthetics

The geographic area used to assess cumulative impacts to aesthetics includes the viewshed of the agricultural environment experienced from public views on surface streets (East Kettleman Lane and North Locust Tree Road) proximate to the Project Site. There are no pending or approved development projects in the same viewshed as the Project site; therefore, a cumulative aesthetics impact would not occur.

Agriculture

The geographic area used to assess cumulative impacts to agriculture and forestry resources is San Joaquin County. A significant cumulative impact would occur if cumulative projects would convert substantial quantities of existing Important Farmland such that the agricultural nature of the County is altered. As a result of a historical pattern of Farmland conversion in the region, caused primarily by development pressure and water scarcity, a significant adverse cumulative impact related to farmland conversion does exist in San Joaquin County.

The Project's incremental, less-than-significant impact, in combination with the incremental impacts of other projects in the cumulative scenario, would not be cumulatively considerable because the site characteristics that qualify the Project Site as Prime Farmland would be restored to conditions suitable for continued agricultural use upon Project decommissioning. There would be no ongoing Project-caused contribution to cumulative effects following decommissioning because the characteristics that qualify the Site as Prime Farmland would be retained and agricultural use of the site would resume. The Project's contribution to cumulative agriculture impacts would not be cumulatively considerable.

Air Quality

The geographic area used to assess cumulative impacts to air quality is the SJVAB. The evaluation of the Project's potential to result in impacts to air quality is, in itself, a cumulative analysis, as the *CEQA Guidelines* Appendix G thresholds asks if the Project would result in a cumulatively considerable net

increase of a criteria pollutant for which the Project region is in non-attainment. The SJVAB is a nonattainment area for ozone, PM_{10}, and $PM_{2.5}$ under the NAAQS and/or CAAQS. Therefore, cumulative air quality impacts currently exist for these pollutants. As discussed in Section 3, *Air Quality*, Project construction, operation, and decommissioning would not generate emissions of these criteria air pollutants exceeding SJVAPCD's significance thresholds, which are intended to assess whether a Project's contribution to existing cumulative air quality impacts is considerable. Additionally, air quality impacts would be further reduced through implementation of Mitigation Measure AQ-1 which would ensure that construction worker exposure to Valley Fever is reduced by requiring the preparation and implementation of a Fugitive Dust Control Plan for the Project which includes dust suppression measures, respiratory protection for workers, and Valley Fever awareness and training to minimize worker exposure to airborne dust. Therefore, the Project's contribution to cumulative air quality impacts would not be cumulatively considerable.

Biological Resources

The geographic area used to assess cumulative impacts to biological resources is the nonnative annual grasslands within the SJMSCP's Central/Southwest Transition Zone within San Joaquin County. Cumulative impacts consider impacts that would occur from the reasonably foreseeable future development, including those projects listed in Table 10 and cumulative development assumed in the SJMSCP. Most cumulative impacts to biological resources occur when a disproportionate number of development projects occur at once and regionally impact a local population of a special-status wildlife species. Impacts to special-status species like habitat loss can aggregate across a region as a result of a disproportionate number of development projects in one area and can therefore cause cumulative impacts. All cumulative development would comply with all applicable laws and regulations governing biological resources. However, regulatory compliance does not guarantee a reduction of potential impacts to biological resources, particularly the special-status species that are present in the environment of the cumulative setting. Cumulative development would have the potential to disturb special-status species and their habitats or conflict with the SJMSCP, which would contribute to the decline of species population, including the potential to result in a decline of a listed species. Accordingly, cumulative impacts to biological resources would be potentially significant.

The Project would adhere to applicable regulatory requirements to minimize potential impacts to special-status species. Furthermore, the Project Applicant would be required to implement Mitigation Measure BIO-1, which would require preconstruction surveys and implementation of avoidance measures, to reduce potential impacts to nesting birds. Implementation of these measures would be required to reduce the Project's contribution such that it would not be cumulatively considerable.

Cultural Resources

The geographic area used to assess cumulative impacts to cultural resources is San Joaquin County. Cumulative development includes past, present, and reasonably foreseeable planned and future development, including the projects in Table 10, that could potentially disturb sensitive areas for cultural resources. Future development near the Project Site could potentially be located in a sensitive area for cultural resources. In addition, unknown resources may be uncovered at other cumulative development sites. Existing County regulations within Chapter 9-1053 of the County Code and the San Joaquin County General Plan Natural and Cultural Resources Element would protect any unknown resources that might be uncovered during Project development. General Plan Policy NCR-6.5 requires an archeological report be prepared prior to permits and approvals. In the event that future cumulative development would result in impacts to known or unknown cultural resources, impacts to such resources would be addressed on a case-by-case basis. For the purposes of this analysis, impacts to cultural resources are assumed to be potentially significant.

As discussed under Section 5, *Cultural Resources*, there are no known historical or archaeological resources on the Project site. In addition, the Project Applicant would be required to implement Mitigation Measures CUL-1 through CUL-3, which would require implementing standard procedures in the event

archaeological resources are unexpectedly encountered during ground-disturbing activities to reduce Project-level impacts to less-than-significant. With implementation of this measure, the Project's contribution would not be cumulatively considerable.

Energy

The geographic area used to assess cumulative impacts to energy considers the cumulative effects of energy use in San Joaquin County. Foreseeable cumulative development would be subject to State requirements for energy efficiency, such as the California Building Energy Efficiency Standards and the California Green Building Standards Code which would ensure projects are designed and constructed to be energy efficient. Construction of cumulative development would be carried out in accordance with CCR Title 13 Sections 2449 and 2485 which would ensure construction would not use energy in a wasteful, inefficient, or unnecessary manner. Because cumulative development would be required to comply with existing state regulations for energy-efficiency, cumulative impacts to energy would be less than significant. Further, as a utility scale solar generation facility, the Project would inherently result in a net negative draw on regional energy use.

Geology and Soils

Geologic hazards are dependent on site-specific conditions, such that development at one project site would not increase another project's geologic hazards impacts. Therefore, this discussion pertains to cumulative impacts to paleontological resources. The geographic area used to assess cumulative impacts to paleontological resources is development within the San Joaquin Valley. Cumulative development within the San Joaquin Valley would continue to disturb areas with the potential to contain paleontological resources. Cumulative development projects have undergone or would be required to undergo CEQA review, which would determine the extent of potential paleontological resources impacts and mitigate those impacts appropriately. This analysis conservatively assumes a cumulative impacts to paleontological resources would be potentially significant. The Project would be required to implement Mitigation Measure GEO-1 which would require WEAP training, paleontological monitoring, and fossil salvage, preparation and curation, and preparation of a final paleontological mitigation report, if necessary to reduce Project-level impacts to less-than-significant. Implementation of Mitigation Measure GEO-1 would reduce the Project's potential contribution such that it would not be cumulatively considerable.

Greenhouse Gas Emissions

GHG emissions and climate change are, by definition, cumulative impacts. The adverse environmental impacts of cumulative GHG emissions, including sea level rise, increased average temperatures, more drought years, and more large forest fires, are already occurring. As a result, cumulative impacts related to GHG emissions are significant. Thus, the issue of climate change involves an analysis of whether a Project's contribution towards an impact is cumulatively considerable. As discussed in Section 8, *Greenhouse Gas Emissions*, the Project would be consistent with plans to minimize GHG emissions, including the 2022 Scoping Plan, Renewables Portfolio Standard, SB 100, and the SJVAPCD Climate Change Action Plan. Additionally, operation of the Project would ultimately result in an expansion of renewable energy technology which would promote the reduction of fossil fuel use and associated GHG emissions. Therefore, the Project's impact would not be cumulatively considerable.

Hazards and Hazardous Materials

The geographic area used to assess cumulative impacts to hazards and hazardous materials includes the area within five miles of the Project Site, as hazardous materials releases from cumulative development could result exposure of people to hazardous materials proximate to the Project Site. The Project Site is located within a primarily agricultural and rural portion of San Joaquin County. Existing hazardous materials use in the cumulative study area is limited and typically associated with agricultural operations (e.g., fuels, fertilizers, pesticides), transportation corridors, and small-scale industrial or utility

uses. These activities are regulated under federal, state, and local hazardous materials management programs, including the California Accidental Release Prevention (CalARP) Program and Unified Program oversight by the Certified Unified Program Agency (CUPA). Project-related hazardous materials would be limited to small quantities and stored, handled, and disposed of in compliance with applicable regulations and best management practices. No acutely hazardous materials in quantities that would trigger offsite consequence planning are proposed. Any releases from cumulative development, including the projects listed in Table 10 would be site-specific, regulated, and localized in extent such that a cumulative impact would not occur.

Hydrology and Water Quality

The geographic area used to assess cumulative impacts to surface water is the San Joaquin River watershed. The geographic area used to assess cumulative impacts to groundwater is land overlying the Eastern San Joaquin Subbasin. A cumulative impact could occur if foreseeable planned and future development within the geographic area, including those projects listed in Table 10, would discharge pollutants to the same watershed and violate water quality standards, or if these projects underly the same groundwater basin and would result in substantially decreased groundwater supplies. Due to the existing overdraft conditions present throughout the San Joaquin Basin region, a cumulative impact related to groundwater management exists.

Ground disturbance by the Project and cumulative projects could cause the release of sediment and other pollutants into surface water or groundwater. As noted in Table 10, the cumulative scenario includes multiple projects, such as the proposed subdivisions, that, like the Project, involve ground disturbance over relatively flat terrain. Because the topography of the Project site along with the sites of other projects in the cumulative scenario do not contain steep slopes, the potential for erosive conditions is low. Projects that could generate stormwater runoff during soil-disturbing construction activities and discharge to surface waters would be required to comply with federal, State, and County water quality requirements, such as the Construction Stormwater General Permit and Chapter 9-1125 of the County's Municipal Code and conditions of the County grading permits. These regulations would require implementation of a SWPPP and its associated BMPs to maintain and treat stormwater and prohibit waste discharge in or adjacent to water bodies, which would reduce the incremental contributions of projects. Therefore, cumulative impacts related to surface water quality and management would be less-than-significant.

Cumulative development could result in increased water demand from the Eastern San Joaquin Subbasin. However, all water use would occur in compliance with the Eastern San Joaquin Subbasin Sustainable Groundwater Management Act. A majority of the planned projects identified in Table 10, by nature, would not generate substantially increased operational water demands relative to present conditions, including the various planned transportation improvement projects to occur in the vicinity of the Project. The Project would not require substantial regular water use during operation and maintenance activities. During operation, biannual solar panel washings and landscaping maintenance are anticipated to generate an annual water demand of approximately 65,000 gallons. It is anticipated that landscaping would be comprised of native plants, requiring minimal water once established. As a result, the Project's contribution to existing significant cumulative groundwater management impacts related to sustainable groundwater management would be less-than-significant.

Land Use and Planning

The geographic scope for evaluating cumulative land use and planning impacts is San Joaquin County because land use plans, policies, and regulations applicable within the County establish the framework governing the location, type, intensity, and environmental effects of development in the surrounding region. The cumulative analysis considers the Project together with the reasonably foreseeable projects identified in Table 10.

A significant cumulative land use impact could occur if the Project, in combination with other past, present, and reasonably foreseeable future development, would result in a substantial conflict with an

applicable land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect. As discussed in Section 11, *Land Use and Planning*, the Project would not conflict with applicable County General Plan policies, zoning regulations, or other land use requirements adopted to avoid or reduce environmental impacts. Therefore, the Project would not result in a significant land use impact on its own.

The related projects identified in Table 10 would be subject to review by the applicable lead agencies and would be required to demonstrate consistency with the land use plans, policies, and regulations governing their respective jurisdictions. These regulatory frameworks are intended to ensure that development occurs in a manner that avoids or minimizes environmental effects associated with land use incompatibility, growth, and resource protection.

Because the Project would not conflict with applicable land use plans, policies, or regulations adopted for the purpose of avoiding or mitigating environmental effects, and because other cumulative projects would be subject to similar regulatory requirements, the Project would not combine with other development to create a significant cumulative land use conflict. Accordingly, a significant cumulative impact related to conflicts with land use plans, policies, or regulations adopted to avoid or mitigate environmental effects would not occur and would be less than significant.

Noise

Construction noise and vibration are localized and rapidly attenuate. Cumulative construction noise and vibration impacts would therefore occur if other projects are located proximate to the Project such that overlapping construction schedules could result in increased construction noise and vibration at the same sensitive receptors. However, no projects are currently planned to be developed in the immediate vicinity of the Project Site during active construction of the Project. Additionally, similar to the Project, cumulative development projects would be subject to compliance with the noise level limits established in the San Joaquin County Municipal Code. Therefore, operational noise from the Project would not combine to create a substantial cumulative increase in noise levels. Therefore, cumulative noise impacts would be less-than-significant.

Population and Housing

Foreseeable cumulative development within the county could include transportation, residential, commercial, and industrial projects in Table 10 which could result in direct impacts to population growth (due to the proposal of new homes and businesses) and indirect impacts to population growth (due to the expansion of transportation services and related infrastructure). The development of cumulative projects could potentially result in substantial population growth within the County. However, cumulative projects would be developed in accordance with the population and housing projections of the San Joaquin County General Plan goals and policies and the San Joaquin Council of Governments Regional Housing Needs Plan and would result in a less-than-significant cumulative impact.

Transportation

The geographic area used to assess cumulative transportation impacts is San Joaquin County. A cumulative transportation impact could occur if cumulative County development would result in exceedance of long-term countywide VMT targets. Cumulative development in San Joaquin County could include residential, commercial, and industrial projects, including those in Table 10, which could increase population, employment, and subsequently countywide VMT. Therefore, cumulative impacts are potentially significant. The Project would be remotely monitored during operations and is expected to generate up to approximately 20 trips per year during operations and maintenance activities. This amount would not exceed thresholds for VMT screening. Therefore, the Project's contribution to VMT would not be cumulatively considerable.

Tribal Cultural Resources

The geographic area for considering cumulative impacts to tribal cultural resources is based on the ethnographic use patterns of the Project Site and surrounding region. Cumulative development in the County, including projects listed in Table 10, could cumulatively contribute to the erasure of tribal cultural resources important to these Tribes from the landscape. However, compliance with the provisions of AB 52 would ensure that any known or potential tribal cultural resources are treated in consultation with local Native American groups. Compliance with AB 52, implementation of Project-specific measures to protect tribal cultural resources on a case-by-case basis, and continued involvement by local Native American groups in regional planning would limit the destruction of tribal cultural resources such that cumulative impacts would be less-than-significant.

Utilities and Service Systems

The Project would have no impact on wastewater, electric, or natural gas, infrastructure; therefore, these utilities are not discussed in the above analysis. The geographic area used to assess cumulative utilities and service systems impacts is the Eastern San Joaquin Subbasin service area for water and San Joaquin County for solid waste disposal. A cumulative utilities and service systems impact could occur if cumulative development would increase water demand in the Eastern San Joaquin Subbasin service area such that the Eastern San Joaquin Subbasin cannot adequately meet cumulative demands or generate solid waste that exceeds the current capacity of the North County Landfill & Recycling Center. Groundwater from the San Joaquin Valley Basin supplies approximately 30 percent of water in the region (USGS 2024). The Eastern San Joaquin Subbasin is not adjudicated, although it is in condition of critical overdraft (DWR 2026). Groundwater level measurements within the Eastern San Joaquin Subbasin have been in continuous decline over the last 40 years (San Joaquin County 2014). Therefore, cumulative impacts to groundwater would be potentially significant. The amount of water required during construction and decommissioning of the Project would be temporary and nominal. Water to be used during operation would be obtained from an external commercially available source, and would not directly affect groundwater supplies within the Project area. Therefore, cumulative development would be adequately served by the existing water supply, and cumulative water supply impacts would be less-than-significant.

The North County Landfill & Recycling Center has a remaining capacity of 35.4 million cubic yards and operations are projected to continue through 2048 (CalRecycle 2010). Accordingly, sufficient landfill capacity exists to serve cumulative development. Therefore, cumulative impacts to solid waste would be less-than-significant.

Based on the above, the Project does not have impacts that are individually limited, but cumulatively considerable. As such, the Project's cumulative impacts related to utilities and service systems would be less-than-significant.

LESS-THAN-SIGNIFICANT IMPACT

c. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

Adverse effects on human beings are typically associated with air quality, hazards and hazardous materials, and noise impacts. As detailed in Section 3, *Air Quality*; Section 9, *Hazards and Hazardous Materials*; and Section 13, *Noise*, the Project would not result, either directly or indirectly, in substantial adverse effects related to air quality, hazardous materials, and noise with implementation of Mitigation Measures AQ-1 and NOI-1. Therefore, impacts to human beings would be less than significant with mitigation incorporated.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

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Appendix A

Air Quality and Greenhouse Gas Study

CalEEMod Calculations

N Locust Tree Project Custom Report

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1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	N Locust Tree Project
Construction Start Date	10/1/2026
Operational Year	2027
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.40000
Precipitation (days)	34.0000
Location	38.10695356097315, -121.18755376752354
County	San Joaquin
City	Unincorporated
Air District	San Joaquin Valley APCD
Air Basin	San Joaquin Valley
TAZ	2119
EDFZ	4
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric

Data Field	Value
App Version	2022.1.1.45

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
General Light Industry	1.000000	1000sqft	16.8800	1,000.000	0.00000	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

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.	1.31028	1.09283	9.91213	16.2188	0.04025	0.24031	0.82762	1.06794	0.22302	0.21318	0.43619	—	5,070.05	5,070.05	0.16231	0.29047	4.82796	5,165.50
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.31258	1.09342	10.4415	15.9582	0.04026	0.25724	0.82762	1.08486	0.23858	0.21318	0.45176	—	5,076.18	5,076.18	0.16529	0.29146	0.14201	5,167.31

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.32859	0.27595	2.47527	3.88829	0.00992	0.06142	0.19068	0.25210	0.05695	0.04906	0.10601	—	1,236.02	1,236.02	0.04055	0.06800	0.48534	1,257.79
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.05997	0.05036	0.45174	0.70961	0.00181	0.01121	0.03480	0.04601	0.01039	0.00895	0.01935	—	204.638	204.638	0.00671	0.01126	0.08035	208.241

2.2. Construction Emissions by Year

2.2.1. Total Construction Emissions by Year, Unmitigated

Includes both onsite and offsite emissions.

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2027	1.31028	1.09283	9.91213	16.2188	0.04025	0.24031	0.82762	1.06794	0.22302	0.21318	0.43619	—	5,070.05	5,070.05	0.16231	0.29047	4.82796	5,165.50
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	1.31258	1.09342	10.4415	15.9582	0.04026	0.25724	0.82762	1.08486	0.23858	0.21318	0.45176	—	5,076.18	5,076.18	0.16529	0.29146	0.14201	5,167.31
2027	1.28446	1.07890	10.0717	15.8241	0.04025	0.24031	0.82762	1.06794	0.22302	0.21318	0.43619	—	5,033.94	5,033.94	0.16522	0.29144	0.12496	5,125.05
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.18894	0.15769	1.41476	2.10012	0.00560	0.03717	0.09669	0.13386	0.03444	0.02494	0.05939	—	693.883	693.883	0.02299	0.03620	0.28267	705.529

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
2027	0.32859	0.27595	2.47527	3.88829	0.00992	0.06142	0.19068	0.25210	0.05695	0.04906	0.10601	—	1,236.02	1,236.02	0.04055	0.06800	0.48534	1,257.79
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.03448	0.02878	0.25819	0.38327	0.00102	0.00678	0.01765	0.02443	0.00629	0.00455	0.01084	—	114.880	114.880	0.00381	0.00599	0.04680	116.808
2027	0.05997	0.05036	0.45174	0.70961	0.00181	0.01121	0.03480	0.04601	0.01039	0.00895	0.01935	—	204.638	204.638	0.00671	0.01126	0.08035	208.241

2.2.2. Onsite 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2027	1.04428	0.87726	7.88620	13.5987	0.02821	0.21624	0.00000	0.21624	0.19894	0.00000	0.19894	—	3,044.68	3,044.68	0.12351	0.02470	0.00000	3,055.13
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	1.05117	0.88304	8.15167	13.5776	0.02823	0.23316	0.00000	0.23316	0.21451	0.00000	0.21451	—	3,046.50	3,046.50	0.12358	0.02472	0.00000	3,056.96
2027	1.04428	0.87726	7.88620	13.5987	0.02821	0.21624	0.00000	0.21624	0.19894	0.00000	0.19894	—	3,044.68	3,044.68	0.12351	0.02470	0.00000	3,055.13
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.15833	0.13302	1.14473	1.81968	0.00415	0.03411	0.00000	0.03411	0.03138	0.00000	0.03138	—	447.955	447.955	0.01817	0.00363	0.00000	449.493
2027	0.27138	0.22798	1.98272	3.35207	0.00715	0.05586	0.00000	0.05586	0.05139	0.00000	0.05139	—	771.424	771.424	0.03129	0.00626	0.00000	774.071
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.02889	0.02428	0.20891	0.33209	0.00076	0.00622	0.00000	0.00622	0.00573	0.00000	0.00573	—	74.1641	74.1641	0.00301	0.00060	0.00000	74.4187
2027	0.04953	0.04161	0.36185	0.61175	0.00130	0.01019	0.00000	0.01019	0.00938	0.00000	0.00938	—	127.718	127.718	0.00518	0.00104	0.00000	128.156

2.2.3. Offsite 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2027	0.26600	0.21558	2.02594	2.62013	0.01204	0.02407	0.82762	0.85170	0.02407	0.21318	0.23725	—	2,025.38	2,025.38	0.03880	0.26577	4.82796	2,110.37
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.26141	0.21037	2.28986	2.38060	0.01204	0.02407	0.82762	0.85170	0.02407	0.21318	0.23725	—	2,029.68	2,029.68	0.04171	0.26674	0.14201	2,110.35
2027	0.24018	0.20164	2.18551	2.22537	0.01204	0.02407	0.82762	0.85170	0.02407	0.21318	0.23725	—	1,989.27	1,989.27	0.04171	0.26674	0.12496	2,069.92
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.03061	0.02467	0.27003	0.28045	0.00145	0.00306	0.09669	0.09976	0.00306	0.02494	0.02801	—	245.928	245.928	0.00482	0.03257	0.28267	256.036
2027	0.05722	0.04797	0.49255	0.53622	0.00278	0.00556	0.19068	0.19624	0.00556	0.04906	0.05462	—	464.599	464.599	0.00926	0.06174	0.48534	483.715
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.00559	0.00450	0.04928	0.05118	0.00026	0.00056	0.01765	0.01821	0.00056	0.00455	0.00511	—	40.7162	40.7162	0.00080	0.00539	0.04680	42.3897
2027	0.01044	0.00876	0.08989	0.09786	0.00051	0.00101	0.03480	0.03581	0.00101	0.00895	0.00997	—	76.9197	76.9197	0.00153	0.01022	0.08035	80.0845

2.3. 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Unmit.	0.05497	0.05164	0.03482	0.27879	0.00064	0.00137	0.04903	0.05040	0.00133	0.01247	0.01380	1.11141	77.8567	78.9681	0.11630	0.00366	0.44542	83.4110
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.04580	0.04302	0.03808	0.19828	0.00060	0.00130	0.04903	0.05033	0.00127	0.01247	0.01374	1.11141	73.4334	74.5449	0.11648	0.00385	0.26510	78.8690
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.04760	0.04475	0.03441	0.20504	0.00056	0.00129	0.04357	0.04486	0.00126	0.01109	0.01234	1.11141	69.4798	70.5912	0.11621	0.00353	0.33290	74.8813
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.00869	0.00817	0.00628	0.03742	0.00010	0.00024	0.00795	0.00819	0.00023	0.00202	0.00225	0.18401	11.5032	11.6872	0.01924	0.00058	0.05512	12.3975

2.4. 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	0.02334	0.02122	0.02331	0.22595	0.00057	0.00045	0.04903	0.04948	0.00042	0.01247	0.01289	—	58.1967	58.1967	0.00189	0.00243	0.18511	59.1530
Area	0.03041	0.02981	0.00037	0.04349	< 0.000005	0.00008	—	0.00008	0.00006	—	0.00006	—	0.17885	0.17885	0.00001	< 0.000005	—	0.17949
Energy	0.00122	0.00061	0.01114	0.00935	0.00007	0.00085	—	0.00085	0.00085	—	0.00085	—	19.0598	19.0598	0.00211	0.00014	—	19.1538
Water	—	—	—	—	—	—	—	—	—	—	—	0.44313	0.42132	0.86445	0.04551	0.00109	—	2.32628
Waste	—	—	—	—	—	—	—	—	—	—	—	0.66828	0.00000	0.66828	0.06679	0.00000	—	2.33810

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.26030	0.26030
Total	0.05497	0.05164	0.03482	0.27879	0.00064	0.00137	0.04903	0.05040	0.00133	0.01247	0.01380	1.11141	77.8567	78.9681	0.11630	0.00366	0.44542	83.4110
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.02191	0.01974	0.02694	0.18892	0.00053	0.00045	0.04903	0.04948	0.00042	0.01247	0.01289	—	53.9523	53.9523	0.00207	0.00262	0.00480	54.7905
Area	0.02267	0.02267	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.00122	0.00061	0.01114	0.00935	0.00007	0.00085	—	0.00085	0.00085	—	0.00085	—	19.0598	19.0598	0.00211	0.00014	—	19.1538
Water	—	—	—	—	—	—	—	—	—	—	—	0.44313	0.42132	0.86445	0.04551	0.00109	—	2.32628
Waste	—	—	—	—	—	—	—	—	—	—	—	0.66828	0.00000	0.66828	0.06679	0.00000	—	2.33810
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.26030	0.26030
Total	0.04580	0.04302	0.03808	0.19828	0.00060	0.00130	0.04903	0.05033	0.00127	0.01247	0.01374	1.11141	73.4334	74.5449	0.11648	0.00385	0.26510	78.8690
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.01988	0.01795	0.02309	0.17424	0.00049	0.00041	0.04357	0.04398	0.00038	0.01109	0.01147	—	49.9104	49.9104	0.00180	0.00230	0.07260	50.7143
Area	0.02649	0.02619	0.00018	0.02145	< 0.000005	0.00004	—	0.00004	0.00003	—	0.00003	—	0.08820	0.08820	< 0.000005	< 0.000005	—	0.08852
Energy	0.00122	0.00061	0.01114	0.00935	0.00007	0.00085	—	0.00085	0.00085	—	0.00085	—	19.0598	19.0598	0.00211	0.00014	—	19.1538
Water	—	—	—	—	—	—	—	—	—	—	—	0.44313	0.42132	0.86445	0.04551	0.00109	—	2.32628
Waste	—	—	—	—	—	—	—	—	—	—	—	0.66828	0.00000	0.66828	0.06679	0.00000	—	2.33810
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.26030	0.26030
Total	0.04760	0.04475	0.03441	0.20504	0.00056	0.00129	0.04357	0.04486	0.00126	0.01109	0.01234	1.11141	69.4798	70.5912	0.11621	0.00353	0.33290	74.8813
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Mobile	0.00363	0.00328	0.00421	0.03180	0.00009	0.00007	0.00795	0.00803	0.00007	0.00202	0.00209	—	8.26323	8.26323	0.00030	0.00038	0.01202	8.39634
Area	0.00483	0.00478	0.00003	0.00391	< 0.000005	0.00001	—	0.00001	0.00001	—	0.00001	—	0.01460	0.01460	< 0.000005	< 0.000005	—	0.01465
Energy	0.00022	0.00011	0.00203	0.00171	0.00001	0.00015	—	0.00015	0.00015	—	0.00015	—	3.15558	3.15558	0.00035	0.00002	—	3.17113
Water	—	—	—	—	—	—	—	—	—	—	—	0.07337	0.06975	0.14312	0.00753	0.00018	—	0.38514
Waste	—	—	—	—	—	—	—	—	—	—	—	0.11064	0.00000	0.11064	0.01106	0.00000	—	0.38710
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.04310	0.04310
Total	0.00869	0.00817	0.00628	0.03742	0.00010	0.00024	0.00795	0.00819	0.00023	0.00202	0.00225	0.18401	11.5032	11.6872	0.01924	0.00058	0.05512	12.3975

3. Construction Emissions Details

3.1. Staging and Site Preparation (2026)

3.1.1. Onsite - 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
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.67494	0.56713	4.22314	5.97557	0.01684	0.13740	—	0.13740	0.12641	—	0.12641	—	1,823.33	1,823.33	0.07396	0.01479	—	1,829.59

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Dust From Material Movement	—	—	—	—	—	—	0.00000	0.00000	—	0.00000	0.00000	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02774	0.02331	0.17355	0.24557	0.00069	0.00565	—	0.00565	0.00520	—	0.00520	—	74.9315	74.9315	0.00304	0.00061	—	75.1887
Dust From Material Movement	—	—	—	—	—	—	0.00000	0.00000	—	0.00000	0.00000	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.00506	0.00425	0.03167	0.04482	0.00013	0.00103	—	0.00103	0.00095	—	0.00095	—	12.4058	12.4058	0.00050	0.00010	—	12.4483
Dust From Material Movement	—	—	—	—	—	—	0.00000	0.00000	—	0.00000	0.00000	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.1.2. Offsite - 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
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04005	0.03633	0.03175	0.38135	0.00000	0.00000	0.08401	0.08401	0.00000	0.01969	0.01969	—	81.8600	81.8600	0.00220	0.00350	0.00806	82.9671
Vendor	0.01420	0.00842	0.35836	0.11711	0.00201	0.00401	0.07633	0.08034	0.00401	0.02109	0.02510	—	278.249	278.249	0.00534	0.04189	0.01776	290.883
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00164	0.00149	0.00117	0.01604	0.00000	0.00000	0.00338	0.00338	0.00000	0.00079	0.00079	—	3.44824	3.44824	0.00008	0.00014	0.00551	3.49869
Vendor	0.00059	0.00036	0.01443	0.00472	0.00008	0.00016	0.00308	0.00324	0.00016	0.00085	0.00102	—	11.4292	11.4292	0.00022	0.00172	0.01214	11.9598
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00030	0.00027	0.00021	0.00293	0.00000	0.00000	0.00062	0.00062	0.00000	0.00014	0.00014	—	0.57090	0.57090	0.00001	0.00002	0.00091	0.57925
Vendor	0.00011	0.00007	0.00263	0.00086	0.00002	0.00003	0.00056	0.00059	0.00003	0.00016	0.00019	—	1.89223	1.89223	0.00004	0.00029	0.00201	1.98008
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.2. Grading (2026)

3.2.1. Onsite - 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
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.67494	0.56713	4.22314	5.97557	0.01684	0.13740	—	0.13740	0.12641	—	0.12641	—	1,823.33	1,823.33	0.07396	0.01479	—	1,829.59
Dust From Material Movement	—	—	—	—	—	—	0.00000	0.00000	—	0.00000	0.00000	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02774	0.02331	0.17355	0.24557	0.00069	0.00565	—	0.00565	0.00520	—	0.00520	—	74.9315	74.9315	0.00304	0.00061	—	75.1887
Dust From Material Movement	—	—	—	—	—	—	0.00000	0.00000	—	0.00000	0.00000	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.00506	0.00425	0.03167	0.04482	0.00013	0.00103	—	0.00103	0.00095	—	0.00095	—	12.4058	12.4058	0.00050	0.00010	—	12.4483

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Dust From Material Movement	—	—	—	—	—	—	0.00000	0.00000	—	0.00000	0.00000	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.2.2. Offsite - 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
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04005	0.03633	0.03175	0.38135	0.00000	0.00000	0.08401	0.08401	0.00000	0.01969	0.01969	—	81.8600	81.8600	0.00220	0.00350	0.00806	82.9671
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.02712	0.01102	0.86818	0.19996	0.00463	0.01323	0.18540	0.19863	0.01323	0.05076	0.06399	—	686.531	686.531	0.01102	0.10869	0.04149	719.237
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00164	0.00149	0.00117	0.01604	0.00000	0.00000	0.00338	0.00338	0.00000	0.00079	0.00079	—	3.44824	3.44824	0.00008	0.00014	0.00551	3.49869
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00113	0.00048	0.03492	0.00813	0.00019	0.00054	0.00749	0.00804	0.00054	0.00205	0.00260	—	28.2035	28.2035	0.00045	0.00446	0.02824	29.5714
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00030	0.00027	0.00021	0.00293	0.00000	0.00000	0.00062	0.00062	0.00000	0.00014	0.00014	—	0.57090	0.57090	0.00001	0.00002	0.00091	0.57925

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00021	0.00009	0.00637	0.00148	0.00003	0.00010	0.00137	0.00147	0.00010	0.00037	0.00047	—	4.66941	4.66941	0.00008	0.00074	0.00468	4.89589

3.3. Installation (2026)

3.3.1. Onsite - 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
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.05117	0.88304	8.15167	13.5776	0.02823	0.23316	—	0.23316	0.21451	—	0.21451	—	3,046.50	3,046.50	0.12358	0.02472	—	3,056.96
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.10285	0.08640	0.79762	1.32854	0.00276	0.02281	—	0.02281	0.02099	—	0.02099	—	298.092	298.092	0.01209	0.00242	—	299.115
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Off-Road Equipment	0.01877	0.01577	0.14557	0.24246	0.00050	0.00416	—	0.00416	0.00383	—	0.00383	—	49.3526	49.3526	0.00200	0.00040	—	49.5220
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.3.2. Offsite - 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
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.17623	0.15984	0.13969	1.67795	0.00000	0.00000	0.36963	0.36963	0.00000	0.08664	0.08664	—	360.184	360.184	0.00970	0.01541	0.03546	365.055
Vendor	0.08519	0.05053	2.15017	0.70266	0.01204	0.02407	0.45799	0.48207	0.02407	0.12654	0.15061	—	1,669.49	1,669.49	0.03201	0.25133	0.10655	1,745.30
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01715	0.01564	0.01226	0.16805	0.00000	0.00000	0.03538	0.03538	0.00000	0.00828	0.00828	—	36.1244	36.1244	0.00085	0.00151	0.05777	36.6530
Vendor	0.00846	0.00520	0.20609	0.06746	0.00118	0.00236	0.04399	0.04634	0.00236	0.01218	0.01453	—	163.274	163.274	0.00313	0.02459	0.17348	170.854
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00313	0.00285	0.00224	0.03067	0.00000	0.00000	0.00646	0.00646	0.00000	0.00151	0.00151	—	5.98081	5.98081	0.00014	0.00025	0.00957	6.06832
Vendor	0.00154	0.00095	0.03761	0.01231	0.00021	0.00043	0.00803	0.00846	0.00043	0.00222	0.00265	—	27.0319	27.0319	0.00052	0.00407	0.02872	28.2869

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.4. Installation (2027)

3.4.1. Onsite - 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
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.04428	0.87726	7.88620	13.5987	0.02821	0.21624	—	0.21624	0.19894	—	0.19894	—	3,044.68	3,044.68	0.12351	0.02470	—	3,055.13
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.04428	0.87726	7.88620	13.5987	0.02821	0.21624	—	0.21624	0.19894	—	0.19894	—	3,044.68	3,044.68	0.12351	0.02470	—	3,055.13
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.24115	0.20258	1.82108	3.14021	0.00651	0.04993	—	0.04993	0.04594	—	0.04594	—	703.076	703.076	0.02852	0.00570	—	705.489

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04401	0.03697	0.33235	0.57309	0.00119	0.00911	—	0.00911	0.00838	—	0.00838	—	116.402	116.402	0.00472	0.00094	—	116.802
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.4.2. Offsite - 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
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.17817	0.16372	0.09733	1.96932	0.00000	0.00000	0.36963	0.36963	0.00000	0.08664	0.08664	—	392.193	392.193	0.00679	0.01444	1.23039	397.898
Vendor	0.08783	0.05185	1.92860	0.65080	0.01204	0.02407	0.45799	0.48207	0.02407	0.12654	0.15061	—	1,633.18	1,633.18	0.03201	0.25133	3.59757	1,712.48
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.15499	0.15111	0.12622	1.55075	0.00000	0.00000	0.36963	0.36963	0.00000	0.08664	0.08664	—	354.601	354.601	0.00970	0.01541	0.03183	359.469
Vendor	0.08519	0.05053	2.05929	0.67461	0.01204	0.02407	0.45799	0.48207	0.02407	0.12654	0.15061	—	1,634.66	1,634.66	0.03201	0.25133	0.09312	1,710.45
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Worker	0.03579	0.03489	0.02581	0.36858	0.00000	0.00000	0.08349	0.08349	0.00000	0.01954	0.01954	—	83.9270	83.9270	0.00179	0.00356	0.12264	85.1552
Vendor	0.01998	0.01167	0.46570	0.15273	0.00278	0.00556	0.10381	0.10937	0.00556	0.02873	0.03429	—	377.278	377.278	0.00739	0.05804	0.35774	395.115
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00653	0.00637	0.00471	0.06727	0.00000	0.00000	0.01524	0.01524	0.00000	0.00357	0.00357	—	13.8951	13.8951	0.00030	0.00059	0.02030	14.0984
Vendor	0.00365	0.00213	0.08499	0.02787	0.00051	0.00101	0.01895	0.01996	0.00101	0.00524	0.00626	—	62.4627	62.4627	0.00122	0.00961	0.05923	65.4158
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.5. Paving (2027)

3.5.1. Onsite - 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
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.73566	0.61816	3.93335	5.15536	0.01536	0.14411	—	0.14411	0.13258	—	0.13258	—	1,663.14	1,663.14	0.06746	0.01349	—	1,668.84
Paving	0.00000	0.00000	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03023	0.02540	0.16164	0.21186	0.00063	0.00592	—	0.00592	0.00545	—	0.00545	—	68.3481	68.3481	0.00277	0.00055	—	68.5826
Paving	0.00000	0.00000	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.00552	0.00464	0.02950	0.03867	0.00012	0.00108	—	0.00108	0.00099	—	0.00099	—	11.3158	11.3158	0.00046	0.00009	—	11.3546
Paving	0.00000	0.00000	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.5.2. Offsite - 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
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04049	0.03721	0.02212	0.44757	0.00000	0.00000	0.08401	0.08401	0.00000	0.01969	0.01969	—	89.1348	89.1348	0.00154	0.00328	0.27963	90.4313
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00145	0.00141	0.00104	0.01491	0.00000	0.00000	0.00338	0.00338	0.00000	0.00079	0.00079	—	3.39458	3.39458	0.00007	0.00014	0.00496	3.44426
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00026	0.00026	0.00019	0.00272	0.00000	0.00000	0.00062	0.00062	0.00000	0.00014	0.00014	—	0.56201	0.56201	0.00001	0.00002	0.00082	0.57024
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
General Light Industry	0.02334	0.02122	0.02331	0.22595	0.00057	0.00045	0.04903	0.04948	0.00042	0.01247	0.01289	—	58.1967	58.1967	0.00189	0.00243	0.18511	59.1530
Total	0.02334	0.02122	0.02331	0.22595	0.00057	0.00045	0.04903	0.04948	0.00042	0.01247	0.01289	—	58.1967	58.1967	0.00189	0.00243	0.18511	59.1530
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	0.02191	0.01974	0.02694	0.18892	0.00053	0.00045	0.04903	0.04948	0.00042	0.01247	0.01289	—	53.9523	53.9523	0.00207	0.00262	0.00480	54.7905
Total	0.02191	0.01974	0.02694	0.18892	0.00053	0.00045	0.04903	0.04948	0.00042	0.01247	0.01289	—	53.9523	53.9523	0.00207	0.00262	0.00480	54.7905
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	0.00363	0.00328	0.00421	0.03180	0.00009	0.00007	0.00795	0.00803	0.00007	0.00202	0.00209	—	8.26323	8.26323	0.00030	0.00038	0.01202	8.39634
Total	0.00363	0.00328	0.00421	0.03180	0.00009	0.00007	0.00795	0.00803	0.00007	0.00202	0.00209	—	8.26323	8.26323	0.00030	0.00038	0.01202	8.39634

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	5.77297	5.77297	0.00093	0.00011	—	5.83006
Total	—	—	—	—	—	—	—	—	—	—	—	—	5.77297	5.77297	0.00093	0.00011	—	5.83006
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	5.77297	5.77297	0.00093	0.00011	—	5.83006
Total	—	—	—	—	—	—	—	—	—	—	—	—	5.77297	5.77297	0.00093	0.00011	—	5.83006
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	0.95578	0.95578	0.00015	0.00002	—	0.96523
Total	—	—	—	—	—	—	—	—	—	—	—	—	0.95578	0.95578	0.00015	0.00002	—	0.96523

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	0.00122	0.00061	0.01114	0.00935	0.00007	0.00085	—	0.00085	0.00085	—	0.00085	—	13.2869	13.2869	0.00118	0.00003	—	13.3237
Total	0.00122	0.00061	0.01114	0.00935	0.00007	0.00085	—	0.00085	0.00085	—	0.00085	—	13.2869	13.2869	0.00118	0.00003	—	13.3237

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	0.00122	0.00061	0.01114	0.00935	0.00007	0.00085	—	0.00085	0.00085	—	0.00085	—	13.2869	13.2869	0.00118	0.00003	—	13.3237
Total	0.00122	0.00061	0.01114	0.00935	0.00007	0.00085	—	0.00085	0.00085	—	0.00085	—	13.2869	13.2869	0.00118	0.00003	—	13.3237
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	0.00022	0.00011	0.00203	0.00171	0.00001	0.00015	—	0.00015	0.00015	—	0.00015	—	2.19979	2.19979	0.00019	< 0.000005	—	2.20590
Total	0.00022	0.00011	0.00203	0.00171	0.00001	0.00015	—	0.00015	0.00015	—	0.00015	—	2.19979	2.19979	0.00019	< 0.000005	—	2.20590

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	0.02140	0.02140	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.00127	0.00127	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Landscape Equipment	0.00774	0.00714	0.00037	0.04349	< 0.000005	0.00008	—	0.00008	0.00006	—	0.00006	—	0.17885	0.17885	0.00001	< 0.000005	—	0.17949
Total	0.03041	0.02981	0.00037	0.04349	< 0.000005	0.00008	—	0.00008	0.00006	—	0.00006	—	0.17885	0.17885	0.00001	< 0.000005	—	0.17949
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.02140	0.02140	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.00127	0.00127	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	0.02267	0.02267	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.00391	0.00391	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.00023	0.00023	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.00070	0.00064	0.00003	0.00391	< 0.000005	0.00001	—	0.00001	0.00001	—	0.00001	—	0.01460	0.01460	< 0.000005	< 0.000005	—	0.01465
Total	0.00483	0.00478	0.00003	0.00391	< 0.000005	0.00001	—	0.00001	0.00001	—	0.00001	—	0.01460	0.01460	< 0.000005	< 0.000005	—	0.01465

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.44313	0.42132	0.86445	0.04551	0.00109	—	2.32628
Total	—	—	—	—	—	—	—	—	—	—	—	0.44313	0.42132	0.86445	0.04551	0.00109	—	2.32628
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.44313	0.42132	0.86445	0.04551	0.00109	—	2.32628
Total	—	—	—	—	—	—	—	—	—	—	—	0.44313	0.42132	0.86445	0.04551	0.00109	—	2.32628
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.07337	0.06975	0.14312	0.00753	0.00018	—	0.38514
Total	—	—	—	—	—	—	—	—	—	—	—	0.07337	0.06975	0.14312	0.00753	0.00018	—	0.38514

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.66828	0.00000	0.66828	0.06679	0.00000	—	2.33810
Total	—	—	—	—	—	—	—	—	—	—	—	0.66828	0.00000	0.66828	0.06679	0.00000	—	2.33810
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.66828	0.00000	0.66828	0.06679	0.00000	—	2.33810
Total	—	—	—	—	—	—	—	—	—	—	—	0.66828	0.00000	0.66828	0.06679	0.00000	—	2.33810
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.11064	0.00000	0.11064	0.01106	0.00000	—	0.38710
Total	—	—	—	—	—	—	—	—	—	—	—	0.11064	0.00000	0.11064	0.01106	0.00000	—	0.38710

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.26030	0.26030
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.26030	0.26030
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.26030	0.26030
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.26030	0.26030
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.04310	0.04310
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.04310	0.04310

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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8. 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 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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

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

4.10. 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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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
Staging and Site Preparation	Site Preparation	10/1/2026	10/21/2026	5.00000	15.0000	—
Grading	Grading	10/22/2026	11/11/2026	5.00000	15.0000	—
Installation	Building Construction	11/12/2026	4/28/2027	5.00000	120.000	—
Paving	Paving	4/29/2027	5/19/2027	5.00000	15.0000	—

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
Staging and Site Preparation	Skid Steer Loaders	Diesel	Average	2.00000	8.00000	71.0000	0.37000
Staging and Site Preparation	Off-Highway Trucks	Diesel	Average	1.000000	8.00000	376.000	0.38000
Grading	Skid Steer Loaders	Diesel	Average	2.00000	8.00000	71.0000	0.37000
Grading	Off-Highway Trucks	Diesel	Average	1.000000	8.00000	376.000	0.38000
Installation	Tractors/Loaders/ Backhoes	Diesel	Average	1.000000	6.00000	84.0000	0.37000
Installation	Cement and Mortar Mixers	Diesel	Average	1.000000	2.00000	10.00000	0.56000
Installation	Rough Terrain Forklifts	Diesel	Average	2.00000	6.00000	96.0000	0.40000
Installation	Bore/Drill Rigs	Diesel	Average	2.00000	6.00000	83.0000	0.50000
Installation	Skid Steer Loaders	Diesel	Average	2.00000	6.00000	71.0000	0.37000
Installation	Off-Highway Trucks	Diesel	Average	1.000000	8.00000	376.000	0.38000
Paving	Paving Equipment	Diesel	Average	1.000000	6.00000	89.0000	0.36000
Paving	Rollers	Diesel	Average	1.000000	6.00000	36.0000	0.38000
Paving	Off-Highway Trucks	Diesel	Average	1.000000	8.00000	376.000	0.38000

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Staging and Site Preparation	Worker	10.00000	11.8900	LDA,LDT1,LDT2
Staging and Site Preparation	Vendor	10.00000	9.10000	HHDT,MHDT
Staging and Site Preparation	Hauling	0.00000	20.0000	HHDT
Staging and Site Preparation	Onsite truck	0.00000	—	HHDT
Grading	Worker	10.00000	11.8900	LDA,LDT1,LDT2
Grading	Vendor	0.00000	9.10000	HHDT,MHDT
Grading	Hauling	10.00000	20.0000	HHDT
Grading	Onsite truck	—	—	HHDT
Installation	Worker	44.0000	11.8900	LDA,LDT1,LDT2
Installation	Vendor	60.0000	9.10000	HHDT,MHDT
Installation	Hauling	0.00000	20.0000	HHDT
Installation	Onsite truck	—	—	HHDT
Paving	Worker	10.00000	11.8900	LDA,LDT1,LDT2
Paving	Vendor	0.00000	9.10000	HHDT,MHDT
Paving	Hauling	0.00000	20.0000	HHDT
Paving	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%

5.5. Architectural Coatings

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Staging and Site Preparation	—	—	0.00000	0.00000	0.00000
Grading	—	—	0.00000	0.00000	0.00000
Paving	0.00000	0.00000	0.00000	0.00000	0.00000

5.6.2. Construction Earthmoving Control Strategies

Control Strategies Applied	Frequency (per day)	PM10 Reduction	PM2.5 Reduction
Water Exposed Area	2	61%	61%

5.7. Construction Paving

Phase Name	Land Use	Area Paved (acres)	% Asphalt
Paving	General Light Industry	0.00000	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2026	0.00000	203.983	0.03300	0.00400
2027	0.00000	203.983	0.03300	0.00400

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
General Light Industry	4.96000	1.99000	5.00000	1,657.62	68.2903	27.3987	68.8410	22,822.5

5.10. Operational Area Sources

5.10.1. Hearths

Land Use	Hearth Type	Unmitigated (number)	Mitigated (number)
General Light Industry	Wood Fireplaces	0	0
General Light Industry	Gas Fireplaces	0	0
General Light Industry	Propane Fireplaces	0	0
General Light Industry	Electric Fireplaces	0	0
General Light Industry	No Fireplaces	0	0
General Light Industry	Conventional Wood Stoves	0	0
General Light Industry	Catalytic Wood Stoves	0	0

Land Use	Hearth Type	Unmitigated (number)	Mitigated (number)
General Light Industry	Non-Catalytic Wood Stoves	0	0
General Light Industry	Pellet Wood Stoves	0	0

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)
0.00000	0.00000	1,500.00	500.000	—

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00000
Summer Days	day/yr	180.000

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)
General Light Industry	10,330.0	203.983	0.0330	0.0040	41,458.6

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
General Light Industry	231,250	0.00000

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
General Light Industry	1.24000	0.00000

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
General Light Industry	Other commercial A/C and heat pumps	R-410A	2,088.00	0.30000	4.00000	4.00000	18.0000

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

5.16.2. Process Boilers

5.17. User Defined

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. Biomass Cover Type

5.18.1.1. Unmitigated

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)

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	24.4400	annual days of extreme heat
Extreme Precipitation	3.20000	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	0.00000	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

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
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.

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	58.3447
AQ-PM	48.1767
AQ-DPM	6.77038
Drinking Water	99.4755
Lead Risk Housing	51.4808
Pesticides	86.0000
Toxic Releases	17.9795
Traffic	4.56250
Effect Indicators	—
CleanUp Sites	0.00000
Groundwater	78.0508
Haz Waste Facilities/Generators	26.6711
Impaired Water Bodies	90.1302
Solid Waste	89.0263

Indicator	Result for Project Census Tract
Sensitive Population	—
Asthma	42.4726
Cardio-vascular	52.1934
Low Birth Weights	7.65974
Socioeconomic Factor Indicators	—
Education	62.6803
Housing	6.89480
Linguistic	47.6790
Poverty	38.9070
Unemployment	26.8610

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	40.83151546
Employed	26.40831515
Median HI	56.70473502
Education	—
Bachelor's or higher	40.75452329
High school enrollment	15.73206724

Indicator	Result for Project Census Tract
Preschool enrollment	49.04401386
Transportation	—
Auto Access	46.0284871
Active commuting	51.71307584
Social	—
2-parent households	38.39343
Voting	86.12857693
Neighborhood	—
Alcohol availability	97.0101373
Park access	2.194276915
Retail density	1.450019248
Supermarket access	18.36263313
Tree canopy	58.95034005
Housing	—
Homeownership	75.37533684
Housing habitability	89.51623252
Low-inc homeowner severe housing cost burden	84.39625305
Low-inc renter severe housing cost burden	78.80148852
Uncrowded housing	62.77428461
Health Outcomes	—
Insured adults	47.32452201

Indicator	Result for Project Census Tract
Arthritis	0.0
Asthma ER Admissions	78.3
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	31.3
Cognitively Disabled	4.6
Physically Disabled	34.8
Heart Attack ER Admissions	72.6
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	78.5
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0

Indicator	Result for Project Census Tract
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	82.0
Elderly	22.8
English Speaking	64.1
Foreign-born	25.9
Outdoor Workers	9.2
Climate Change Adaptive Capacity	—
Impervious Surface Cover	98.6
Traffic Density	7.1
Traffic Access	0.0
Other Indices	—
Hardship	54.6
Other Decision Support	—
2016 Voting	65.9

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	43.0000

Metric	Result for Project Census Tract
Healthy Places Index Score for Project Location (b)	43.0000
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
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

8.1. Justifications

Screen	Justification
Land Use	16.88 acre project
Construction: Construction Phases	Based on data provided by applicant. assuming staging and site preparation will occur at the same time.

Screen	Justification
Construction: Off-Road Equipment	based on equipment data from applicant
Construction: Trips and VMT	2 trips per flat bed truck during staging activity (5 trucks total); otherwise based on applicant estimates. Assumes 10 trips per day of hauling during grading to account for potential waste disposal of construction soil or debris.

8.3. Land Use

Model Parameter	Units	Default Value	New Value
Lot Area	acre	0.02296	16.8800
Landscape Area	sq. ft	—	0.00000

8.4. Construction

8.4.1. Construction Phases

Phase Type	Phase Name	Model Parameter	Default Value	New Value
Grading	Grading	Start Date	11/14/2026	10/22/2026
Grading	Grading	End Date	12/26/2026	11/11/2026
Grading	Grading	Work Days per Phase	30.0000	15.0000
Paving	Paving	Start Date	2/21/2028	4/29/2027
Paving	Paving	End Date	3/20/2028	5/19/2027
Paving	Paving	Work Days per Phase	20.0000	15.0000

8.4.2. Off-Road Equipment

Phase Name	Equipment Type	Model Parameter	Default Value	New Value
Installation	Tractors/Loaders/Backhoes	Number per Day	3.00000	1.000000
Installation	Tractors/Loaders/Backhoes	Hours Per Day	7.00000	6.00000
Paving	Paving Equipment	Number per Day	2.00000	1.000000
Paving	Paving Equipment	Hours Per Day	8.00000	6.00000
Paving	Rollers	Number per Day	2.00000	1.000000
Paving	Rollers	Hours Per Day	8.00000	6.00000

8.4.6. Trips and VMT

Phase Name	Trip Type	Model Parameter	Default Value	New Value
Staging and Site Preparation	Worker	One-Way Trips per Day	7.50000	10.00000
Grading	Worker	One-Way Trips per Day	7.50000	10.00000
Grading	Hauling	One-Way Trips per Day	0.00000	10.00000
Installation	Worker	One-Way Trips per Day	0.42000	44.0000
Installation	Vendor	One-Way Trips per Day	0.16390	60.0000
Paving	Worker	One-Way Trips per Day	7.50000	10.00000

GHG Offset Calculations

N Locust Tree Solar Project

Displaced Energy Production during 35-year Project life (2023 CA Power Mix and Increased Renewable Accountability)

Annual Energy Production		Annual Average Solar Radiation Hours/Day/Year
Grid Size (MW)	4	
Total hrs/year	2,920	
% Operational time [1]	*100%*	
Operational hours/year	2,920	
KWh produced per year	11,680,000	
Assumed Heat Rate (Btu/KWh)	10,000	
Annual Fuel Equivalent (MMBtu)[2]	116,800	

If not provided by client:		Units
	4	MW Generation
	8	hrs/day
	32	MWh/day
	365	days/year
	11680	MWh/year
	1000	kWh/MWh
	11,680,000	**kWh/year**

CA Power Mix[3]		Annual Fuel Displacement (MMBtu)
Coal[4]	1.77%	2,067
Large Hydro	11.70%	13,666
Natural Gas[4]	36.56%	42,702
Nuclear	9.34%	10,909
Oil	0.01%	12
Other (petroleum coke/waste heat)	0.07%	82
Renewables	36.86%	43,052
Unspecified sources of Power	3.69%	4,310
Total	**100.0%**	**116,800**

Annual Pollutant Displacement[4]

Natural Gas Turbine Emissions

Pollutant	AP-42 Emission Factor (lb/MMBtu)[5]	Controlled Emission Factor (lb/MMBtu)	Controlled Emissions (lb)	Controlled Emissions (ton)	AP-42 Emission Factor Source Notes[5]
NO_2	0.099	0.099	4,228	2.11	Table 3.1-1, lean premix; Assume SCR Control Efficiency
CO	0.015	0.015	641	0.32	Table 3.1-1, lean premix; Assume Ox. Cat. Control Efficiency
PM_{10}	0.0047	0.0047	201	0.10	Table 3.1-2a, PM (condensible)
$PM_{2.5}$	0.0019	0.0019	81	0.04	Table 3.1-2a, PM (filterable)
SO_2	0.0034	0.0034	145	0.07	Table 3.1-2a
CO_2	110	110	4,697,229	2,348.61	Table 3.1-2a

Coal Combustion Emissions

Pollutant	AP-42 Emission Factor (lb/ton)[6]	Controlled Emission Factor (lb/ton)	Emissions (lb)[7]	Emissions (ton)	AP-42 Emission Factor Source Notes[6]
NOx	12	12	1034	0.52	Table 1.1-3 pulverized coal, wall fired, bituminous coal NSPS
CO	0.5	0.5	43	0.02	Table 1.1-3 pulverized coal, wall fired, bituminous coal NSPS
PM_{10}[8]	0.46	0.084	7	0.00	Table 1.1-4, PC-fired dry bottom wall-fired, scrubber control
$PM_{2.5}$[8]	0.12	0.06	5	0.00	Table 1.1-4, PC-fired dry bottom wall-fired, scrubber control
SO_2[9]	2.85	0.57	49	0.02	Table 1.1-3 pulverized coal, wall fired, bituminous coal NSPS
CO_2	6040	6040	520286	260.14	Table 1.1-20
Total NMHC	0.06	0.06	5	0.00	Table 1.1-19; assumed all hydrocarbons are reactive
CH_4	0.04	0.04	3	0.00	Table 1.1-19
N_2O	0.03	0.03	3	0.00	Table 1.1-19

Total Displaced Emissions Associated With Direct Combustion

Pollutant	tons/year[8]	tons/lifetime (35 years (Static))	tons/lifetime (35 years (Increased Renewable))
ROG (NMHC)	0	0	
NO_x	3	92	
CO	0	12	
PM_{10}	0	4	
$PM_{2.5}$	0	2	
SO_x	0	3	
CO_2E (Metric Ton)	2,367	82,845	22,575

Notes:
1. Operational time is based on annual average solar radiation hours per day per year (5.38) for the project area. Source: solardirect.com (https://www.solardirect.com/archives/pv/systems/gts/gts-sizing-sun-hours.html)
2. The Project is assumed to displace existing power generation equivalent to the current power mix each year of operation.
3. CA Power Mix assumptions are based on data from the 2024 Total System Electric Generatin Table. https://www.energy.ca.gov/programs-and-topics/programs/power-source-disclosure-program/power-content-label
4. Combustion of natural gas and coal for power are of the greatest concern related to the generation of criteria pollutants and GHG emissions, therefore only fuel displacement of natural gas and coal due to electricty production from the Solar Scarlet facility are considered in this assessment.
5. EPA Air Pollution Emission Factors AP-42 Section 3.1, Stationary Gas Turbines
6. EPA Air Pollution Emission Factors AP-42 Section 1.1, Bituminous and Subbituminous Coal Combustion
7. Coal characteristics used for conversion: Assumed coal heat content = 24 MMBtu/ton
8. Total particulate matter (CPM-TOT) is expressed in terms of coal ash content therefore emission factor is determined by multiplying % ash content of coal (assumed to be 20% herein) by value listed in Table 1.1-4. Organic fraction of particulate matter is 20% of total CPM-TOT (Table 1.1-5) and listed as controlled emission factor.
9. SO_2 emission factor calculated by multiplying the weight percent of sulfur (assumed to be 7.5%) by the value listed in Table 1.1-3
10. CO_2E volumes are in metric tons rather than short (US) tons

Constants:

# years for project duration	35
GWP CH4	30
GWP N2O	273

N Locust Tree Solar Project

Displaced Energy Production during 35-year Project life (2023 CA Power Mix and Increased Renewable Accountability)

https://www.energy.ca.gov/programs-and-topics/programs/power-source-disclosure-program/power-content-label

Offset based on Increased Renewable Percentage

Year	Renewable %	Change in %	reduction per year		Non Renewable %	Total MT GHG	GHG per %
2024	45.00%				55.00%	2,367	43.03621114
2025	45.03%				54.97%	2,366	
2026	45.06%				54.94%	2,364	
2027	45.09%				54.91%	2,363	
2028	45.12%				54.88%	2,362	
2029	45.15%				54.85%	2,361	
2030	60%	60.0000%	0.000295567		40.00%	1,721	
2031	66.00%				34.00%	1,463	
2032	72.00%				28.00%	1,205	
2033	78.00%				22.00%	947	
2034	84.00%				16.00%	689	
2035	90%	30%	0.06		10.00%	430	
2036	91.00%				9.00%	387	
2037	92.00%				8.00%	344	
2038	93.00%				7.00%	301	
2039	94.00%				6.00%	258	
2040	95%	5%	0.01		5.00%	215	
2041	96.00%				4.00%	172	
2042	97.00%				3.00%	129	
2043	98.00%				2.00%	86	
2044	99.00%				1.00%	43	
2045	100%	5%	0.01		0.00%	0	

*Beyond 2045 would be equalt to 2045

	GHG Emissions (MT CO2e Per Year)
Total Offset Over Project Lifetime:	13,115
Annual offset (Operational Year 2028)	**375**
Construction Emissions (Amortized)[1]	9
Decommissioning Emissions (Amortized)[1]	9
Annual Operational Emissions	12
Annual GHG Emissions Generated	**31**
Net Annual Emissions Offset	**344**

Note

[1] Uses a Project Lifetime of 35 years.

Appendix B

Biological Resources Assessment

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916-706-1374

May 6, 2026
Project No: 25-18424

Ryan Nyberg
Renewable Properties, LLC
44 Montgomery Street, Suite 3150
San Francisco, California 94104
Via email: ryan@renewprop.com

Subject: Limited Biological Resources Assessment Memorandum for the North Locust Tree Road Solar Project in San Joaquin County, California

Dear Ryan:

This memorandum describes the methods and results of an environmental review conducted to describe biological resources in the 16.9-acre North Locust Tree Road Solar Project (project) area, located in a 19.8-acre parcel (Assessor's Parcel Number 063-150-160) in San Joaquin County, California.

Background and Project Description

Land uses surrounding the project area include agricultural lands and scattered rural residential parcels in unincorporated San Joaquin County, south of East Kettleman Lane and four miles east of Lodi, California (Attachment 1, Figure 1 Regional LocationFigure 1). The project area is located 0.4 mile east of North Locust Tree Road (Attachment 1, Figure 2) and sits at an approximate elevation of 70-78 feet above mean sea level. The latitude and longitude of the approximate center of the site is 38.110806° North, -121.188511° West.

The proposed project consists of a ground-mounted solar photovoltaic energy facility. The project will generate up to three megawatts of clean, reliable solar energy by utilizing photovoltaic solar modules, inverters, and appurtenant electrical equipment to convert the energy from the sun into usable power distributed to the electrical grid. The modules will be mounted on a steel racking system employing single-axis tracker technology that efficiently tracks the movement of the sun throughout the day and maximizes the efficiency of solar collection. The rows of modules will be anchored in the ground using driven piers, and the overall height of the array is not expected to exceed 15 feet above the existing ground surface at maximum tilt. The project will interconnect to the existing Pacific Gas and Electric Company electrical distribution system parallel to the northern boundary of the project area.

Regulatory Setting

Regulated or sensitive resources described in this assessment include special-status plant and wildlife species, native nesting birds, sensitive plant communities, jurisdictional waters and wetlands, wildlife movement corridors, federally designated Critical Habitat, and locally protected resources. Regulatory authority over biological resources is shared by federal, state, and local jurisdictions. Primary authority for regulation of general biological resources lies within the land use control and planning authority of local jurisdictions. See Attachment 2 for a detailed description of the Regulatory Setting.

Literature Review

Special-status plant and wildlife species present or potentially present within or adjacent to the project area were identified through a desktop literature review using the following sources:

- United States Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) Trust Resource Report (USFWS 2026a)
- California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDB 2026)
- California Native Plant Society (CNPS) Online Inventory of Rare and Endangered Vascular Plants (CNPS 2026)
- United States Department of Agriculture (USDA), Natural Resources Conservation Service Web Soil Survey (USDA 2026a)
- USFWS Critical Habitat Portal (USFWS 2026b)
- USFWS National Wetland Inventory (NWI) Wetland Mapper (USFWS 2026c)
- CDFW Biogeographic Information and Observation System (CDFW 2026a)
- CDFW Special Animals List (CDFW 2026b)
- San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP 2000)

The CNDDB and CNPS database searches included the 7.5-minute United States Geological Survey *Waterloo, California* quadrangle and surrounding eight quadrangles (referred to as a "nine-quad search"). The IPaC search included the project area and a two-mile buffer surrounding the project area. Following a review of these resources, Rincon Consultants (Rincon) also reviewed relevant life history information on those species documented as occurring in the region, including habitat type, soils, and elevation preferences.

The potential for wildlife movement corridors was evaluated based on the California Essential Habitat Connectivity Project commissioned by the California Department of Transportation and CDFW (Spencer et al. 2010).

Field Survey

A general biological field survey was performed by Rincon biologist Allie Sennett on March 17, 2026. The survey was conducted by walking throughout the entirety of the parcel to document existing conditions and evaluate the potential for the project area to support special-status plant and wildlife species, sensitive vegetation communities, and potentially jurisdictional aquatic resources. Binoculars were used to aid in identification of resources and to achieve visual coverage of the entire parcel. An aerial photograph and georeferenced mobile map with an overlay of the project area boundary was used to map vegetation communities and record any special-status or other sensitive biological resources while in the field. Representative photographs were taken to document existing conditions, vegetation communities, and sensitive biological resources (Attachment 3).

Definition of Special-Status Species

For the purposes of this report, special-status species include:

- Plant and wildlife species listed as threatened or endangered under the federal Endangered Species Act (ESA), including species proposed for listing
- Plant and wildlife species listed as threatened or endangered under the California Endangered Species Act (CESA), including species that are candidates for listing
- Wildlife species designated as Fully Protected by the California Fish and Game Commission, and as Species of Special Concern (SSC) by CDFW
- Plant species with CNPS California Rare Plant Ranks 1A, 1B, 2A and 2B, per the following definitions:
  - Rank 1A = Presumed extirpated in California and rare or extinct elsewhere
  - Rank 1B = Rare, threatened, or endangered in California and elsewhere

- Rank 2A = Presumed extirpated in California but common elsewhere
- Rank 2B = Rare, threatened, or endangered in California, but common elsewhere.

Special-status plant and wildlife species are discussed below in terms of California Environmental Quality Act (CEQA) thresholds of significance. A threshold of significance for a given environmental impact defines the level of effect above which the lead agency will normally consider impacts to be significant, and below which it will normally consider impacts to be less than significant. Lead agencies are responsible for establishing the thresholds of significance for all documents they prepare.

A list of special-status plant species with potential to occur in the search area defined above is included in Attachment 4, and a list of special-status wildlife species is included in Attachment 5. Definitions regarding potential for species occurrence for this assessment are as follows:

- **Not Expected to Occur.** Habitat within and adjacent to the project area is lacking for the species' life history requirements (foraging, breeding, cover, range, elevation, hydrology, vegetation community, site history, and/or disturbance regime). There are no documented occurrences of the species in the larger vicinity of the project area.
- **Low.** Few of the habitat components meeting the species requirements are present, and/or the majority of habitat on and adjacent to the project area is unsuitable or of poor quality. Because of this, the species is highly unlikely to be found within the project area. Any documented occurrences of the species are likely further in distance than possible for the species to disperse to the site, or the date of the occurrence is several decades old, or the vicinity of the project area has been developed in a manner that likely precludes the species from presently occurring.
- **Moderate.** Some of the habitat components meeting the species requirements are present, and/or only some of the habitat on or adjacent to the project area is unsuitable. There are recently documented occurrences in the near vicinity of the project area; therefore, the species has a moderate probability of occurring within the project area.
- **High.** All of the habitat components meeting the species requirements are present, and/or most of the habitat on or adjacent to the project area is highly suitable. There are documented occurrences of the species on or immediately adjacent to the project area; therefore, the species has a high probability of occurring within the project area.
- **Present.** Species was observed within the project area during field surveys or has been recorded (i.e., CNDDB, or other reports) within the project area recently (within the last ±10 years).

Based on these definitions, there would be no impact or less-than-significant impacts to species that are not expected to occur or that have a low potential to occur in the project area.

Results

Soils

Two soil types, Acampo sandy loam, 0 to 2 percent slopes and Kingdon fine sandy loam, 0 to 2 percent slopes, have been mapped in the project area (USDA 2026a; Attachment 1, Figure 3).

Acampo soils consist of deep to hardpan, moderately well drained soils formed in alluvium derived mainly from granitic rock sources, and are found on low fan terraces. This soil type is listed as predominantly hydric on the USDA Natural Resources Conservation Service List of Hydric Soils (USDA 2026b).

Kingdon soils consist of very deep, moderately well drained soils formed in alluvium derived mainly from granitic mixed rock sources, and are found on low fan terraces. This soil type is listed as predominantly hydric on the USDA Natural Resources Conservation Service List of Hydric Soils (USDA 2026b).

Land Cover Types

The project area can be characterized as agriculture and is an active vineyard. The edges of the parcel are dominated by non-native grasses and forbs, as well as the areas between the vineyard rows. (Attachment 1, Figure 4). These included, but were not limited to, barley (*Hordeum murinum*), cheeseweed (*Malva parviflora*), English plantain (*Plantago lanceolata*), field mustard (*Brassica rapa*), and wild oats (*Avena fatua*). The access road is located along an existing dirt road that connects the project area to North Locust Tree Road.

Special-Status Plant Species

Results of the IPaC, CNDDB, and CNPS searches identified 17 special-status plant species known to occur within the two-mile/nine-quad search radius of the project area (CNPS 2026, CNDDB 2026, USFWS 2026a). None of these are expected to occur due to a lack of suitable habitat in the project area or the project area is outside of the species known elevation range. In addition, the developed and managed nature of the site likely precludes special-status plants from occurring. Attachment 4 includes a list of the 17 special-status plant species evaluated for their potential to occur in the project area.

Special-Status Wildlife Species

Results of the CNDDB and IPaC searches indicated 25 special-status wildlife species are known to occur within the two-mile/nine-quad search radius of the project area (CNDDB 2026, USFWS 2026a). Of these, one species has a moderate potential to occur in the project area and is discussed further below. The remaining 24 species are not expected to occur or have a low potential to occur due to a lack of suitable habitat or the project area is outside of the species' known range. Therefore, these 24 species were removed from further consideration. Attachment 5 includes a list of the 25 special-status wildlife species evaluated for their potential to occur in the project area.

Swainson's hawk (*Buteo swainsoni*; state threatened) breeds in grasslands with scattered trees, juniper-sage flats, riparian areas, savannahs, and agricultural or ranch lands with groves or rows of trees. Swainson's hawk requires suitable foraging areas within 10–12 miles of a nest site, such as grasslands, alfalfa, or grain fields that support small mammal populations. Swainson's hawks are known to nest in single trees on agricultural landscapes and occasionally in orchards. Suitable foraging habitat in the vicinity of the project area is present in the scattered surrounding agricultural fields. Trees that may support nesting are present in adjacent rural residential areas. In addition, there are several documented occurrences of Swainson's hawk within 5 miles of the project area (CNDDB 2026). This species is covered under the SJMSCP.

Critical Habitat

Critical Habitat is a term defined and used in the federal ESA to specify geographic areas that contain features essential to the conservation of an endangered or threatened species, and that may require special management and protection. Critical Habitat may also include areas that are not currently occupied by the species but will be needed for its recovery.

The project area does not fall within Critical Habitat limits for any special-status wildlife or plant species. The nearest mapped Critical Habitat is approximately 11 miles west of the project area for Delta smelt (*Hypomesus transpacificus*).

Wildlife Corridors

Wildlife corridors are linear features that connect large patches of natural open space and provide avenues for the migration of animals. Habitat linkages are small patches that join larger blocks of habitat

and help reduce the adverse effects of habitat fragmentation; they may be continuous habitat or discrete habitat islands that function as stepping-stones for wildlife dispersal.

The project area is not recognized as an important wildlife corridor by any regional or state agency or jurisdiction and is not considered critical to the ecological functioning of adjoining open space areas (CDFW 2026b). Due to the disturbed nature of the site and level of development and human disturbance surrounding the site, common wildlife species like raccoon (*Procyon lotor*) may pass through the site to access adjacent patches of cover and foraging habitat, but migratory wildlife use of the site is unlikely.

Potentially Jurisdictional Aquatic Features

No wetlands or other waters have been mapped in or adjacent to the project area by the National Wetlands Inventory (USFWS 2026c), and no wetlands, waters, or other potentially jurisdictional aquatic features were observed in the project area during the field survey.

San Joaquin Multi-Species Habitat Conservation and Open Space Plan

The SJMSCP is a comprehensive conservation planning strategy that addresses the needs of multiple plant and animal species while protecting the region's agricultural interests as the population increases over the next 25 years (2001–2051). The SJMSCP is administered by the San Joaquin Council of Governments, Inc., which is a non-profit corporation established by San Joaquin County and the cities of Escalon, Lathrop, Lodi, Manteca, Ripon, Stockton and Tracy.

The SJMSCP provides coverage for impacts to biological resources pursuant to CEQA, the CESA, and ESA, and is approved and authorized by the CDFW and USFWS. As such, if the project proponent chooses to participate in this permitting pathway, the proposed project will be subject to review under the SJMSCP. As part of this process, the project will be required to comply with all provisions of the SJMSCP, including implementation of applicable Incidental Take Minimization Measures and payment of mitigation fees. These fees must be paid prior to the initiation of construction activities to ensure compliance with the plan and to mitigate potential impacts to covered species and habitats.

Summary

The project area has been developed as an active vineyard, with non-native grasses and forbs occurring throughout. No sensitive habitats or sensitive vegetation communities were detected during the field survey, nor have any been mapped by CDFW or USFWS in the project area, including areas designated as Critical Habitat for federally endangered species or protected wildlife movement corridors. No special-status plants are expected to occur in the project area; however, one special-status wildlife species has a moderate potential to occur in or adjacent to the project area.

Swainson's hawk is a Covered Species under the SJMSCP, and the project proponent will be required to comply with all provisions of the SJMSCP; therefore, potential impacts to Swainson's hawk would be mitigated to less than significant through participation in the SJMSCP.

Additionally, native nesting birds protected by the MBTA or the California Department of Fish and Game code may use the site and surrounding habitat during the breeding season (typically February 1 through August 31).To comply with CEQA and the MBTA, a preconstruction nesting bird survey would be required if construction activities were to occur during the breeding season.

If you have any questions about this memorandum, please contact Lisa Achter at 530-217-8952 or lachter@rinconconsultants.com.

Sincerely,
Rincon Consultants, Inc.

Lisa Achter
Senior Biologist, Project Manager

Attachments

Attachment 1 Figures
Attachment 2 Regulatory Setting
Attachment 3 Site Photographs
Attachment 4 Plant Species with Potential to Occur
Attachment 5 Wildlife Species with Potential to Occur

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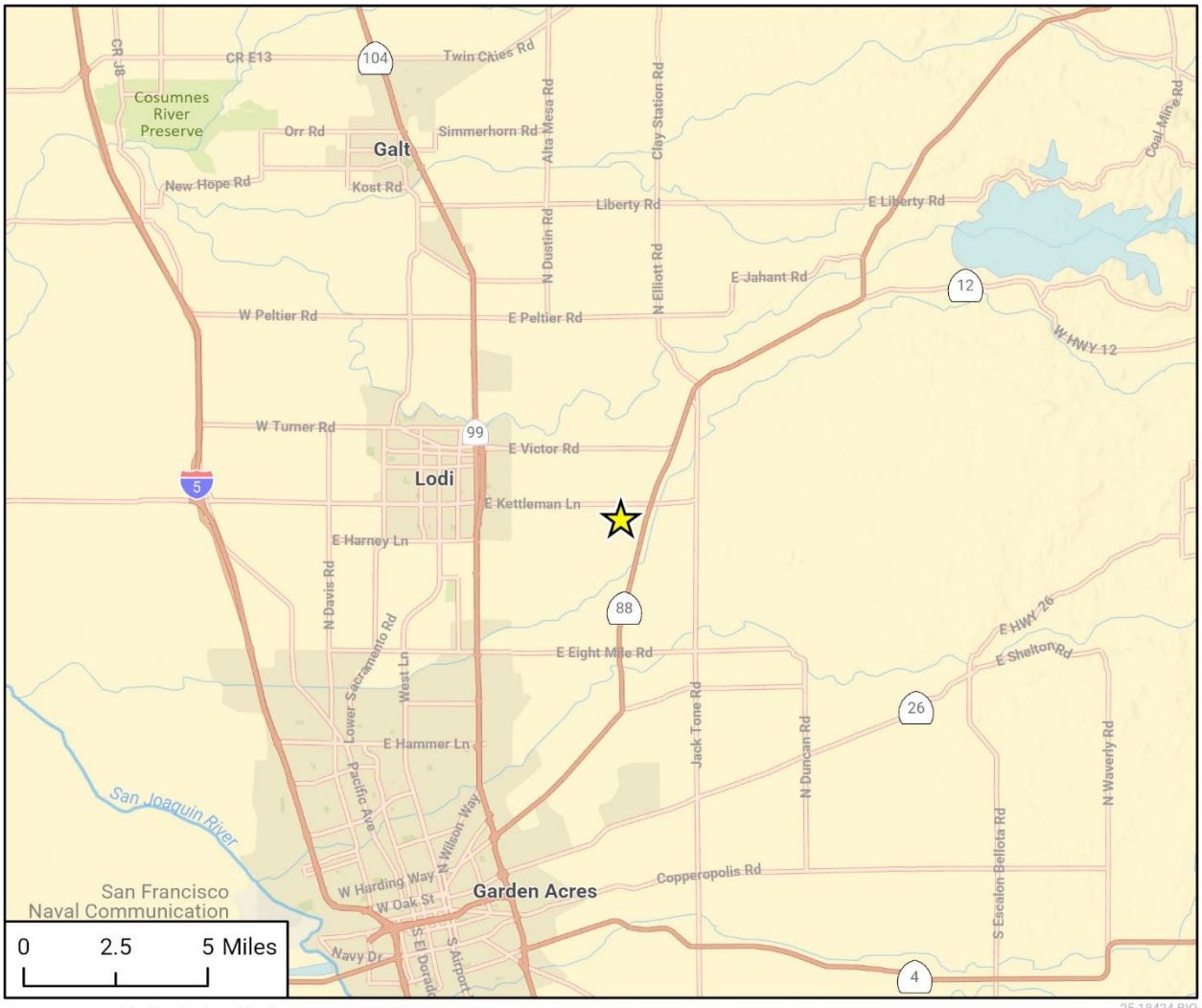
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Attachment 1

Figures

Figure 1 Regional Location



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Map created by Rincon Consultants, Inc., 2026.

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Fig 1 Regional Location

Project Location

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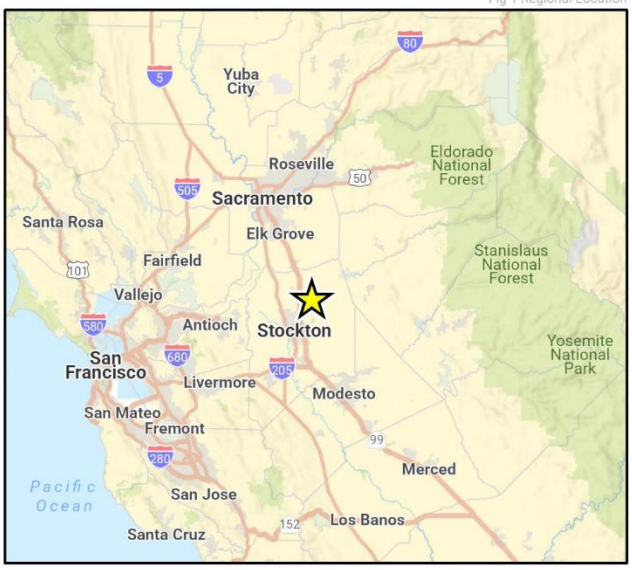
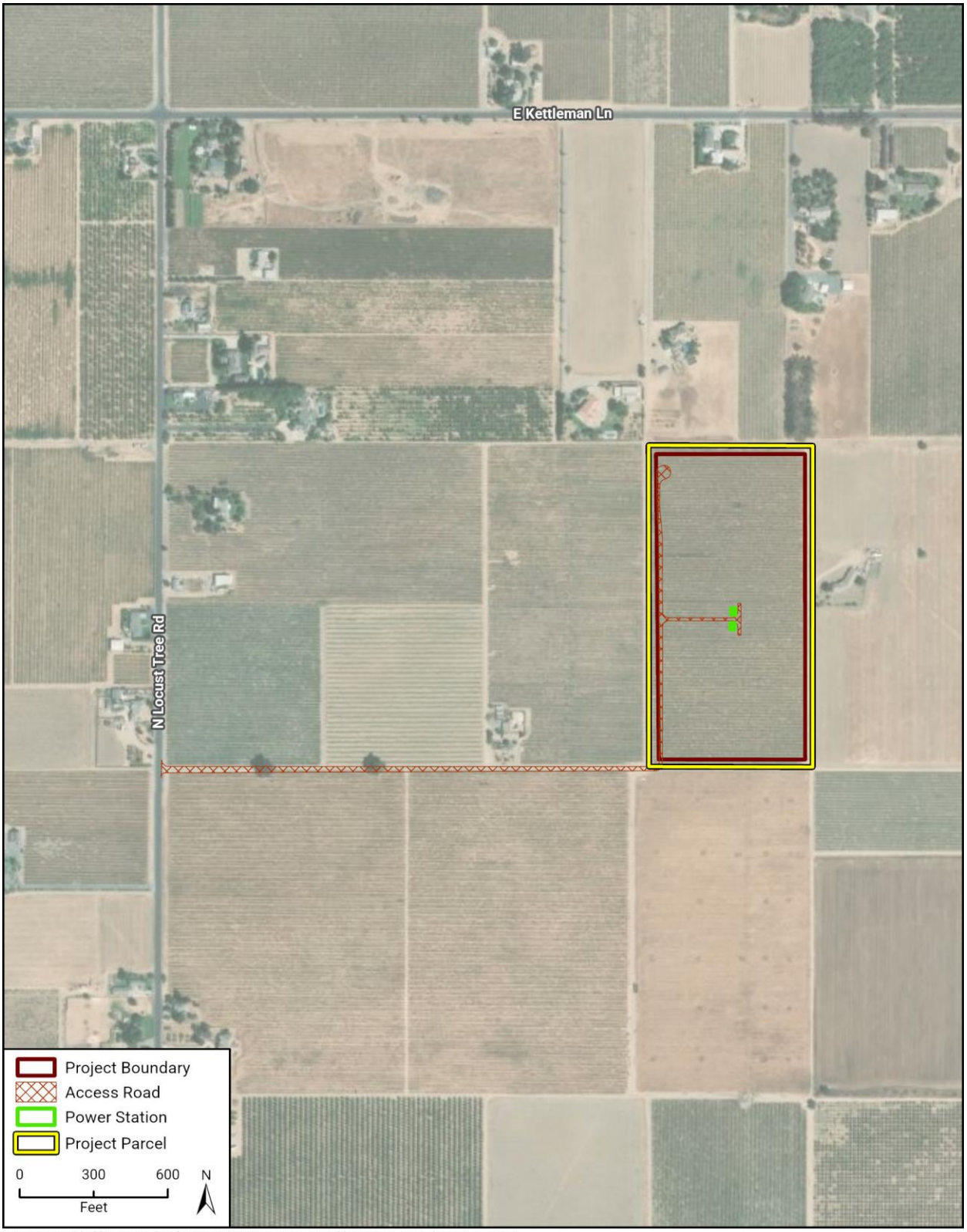


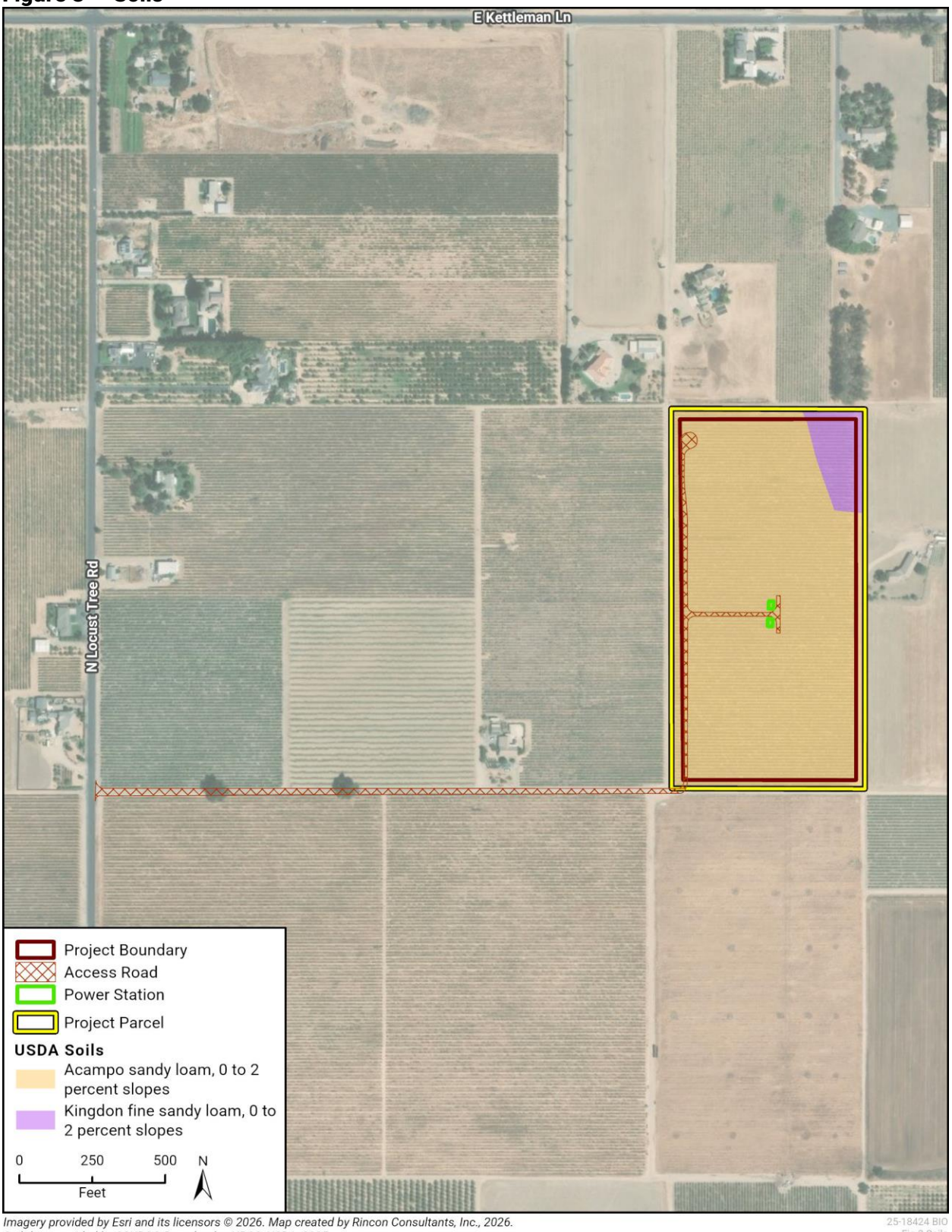
Figure 2 Project Area



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25-18424 BIO
Fig 2 Project Site

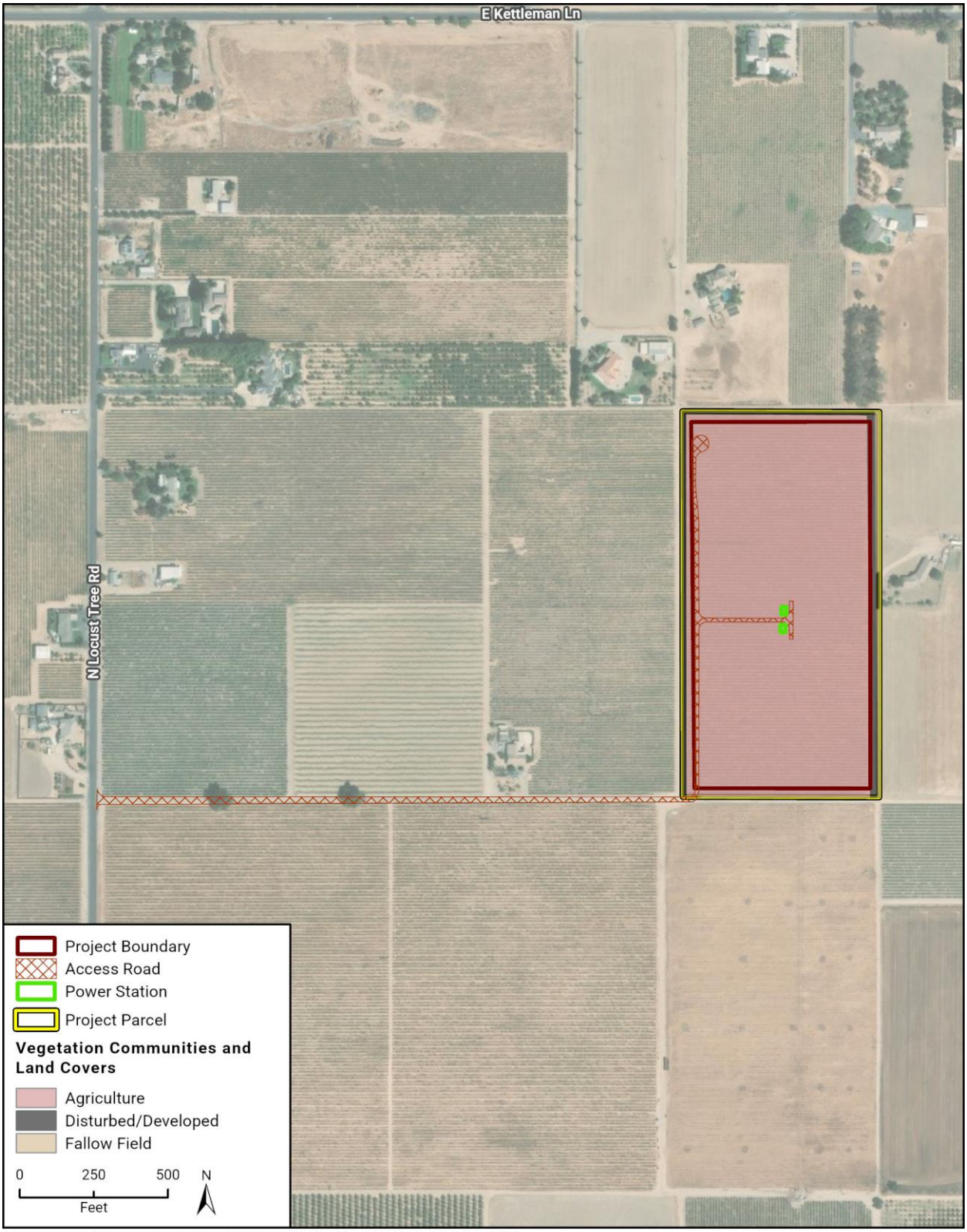
Figure 3 Soils



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Soil data provided by SSURGO Downloader, NRCS, USDA, 2025.

25-18424 BIO
Fig 3 Soils

Figure 4 Land Cover Types



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Soil data provided by SSURGO Downloader, NRCS, USDA, 2025.

25-18424 BIO
Fig 4 Vegetation

Attachment 2

Regulatory Setting

Regulatory Framework

The following is a brief summary of the regulatory context under which biological resources are managed at the federal, state, and local levels. A number of federal and state statutes provide a regulatory structure that guides the protection of biological resources. Agencies with the responsibility for protection of biological resources within the project site include the following:

- United States Army Corps of Engineers (USACE; wetlands and other waters of the United States)
- United States Fish and Wildlife Service (USFWS; federally listed species and migratory birds)
- National Marine Fisheries Service (NMFS; marine wildlife and anadromous fishes)
- Regional Water Quality Control Board (RWQCB; waters of the State)
- California Department Fish and Wildlife (CDFW; riparian areas, streambeds, and lakes; state-listed species; nesting birds, marine resources)
- California Coastal Commission (CCC)

United States Army Corps of Engineers

USACE is responsible for administering several federal programs related to ensuring the quality and navigability of the nation's waters.

Clean Water Act Section 404

Congress enacted the Clean Water Act (CWA) "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." The CWA establishes the basic structure for regulating discharges of pollutants into the waters of the United States and regulating quality standards for surface waters. The basis of the CWA was enacted in 1948 and was called the Federal Water Pollution Control Act, but the law was significantly reorganized and expanded in 1972. "Clean Water Act" became the law's common name with amendments in 1972.

Section 404 of the CWA establishes a program to regulate the discharge of dredged or fill material into waters of the United States, including wetlands. Section 404 of the CWA authorizes the Secretary of the Army, acting through the USACE, to issue permits regulating the discharge of dredged or fill materials into the "navigable waters at specified disposal sites." Section 404 requires that a permit be issued before dredged or fill material may be discharged into waters of the United States, unless the activity is exempt from regulation under Section 404 (e.g., certain farming and forestry activities).

Waters of the United States

USACE and the United States Environmental Protection Agency (USEPA) have undertaken several efforts to modernize their regulations defining "waters of the United States" (e.g., the 2015 Clean Water Rule and 2020 Navigable Waters Protection Rule), but these efforts have been frustrated by legal challenges which have invalidated the updated regulations. As a result of the Supreme Court ruling in *Sackett v. Environmental Protection Agency*, USEPA and USACE issued a final rule that amends the "Revised Definition of 'Waters of the United States'" to conform key aspects of the regulatory text to the United States Supreme Court's decision (88 Federal Register 61964–61969, September 8, 2023).

Under the "Revised Definition of 'Waters of the United States'; Conforming" rule, the term "waters of the United States" is defined as follows (33 Code of Federal Regulations [CFR] 328.3[a]):

(1) Waters which are:
   (i) Currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
   (ii) The territorial seas; or
   (iii) Interstate waters;

(2) Impoundments of waters otherwise defined as waters of the United States under this definition, other than impoundments of waters identified under paragraph (a)(5) of this section;

(3) Tributaries of waters identified in paragraph (a)(1) or (2) of this section that are relatively permanent, standing or continuously flowing bodies of water;

(4) Wetlands adjacent to the following waters:
   (i) Waters identified in paragraph (a)(1) of this section; or
   (ii) Relatively permanent, standing or continuously flowing bodies of water identified in paragraph (a)(2) or (a)(3) of this section and with a continuous surface connection to those waters;

(5) Intrastate lakes and ponds not identified in paragraphs (a)(1) through (4) of this section that are relatively permanent, standing or continuously flowing bodies of water with a continuous surface connection to the waters identified in paragraph (a)(1) or (a)(3) of this section.

In addition, the amended regulations include eight types of excluded waters (33 CFR 328.3[b]) which are not "waters of the United States" even where they otherwise meet the terms of paragraphs (a)(2) through (5) of this section:

(1) Waste treatment systems, including treatment ponds or lagoons, designed to meet the requirements of the Clean Water Act;

(2) Prior converted cropland designated by the Secretary of Agriculture. The exclusion would cease upon a change of use, which means that the area is no longer available for the production of agricultural commodities. Notwithstanding the determination of an area's status as prior converted cropland by any other Federal agency, for the purposes of the Clean Water Act, the final authority regarding Clean Water Act jurisdiction remains with EPA;

(3) Ditches (including roadside ditches) excavated wholly in and draining only dry land and that do not carry a relatively permanent flow of water;

(4) Artificially irrigated areas that would revert to dry land if the irrigation ceased;

(5) Artificial lakes or ponds created by excavating or diking dry land to collect and retain water and which are used exclusively for such purposes as stock watering, irrigation, settling basins, or rice growing;

(6) Artificial reflecting or swimming pools or other small ornamental bodies of water created by excavating or diking dry land to retain water for primarily aesthetic reasons;

(7) Waterfilled depressions created in dry land incidental to construction activity and pits excavated in dry land for the purpose of obtaining fill, sand, or gravel unless and until the construction or excavation operation is abandoned and the resulting body of water meets the definition of waters of the United States; and

(8) Swales and erosional features (e.g., gullies, small washes) characterized by low volume, infrequent, or short duration flow.

The lateral limits of USACE jurisdiction in non-tidal waters is defined by the "ordinary high-water mark" (OHWM) unless adjacent wetlands are present. The OHWM is a line on the shore or edge of a channel established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed upon the bank, shelving, changes in the character of soil, destruction of vegetation, or the presence of debris (33 CFR 328.3[e]). As such, waters are recognized in the field by the presence of a defined watercourse with appropriate physical and topographic features. If wetlands occur within, or adjacent to, waters of the United States, the lateral limits of USACE jurisdiction extend beyond the OHWM to the outer edge of the wetlands (33 CFR 328.4 [c]). The upstream limit of jurisdiction in the absence of adjacent wetlands is the point beyond which the OHWM is no longer perceptible (33 CFR 328.4; see also 51 Federal Register 41217).

Wetlands

USACE defines wetlands as "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (33 CFR 328.3). Indicators of three wetland parameters (hydric soils, hydrophytic vegetation, and wetlands hydrology), as determined by site investigation, must be present at a site for USACE to classify the site as a wetland (Environmental Laboratory 1987).

Limitations on Jurisdiction based on *Sackett v. Environmental Protection Agency* Supreme Court Decision

On May 25, 2023, the Supreme Court issued its decision on the petition from the Sacketts, a family in Idaho that was subject to a compliance order from the USEPA for backfilling their lot near Priest Lake, which the USEPA claimed contained federally regulated wetlands. The wetlands in question were adjacent to a ditch that fed a creek that ultimately drained into Priest Lake, a navigable water body. The USEPA asserted that the Sacketts had violated the law by filling the wetlands on their property without a permit. The Court's decision addressed controversy over whether, and under what conditions, the CWA reaches navigable waters' tributaries or adjacent wetlands. The Supreme Court's decision in Sackett provides definitive guidance to the agencies in determining the limits of their CWA authority. Major tenets of the decision have been incorporated into the agencies' current regulations through the September 2023 Conforming Rule.

The Court decided:

- "Adjacent wetlands" are WOTUS only if there is a continuous surface connection between the wetland and a navigable or relatively permanent water body, such that it is difficult to determine the boundary between the wetland and the water body. The opinion notes that "temporary interruptions to surface connection may sometimes occur because of phenomena like low tides or dry spells." The agencies addressed this element by defining the term "adjacent" to mean "having a continuous surface connection" in the Conforming Rule.
- The Significant Nexus Standard, introduced by the Court in prior decisions, is not mentioned in the Clean Water Act and should not be used. The Court determined that the standard applies ecological factors whose use in determining jurisdiction is not supported by the statute. The Conforming Rule removed significant nexus considerations from the definition.
- Although jurisdiction over tributaries was not addressed by the Court, the decision stated that "…the [Clean Water Act's] use of "waters" encompasses only those relatively permanent, standing or continuously flowing bodies of water forming geographical features that are described in ordinary parlance as streams, oceans, rivers, and lakes." The Conforming Rule makes clear that only relatively permanent tributaries qualify as "waters of the United States."

Rivers and Harbors Act Section 10

Section 10 of the Rivers and Harbors Act of 1899 requires authorization from the USACE for the construction of any structure in or over any navigable water of the United States. Structures or work outside the limits defined for navigable waters of the United States require a Section 10 permit if the structure or work affects the course, location, or condition of the water body. The law applies to any dredging or disposal of dredged materials, excavation, filling, re-channelization, or any other modification of a navigable water of the United States and applies to all structures and work. It further includes, without limitation, any wharf, dolphin, weir, boom breakwater, jetty, groin, bank protection (e.g., riprap, revetment, bulkhead), mooring structures such as pilings, aerial or subaqueous power transmission lines, intake or outfall pipes, permanently moored floating vessel, tunnel, artificial canal, boat ramp, aids to navigation, and any other permanent, or semi-permanent obstacle or obstruction. It is important to note that Section 10 applies only to navigable waters and thus does not apply to work in non-navigable wetlands or tributaries. In some cases, Section 10 authorization is issued by the USACE concurrently with CWA Section 404 authorization, such as when certain Nationwide Permits are used.

Coastal Zone Management Act of 1972

The Coastal Zone Management Act of 1972 (16 United States Code [USC] 1451 et seq.), administered by the National Oceanic and Atmospheric Administration, provides for the management of the nation's coastal resources, including the Great Lakes. The goal is to "preserve, protect, develop, and where possible, to restore or enhance the resources of the nation's coastal zone." Each federal agency activity within or outside of the coastal zone that affects any land or water use or natural resources of the coastal zone must be carried out in a manner consistent to the maximum extent practicable with the enforceable policies of the approved state management programs. The policies of the California Coastal Act of 1976 (Coastal Act) govern the types of developments and uses allowed within wetlands and other waters within the Coastal Zone, including open coastal waters. Along the Pacific coast, open coastal waters extend from the mean high-water line to the state's outer limit of jurisdiction, approximately 3 miles offshore.

Regional Water Quality Control Board

The State Water Resources Control Board (SWRCB) and nine RWQCBs have jurisdiction over "waters of the State," which are defined as any surface water or groundwater, including saline waters, within the boundaries of the state (California Water Code sec. 13050[e]). These agencies also have responsibilities for administering portions of the CWA.

Clean Water Act Section 401

Section 401 of the CWA requires an applicant requesting a federal license or permit for an activity that may result in any discharge into navigable waters (such as a Section 404 Permit) to provide state certification that the proposed activity will not violate state and federal water quality standards. In California, CWA Section 401 Water Quality Certification (Section 401 Certification) is issued by the RWQCBs and by the SWRCB for multi-region projects. The process begins when an applicant submits an application to the RWQCB and informs the USACE (or the applicable agency from which a license or permit was requested) that an application has been submitted. The USACE will then determine a "reasonable period of time" for the RWQCB to act on the application; this is typically 60 days for routine projects and longer for complex projects but may not exceed one year. When the period has elapsed, if the RWQCB has not either issued or denied the application for Section 401 Certification, the USACE may determine that Certification has been waived and issue the requested permit. If a Section 401

Certification is issued it may include binding conditions, imposed either through the Certification itself or through the requested federal license or permit.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (Porter-Cologne Act) is the principal law governing water quality regulation in California. It establishes a comprehensive program to protect water quality and the beneficial uses of water. The Porter-Cologne Act applies to surface waters, wetlands, and ground water and to both point and nonpoint sources of pollution. Pursuant to the Porter-Cologne Act (California Water Code section 13000 et seq.), the policy of the State is as follows:

- The quality of all the waters of the State shall be protected
- All activities and factors affecting the quality of water shall be regulated to attain the highest water quality within reason
- The State must be prepared to exercise its full power and jurisdiction to protect the quality of water in the State from degradation

The Porter-Cologne Act established nine RWQCBs (based on watershed boundaries) and the SWRCB, which are charged with implementing its provisions and which have primary responsibility for protecting water quality in California. The SWRCB provides program guidance and oversight, allocates funds, and reviews RWQCB decisions. In addition, the SWRCB allocates rights to the use of surface water. The RWQCBs have primary responsibility for individual permitting, inspection, and enforcement actions within each of nine hydrologic regions. The SWRCB and RWQCBs have numerous nonpoint source related responsibilities, including monitoring and assessment, planning, financial assistance, and management.

Section 13260 of the Porter-Cologne Act requires any person discharging or proposing to discharge waste that could affect the quality of waters of the State to file a Report of Waste Discharge with the appropriate RWQCB. The RWQCB may then authorize the discharge, subject to conditions, by issuing Waste Discharge Requirements (WDRs). While this requirement was historically applied primarily to outfalls and similar point source discharges, the SWRCB's *State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State*, effective May 2020, make it clear that the agency will apply the Porter-Cologne Act's requirements to discharges of dredge and fill material as well. The *Procedures* state that they are to be used in issuing CWA Section 401 Certifications and WDRs and largely mirror the existing review requirements for CWA Section 404 Permits and Section 401 Certifications, incorporating most elements of the USEPA's *Section 404(b)(1) Guidelines*. Following issuance of the *Procedures*, the SWRCB produced a consolidated application form for dredge/fill discharges that can be used to obtain a CWA Section 401 Water Quality Certification, WDRs, or both.

Non-Wetland Waters of the State

The SWRCB and RWQCBs have not established regulations for field determinations of waters of the state except for wetlands currently. In many cases the RWQCBs interpret the limits of waters of the State to be bounded by the OHWM unless isolated conditions or ephemeral waters are present. However, in the absence of statewide guidance each RWQCB may interpret jurisdictional boundaries within their region and the SWRCB has encouraged applicants to confirm jurisdictional limits with their RWQCB before submitting applications. As determined by the RWQCB, waters of the State may include riparian areas or other locations outside the OHWM, leading to a larger jurisdictional area over a given water body compared to the USACE.

Wetland Waters of the State

Procedures for defining wetland waters of the State pursuant to the SWRCB's *State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State* went into effect May 28, 2020. The SWRCB defines an area as wetland if, under normal circumstances:

(i) the area has continuous or recurrent saturation of the upper substrate caused by groundwater, or shallow surface water, or both;
(ii) the duration of such saturation is sufficient to cause anaerobic conditions in the upper substrate; and
(iii) the area's vegetation is dominated by hydrophytes or the area lacks vegetation.

The SWRCB's *Implementation Guidance for the Wetland Definition and Procedures for Discharges of Dredge and Fill Material to Waters of the State* (2020), states that waters of the United States and waters of the State should be delineated using the standard USACE delineation procedures, taking into consideration that the methods shall be modified only to allow for the fact that a lack of vegetation does not preclude an area from meeting the definition of a wetland.

California Coastal Act of 1976

The Coastal Act (Public Resources Code Section 30000 et seq.) was enacted to establish policies and guidelines that provide direction for the conservation and development of the California coastline. The Coastal Act established the CCC and created a state and local government partnership to ensure that public concerns regarding coastal development are addressed. Some of the basic goals of this program are to protect, maintain, and, where feasible, enhance and restore the overall quality of the coastal zone environment and its natural and artificial resources; maximize public access to and public recreational opportunities along the coast; and ensure priority for coastal-dependent and coastal-related development over other development on the coast.

The CCC serves as the coastal management and regulatory agency with jurisdiction over the Coastal Zone (Public Resources Code Section 30103). The California Coastal Zone generally extends seaward 3 miles and inland anywhere from 0.5 mile to 5 miles. The CCC is responsible for assisting in the preparation, review, and certification of Local Coastal Programs/Local Coastal Plans, which are developed by municipalities for that portion of their jurisdiction that falls within the Coastal Zone. Once the Local Coastal Program/Local Coastal Plan has been certified, regulatory responsibility is delegated to the local jurisdiction, although the CCC retains jurisdiction over the immediate shoreline.

United States Fish and Wildlife Service

USFWS implements several laws protecting the Nation's fish and wildlife resources, including the federal Endangered Species Act (ESA; 16 USC Sections 153 et seq.), the Migratory Bird Treaty Act (MBTA; 16 USC Sections 703-711) and the Bald and Golden Eagle Protection Act (16 USC Section 668).

Endangered Species Act

USFWS and NMFS share responsibility for implementing the federal ESA. Generally, the USFWS implements the federal ESA for terrestrial and freshwater species, while the NMFS implements the federal ESA for marine and anadromous species. Projects that would result in "take" of any threatened or endangered wildlife species, or a threatened or endangered plant species if occurring on federal land, are required to obtain permits from the USFWS or NMFS through either Section 7 (interagency consultation with a federal nexus) or Section 10 (Habitat Conservation Plan) of the federal ESA, depending on the involvement by the federal government in funding, authorizing, or carrying out the project. The permitting process is used to determine if a project would jeopardize the continued existence of a listed species and

what measures would be required to avoid jeopardizing the species. “Take” under federal definition means to harass, harm (which includes habitat modification), pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. Proposed or candidate species do not have the full protection of the federal ESA; however, the USFWS and NMFS advise project applicants that they could be elevated to listed status at any time.

Migratory Bird Treaty Act

The MBTA of 1918 implements four international conservation treaties that the United States entered into with Canada in 1916, Mexico in 1936, Japan in 1972, and Russia in 1976. It is intended to ensure the sustainability of populations of all protected migratory bird species. The law has been amended with the signing of each treaty, as well as when any of the treaties were amended, such as with Mexico in 1976 and Canada in 1995. The MBTA prohibits the take (including killing, capturing, selling, trading, and transport) of protected migratory bird species without prior authorization by the USFWS.

The list of migratory bird species protected by the law, in regulations at 50 CFR Part 10.13, is primarily based on bird families and species included in the four international treaties. A migratory bird species is included on the list if it meets one or more of the following criteria:

1. It occurs in the United States or U.S. territories as the result of natural biological or ecological processes and is currently, or was previously listed as, a species or part of a family protected by one of the four international treaties or their amendments.
2. Revised taxonomy results in it being newly split from a species that was previously on the list, and the new species occurs in the United States or U.S. territories as the result of natural biological or ecological processes.
3. New evidence exists for its natural occurrence in the United States or U.S. territories resulting from natural distributional changes and the species occurs in a protected family.

In 2004, the Migratory Bird Treaty Reform Act limited the scope of the MBTA by stating the MBTA applies only to migratory bird species that are native to the United States or U.S. territories, and that a native migratory bird species is one that is present as a result of natural biological or ecological processes. The Migratory Bird Treaty Reform Act requires the USFWS to publish a list of all nonnative, human-introduced bird species to which the MBTA does not apply, and an updated list was published in 2020. The 2020 update identifies species belonging to biological families referred to in treaties the MBTA implements but are not protected because their presence in the United States or U.S. territories is solely the result of intentional or unintentional human-assisted introductions.

Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act prohibits anyone, without a permit issued by the USFWS, from “taking” bald or golden eagles, including their parts (including feathers), nests, or eggs. The Act provides criminal penalties for persons who “take, possess, sell, purchase, barter, offer to sell, purchase or barter, transport, export or import, at any time or any manner, any bald eagle ... [or any golden eagle], alive or dead, or any part, nest, or egg thereof.” The Act defines “take” as “pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb.”

“Disturb” means “to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, 1) injury to an eagle, 2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or 3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior.”

In addition to immediate impacts, this definition also covers impacts that result from human-induced alterations initiated around a previously used nest site during a time when eagles are not present, if, upon

the eagle's return, such alterations agitate or bother an eagle to a degree that interferes with or interrupts normal breeding, feeding, or sheltering habits, and causes injury, death or nest abandonment.

California Department of Fish and Wildlife

CDFW derives its authority from the Fish and Game Code of California and administers several State laws protecting fish and wildlife resources and the habitats upon which they depend.

California Endangered Species Act

The California Endangered Species Act (CESA) (Fish and Game Code Section 2050 et. seq.) prohibits take of state listed threatened or endangered. Take under CESA is defined as “Hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill” (Fish and Game Code sec. 86). This definition does not prohibit indirect harm by way of habitat modification, except where such harm is the proximate cause of death of a listed species. Where incidental take would occur during construction or other lawful activities, CESA allows the CDFW to issue an Incidental Take Permit upon finding, among other requirements, that impacts to the species have been minimized and fully mitigated. Unlike the federal ESA, CESA’s protections extend to candidate species during the period (typically one year) while the California Fish and Game Commission decides whether the species warrants CESA listing.

Native Plant Protection Act

CDFW also has authority to administer the Native Plant Protection Act (NPPA) (Fish and Game Code Section 1900 et seq.). NPPA requires the CDFW to establish criteria for determining if a species, subspecies, or variety of native plant is endangered or rare, and prohibits the take of listed plant species. Effective in 2015, CDFW promulgated regulations (14 California Code of Regulations [CCR] 786.9) under the authority of the NPPA, establishing that the CESA’s permitting procedures would be applied to plants listed under the NPPA as "Rare." With this change, there is little practical difference for the regulated public between plants listed under CESA and those listed under the NPPA.

Fully Protected Species Laws

CDFW enforces Sections 3511, 4700, 5050, and 5515 of the Fish and Game Code, which prohibit take of species designated as Fully Protected. CDFW is not allowed to issue an Incidental Take Permit for Fully Protected species; therefore, impacts to these species must be avoided. The exception is situations where a Natural Community Conservation Plan is in place that authorizes take of the fully protected species.

Avian Protection Laws

California Fish and Game Code sections 3503, 3503.5, and 3513 describe unlawful take, possession, or destruction of native birds, nests, and eggs. Section 3503.5 of the Code protects all birds-of-prey and their eggs and nests against take, possession, or destruction of nests or eggs. Section 3513 makes it a state-level offense to take any bird in violation of the federal MBTA.

Protection of Lakes and Streambeds

California Fish and Game Code section 1602 states that it is unlawful for any person to "substantially divert or obstruct the natural flow of, or substantially change or use any material from the bed, channel, or bank of, any river, stream, or lake" without first notifying the CDFW of that activity. Thereafter, if CDFW determines and informs the entity that the activity will not substantially adversely affect any existing fish or wildlife resources, the entity may commence the activity. If, however, California Department of Fish and

Game determines that the activity may substantially adversely affect an existing fish or wildlife resource, the entity may be required to obtain from CDFW a Streambed Alteration Agreement (SAA), which will include reasonable measures necessary to protect the affected resource(s), before the entity may conduct the activity described in the notification. Upon receiving a complete Notification of Lake/Streambed Alteration, CDFW has 60 days to present the entity with a Draft SAA. Upon review of the Draft SAA by the applicant, any problematic terms are negotiated with CDFW and a final SAA is executed.

The CDFW has not defined the term "stream" for the purposes of implementing its regulatory program under Section 1602, and the agency has not promulgated regulations directing how jurisdictional streambeds may be identified, or how their limits should be delineated. However, four relevant sources of information offer insight as to the appropriate limits of CDFW jurisdiction as discussed below.

- The plain language of Section 1602 of California Fish and Game Code establishes the following general concepts:
  - References "river," "stream," and "lake"
  - References "natural flow"
  - References "bed," "bank," and "channel"
- Applicable court decisions, in particular *Rutherford v. State of California* (188 Cal App. 3d 1276 [1987]), which interpreted Section 1602's use of "stream" to be as defined in common law. The Court indicated that a "stream" is commonly understood to:
  - Have a source and a terminus
  - Have banks and a channel
  - Convey flow at least periodically, but need not flow continuously and may at times appear outwardly dry
  - Represent the depression between the banks worn by the regular and usual flow of the water
  - Include the area between the opposing banks measured from the foot of the banks from the top of the water at its ordinary stage, including intervening sand bars
  - Include the land that is covered by the water in its ordinary low stage
  - Include lands below the OHWM
- CDFW regulations defining "stream" for other purposes, including sport fishing (14 CCR 1.72) and streambed alterations associated with cannabis production (14 CCR 722[c][21]), which indicate that a stream:
  - Flows at least periodically or intermittently
  - Flows through a bed or channel having banks
  - Supports fish or aquatic life
  - Can be dry for a period of time
  - Includes watercourses where surface or subsurface flow supports or has supported riparian vegetation
- Guidance documents, including *A Field Guide to Lake and Streambed Alteration Agreements* (California Department of Fish and Game 1994) and *Methods to Describe and Delineate Episodic Stream Processes on Arid Landscapes for Permitting Utility-Scale Solar Power Plants* (Brady and Vyverberg 2013), which suggest the following:
  - A stream may flow perennially or episodically
  - A stream is defined by the course in which water currently flows, or has flowed during the historic hydrologic course regime (approximately the last 200 years)
  - Width of a stream course can reasonably be identified by physical or biological indicators

- A stream may have one or more channels (single thread vs. compound form)
- Features such as braided channels, low-flow channels, active channels, banks associated with secondary channels, floodplains, islands, and stream-associated vegetation, are interconnected parts of the watercourse
- Canals, aqueducts, irrigation ditches, and other means of water conveyance can be considered streams if they support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife
- Biologic components of a stream may include aquatic and riparian vegetation, all aquatic wildlife including fish, amphibians, reptiles, invertebrates, and terrestrial species which derive benefits from the stream system
- The lateral extent of a stream can be measured in different ways depending on the particular situation and the type of fish or wildlife resource at risk

The tenets listed above, among others, are applied to establish the boundaries of streambeds in various environments. Importance of each factor may be weighted based on site-specific considerations and the applicability of the indicators to the streambed at hand.

San Joaquin Multi-Species Habitat Conservation and Open Space Plan

The San Joaquin County Multi Species Habitat Conservation Plan and Open Space Plan (SJMSCP) is a comprehensive conservation planning process that addresses the needs of multiple plant and animal species while protecting the region's agricultural interests as the population increases over a period of 50 years (2001–2051) (SJMSCP 2000). The SJMSCP, in accordance with ESA Section 10(a)(1)(B) and CESA Section 2081(b) offers compensation for the Conversion of Open Space to non-Open Space which affect one or more of the 97 species covered under the SJMSCP (Covered Species) (SJMSCP 2000).

The project area is mapped as the agriculture land use type per the SJMSCP and is also located in the SJMSCP's Central Zone, which provides incidental take coverage for several Covered Species. If a project proponent opts into the SJMSCP, permit conditions would require avoidance and minimization measures to offset impacts to Covered Species.

For all project activities subject to the SJMSCP and seeking coverage under the SJMSCP, the project proponent must submit an applicant checklist and review form to the San Joaquin Council of Governments to establish eligibility for coverage. The form details the activities not subject to the SJMSHCP and those that may have the potential to impact a biological resource covered by the SJMSHCP. Project applicants have four options to receive coverage, with approval by the San Joaquin Council of Governments:

1. Pay the appropriate fee. A fee is assessed depending on which of the four habitats the project lies within.
2. Dedicate habitat lands as conservation easement or fee title.
3. Purchase mitigation bank credits from a mitigation bank approved by SJMSCP.
4. Propose an alternative mitigation plan, consistent with the goals of the SJMSCP and equivalent in biological value.

Attachment 3

Site Photographs



Photograph 1. Looking north through project area. March 17, 2026.



Photograph 2. Looking north along eastern boundary of project area. March 17, 2026.



Photograph 3. Looking south along eastern access road. March 17, 2026.

Attachment 4

Special-Status Plant Species with Potential to Occur

Special-Status Plant Species in the Two-Mile/Nine-Quad Search Radius of the Project Area

Scientific Name Common Name	Status Fed/State ESA CRPR	Habitat Requirements	Potential to Occur	Rationale
Astragalus tener var. *tener* alkali milk-vetch	None/None G2T1/S1 1B.2	Annual herb. Playas, valley and foothill grassland, vernal pools. Alkaline soil. Elevations: 5-195 feet. Blooms Mar-Jun.	Not Expected	Suitable vernal pool habitat is not present within or adjacent to the project area.
Atriplex cordulata var. *cordulata* heartscale	None/None GNRT2/S2 1B.2	Annual herb. Chenopod scrub, meadows and seeps, valley and foothill grassland. Alkaline soil (sometimes). Elevations: 0-1,835 feet. Blooms Apr-Oct.	Not Expected	Suitable scrub and meadow habitat is not present within or adjacent to the project area.
Blepharizonia plumosa big tarplant	None/None G1G2/S1S2 1B.1	Annual herb. Valley and foothill grassland. Clay soil (usually). Elevations: 100-1,655 feet. Blooms Jul-Oct.	Not Expected	Suitable grassland habitat is not present within or adjacent to the project area.
Brasenia schreberi watershield	None/None G5/S3 2B.3	Perennial rhizomatous herb (aquatic). Marshes and swamps. Aquatic known from water bodies both natural and artificial in California. Elevations: 0-7,220 feet. Blooms Jun-Sep.	Not Expected	Suitable aquatic habitat is not present within or adjacent to the project area.
Castilleja campestris ssp. *succulenta* fleshy owl's clover	FT/SE G4?T2T3/S2S3 1B.2	Annual herb (hemiparasitic). Vernal pools. Moist places, often in acidic soils. Elevations: 165-2,460 feet. Blooms (Mar) Apr-May.	Not Expected	Suitable vernal pool habitat is not present within or adjacent to the project area. The project area is below the known elevation range for this species.
Chloropyron palmatum palmate-bracted bird's-beak	FE/SE G1/S1 1B.1	Annual herb (hemiparasitic). Chenopod scrub, valley and foothill grassland. Alkaline soil. Elevations: 15-510 feet. Blooms May-Oct.	Not Expected	Suitable scrub and grassland habitat is not present within or adjacent to the project area.
Delphinium recurvatum recurved larkspur	None/None G2?/S2 1B.2	Perennial herb. Chenopod scrub, cismontane woodland, valley and foothill grassland. Alkaline. Elevations: 10-2,590 feet. Blooms Mar-Jun.	Not Expected	Suitable scrub, woodland, and grassland habitat is not present within or adjacent to the project area.
Eryngium racemosum Delta button-celery	None/SE G1/S1 1B.1	Annual/perennial herb. Riparian scrub. Seasonally inundated floodplain on clay. Elevations: 10-100 feet. Blooms (May) Jun-Oct.	Not Expected	Suitable riparian scrub habitat is not present within or adjacent to the project area.

Scientific Name Common Name	Status Fed/State ESA CRPR	Habitat Requirements	Potential to Occur	Rationale
Extriplex joaquinana San Joaquin spearscale	None/None G2/S2 1B.2	Annual herb. Chenopod scrub, meadows and seeps, playas, valley and foothill grassland. In seasonal alkali wetlands or alkali sink scrub with *Distichlis spicata*, *Frankenia*, etc. Elevations: 5-2,740 feet. Blooms Apr-Oct.	Not Expected	Suitable alkali sink habitat is not present within or adjacent to the project area.
Hibiscus lasiocarpos var. *occidentalis* woolly rose-mallow	None/None G5T3/S3 1B.2	Perennial rhizomatous herb (emergent). Marshes and swamps. Moist, freshwater-soaked river banks and low peat islands in sloughs; can also occur on riprap and levees. In California, known from the delta watershed. Elevations: 0-395 feet. Blooms Jun-Sep.	Not Expected	Suitable marsh habitat for this species is not present within the project area.
Lathyrus jepsonii var. *jepsonii* Delta tule pea	None/None G5T2/S2 1B.2	Perennial herb. Marshes and swamps. In freshwater and brackish marshes. Often found with *Typha*, *Aster lentus*, *Rosa californica*, *Juncus* spp., *Scirpus*, etc. Usually on marsh and slough edges. Elevations: 0-15 feet. Blooms May-Jul (Aug-Sep).	Not Expected	Suitable marsh habitat is not present within or adjacent to the project area.
Legenere limosa legenere	None/None G2/S2 1B.1	Annual herb. Vernal pools. In beds of vernal pools. Elevations: 5-2,885 feet. Blooms Apr-Jun.	Not Expected	Suitable vernal pool habitat is not present within or adjacent to the project area.
Lilaeopsis masonii Mason's lilaeopsis	None/SR G2/S2 1B.1	Perennial rhizomatous herb. Marshes and swamps, riparian scrub. Tidal zones, in muddy or silty soil formed through river deposition or river bank erosion. In brackish or freshwater. Elevations: 0-35 feet. Blooms Apr-Nov.	Not Expected	Suitable marsh and riparian scrub habitat are not present within or adjacent to the project area.
Sagittaria sanfordii Sanford's arrowhead	None/None G3/S3 1B.2	Perennial rhizomatous herb (emergent). Marshes and swamps. In standing or slow-moving freshwater ponds, marshes, and ditches. Elevations: 0-2,135 feet. Blooms May-Nov.	Not Expected	Suitable marsh habitat is not present within the project area.
Symphyotrichum lentum Suisun Marsh aster	None/None G2/S2 1B.2	Perennial rhizomatous herb. Marshes and swamps. Most often seen along sloughs with *Phragmites*, *Scirpus*, blackberry, *Typha*, etc. Elevations: 0-10 feet. Blooms (Apr) May-Nov.	Not Expected	Suitable marsh habitat is not present within or adjacent to the project area.

Scientific Name Common Name	Status Fed/State ESA CRPR	Habitat Requirements	Potential to Occur	Rationale
Trifolium hydrophilum saline clover	None/None G2/S2 1B.2	Annual herb. Marshes and swamps, valley and foothill grassland, vernal pools. Mesic, alkaline sites. Elevations: 0-985 feet. Blooms Apr-Jun.	Not Expected	Suitable marsh, grassland, and vernal pool habitat is not present within or adjacent to the project area.
Tuctoria greenei Greene's tuctoria	FE/SR G1/S1 1B.1	Annual herb. Vernal pools. Vernal pools in open grasslands. Elevations: 100-3,510 feet. Blooms May-Sep.	Not Expected	Suitable vernal pool habitat is not present within the project area.

Status (Federal/State)

FE = Federal Endangered
FT = Federal Threatened
FPE = Federal Proposed Endangered
FPT = Federal Proposed Threatened
FC = Federal Candidate
SE = State Endangered
ST = State Threatened
SCE = State Candidate Endangered
SCT = State Candidate Threatened
SR = State Rare
SSC = CDFW Species of Special Concern
FP = CDFW Fully Protected
WL = CDFW Watch List

CRPR (CNPS California Rare Plant Rank)

1A = Presumed extirpated in California, and rare or extinct elsewhere
1B = Rare, Threatened, or Endangered in California and elsewhere
2A = Presumed extirpated in California, but common elsewhere
2B= Rare, Threatened, or Endangered in California, but more common elsewhere

CRPR Threat Code Extension

.1 = Seriously endangered in California (>80% of occurrences threatened/high degree and immediacy of threat)
.2 = Moderately threatened in California (20-80% of occurrences threatened/moderate degree and immediacy of threat)
.3 = Not very endangered in California (<20% of occurrences threatened/low degree and immediacy of threat)

Other Statuses

G1 or S1 Critically Imperiled Globally or Subnationally (state)
G2 or S2 Imperiled Globally or Subnationally (state)
G3 or S3 Vulnerable to extirpation or extinction Globally or Subnationally (state)
G4/5 or S4/5 Apparently secure, common and abundant
GH or SH Possibly Extirpated – missing; known from only historical occurrences but still some hope of rediscovery

Additional notations may be provided as follows

T – Intraspecific Taxon (subspecies, varieties, and other designations below the level of species)
Q – Questionable taxonomy that may reduce conservation priority
? – Inexact numeric rank

Attachment 5

Special-Status Wildlife Species with Potential to Occur

Special-Status Wildlife Species in the Two-Mile/Nine-Quad Search Radius of the Project Area

Scientific Name Common Name	Status Fed/State ESA CDFW	Habitat Requirements	Potential to Occur	Rationale
Invertebrates				
Bombus crotchii Crotch's bumble bee	None/SCE G2/S2	Crotch's bumble bee habitat requirements include availability of suitable colony nesting sites, floral resources to obtain nectar and pollen throughout the duration of the colony period (spring, summer and fall), and suitable overwintering sites for queens. Most bumble bees are primitively eusocial insects that live in colonies composed of a queen, workers, and, near the end of the season, reproductive members of the colony (new queens, or gynes, and males). Nest sites typically include underground cavities, wood or rock piles, brush piles, and other cavities on open west-southwest slopes bordered by trees. Little is known about hibernacula or overwintering sites.	Not Expected	Suitable floral resources and potential nesting/overwintering sites are not present within the project area, as it is a managed agricultural site.
Branchinecta lynchi vernal pool fairy shrimp	FT/None G3/S3	Endemic to the grasslands of the Central Valley, Central Coast mountains, and South Coast mountains, in astatic rain-filled pools. Inhabit small, clear-water sandstone-depression pools and grassed swale, earth slump, or basalt-flow depression pools.	Not Expected	Suitable vernal pool habitat is not present within the project area.
Danaus plexippus plexippus monarch - California overwintering population	FPT/None G4T1T2Q/S2	Monarch adults make massive, multi-generation migrations from spring to fall, flying thousands of miles to breed and hibernate along the California coast and in central Mexico. Monarchs stop to feed on flower nectar and to roost together at night. During warm winter days, the butterflies may take moisture and flower nectar. Most mating happens before they journey north in the spring, when females lay single eggs along the way under host plant leaves (*Asclepias* sp.); caterpillars eat flowers and leaves. Overwintering sites along the California coast are important for conservation of this species and roosts are located in wind-protected tree groves (eucalyptus,	Not Expected	Suitable milkweed host plants were not observed during the field survey when they would have been evident and identifiable. Additionally, monarchs are only known to overwinter along the coast of California.

Scientific Name Common Name	Status Fed/State ESA CDFW	Habitat Requirements	Potential to Occur	Rationale
		Monterey pine, cypress), with nectar and water sources nearby.		
Desmocerus californicus dimorphus valley elderberry longhorn beetle	FT/None G3T3/S3	Occurs only in the Central Valley of California, in association with blue elderberry (Sambucus mexicana). Prefers to lay eggs in elderberries 2 to 8 inches in diameter; some preference shown for "stressed" elderberries.	Not Expected	Suitable elderberry host plants were not observed during the field survey.
Lepidurus packardi vernal pool tadpole shrimp	FE/None G3/S3	Inhabits vernal pools and swales in the Sacramento Valley containing clear to highly turbid water. Pools commonly found in grass-bottomed swales of unplowed grasslands. Some pools are mud-bottomed and highly turbid.	Not Expected	Suitable vernal pool habitat is not present within the project area.
Fish				
Acipenser medirostris pop. 1 green sturgeon - southern DPS	FT/None G2T1/S1 SSC	Green sturgeon primarily spawn in the upper mainstem of the Sacramento River, although some spawning activity has recently been documented in the Feather and Yuba rivers. The extent to which the species uses the San Joaquin River is unclear, although an adult fish was recently found in a major tributary, the Stanislaus River, indicating at least some use of that system. Green Sturgeon are one of the most marine-oriented sturgeon species, spending much of their life in coastal Pacific Ocean waters from Ensenada, Mexico, to the Bering Sea.	Not Expected	Suitable aquatic habitat is not present within or adjacent to the project area.
Hypomesus transpacificus Delta smelt	FT/SE G1/S1	Delta smelt are able to tolerate a wide variety of salinity levels. For a large part of their one-year life span, delta smelt live along the freshwater edge of the mixing zone (saltwater-freshwater interface). Shortly before spawning, adults migrate upstream from the brackish-water habitat associated with the mixing zone and disperse widely into river channels and tidally influenced backwater sloughs, where they spawn in shallow, fresh or slightly brackish water.	Not Expected	Suitable aquatic habitat is not present within or adjacent to the project area.

Scientific Name Common Name	Status Fed/State ESA CDFW	Habitat Requirements	Potential to Occur	Rationale
Oncorhynchus mykiss irideus pop. 11 steelhead - Central Valley DPS	FT/None G5T2Q/S2 SSC	Populations in the Sacramento and San Joaquin rivers and their tributaries.	Not Expected	Suitable aquatic habitat is not present within the project area.
Pogonichthys macrolepidotus Sacramento splittail	None/None G3/S3 SSC	Endemic to the lakes and rivers of the Central Valley, but now confined to the Delta, Suisun Bay and associated marshes. Slow moving river sections, dead end sloughs. Requires flooded vegetation for spawning and foraging for young.	Not Expected	Suitable aquatic habitat is not present within or adjacent to the project area.
Spirinchus thaleichthys pop. 2 longfin smelt - San Francisco Bay-Delta DPS	FE/ST G5TNRQ/S1	Longfin smelt is a pelagic estuarine fish. They generally spawn in freshwater and then move downstream to brackish water to mature, as the life cycle of most longfin smelt generally requires estuarine conditions. Longfin smelt are thought to be restricted by high water temperatures, generally greater than 71°F. Most longfin smelt in the San Francisco Bay are believed to breed in the lower reaches of the Sacramento and San Joaquin Rivers.	Not Expected	Suitable aquatic habitat is not present within or adjacent to the project area.
Amphibians				
Ambystoma californiense pop. 1 California tiger salamander - central California DPS	FT/ST G3T3/S3 WL	Lives in vacant or mammal-occupied burrows throughout most of the year; in grassland, savanna, or open woodland habitats. Need underground refuges, especially ground squirrel burrows, and vernal pools or other seasonal water sources for breeding.	Not Expected	Suitable aquatic and upland habitat is not present within or adjacent to the project area.
Rana boylii pop. 5 *foothill yellow-legged frog - south Sierra DPS*	FE/SE G3T2/S2	Sierra Nevada from South Fork American River subbasin (HU 8) in El Dorado County south to Tehachapi Mountains in Kern County. Partly shaded shallow streams and riffles with a rocky substrate in a variety of habitats. Needs at least some cobble-sized substrate for egg-laying and at least 15 weeks to attain metamorphosis.	Not Expected	Suitable aquatic habitat is not present within or adjacent to the project area.

Scientific Name Common Name	Status Fed/State ESA CDFW	Habitat Requirements	Potential to Occur	Rationale
Spea hammondii western spadefoot	FPT/None G2G3/S3S4 SSC	Occurs primarily in grassland habitats, but can be found in valley-foothill hardwood woodlands. Vernal pools or rain pools are essential for breeding and egg-laying.	Not Expected	Suitable aquatic and upland habitats are not present within or adjacent to the project area.
Reptiles				
Actinemys marmorata northwestern pond turtle	FPT/None G2/SNR SSC	A thoroughly aquatic turtle of ponds, marshes, rivers, streams and irrigation ditches, usually with aquatic vegetation, and basking sites below 6,000 feet elevation. Typically nests on sandy banks or grassy open fields within 330 feet of water; but has been observed nesting up to 1,640 feet from water.	Not Expected	Suitable aquatic and upland habitats are not present within or adjacent to the project area.
Thamnophis gigas giant gartersnake	FT/ST G2/S2	Prefers freshwater marsh and low gradient streams. Has adapted to drainage canals, rice fields, and irrigation ditches. This is the most aquatic of the gartersnakes in California.	Not Expected	Suitable aquatic and upland habitats are not present within or adjacent to the project area.
Birds				
Agelaius tricolor tricolored blackbird	None/ST G3/S2 SSC	Highly colonial species, most numerous in Central Valley and vicinity. Largely endemic to California. Requires open water, protected nesting substrate, and foraging area with insect prey within a mile of the colony.	Not Expected	Suitable nesting habitat is not present within or adjacent to the project area.
Athene cunicularia burrowing owl	None/SCE G4/S2 SSC	Open, dry annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel.	Not Expected	Suitable burrows and foraging habitat are not present within or adjacent to the project area.
Buteo swainsoni Swainson's hawk	None/ST G5/S4	Breeds in grasslands with scattered trees, juniper-sage flats, riparian areas, savannahs, and agricultural or ranch lands with groves or lines of trees. Requires adjacent suitable foraging areas such as grasslands, or alfalfa or grain fields supporting rodent populations.	Moderate	Suitable nesting habitat may be present in trees adjacent to the project area. Although foraging habitat on the site and in the vicinity of the project area is limited to the edges of vineyards, Swainson's hawks can forage up to 12 miles from nest sites, and foraging habitat is present within this distance.

Scientific Name Common Name	Status Fed/State ESA CDFW	Habitat Requirements	Potential to Occur	Rationale
Elanus leucurus white-tailed kite	None/None G5/S3S4 FP	Rolling foothills and valley margins with scattered oaks and river bottomlands or marshes next to deciduous woodland. Open grasslands, meadows, or marshes for foraging close to isolated, dense-topped trees for nesting and perching.	Not Expected	Suitable foraging and nesting habitat for this species is not present within or adjacent to the project area.
Icteria virens yellow-breasted chat	None/None G5/S4 SSC	Summer resident; inhabits riparian thickets of willow and other brushy tangles near watercourses. Nests in low, dense riparian, consisting of willow, blackberry, wild grape; forages and nests within 10 feet of ground.	Not Expected	Suitable riparian habitat is not present within or adjacent to the project area.
Melospiza melodia pop. 1 song sparrow ("Modesto" population)	None/None G5T3?Q/S3? SSC	Central lower basin of Great Valley, from Colusa County south to Stanislaus County and east of Suisun Marshes. Breeds chiefly below 200 feet elevation. Freshwater marshes, riparian thickets, sparsely vegetated irrigation canals, and Valley Oak restoration sites. Cover consists of willow and nettle thickets, growths of tules and cattails, and riparian oak forests with sufficient understory of blackberry.	Not Expected	Suitable riparian habitat is not present within or adjacent to the project area.
Riparia riparia bank swallow	None/ST G5/S3	Colonial nester; nests primarily in riparian and other lowland habitats west of the desert. Requires vertical banks/cliffs with fine-textured/sandy soils near streams, rivers, lakes, and ocean to dig nesting hole.	Not Expected	Suitable vertical banks near aquatic features are not present within or adjacent to the project area.
Setophaga petechia yellow warbler	None/None G5/S3 SSC	Riparian plant associations in close proximity to water. Also nests in montane shrubbery in open conifer forests in Cascades and Sierra Nevada. Frequently found nesting and foraging in willow shrubs and thickets, and in other riparian plants including cottonwoods, sycamores, ash, and alders.	Not Expected	Suitable riparian habitat is not present within or adjacent to the project area.
Vireo bellii pusillus least Bell's vireo	FE/SE G5T2/S3	Summer resident of Southern California in low riparian in vicinity of water or in dry river bottoms; below 2000 feet. Nests placed along margins of bushes or on twigs projecting into pathways, usually willow, *Baccharis*, mesquite.	Not Expected	Suitable riparian habitat is not present within or adjacent to the project area.

Scientific Name Common Name	Status Fed/State ESA CDFW	Habitat Requirements	Potential to Occur	Rationale
Mammals				
Antrozous pallidus pallid bat	None/None G4/S3 SSC	Found in a variety of habitats including deserts, grasslands, shrublands, woodlands, and forests. Most common in open, dry habitats with rocky areas for roosting. Roosts in crevices of rock outcrops, caves, mine tunnels, buildings, bridges, and hollows of live and dead trees which must protect bats from high temperatures. Very sensitive to disturbance of roosting sites.	Not Expected	Suitable foraging and roosting habitat is not present within or adjacent to the project area.

Status (Federal/State)

FE = Federal Endangered
FT = Federal Threatened
FPE = Federal Proposed Endangered
FPT = Federal Proposed Threatened
FD = Federal Delisted
FC = Federal Candidate
SE = State Endangered
ST = State Threatened
SCE = State Candidate Endangered
SCT = State Candidate Threatened
SR = State Rare
SD = State Delisted
SSC = CDFW Species of Special Concern
FP = CDFW Fully Protected
WL = CDFW Watch List

Other Statuses

G1 or S1 Critically Imperiled Globally or Subnationally (state)
G2 or S2 Imperiled Globally or Subnationally (state)
G3 or S3 Vulnerable to extirpation or extinction Globally or Subnationally (state)
G4/5 or S4/5 Apparently secure, common and abundant
GH or SH Possibly Extirpated – missing; known from only historical occurrences but still some hope of rediscovery

Additional notations may be provided as follows

T – Intraspecific Taxon (subspecies, varieties, and other designations below the level of species)
Q – Questionable taxonomy that may reduce conservation priority
? – Inexact numeric rank

Appendix C

Cultural Resources Technical Report



North Locust Tree Road Solar Project

Cultural Resources Technical Report

prepared for

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prepared by

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May 2026

RINCON CONSULTANTS

Confidentiality

The following document contains sensitive and confidential information concerning archaeological sites. This report should be held confidential and is not for public distribution. Archaeological site locations are exempt from the California Public Records Act, as specified in Government Code 6254.10, and from the Freedom of Information Act (Exemption 3), under the legal authority of both the National Historic Preservation Act (PL 102-574, Section 304[a]) and the Archaeological Resources Protection Act (PL 96-95, Section 9[a]). Sections of this report contain maps and other sensitive information. Distribution should be restricted appropriately.

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Appendices

Appendix A CHRIS CCaIC Records Search Results
Appendix B NAHC Sacred Lands File Search

Executive Summary

RPCA Solar 25, LLC retained Rincon Consultants Inc. (Rincon) to perform a cultural resources study for the North Locust Tree Road Solar Project (Project) in San Joaquin County, California. The purpose of this technical report is to document the methods and results of the cultural resources records search, Native American Heritage Commission Sacred Lands File search, desktop geoarchaeological review, and a pedestrian field survey. Cultural resources work performed in support of the Project has been completed pursuant to the requirements of Section 106 of the National Historic Preservation Act (NHPA) and the California Environmental Quality Act (CEQA). The United States Department of Agriculture (USDA) is the lead federal agency for the purposes of Section 106 of the NHPA and the County of San Joaquin (County) is the lead agency for the purposes of CEQA.

The Area of Potential Effects (APE) corresponds with the Project footprint and encompasses approximately 18.5 acres within one parcel (APN 06315016). The cultural resources records search, Sacred Lands File search, background research, and field survey did not result in the identification of cultural resources within or immediately adjacent to the Area of Potential Effects (APE). Additionally, the APE has been used for agricultural purposes as early as the 1920s, and geoarchaeological review indicates there is a low potential for buried archaeological resources within the APE.

Rincon recommends a finding of ***no historic properties affected*** for the undertaking under Section 106 of the NHPA. In the event of a post-review discovery during ground disturbance associated with the undertaking, the procedures under 36 CFR Part 800.13 should be followed by the lead federal agency.

Under CEQA, Rincon recommends a finding of ***no impact to historical resources***, ***less than significant impact with mitigation for archaeological resources,*** and ***less than significant impact to human remains***. As standard best management practices under CEQA, Rincon has recommended measures in the unlikely event of an unanticipated discovery during construction.

1 Introduction

RPCA Solar 25, LLC retained Rincon Consultants Inc. (Rincon) to perform a cultural resources study for the North Locust Tree Road Solar Project (Project) in San Joaquin County, California. The purpose of this technical report is to document the tasks conducted by Rincon: specifically, a cultural resources records search, Native American Heritage Commission (NAHC) Sacred Lands File (SLF) search, desktop geoarchaeological review, and a pedestrian field survey. Cultural resources work performed in support of the Project has been completed pursuant to the requirements of the Section 106 of the National Historic Preservation Act (NHPA) and the California Environmental Quality Act (CEQA). The United States Department of Agriculture (USDA) is the lead federal agency for the purposes of Section 106 of the NHPA and the County of San Joaquin (County) is the lead agency for the purposes of CEQA.

1.1 Project Description

The Project would construct a solar energy generation facility on approximately 18.5 acres within one parcel (APN 063-150-160) of a 19.8-acre property in unincorporated San Joaquin County (Figure 1). The Project is located south of East Kettleman Lane and approximately 4 miles east of the city of Lodi and is situated about 0.4 mile east of North Locust Tree Road, within portions of Section 15 of Township 3 North, Range 7 East of the Waterloo, California United States Geological Survey 7.5-minute quadrangle. The project area sits at an elevation of approximately 70 to 80 feet above mean sea level.

The Project is bordered by unpaved and unnamed roads and agricultural fields with one residential property to the east and another to the northwest (Figure 2). The Project area is currently an agricultural field surrounded by scattered rural residential properties.

When complete, the Project will generate up to 3.0 megawatts (MW) of alternating current (AC) clean, reliable solar energy. The Project will utilize solar modules and string inverters to convert the sun's energy into usable (AC) power. Single-axis tracking technology will be utilized to allow modules to efficiently track the sun throughout the day and maximize the efficiency of solar collection. The modules will be mounted on a steel racking system, which will be anchored into the ground using driven steel piers. The overall height of the array is not expected to be more than 15 feet tall at maximum tilt. Ground disturbance associated with the Project will occur where steel racking is anchored into the ground using driven piers and where limited subsurface work is required to support operation of the Project. The depth of ground disturbance associated with the Project was unknown at the time of preparation of this report.

1.2 Area of Potential Effects

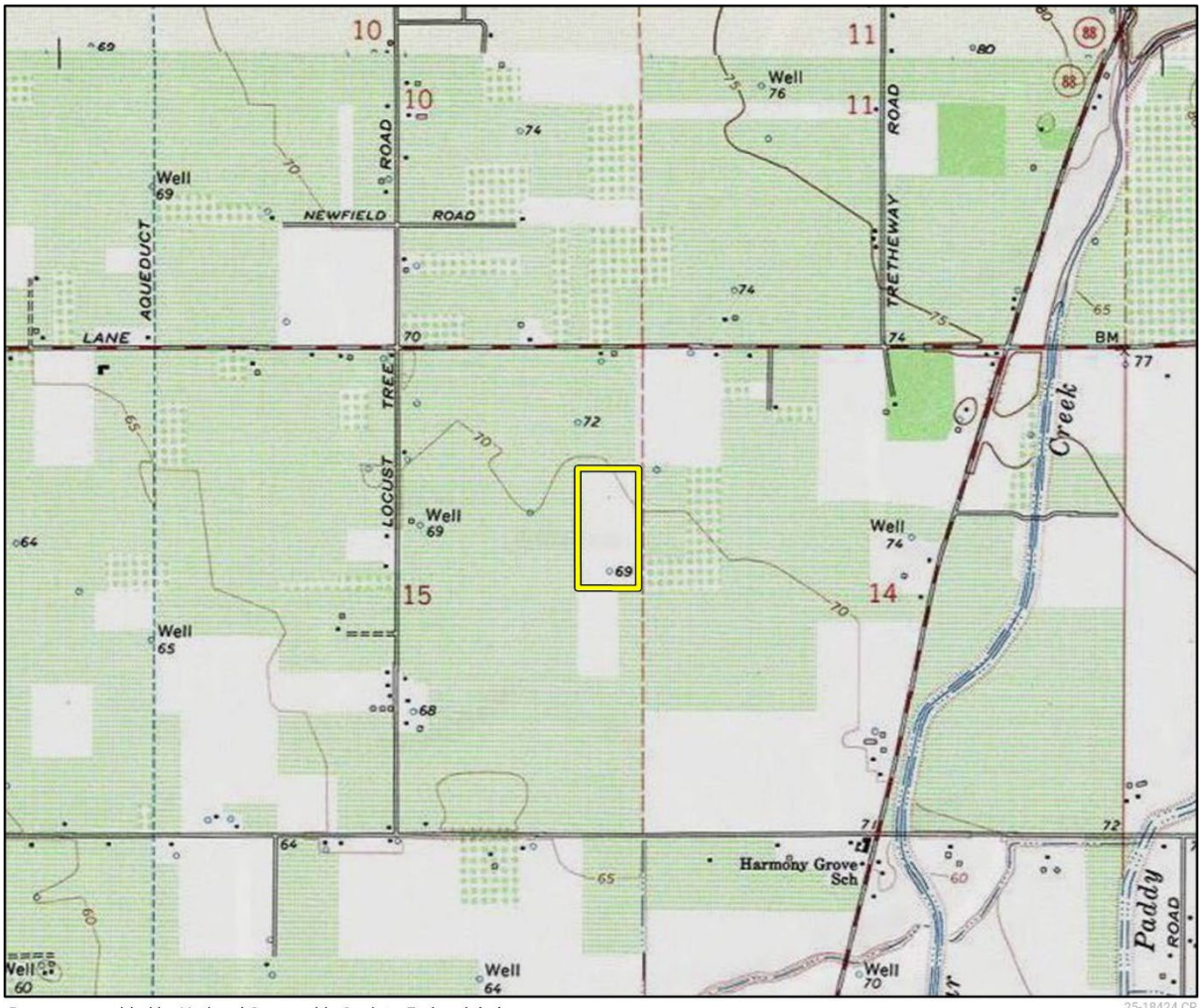
The Area of Potential Effects (APE) is the geographic area or areas within which an undertaking may directly or indirectly cause changes in the character or use of historic properties. Determination of the APE is influenced by the Project's setting, the scale and nature of the undertaking, and the different kinds of effects that may result from the undertaking (36 CFR 800.16[d]). The APE must be considered as a three-dimensional space that includes the depth of proposed ground disturbance associated with construction and the height of proposed above ground facilities.

The APE was developed to identify historic properties that may be directly or indirectly affected by the undertaking, pursuant to 36 CFR 800.16(d). The APE corresponds with the Project footprint, which includes approximately 18.5 acres within one parcel. The belowground vertical APE encompasses the depth of ground disturbance anticipated for installation of panel foundations and other limited surface construction activities required to install and operate the PV system, which is not currently known. The aboveground vertical APE extends up to 15 feet above ground surface to account for the maximum anticipated height of the PV panels at full tilt.

1.3 Personnel

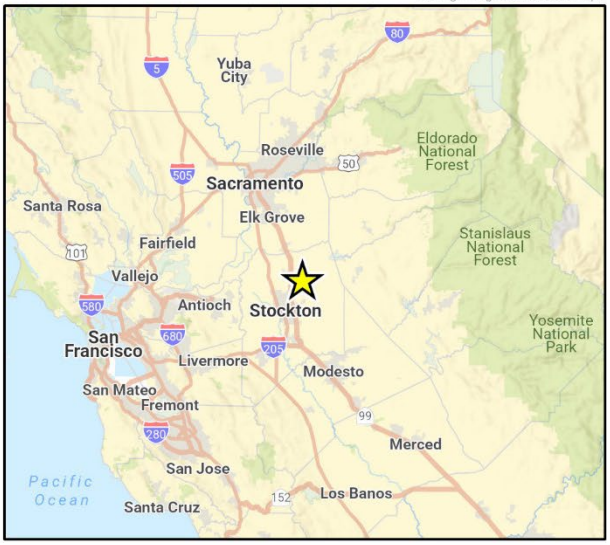
Rincon Senior Archaeologist Ashley Long, MA, RPA, authored and provided management oversight for this cultural resources study. Rincon Archaeologist Catherine Johnson, PhD, RPA, was a contributing author of this report. Archaeologists Mary Garrett-Catlin, BA, and Joel Rudewicz, MA, RPA, performed the cultural resources field survey. Cultural Resources Peter Carey MA, RPA, reviewed this report for quality control.

Figure 1 Regional Location Map



Basemap provided by National Geographic Society, Esri and their licensors © 2026. Map created by Rincon Consultants, Inc. 2026. Waterloo Quadrangle. T03N R07E S15. The topographic representation depicted in this map may not portray all of the features currently found in the vicinity today and/or features depicted in this map may have changed since the original topographic map was assembled.

25-18424 CR
CR Fig 1 Regional Location Topo

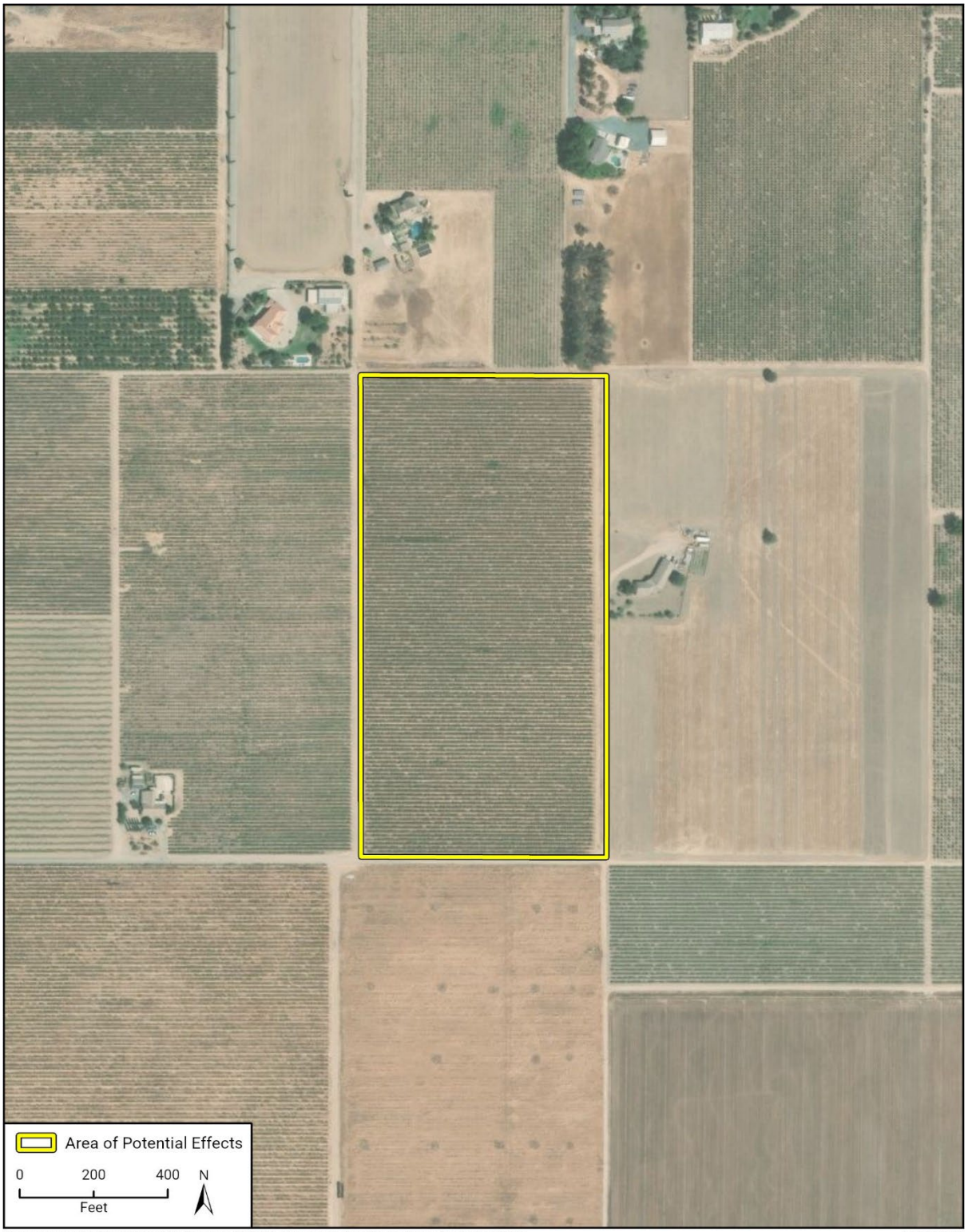


Project Location

0 1,000 2,000 Feet

N

Figure 2 Area of Potential Effects



Basemap provided by Esri and its licensors © 2026. Map created by Rincon Consultants, Inc. 2026.

25-18424 CR
Fig X APE

2 Regulatory Setting

This section includes a discussion of the applicable federal, state, and local laws, ordinances, regulations, and standards governing cultural resources, which must be adhered to before and during implementation of the Project.

2.1 Federal

This Project may utilize funds provided by the USDA. Projects that involve federal funding or permitting (i.e., have a federal nexus) must comply with the provisions of the NHPA as amended (16 United States Code [USC] 470f). The NHPA of 1966 established a federal program for the preservation of historic properties, including built environment, archaeological, and traditional cultural resources. Towards this end, the NHPA establishes both institutions and defined processes to direct federal agencies and support state and local governments in their historic preservation programs and activities. These institutions and processes include the Advisory Council on Historic Preservation (ACHP), State Historic Preservation Officers (SHPO), the NRHP, and the Section 106 review process.

2.1.1 Section 106 of the NHPA

Section 106 (16 USC 470f) requires federal agencies to account for the effects of their undertakings on historic properties, and to afford the ACHP a reasonable opportunity to comment on such undertakings. Historic properties are defined as buildings, structures, districts, sites, or objects which are included in or eligible for inclusion in the NRHP. Section 106 is implemented through 36 CFR Part 800, which outlines the process for historic preservation review, including participants, identification efforts, and the assessment and resolution of adverse effects. Per 36 CFR 800.16(y), a federal undertaking is defined as any project requiring or receiving a federal permit, license, approval, or funding. Federal agencies must take steps to determine if the undertaking would result in an adverse effect to historic properties and take measures to avoid or resolve those effects as feasible.

2.1.2 National Register of Historic Places

Authorized by Section 101 of the NHPA, the NRHP is the nation's official list of cultural resources worthy of preservation. The NRHP recognizes the quality of significance in American, state, and local history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects. Per 36 CFR Part 60.4, a property is eligible for listing in the NRHP if it meets one or more of the following criteria:

Criterion A: Is associated with events that have made a significant contribution to the broad patterns of our history

Criterion B: Is associated with the lives of persons significant in our past

Criterion C: Embodies the distinctive characteristics of a type, period, or method of installation, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction

Criterion D: Has yielded, or may be likely to yield, information important in prehistory or history

In addition to meeting at least one of the above designation criteria, resources must also retain integrity. The NPS recognizes seven aspects or qualities that, considered together, define historic integrity. To retain integrity, a property must possess several of these seven qualities—if not all—defined in the following manner:

Location: The place where the historic property was constructed or the place where the historic event occurred

Design: The combination of elements that create the form, plan, space, structure, and style of a property

Setting: The physical environment of a historic property

Materials: The physical elements that were combined or deposited during a particular period of time and in a particular pattern or configuration to form a historic property

Workmanship: The physical evidence of the crafts of a particular culture or people during any given period in history or prehistory

Feeling: A property's expression of the aesthetic or historic sense of a particular period of time

Association: The direct link between an important historic event or person and a historic property

Certain properties are generally considered ineligible for listing in the NRHP, including cemeteries, birthplaces, graves of historical figures, properties owned by religious institutions, relocated structures, or commemorative properties. Additionally, a property must be at least 50 years of age to be eligible for listing in the NRHP. The NPS states that 50 years is the general estimate of the time needed to develop the necessary historical perspective to evaluate significance (NPS 1997: 41). Properties which are less than 50 years must be determined to have "exceptional importance" to be considered eligible for NRHP listing.

Under Section 106, should historic properties be identified within the APE, the federal agency must determine if the undertaking will affect them. Per 36 CFR 800.5(a)(1), an adverse effect is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for including in the NRHP in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association.

Examples of adverse effects include, but are not limited to:

- Physical destruction of or damage to all or part of the property;
- Alteration of a property (including restoration, rehabilitation, repair, maintenance, stabilization, hazardous material remediation, and provision of handicapped access) that is not consistent with the Secretary of Interior's Standards for the Treatment of Historic Properties;
- Removal of the property from its historic location;
- Change of the character of the property's use or of physical features within the property's setting that contribute to its historic significance;
- Introduction of visual, atmospheric, or audible elements that diminish the integrity of the property's significant historic features.

If the Agency Official finds that there are historic properties which may be affected by the undertaking, but the undertaking will not alter the characteristics that qualify them for inclusion in the NRHP, the agency typically proposes a finding of **No Adverse Effect**. If no historic properties are

present or the undertaking will have no effect on them, the agency may propose a finding of **No Historic Properties Affected** (36 CFR 800.4[d]).

2.2 State

2.2.1 California Environmental Quality Act

California Public Resources Code (PRC) Section 21084.1 requires lead agencies to determine if a project could have a significant impact on historical or unique archaeological resources. As defined in PRC Section 21084.1, a historical resource is a resource listed in, or determined eligible for listing in, the CRHR, a resource included in a local register of historical resources or identified in a historical resources survey pursuant to PRC Section 5024.1(g), or any object, building, structure, site, area, place, record, or manuscript that a lead agency determines to be historically significant. PRC Section 21084.1 also states resources meeting the above criteria are presumed to be historically or culturally significant unless the preponderance of evidence demonstrates otherwise. Resources listed in the NRHP are automatically listed in the CRHR, as are California Historical Landmarks 770 and above; both are therefore historical resources under CEQA. Historical resources may include eligible built environment resources and archaeological resources of the precontact or historic periods.

CEQA Guidelines Section 15064.5(c) provides further guidance on the consideration of archaeological resources. If an archaeological resource does not qualify as a historical resource, it may meet the definition of a "unique archaeological resource" as identified in PRC Section 21083.2. PRC Section 21083.2(g) defines a unique archaeological resource as an artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria: 1) it contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information, 2) has a special and particular quality such as being the oldest of its type or the best available example of its type, or 3) is directly associated with a scientifically recognized important prehistoric or historic event or person.

If an archaeological resource does not qualify as a historical or unique archaeological resource, the impacts of a project on those resources will be less than significant and need not be considered further (*CEQA Guidelines* Section 15064.5[c][4]). *CEQA Guidelines* Section 15064.5 also provides guidance for addressing the potential presence of human remains, including those discovered during the implementation of a project.

According to CEQA, an impact that results in a substantial adverse change in the significance of a historical resource is considered a significant impact on the environment. A substantial adverse change could result from physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of the historical resource would be materially impaired (*CEQA Guidelines* Section 15064.5 [b][1]). Material impairment is defined as demolition or alteration in an adverse manner [of] those characteristics of a historical resource that convey its historical significance and that justify its inclusion in, or eligibility for inclusion in, the CRHR or a local register (*CEQA Guidelines* Section 15064.5[b][2][A]).

If it can be demonstrated that a project will cause damage to a unique archaeological resource, the lead agency may require reasonable efforts be made to permit any or all of these resources to be preserved in place or left in an undisturbed state. To the extent that resources cannot be left undisturbed, mitigation measures are required (PRC Section 21083.2[a][b]).

The requirements for mitigation measures under CEQA are outlined in CEQA Guidelines Section 15126.4(a)(1). In addition to being fully enforceable, mitigation measures must be completed within a defined time period and be roughly proportional to the impact of the project. Generally, a project which is found to comply with the Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings (the Standards) is considered to be mitigated below a level of significance (*CEQA Guidelines* Section 15126.4 [b][1]). For historical resources of an archaeological nature, lead agencies should also seek to avoid damaging effects where feasible. Preservation in place is the preferred manner to mitigate impacts to archaeological sites; however, data recovery through excavation may be the only option in certain instances (*CEQA Guidelines* Section 15126.4[b][3]).

California Register of Historical Resources

The CRHR was established in 1992 and codified by PRC Sections 5024.1 and Title 14 Section 4852. The CRHR is an authoritative listing and guide to be used by state and local agencies, private groups, and citizens in identifying the existing historical resources of the state and to indicate which resources deserve to be protected, to the extent prudent and feasible, from substantial adverse change (PRC 5024.1(a)). The criteria for eligibility for the CRHR are consistent with the NRHP criteria but have been modified for state use in order to include a range of historical resources that better reflect the history of California (PRC, 5024.1(b)). Unlike the NRHP however, the CRHR does not have a defined age threshold for eligibility; rather, a resource may be eligible for the CRHR if it can be demonstrated sufficient time has passed to understand its historical or architectural significance (California Office of Historic Preservation [OHP] 2011). Furthermore, resources may still be eligible for listing in the CRHR even if they do not retain sufficient integrity for NRHP eligibility (OHP 2011). Generally, the OHP recommends resources over 45 years of age be recorded and evaluated for historical resources eligibility (OHP 1995: 2).

A property is eligible for listing in the CRHR if it meets one of more of the following criteria:

Criterion 1: Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage

Criterion 2: Is associated with the lives of persons important to our past

Criterion 3: Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values

Criterion 4: Has yielded, or may be likely to yield, information important in prehistory or history

2.2.2 California Health and Safety Code

Section 7050.5 of the California Health and Safety Code states that in the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the County Coroner has determined if the remains are subject to the Coroner's authority. If the human remains are of Native American origin, the Coroner must notify the NAHC within 24 hours of this identification.

2.2.3 California Public Resources Code Section 5097.98

Section 5097.98 of the California PRC states that the NAHC, upon notification of the discovery of Native American human remains pursuant to Health and Safety Code Section 7050.5, shall immediately notify those persons (i.e., the Most Likely Descendant [MLD]) that it believes to be descended from the deceased. With permission of the landowner or a designated representative, the MLD may inspect the remains and any associated cultural materials and make recommendations for treatment or disposition of the remains and associated grave goods. The MLD shall provide recommendations or preferences for treatment of the remains and associated cultural materials within 48 hours of being granted access to the site.

2.3 Local Regulations

2.3.1 San Joaquin County 2035 General Plan (2016)

The San Joaquin County General Plan, which was adopted in December 2016, includes goals and policies relating to cultural resources (San Joaquin County 2016) and as presented in Part 3.4 Natural and Cultural Resources Element include the following:

- **Goal NCR-6 - Protect historical and cultural resources:** It is the goal of San Joaquin County to protect its valuable architectural, historical, archaeological, and cultural resources.

  Policies:

  - **NCR-6.1 Protect Historical and Cultural Resources**

    The County shall protect historical and cultural resources and promote expanded cultural opportunities for residents to enhance the region's quality of life and economy.
  - **NCR-6.2 No Destruction of Resources**

    The County shall ensure that no significant architectural, historical, archaeological, or cultural resources are knowingly destroyed through County action.
  - **NCR-6.3 Encourage Public and Private Preservation Efforts**

    The County shall continue to encourage efforts, both public and private, to preserve the historical and cultural heritage of San Joaquin County and its communities and residents.
  - **NCR-6.4 Registration of Historic Properties**

    The County shall encourage owners of eligible historic properties to apply for State and Federal registration, to participate in tax incentive programs for historical restoration, and to enter into Mills Act Contracts.
  - **NCR-6.5 Protect Archaeological and Historical Resources**

    The County shall protect significant archaeological and historical resources by requiring an archaeological report be prepared by a qualified cultural resource specialist prior to the issuance of any discretionary permit or approval in areas determined to contain significant historic or prehistoric archaeological artifacts that could be disturbed by project construction.

- **NCR-6.6 Tribal Consultation**

  The County shall consult with Native American tribes regarding proposed development projects and land use policy changes consistent with the State's Local and Tribal Intergovernmental Consultation requirements.

- **NCR-6.7 Adaptive Reuse of Historic Structures**

  The County shall encourage the adaptive reuse of architecturally significant or historic buildings if the original use of the structure is no longer feasible and the new use is allowed by the underlying land use designation and zoning district.

- **NCR-6.8 Land Use and Development**

  The County shall encourage land uses and development that retain and enhance significant historic properties and sustain historical community character.

3 Natural and Cultural Setting

This section provides background information pertaining to the natural and cultural context of the APE. It places the APE in the broader natural environment that has sustained populations throughout history. This section also provides an overview of regional indigenous history, local ethnography, and post-contact history. This background information describes the distribution and type of cultural resources documented in the vicinity of the APE to inform the cultural resources sensitivity assessment.

3.1 Natural Setting

The APE is located within a region that historically supported extensive tule marshes and seasonal wetlands at lower elevations, much of which was drained and channelized for agricultural purposes during the nineteenth and twentieth centuries. The APE itself is situated on an upland low fan terrace above the historic marsh margin. The terrain consists of a level terrace situated along the Mokelumne River at the junction of the San Joaquin and Sacramento Valleys. The APE encompasses an approximately 18.5-acre agricultural area within one parcel, surrounded by scattered rural residential properties and agricultural fields. The APE is bounded by unpaved roads, residential properties, and agricultural fields to the east, north, west, and south.

The APE is located within an expansive marshland that was historically drained and channelized for agricultural purposes. A system of channelized creeks and streams are located to the south and east of the APE including Bear Creek, located approximately 0.78-mile to the east, and Middle Paddy Creek, located 1.17 miles to the east. The Mokelumne River is located approximately 2.45 miles north of the APE.

The APE and surrounding vicinity have been extensively modified by historical and modern agriculture, largely replacing the native biological setting. Current vegetation is dominated by agricultural crops, non-native grasses, and ornamental trees associated with rural residences. While the natural habitat is fragmented, wildlife in the broader region historically included tule elk, mule deer, raccoon, and migratory waterfowl such as geese, ducks, and swans. Local waterways support native fish species including rainbow trout, Sacramento pikeminnow, and smelt (Moratto 1984).

3.2 Cultural Setting

3.2.1 Indigenous History

The APE is located within the Central Valley archaeological region, as defined by Moratto (1984). The Central Valley has been described as one of the largest intermontane basins extending 650 kilometers from the Siskiyou Mountains to the Tehachapis (Rosenthal et al. 2007). The APE specifically lies within the San Joaquin Valley subregion, which spans from the Sacramento-San Joaquin Delta southward to the base of the Tehachapi Mountains. No single chronological framework covers the entirety of the Central Valley, but California prehistory is generally divided into three broad time periods: the Paleoindian Period (ca. 11,550 to 8,550 BCE), the Archaic Period (8,550 BCE to CE 1,100) and the Emergent Occupation Period (CE 1,000 to European Contact) (Fredrickson 1973, 1974), which has been updated and adjusted by Rosenthal et al. (2007) to further

separate the Archaic Period into Lower (8,550 BCE to 5,550 BCE), Middle (5,550 BCE to 550 BCE), and Upper (550 BCE to CE 1,100). The precontact chronological sequence for the Central Valley San Joaquin Valley subregion presented below is based on Rosenthal et al. (2007) and Moratto (1984).

Paleoindian Period (11,550 to 8550 BCE)

Little is currently known about the Paleoindian Period in the San Joaquin Valley subregion. The earliest known sites dating to this period are located in the Southern San Joaquin Valley at Tulare Lake (Garfinkel 2015). Moratto (1984) has refuted most evidence dating occupation sites to the Paleoindian Period based on inaccurate or poorly executed radiocarbon dating; however, later uncalibrated dates at the Witt Site (CA-KIN-32) aged toward the end of the last ice age, between 9,370 and 13,802 BCE (Garfinkel 2015). This period is represented by fluted projectile points similar to Clovis points found at sites near Tracy Lake, located approximately 10 miles northwest of the current APE, and the Tulare Lake Basin, as well as associated stone tools such as leaf-shaped knives and ovate domed and elongate keeled scrapers, and crescents that may represent subsistence focus on hunting of extinct megafauna (Garfinkel 2015). Along with fluted projectile points, concave base points have been discovered along the Tulare Lake shoreline, which is known to have been occupied during the Late Pleistocene (Rosenthal et al. 2007, Garfinkel 2015).

Lower Archaic (8550 to 5550 BCE)

Climate change at the end of the Pleistocene caused significant periods of alluvial deposition beginning around 9,050 BCE. These new alluvial deposits created a clear stratigraphic boundary between the Late Pleistocene and Holocene sediments. The Lower Archaic, like the Paleoindian Period, is represented only by limited isolated finds. Only one Lower Archaic site (KER-116) has been identified in the Central Valley proper, within the San Joaquin Valley subregion (Rosenthal et al. 2007).

Typical Lower Archaic artifacts include flaked stone crescents and stemmed projectile points, mostly along the shoreline of Tulare Lake. The identification of projectile points and a diverse faunal assemblage at KER-116 point to hunting being an important subsistence activity (Fredrickson and Grossman 1977). One isolated flaked stone crescent has been identified in the Sacramento Valley on an alluvial fan west of Orland (Rosenthal et al. 2007).

Middle Archaic (5550 to 550 BCE)

The Middle Archaic began with substantial climate change to much warmer, drier conditions. Tulare Lake shrank and eventually disappeared. New wetlands created new habitats, and rising sea levels led to the creation of the Sacramento-San Joaquin Delta, creating new deposits. Fans and floodplains stabilized after an initial period of deposition in 5,550 BCE. While archaeological deposits dating to the Middle Archaic are rare in the Central Valley proper due to these geomorphic changes. The Middle Archaic record has revealed a pattern of organized subsistence strategies and increased residential stability. The archetypal pattern of the Middle Archaic in the Central Valley has been identified as the Windmiller Pattern, represented by extended burials oriented to the west and a sophisticated material culture. However, some representative sites in the foothills of the Sacramento Valley region exhibit closer association with the Mendocino Pattern, an upland adaptive strategy featuring high-residential mobility (Rosenthal et al. 2007).

During this time, the mortar and pestle become more widespread, suggesting a shift toward more intensive subsistence practices. Fishing technologies, such as bone gorges, hooks, and spears, also appear during the Middle Archaic suggesting a new focus on fishing (Rosenthal et al. 2007). Several

other technologies become apparent during this time. Baked-clay impressions of twined basketry, pottery, and other baked clay objects have been found at several sites. Personal adornment items also become more frequent. Exchange with outside groups is evidenced by the presence of obsidian, shell beads and ornaments (Moratto 1984; Rosenthal et al. 2007; Burns et al. 2012). Trade also seemed to be focused on utilitarian items such as obsidian or finished obsidian tools from at least five separate sources (Moratto 1984).

Upper Archaic (550 BCE to CE 1100)

The Upper Archaic began with the onset of the Late Holocene, marked by a cooler, wetter climate. The environmental conditions of the Upper Archaic were characterized by the return of lakes that had disappeared during the Middle Archaic and a renewed fan and floodplain deposition. The Upper Archaic is better represented in the archaeological record than in earlier periods. Cultural diversity was more pronounced and is marked by contrasting material cultures throughout the valley (Rosenthal et al. 2007).

During this period, numerous specialized technologies were developed such as bone tools, and implements, manufactured goods such as *Olivella* and *Haliotis* beads and ornaments, well-made ceremonial blades, and ground-stone plummets. People living in the San Joaquin Valley region traded with neighboring groups for obsidian. Upper Archaic period economies varied by region throughout the Central Valley. Economies were primarily focused on seasonal resources such as acorns, salmon, shellfish, rabbits, and deer (Rosenthal et al. 2007). Burials were often in flexed positions, typically on the side or supine, and could include cremation (Moratto 1984, Rosenthal et al. 2007).

Emergent Occupation Period (CE 1000 to Contact)

The stable climatic conditions of the Upper Archaic continued into the Emergent Occupation Period. There has been sporadic research in the San Joaquin Valley on this time period, and thus only the Pacheco Complex lithics on the western edge of the valley has been formally defined. After CE 1000, many of the technologies observed during the Archaic disappeared to be replaced by cultural traditions recorded at European contact. The bow and arrow replaced the atlatl as the preferred hunting method sometime between CE 1000 and 1300 (Rosenthal et al. 2007).

Increased social complexity is evidenced by increased variation in burial types and offerings and larger residential communities. Grave offerings such as shell beads, ornaments, and ritually “killed” mortars and pestles are often found in burials. Pottery was frequently obtained through trade with groups living in the foothills to the east. The Panoche side-notched point became important in the western side of the San Joaquin Valley (Rosenthal et al. 2007). In addition to the side-notched point, the Panoche Complex featured large circular structures, flexed burials, marine shell beads, bone awls, millingstones, and mortars and pestles (Moratto 1984).

As with the Archaic Period, Emergent Occupation Period economies varied geographically, fishing and plant harvesting increased in importance throughout the Central Valley with a decrease in acorn reliance and an increase in processing of small seeds such as grass seeds (Rosenthal et al. 2007, Wohlgemuth 2016). Most Emergent Occupation Period residential sites contain diverse assemblages of mammal and bird remains and large amounts of fish bone. Approximately 1,000 years ago, the mortar and pestle become the dominant tool type and small seeds increase in archaeological deposits over time (Rosenthal et al. 2007).

3.2.2 Ethnographic Setting

The APE is within the traditional territory of the Plains Miwok whose ethnographic territory encompassed much of the eastern Sacramento-San Joaquin Delta and the lower reaches of the Mokelumne and Cosumnes rivers in present-day San Joaquin and Sacramento Counties (Bennyhoff 1977; Levy 1978). In older ethnographic classifications, the Miwok were divided into Coast, Lake, and Interior groups, with the Plains Miwok representing the westernmost valley division of the broader Eastern or Interior Miwok population (Kroeber 1925; Levy 1978)

Interior Miwok

The three geographical divisions of the Miwok are the Coast Miwok, Lake Miwok and Interior Miwok. The Interior Miwok is further divided into the Plains Miwok and the Sierra Miwok (Kroeber 1925; Levy 1978). The primary differences recorded by ethnographers between the Interior and Sierra Miwok are language, topographic area, and ecological context. The traditional territory of the Interior Miwok is bordered by Yokuts to the south, Maidu to the north, Washo to the east and Patwin to the west.

Miwok settlements typically included thatched, conical houses and semi-subterranean earth-covered dwellings in winter, constructed by higher status families. Houses generally had a central hearth and an earth oven for cooking purposes. Large, semi-subterranean assembly houses were constructed for use as a ritual and social gathering place. In summer, a circular brush hut was constructed for use in mourning ceremonies. Other structures included sweathouses for curing disease and purification prior to hunting, small conical structures used by menstruating women, and grinding houses built over bedrock mortars to permit food processing in inclement weather. Acorn granaries were constructed for long-term acorn storage (Kroeber 1925; Levy 1978).

Miwok social organization is characterized by the moiety pattern, with all living things belonging to one of two categories: land and water. Moieties typically married outside their own groups which played an important role in many ceremonies (Levy 1978). On the other hand, political organization centered on small tribelets of approximately 300 to 500 people and several distinct settlements. A chief headed each tribelet, and a representative of the chief of each settlement had oversight of local affairs. Chiefs acted as advisors and managed use of natural resources by preventing trespassing on tribelet territory and determining the appropriate time to begin the acorn harvest each season. The chief also arbitrated any disputes and sanctioned the punishment of criminal offenders (Kroeber 1925; Levy 1978).

Traditional Miwok artistry includes twined and coiled basketry, usually from willow and redbud trees. Other activities included the manufacturing of tule mats used as floor covering. Woven blankets were often made of rabbit skin strips or feathers attached to cordage woven from plant fibers. Tule balsa rafts were used to navigate rivers and sloughs (Levy 1978).

Traditional Miwok subsistence practices centered on the use of acorns and other seeds as primary plant food sources and on hunting of mule deer, tule elk, pronghorn antelope, and various species of waterfowl. Hunting was done typically with a sinew-backed bow and arrow. Fishing was a particularly important activity for the Miwok, primarily with various types of nets; Seines were used in large rivers and sloughs where the pace of water flow was slow, while hook and line was typically used to take sturgeon, while harpoons were the most common implement for salmon fishing (Levy 1978).

Records of exploitation of the Interior Miwok people by the Mission San Jose begin as early as 1811 (Levy 1978). Several triblets of Plains Miwok engaged in armed resistance in the 1820s and 1830s in attempts to resist missionization. As a direct result of the establishment of the mission system, the Interior Miwok population dramatically declined. Despite this, the Interior Miwok continue to populate Amador, San Joaquin and Calaveras Counties and surrounding areas (California Valley Miwok Tribe 2026; Ione Band of Miwok Indians 2026).

3.2.3 Post-Contact Setting

Post-contact history for the state of California is generally divided into three periods: the Spanish Period (1769 to 1822), Mexican Period (1822 to 1848), and American Period (1848 to present). Although Spanish, Russian, and British explorers visited the area for brief periods between 1529 and 1769, the Spanish Period in California begins with the establishment in 1769 of a settlement at San Diego and the founding of Mission San Diego de Alcalá, the first of 21 missions constructed between 1769 and 1823. Independence from Spain in 1821 marks the beginning of the Mexican Period, and the signing of the Treaty of Guadalupe Hidalgo in 1848, ending the Mexican-American War, signals the beginning of the American Period when California became a territory of the United States.

Spanish Period (1769-1822)

Spanish explorers made sailing expeditions along the coast of California between the mid-1500s and mid-1700s. Juan Rodriguez Cabrillo in 1542 led the first European expedition to observe what was known by the Spanish as Alta (upper) California. For more than 200 years, Cabrillo and other Spanish, Portuguese, British, and Russian explorers sailed the Alta California coast and made limited inland expeditions, but they did not establish permanent settlements (Bean 1968; Rolle 2003). The Spanish crown laid claim to Alta California based on the surveys conducted by Cabríllo and Vizcaíno (Bancroft 1885; Gumprecht 1999).

By the eighteenth century, Spain developed a three-pronged approach to secure its hold on the territory and counter against other foreign explorers. The Spanish established military forts known as presidios, as well as missions and pueblos (towns) throughout Alta California. The 1769 overland expedition by Captain Gaspár de Portolá marks the beginning of California's historic period, occurring just after the King of Spain installed the Franciscan Order to direct religious and colonization matters in assigned territories of the Americas. Portolá established the Presidio of San Diego as the first Spanish settlement in Alta California in 1769.

Construction of missions and associated presidios was a major emphasis during the Spanish Period in California to integrate the Native American population into Christianity and communal enterprise. Incentives were also provided to bring settlers to pueblos or towns; just three pueblos were established during the Spanish Period, only two of which were successful and remain as California cities (San José and Los Angeles).

Spain began making land grants in 1784, typically to retiring soldiers, although the grantees were only permitted to inhabit and work the land. The land titles technically remained property of the Spanish king (Livingston 1914).

Mexican Period (1822-1848)

Several factors kept growth within Alta California to a minimum, including the threat of foreign invasion, political dissatisfaction, and unrest among the indigenous population. After more than a

decade of intermittent rebellion and warfare, New Spain won independence from Spain in 1821. In 1822, the Mexican legislative body in California ended isolationist policies designed to protect the Spanish monopoly on trade, and decreed California ports open to foreign merchants (Hackel 1997).

Extensive land grants were established in the interior during the Mexican Period, in part to increase the population inland from the more settled coastal areas where the Spanish had first concentrated their colonization efforts. The secularization of the missions following Mexico's independence from Spain resulted in the subdivision of former mission lands and establishment of many additional ranchos. Commonly, former soldiers and well-connected Mexican families were the recipients of these land grants, which now included the title to the land.

During the supremacy of the ranchos (1834 to 1848), landowners largely focused on the cattle industry and devoted large tracts to grazing. Cattle hides became a primary Southern California export, providing a commodity to trade for goods from the east and other areas in the United States and Mexico. The number of nonnative inhabitants increased during this period because of the influx of explorers, trappers, and ranchers associated with the land grants. The rising California population contributed to the introduction and rise of diseases foreign to the Native American population, who had no associated immunities.

American Period (1848- Present)

The United States went to war with Mexico in 1846. During the first year of the war, John C. Fremont traveled from Monterey to Los Angeles with reinforcements for Commodore Stockton, and evaded Californian soldiers in Santa Barbara's Gaviota Pass by taking the route over the San Marcos grade instead (Kyle 2002). The war ended in 1848 with the Treaty of Guadalupe Hidalgo, ushering California into its American Period.

California officially became a state with the Compromise of 1850, which also designated Utah and New Mexico (with present-day Arizona) as United States territories (Waugh 2003). Horticulture and livestock, based primarily on cattle as the currency and staple of the rancho system, continued to dominate the California economy through 1850s. The discovery of gold in the northern part of the state led to the Gold Rush beginning in 1848, and with the influx of people seeking gold, cattle were no longer desired mainly for their hides but also as a source of meat and other goods. During the 1850s cattle boom, rancho vaqueros drove large herds from Southern to Northern California to feed that region's burgeoning mining and commercial boom.

San Joaquin County

San Joaquin County was comprised of Mexican "rancho" land grants in the early 1800s that encompassed over 100,000 acres of the region, the largest being Campo de los Franceses (San Joaquin County 2016). During the Gold Rush in the late 1840s and 1850s, travelers seeking their fortunes in the Sierra Nevadas sometimes passed through the "Fifteen Mile House," a stagecoach stop 15 miles from Stockton, built in the area where the community of Linden is now located (Smith 1976). By the 1850s, prospectors had rushed to stake claims along Calaveras River, with some of the most sizable immigrant ethnic groups including Chinese, Chilean, Mexican, and French miners (Chan 2000, Rohe 1996). Miwok and Yokuts populations were further destabilized by the upswell of prospectors. In 1852, a community of Muqueleme Miwok (likely intermarried and allied with Chilamne Yokuts) lived at the Calaveras River crossing of Bellota, approximately 10.28 miles southeast of the APE. However, violent encroachment from settlers and forced displacement led to the abandonment of Native villages along the Calaveras and Mokelumne Rivers by the turn of the

century, with communities predominantly moving to the Buena Vista and Ione areas of Amador County (Bennyhoff 1977).

As the flurry of the Gold Rush brought a swelling population of settlers to San Joaquin County, the region developed as an agricultural hub with fertile soil and favorable climate. This influx of miners and farmers in the late 1840s and early 1850s resulted in the establishment of towns throughout the county, including Stockton, located approximately 6.50 miles southwest of the APE, which was founded by 1849 by Charles M. Weber, a German immigrant in search of gold (Lea and Roth 2003; Visit Stockton 2026). Stockton became a significant resource for gold mining communities within the area and was officially incorporated in 1850. After the Gold Rush, the city transformed into an agricultural, industrial, and transportation hub. By 1854, Stockton was the fourth largest city in California.

San Joaquin County was officially established in 1850, named after the San Joaquin River that runs through it (Tracy News Today 2025). Agriculture in the San Joaquin Valley began with cattle ranching, which came to an end as a result of a major drought between 1863 and 1864 and the shift towards grain farming (San Joaquin County 2016)). Grain production replaced cattle as population growth, development of the railroads after 1869, and the high cost of land increased the demand for food (Menefee and Dodge 1923). Wright Cowell purchased water rights in 1886, which resulted in the formation of the San Joaquin Land & Water company in 1889 (SSJID 2026). After this company and many other companies attempting to establish irrigation systems in San Joaquin County failed, the Stanislaus and San Joaquin Water Company was formed in 1895, which resulted in 47 miles of ditches along the Stanislaus River from Knights Ferry to Manteca. This evolved into the South San Joaquin Irrigation District in 1909, which is still active in supplying irrigation water for the agricultural areas in southern San Joaquin County.

The railroad arrived in the San Joaquin Valley in 1866 with the Central Pacific Railway connecting Los Angeles to the Bay Area (ASM Affiliates 2020). Small communities along the railroad were established along with new industries including logging and mineral mining. The city of Lodi, originally called Mokelumne, located approximately 3.8 miles to the west of the APE, was established in 1869 as a location to serve the Central Pacific Railroad (City of Lodi 2026). The town changed its name to Lodi in 1874 and was officially incorporated as a city in 1906. The Southern Pacific Railroad leased the Central Pacific Railroad's lines in 1885 and by 1896 the San Francisco & San Joaquin Valley Railroad (later acquired by Atchison, Topeka and Santa Fe Railway) traversed the region (Applied Earthworks 2017).

Today, San Joaquin County has a population of approximately 836,506 and includes an area of nearly 920,000 acres (approximately 1,400 square miles) (San Joaquin County 2016; World Population Review 2026). It remains one of the country's top producers of agriculture and is a large contributor of agricultural, logistical, packing and shipping, manufacturing, healthcare, and bioeconomy industries.

4 Methods

This section presents the methods for each task completed during the preparation of this assessment.

4.1 Background and Archival Research

4.1.1 Archival Research

Rincon completed additional background and archival research in support of this study in April 2026. A variety of primary and secondary source materials were consulted. Sources included, but were not limited to, historical maps, aerial photographs, and written histories of the area. The following sources were utilized to develop an understanding of the APE and its context:

- Google Earth imagery for the years 2003, 2004, 2006, 2007, 2008, 2011, 2013, 2015, 2017, 2023, and 2025 (Google Earth 2026)
- United States Geological Survey topographic quadrangle maps including: the 1894 *Lodi, California* USGS 30-minute and topographic quadrangle, the 1908, 1953, and 1968 *Waterloo, California* 7.5-minute topographic quadrangles, and the 1939 and 1942 *Bellota, California* 15-minute topographic quadrangle (USGS 1894, 1908, 1939, 1942, 1953, 1968)
- Aerial imagery accessed through NETR Online for the years 1957, 1963, 1967, 1968, 1984, 1993, 1998, 2002, 2005, 2009, 2010, 2012, 2014, 2016, 2018, 2020, 2022, and 2024 (NETR Online 2026)
- Bureau of Land Management General Land Office Plat Maps for Township 3 North, Range 7 East, Mount Diablo Meridian from 1865 (BLM 1865)
- Geologic Maps accessed through the National Geologic Map Database MapView (Marchand and Bartow 1979)
- University of California Davis SoilWeb (California Soil Resource Lab 2003a, 2003b, 2026)
- OHP statewide inventories, including the NRHP, CRHR, California Historical Landmarks list, and the Built Environment Resource Directory (BERD) for San Joaquin County, as well as the California State Historic Property Data File, to identify previously evaluated historic built environment resources in the region (OHP 2022)

4.1.2 California Historical Resources Information System Records Search

On March 9, 2026, Rincon received California Historical Resources Information System (CHRIS) search results (records search #13680L) from the Central California Information Center (CCaIC) (Appendix A). The CCaIC is the official state repository for cultural resources records and reports for the county in which the Project falls. The records search helps to identify previously recorded cultural resources, as well as previously conducted cultural resources studies, in the APE and a 0.5-mile radius surrounding it. Rincon also reviewed statewide historic resource inventories maintained by the OHP, including the NRHP, the CRHR, the California Historical Landmarks list, and the Built Environment Resources Directory (BERD) for San Joaquin County, and the California State Historic

Property Data File as well as the Archaeological Determination of Eligibility list. Non-confidential results of the records search can be found in Appendix A of this cultural resources technical report.

4.1.3 Sacred Lands File Search

Rincon contacted the NAHC on March 6, 2026, to request a search of the SLF and a contact list of Native Americans culturally affiliated with the APE. Appendix B provides the results of the SLF search. Any required Tribal consultation will be conducted by the lead agencies, as appropriate.

4.2 Field Survey

Rincon Archaeologists Mary Garrett-Catlin, BA, and Joel Rudewicz, MA, RPA, conducted a pedestrian survey of the APE on April 2, 2026. Rincon conducted a pedestrian survey using transect intervals spaced 15 meters and oriented generally from east-to-west. Exposed ground surfaces were examined for artifacts (e.g., flaked stone tools, tool-making debris, stone milling tools, ceramics, fire-affected rock), ecofacts (marine shell and bone), soil discoloration that might indicate the presence of a cultural midden, soil depressions, and features indicative of the former presence of structures or buildings (e.g., standing exterior walls, postholes, foundations) or historical debris (e.g., metal, glass, ceramics). Ground disturbances such as burrows and drainages were also visually inspected. Survey accuracy was maintained using a handheld Global Positioning Satellite unit and a georeferenced map of the APE. Site characteristics and survey conditions were documented using field records and a digital camera. Copies of the survey notes and digital photographs are maintained at the Rincon Sacramento office.

5 Findings

5.1 Known Cultural Resources Studies

The CHRIS records search identified one (1) cultural resources study within a 0.5-mile radius of the APE (see Appendix A). This study (SJ-09734) overlaps the southern boundary of the APE and is discussed in further detail below.

Study SJ-09734

Study SJ-09734, *Cultural Resources Inventory Report for the PG&E Northern San Joaquin 230 kV Transmission Project, San Joaquin County, California*, was prepared by Alyssa Scott and Courtney Higgins of Far Western Anthropological Research Group, Inc. (Far Western) in 2021. The study included a records search, archival review, Native American SLF search and outreach, and a field survey, which identified three previously recorded historic-period resources, including two railroad segments (P-39-004457 and P-39-000002) and one bridge (Bridge #29C-341) within 0.25-mile of the study area (Scott and Higgins 2021). No new archaeological or built environment resources were identified as a result of the field survey. Study SJ-09734 overlaps approximately five percent of the current APE along the southern boundary. None of the three cultural resources identified as a result of Study SJ-09734 are located within or immediately adjacent to the current APE.

5.2 Known Cultural Resources

The CHRIS records search did not identify any cultural resources within 0.5-mile of the APE. No previously recorded precontact or historic-period archaeological resources have been previously recorded within or immediately adjacent to the APE or within the 0.5-mile search radius.

5.3 Sacred Lands File Search

The NAHC responded to Rincon's SLF request on March 11, 2026, stating that the results of the SLF search were negative.

5.4 Aerial Imagery and Historical Topographic Maps Review

A comprehensive review of historical topographic maps and aerial photographs was conducted to document land use and development within the APE during the historic period. Sources reviewed include the 1865 General Land Office (GLO) plat map (Bureau of Land Management [BLM] 1865), the 1894 *Lodi, California* USGS 30-minuteand topographic quadrangle (USGS 1894), the 1908, 1953, and 1968 *Waterloo, California* 7.5-minute topographic quadrangles (USGS 1908, 1953, 1968), and the 1939 and 1942 *Bellota, California* 15-minute topographic quadrangle (USGS 1939, 1942). Historical aerial photographs were reviewed via Nationwide Environmental Title Research, LLC Online database (NETR Online 2026) for years 1957, 1963, 1967, 1968, 1984, 1993, 1998, 2002, 2005, 2009, 2010, 2012, 2014, 2016, 2018, 2020, 2022, and 2024; and Google Earth (Google Earth 2026) for years 2003, 2004, 2006, 2007, 2008, 2011, 2013, 2015, 2017, 2023, and 2025.

The Bureau of Land Management General Land Office Plat Map from 1865 depicts an undeveloped APE with an unnamed road to the west along the general route of present-day North Locust Road and a fence line to the south (BLM 1865). A slough is depicted further south of the APE in the adjoining section and a schoolhouse along an unnamed road is depicted approximately 0.60-mile to the east along present-day State Route 88 (SR 88). Review of available historic topographic maps from 1894 indicate that a road travelled north-to-south through the APE in the late 1800's (USGS 1894). The same maps depict the San Joaquin and Sierra Nevada Railroad running east-to-west through the towns of Lodi and Woodbridge approximately 1.75 miles to the north, with the APE's surroundings characterized by gridded urban streets situated between the Mokelumne River to the north, the Calaveras River to the south, and Bear Creek and Pattie Slough to the east (USGS 1894).

Topographic maps from 1908 depict an undeveloped APE with roads along present-day East Kettleman Lane to the north, East Harney Lane to the south, North Locust Tree Road to the west, and SR 88 to the east (USGS 1908). Residential development increases along the roads surrounding the APE through 1953, when topographic maps depict agricultural land surrounding the APE (USGS 1939, 1942, 1953). Aerial imagery from 1957 confirms the APE and the immediate surroundings were agricultural fields separated by unpaved roads (NETR Online 2026). The nearest residential properties to the APE were located on North Locust Tree Road, 0.32-mile to the west, and East Kettleman Lane, 0.20-mile to the north. A well is depicted within the southern portion of the APE in topographic maps from 1968, which is confirmed in aerial imagery from the same year (NETR Online 2026; USGS 1968). No evidence of this well is seen in aerial imagery from 1984 (NETR Online 2026). The existing property immediately east of the APE was developed by 1984 and the property to the northwest was developed by 1993 (NETR Online 2026). The area north of the APE was cleared for the development of the existing property by 2002 (NETR Online 2026). Since 1993, the APE and its surroundings have remained relatively unchanged, with continuous agricultural use and no additional urban development within or adjacent to the APE (Google Earth 2026; NETR Online 2026).

5.5 Survey Results

Rincon Archaeologists conducted a pedestrian survey of the APE on April 2, 2026. Ground surface visibility was poor to moderate (15 to 50 percent) with patchy vegetation between existing vineyard rows (Photograph 1 and Photograph 2). While annual grasses and leaf litter partially obscured the surface, recent mowing between tree rows provided improved ground exposure along the transect corridors. The APE is surrounded by graded dirt access roads, which provided additional ground exposure, particularly along the edges of the vineyard rows where the soil consisted of brown silty loam. The APE has been significantly disturbed by agricultural activities and does not retain any of its natural setting. No cultural resources were identified within the APE.

Photograph 1 Overview of the APE from the Southwest Boundary, Facing North



Photograph 2 Overview of the APE from the Northeast Boundary, Facing Southwest



5.6 Archaeological Sensitivity Analysis

5.6.1 Geoarchaeological Analysis

Geologically, the APE is underlain by Late Pleistocene-aged Lower Modesto Formation alluvial sand (map unit Qm1) deposited on river terraces and alluvial fans of the Mokelumne River system (Marchand and Bartow 1979).The Lower Modesto Formation consists of cut-and-fill terrace remnants on older fan deposits formed during a period of reduced fluvial activity associated with late Pleistocene glacial conditions (Marchand and Bartow 1979).The APE is underlain exclusively by Qm1; the Upper Modesto Formation (Qm2), which records a subsequent episode of channel cutting and filling into Qm1 and underlying deposits, is not mapped within the APE (Marchand and Bartow 1979). The Modesto Formation generally dates to the Late Pleistocene and the Lower Modesto Formation (Qm1) stabilized approximately 25,000 or more years ago, prior to the commonly accepted period of initial human occupation in the region (Rosenthal and Meyer 2004:52).

Soil profiles can be divided into distinct horizons, or layers. As indicated by Waters (1992), A horizons form on stable landforms not subject to intensive depositional or erosional processes, whereas B horizons represent the leaching and downward translocation of fine particles from the topsoil into the underlying sedimentary or alluvial parent material (C horizon), creating a distinct horizon. Given that A horizons form on relatively stable landforms, they are the primary horizons wherein archaeological materials are initially deposited (Waters 1992). There are different classes of A horizons, including Ap horizons, which are A horizons that have been disturbed by agricultural activities such as plowing, and Ab horizons, which are A horizons that have been buried by depositional processes. Archaeological resources encountered within Ap horizons represent a disturbed context wherein archaeological materials have been displaced by plowing and or discing. Because Ab horizons are buried A horizons, they have the greatest likelihood to contain intact subsurface archaeological deposits.

Soils within the APE are mapped as the Acampo sandy loam (0 to 2 percent slopes), comprising approximately 90 percent of the APE, and Kingdon fine sandy loam (0 to 2 percent slopes), comprising approximately 10 percent of the APE within the northeastern corner (California Soil Resource Lab 2026). The Acampo series consists of deep to hardpan, moderately well drained soils formed in alluvium derived mainly from granitic rock sources and are found on low fan terraces at elevations of 10 to 150 feet (California Soil Resource Lab 2003a). A typical soil profile of the Acampo series includes a sandy loam Ap horizon (topsoil disturbed by agricultural activities) extending from the ground surface to a depth of 6 inches followed by an undisturbed sandy loam A horizon from 6 to 19 inches below ground surface, a cambic sandy loam Bw horizon (subsoil) from 19 to 37 inches below ground surface, a weakly silica-cemented sandy loam Bq (duric) horizon from 37 to 47 inches below ground surface, and an indurated duripan from 47 to 60 inches below ground surface (California Soil Resource Lab 2003a). Depth to the Bq (duric) layer ranges from 34 to 40 inches and depth to the indurated duripan ranges from 40 to 60 inches, indicating a mature, stable landscape surface (California Soil Resource Lab 2003a). The Acampo series does not have a documented buried A horizon (Ab) (California Soil Resource Lab 2003a).

The Kingdon series consists of very deep, moderately well drained soils formed in alluvium derived mainly from granitic rock sources and are found on low fan terraces at elevations of 10 to 150 feet (California Soil Resource Lab 2003b). A typical soil profile of the Kingdon series includes two Ap horizons together comprising a 14-inch disturbed plow zone (Ap1: 0 to 5 inches; Ap2: 5 to 14 inches), followed by a transitional BA horizon from 14 to 19 inches below ground surface, an argillic

(Bt) horizon from 19 to 42 inches below ground surface, and an unconsolidated C horizon (parent material) from 42 to 61 inches below ground surface (California Soil Resource Lab 2003b). Unlike the Acampo series, the Kingdon series is classified as very deep with no documented duripan or other subsurface restrictive layer (California Soil Resource Lab 2003b). The Kingdon series also does not have a documented buried A horizon (Ab) (California Soil Resource Lab 2003b; Rosenthal and Meyer 2004).

Based on the information presented above, the overall archaeological sensitivity of the APE is considered low for both surficial and subsurface precontact and historic-period archaeological deposits.

5.6.2 Precontact Archaeological Resources

Potential for Surface Archaeological Resources

Aerial photographs and historical topographic maps document continuous agricultural disturbance within the APE since at least the 1950s, including annual plowing and cultivation. The Acampo sandy loam and Kingdon fine sandy loam profiles described above include distinct Ap (plow zone) horizons extending approximately six and 14 inches below the surface overlying undisturbed A horizons (California Soil Resource Lab 2003a, 2003b). This documented mechanical disturbance would have displaced, fragmented, or buried any surface-deposited archaeological materials. The Acampo sandy loam and Kingdon fine sandy loam soil series have been identified as having a high sensitivity for the presence of archaeological deposits based on their geomorphic position on mature, mollic low fan terraces (Rosenthal and Meyer 2004). However, no evidence of surface precontact archaeological resources was identified during the pedestrian survey. Additionally, the one previous cultural resources study conducted within the 0.5-mile radius (Study SJ-09734) did not identify any precontact resources within or near the current APE (Scott and Higgins 2021). Based on the high-sensitivity soil mapping, the absence of buried A horizons, negative background research, and negative pedestrian survey results, the potential for intact surface precontact archaeological resources is considered low.

Potential for Subsurface Archaeological Resources

The potential for buried archaeological deposits is primarily constrained by the geologic age of the landform. As detailed above, the APE is underlain by late Pleistocene-aged alluvial fan remnants (Lower Modesto Formation), which stabilized over 25,000 years ago (Rosenthal and Meyer 2004:52). This formation age substantially limits the probability that intact cultural deposits are preserved within the primary soil matrix.

Subsurface sensitivity is further constrained by the soil profiles themselves. Neither the Acampo nor the Kingdon series has a documented buried A horizon (Ab), which would have the greatest potential to contain intact subsurface archaeological deposits (California Soil Resource Lab 2003a, 2003b; Rosenthal and Meyer 2004). Both series are capped by disturbed Ap (plow zone) horizons indicative of long-term agricultural disturbance that has mixed and displaced near-surface archaeological materials. For the approximately 90 percent of the APE underlain by Acampo soils, the weakly cemented Bq (duric) layer beginning at approximately 34 to 40 inches and the indurated duripan beginning at approximately 40 to 60 inches create physical barriers that restrict the vertical extent of any potential archaeological features (California Soil Resource Lab 2003a). The approximately 10 percent of the APE underlain by Kingdon soils lacks a duripan but transitions to an unconsolidated C horizon parent material below 42 inches; the deep argillic (Bt) development from

19 to 42 inches similarly limits the likelihood of well-preserved stratified deposits (California Soil Resource Lab 2003b).

Ethnographic settlement models for the Plains Miwok indicate a preference for establishing permanent villages on elevated natural levees and riverbanks immediately adjacent to perennial water sources (Bennyhoff 1977; Kroeber 1925; Levy 1978). Interior fan-terrace settings set back from the primary Mokelumne River channel, such as the APE, were used more ephemerally for resource procurement rather than as locations for persistent village occupation (Bennyhoff 1977; Kroeber 1925). Regional archaeological syntheses confirm that highly sensitive buried sites and early-period occurrences in the northern San Joaquin Valley tend to cluster along major river channels, natural levees, and flood-basin margins rather than on interior low fan terraces (Moratto 1984; Rosenthal et al. 2007; Rosenthal and Meyer 2004). The APE is situated on a low-relief fan terrace approximately 2.45 miles south of the Mokelumne River and is not mapped as a natural levee, flood-basin sink, or paleochannel margin in regional geoarchaeological models (Rosenthal and Meyer 2004; Marchand and Bartow 1979).

Based on geological, geomorphological, ethnographic, and historical evidence, the potential for intact precontact subsurface archaeological deposits is considered low (Bennyhoff 1977; Moratto 1984; Rosenthal and Meyer 2004; Rosenthal et al. 2007).

5.6.3 Historic-Period Archaeological Resources

The 1865 GLO Plat Map depicts the APE within a vacant section of Township 3 North, Range 7 East (BLM 1865). No roads, trails, or structures are depicted within the APE during this early American Period. By 1894 a road ran through the APE trending north-to-south and this road was no longer present (USGS 1894, 1908). Aerial imagery from 1957 shows the APE as an agricultural field bordered by unpaved roads (NETR Online 2026). A well is depicted within the southern portion of the APE in topographic maps and aerial imagery from 1968, which disappears by 1984 (NETR Online 2026; USGS 1968). By 1984 the existing property immediately east of the APE was developed and the existing properties to the northwest and north were developed by 1993 and 2002, respectively (NETR Online 2026). Except for the well in the southern portion of the APE, the APE has remained an active agricultural field since at least the 1950's, with no additional development.

No surface evidence of historic-period cultural materials was evident during the pedestrian field survey. Additionally, the preservation potential of such deposits, if any existed, is compromised by the agricultural land use documented since the 1950s. Deep ripping, a standard practice for orchard preparation in the San Joaquin Valley to breach the hardpan (Clark et al. 2020), typically impacts the upper 3 to 6 feet of the soil column, depths that would intercept most historical domestic features. Consequently, while isolated historical refuse may be present in the plow zone, the potential for intact, eligible historical archaeological deposits is considered low.

6 Conclusions and Recommendations

The following sections present our recommended findings under Section 106 of the NHPA and CEQA.

This study did not result in the identification of cultural resources within the APE. No archaeological resources were identified within the APE or a 0.5-mile radius, and the geoarchaeological review indicates there is a low potential for surface and buried archaeological resources within the APE.

6.1 Section 106 of the National Historic Preservation Act

Based on the results of this study, Rincon recommends a finding of ***no historic properties affected*** under Section 106 of the NHPA for the current undertaking (36 CFR 800.4[d]). Furthermore, Rincon recommends no further archaeological resources work for the undertaking based on the previous disturbance within the APE and lack of archaeological sensitivity as documented in Section 5.6. Best management practices are recommended in case of unanticipated discoveries. In the event of a post-review discovery during ground disturbance associated with the undertaking, the procedures under 36 CFR Part 800.13 should be followed by the lead federal agency.

6.2 CEQA

The impact analysis included here is organized based on the cultural resources thresholds included in *CEQA Guidelines* Appendix G: Environmental Checklist Form:

A. Would the project cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?
B. Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?
C. Would the project disturb any human remains, including those interred outside of dedicated cemeteries?

Threshold A broadly refers to historic-period resources. To more clearly differentiate between archaeological and built environment resources, we have chosen to limit analysis under Threshold A to built environment resources. Archaeological resources, including those that may be considered historical resources pursuant to Section 15064.5 and those that may be considered unique archaeological resources pursuant to Section 21083.2, are considered under Threshold B. Human remains are addressed under Threshold C.

Historical Built Environment Resources

No previously recorded cultural resources have been documented within or immediately adjacent to the APE. Based on the results of this study, Rincon recommends a finding of ***no impact to historical resources*** under CEQA. No further mitigation is required.

Historical and Unique Archaeological Resources

No recorded archaeological resources are within the APE or 0.5-mile search radius (Section 5.2). The NAHC SLF search returned negative results (Section 5.3). The current pedestrian field survey did not identify archaeological resources in the APE (Section 5.5).

Based on the results of this study, the potential for the Project to encounter archaeological resources is low. Rincon recommends a finding of ***less than significant impact with mitigation for archaeological resources*** under CEQA.

Unanticipated Discovery of Cultural Resources

In the event that archaeological resources are unexpectedly encountered during ground-disturbing activities, work within 50 feet of the find shall halt and an archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards for archaeology (National Park Service 1983) shall be contacted immediately to evaluate the resource. If the resource is determined by the qualified archaeologist to be precontact, then a Native American representative shall also be contacted to participate in the evaluation of the resource. If the qualified archaeologist and/or Native American representative determines it to be appropriate, archaeological testing for CRHR eligibility shall be completed. If the resource proves to be eligible for the CRHR and significant impacts to the resource cannot be avoided via project redesign, a qualified archaeologist shall prepare a data recovery plan tailored to the physical nature and characteristics of the resource, per the requirements of the California Code of Regulations (CCR) Guidelines Section 15126.4(b)(3)(C). The data recovery plan shall identify data recovery excavation methods, measurable objectives, and data thresholds to reduce any significant impacts to cultural resources related to the resource. Pursuant to the data recovery plan, the qualified archaeologist and Native American representative, as appropriate, shall recover and document the scientifically consequential information that justifies the resource's significance. The County shall review and approve the treatment plan and archaeological testing as appropriate, and the resulting documentation shall be submitted to the regional repository of the California Historical Resources Information System, per CCR Guidelines Section 15126.4(b)(3)(C).

Human Remains

No human remains are known to be present in the APE. However, the discovery of human remains is a possibility during ground disturbing activities. If human remains are found, California Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to PRC Section 5097.98. In the event of an unanticipated discovery of human remains, the County Coroner must be notified immediately. If the human remains are determined to be of Native American origin, the Coroner will notify the Native American Heritage Commission, which will determine and notify a MLD. The MLD has 48 hours from being granted site access to make recommendations for the disposition of the remains. If the MLD does not make recommendations within 48 hours, the landowner shall reinter the remains in an area of the property secure from subsequent disturbance. With adherence to existing regulations, Rincon recommends a finding of ***less than significant impact to human remains*** under CEQA.

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Appendix A

CHRIS CCaIC Records Search Results

CENTRAL CALIFORNIA INFORMATION CENTER

California Historical Resources Information System

Department of Anthropology – California State University, Stanislaus
One University Circle, Turlock, California 95382
(209) 667-3307

Alpine, Calaveras, Mariposa, Merced, Mono, San Joaquin, Stanislaus & Tuolumne Counties

Date: 3/9/2026

Records Search File No.: 13680L
Project: 25-18424 RPCA North Locust Tree Road Solar

Catherine Johnson
Rincon Consultants, Inc.
180 N. Ashwood Avenue
Ventura, CA 90130
805-844-4455
cjohnson@rinconconsultants.com

Invoice to: ap@rinconconsultants.com

The Central California Information Center received your record search request for the project area referenced above, located on the Waterloo 7.5' quadrangle in San Joaquin County. The following reflects the results of the records search for the project study area and radius:

As per data currently available at the CCaIC, the locations of resources/reports are provided in the following format: ☐ custom GIS maps ☒ GIS Data/shape files

Summary Data:

Resources within the project area:	None formally reported to the Information Center.
Resources within the 1/2-mile radius:	None formally reported to the Information Center.
Reports within the project area:	1: SJ-09734
Reports within the 1/2-mile radius:	None other than the extension of the above-referenced report boundary into the radius area.

Resource Database Printout (list):	☐ enclosed	☐ not requested	☒ nothing listed
Resource Database Printout (details):	☐ enclosed	☒ not requested	☐ nothing listed
Resource Digital Database Records:	☐ enclosed	☒ not requested	☐ nothing listed
Report Database Printout (list):	☒ enclosed	☐ not requested	☐ nothing listed
Report Database Printout (details):	☐ enclosed	☒ not requested	☐ nothing listed
Report Digital Database Records:	☐ enclosed	☒ not requested	☐ nothing listed
Resource Record Copies:	☐ enclosed	☐ not requested	☒ nothing listed

Report Copies: ☒ enclosed ☐ not requested ☐ nothing listed

OHP Historic Properties Directory: New Excel File: Built Environment Resource Directory (BERD) Dated 09/23/2022
Not all resources listed in the BERD are mapped in GIS, nor do we have records on file for; if you identify additional resources in the BERD that you need copies of, contact the IC.
☐ enclosed ☐ not requested ☒ nothing listed

Archaeological Determinations of Eligibility: (ARD Excerpt):
☐ enclosed ☐ not requested ☒ no **evaluations** listed

CA Inventory of Historic Resources (1976): ☐ enclosed ☐ not requested ☒ nothing listed

Caltrans Bridge Survey: ☐ enclosed ☒ not requested ☐ nothing listed

Ethnographic Information: ☐ enclosed ☒ not requested ☐ nothing listed

Historical Literature: ☐ enclosed ☒ not requested ☐ nothing listed

Historical Maps: ☐ enclosed ☒ not requested ☐ nothing listed
See also: http://ngmdb.usgs.gov>topoview

Local Inventories: ☐ enclosed ☒ not requested ☐ nothing listed

GLO and/or Rancho Plat Maps: ☐ enclosed ☒ not requested ☐ nothing listed
See also: https://glorecords.blm.gov

Shipwreck Inventory: ☒ not available at CCaIC; please go to http://shipwrecks.slc.ca.gov/ShipwrecksDatabase/Shipwrecks_Database.asp

Soil Survey Maps: ☒ not available at CCaIC; please go to http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx

Please forward a copy of any resulting reports from this project to the office as soon as possible. Due to the sensitive nature of archaeological site location data, we ask that you do not include resource location maps and resource location descriptions in your report if the report is for public distribution. If you have any questions regarding the results presented herein, please contact the office at the phone number listed above.

The provision of CHRIS Data via this records search response does not in any way constitute public disclosure of records otherwise exempt from disclosure under the California Public Records Act or any other law, including, but not limited to, records related to archeological site information maintained by or on behalf of, or in the possession of, the State of California, Department of Parks and Recreation, State Historic Preservation Officer, Office of Historic Preservation, or the State Historical Resources Commission.

Due to processing delays and other factors, not all of the historical resource reports and resource records that have been submitted to the Office of Historic Preservation are available

via this records search. Additional information may be available through the federal, state, and local agencies that produced or paid for historical resource management work in the search area. Additionally, Native American tribes have historical resource information not in the CHRIS Inventory, and you should contact the California Native American Heritage Commission for information on local/regional tribal contacts.

Should you require any additional information for the above referenced project, reference the record search number listed above when making inquiries. Requests made after initial invoicing will result in the preparation of a separate invoice.

Thank you for using the California Historical Resources Information System (CHRIS).

Note: Billing will be transmitted separately via email by our Financial Services office* ($397.80), payable within 60 days of receipt of the invoice.

If you wish to include payment by Credit Card, you must wait to receive the official invoice from Financial Services so that you can reference the CMP # (Invoice Number), and then contact the link below:

https://commerce.cashnet.com/ANTHROPOLOGY

Sincerely,

E. A. Greathouse

E. A. Greathouse, Coordinator
Central California Information Center
California Historical Resources Information System

* Invoice Request sent to: ARBilling@csustan.edu, CSU Stanislaus Financial Services

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
SJ-09734		2021	Scott, A. and C. Higgins	Cultural Resources Inventory Report for the PG&E Northern San Joaquin 230 kV Transmission Project, San Joaquin County, California	Far Western Anthropological Research Group. Inc. for PG&E	39-000002, 39-004279, 39-004457, 39-004901

Appendix B

NAHC Sacred Lands File Search

NATIVE AMERICAN HERITAGE COMMISSION

CHAIRPERSON
Reginald Pagaling
Chumash

VICE-CHAIRPERSON
Buffy McQuillen
Yokayo Pomo, Yuki, Nomlaki

SECRETARY
Isaac Bojorquez
Ohlone-Costanoan

PARLIAMENTARIAN
Wayne Nelson
Luiseño

COMMISSIONER
Sara Dutschke
Miwok

COMMISSIONER
Stanley Rodriguez
Kumeyaay

COMMISSIONER
Bennae Calac
Pauma-Yuima Band of Luiseño Indians

COMMISSIONER
Vacant

COMMISSIONER
Vacant

EXECUTIVE SECRETARY
Andrew Alejandre
Paskenta Band of Nomlaki Indians

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710
nahc@nahc.ca.gov

March 11, 2026

Catherine Johnson
Rincon Consultants, Inc.

Via Email to: cjohnson@rinconconsultants.com

Re: 25-18424 RPCA North Locust Tree Road Project, San Joaquin County

To Whom It May Concern:

As requested, a search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed based on information submitted for the above referenced project. The results were negative. Be aware that tribes do not always record their sacred sites in the SLF, nor are they required to do so. As such, an SLF search is not a substitute for consultation with all tribes that are traditionally and culturally affiliated with a project's geographic area.

Attached is a list of Native American tribes that are traditionally and culturally affiliated with the project's geographic area. Please contact all of the listed tribes as they may have information about sacred sites within the project area that is not listed with the NAHC.

If within two weeks of notification, a response has not been received, the Commission requests that you follow up with a telephone call or email to ensure that the project information was received.

If you receive notification of a change of address or phone number from a tribe, please inform the NAHC so that we can assure that our lists contain current information.

In addition to engaging in tribal consultation, you should consult the appropriate regional California Historical Research Information System (CHRIS) information center to determine whether it has information regarding the presence of recorded archaeological sites within the project area.

If you have any questions or need additional information, please contact me at Mathew.lin@nahc.ca.gov.

Sincerely,

Mathew Lin

Mathew Lin, MPP
Cultural Resources Analyst

Attachment

Native American Heritage Commission
Native American Contact List
San Joaquin County
3/11/2026

County	Tribe Name	Fed (F) Non-Fed (N)	Contact Person	Contact Address	Phone #	Fax #	Email Address	Cultural Affiliation	Counties	Last Updated
San Joaquin	Amah Mutsun Tribal Band	N	Ed Ketchum, Chairman		(530) 574-3864		aerieways@aol.com	Costanoan Northern Valley Yokut	Alameda,Calaveras,Contra Costa,Fresno,Madera,Mariposa,Merced,Mont	12/9/2025
	Muwekma Ohlone Tribe of the SF Bay Area	N	Charlene Nijmeh, Chairperson	2570 N. First Street 2nd Floor #1035 San Jose, CA, 95131	(408) 464-2892		cnijmeh@muwekma.org	Costanoan	Alameda,Contra Costa,Marin,Merced,Napa,Sacramento,San Francisco,San Joaquin,San Mateo,Santa Clara,Santa Cruz,Solano,Sonoma,Stanislaus	2/5/2026
	Muwekma Ohlone Tribe of the SF Bay Area	N	Bernadette Quiroz, MLD Tribal Rep.	2570 N. First Street 2nd Floor #1035 San Jose, CA, 95131	(785) 730-6175		bquiroz@muwekma.org.	Costanoan	Alameda,Contra Costa,Marin,Merced,Napa,Sacramento,San Francisco,San Joaquin,San Mateo,Santa Clara,Santa Cruz,Solano,Sonoma,Stanislaus	2/5/2026
	Northern Valley Yokut / Ohlone Tribe	N	Katherine Perez, Chairperson	P.O. Box 717 Linden, CA, 95236	(209) 649-8972		canutes@verizon.net	Costanoan Northern Valley Yokut	Alameda,Calaveras,Contra Costa,Fresno,Madera,Mariposa,Merced,Sacramento,San Benito,San Joaquin,Santa	4/30/2024
	Northern Valley Yokut / Ohlone Tribe	N	Timothy Perez, Tribal Compliance Officer	P.O. Box 717 Linden, CA, 95236	(209) 662-2788		huskanam@gmail.com	Costanoan Northern Valley Yokut	Alameda,Calaveras,Contra Costa,Fresno,Madera,Mariposa,Merced,Sacramento,San Benito,San Joaquin,Santa	11/21/2023
	Tule River Indian Tribe	F	Felix Christman, THPO	340 North Reservation Road Porterville, CA, 93257	(559) 719-0420		felix.christman@tulerivertribe-nsn.gov	Yokut	Alameda,Amador,Calaveras,Contra Costa,Fresno,Inyo,Kern,Kings,Madera,Mariposa,Merced,Monterey,Sacramento,San	8/12/2025
	Tule River Indian Tribe	F	Kerri Vera, Environmental Department	340 North Reservation Road Porterville, CA, 93257	(559) 781-4271		kerri.vera@tulerivertribe-nsn.gov	Yokut	Alameda,Amador,Calaveras,Contra Costa,Fresno,Inyo,Kern,Kings,Madera,Mariposa,Merced,Monterey,Sacramento,San	8/12/2025
	United Auburn Indian Community of the Auburn Rancheria	F	Josef Fore, Tribal Historic Preservation Officer	10720 Indian Hill Road Attn: Tribal Preservation Auburn, CA, 95603	(530) 492-9508		THPO@auburnrancheria.com	Nisenan (Southern Maidu) Miwok	Amador,Butte,El Dorado,Nevada,Placer,Plumas,Sacramento,San Joaquin,Sierra,Solano,Sutter,Yolo,Yuba	9/5/2024
	Wilton Rancheria	F	Cultural Preservation Department,	9728 Kent Street Elk Grove, CA, 95624	(916) 313-4493		cpd@wiltonrancheria-nsn.gov	Nisenan Miwok	Alameda,Alpine,Amador,Contra Costa,El Dorado,Mono,Nevada,Placer,Sacramento,San Joaquin,Solano,Stanislaus,Sutter,Yolo,Yuba	1/23/2026
	Wilton Rancheria	F	Steven Hutchason, Tribal Historic Preservation Officer	9728 Kent Street Elk Grove, CA, 95624	(916) 683-6000		shutchason@wiltonrancheria-nsn.gov	Nisenan Miwok	Alameda,Alpine,Amador,Contra Costa,El Dorado,Mono,Nevada,Placer,Sacramento,San Joaquin,Solano,Stanislaus,Sutter,Yolo,Yuba	1/23/2026
	Wilton Rancheria	F	Michelle St. Clair, Executive Director of Cultural Preservation	9728 Kent Street Elk Grove, CA, 95624	(916) 683-6000		mstclair@wiltonrancheria-nsn.gov	Nisenan Miwok	Alameda,Alpine,Amador,Contra Costa,El Dorado,Mono,Nevada,Placer,Sacramento,San Joaquin,Solano,Stanislaus,Sutter,Yolo,Yuba	1/23/2026

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

Record: PROJ-2026-001297
Report Type: List of Tribes
Counties: San Joaquin
NAHC Group: All

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed 25-18424 RPCA North Locust Tree Road Project, San Joaquin County.

Appendix D

Geotechnical Report

GEOTECHNICAL • ENVIRONMENTAL • GEOLOGY • MATERIALS TESTING & INSPECTION • FORENSIC • LABORATORY

SALEM
engineering group, inc.

GEOTECHNICAL ENGINEERING INVESTIGATION

PROPOSED 4,824.06 KWDC GROUND MOUNT
SOLAR ARRAY SYSTEM
N. LOCUST TREE RD. SOLAR
EAST KETTLEMAN LANE
SITE COORDINATES: 38.11097°, -121.188538°
LODI, CALIFORNIA

SALEM PROJECT NO. 4-226-0318
JULY 1, 2026

PREPARED FOR:
MR. RYAN NYBERG
RENEWABLE PROPERTIES
44 MONTGOMERY STREET, SUITE 3150
SAN FRANCISCO, CA 94104

PREPARED BY:
SALEM ENGINEERING GROUP, INC.
4729 W. JACQUELYN AVENUE
FRESNO, CA 93722
P: (559) 271-9700
F: (559) 275-0827

SALEM
engineering group, inc.

4729 W. Jacquelyn Avenue
Fresno, CA 93722
Phone (559) 271-9700
Fax (559) 275-0827

July 1, 2026 Project No. 4-226-0318

Mr. Ryan Nyberg
Renewable Properties
44 Montgomery Street, Suite 3150
San Francisco, California 94104

Subject: **GEOTECHNICAL ENGINEERING INVESTIGATION**
Proposed 4,824.06 kW DC Ground Mount Solar Array System
N. Locust Tree Rd. Solar
East Kettleman Lane
Site Coordinates: 38.11097°, -121.188538°
Lodi, California

Dear Mr. Nyberg:

At your request and authorization, SALEM Engineering Group, Inc. (SALEM) has prepared this geotechnical engineering investigation report for the proposed ground mount solar array system to be located near E. Kettleman Lane in Lodi, California (coordinates: 38.11097°, -121.188538°).

The accompanying report presents our findings, conclusions, and recommendations regarding the geotechnical aspects of designing and constructing the project as presently proposed. In our opinion, the proposed project is feasible from a geotechnical viewpoint provided our recommendations are incorporated into the design and construction of the project.

We appreciate the opportunity to assist you with this project. Should you have questions regarding this report or need additional information, please contact the undersigned at (559) 271-9700.

Respectfully Submitted,

SALEM ENGINEERING GROUP, INC.

Dean B. Ledgerwood II, PE, PG, CEG
Geotechnical Manager
PE 94395 / PG 8725 / CEG 2613

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Soil Resistivity Test Result
Thermal Resistivity Test Results

APPENDIX C – EARTHWORK AND PAVEMENT SPECIFICATIONS

SALEM engineering group, inc.

4729 W. Jacquelyn Avenue
Fresno, CA 93722
Phone (559) 271-9700
Fax (559) 275-0827

GEOTECHNICAL ENGINEERING INVESTIGATION
PROPOSED 4,824.06 KWDC GROUND MOUNT SOLAR ARRAY SYSTEM
N. LOCUST TREE RD. SOLAR
EAST KETTLEMAN LANE
SITE COORDINATES: (38.11097°, -121.188538°)
LODI, CALIFORNIA

1. PURPOSE AND SCOPE

This report presents the results of our geotechnical engineering investigation for the proposed ground mount solar array system located near East Kettleman Lane in Lodi, California (coordinates: 38.11097°, -121.188538°, see Figure 1, Vicinity Map). The project site is located in an area currently occupied by vineyards.

SALEM Engineering Group, Inc. (SALEM) has completed this geotechnical engineering investigation with the purpose to observe and sample the subsurface conditions encountered at the site, and provide conclusions and recommendations relative to the geotechnical aspects of constructing the project as presently proposed. The recommendations presented herein are based on analysis of the data obtained during the investigation and our local experience with similar soil and geologic conditions.

If project details vary significantly from those described herein, SALEM Engineering Group, Inc. (SALEM) should be contacted to determine the necessity for review and possible revision of this report.

Figures referenced in this report are attached at the end of the report text. Boring logs are included in Appendix A and laboratory results are included in Appendix B of this report. Earthwork and Pavement Specifications are presented in Appendix C. If text of the report conflict with the specifications in Appendix C, the recommendations in the text of the report have precedence.

2. SITE LOCATION AND DESCRIPTION

Based on review of the site plan (PV-100) provided by Renewable Properties, we understand that the project will include the installation/construction of a ground mount solar array system within an approximate 18.5-acre area. The proposed array area is relatively flat, with no major changes in grade, and is currently occupied by a vineyard. The project area is bound in all directions by vineyards and/or orchards with rural residential developments.

At the time of our field investigation on May 6, 2026, the project area was occupied by grape vineyards. The array site appeared relatively flat, with an average elevation of approximately 75 feet above mean sea level (AMSL), based on Google Earth Imagery.

Based on review of numerous aerial images, available on-line, dating from May 1993 to September 2025, the proposed array areas appear to have been used for agriculture since 1993. The existing rural residences were developed sometime before May 1993.

3. PROJECT DESCRIPTION

We understand that the project will include the installation/construction of a ground mount solar array system within an approximate 18.5-acre area. The proposed system output is 4,824.06 kW. The site configuration and locations of proposed improvements are shown on the Site Plan, Figure No. 2, attached at the end of this report.

Based on information provided by Renewable Properties and our experience with similar projects, the ground mount solar panels are typically supported on driven piles extending to approximate depths of 6 to 14 feet below existing grade.

Based on our experience, the solar array foundation dead loads (DL) are expected to be light to moderate with lateral loads and uplift loads governing foundation design. An allowable lateral pile deflection of 1 inch at ground level is anticipated.

Construction is also anticipated to include lightly loaded equipment slabs on grade with total dead loads of up to 25 kips.

A site grading plan was not provided at the time of preparation of this proposal. It is anticipated that minimal cuts and/or fills (less than about 1½ feet) may be required to achieve finished grade for the project.

In the event that changes occur in the nature or design of the project, the conclusions and recommendations contained in this report will not be considered valid unless the changes are reviewed and the conclusions and recommendations of our report are modified.

4. FIELD EXPLORATION

Our field exploration consisted of site surface reconnaissance and subsurface exploration. The results of our site surface reconnaissance are included in Section 2 of this report. The exploratory test borings (B-1 through B-12) were drilled on May 6, 2026, within the proposed solar array area, at the approximate locations shown on the Site Plan (Figure No. 2). The test borings were drilled to depths of about 10 to 21½ feet below site grade (BSG), with 6-5/8 inch diameter hollow-stem auger rotated by a truck-mounted CME-45C drill rig. The locations of the test borings were determined by measuring from features shown on the array location plan, provided to us. Hence, accuracy can be implied only to the degree that this method warrants.

The materials encountered in the test borings were visually classified in the field, and logs were recorded by a field engineer at that time. Visual classification of the materials encountered in the test borings was generally made in accordance with the Unified Soil Classification System (ASTM D2487).

The test boring logs are presented in Appendix A. The boring logs include the soil type, color, moisture content, dry density, and the applicable Unified Soil Classification System symbol.

Subsurface soil samples were obtained by driving a Modified California sampler (MCS) and a Standard Penetration Test (SPT) sampler. Penetration resistance blow counts were obtained by dropping an automated 140-pound trip hammer through a 30-inch free fall to drive the sampler to a maximum depth of 18 inches. The number of blows required to drive the last 12 inches were recorded as Penetration Resistance (blows/foot) on the logs of the boring. In the case where very high penetration resistance was encountered, the number of blows recorded may be for less than 12 inches.

Soil samples were obtained from the test borings at the depths shown on the boring logs. The MCS samples were recovered and capped at both ends to preserve the samples at their natural moisture content; SPT samples were recovered and placed in sealed bags to preserve their natural moisture content.

5. LABORATORY TESTING

Laboratory tests were performed on selected soil samples to evaluate their physical characteristics and engineering properties. The laboratory-testing program was formulated with emphasis on the evaluation of natural moisture and density, gradation, plasticity index, expansion index, consolidation, thermal resistivity test results, and shear strength of the soils encountered. In addition, chemical tests were performed to evaluate the corrosivity of the soils to buried concrete and metal. Details of the laboratory test program and the results of laboratory tests are summarized in Appendix B. This information, along with the field observations, was used to prepare the final boring logs in Appendix A.

6. SOIL AND GROUNDWATER CONDITIONS

6.1 Subsurface Conditions

The predominant soils encountered throughout the project site included interbedded layers of sandy silt, sandy clay, and clayey sand. Medium dense to very dense poorly graded sands were encountered in boring B-5 from 8.5 to 20 feet BSG. It should be noted that the soils within the upper 5 feet BSG included very dense/hard materials, as indicated by standard penetration resistance, N-values, greater than 30 to 50 blows per foot.

The result of one (1) consolidation test, conducted on a selected soil sample, indicated a total consolidation value of about 3.7 percent at 16 kips per square foot, with a collapse value of about 0.1 percent when wetted at 2 kips per square foot. Four (4) direct shear tests resulted in internal angles of friction ranging between 42 and 45 degrees with cohesion values of ranging between 0 and 47 pounds per square foot.

The results of an expansion index test conducted on a near surface sample of silty clayey sand indicated an expansion index of 7 (very low expansion potential). Two (2) Atterberg limits tests resulted in plasticity index values of 6 and 6 with liquid limit values of 21 and 22, respectively.

Two (2) R-value tests resulted in R-values of 15 and 44, respectively, indicating the soils tested, when compacted as engineered fill, have poor to good pavement support characteristics

Soil conditions described in the previous paragraphs are generalized. Therefore, the reader should consult exploratory boring logs included in Appendix A for soil type, color, moisture, consistency, and USCS classification of the materials encountered at specific locations and elevations. Laboratory plates with the results of testing are included in Appendix B. The actual boundaries between different soil types may be gradual and soil conditions may vary. For a more detailed description of the materials encountered, the boring logs in Appendix A should be consulted.

6.2 Groundwater

The test borings were checked for the presence of groundwater during and after the drilling operations. Groundwater was not encountered in the borings, to a maximum depth explored of 21½ feet BSG.

Groundwater depth contour data for the years 2015 to 2023, available online at the SGMA website (SGMA Data Viewer (ca.gov), suggest that groundwater depths in the site area have ranged between about 110 feet and 160 feet BSG during that time period.

It should be recognized that water table elevations may fluctuate with time, being dependent upon seasonal precipitation, irrigation, land use, localized pumping, and climatic conditions as well as other factors. Therefore, water level observations at the time of the field investigation may vary from those encountered during the construction phase of the project. The evaluation of such factors is beyond the scope of this report.

6.3 Soil Corrosion Screening

Excessive sulfate in either the soil or native water may result in an adverse reaction between the cement in concrete and the soil. The 2019 Edition of ACI 318 (ACI 318) has established criteria for evaluation of sulfate and chloride levels and how they relate to cement reactivity with soil and/or water. Near surface soil samples were obtained and tested for the evaluation of the potential for concrete deterioration and steel corrosion due to attack by soil-borne soluble salts and soluble chloride. The water-soluble sulfate concentrations detected in the saturation extracts from the soil samples were 190 and 540 mg/kg, respectively.

ACI 318 Tables 19.3.1.1 and 19.3.2.1 outline exposure categories, classes, and concrete requirements by exposure class. ACI 318 requirements for site concrete based upon soluble sulfate are summarized in Table 6.3 below.

TABLE 6.3
WATER SOLUBLE SULFATE EXPOSURE REQUIREMENTS

Sample Location/Depth	Water Soluble Sulfate (SO_4) in Soil, Percentage by Weight	Exposure Class	Maximum w/cm Ratio	Minimum Concrete Compressive Strength	Cementations Materials Type
B-1 @ 1-5’	0.019	S0	N/A	2,500 psi	No Restriction
B-10 @ 1-5’	0.054	S0	N/A	2,500 psi	No Restriction

The water-soluble chloride concentrations detected in the saturation extracts from the soil samples were 53 and 70 mg/kg, respectively. In addition, testing performed on the same soil samples as listed in the table above resulted in minimum resistivity values of 4,738 and 2,775 ohm-centimeter. Based on the results, the soils tested would be considered to have a “mildly corrosive” corrosion potential to buried metal objects (per National Association of Corrosion Engineers, Corrosion Severity Ratings). It is recommended that, at a minimum, applicable manufacturer’s recommendations for corrosion protection of buried metal pipe be closely followed.

It is recommended that a qualified corrosion engineer be consulted regarding protection of buried steel or ductile iron piping and conduit or, at a minimum, applicable manufacturer’s recommendations for corrosion protection of buried metal pipe be closely followed.

6.4 Thermal Conductivity Testing

Thermal conductivity tests (ASTM D5334) were conducted on a set of near surface samples collected at depths between 1 and 5 feet BSG. The samples were remolded to a dry density of about 90 and 95 percent of the maximum dry density determined in accordance with the standard proctor (ASTM D1557) and to in-situ dry density, then were tested for thermal resistivity at the saturated moisture content, 0 percent moisture, 2.5 percent moisture, in-situ moisture, and one intermediate point between in-situ and 2.5 percent moisture content. The results of the thermal resistivity tests are provided in Table No. 6.4 below and included in Appendix B of this report**.**

TABLE 6.4
RESULTS OF THERMAL RESISTIVITY TESTING

Location	Depth, Feet BSG	Target Percent Relative Compaction	Actual Percent Relative Compaction, D1557	Moisture Content, %	Thermal Resistivity, ˚C-cm/W
B-3	1.5-5	90	88	0	105.8
		90	90	2.3	98.7
		90	90	4.7	86.6
		90	92	7.0	76.4
B-3	1.5-5	95	92	0	129.7
		95	94	2.4	109.0
		95	93	4.8	78.0
		95	95	6.9	74.3
B-8	1-5	90	88	0	151.7
		90	90	2.4	122.4
		90	90	4.7	107.2
		90	91	7.2	101.7
B-8	1-5	95	91	0	128.0
		95	93	2.5	110.3
		95	93	4.9	104.8
		95	98	7.4	86.4

6.5 Field Resistivity Testing

On May 18, 2026 two (2) field electrical resistivity testing was performed at the locations requested. The field electrical resistivity was conducted using the 4-Point Wenner Array method using an AEMC 4620 with an operating frequency of 128Hz square wave. As requested, the probe spacing was performed with an A-spacing distance of 5, 10, 20, and 50 feet. At each location, two (2) perpendicular lines in general orientations of the N-S and E-W cardinal directions. The location of the field resistivty testing is depicted on Figure No. 2 at the end of this report.

Results of Wenner 4-PointResistivty Testing
Location R-1-NS

Test No	A Spacing (ft)	Depth of Pin, Inches	Resistance Level R (Ohms)	Resistivity*, ρ (ohms-ft)	Resistivity*, ρ (ohms-cm)
1-NS	5	12	2.39	75.1	2,288.5
1-NS	10	12	1.06	66.6	2,030.0
1-NS	20	12	0.81	101.8	3,102.4
1-NS	50	12	0.48	150.8	4,596.1

Results of Wenner 4-PointResistivty Testing
Location R-1-EW

Test No	A Spacing (ft)	Depth of Pin, Inches	Resistance Level R (Ohms)	Resistivity*, ρ (ohms-ft)	Resistivity*, ρ (ohms-cm)
1-EW	5	12	2.54	79.8	2,432.1
1-EW	10	12	1.94	121.9	3,715.2
1-EW	20	12	1.22	153.3	4,672.7
1-EW	50	12	0.49	153.9	4,691.1

Results of Wenner 4-PointResistivty Testing
Location R-2-NS

Test No	A Spacing (ft)	Depth of Pin, Inches	Resistance Level R (Ohms)	Resistivity*, ρ (ohms-ft)	Resistivity*, ρ (ohms-cm)
2-NS	5	12	5.88	184.7	5,630.3
2-NS	10	12	2.03	127.5	3,887.6
2-NS	20	12	1.27	159.6	4,864.2
2-NS	50	12	0.61	191.6	5,840.9

Results of Wenner 4-PointResistivty Testing
Location R-2-EW

Test No	A Spacing (ft)	Depth of Pin, Inches	Resistance Level R (Ohms)	Resistivity*, ρ (ohms-ft)	Resistivity*, ρ (ohms-cm)
2-EW	5	12	7.86	246.9	7,526.2
2- EW	10	12	2.27	142.6	4,347.2
2- EW	20	12	1.93	242.5	7,392.1
2- EW	50	12	0.82	257.6	7,851.7

7. GEOLOGIC SETTING

The project site is in the Great Valley Geomorphic Province, which is a topographic and structural basin that is bounded on the east by the Sierra Nevada and on the west by the Coast Ranges. The Sierra Nevada, a fault block dipping gently southwestward, is made up of igneous and metamorphic rocks of pre-Tertiary age that comprise the basement complex beneath the Valley. The Coast Ranges contain folded and faulted sedimentary rocks of Mesozoic and Cenozoic age, which are similar to those rocks that underlie the Valley at depth and non-conformably overlie the basement complex; gently dipping to nearly horizontal sedimentary rocks of Tertiary and Quaternary age overlie the older rocks. The Great Valley Province is an alluvial plain, drained by the Sacramento River in the north and the San Joaquin Valley in the south,

each join and flow out the San Francisco Bay. The Great Valley is an asymmetric trough, extending about 50 miles wide and 400 miles long. The southern portion of the Great Valley includes San Joaquin Valley filled with Pleistocene and Holocene alluvium derived from the Sierra Nevada and Coast Ranges. Sediments in the Great Valley are reportedly up to 40,000 feet thick.

Based on review of the Geologic Map of California, Sacramento Sheet[1], the site is mapped in an area described as recent (Quaternary) alluvial fan deposits in the Great Valley (Qf). Deposits encountered on the subject site during exploratory drilling are discussed in detail in this report.

8. GEOLOGIC HAZARDS

8.1 Faulting and Seismicity

Several active and potentially active faults are located in the site region and contribute to design seismic ground motion estimates. An "active fault" is defined, for the purpose of this evaluation, as a fault that has had surface displacement within the Holocene age (about the last 11,700 years). Based on the distance to active faults in the region, as well as the historic seismic record, the area of the subject site is subject to low to moderate seismicity.

The site is not located within a mapped Alquist-Priolo Earthquake Fault Zone (Special Studies Zone for earthquake fault rupture hazard) and will not require a special site investigation by an Engineering Geologist.

The nearest active (Holocene or younger) fault segment to the project site with the potential for surface rupture is the Marsh Creek-Greenville section of the Greenville Fault located approximately 38.5 miles southwest of the site.

Considering the distance to nearest active faulting, the potential for fault rupture hazard to impact the site is considered very low.

8.2 Design Seismic Ground Motion Parameters and Site Class

Seismic coefficients and spectral response acceleration values were developed based on the 2025 California Building Code (CBC). The CBC methodology for determining design ground motion values is based on the USGS Seismic Design Geodatabase obtained via the Office of Statewide Health Planning and Development (OSHPD) Seismic Design Maps, which incorporate both probabilistic and deterministic seismic ground motion.

Based on the scope of our field investigation, a Site Class “Default” was selected in accordance with the 2025 CBC and ASCE 7-22, Chapter 20. A table providing the recommended seismic design parameters for the project site is included in Section 9.6.1 of this report. The seismic parameters included in this table represent the most critical values considering site class default.

Based on the Office of Statewide Health Planning and Development (OHSPD) Seismic Design Maps, the estimated design peak ground acceleration adjusted for site class effects (PGAm) was determined to be 0.34g. The site could be impacted by relatively low to moderate levels of seismic ground shaking in the event of a large regional earthquake.

[1] Compilation by Arthur R. Smith., 1964, Geologic Map of California: Bakersfield Sheet: California Division of Mines and Geology, scale 1:250,000

While listing PGA is useful for comparison of potential effects of fault activity in a region, other considerations are important in seismic design, including frequency and duration of motion and soil conditions underlying the site.

8.3 Liquefaction

Soil liquefaction is a state of soil particles suspension caused by a complete loss of strength when the effective stress drops to zero. Liquefaction normally occurs under saturated conditions in soils such as sand in which the strength is purely frictional. Primary factors that trigger liquefaction are: moderate to strong ground shaking (seismic source), relatively clean, loose granular soils (primarily poorly graded sands and silty sands), and saturated soil conditions (shallow groundwater).

Due to the relatively deep groundwater conditions, relatively low seismicity (PGAm=0.34g), and relatively stiff/dense soil conditions, the liquefaction is not considered a hazard to this project, and seismic settlement is expected to be negligible.

8.4 Lateral Spreading

Lateral spreading is a phenomenon in which soils move laterally during seismic shaking and is often associated with liquefaction. The amount of movement depends on the soil strength, duration and intensity of seismic shaking, topography, and free face geometry. Due to the very low potential for liquefaction/seismic settlement to impact the site, and the relatively flat topography in the vicinity of the site, we judge the likelihood of lateral spreading to be negligible.

8.5 Landslides

There are no known landslides at the site, nor is the site in the path of any known or potential landslides. We do not consider the potential for a landslide to be a hazard to this project.

8.6 Tsunamis and Seiches

The site is not located within a coastal area. Therefore, tsunamis (seismic sea waves) are not considered a potentially significant hazard at the site.

Seiches are large waves generated in enclosed bodies of water in response to ground shaking. Considering the lack of a large body of water in the site vicinity, the potential for flooding from a seismically-induced seiche is considered negligible.

9. CONCLUSIONS AND RECOMMENDATIONS

9.1 General

9.1.1 Based upon the data collected during this investigation, and from a geotechnical engineering standpoint, it is our opinion that the site is suitable for the proposed construction as planned, provided the recommendations contained in this report are incorporated into the project design and construction. Conclusions and recommendations provided in this report are based on our review of available literature, analysis of data obtained from our field exploration and laboratory testing program, and our understanding of the proposed development at this time.

9.1.2 The predominant soils encountered throughout the project site included interbedded layers of sandy silt, sandy clay, and clayey sand. Medium dense to very dense poorly graded sands were encountered in boring B-5 from 8.5 to 20 feet BSG.

It should be noted that the soils within the upper 5 feet BSG included very dense/hard materials, as indicated by standard penetration resistance, N-values, greater than 30 to 50 blows per foot. Based on the isolated areas of hard/very dense materials the Contractor should anticipate that the upper soils could be resistant to pile driving activities. If damage due to driving piles is encountered, a pilot hole may be drilled with a diameter that is 25% less than that of the piles used to support the solar panels.

9.1.3 The test borings were checked for the presence of groundwater during and after the drilling operations. Groundwater was not encountered in the borings drilling during this investigation to a maximum depth explored of 21½ feet BSG.

9.1.4 Based on the results of laboratory testing, the soils encountered at the site are considered to have a low risk for post construction shrink/swell movement (low expansion potential, EI=7).

9.1.5 Laboratory tests indicate the near surface soils have a sulfate exposure Class S0 (refer to Table 6.3 for requirements). Based on the testing performed, the near surface soils are "mildly corrosive" to buried metal objects.

9.1.6 Based on the subsurface conditions at the site and the anticipated structural loading, the proposed solar panels and associated equipment slabs may be supported using the foundation types presented in this report.

9.1.7 Provided the site is graded in accordance with the recommendations of this report and the foundations are constructed as described herein, maximum total pile settlement due to static loads will be about 1 inch total. Maximum differential static settlement is anticipated to be about ½ inch between adjacent piles.

9.1.8 All references to relative compaction and optimum moisture content in this report are based on ASTM D1557 (latest edition).

9.1.9 SALEM Engineering Group, Inc. should be retained to review the project plans as they develop further, provide engineering consultation as-needed, and perform geotechnical observation and testing services during construction.

9.2 Surface Drainage

9.2.1 Proper surface drainage is critical to the future performance of the project. Uncontrolled infiltration of irrigation excess and storm runoff into the soils can adversely affect the performance of the planned improvements. Saturation of a soil can cause it to lose internal shear strength and increase its compressibility, resulting in a change to important engineering properties. Proper drainage should be maintained at all times.

9.2.2 Grading should be designed and constructed such that surface drainage water in the array area will be collected and transferred away from foundations and slabs in a non-erosive manner. Drainage should not be allowed to pond within 5 feet of any foundation. Final soil slopes should be graded to a minimum of 2 percent to direct surface water away from foundations and equipment slabs. Irrigation within 5 feet of the new foundations (if any) should be kept to a minimum, to just support vegetative life.

9.3 Site Grading

9.3.1 A pre-construction conference should be held at the site prior to the beginning of site grading operations, with the owner, contractor, and geotechnical engineer in attendance.

9.3.2 A representative of our firm should be present during all site clearing and grading operations to test and observe the site preparation and earthwork construction. This testing and observation is an integral part of our service as acceptance of earthwork construction is dependent upon compaction of the material and the stability of the material. The Geotechnical Engineer may reject any material that does not meet compaction and stability requirements. Further recommendations of this report are predicated upon the assumption that earthwork construction will conform to recommendations set forth in this section as well as other portions of this report.

9.3.3 Site preparation activities shall include removal of all vegetation (if any) and demolition of surface obstructions not intended to be incorporated into final site design. In addition, underground buried structures and/or utility lines encountered during demolition and construction should be properly removed and the resulting excavations backfilled with Engineered Fill. After demolition activities, it is recommended that disturbed soils be over-excavated and the resulting excavation backfilled with on-site or approved imported material compacted as engineered fill.

9.3.4 Site preparation should include removal of existing surface/subsurface structures, underground utilities (as required), debris, and any existing uncertified fill or soils with deleterious materials (roots, construction debris, etc.). Excavations or depressions resulting from site clearing operations, or other existing excavations or depressions, should be restored with Engineered Fill in accordance with the recommendations of this report.

9.3.5 Surface vegetation (if present at the time of grading) should be removed by stripping to a sufficient depth to remove organic-rich topsoil. The upper 2 to 4 inches of the soils containing, vegetation, roots and other objectionable organic matter encountered at the time of grading should be stripped and removed from the surface. Deeper stripping may be required in localized areas. In addition, any existing concrete and asphalt materials shall be removed from areas of proposed improvements and stockpiled separately from excavated soil material. The stripped vegetation, will not be suitable for use as Engineered Fill or within the array area, within 5 feet of equipment pads, or within pavement areas. However, stripped topsoil may be stockpiled and reused in landscape or non-structural areas, or exported from the site.

9.3.6 Existing trees/vineyards to be removed should have their root systems removed and soils thoroughly cleared of root balls as well as isolated roots greater than 1-inch in diameter. The tree and root system removal may disturb a significant quantity of soil. Following tree removal, all loose and disturbed soil should be removed from the tree wells. Any areas or pockets of soft or loose soils, void spaces made by burrowing animals, undocumented fill, or other disturbed soil (i.e. soil disturbed by root removal) that are encountered, should be excavated to expose

approved firm native material. Care should be taken during site grading to mitigate (e.g. excavate and compact as engineered fill) all soil disturbed by demolition and tree removal activities. Upon removal of loose materials, resultant excavations should be backfilled with on-site soils compacted as engineered fill per this report. Prior to installation of solar improvements, the site should be proofrolled with a loaded water truck. Areas where depression by loaded water truck of ½ inch or greater occurs should be over-excavated to firm non-yielding soils and backfilled with compacted engineered fill.

9.3.7 Areas of proposed equipment pads should be prepared by excavation to a depth of 1 foot below the bottom of the equipment pad, 1 foot below preconstruction site grades, or to the depth required to remove disturbed soil from orchard removal activities, whichever is greater. The over-excavation limits of equipment pad areas should extend to a minimum of 3 feet beyond the equipment pad. The bottom of the over-excavation should be observed, tested, and/or probed and approved by SALEM. Upon approval, the bottom of excavation should be scarified an additional 12 inches, worked until uniform and free from large clods, moisture conditioned to above optimum moisture, and compacted to a minimum of 92 percent relative compaction (ASTM D1557).

Equipment pads should be supported on a minimum of 4 inches of Class 2 aggregate base over moisture conditioned engineered fill soils prepared in accordance with the recommendations above.

9.3.8 Areas of unpaved gravel covered access roads should be prepared by scarification of the upper 12 inches, moisture condition to slightly above optimum and compacted to a minimum of 95 percent relative compaction (ASTM D1557).

Unpaved gravel covered access roads subject to HS20 Fire Truck Loading should be capped with a minimum of 10 inches of Caltrans class 2 aggregate base material compacted to 95 percent relative compaction. To improve roadway stability and reduced required aggregate base section, the unpaved roadway may comprise of 6 inches of Class 2 Aggregate base over a Tensar NX750 geogrid, or equivalent, over compacted subgrade prepared as recommended above.

Unpaved gravel covered access roads subject to light vehicular traffic (not heavy HS20 Fire Truck loading) should be capped with a minimum of 6 inches of Caltrans class 2 aggregate base material compacted to 95 percent relative compaction.

9.3.9 Earthen -uncovered roadways intended to support infrequent lightly loaded vehicular traffic, should be prepared by over-excavation to a minimum of 12 inches below preconstruction site grade or 12 inches below finished roadways surface, whichever is greater. The horizontal limits of subgrade over-excavation should extend a minimum of 3 feet beyond the edge of the roadway. The bottom of excavation should be scarified 12 inches, moisture conditioned to slightly above optimum, and compacted the 92 percent relative compaction. The roadway may be backfilled with on-site material placed in controlled lifts of no greater than 6 to 8 inches thick, moisture conditioned to slightly above optimum and compacted to 95 percent relative compaction (ASTM D1557). The upper 12 inches below the surface should be compacted to 95 percent relative compaction.

Earthen -uncovered roadways intended to support heavy traffic, such as HS20 fire truck loading, should be prepared by over-excavation to a minimum of 18 inches below preconstruction site grade or 18 inches below finished roadways surface, whichever is greater. The horizontal limits of subgrade over-excavation should extend a minimum of 3 feet beyond the edge of the roadway. The bottom of excavation should be scarified 12 inches, moisture conditioned to slightly above optimum, and compacted the 92 percent relative compaction. The roadway may be backfilled with on-site material placed in controlled lifts of no greater than 6 to 8 inches thick, moisture conditioned to slightly above optimum and compacted to 95 percent relative compaction (ASTM D1557). The upper 18 inches below the surface should be compacted to 95 percent relative compaction.

9.3.10 An integral part of satisfactory fill placement is the stability of the placed lift of soil. If placed materials exhibit excessive instability as determined by a SALEM field representative, the lift will be considered unacceptable and shall be remedied prior to placement of additional fill material. Additional lifts should not be placed if the previous lift did not meet the required dry density or if soil conditions are not stable.

9.3.11 The most effective site preparation alternatives will depend on site conditions prior to grading. SALEM should evaluate site conditions and provide supplemental recommendations immediately prior to grading, if necessary.

9.3.12 We do not anticipate groundwater or seepage to adversely affect construction if conducted during the drier months of the year (typically summer and fall). However, groundwater and soil moisture conditions could be significantly different during the wet season (typically winter and spring) as surface soil becomes wet; perched groundwater conditions may develop. Grading during this time period will likely encounter wet materials resulting in possible excavation and fill placement difficulties. Project site stabilization consisting of placement of aggregate base and protecting exposed soils during construction should be performed. If construction occurs during wet season, it is anticipated the excavated soils and bottom of excavation will be overly saturated. The bottoms of excavation may be stabilized by additional over-excavation of 18 to 30 inches followed by placement of 1½ Class 2 aggregate base or open graded rock fully encapsulated with a geotextile fabric. The top of the stabilization rock should be firm and non-yielding and deeper than at least the depth of engineered fill recommended below foundations. If the construction schedule requires grading operations during the wet season, we can provide additional recommendations as conditions warrant.

9.3.13 Typical remedial measures include: discing and aerating the soil during dry weather; mixing the soil with dryer materials; removing and replacing the soil with an approved fill material or placement of crushed rocks or aggregate base material; or mixing the soil with an approved lime or cement product.

The most common remedial measure of stabilizing the bottom of the excavation due to wet soil condition is to reduce the moisture of the soil to near the optimum moisture content by having the subgrade soils scarified and aerated or mixed with drier soils prior to compacting. However, the drying process may require an extended period of time and delay the construction operation. To expedite the stabilizing process, crushed rock may be utilized for stabilization provided this method is approved by the owner for the cost purpose.

If the use of crushed rock is considered, it is recommended that the upper soft and wet soils be replaced by 12 to 30 inches of ¾-inch to 1-inch crushed rocks. The thickness of the rock layer

depends on the severity of the soil instability. The recommended 12 to 30 inches of crushed rock material will provide a stable platform. It is further recommended that lighter compaction equipment be utilized for compacting the crushed rock. All open graded crushed rock/gravel should be fully encapsulated with a geotextile fabric (such as Mirafi 140N) to minimize migration of soil particles into the voids of the crushed rock. Although it is not required, the use of geogrid (e.g. Tensar BX 1100, BX 1200 or TX 160) below the crushed rock will enhance stability and reduce the required thickness of crushed rock necessary for stabilization.

Our firm should be consulted prior to implementing remedial measures to provide appropriate recommendations.

9.4 Soil Excavation and Pile Driving Characteristics

9.4.1 Based on the soil conditions encountered in our borings, the onsite soils can be excavated with light to moderate effort using conventional excavation equipment. The near surface soils, and deeper soils encountered generally were noted to have relatively high N-values and may cause difficult driving conditions for small diameter driven piers. If damage to piles or refusal is encountered during installation, a small diameter pilot hole, with a diameter that is 25% less than that of the piles, may be drilled to allow for installation. Pile contractors bidding or planning for this project should review the soil descriptions in Section 6.1, and the boring logs provided in Appendix A of this report.

9.4.2 It is the responsibility of the contractor to ensure that all excavations and trenches are properly shored and maintained in accordance with applicable Occupational Safety and Health Administration (OSHA) rules and regulations to maintain safety and maintain the stability of adjacent existing improvements. Temporary excavations are further discussed in a later Section of this report.

9.4.3 Earthwork operations for equipment slabs may encounter moist and unstable soils which may require removal to a stable bottom (see Sections 9.3.10 and 9.3.11). In addition, native soils exposed as part of site grading operations should not be allowed to dry out and should be kept continuously moist prior to placement of aggregate base (equipment slabs) or subsequent fill.

9.5 Fill Materials

9.5.1 On-site soils are considered suitable for use as engineered fill provided they do not contain deleterious matter, organic material in excess of 5 percent by weight, or rock/cobble material larger than 3 inches in maximum dimension.

9.5.2 Import soil intended for use as engineered fill soil (if required) shall be well-graded, slightly cohesive silty sand or sandy silt. This material should be approved by the Engineer prior to use and should typically possess the soil characteristics summarized below in Table 9.5.2.

TABLE 9.5.2
IMPORT FILL REQUIREMENTS

Percent Passing 3-inch Sieve	100
Percent Passing No.4 Sieve	75-100
Percent Passing No 200 Sieve	15-40

Maximum Plasticity Index	10
Organic Content, Percent by Weight	Less than 3%
Maximum Expansion Index (ASTM D4829)	10

Prior to importing the Contractor should demonstrate to the Owner that the proposed import meets the requirements for import fill specified in this report. In addition, the material should be verified by the Contractor that the soils do not contain any environmental contaminates as regulated by local, state, or federal agencies, as applicable.

9.5.3 All engineered fill (including scarified ground surfaces and backfill) should be placed/compacted in lifts no thicker than will allow for adequate bonding and compaction (typically 6 to 8 inches in loose thickness).

9.5.4 On-Site Soils used as engineered fill soils should be moisture conditioned to between one (1) and four (4) percent above optimum moisture content and compacted to at least 92 percent relative compaction.

9.5.5 Import engineered fill, should be placed, moisture conditioned to slightly above optimum moisture content, and compacted to at least 92 percent relative compaction.

9.5.6 The preferred materials specified for engineered fill are suitable for most applications with the exception of exposure to erosion. Project site winterization and protection of exposed soils during the construction phase should be the sole responsibility of the Contractor, since they have complete control of the project site.

9.5.7 Environmental characteristics and corrosion potential of import soil materials should also be considered when selecting import fill.

9.5.8 Proposed import materials should be sampled, tested, and approved by SALEM prior to its transportation to the site.

9.5.9 Aggregate base material should meet the requirements of a Caltrans Class 2 Aggregate Base. The aggregate base material should conform to the requirements of Section 26 of the Standard Specifications for Class 2 material, ¾-inch or 1½-inches maximum size. The aggregate base material should be compacted to a minimum relative compaction of 95 percent based ASTM D1557. The aggregate base material should be spread in layers not exceeding 6 inches and each layer of aggregate material course should be tested and approved by the Soils Engineer prior to the placement of successive layers.

9.6 Seismic Design Criteria

9.6.1 For seismic design of the structures, and in accordance with the seismic provisions of the 2025 CBC, our recommended parameters are shown below. These parameters were determined from the USGS Seismic Design Geodatabase obtained via the State of California Office of Statewide Health Planning and Development (OSHPD) Seismic Design Map Tool Website (https://seismicmaps.org/) in accordance with the 2025 CBC. The Site Classes were determined

based on the requirements of ASCE 7-22, Chapters 20 and C20 (see Section 8.3). The value given for each seismic item below is the most critical value considering the listed site classes.

TABLE 9.6.1 - 2025 CBC SEISMIC DESIGN PARAMETERS

Seismic Item	Symbol	Value	ASCE 7-22 or 2025 CBC Reference
Site Coordinates (Datum = NAD 83)		38.1109° Lat -121.1885° Lon	
Site Class(es)	--	Default	ASCE 7-22 Table 20.2-1
Soil Profile Name(s)	--	Default	ASCE 7-22 Table 20.2-1
Risk Category	--	II	CBC 2025 Table 1604.5
Peak Ground Acceleration (adjusted for Site Class effects)	PGA_M	0.34 g	USGS Seismic Design Geodatabase
Seismic Design Category	SDC	D	ASCE 7 Table 11.6-1 & 2
Mapped Spectral Acceleration (Short period - 0.2 sec)	S_S	0.66 g	USGS Seismic Design Geodatabase
Mapped Spectral Acceleration (1.0 sec. period)	S_1	0.23 g	USGS Seismic Design Geodatabase
MCE Spectral Response Acceleration (Short period - 0.2 sec)	S_{MS}	0.97	USGS Seismic Design Geodatabase
MCE Spectral Response Acceleration (1.0 sec. period)	S_{M1}	0.63 g	USGS Seismic Design Geodatabase
Design Spectral Response Acceleration $S_{DS}=⅔S_{MS}$ (short period - 0.2 sec)	S_{DS}	0.65 g	ASCE 7 Equation 11.4-1
Design Spectral Response Acceleration $S_{D1}=⅔S_{M1}$ (1.0 sec. period)	S_{D1}	0.42 g	ASCE 7 Equation 11.4-2
End of Short-Term Transition Period (S_{D1}/S_{DS}), Seconds	T_S	0.643	ASCE 7-22, Section 11.4.5
Beginning of Short-Term Transition Period ($0.2[S_{D1}/S_{DS}]$), Seconds	T_0	0.129	ASCE 7-22, Section 11.4.5
Long Period Transition Period (seconds)	T_L	12	ASCE 7-22, Figure 22-14

9.6.2 Conformance to the seismic design criteria in the table above does not constitute any kind of guarantee or assurance that significant structural damage or ground failure will not occur if a large earthquake occurs. The primary goal of seismic design is to protect life, not to avoid all damage, since such design may be economically prohibitive.

9.7 Small Diameter Driven Pile Foundations

9.7.1 Solar arrays may be supported using driven steel piles (small diameter H-piles, C-Shape Piles, etc.). **Driven piles should have a minimum embedment depth of 6 feet BSG. The upper 1 foot should be neglected in design**.

Resistant soils may be encountered within the upper 5 feet BSG. If damage due to driving piles is encountered, a pilot hole may be drilled with a diameter that is 25% less than that of the piles used to support the solar panels.

9.7.2 The allowable downward load capacity of piles driven piles to at least 6 feet BSG may be designed based on an average allowable skin friction value of 150 pounds per square foot. The upper 1 foot below site grade should be neglected for design. For driven piles, an allowable end bearing capacity of 3,000 pounds per square foot may be considered for design. The effective area in calculating the pile capacity should be the outer perimeter dimensions of the pile section (e.g, for a W6 x 6 x 15, the effective side friction area should be 4 sides multiplied by 6" per foot of pile length embedded into the soil). An increase of one-third may be applied when using the alternate load combination in Section 1605 of the 2025 CBC that includes wind or earthquake loads.

9.7.3 Uplift loads can be resisted by piles using 60 percent of the allowable downward side friction plus the weight of the pile.

9.7.4 The total static settlement of the pile is not expected to exceed 1 inch. Differential static settlement between adjacent piles should be less than ½ inch.

9.7.5 The driven piles may be designed for an allowable lateral capacity of 400 pounds per square foot per foot of depth below the lowest adjacent grade to a maximum of 4,000 psf. Passive resistance in the upper portion of the driven piles, to a depth of 1 foot, should be neglected in design. The passive pressure for driven piles spaced at a minimum of three (3) pile diameters apart may be applied over a width equal to two (2) pile diameters. No other increases should be applied to the allowable passive pressure.

9.7.6 If desired, the driven piles may be designed using LPILE and the parameters presented in Table 9.7.6.

TABLE 9.7.6 - LPILE PARAMETERS

Depth, Feet (BSG)	L-Pile Soil Type	Effective Unit Weight (pcf)	Angle of Internal Friction (degrees)	Undrained Shear Strength, Cohesion, (psf)	Static Modulus of Subgrade Reaction, K (pci)	Soil Strain Ratio, ε_{50}
0 to 1 feet	Neglect	Neglect	Neglect	Neglect	Neglect	Neglect
1 to 6 feet	Stiff Clay	120	N/A	1,000	500	0.007
6 to 21 feet	Sand (Reese)	125	40	N/A	90	N/A

(1) The upper 1 foot should be neglected in design due to potential for disturbed soils.

9.8 Lightly Loaded Concrete Equipment Slabs-on-Grade

It is anticipated that construction may include lightly loaded equipment slabs on grade with total dead loads of up to 25 kips.

9.8.1 Slab thickness and reinforcement should be determined by the structural engineer based on the anticipated loading.

9.8.2 Equipment slabs supported on a minimum of 4 inches of aggregate base over subgrade soils prepared in accordance with the recommendations included in Section 9.3.7 of this report may be designed based on a modulus of subgrade reaction of 125 psi/inch, a maximum average allowable bearing capacity across the bottom of the slab of 500 pounds per square foot, and a maximum allowable soil bearing load of 1,000 pounds per square foot (static or short term loads). The maximum total static settlement should not exceed 1 inch with a differential static settlement not expected to exceed ½ inch over 30 feet for a uniformly loaded slab.

9.8.3 Equipment slabs should include a thickened edge extending to the bottom of the recommended aggregate base section.

9.8.4 The lateral resistance for equipment slabs prepared in accordance with the recommendations included in Section 9.3.7 of this report may be designed based on an allowable fluid passive pressure of 400 pounds per cubic foot. This value may be increased by 1/3 for wind and seismic loading. The bottom surface of concrete slabs may be designed based on an allowable coefficient of friction of 0.36.

9.8.5 Proper finishing and curing should be performed in accordance with the latest guidelines provided by the American Concrete Institute, Portland Cement Association, and ASTM.

9.8.6 The moisture content of the subgrade soils should be verified to be at or above optimum moisture content with a maximum of 4 percent above optimum moisture content prior to placement of the aggregate base section.

9.9 Temporary Excavations

9.9.1 We anticipate that the majority of the site soils will be classified as Cal-OSHA “Type C” soil when encountered in excavations during site development and construction. Excavation sloping, benching, the use of trench shields, and the placement of trench spoils should conform to the latest applicable Cal-OSHA standards. The contractor should have a Cal-OSHA-approved “competent person” onsite during excavation to evaluate trench conditions and make appropriate recommendations where necessary.

9.9.2 It is the contractor’s responsibility to provide sufficient and safe excavation support as well as protecting nearby utilities, structures, and other improvements which may be damaged by earth movements. All onsite excavations must be conducted in such a manner that potential surcharges from existing structures, construction equipment, and vehicle loads are resisted. The surcharge area may be defined by a 1:1 projection down and away from the bottom of an existing foundation or vehicle load.

9.9.3 Temporary excavations and slope faces should be protected from rainfall and erosion. Surface runoff should be directed away from excavations and slopes.

9.9.4 Open, unbraced excavations in undisturbed soils should be made according to the slopes presented in Table 9.9.4 below.

TABLE 9.9.4
RECOMMENDED EXCAVATION SLOPES

Depth of Excavation (ft)	Slope (Horizontal : Vertical)
0-5	1:1
5-10	1½:1

9.9.5 If, due to space limitation, excavations near existing structures are performed in a vertical position, braced shorings or shields may be used for supporting vertical excavations. Therefore, in order to comply with the local and state safety regulations, Shoring systems should be properly designed and installed in compliance with local and state safety regulations. A Specialty Shoring Contractor should be responsible for the design and installation of such a shoring system during construction.

9.9.6 Braced shorings should be designed for a maximum uniform pressure distribution of 30H, (where H is the depth of the excavation in feet). The foregoing does not include excess hydrostatic pressure or surcharge loading. Fifty percent of any surcharge load, such as construction equipment weight, should be added to the lateral load given herein. Equipment traffic should concurrently be limited to an area at least 3 feet from the shoring face or edge of the slope.

9.9.7 The excavation and shoring recommendations provided herein are based on soil characteristics derived from the borings within the area. Variations in soil conditions will likely be encountered during the excavations. SALEM should be afforded the opportunity to provide field review to evaluate the actual conditions and account for field condition variations not otherwise anticipated in the preparation of this recommendation. Slope height, slope inclination, or excavation depth should in no case exceed those specified in local, state, or federal safety regulation, (e.g. OSHA) standards for excavations, 29 CFR part 1926, or Assessor's regulations.

9.10 Underground Utilities

9.10.1 Underground utility trenches should be backfilled with properly compacted material. The material excavated from the trenches should be adequate for use as final backfill (above bedding and pipe zone backfill) provided it does not contain deleterious matter, vegetation or rock larger than 3 inches in maximum dimension. Trench backfill should be placed in loose lifts not exceeding 8 inches and compacted to at least 90 percent relative compaction at or above optimum moisture content. The upper 12 inches of trench backfill within asphalt or concrete paved areas shall be moisture conditioned to at or above optimum moisture content and compacted to at least 95 percent relative compaction.

9.10.2 Bedding and pipe zone backfill typically extends from the bottom of the trench excavations to approximately 12 inches above the crown of the pipe. Pipe bedding, haunches and initial fill extending to 1 foot above the pipe should consist of a clean well graded sand with 100 percent passing the #4 sieve, a maximum of 15 percent passing the #200 sieve, and a minimum sand equivalent of 20.

9.10.3 It is suggested that underground utilities crossing beneath new or existing structures be plugged at entry and exit locations to the new structures to prevent water migration. Trench plugs can

consist of on-site clay soils, if available, or sand cement slurry. The trench plugs should extend 2 feet beyond each side of individual perimeter foundations.

9.10.4 The contractor is responsible for removing all water-sensitive soils from the trench regardless of the backfill location and compaction requirements. The contractor should use appropriate equipment and methods to avoid damage to the utilities and/or structures during fill placement and compaction.

9.11 Pavement Design and Construction

9.11.1 New pavement subgrade soils should be prepared as recommended in Section 9.3 of this report.

9.11.2 The pavement design recommendations provided herein are based on the State of California Department of Transportation (CALTRANS) design manual and the results of the R-value testing performed. An R-value of 15 was utilized for design of project pavements.

9.11.3 The pavement design recommendations provided herein are based on a 20-year pavement life for traffic indices ranging from 4.0 to 8.0. Table 9.11.3 presents minimum sections recommended for flexible asphaltic concrete pavement design.

TABLE 9.11.3
ASPHALT CONCRETE PAVEMENT THICKNESSES

Traffic Index	Asphaltic Concrete, (inches)	Class 2 Aggregate Base, (inches)*	Compacted Subgrade, (inches)*
4.0	2.5	5.5	12.0
5.0	2.5	9.0	12.0
6.0	3.0	11.5	12.0
7.0	4.0	13.0	12.0
8.0	4.5	15.5	12.0

95% compaction based on ASTM D1557 Test Method

9.11.4 The following recommendations are for Portland Cement Concrete pavement sections.

TABLE 9.11.4
PORTLAND CEMENT CONCRETE PAVEMENT THICKNESSES

Traffic Index	Portland Cement Concrete, (inches)*	Class 2 Aggregate Base, (inches)**	Compacted Subgrade. (inches)**
4.0	6.0	4.0	12.0
5.0	6.0	4.0	12.0
6.0	6.0	4.0	12.0
7.0	6.5	4.0	12.0

8.0	6.5	4.0	12.0

**** Minimum Compressive Strength of 4,000 psi***
***** 95% compaction based on ASTM D1557 Test Method***

9.11.5 Asphalt concrete should conform to Section 39 of Caltrans' latest Standard Specifications for ½ inch Hot Mix Asphalt (HMA) Type A or B. Asphaltic concrete pavements should be placed and compacted in accordance with Caltrans Standard Specifications.

9.11.6 Excavations, depressions, or soft and pliant areas extending below planned finished subgrade levels should be cleaned to firm, undisturbed soil and backfilled with Engineered Fill. Any buried structures encountered during construction should be properly removed and backfilled.

9.11.7 Buried structures encountered during construction should be properly removed/rerouted and the resulting excavations backfilled. It is suspected that demolition activities of the existing pavement will disturb the upper soils. After demolition activities, it is recommended that disturbed soils within pavement areas be removed and/or compacted as engineered fill under the observation and testing of SALEM (see Section 9.3).

9.11.8 An integral part of satisfactory fill placement is the stability of the placed lift of soil. Prior to placement of aggregate base, the subgrade soils should be proof-rolled by a loaded water truck (or equivalent) to verify no deflections of greater than ½ inch occur. If placed materials exhibit excessive instability as determined by a SALEM field representative, the lift will be considered unacceptable and shall be remedied prior to placement of additional fill material. Additional lifts should not be placed if the previous lift did not meet the required dry density or if soil conditions are not stable.

9.11.9 A representative of our firm should be present during all site clearing and grading operations to test and observe earthwork construction. This testing and observation is an integral part of our service as acceptance of earthwork construction is dependent upon compaction of the material and the stability of the material.

9.12 Earthen Roadways and Gravel Covered Roadway Maintenance

9.12.1 Periodic inspection schedule of at least 2 times per year should be performed to identify areas of needed repair. Areas of erosion, rutting, pot holes, etc., should be repaired in order to maintain accessibility during ideal conditions.

9.12.2 Earthen uncovered and gravel covered roadways should be crowned and/or include a cross slope of at least 4 percent (1/2 inch every foot), to promote positive drainage. Crown/cross slopes should not exceed 6 percent.

9.12.3 Surface runoff should be directed away from the roadway to prevent ponding of water within 3 feet horizontally of the edge of the earthen road. To prevent erosion, flat bottom ditches should be constructed along the edge of the roadways. The slope from edge roadway to bottom of the drainage ditch should not exceed 3H to 1V.

9.12.4 It is our understanding it is desired to construct these roadways to be relatively flat with grades matching adjacent site grades (1 percent cross slope). Roadways graded to match adjacent elevations (i.e. without crown or cross slope as recommended above) and without drainage ditches to direct runoff away from edges of roadways, will result in an increased potential for distress due to erosion, structural damage, potholes, standing water, etc. These conditions will result in an increased potential for reduced accessibility to vehicular traffic (including

emergency vehicles) until such conditions are repaired. If temporary access restrictions are not acceptable, the roadways should be graded and drained in accordance with the recommendations above. The Owner should acknowledge in writing that the risk for reduced accessibility is acceptable.

9.12.5 Earthen roadways and gravel covered roadways should be periodically inspected at least 2 times a year or more. Increased inspection frequency may be required in the event of higher traffic volumes than anticipated and/or severe wet weather events (such as flash floods). Drainage ditches should be properly maintained to be free of debris and obstructions. Areas with minor repairs (soft yielding soils, potholes, erosion, etc.) should included removal of loose soft soils. The resultant bottom of excavation should be scarified, moisture conditioned to slightly above optimum and compacted as engineered fill. The resultant excavation may be backfilled with on-site soils compacted to 95 percent relative compaction.

9.12.6 Periodic re-grading/re-shaping of the surface to remove corrugation/ wash board features should be anticipated. The crown shape should be maintained to promote positive drainage.

10. PLAN REVIEW, CONSTRUCTION OBSERVATION AND TESTING

10.1 Plan and Specification Review

10.1.1 SALEM should be retained to review the project plans and specifications prior to final design submittal to assess whether our recommendations have been properly implemented and evaluate if additional analysis and/or recommendations are required.

10.2 Construction Observation and Testing Services

10.2.1 The recommendations provided in this report are based on the assumption that we will continue as Geotechnical Engineer of Record throughout the construction phase. It is important to maintain continuity of geotechnical interpretation and confirm that field conditions encountered are similar to those anticipated during design. If we are not retained for these services, we cannot assume any responsibility for others interpretation of our recommendations, and therefore the future performance of the project.

10.2.2 SALEM should be retained for construction testing and inspections, and should be present at the site during site preparation to observe site clearing, preparation of exposed surfaces after clearing, and placement, treatment and compaction of fill material. SALEM's observations should be supplemented with periodic compaction tests to establish substantial conformance with these recommendations. Moisture content of footings and slab subgrade should be tested immediately prior to concrete placement.

10.2.3 SALEM should be contacted to observe conventional foundation excavations (if any) prior to placement of reinforcing steel or concrete to assess whether the actual bearing conditions are compatible with the conditions anticipated during the preparation of this report.

11. LIMITATIONS AND CHANGED CONDITIONS

The analyses and recommendations submitted in this report are based upon the data obtained from the borings excavated at the approximate locations shown on the Site Plan, Figure No. 2. The report does not reflect variations which may occur between borings. The nature and extent of such variations may not

become evident until construction is initiated. If variations then appear during construction, a re-evaluation of the recommendations of this report will be necessary after performing on-site observations during the excavation period and noting the characteristics of such variations. The findings and recommendations presented in this report are valid as of the present and for the proposed construction.

If site conditions change due to natural processes or human intervention on the property or adjacent to the site, or changes occur in the nature or design of the project, or if there is a substantial time lapse between the submission of this report and the start of the work at the site, the conclusions and recommendations contained in our report will not be considered valid unless the changes are reviewed by SALEM and the conclusions of our report are modified or verified in writing. The validity of the recommendations contained in this report is also dependent upon an adequate testing and observations program during the construction phase. Our firm assumes no responsibility for construction compliance with the design concepts or recommendations unless we have been retained to perform the on-site testing and review during construction. SALEM has prepared this report for the exclusive use of the owner and design consultants.

SALEM does not practice in the field of corrosion engineering. It is recommended that a qualified corrosion engineer be consulted regarding protection of buried steel or ductile iron piping and conduit or, at a minimum, that manufacturer's recommendations for corrosion protection be closely followed. Further, a corrosion engineer should be consulted to incorporate the necessary precautions to avoid premature corrosion of concrete slabs and foundations in direct contact with native soil. The importation of soil and or aggregate materials to the site should be screened to determine the potential for corrosion to concrete and buried metal piping.

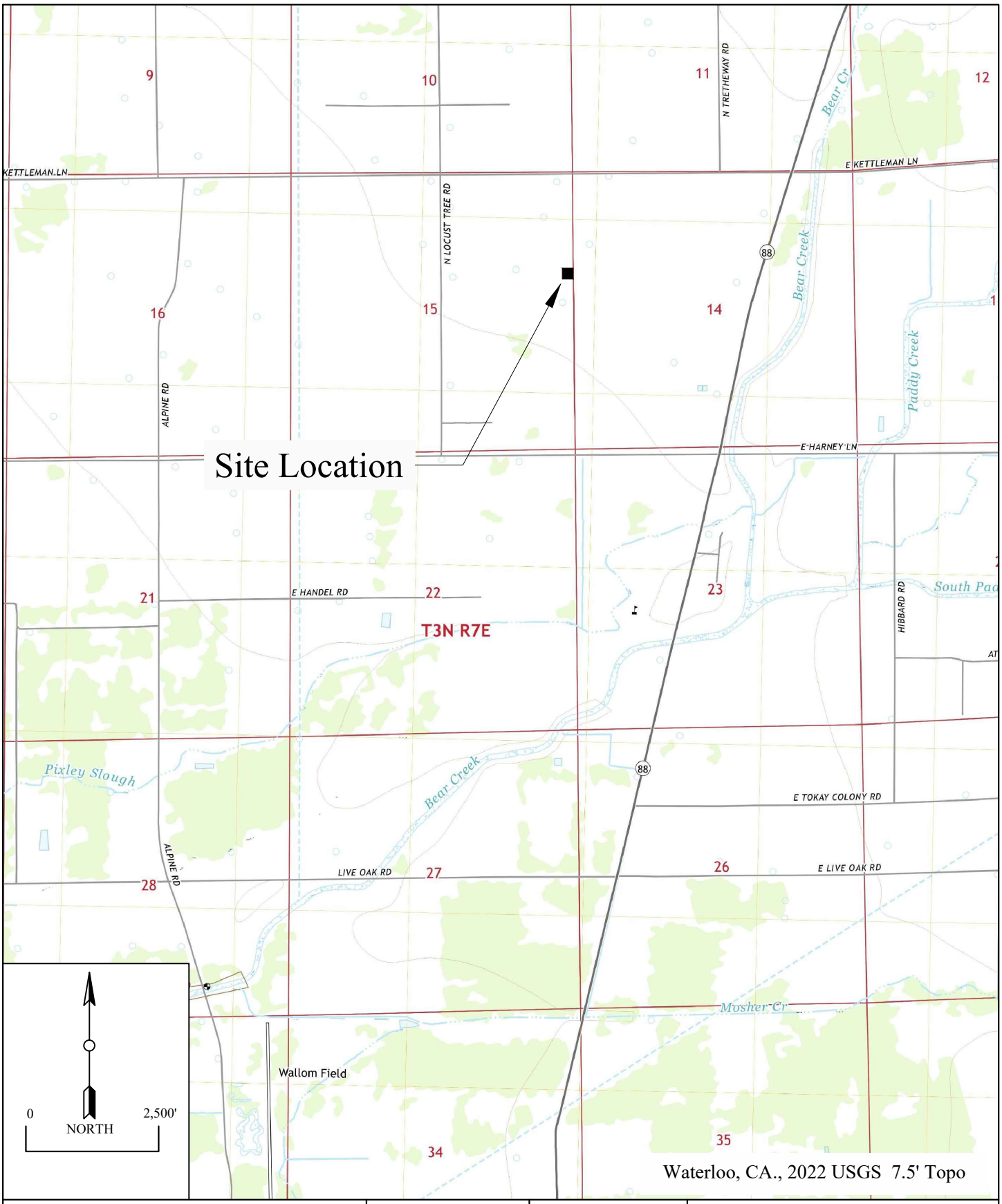
This report has been prepared in accordance with generally accepted geotechnical engineering practices in the area. No other warranties, either express or implied, are made as to the professional advice provided under the terms of our agreement and included in this report.

If you have any questions, or if we may be of further assistance, please do not hesitate to contact our office at (559) 271-9700.

Respectfully Submitted,
SALEM ENGINEERING GROUP, INC.

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R. Sammy Salem, PE, GE
Principal Managing Engineer
RCE 52762 / RGE 2549



Waterloo, CA., 2022 USGS 7.5' Topo

VICINITY MAP

GEOTECHNICAL ENGINEERING INVESTIGATION 4,824.06kW SOLAR ARRAY SYSTEM: N. LOCUST TREE ROAD SOLAR E KETTLEMAN LANE SITE COORDINATES: (38.110976, -121.188538) LODI, CALIFORNIA	SCALE: 1" = 2,500 '	DATE: MAY 2026
	DRAWN BY: VT	APPROVED BY: DL
	PROJECT NO. 4-226-0318	FIGURE NO. 1

SALEM engineering group, inc.



SITE PLAN	SCALE: 1" = 250'	DATE: JUNE 2026
GEOTECHNICAL ENGINEERING INVESTIGATION Proposed 4,824.06 kW DC Ground Mount Solar Array System N Locust Tree Road Solar E Kettleman Lane - Site Coordinate: (38.110976°, -121.188538°) Lodi, California	DRAWN BY: CR	APPROVED BY: DL
	PROJECT NO. 4-226-0318	FIGURE NO. 2

SALEM
engineering group, inc.

APPENDIX

A

APPENDIX A
FIELD EXPLORATION

Our field exploration consisted of site surface reconnaissance and subsurface exploration. The results of our site surface reconnaissance are included in Section 2 of this report. The exploratory test borings (B-1 through B-12) were drilled on May 6, 2026, within the proposed solar array area, at the approximate locations shown on the Site Plan (Figure No. 2). The test borings were drilled to depths of about 10 to 21½ feet below site grade (BSG), with 6-5/8 inch diameter hollow-stem auger rotated by a truck-mounted CME-55 drill rig and 4 inch diameter hand auger equipment were also utilized during our subsurface exploration. The locations of the test borings were determined by measuring from features shown on the array location plan, provided to us. Hence, accuracy can be implied only to the degree that this method warrants.

Sampling was accomplished by driving a 2-inch Standard Penetration Test (SPT) sampler and/or a 3-inch outside diameter Modified California Sampler (MCS) 18 inches into the soil. Penetration and/or Resistance tests were performed at selected depths. The resistance/N-Value obtained from driving was recorded based on the number of blows required to penetrate the last 12 inches. The driving energy was provided by an auto-trip hammer weighing 140 pounds, falling 30 inches. Relatively undisturbed MCS soil samples were obtained while performing this test. Bag samples of the disturbed soil were obtained from the SPT samples and auger cuttings. All samples were returned to our Fresno laboratory for evaluation. The test borings were backfilled with excavated soil upon completion of drilling and sampling.

Subsurface conditions encountered in the test borings were visually examined, classified and logged in general accordance with the American Society for Testing and Materials (ASTM) Practice for Description and Identification of Soils (Visual-Manual Procedure D2488). This system uses the Unified Soil Classification System (USCS) for soil designations.

The logs depict soil and geologic conditions encountered and depths at which samples were obtained. The logs also include our interpretation of the conditions between sampling intervals. Therefore, the logs contain both observed and interpreted data. We determined the lines designating the interface between soil materials on the logs using visual observations, excavation characteristics and other factors. The transition between materials may be abrupt or gradual. Where applicable, the field logs were revised based on subsequent laboratory testing.

Test Boring: B-1 **Page** 1 **Of:** 1

SALEM engineering group, inc.

Project Number: 4-226-0318

Date: 05/06/2026

Client: Renewable Properties, LLC

Project: 4,824.06kW Solar Array System: N Locust Tree Road Solar

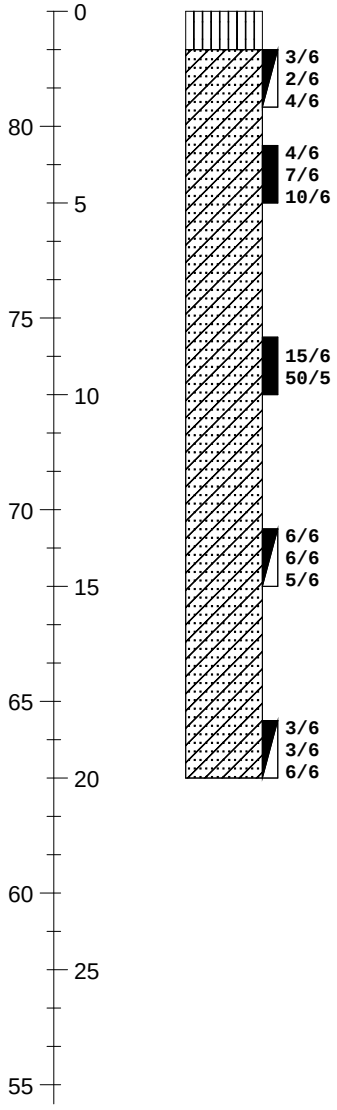
Location: E. Kettleman Lane (38.110976, -121.188538), Lodi, CA.

Drilled By: Salem Engineering Group, Inc. **Logged By:** CR

Drill Type: CME-45 **Elevation:** 83-ft. AMSL

Auger Type: 6in. Solid Flight Auger **Initial Depth to Groundwater:** N/A

Hammer Type: Automatic Trip - 140lbs./30in. **Final Depth to Groundwater:** N/A



ELEVATION/ DEPTH (feet)	USCS	Soil Description	N-Values blows/ft.	Moisture Content %	Dry Density, PCF	Remarks
0	ML	Sandy SILT; brown, dry, non-plastic.				
80	SC	Clayey SAND; loose, dark brown, moist, fine to medium grained.	6	11.1	--	Bulk 1-5': -#200 = 50% SAND = 50% R-Value = 44 EI = 7
5		Medium dense.	17	10.9	122.5	ø = 44° c'= 47 psf
75		Very dense, cemented.	>50	9.7	119.8	-#200 = 49% SAND = 51%
10						
70	SC	Medium dense, reddish brown.	11	11.5	--	
15						
65		Loose.	9	9.5		
20		End of boring at 20ft. BSG.				
60						
25						
55						

Notes:

Figure Number A-1

SALEM engineering group, inc.

Test Boring: B-2 **Page** 1 **Of:** 1

Project Number: 4-226-0318

Date: 05/06/2026

Client: Renewable Properties, LLC

Project: 4,824.06kW Solar Array System: N Locust Tree Road Solar

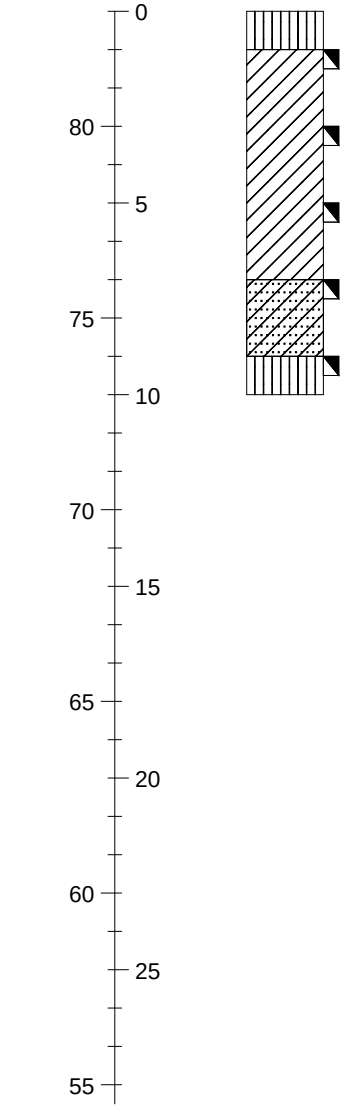
Location: E. Kettleman Lane (38.110976, -121.188538), Lodi, CA.

Drilled By: Salem Engineering Group, Inc. **Logged By:** CR

Drill Type: N/A **Elevation:** 83-ft. AMSL

Auger Type: 4in. Hand Auger **Initial Depth to Groundwater:** N/A

Hammer Type: N/A **Final Depth to Groundwater:** N/A



ELEVATION/ DEPTH (feet)	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	Soil Description	N-Values blows/ft.	Moisture Content %	Dry Density, PCF	Remarks
		ML	Sandy SILT; brown, dry to damp, non-plastic.		13.2	--	
		CL	Sandy Lean CLAY; brown, moist, medium to high plasticity. Reddish brown.		12.2	--	-#200 = 54% SAND = 46%
			Brown, trace sand.		9.3	--	
		SC	Clayey SAND; reddish brown, moist, fine to medium grained.		9.2	--	-#200 = 49% SAND = 51%
		ML	SILT; brown, damp to moist, non-plastic, cemented.		10.5	--	
			End of hand auger sampling at 10ft. BSG				

Notes:

Figure Number A-2

SALEM engineering group, inc.

Test Boring: B-3 **Page** 1 **Of:** 1

Project Number: 4-226-0318

Date: 05/06/2026

Client: Renewable Properties, LLC

Project: 4,824.06kW Solar Array System: N Locust Tree Road Solar

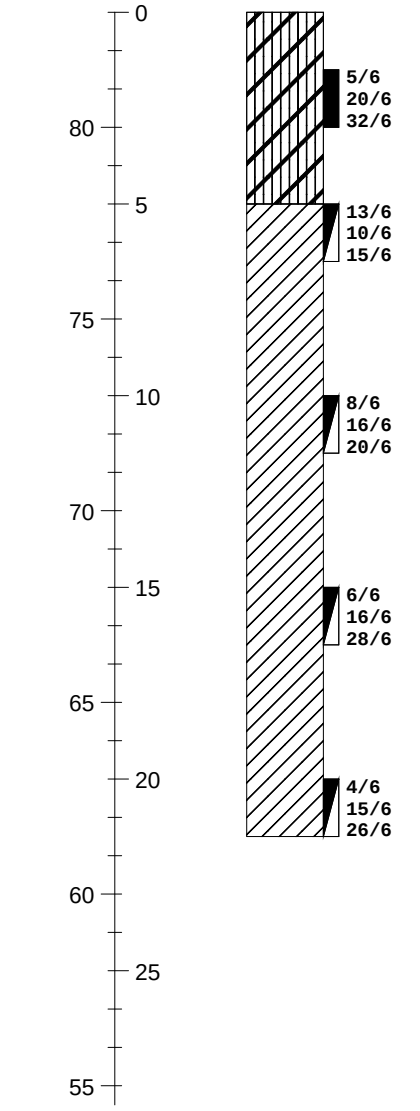
Location: E. Kettleman Lane (38.110976, -121.188538), Lodi, CA.

Drilled By: Salem Engineering Group, Inc. **Logged By:** CR

Drill Type: CME-45 **Elevation:** 83-ft. AMSL

Auger Type: 6in. Solid Flight Auger **Initial Depth to Groundwater:** N/A

Hammer Type: Automatic Trip - 140lbs./30in. **Final Depth to Groundwater:** N/A



ELEVATION/ DEPTH (feet)	USCS	Soil Description	N-Values blows/ft.	Moisture Content %	Dry Density, PCF	Remarks
0	CL-ML	Sandy Silty CLAY; brown, dry, low plasticity. Hard, orangish brown.	>50	14.2	105.6	Bulk 1-5': -#200 = 58% SAND = 41% +#4 = 1% PI = 6 LL = 21
5	CL	Sandy Lean CLAY; very stiff, brown to orangish brown, moist, medium plasticity.	25	13.8	--	
10		Hard, brown.	36	12.1	--	
15		Low to medium plasticity.	44	13.6	--	
20		Light brown, very moist, high plasticity.	41	34.6	--	
		End of boring at 21.5ft. BSG				

Notes:

Figure Number A-3

Test Boring: B-4 **Page** 1 **Of:** 1

Project Number: 4-226-0318

Date: 05/06/2026

Client: Renewable Properties, LLC

Project: 4,824.06kW Solar Array System: N Locust Tree Road Solar

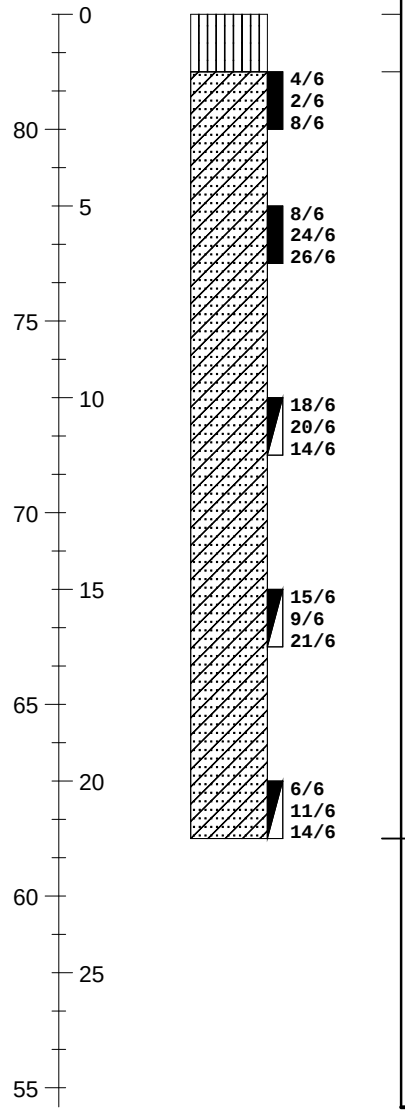
Location: E. Kettleman Lane (38.110976, -121.188538), Lodi, CA.

Drilled By: Salem Engineering Group, Inc. **Logged By:** CR

Drill Type: CME-45 **Elevation:** 83-ft. AMSL

Auger Type: 6in. Solid Flight Auger **Initial Depth to Groundwater:** N/A

Hammer Type: Automatic Trip - 140lbs./30in. **Final Depth to Groundwater:** N/A



ELEVATION/ DEPTH (feet)	USCS	Soil Description	N-Values blows/ft.	Moisture Content %	Dry Density, PCF	Remarks
0	ML	Sandy SILT; brown, dry, non-plastic.				
80	SC	Clayey SAND; loose, brown, moist, fine to medium grained.	10	11.9	118.0	ø = 42° c'= 0 psf
5		Dense.	50	12.3	115.1	
75						
10		Cemented.	34	10.0	--	
70						
15		Medium dense, light brown, fine grained.	30	8.8	--	
65						
20			25	5.9	--	
60		End of boring at 21.5ft. BSG				
25						
55						

Notes:

Figure Number A-4

SALEM engineering group, inc.

Test Boring: B-5 **Page** 1 **Of:** 1

Project Number: 4-226-0318

Date: 05/06/2026

Client: Renewable Properties, LLC

Project: 4,824.06kW Solar Array System: N Locust Tree Road Solar

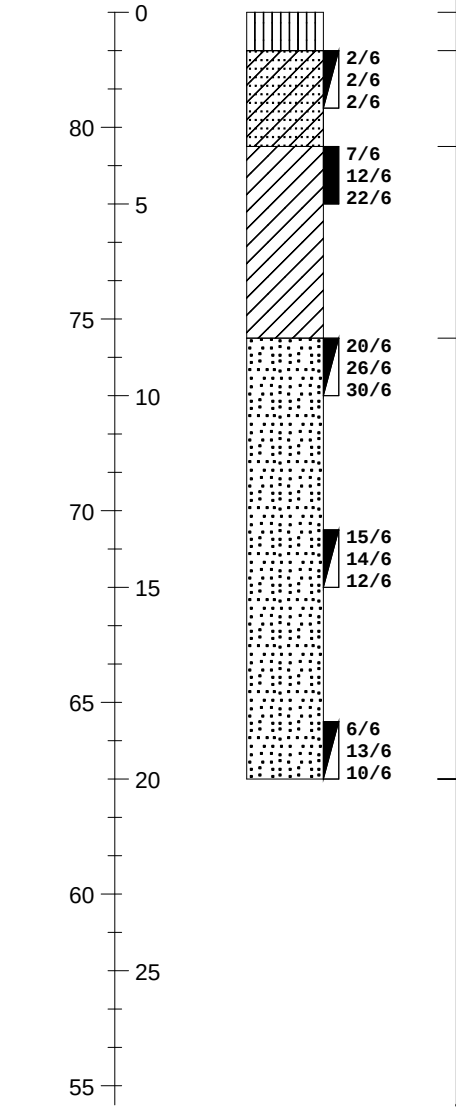
Location: E. Kettleman Lane (38.110976, -121.188538), Lodi, CA.

Drilled By: Salem Engineering Group, Inc. **Logged By:** CR

Drill Type: CME-45 **Elevation:** 83-ft. AMSL

Auger Type: 6in. Solid Flight Auger **Initial Depth to Groundwater:** N/A

Hammer Type: Automatic Trip - 140lbs./30in. **Final Depth to Groundwater:** N/A



ELEVATION/ DEPTH (feet)	USCS	Soil Description	N-Values blows/ft.	Moisture Content %	Dry Density, PCF	Remarks
	ML	Sandy SILT; brown, dary to damp, non-plastic.				
	SC	Clayey SAND; loose, brown, very moist, fine to medium grained.	4	15.1	--	-#200 = 48% SAND = 52%
	CL	Sandy Lean CLAY; very stiff, orange to brown, very moist, low to medium plasticity.	34	18.5	113.4	
	SP	Poorly Graded SAND; very dense, light to orangish brown, damp, fine grained.	>50	3.0	--	
		Medium dense.	26	3.0	--	
		With silt, moist.	23	10.7	--	
		End of boring at 20ft. BSG				

Notes:

Figure Number A-5

SALEM engineering group, inc.

Test Boring: B-6 **Page** 1 **Of:** 1

Project Number: 4-226-0318

Date: 05/06/2026

Client: Renewable Properties, LLC

Project: 4,824.06kW Solar Array System: N Locust Tree Road Solar

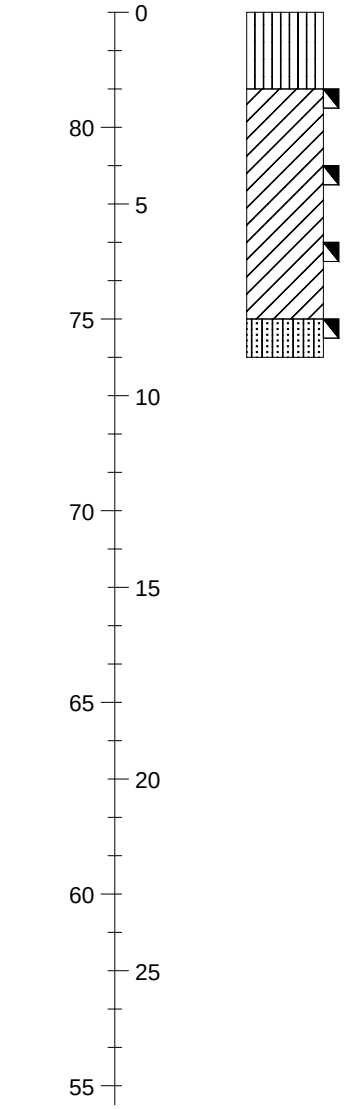
Location: E. Kettleman Lane (38.110976, -121.188538), Lodi, CA.

Drilled By: Salem Engineering Group, Inc. **Logged By:** CR

Drill Type: N/A **Elevation:** 83-ft. AMSL

Auger Type: 4in. Hand Auger **Initial Depth to Groundwater:** N/A

Hammer Type: N/A **Final Depth to Groundwater:** N/A



ELEVATION/ DEPTH (feet)	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	Soil Description	N-Values blows/ft.	Moisture Content %	Dry Density, PCF	Remarks
		ML	Sandy SILT; brown, dry to damp, non-plastic.				
		CL	Sandy Lean CLAY; brown, moist, high plasticity.		12.7	--	
					12.2	--	-#200 = 53% SAND = 47%
					11.5	--	
		SM	Silty SAND; orangish brown, damp, fine grained.		10.6	--	-#200 = 46% SAND = 54%
			End of hand auger sampling at 9ft. BSG				

Notes:

Figure Number A-6

Test Boring: B-7 **Page** 1 **Of:** 1

SALEM engineering group, inc.

Project Number: 4-226-0318

Date: 05/06/2026

Client: Renewable Properties, LLC

Project: 4,824.06kW Solar Array System: N Locust Tree Road Solar

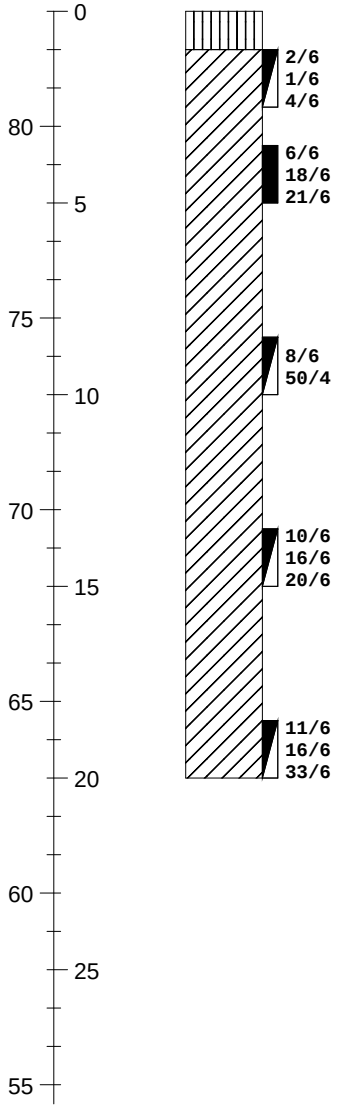
Location: E. Kettleman Lane (38.110976, -121.188538), Lodi, CA.

Drilled By: Salem Engineering Group, Inc. **Logged By:** CR

Drill Type: CME-45 **Elevation:** 83-ft. AMSL

Auger Type: 6in. Solid Flight Auger **Initial Depth to Groundwater:** N/A

Hammer Type: Automatic Trip - 140lbs./30in. **Final Depth to Groundwater:** N/A



ELEVATION/ DEPTH (feet)	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	Soil Description	N-Values blows/ft.	Moisture Content %	Dry Density, PCF	Remarks
		ML	Sandy SILT; brown, dry, non-plastic.				
		CL	Sandy Lean CLAY; firm, brown, very moist, low to medium plasticity.	5	13.1	--	
			Very stiff, reddish brown, moist, medium plasticity.	39	11.9	121.2	ø = 45° c'= 0 psf
			Hard, brown, high plasticity, trace sand.	>50	10.2	--	
			Medium plasticity.	36	15.4	--	
			Low plasticity.	49	12.0	--	
			End of boring at 20ft. BSG				

Notes:

Figure Number A-7

SALEM engineering group, inc.

Test Boring: B-8 **Page** 1 **Of:** 1

Project Number: 4-226-0318

Date: 05/06/2026

Client: Renewable Properties, LLC

Project: 4,824.06kW Solar Array System: N Locust Tree Road Solar

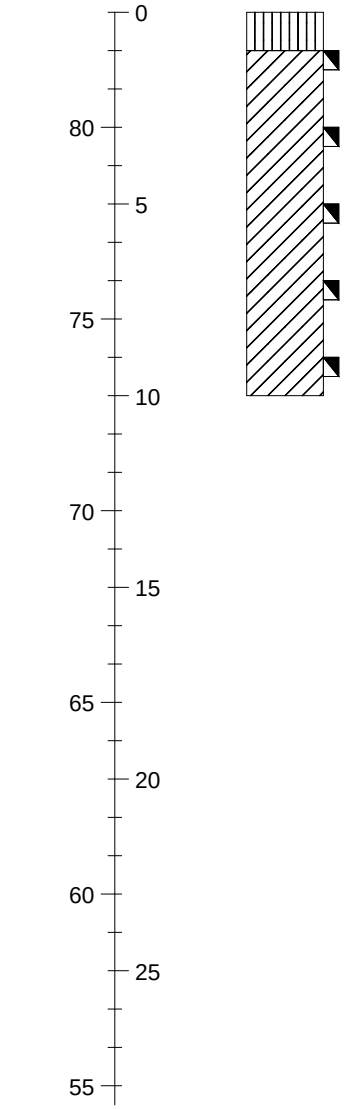
Location: E. Kettleman Lane (38.110976, -121.188538), Lodi, CA.

Drilled By: Salem Engineering Group, Inc. **Logged By:** CR

Drill Type: N/A **Elevation:** 83-ft. AMSL

Auger Type: 4in. Hand Auger **Initial Depth to Groundwater:** N/A

Hammer Type: N/A **Final Depth to Groundwater:** N/A



ELEVATION/ DEPTH (feet)	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	Soil Description	N-Values blows/ft.	Moisture Content %	Dry Density, PCF	Remarks
		ML	Sandy SILT; brown, dry to damp, non-plastic.		11.5	--	Bulk 1-5': -#200 = 51% SAND = 48% +#4 = 1% PI = 6 LL = 21
		CL	Sandy Lean CLAY; dark brown, moist, high plasticity.		12.0	--	
			Reddish brown, damp, cemented, trace sand.		11.4	--	
			Brown.		9.7	--	
					9.6	--	
			End of hand auger sampling at 10ft. BSG.				

Notes:

Figure Number A-8

SALEM engineering group, inc.

Test Boring: B-9 **Page** 1 **Of:** 1

Project Number: 4-226-0318

Date: 05/06/2026

Client: Renewable Properties, LLC

Project: 4,824.06kW Solar Array System: N Locust Tree Road Solar

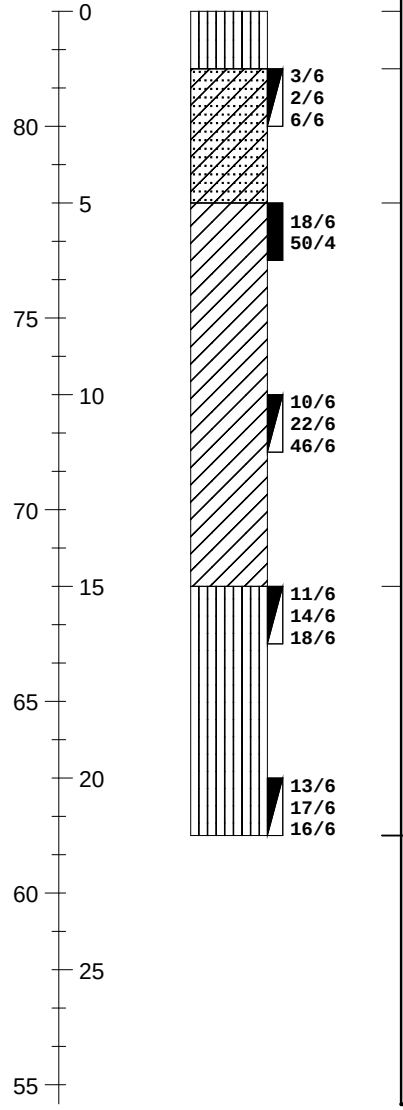
Location: E. Kettleman Lane (38.110976, -121.188538), Lodi, CA.

Drilled By: Salem Engineering Group, Inc. **Logged By:** CR

Drill Type: CME-45 **Elevation:** 83-ft. AMSL

Auger Type: 6in. Solid Flight Auger **Initial Depth to Groundwater:** N/A

Hammer Type: Automatic Trip - 140lbs./30in. **Final Depth to Groundwater:** N/A



ELEVATION/ DEPTH (feet)	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	Soil Description	N-Values blows/ft.	Moisture Content %	Dry Density, PCF	Remarks
		ML	Sandy SILT; brown, dry, non-plastic.				
		SC	Clayey SAND; loose, brown, very moist to wet, fine to medium grained.	8	13.5	--	
		CL	Sandy Lean CLAY; hard, orange brown, damp, medium plasticity.	>50	10.3	120.1	ø = 44° c'= 0 psf
			Brown, low to medium plasticity.	48	10.6	--	
		ML	Sandy SILT; hard, light brown, damp to moist, non-plastic.	32	9.7	--	
			Very stiff.	30	6.4	--	
			End of boring at 21.5ft.BSG				

Notes:

Figure Number A-9

Test Boring: B-10 **Page** 1 **Of:** 1

Project Number: 4-226-0318

Date: 05/06/2026

Client: Renewable Properties, LLC

Project: 4,824.06kW Solar Array System: N Locust Tree Road Solar

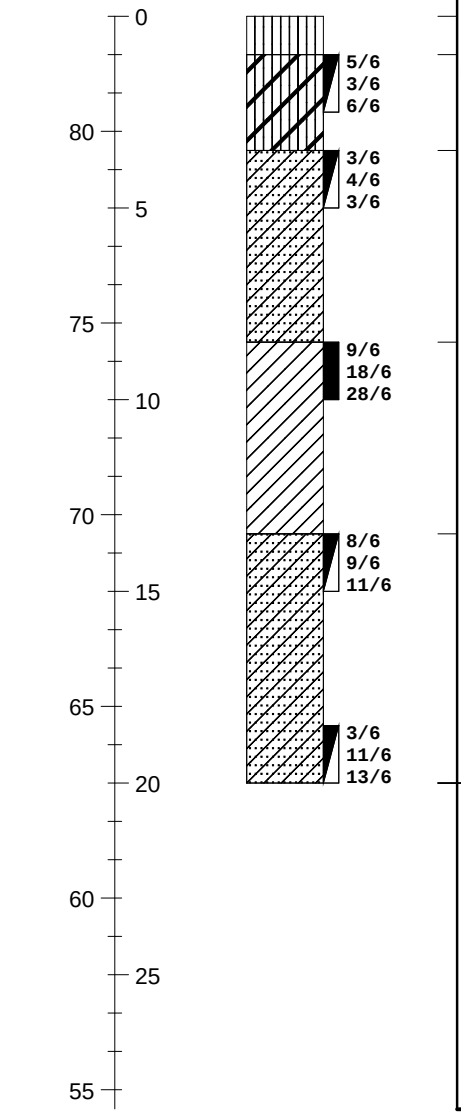
Location: E. Kettleman Lane (38.110976, -121.188538), Lodi, CA.

Drilled By: Salem Engineering Group, Inc. **Logged By:** CR

Drill Type: CME-45 **Elevation:** 83-ft. AMSL

Auger Type: 6in. Solid Flight Auger **Initial Depth to Groundwater:** N/A

Hammer Type: Automatic Trip - 140lbs./30in. **Final Depth to Groundwater:** N/A



ELEVATION/ DEPTH (feet)	USCS	Soil Description	N-Values blows/ft.	Moisture Content %	Dry Density, PCF	Remarks
	ML	Sandy SILT; brown, dry, non-plastic.				
	CL-ML	Sandy Silty CLAY; stiff, brown, moist, low plasticity.	9	8.9	--	Bulk 1-5': R-Value = 15
	SC	Clayey SAND; loose, brown, moist, fine to medium grained.	7	11.0	--	
	CL	Sandy Lean CLAY; hard, brown to orange, moist, medium plasticity.	46	10.8	125.2	
	SC	Clayey SAND; medium dense, orange brown, moist, fine to medium grained.	20	10.7	--	
			24	10.1	--	
		End of boring at 20ft. BSG				

Notes:

Figure Number A-10

Test Boring: B-11 **Page** 1 **Of:** 1

Project Number: 4-226-0318

Date: 05/06/2026

Client: Renewable Properties, LLC

Project: 4,824.06kW Solar Array System: N Locust Tree Road Solar

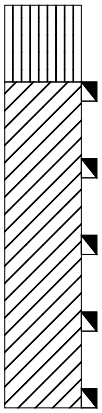
Location: E. Kettleman Lane (38.110976, -121.188538), Lodi, CA.

Drilled By: Salem Engineering Group, Inc. **Logged By:** CR

Drill Type: N/A **Elevation:** 83-ft. AMSL

Auger Type: 4in. Hand Auger **Initial Depth to Groundwater:** N/A

Hammer Type: N/A **Final Depth to Groundwater:** N/A

ELEVATION/ DEPTH (feet)	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	Soil Description	N-Values blows/ft.	Moisture Content %	Dry Density, PCF	Remarks
0 / 83		ML	Sandy SILT; brown, dry, non-pllsatic.				
		CL	Sandy Lean CLAY; dark brown, moist, medium to high plasticity.		12.2	--	-#200 = 59% SAND = 41%
5 / 80					10.6	--	
			Reddish, high plasticity.		11.2	--	-#200 = 56% SAND = 43% +#4 = 1%
10 / 75			Some cementation.		12.0	--	
					9.8	--	
			End of hand auger sampling at 10.5ft. BSG				
15 / 70							
20 / 65							
25 / 60							
55							

Notes:

Figure Number A-11

SALEM engineering group, inc.

Test Boring: B-12 **Page** 1 **Of:** 1

Project Number: 4-226-0318

Date: 05/06/2026

Client: Renewable Properties, LLC

Project: 4,824.06kW Solar Array System: N Locust Tree Road Solar

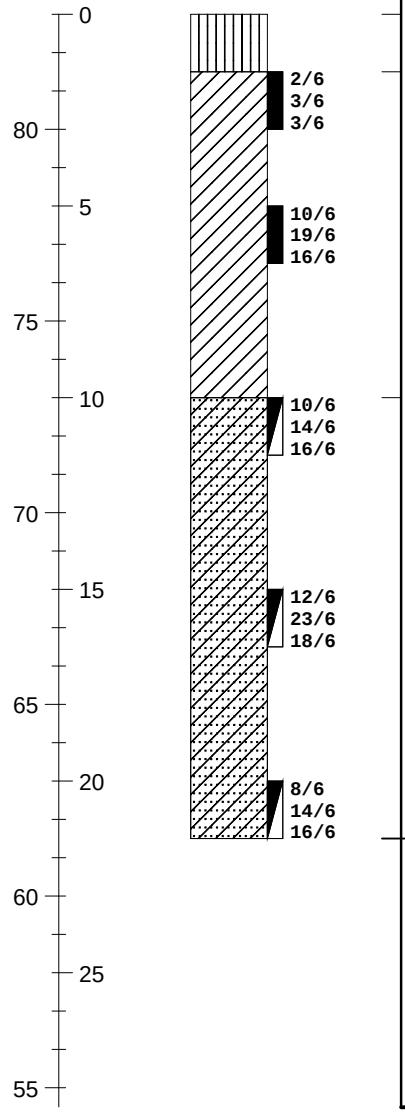
Location: E. Kettleman Lane (38.110976, -121.188538), Lodi, CA.

Drilled By: Salem Engineering Group, Inc. **Logged By:** CR

Drill Type: CME-45 **Elevation:** 83-ft. AMSL

Auger Type: 6in. Solid Flight Auger **Initial Depth to Groundwater:** N/A

Hammer Type: Automatic Trip - 140lbs./30in. **Final Depth to Groundwater:** N/A



ELEVATION/ DEPTH (feet)	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	Soil Description	N-Values blows/ft.	Moisture Content %	Dry Density, PCF	Remarks
		ML	Sandy SILT; brown, dry, non-plsatic.				
		CL	Sandy Lean CLAY; firm, brown, moist to very moist, medium to high plasticity.	6	13.2	--	
			Very stiff, orange brown, moist, high plasticity.	35	10.6	124.7	-#200 = 53% SAND = 47%
		SC	Clayey SAND; medium dense, orange brown, moist, fine to medium grained.	30	8.3	--	
			Dense.	41	11.5	--	
			Medium dense.	30	7.7	--	
			End of boring at 21.5ft. BSG				

Notes:

Figure Number A-12

KEY TO SYMBOLS

Symbol Description

Strata symbols



Silt



Clayey Sand



Lean Clay



Silty low plasticity clay



Poorly graded sand



Silty Sand

Soil Samplers



Standard penetration test



California sampler



Bulk/Grab sample

Notes:

Granular Soils
Blows Per Foot (Uncorrected)

	MCS	SPT
Very loose	<5	<4
Loose	5-15	4-10
Medium dense	16-40	11-30
Dense	41-65	31-50
Very dense	>65	>50

Cohesive Soils
Blows Per Foot (Uncorrected)

	MCS	SPT
Very soft	<3	<2
Soft	3-5	2-4
Firm	6-10	5-8
Stiff	11-20	9-15
Very Stiff	21-40	16-30
Hard	>40	>30

MCS = Modified California Sampler
SPT = Standard Penetration Test Sampler

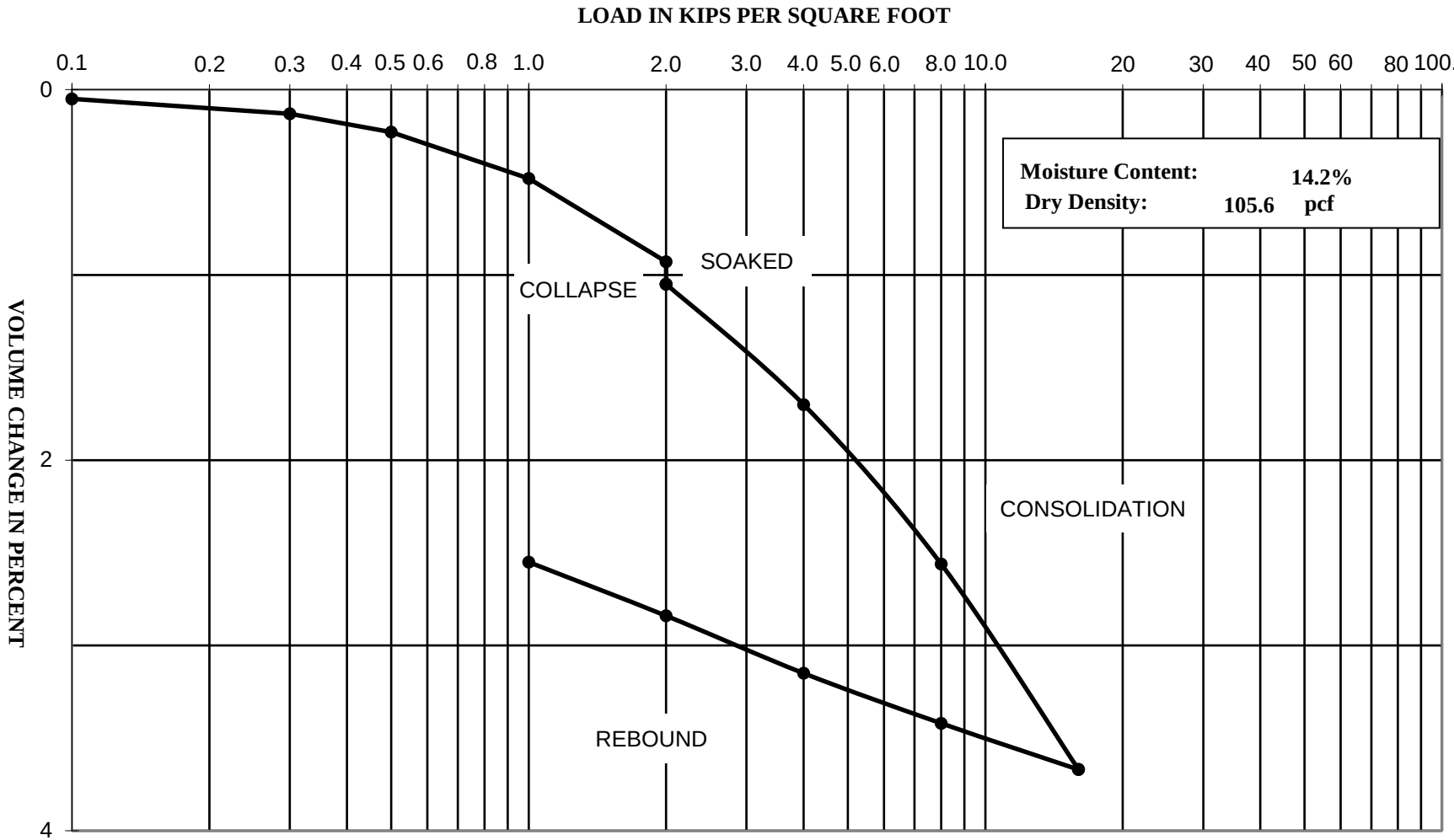
APPENDIX

B

APPENDIX B
LABORATORY TESTING

Laboratory tests were performed in accordance with generally accepted test methods of the American Society for Testing and Materials (ASTM), Caltrans, or other suggested procedures. Selected samples were tested for in-situ moisture content and density, grain size distribution, plasticity index, expansion index, shear strength, consolidation, soil resistivity, soluble sulfates and chlorides. The results of the laboratory tests are summarized in the following figures.

CONSOLIDATION - PRESSURE TEST DATA
ASTM D2435



Project Name: 4,824.06kW Solar Array System: N Locust Tree Road Solar - Lodi, CA

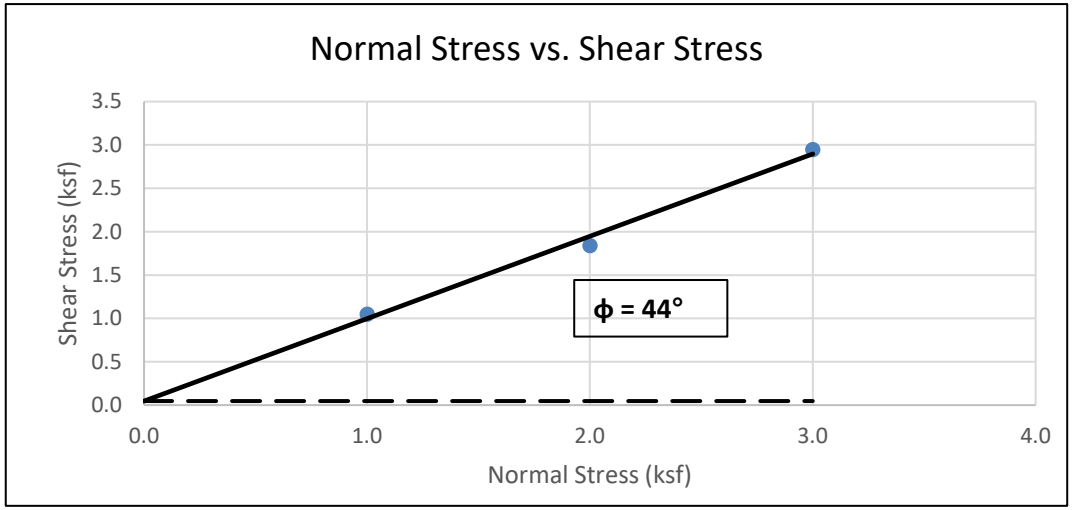
Project Number: 4-226-0318

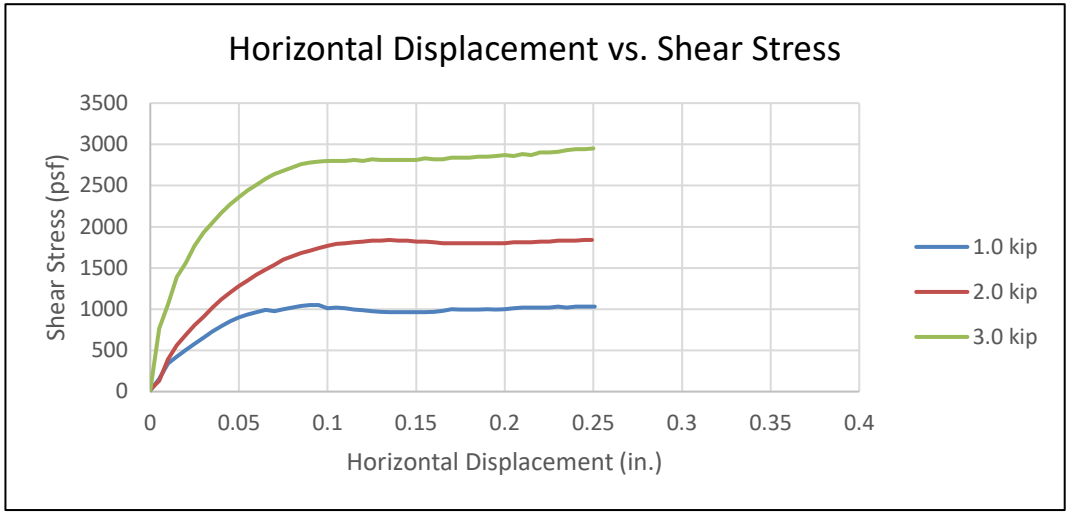
Boring: B-3 @ 1.5'-3'

SALEM engineering group, inc.

Direct Shear Test (ASTM D3080)

Project Name: 4,824.06kW Solar Array System: N Locust Tree Road Solar - Lodi, CA
Project Number: 4-226-0318
Client: Renewable Properties, LLC
Boring: B-1 @ 3.5'-5'
Soil Type: Clayey SAND (SC)
Sample Type: Undisturbed Ring
Tested By: MC
Reviewed By:
Date of Test: 5/22/26
Test Equipment: GeoComp ShearTrac II





	Loading		
	1.0 kip	**2.0 kip**	**3.0 kip**
Normal Stress (ksf)	1.00	2.00	3.00
Shear Rate (in/min)	0.0040	0.0040	0.0040
Peak Shear Stress (ksf)	1.05	1.84	2.95

Initial Height of Sample (in)	1.000	1.000	1.000
Post-Consol. Sample Height (in.)	0.948	0.928	0.912
Post-Shear Sample Height (in.)	0.942	0.916	0.901
Diameter of Sample (in)	2.416	2.416	2.416

Initial (pre-shear) Values			
Moisture Content (%)	10.9		
Dry Density (pcf)	122.7	124.4	123.7
Saturation %	79.8	84.1	82.2
Void Ratio	0.37	0.35	0.36
Consolidated Void Ratio	0.30	0.25	0.24

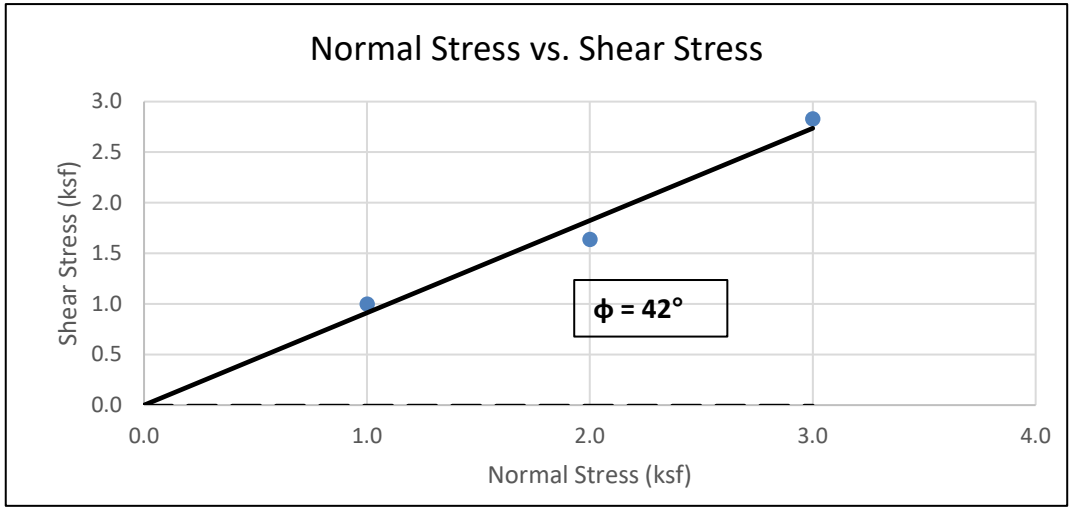
Final (post-shear) Values			
Final Moisture Content (%)	14.4	14.4	14.1
Dry Density (pcf)	129.1	132.3	134.5
Saturation %	117.5	140.9	146.6
Void Ratio	0.33	0.27	0.26

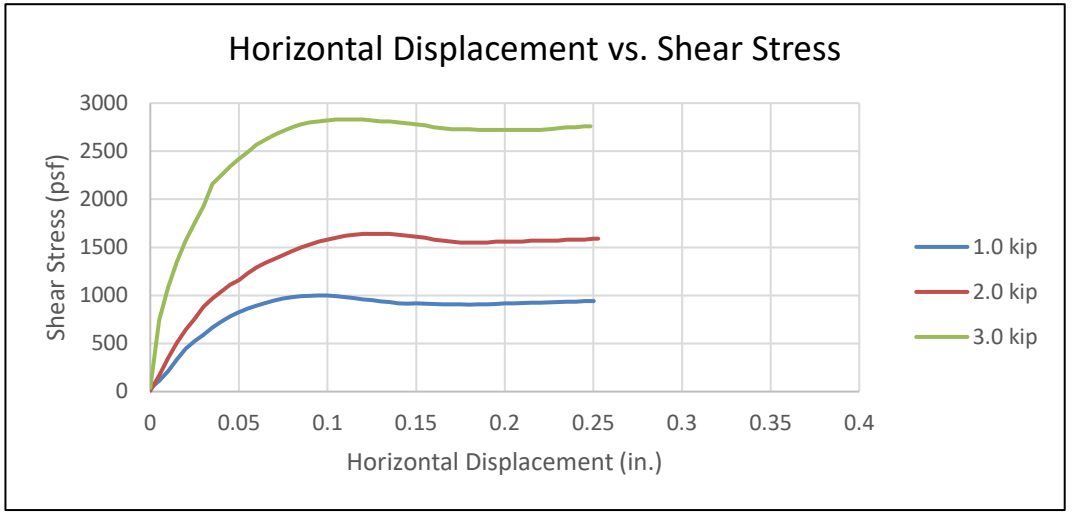
Peak Shear Strength Values	
Slope	0.95
Friction Angle	44
Cohesion (psf)	47

SALEM engineering group, inc.
4729 W. Jacquelyn Ave.
Fresno, CA 93722

Direct Shear Test (ASTM D3080)

Project Name: 4,824.06kW Solar Array System: N Locust Tree Road Solar - Lodi, CA
Project Number: 4-226-0318
Client: Renewable Properties, LLC
Boring: B-4 @ 1.5'-3'
Soil Type: Clayey SAND (SC)
Sample Type: Undisturbed Ring
Tested By: MC
Reviewed By:
Date of Test: 5/22/26 & 5/26/26
Test Equipment: GeoComp ShearTrac II





	Loading		
	1.0 kip	**2.0 kip**	**3.0 kip**
Normal Stress (ksf)	1.00	2.00	3.00
Shear Rate (in/min)	0.0025	0.0025	0.0025
Peak Shear Stress (ksf)	1.00	1.64	2.83

Initial Height of Sample (in)	1.000	1.000	1.000
Post-Consol. Sample Height (in.)	0.946	0.933	0.915
Post-Shear Sample Height (in.)	0.940	0.927	0.904
Diameter of Sample (in)	2.416	2.416	2.416

Initial (pre-shear) Values			
Moisture Content (%)	11.9		
Dry Density (pcf)	118.3	121.9	118.9
Saturation %	74.3	82.3	75.6
Void Ratio	0.44	0.39	0.43
Consolidated Void Ratio	0.36	0.30	0.31

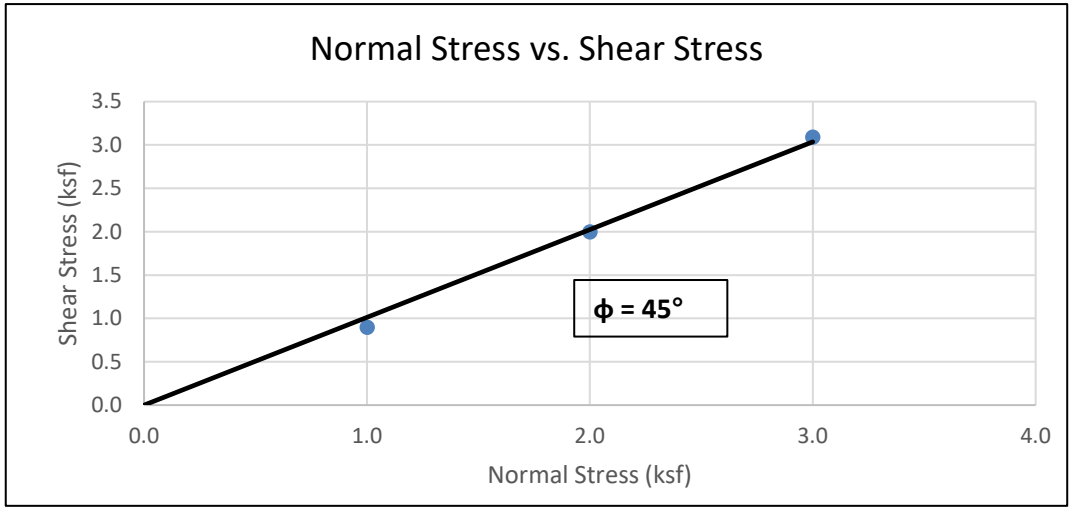
Final (post-shear) Values			
Final Moisture Content (%)	15.6	15.1	15.0
Dry Density (pcf)	122.7	126.7	127.0
Saturation %	108.1	125.1	124.6
Void Ratio	0.39	0.33	0.33

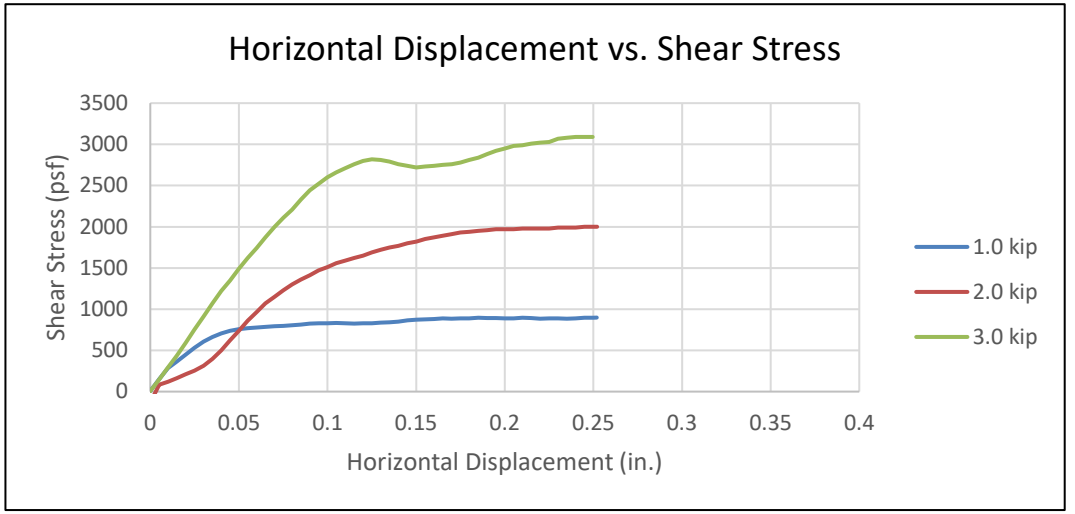
Peak Shear Strength Values	
Slope	0.91
Friction Angle	42
Cohesion (psf)	0

SALEM engineering group, inc.
4729 W. Jacquelyn Ave.
Fresno, CA 93722

Direct Shear Test (ASTM D3080)

Project Name: 4,824.06kW Solar Array System: N Locust Tree Road Solar - Lodi, CA
Project Number: 4-226-0318
Client: Renewable Properties, LLC
Boring: B-7 @ 3.5'-5'
Soil Type: Sandy Lean CLAY (CL)
Sample Type: Undisturbed Ring
Tested By: NL / MC
Reviewed By:
Date of Test: 5/22/26 & 5/26/26
Test Equipment: GeoComp ShearTrac II





	Loading		
	1.0 kip	**2.0 kip**	**3.0 kip**
Normal Stress (ksf)	1.00	2.00	3.00
Shear Rate (in/min)	0.0040	0.0040	0.0040
Peak Shear Stress (ksf)	0.90	2.00	3.09

Initial Height of Sample (in)	1.000	1.000	1.000
Post-Consol. Sample Height (in.)	0.971	0.967	0.960
Post-Shear Sample Height (in.)	0.968	0.957	0.954
Diameter of Sample (in)	2.416	2.416	2.416

Initial (pre-shear) Values			
Moisture Content (%)	11.9		
Dry Density (pcf)	117.0	125.5	120.7
Saturation %	73.5	94.7	81.9
Void Ratio	0.44	0.34	0.39
Consolidated Void Ratio	0.39	0.29	0.33

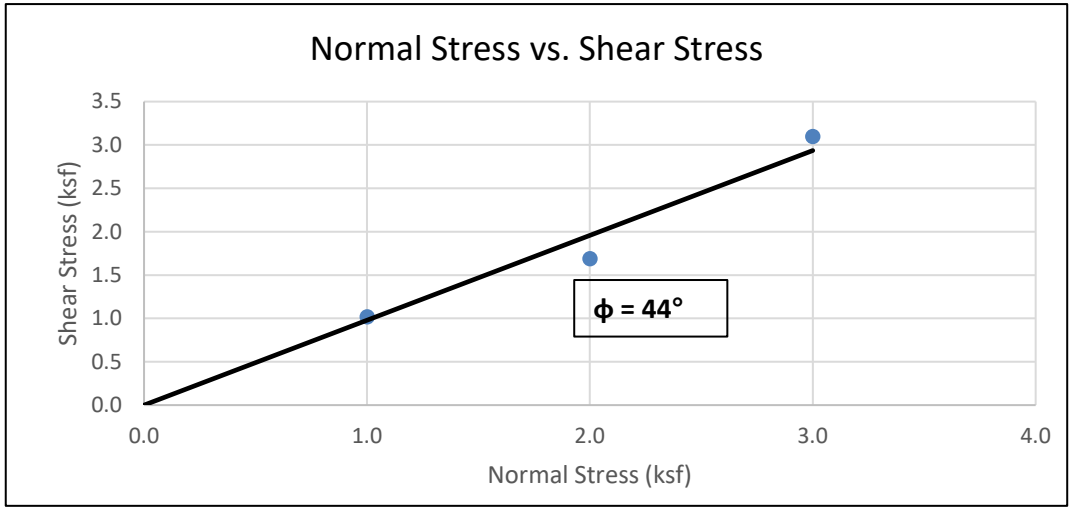
Final (post-shear) Values			
Final Moisture Content (%)	17.5	16.2	16.1
Dry Density (pcf)	116.0	121.2	122.6
Saturation %	102.4	131.9	114.9
Void Ratio	0.46	0.33	0.38

Peak Shear Strength Values	
Slope	1.01
Friction Angle	45
Cohesion (psf)	0

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4729 W. Jacquelyn Ave.
Fresno, CA 93722

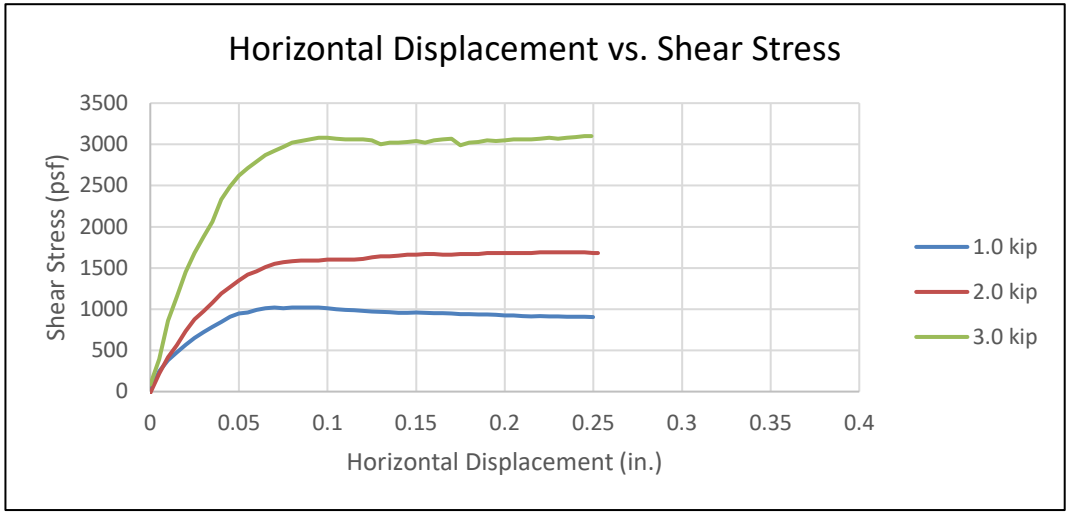
Direct Shear Test (ASTM D3080)

Project Name: 4,824.06kW Solar Array System: N Locust Tree Road Solar - Lodi, CA
Project Number: 4-226-0318
Client: Renewable Properties, LLC
Boring: B-9 @ 5'-6.5'
Soil Type: Sandy Lean CLAY (CL)
Sample Type: Undisturbed Ring
Tested By: NL / MC
Reviewed By:
Date of Test: 5/26-27/26
Test Equipment: GeoComp ShearTrac II



	Loading		
	1.0 kip	**2.0 kip**	**3.0 kip**
Normal Stress (ksf)	1.00	2.00	3.00
Shear Rate (in/min)	0.0040	0.0040	0.0040
Peak Shear Stress (ksf)	1.02	1.69	3.10

Initial Height of Sample (in)	1.000	1.000	1.000
Post-Consol. Sample Height (in.)	0.967	0.930	0.924
Post-Shear Sample Height (in.)	0.963	0.917	0.911
Diameter of Sample (in)	2.416	2.416	2.416



Initial (pre-shear) Values			
Moisture Content (%)	10.3		
Dry Density (pcf)	117.1	119.0	123.1
Saturation %	64.1	67.6	76.3
Void Ratio	0.43	0.41	0.36
Consolidated Void Ratio	0.39	0.31	0.26

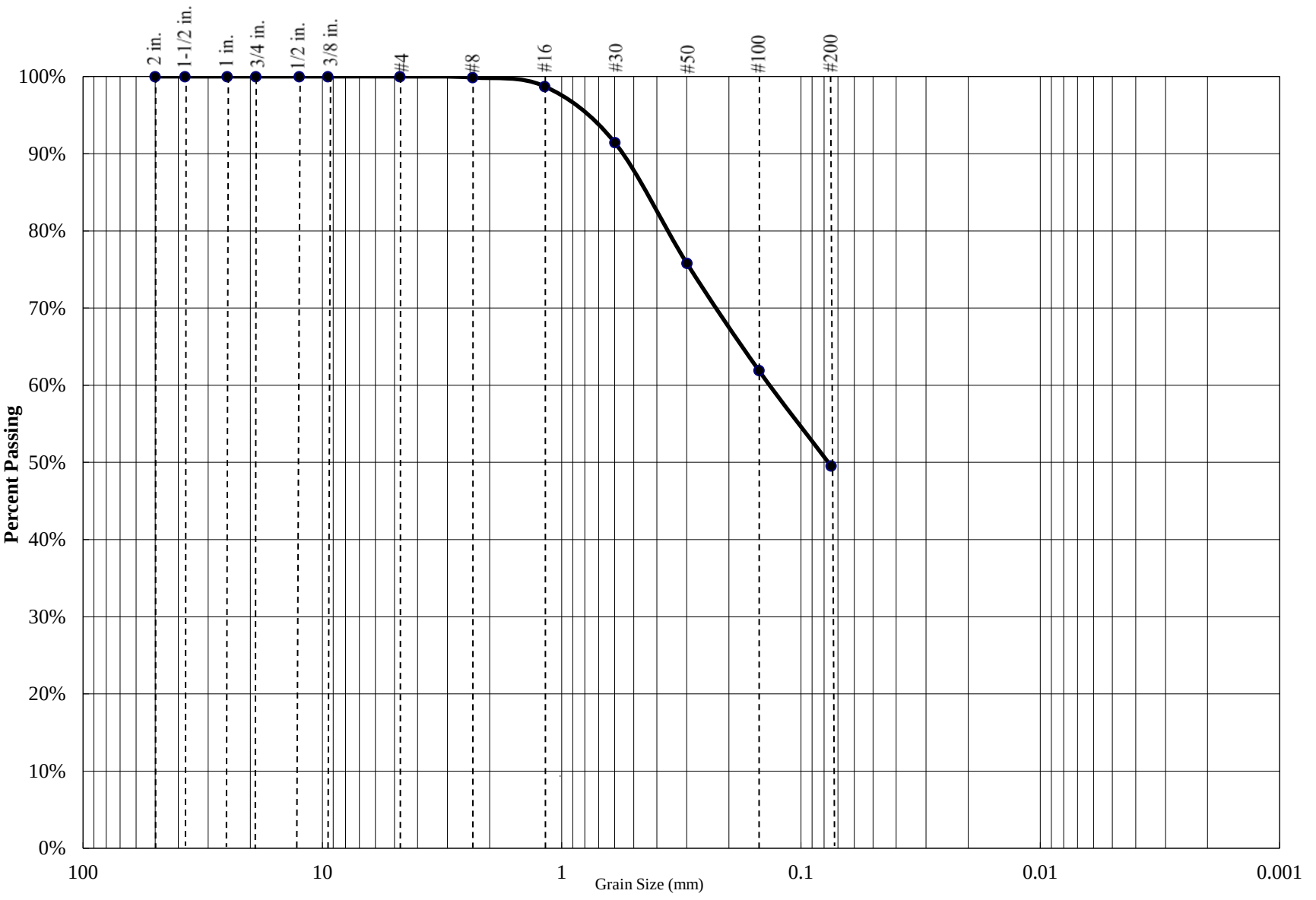
Final (post-shear) Values			
Final Moisture Content (%)	17.7	18.7	19.0
Dry Density (pcf)	119.1	125.2	126.6
Saturation %	100.7	128.3	150.4
Void Ratio	0.47	0.39	0.34

Peak Shear Strength Values	
Slope	0.98
Friction Angle	44
Cohesion (psf)	0

SALEM engineering group, inc.
4729 W. Jacquelyn Ave.
Fresno, CA 93722

PARTICLE SIZE DISTRIBUTION DIAGRAM

GRADATION TEST - ASTM C136



Percent Gravel	Percent Sand	Percent Silt/Clay
0%	50%	50%

Sieve Size	Percent Passing
3/4 inch	100.0%
1/2 inch	100.0%
3/8 inch	100.0%
#4	100.0%
#8	99.9%
#16	98.7%
#30	91.4%
#50	75.8%
#100	61.9%
#200	49.6%

Atterberg Limits		
PL=	**LL=**	**PI=**

Coefficients					
D_{85}=		**D_{60}=**		**D_{50}=**	
D_{30}=		**D_{15}=**		**D_{10}=**	
C_u=	N/A	**C_c=**	N/A		

USCS CLASSIFICATION
Silty Clayey SAND (SC-SM)

Project Name: 4,824.06kW Solar Array System: N Locust Tree Road Solar - Lodi, CA

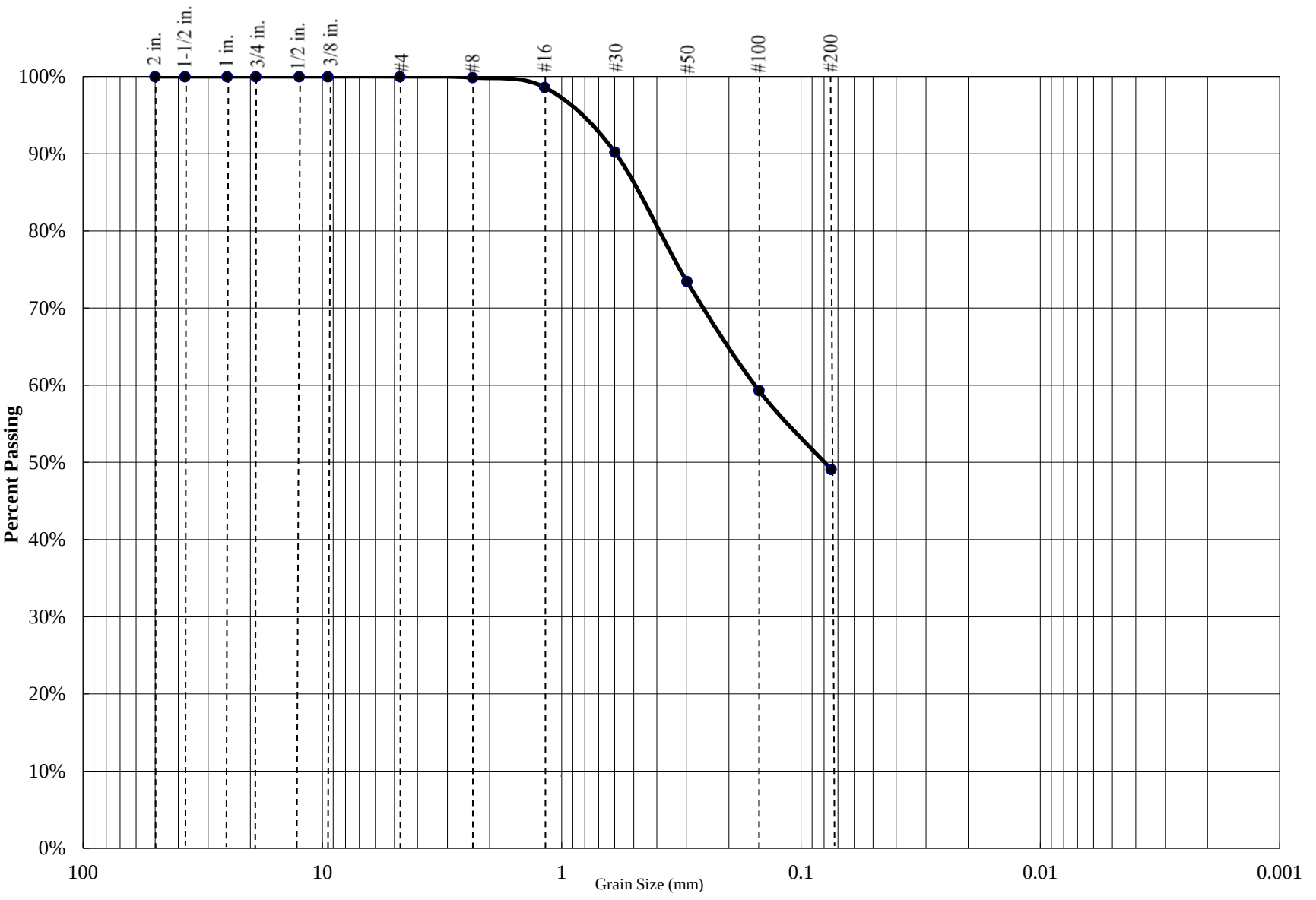
Project Number: 4-226-0318

Boring: B-1 @ 1'-5'

SALEM engineering group, inc.

PARTICLE SIZE DISTRIBUTION DIAGRAM

GRADATION TEST - ASTM C136



Percent Gravel	Percent Sand	Percent Silt/Clay
0%	51%	49%

Sieve Size	Percent Passing
3/4 inch	100.0%
1/2 inch	100.0%
3/8 inch	100.0%
#4	100.0%
#8	99.9%
#16	98.6%
#30	90.2%
#50	73.5%
#100	59.3%
#200	49.1%

Atterberg Limits		
PL=	**LL=**	**PI=**

Coefficients					
D_{85}=		**D_{60}=**		**D_{50}=**	
D_{30}=		**D_{15}=**		**D_{10}=**	
C_u=	N/A	**C_c=**	N/A		

USCS CLASSIFICATION
Clayey SAND (SC)

Project Name: 4,824.06kW Solar Array System: N Locust Tree Road Solar - Lodi, CA

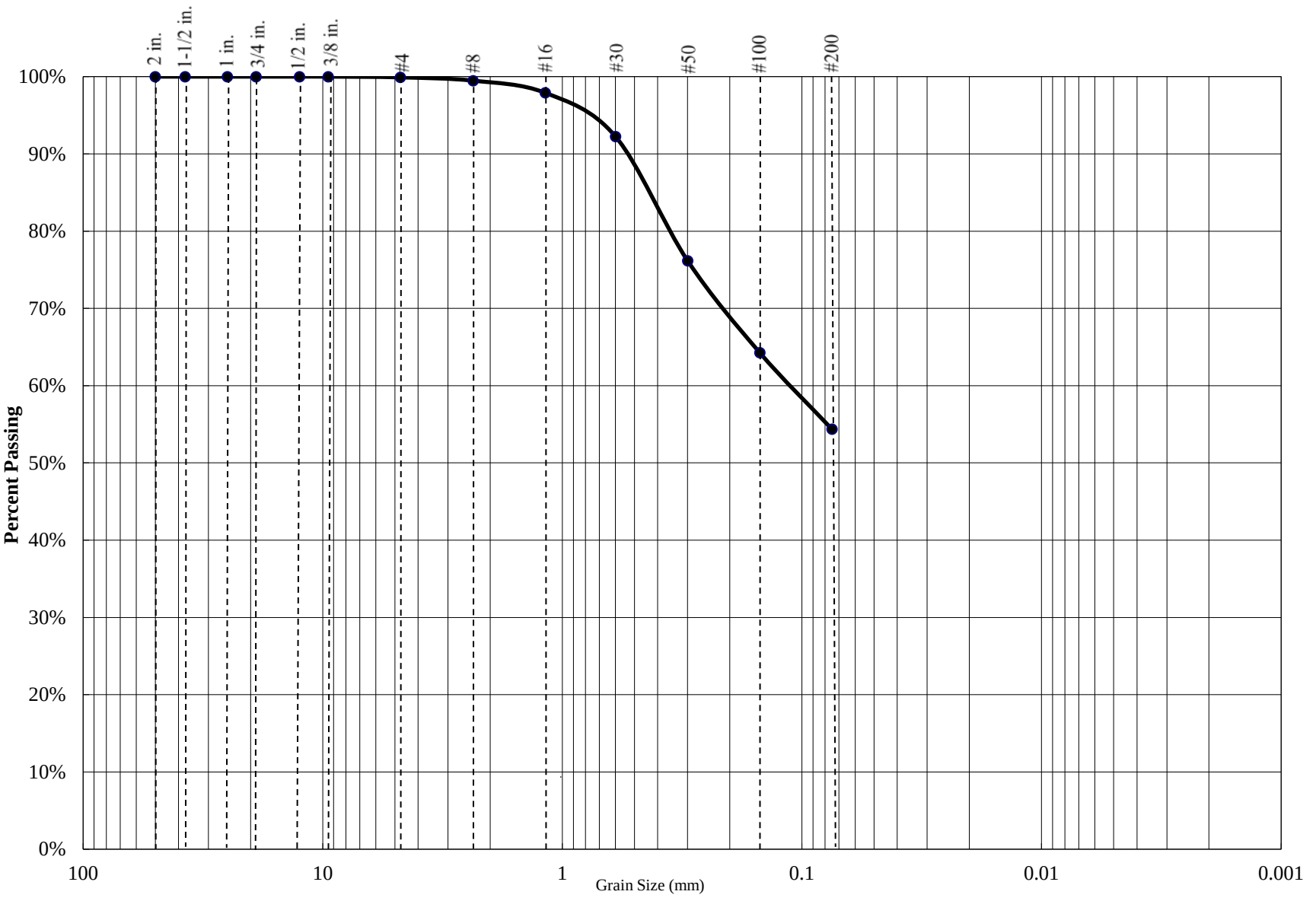
Project Number: 4-226-0318

Boring: B-1 @ 8.5'-10'

SALEM engineering group, inc.

PARTICLE SIZE DISTRIBUTION DIAGRAM

GRADATION TEST - ASTM C136



Percent Gravel	Percent Sand	Percent Silt/Clay
0%	46%	54%

Sieve Size	Percent Passing
3/4 inch	100.0%
1/2 inch	100.0%
3/8 inch	100.0%
#4	99.9%
#8	99.5%
#16	97.9%
#30	92.2%
#50	76.2%
#100	64.3%
#200	54.4%

Atterberg Limits		
PL=	**LL=**	**PI=**

Coefficients					
D_{85}=		**D_{60}=**		**D_{50}=**	
D_{30}=		**D_{15}=**		**D_{10}=**	
C_u=	N/A	**C_c=**	N/A		

USCS CLASSIFICATION
Sandy Lean CLAY (CL)

Project Name: 4,824.06kW Solar Array System: N Locust Tree Road Solar - Lodi, CA

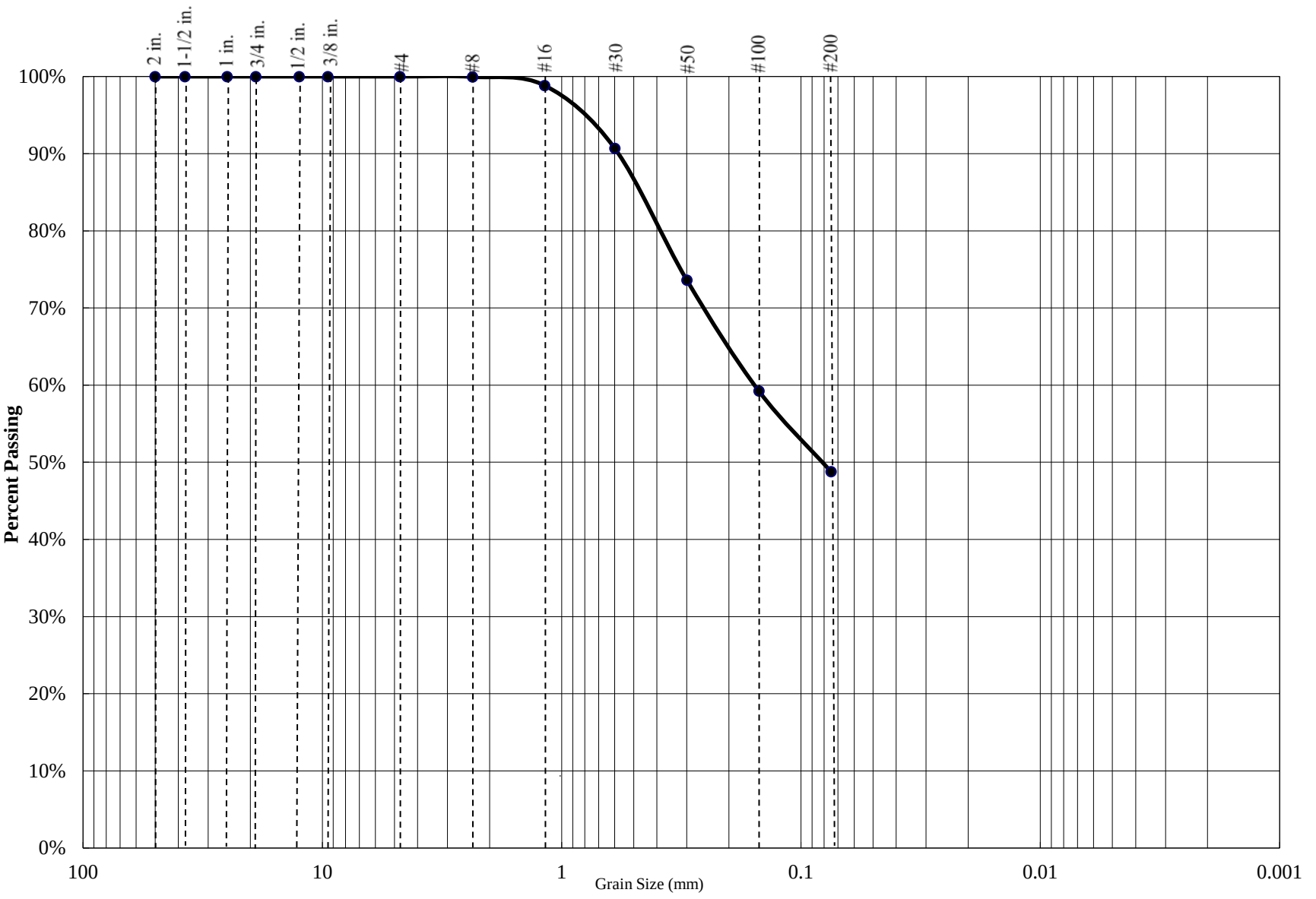
Project Number: 4-226-0318

Boring: B-2 @ 3'-4'

SALEM engineering group, inc.

PARTICLE SIZE DISTRIBUTION DIAGRAM

GRADATION TEST - ASTM C136



Percent Gravel	Percent Sand	Percent Silt/Clay
0%	51%	49%

Sieve Size	Percent Passing
3/4 inch	100.0%
1/2 inch	100.0%
3/8 inch	100.0%
#4	100.0%
#8	100.0%
#16	98.8%
#30	90.7%
#50	73.6%
#100	59.2%
#200	48.8%

Atterberg Limits		
PL=	**LL=**	**PI=**

Coefficients					
D_{85}=		**D_{60}=**		**D_{50}=**	
D_{30}=		**D_{15}=**		**D_{10}=**	
C_u=	N/A	**C_c=**	N/A		

USCS CLASSIFICATION
Clayey SAND (SC)

Project Name: 4,824.06kW Solar Array System: N Locust Tree Road Solar - Lodi, CA

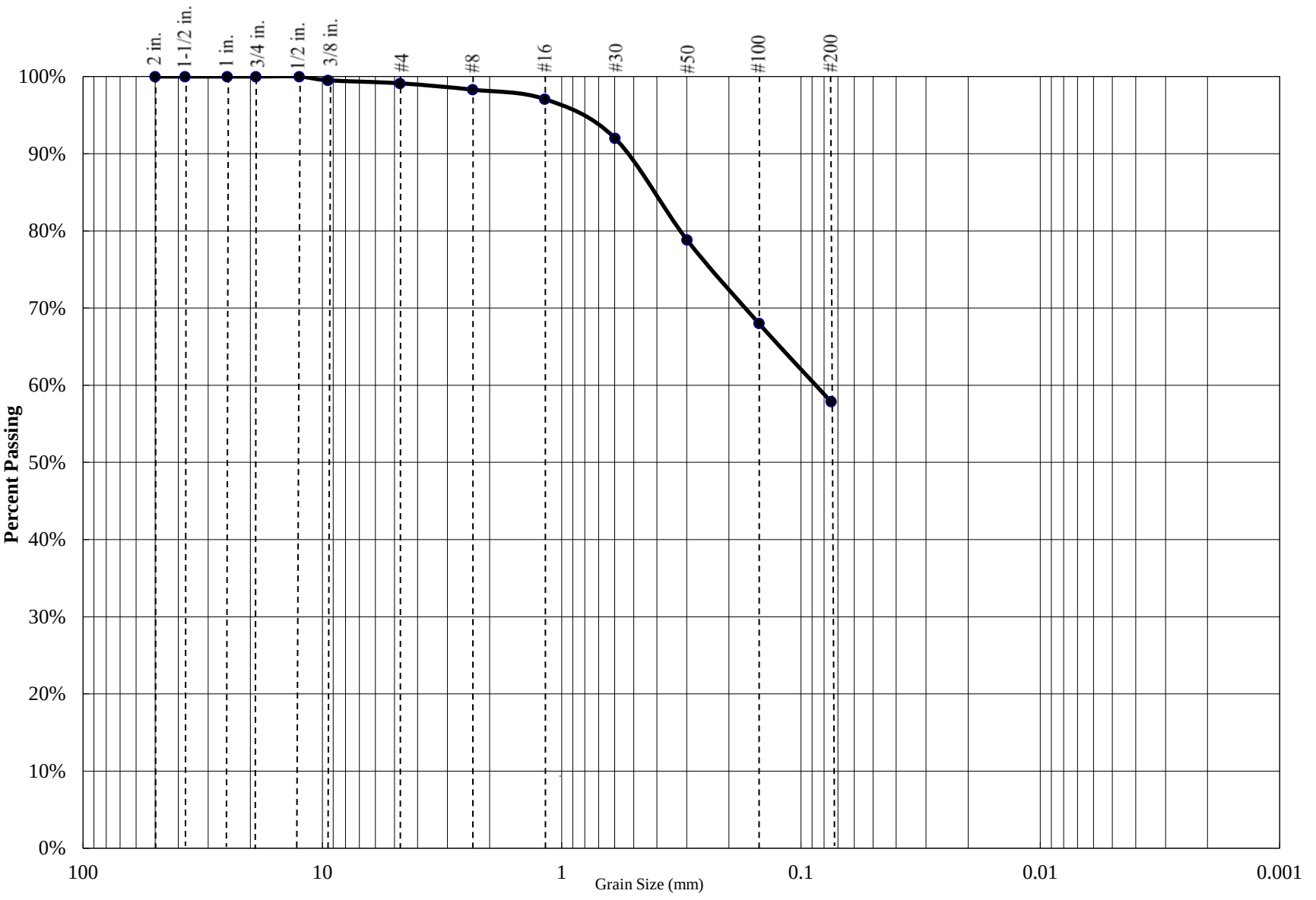
Project Number: 4-226-0318

Boring: B-2 @ 7'-8'

SALEM engineering group, inc.

PARTICLE SIZE DISTRIBUTION DIAGRAM

GRADATION TEST - ASTM C136



Percent Gravel	Percent Sand	Percent Silt/Clay
1%	41%	58%

Sieve Size	Percent Passing
3/4 inch	100.0%
1/2 inch	100.0%
3/8 inch	99.5%
#4	99.1%
#8	98.3%
#16	97.1%
#30	92.0%
#50	78.9%
#100	68.0%
#200	57.9%

Atterberg Limits		
PL=	**LL=**	**PI=**

Coefficients					
D_{85}=		**D_{60}=**		**D_{50}=**	
D_{30}=		**D_{15}=**		**D_{10}=**	
C_u=	N/A	**C_c=**	N/A		

USCS CLASSIFICATION
Sandy Silty CLAY (CL-ML)

Project Name: 4,824.06kW Solar Array System: N Locust Tree Road Solar - Lodi, CA

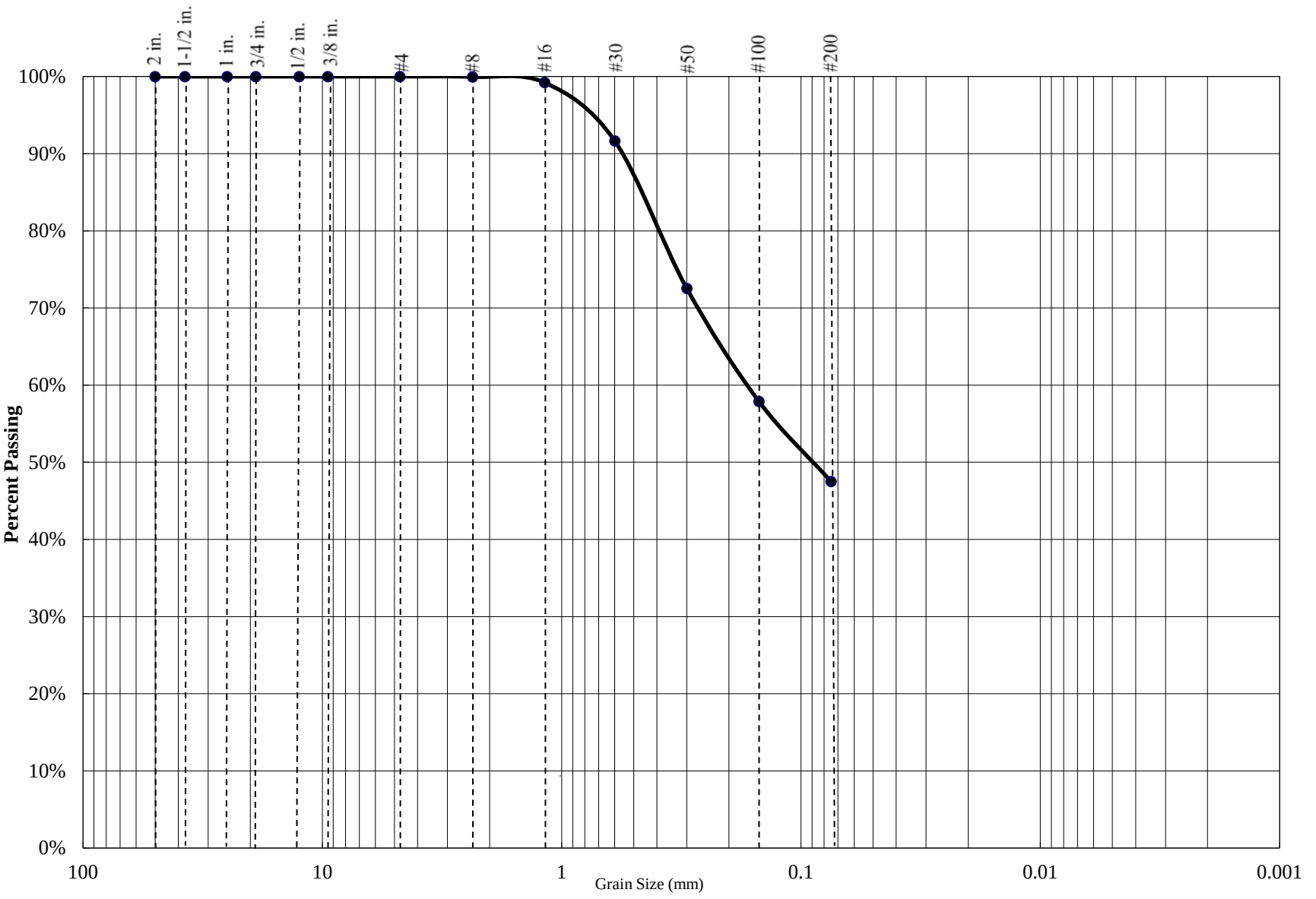
Project Number: 4-226-0318

Boring: B-3 @ 1'-5'

SALEM engineering group, inc.

PARTICLE SIZE DISTRIBUTION DIAGRAM

GRADATION TEST - ASTM C136



Percent Gravel	Percent Sand	Percent Silt/Clay
0%	52%	48%

Sieve Size	Percent Passing
3/4 inch	100.0%
1/2 inch	100.0%
3/8 inch	100.0%
#4	100.0%
#8	100.0%
#16	99.2%
#30	91.6%
#50	72.5%
#100	57.9%
#200	47.5%

Atterberg Limits		
PL=	**LL=**	**PI=**

Coefficients					
D_{85}=		**D_{60}=**		**D_{50}=**	
D_{30}=		**D_{15}=**		**D_{10}=**	
C_u=	N/A	**C_c=**	N/A		

USCS CLASSIFICATION
Clayey SAND (SC)

Project Name: 4,824.06kW Solar Array System: N Locust Tree Road Solar - Lodi, CA

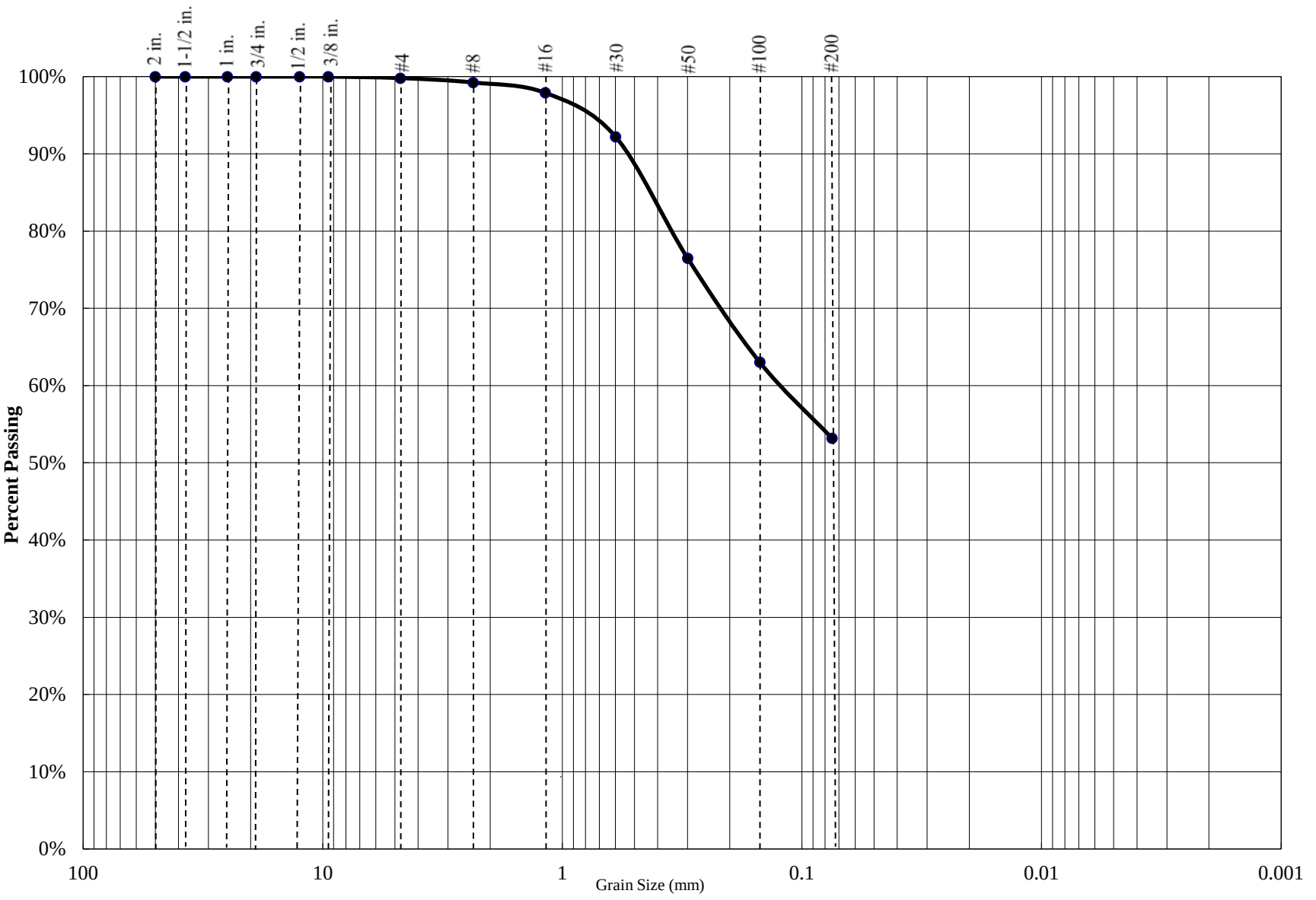
Project Number: 4-226-0318

Boring: B-5 @ 1'-2.5'

SALEM engineering group, inc.

PARTICLE SIZE DISTRIBUTION DIAGRAM

GRADATION TEST - ASTM C136



Percent Gravel	Percent Sand	Percent Silt/Clay
0%	47%	53%

Sieve Size	Percent Passing
3/4 inch	100.0%
1/2 inch	100.0%
3/8 inch	100.0%
#4	99.8%
#8	99.2%
#16	97.9%
#30	92.2%
#50	76.5%
#100	63.0%
#200	53.2%

Atterberg Limits		
PL=	**LL=**	**PI=**

Coefficients					
D_{85}=		**D_{60}=**		**D_{50}=**	
D_{30}=		**D_{15}=**		**D_{10}=**	
C_u=	N/A	**C_c=**	N/A		

USCS CLASSIFICATION
Sandy Lean CLAY (CL)

Project Name: 4,824.06kW Solar Array System: N Locust Tree Road Solar - Lodi, CA

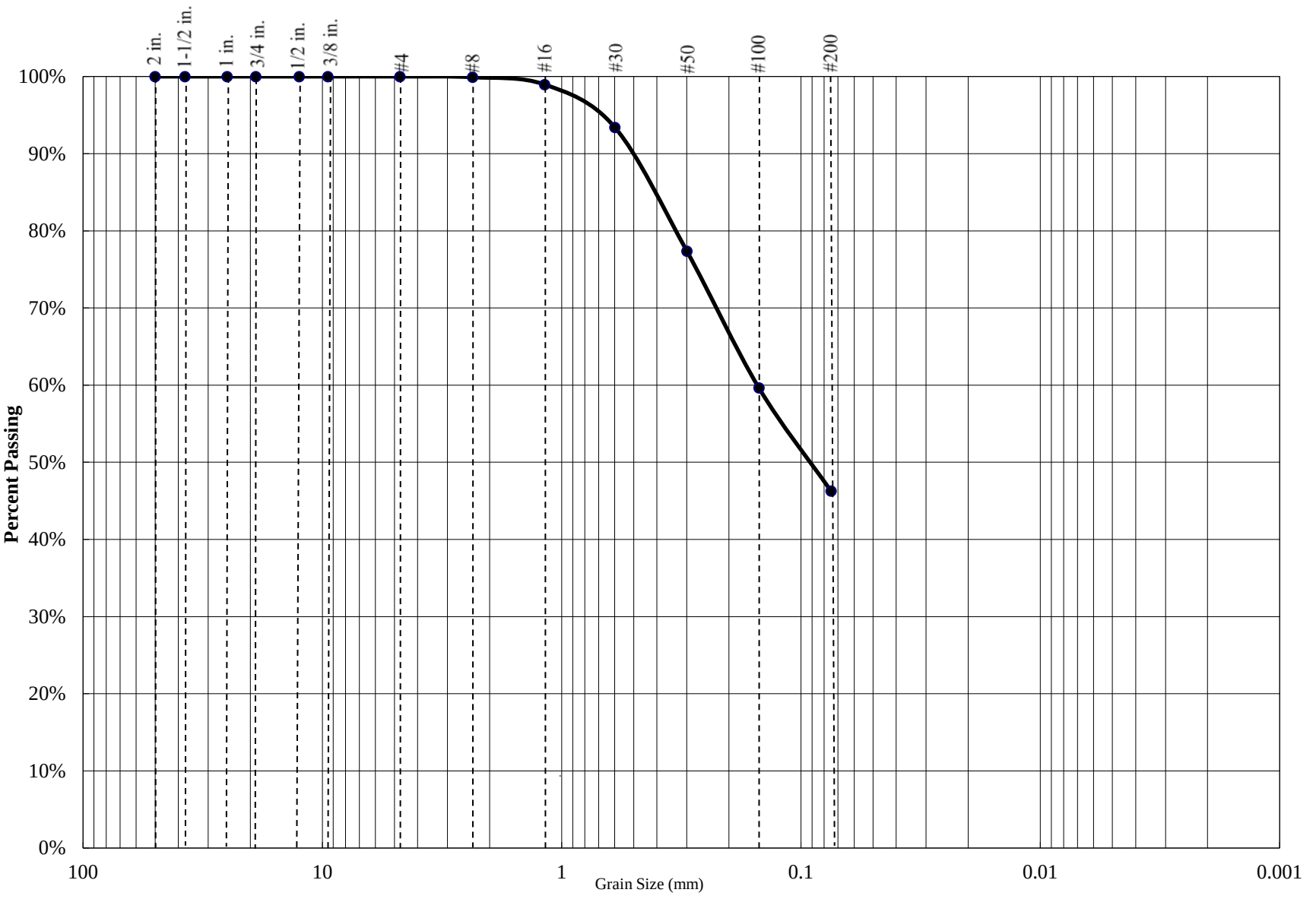
Project Number: 4-226-0318

Boring: B-6 @ 4'-5'

SALEM engineering group, inc.

PARTICLE SIZE DISTRIBUTION DIAGRAM

GRADATION TEST - ASTM C136



Percent Gravel	Percent Sand	Percent Silt/Clay
0%	54%	46%

Sieve Size	Percent Passing
3/4 inch	100.0%
1/2 inch	100.0%
3/8 inch	100.0%
#4	100.0%
#8	99.9%
#16	99.0%
#30	93.4%
#50	77.4%
#100	59.6%
#200	46.3%

Atterberg Limits		
PL=	**LL=**	**PI=**

Coefficients					
D_{85}=		**D_{60}=**		**D_{50}=**	
D_{30}=		**D_{15}=**		**D_{10}=**	
C_u=	N/A	**C_c=**	N/A		

USCS CLASSIFICATION
Silty SAND (SM)

Project Name: 4,824.06kW Solar Array System: N Locust Tree Road Solar - Lodi, CA

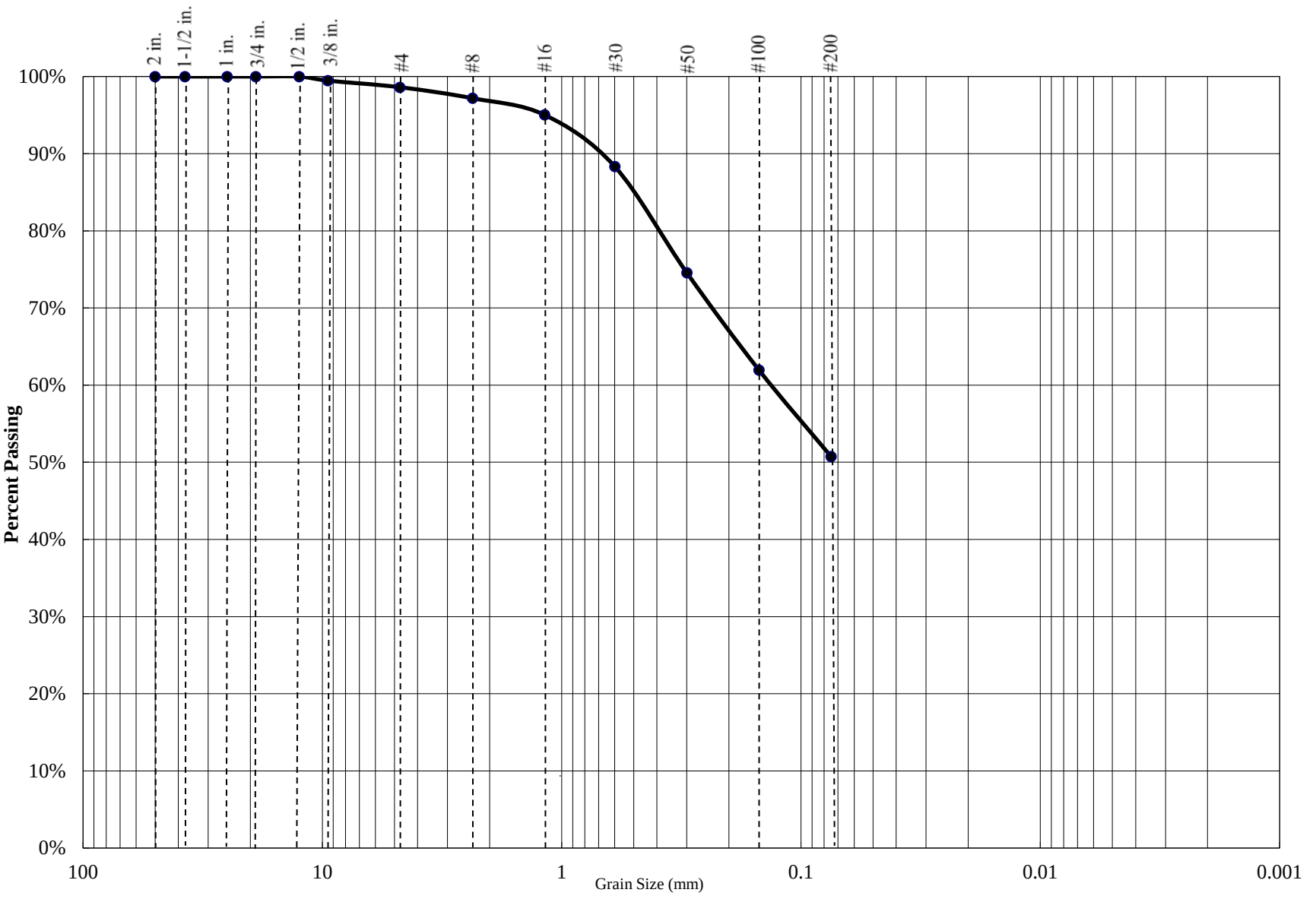
Project Number: 4-226-0318

Boring: B-6 @ 8'-9'

SALEM engineering group, inc.

PARTICLE SIZE DISTRIBUTION DIAGRAM

GRADATION TEST - ASTM C136



Percent Gravel	Percent Sand	Percent Silt/Clay
1%	48%	51%

Sieve Size	Percent Passing
3/4 inch	100.0%
1/2 inch	100.0%
3/8 inch	99.5%
#4	98.6%
#8	97.2%
#16	95.0%
#30	88.3%
#50	74.6%
#100	62.0%
#200	50.8%

Atterberg Limits		
PL=	**LL=**	**PI=**

Coefficients					
D_{85}=		**D_{60}=**		**D_{50}=**	
D_{30}=		**D_{15}=**		**D_{10}=**	
C_u=	N/A	**C_c=**	N/A		

USCS CLASSIFICATION
Sandy Silty CLAY (CL-ML)

Project Name: 4,824.06kW Solar Array System: N Locust Tree Road Solar - Lodi, CA

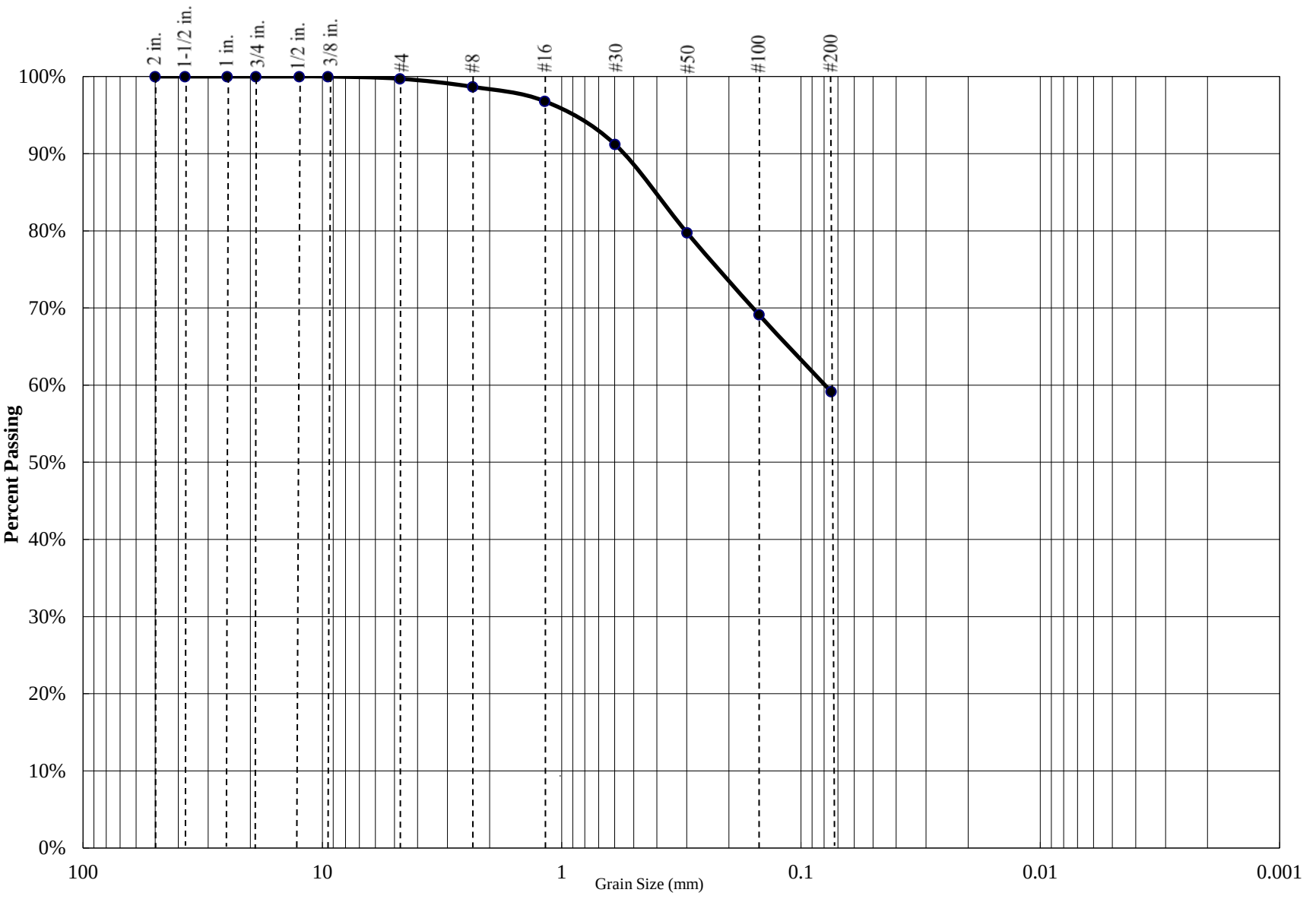
Project Number: 4-226-0318

Boring: B-8 @ 1'-5'

SALEM engineering group, inc.

PARTICLE SIZE DISTRIBUTION DIAGRAM

GRADATION TEST - ASTM C136



Percent Gravel	Percent Sand	Percent Silt/Clay
0%	41%	59%

Sieve Size	Percent Passing
3/4 inch	100.0%
1/2 inch	100.0%
3/8 inch	100.0%
#4	99.7%
#8	98.7%
#16	96.8%
#30	91.2%
#50	79.8%
#100	69.1%
#200	59.2%

Atterberg Limits		
PL=	**LL=**	**PI=**

Coefficients					
D_{85}=		**D_{60}=**		**D_{50}=**	
D_{30}=		**D_{15}=**		**D_{10}=**	
C_u=	N/A	**C_c=**	N/A		

USCS CLASSIFICATION
Sandy Lean CLAY (CL)

Project Name: 4,824.06kW Solar Array System: N Locust Tree Road Solar - Lodi, CA

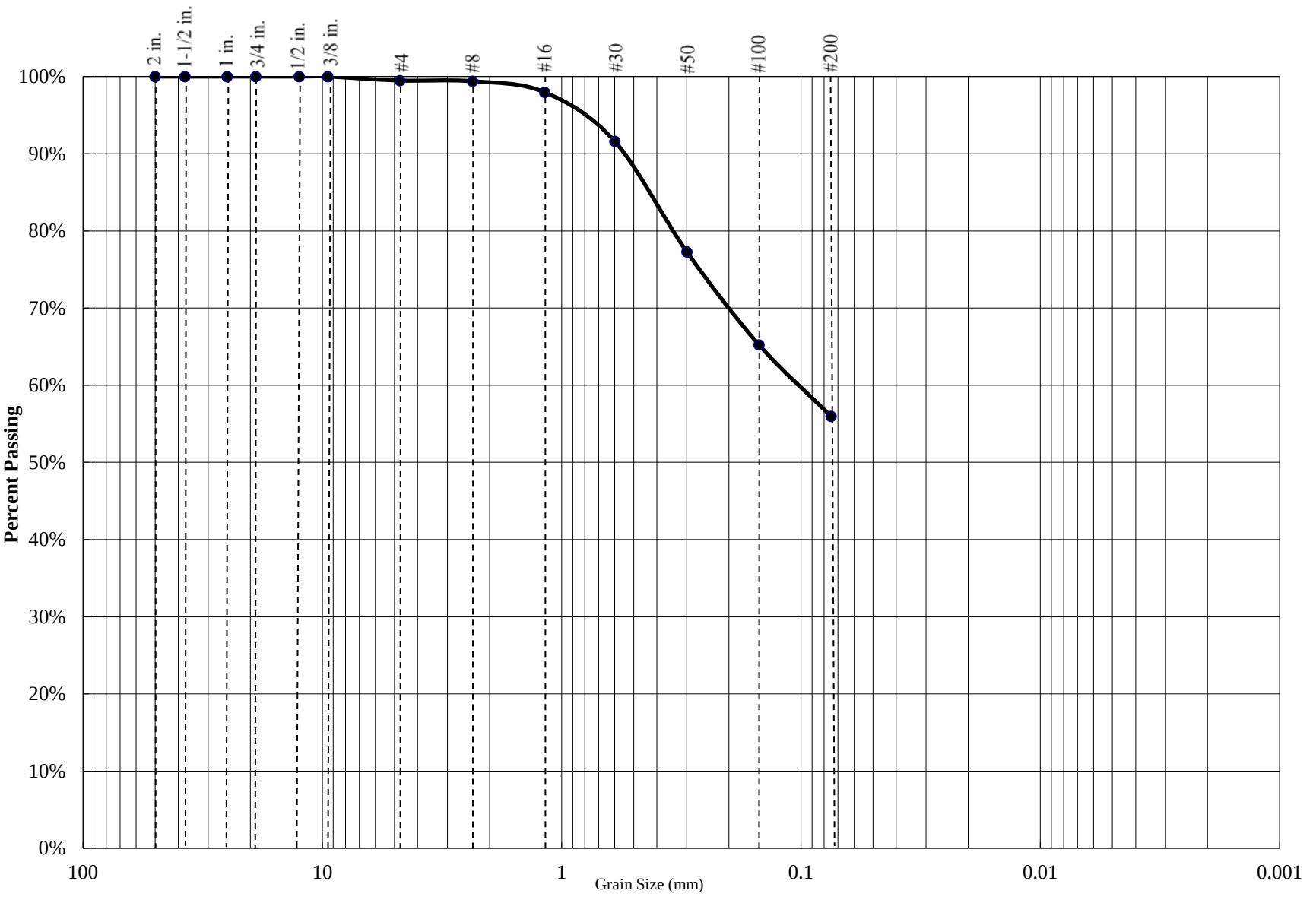
Project Number: 4-226-0318

Boring: B-11 @ 2'-3'

SALEM engineering group, inc.

PARTICLE SIZE DISTRIBUTION DIAGRAM

GRADATION TEST - ASTM C136



Percent Gravel	Percent Sand	Percent Silt/Clay
1%	43%	56%

Sieve Size	Percent Passing
3/4 inch	100.0%
1/2 inch	100.0%
3/8 inch	100.0%
#4	99.5%
#8	99.4%
#16	98.0%
#30	91.6%
#50	77.3%
#100	65.3%
#200	56.0%

Atterberg Limits		
PL=	**LL=**	**PI=**

Coefficients					
D_{85}=		**D_{60}=**		**D_{50}=**	
D_{30}=		**D_{15}=**		**D_{10}=**	
C_u=	N/A	**C_c=**	N/A		

USCS CLASSIFICATION
Sandy Lean CLAY (CL)

Project Name: 4,824.06kW Solar Array System: N Locust Tree Road Solar - Lodi, CA

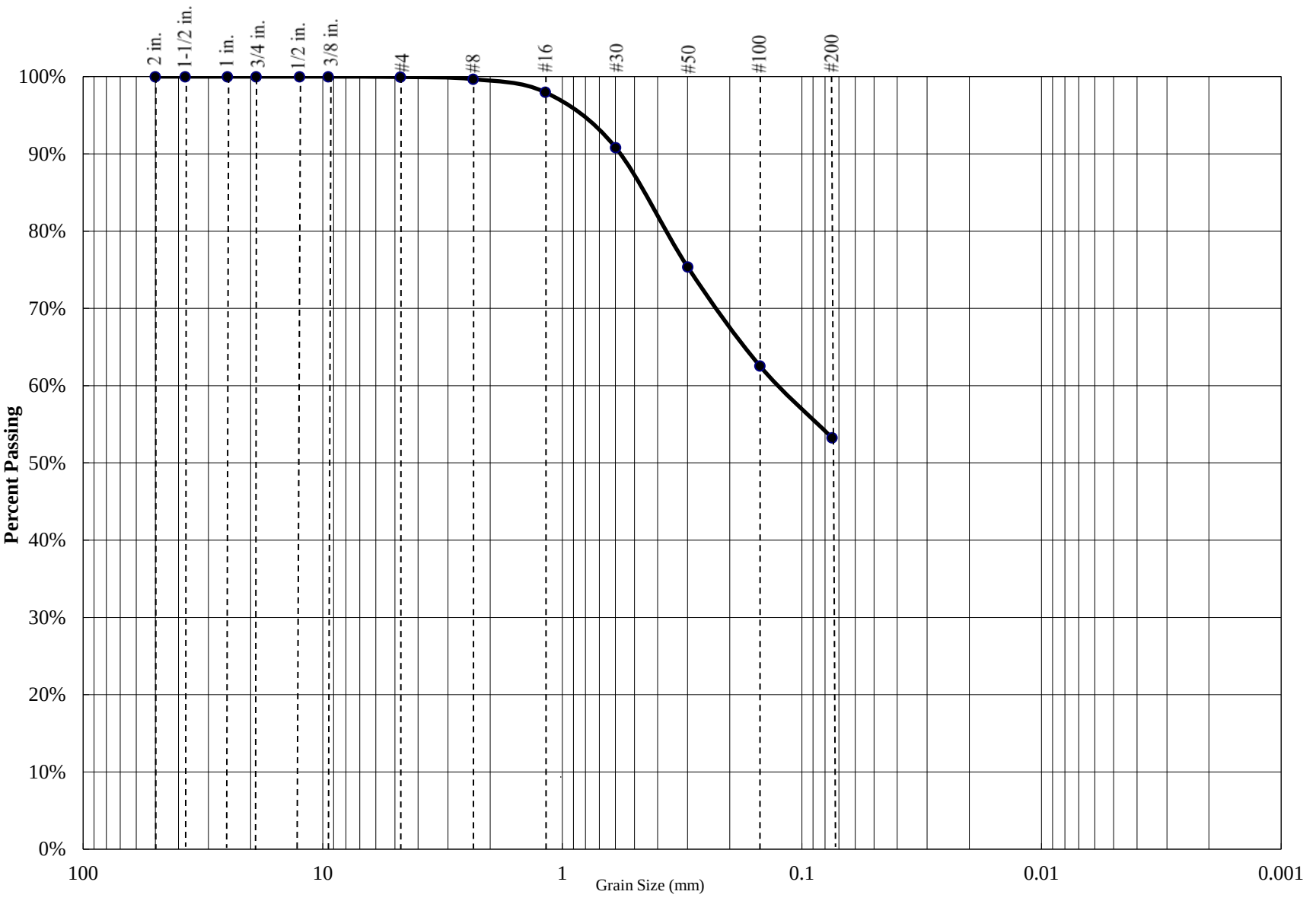
Project Number: 4-226-0318

Boring: B-11 @ 6'-7'

SALEM engineering group, inc.

PARTICLE SIZE DISTRIBUTION DIAGRAM

GRADATION TEST - ASTM C136



Percent Gravel	Percent Sand	Percent Silt/Clay
0%	47%	53%

Sieve Size	Percent Passing
3/4 inch	100.0%
1/2 inch	100.0%
3/8 inch	100.0%
#4	100.0%
#8	99.7%
#16	98.0%
#30	90.8%
#50	75.4%
#100	62.6%
#200	53.3%

Atterberg Limits		
PL=	**LL=**	**PI=**

Coefficients					
D_{85}=		**D_{60}=**		**D_{50}=**	
D_{30}=		**D_{15}=**		**D_{10}=**	
C_u=	N/A	**C_c=**	N/A		

USCS CLASSIFICATION
Sandy Lean CLAY (CL)

Project Name: 4,824.06kW Solar Array System: N Locust Tree Road Solar - Lodi, CA

Project Number: 4-226-0318

Boring: B-12 @ 5'-6.5'

SALEM engineering group, inc.

EXPANSION INDEX TEST
ASTM D4829

Project Name: 4,824.06kW Solar Array System: N Locust Tree Road Solar - Lodi, CA
Project Number: 4-226-0318
Date Sampled: 5/6/26 Date Tested: 5/15/26
Sampled By: SEG Tested By: MC
Sample Location: B-1 @ 1'-5'
Soil Description: Silty Clayey SAND (SC-SM)

Trial #	1	2	3
Weight of Soil & Mold, g.	597.9		
Weight of Mold, g.	187.1		
Weight of Soil, g.	410.8		
Wet Density, pcf	123.9		
Weight of Moisture Sample (Wet), g.	803.0		
Weight of Moisture Sample (Dry), g.	739.5		
Moisture Content, %	8.6		
Dry Density, pcf	114.1		
Specific Gravity of Soil	2.7		
Degree of Saturation, %	48.6		

Time	Inital	30 min	1 hr	4 hrs	8 hrs	24 hrs
Dial Reading	0	0.0035	0.0049	0.0066	--	0.0077

Expansion Index $_{measured}$ = 7.7
Expansion Index $_{50}$ = 7.1

Expansion Index = **7**

Expansion Potential Table	
Exp. Index	Potential Exp.
0 - 20	Very Low
21 - 50	Low
51 - 90	Medium
91 - 130	High
>130	Very High

SALEM engineering group, inc.

Atterberg Limits Determination
ASTM D4318

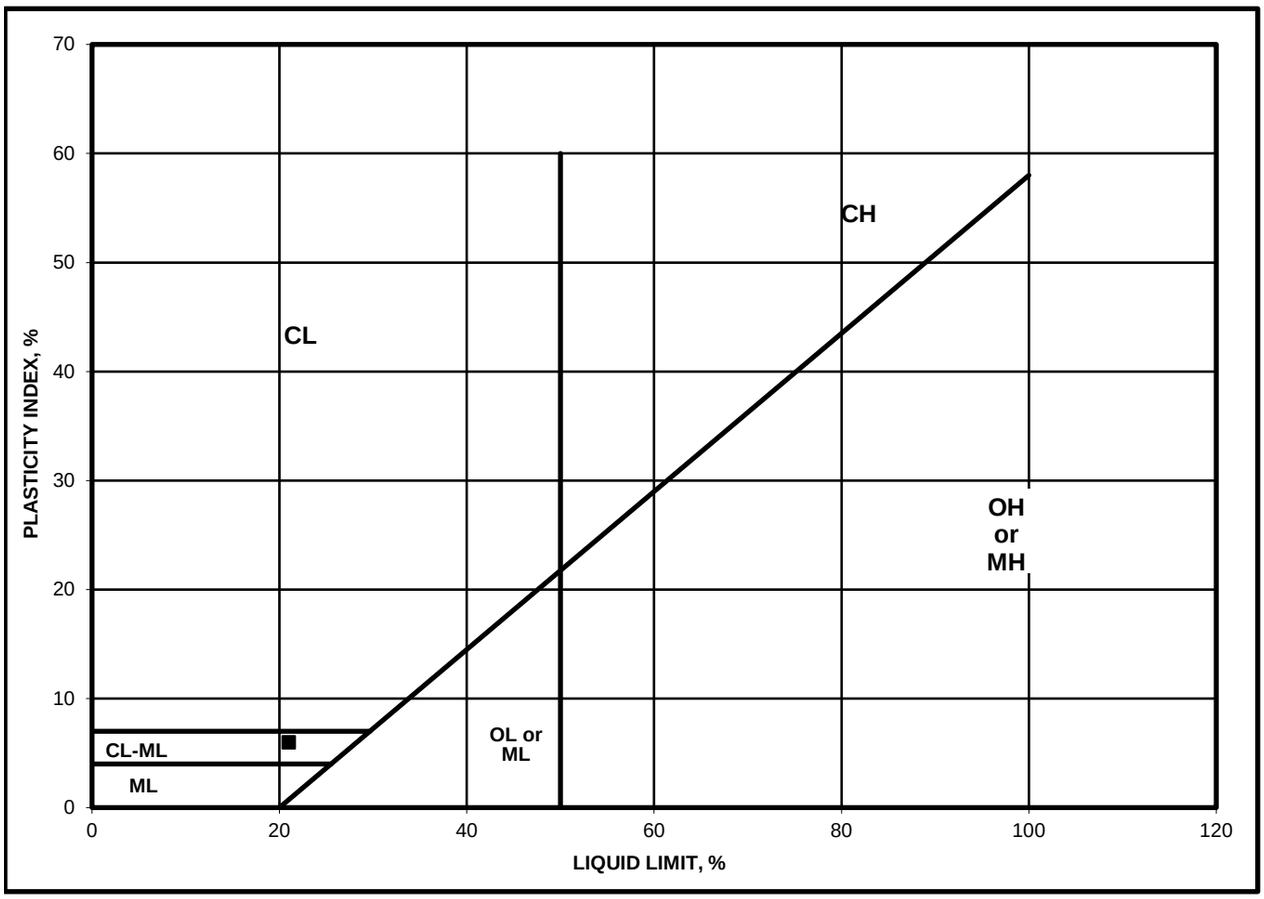
Project Name: 4,824.06kW Solar Array System: N Locust Tree Road Solar - Lodi, CA
Project Number: 4-226-0318
Date Sampled: 5/6/26 Date Tested: 5/19/26
Sampled By: SEG Tested By: MC
Sample Location: B-3 @ 1'-5'

Run Number	Plastic Limit			Liquid Limit		
	1	2	3	1	2	3
Weight of Wet Soil & Tare	22.83	22.75	22.38	29.29	28.71	27.54
Weight of Dry Soil & Tare	21.90	21.83	21.51	27.04	26.48	25.48
Weight of Water	0.93	0.92	0.87	2.25	2.23	2.06
Weight of Tare	15.56	15.50	15.48	15.75	15.56	15.74
Weight of Dry Soil	6.34	6.33	6.03	11.29	10.92	9.74
Water Content	14.7	14.5	14.4	19.9	20.4	21.1
Number of Blows				31	25	19

Plastic Limit : 15 **Liquid Limit : 21**

Plasticity Index: 6

Unified Soil Classification: CL/ML



SALEM engineering group, inc.

Atterberg Limits Determination
ASTM D4318

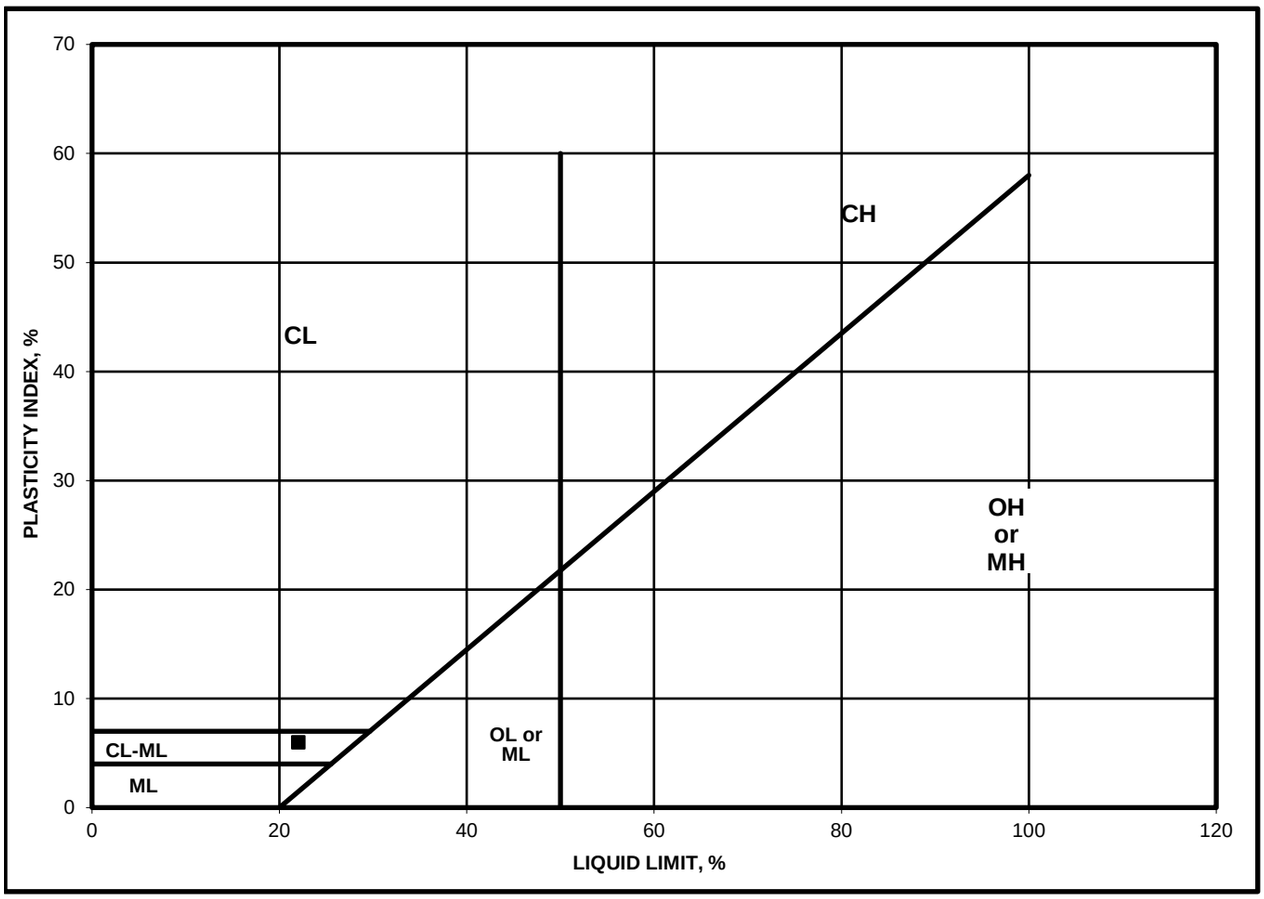
Project Name: 4,824.06kW Solar Array System: N Locust Tree Road Solar - Lodi, CA
Project Number: 4-226-0318
Date Sampled: 5/6/26 Date Tested: 5/19/26
Sampled By: SEG Tested By: MC
Sample Location: B-8 @ 1'-5'

Run Number	Plastic Limit			Liquid Limit		
	1	2	3	1	2	3
Weight of Wet Soil & Tare	22.59	22.58	22.49	29.03	28.45	28.02
Weight of Dry Soil & Tare	21.66	21.62	21.55	26.63	26.09	25.72
Weight of Water	0.93	0.96	0.94	2.40	2.36	2.30
Weight of Tare	15.78	15.54	15.59	15.70	15.51	15.48
Weight of Dry Soil	5.88	6.08	5.96	10.93	10.58	10.24
Water Content	15.8	15.8	15.8	22.0	22.3	22.5
Number of Blows				32	26	22

Plastic Limit : 16 **Liquid Limit : 22**

Plasticity Index: 6

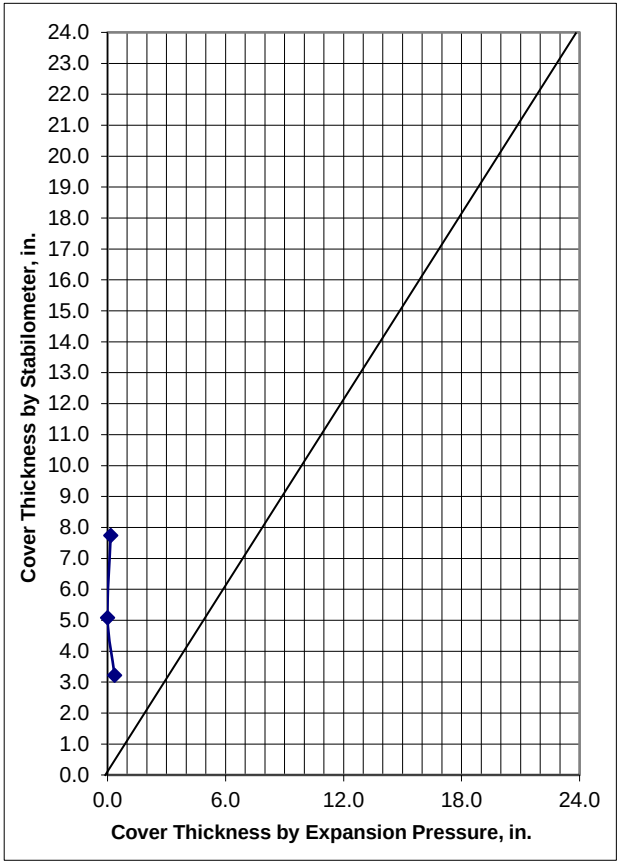
Unified Soil Classification: CL/ML

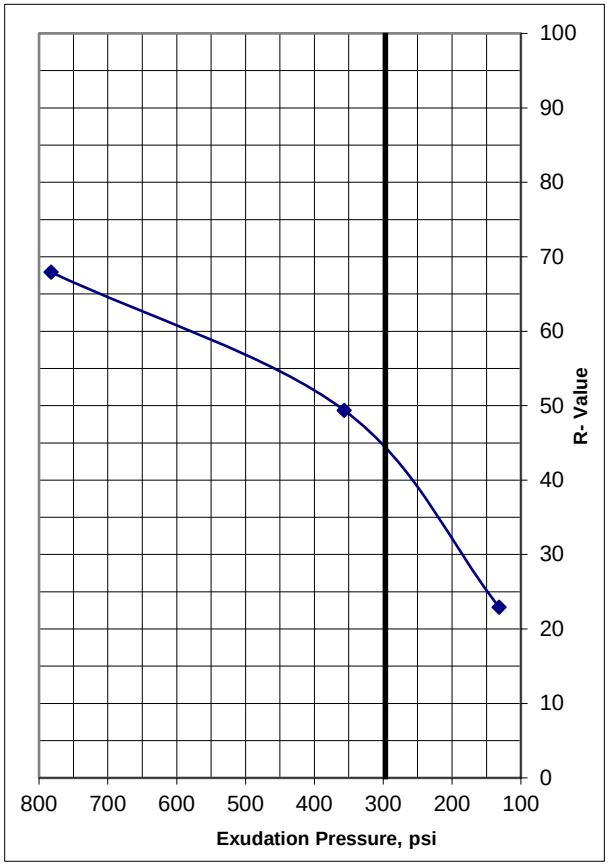


SALEM engineering group, inc.

Resistance R-Value
and Expansion Pressure of Compacted Soils
ASTM D2844

Project Name: 4,824.06kW Solar Array System: N Locust Tree Road Solar - Lodi, CA
Project Number: 4-226-0318
Date Sampled: 5/6/26 Date Tested: 5/22/26
Sampled By: SEG Tested By: JTA
Sample Location: B-1 @ 1'-5'
Soil Description: Silty Clayey SAND (SC-SM)





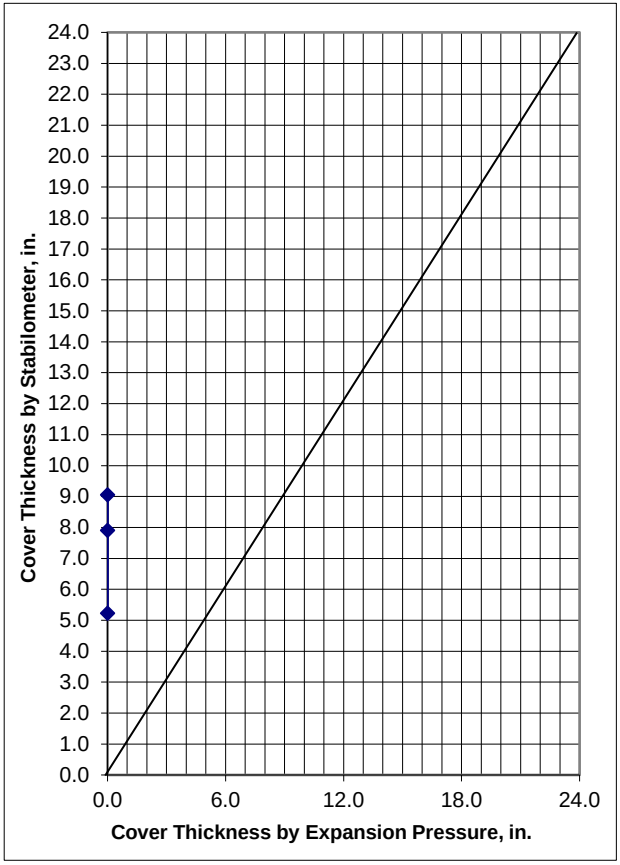
Specimen	1	2	3
Exudation Pressure, psi	782.7	356.7	131.5
Moisture at Test, %	10.1	11.2	12.7
Dry Density, pcf	123.7	120.9	118.2
Expansion Pressure, psf	39	0	17
Thickness by Stabilometer, in.	3.2	5.1	7.7
Thickness by Expansion Pressure, in.	0.4	0.0	0.2
R-Value by Stabilometer	68	49	23
R-Value by Expansion Pressure	N/A		
R-Value at 300 psi Exudation Pressure	44		

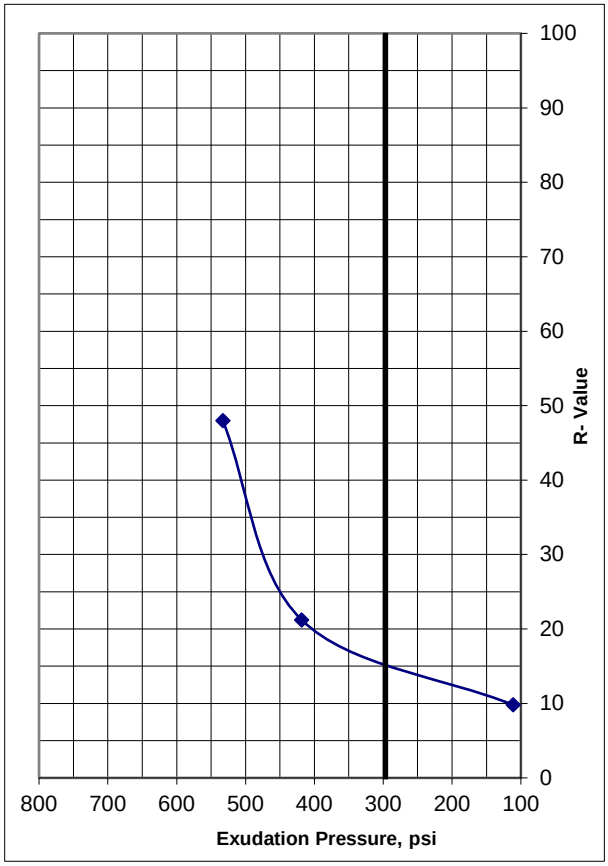
Controlling R-Value	**44**

SALEM engineering group, inc.

Resistance R-Value
and Expansion Pressure of Compacted Soils
ASTM D2844

Project Name: 4,824.06kW Solar Array System: N Locust Tree Road Solar - Lodi, CA
Project Number: 4-226-0318
Date Sampled: 5/6/26 Date Tested: 5/22/26
Sampled By: SEG Tested By: JTA
Sample Location: B-10 @ 1'-5'
Soil Description: Sandy Silty CLAY (CL-ML)





Specimen	1	2	3
Exudation Pressure, psi	533	418.5	111.2
Moisture at Test, %	9.4	10.2	11.7
Dry Density, pcf	128.7	127.0	122.9
Expansion Pressure, psf	0	0	0
Thickness by Stabilometer, in.	5.2	7.9	9.1
Thickness by Expansion Pressure, in.	0.0	0.0	0.0
R-Value by Stabilometer	48	21	10
R-Value by Expansion Pressure	N/A		
R-Value at 300 psi Exudation Pressure	15		

Controlling R-Value	**15**

SALEM engineering group, inc.

CHEMICAL ANALYSIS

SO_4 - Modified CTM 417 & Cl - Modified CTM 417/422

Project Name: 4,824.06kW Solar Array System: N Locust Tree Road Solar - Lodi, CA
Project Number: 4-226-0318
Date Sampled: 5/6/26 Date Tested: 5/15/26
Sampled By: SEG Tested By: MC
Soil Description: Silty Clayey SAND (SC-SM)

Sample Number	Sample Location	Soluble Sulfate SO_4-S	Soluble Chloride Cl	pH
1a.	B-1 @ 1'-5'	190 mg/kg	55 mg/kg	6.9
1b.	B-1 @ 1'-5'	180 mg/kg	52 mg/kg	6.9
1c.	B-1 @ 1'-5'	200 mg/kg	53 mg/kg	6.9
Average:		**190 mg/kg**	**53 mg/kg**	**6.9**

SALEM
engineering group, inc.

CHEMICAL ANALYSIS

SO_4 - Modified CTM 417 & Cl - Modified CTM 417/422

Project Name: 4,824.06kW Solar Array System: N Locust Tree Road Solar - Lodi, CA
Project Number: 4-226-0318
Date Sampled: 5/6/26 Date Tested: 5/15/26
Sampled By: SEG Tested By: MC
Soil Description: Sandy Silty CLAY (CL-ML)

Sample Number	Sample Location	Soluble Sulfate SO_4-S	Soluble Chloride Cl	pH
1a.	B-10 @ 1'-5'	530 mg/kg	71 mg/kg	7.2
1b.	B-10 @ 1'-5'	540 mg/kg	70 mg/kg	7.2
1c.	B-10 @ 1'-5'	550 mg/kg	70 mg/kg	7.2
Average:		**540 mg/kg**	**70 mg/kg**	**7.2**

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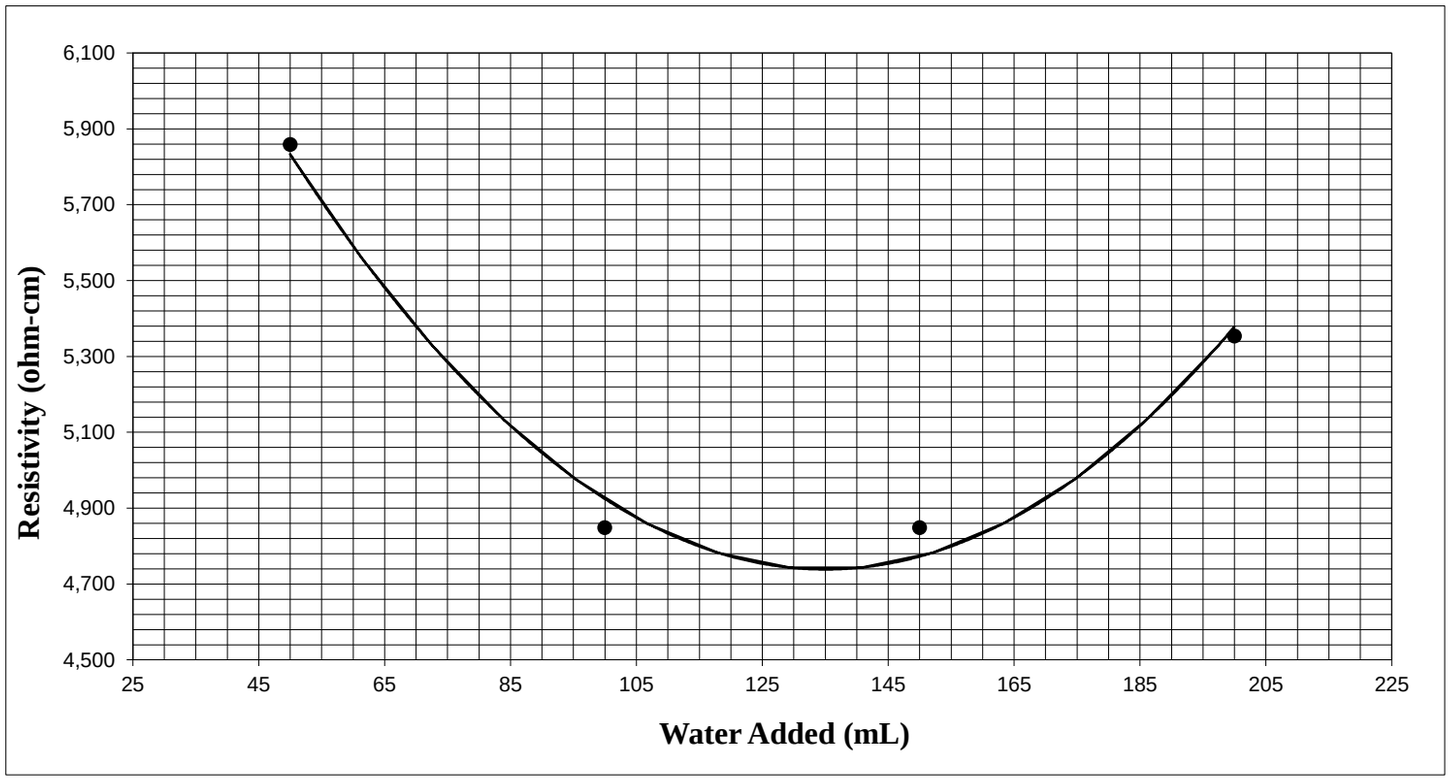
SOIL RESISTIVITY
CTM 643

Project Name: 4,824.06kW Solar Array System: N Locust Tree Road Solar - Lodi, CA
Project Number: 4-226-0318 Date Sampled: 5/6/26 Date Tested: 5/20/26
Sample Location: B-1 @ 1'-5' Sampled By: SEG Tested By: FP
Soil Description: Silty Clayey SAND (SC-SM)

Chloride Content: 53 mg/Kg Initial Sample Weight: 700 gms
Sulfate Content: 190 mg/Kg Test Box Constant: 1.010 cm
Soil pH: 6.9

Test Data:

Trial #	Water Added (mL)	Meter Dial Reading	Multiplier Setting	Resistance (ohms)	Resistivity (ohm-cm)
1	50	5.8	1,000	5,800	5,858
2	100	4.8	1,000	4,800	4,848
3	150	4.8	1,000	4,800	4,848
4	200	5.3	1,000	5,300	5,353



Minimum Resistivity:	**4,738** ohm-cm

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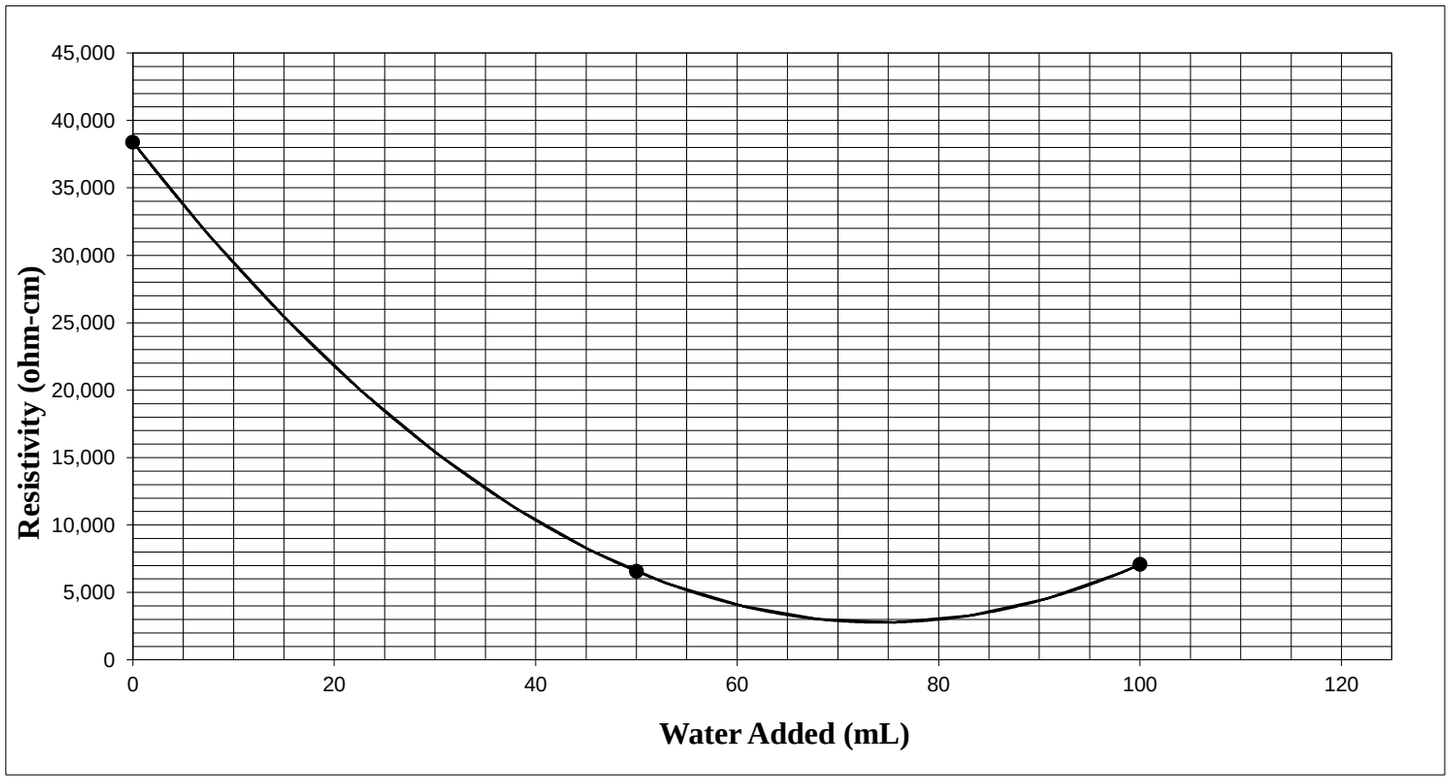
SOIL RESISTIVITY
CTM 643

Project Name: 4,824.06kW Solar Array System: N Locust Tree Road Solar - Lodi, CA
Project Number: 4-226-0318 Date Sampled: 5/6/26 Date Tested: 5/21/26
Sample Location: B-10 @ 1'-5' Sampled By: SEG Tested By: FP
Soil Description: Sandy Silty CLAY (CL-ML)

Chloride Content: 70 mg/Kg Initial Sample Weight: 700 gms
Sulfate Content: 540 mg/Kg Test Box Constant: 1.010 cm
Soil pH: 7.2

Test Data:

Trial #	Water Added (mL)	Meter Dial Reading	Multiplier Setting	Resistance (ohms)	Resistivity (ohm-cm)
1	0	3.8	10,000	38,000	38,382
2	50	6.5	1,000	6,500	6,565
3	100	7.0	1,000	7,000	7,070



Minimum Resistivity:	**2,775** ohm-cm

SALEM engineering group, inc.

Thermal Conductivity by Thermal Probe
ASTM D5334

Project Name: 4,824.06kW Solar Array System: N Locust Tree Road Solar - Lodi, CA

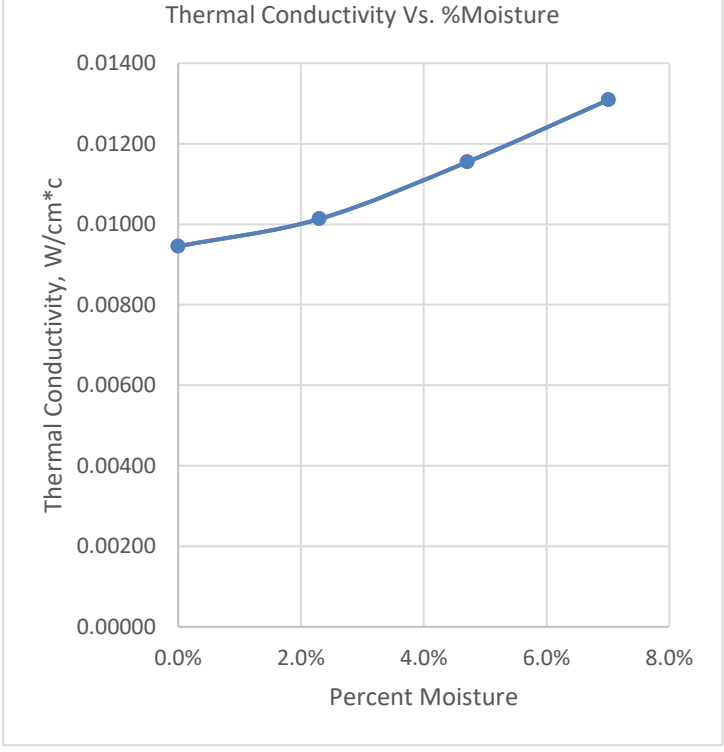
Project Number: 4-226-0318 **Date Tested:** 5/26/2026

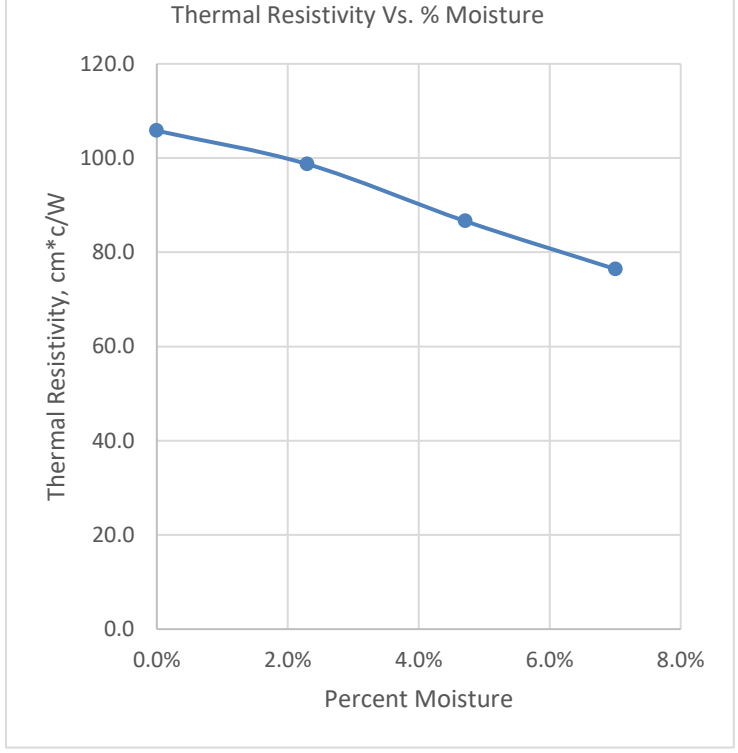
Tested By: MC

Test Boring: B-3

Depth: 1'-5' Feet BSG **Maximum Dry Density, pcf:** 128.1

Wet Weight, gm	831.3	853.5	874.7	894.3
Dry Weight, gm	831.3	833.9	833.5	831.6
Moisture Content, %	0.0%	2.3%	4.7%	7.0%
Average Length, in	6.10	6.00	6.00	5.90
Average Diameter, in	2.42	2.42	2.42	2.42
Dry Density, pcf	112.9	115.2	115.3	117.3
Remolded Compaction, %	88%	90%	90%	92%
Thermal Conductivity, W/cm*c◦	0.009	0.010	0.012	0.013
Thermal Resistivity, cm*c◦/W	105.800	98.700	86.600	76.400





SALEM engineering group, inc.

Thermal Conductivity by Thermal Probe
ASTM D5334

Project Name: 4,824.06kW Solar Array System: N Locust Tree Road Solar - Lodi, CA

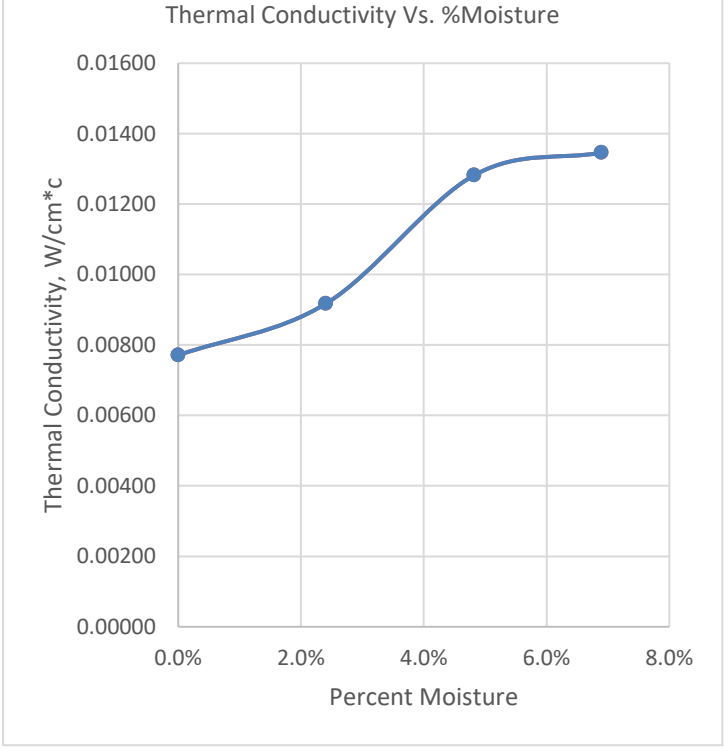
Project Number: 4-226-0318 **Date Tested:** 5/26/2026

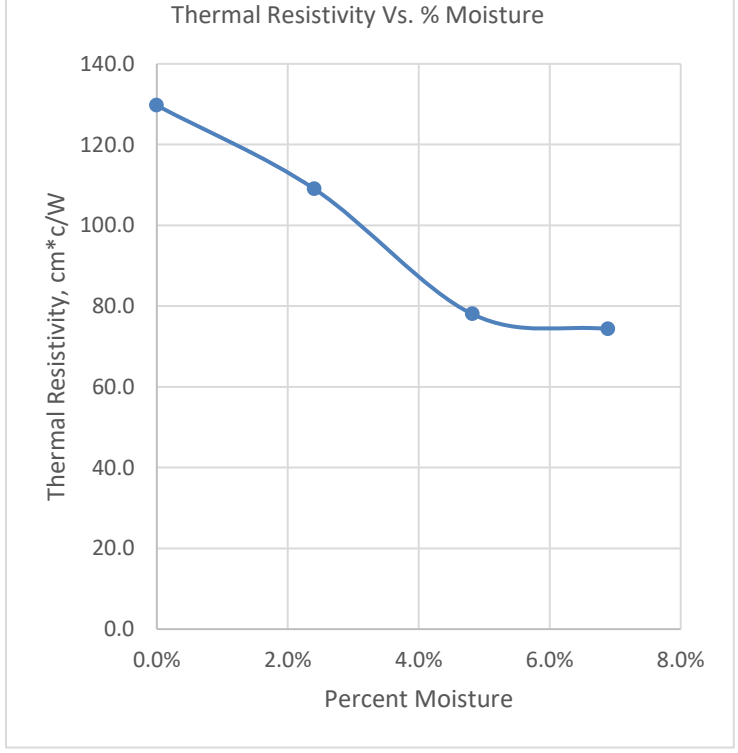
Tested By: MC

Test Boring: B-3

Depth: 1'-5' Feet BSG **Maximum Dry Density, pcf:** 128.1

Wet Weight, gm	877.6	904.6	922.2	943.4
Dry Weight, gm	877.6	882.8	877.7	878.4
Moisture Content, %	0.0%	2.4%	4.8%	6.9%
Average Length, in	6.20	6.10	6.10	6.00
Average Diameter, in	2.42	2.42	2.42	2.42
Dry Density, pcf	117.2	119.9	119.5	121.8
Remolded Compaction, %	92%	94%	93%	95%
Thermal Conductivity, W/cm*c◦	0.008	0.009	0.013	0.013
Thermal Resistivity, cm*c◦/W	129.700	109.000	78.000	74.300





SALEM engineering group, inc.

Thermal Conductivity by Thermal Probe
ASTM D5334

Project Name: 4,824.06kW Solar Array System: N Locust Tree Road Solar - Lodi, CA

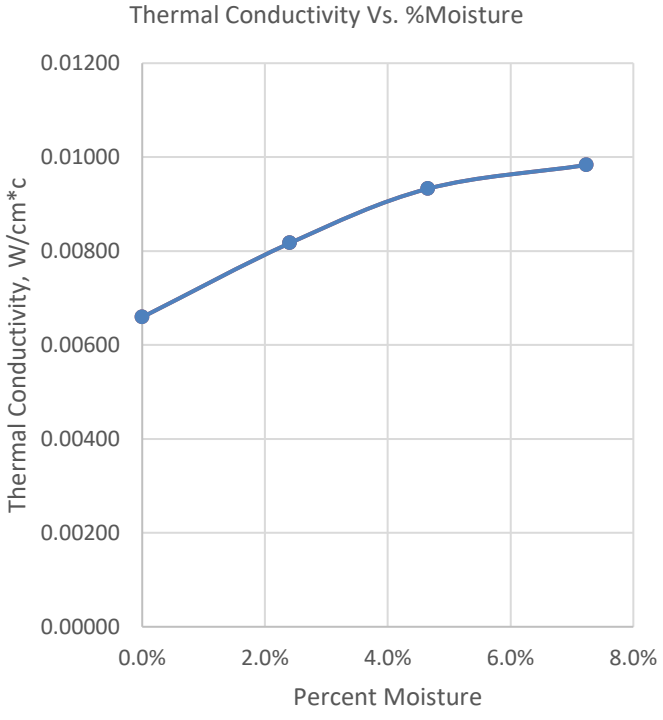
Project Number: 4-226-0318 **Date Tested:** 5/26/2026

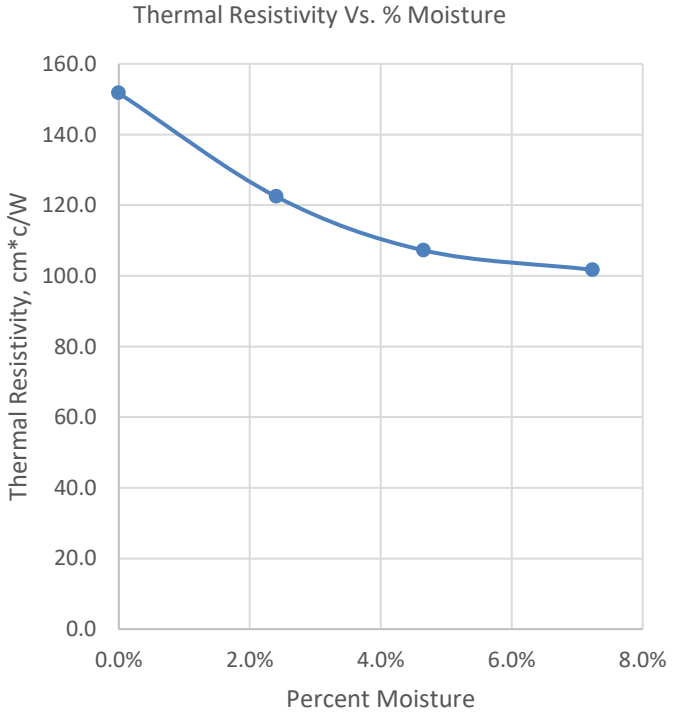
Tested By: MC

Test Boring: B-8

Depth: 1'-5' Feet BSG **Maximum Dry Density, pcf:** 126

Wet Weight, gm	817.5	838.1	859.5	880.5
Dry Weight, gm	817.5	817.9	819.5	816.8
Moisture Content, %	0.0%	2.4%	4.7%	7.2%
Average Length, in	6.10	6.00	6.00	5.90
Average Diameter, in	2.42	2.42	2.42	2.42
Dry Density, pcf	111.0	113.0	113.4	115.3
Remolded Compaction, %	88%	90%	90%	91%
Thermal Conductivity, W/cm*c◦	0.007	0.008	0.009	0.010
Thermal Resistivity, cm*c◦/W	151.700	122.400	107.200	101.700





SALEM engineering group, inc.

Thermal Conductivity by Thermal Probe
ASTM D5334

Project Name: 4,824.06kW Solar Array System: N Locust Tree Road Solar - Lodi, CA

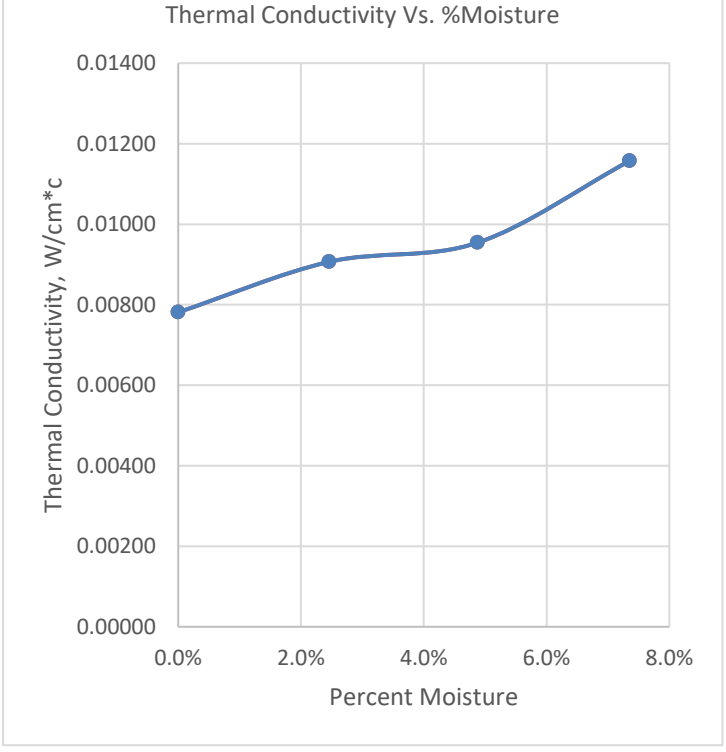
Project Number: 4-226-0318 **Date Tested:** 5/26/2026

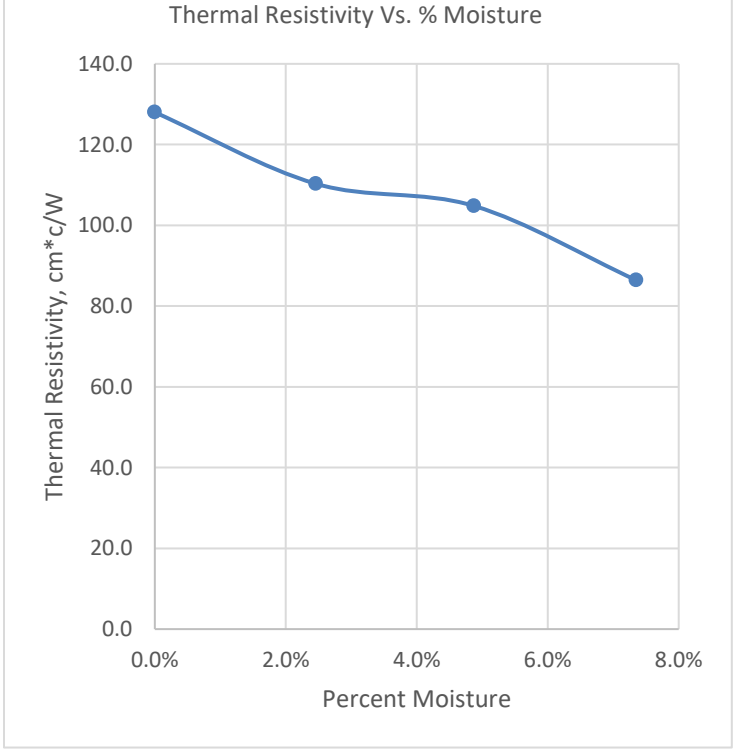
Tested By: MC

Test Boring: B-8

Depth: 1'-5' Feet BSG **Maximum Dry Density, pcf:** 126

Wet Weight, gm	862.9	884.8	907.8	957.3
Dry Weight, gm	862.9	863.0	863.5	886.9
Moisture Content, %	0.0%	2.5%	4.9%	7.4%
Average Length, in	6.20	6.10	6.10	6.00
Average Diameter, in	2.42	2.42	2.42	2.42
Dry Density, pcf	115.3	117.3	117.5	123.1
Remolded Compaction, %	91%	93%	93%	98%
Thermal Conductivity, W/cm*c◦	0.008	0.009	0.010	0.012
Thermal Resistivity, cm*c◦/W	128.000	110.300	104.800	86.400





SALEM engineering group, inc.

APPENDIX

C

APPENDIX C
GENERAL EARTHWORK AND PAVEMENT SPECIFICATIONS

When the text of the report conflicts with the general specifications in this appendix, the recommendations in the report have precedence.

1.0 SCOPE OF WORK: These specifications and applicable plans pertain to and include all earthwork associated with the site rough grading, including, but not limited to, the furnishing of all labor, tools and equipment necessary for site clearing and grubbing, stripping, preparation of foundation materials for receiving fill, excavation, processing, placement and compaction of fill and backfill materials to the lines and grades shown on the project grading plans and disposal of excess materials.

2.0 PERFORMANCE: The Contractor shall be responsible for the satisfactory completion of all earthwork in accordance with the project plans and specifications. This work shall be inspected and tested by a representative of SALEM Engineering Group, Incorporated, hereinafter referred to as the Soils Engineer and/or Testing Agency. Attainment of design grades, when achieved, shall be certified by the project Civil Engineer. Both the Soils Engineer and the Civil Engineer are the Owner's representatives. If the Contractor should fail to meet the technical or design requirements embodied in this document and on the applicable plans, he shall make the necessary adjustments until all work is deemed satisfactory as determined by both the Soils Engineer and the Civil Engineer. No deviation from these specifications shall be made except upon written approval of the Soils Engineer, Civil Engineer, or project Architect.

No earthwork shall be performed without the physical presence or approval of the Soils Engineer. The Contractor shall notify the Soils Engineer at least 2 working days prior to the commencement of any aspect of the site earthwork.

The Contractor shall assume sole and complete responsibility for job site conditions during the course of construction of this project, including safety of all persons and property; that this requirement shall apply continuously and not be limited to normal working hours; and that the Contractor shall defend, indemnify and hold the Owner and the Engineers harmless from any and all liability, real or alleged, in connection with the performance of work on this project, except for liability arising from the sole negligence of the Owner or the Engineers.

3.0 TECHNICAL REQUIREMENTS: All compacted materials shall be densified to no less that 95 percent of relative compaction (90 percent for cohesive soils) based on ASTM D1557 Test Method (latest edition), UBC or CAL-216, or as specified in the technical portion of the Soil Engineer's report. The location and frequency of field density tests shall be determined by the Soils Engineer. The results of these tests and compliance with these specifications shall be the basis upon which satisfactory completion of work will be judged by the Soils Engineer.

4.0 SOILS AND FOUNDATION CONDITIONS: The Contractor is presumed to have visited the site and to have familiarized himself with existing site conditions and the contents of the data presented in the Geotechnical Engineering Report. The Contractor shall make his own interpretation of the data contained in the Geotechnical Engineering Report and the Contractor shall not be relieved of liability for any loss sustained as a result of any variance between conditions indicated by or deduced from said report and the actual conditions encountered during the progress of the work.

5.0 DUST CONTROL: The work includes dust control as required for the alleviation or prevention of any dust nuisance on or about the site or the borrow area, or off-site if caused by the Contractor's operation either during the performance of the earthwork or resulting from the conditions in which the Contractor leaves the site. The Contractor shall assume all liability, including court costs of codefendants, for all claims related to dust or wind-blown materials attributable to his work. Site preparation shall consist of site clearing and grubbing and preparation of foundation materials for receiving fill.

6.0 CLEARING AND GRUBBING: The Contractor shall accept the site in this present condition and shall demolish and/or remove from the area of designated project earthwork all structures, both surface and subsurface, trees, brush, roots, debris, organic matter and all other matter determined by the Soils Engineer to be deleterious. Such materials shall become the property of the Contractor and shall be removed from the site.

Tree root systems in proposed improvement areas should be removed to a minimum depth of 3 feet and to such an extent which would permit removal of all roots greater than 1 inch in diameter. Tree roots removed in parking areas may be limited to the upper 1½ feet of the ground surface. Backfill of tree root excavations is not permitted until all exposed surfaces have been inspected and the Soils Engineer is present for the proper control of backfill placement and compaction. Burning in areas which are to receive fill materials shall not be permitted.

7.0 SUBGRADE PREPARATION: Surfaces to receive Engineered Fill and/or building or slab loads shall be prepared as outlined above, scarified to a minimum of 12 inches, moisture-conditioned as necessary, and recompacted to 95 percent relative compaction (90 percent for cohesive soils).

Loose soil areas and/or areas of disturbed soil shall be moisture-conditioned as necessary and recompacted to 95 percent relative compaction (90 percent for cohesive soils). All ruts, hummocks, or other uneven surface features shall be removed by surface grading prior to placement of any fill materials. All areas which are to receive fill materials shall be approved by the Soils Engineer prior to the placement of any fill material.

8.0 EXCAVATION: All excavation shall be accomplished to the tolerance normally defined by the Civil Engineer as shown on the project grading plans. All over-excavation below the grades specified shall be backfilled at the Contractor's expense and shall be compacted in accordance with the applicable technical requirements.

9.0 FILL AND BACKFILL MATERIAL: No material shall be moved or compacted without the presence or approval of the Soils Engineer. Material from the required site excavation may be utilized for construction site fills, provided prior approval is given by the Soils Engineer. All materials utilized for constructing site fills shall be free from vegetation or other deleterious matter as determined by the Soils Engineer.

10.0 PLACEMENT, SPREADING AND COMPACTION: The placement and spreading of approved fill materials and the processing and compaction of approved fill and native materials shall be the responsibility of the Contractor. Compaction of fill materials by flooding, ponding, or jetting shall not be permitted unless specifically approved by local code, as well as the Soils Engineer. Both cut and fill shall be surface-compacted to the satisfaction of the Soils Engineer prior to final acceptance.

11.0 SEASONAL LIMITS: No fill material shall be placed, spread, or rolled while it is frozen or thawing, or during unfavorable wet weather conditions. When the work is interrupted by heavy rains, fill operations shall not be resumed until the Soils Engineer indicates that the moisture content and density of previously placed fill is as specified.

12.0 DEFINITIONS - The term "pavement" shall include asphaltic concrete surfacing, untreated aggregate base, and aggregate subbase. The term "subgrade" is that portion of the area on which surfacing, base, or subbase is to be placed.

The term “Standard Specifications”: hereinafter referred to, is the most recent edition of the Standard Specifications of the State of California, Department of Transportation. The term "relative compaction" refers to the field density expressed as a percentage of the maximum laboratory density as determined by ASTM D1557 Test Method (latest edition) or California Test Method 216 (CAL-216), as applicable.

13.0 PREPARATION OF THE SUBGRADE - The Contractor shall prepare the surface of the various subgrades receiving subsequent pavement courses to the lines, grades, and dimensions given on the plans. The upper 12 inches of the soil subgrade beneath the pavement section shall be compacted to a minimum relative compaction of 95 percent based upon ASTM D1557. The finished subgrades shall be tested and approved by the Soils Engineer prior to the placement of additional pavement courses.

14.0 AGGREGATE BASE - The aggregate base material shall be spread and compacted on the prepared subgrade in conformity with the lines, grades, and dimensions shown on the plans. The aggregate base material shall conform to the requirements of Section 26 of the Standard Specifications for Class II material, ¾-inch or 1½-inches maximum size. The aggregate base material shall be compacted to a minimum relative compaction of 95 percent based upon CAL-216. The aggregate base material shall be spread in layers not exceeding 6 inches and each layer of aggregate material course shall be tested and approved by the Soils Engineer prior to the placement of successive layers.

15.0 AGGREGATE SUBBASE - The aggregate subbase shall be spread and compacted on the prepared subgrade in conformity with the lines, grades, and dimensions shown on the plans. The aggregate subbase material shall conform to the requirements of Section 25 of the Standard Specifications for Class II Subbase material. The aggregate subbase material shall be compacted to a minimum relative compaction of 95 percent based upon CAL-216, and it shall be spread and compacted in accordance with the Standard Specifications. Each layer of aggregate subbase shall be tested and approved by the Soils Engineer prior to the placement of successive layers.

16.0 ASPHALTIC CONCRETE SURFACING - Asphaltic concrete surfacing shall consist of a mixture of mineral aggregate and paving grade asphalt, mixed at a central mixing plant and spread and compacted on a prepared base in conformity with the lines, grades, and dimensions shown on the plans. The viscosity grade of the asphalt shall be PG 64-10, unless otherwise stipulated or local conditions warrant more stringent grade. The mineral aggregate shall be Type A or B, ½ inch maximum size, medium grading, and shall conform to the requirements set forth in Section 39 of the Standard Specifications. The drying, proportioning, and mixing of the materials shall conform to Section 39. The prime coat, spreading and compacting equipment, and spreading and compacting the mixture shall conform to the applicable chapters of Section 39, with the exception that no surface course shall be placed when the atmospheric temperature is below 50 degrees F. The surfacing shall be rolled with a combination steel-wheel and pneumatic rollers, as described in the Standard Specifications. The surface course shall be placed with an approved self-propelled mechanical spreading and finishing machine.

Appendix E

Noise Study

Construction Noise

Distance	Noise Level @ 50 ft	14300 n Locust Tree Rd	10250 E. Kettleman Lane
		70	130
Site Preparation	78	75.077	69.701
Building Construction	94	91.077	85.701
Paving	73	70.077	64.701
Staging	76	73.077	67.701

Construction Vibration

Distance	Vibration @ 25 ft	SFR
		110
Vibratory Roller	0.21	0.023
Large Bulldozer	0.089	0.010
Loaded Trucks	0.076	0.008
Small Bulldozer	0.003	0.000
Distance	Vibration @ 25 ft	SFR
		135
Impact Pile Drive	1.518	0.121

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 06/29/2026
Case Description: Site Preparation

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Site Preparation	Residential	65.0	55.0	50.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Front End Loader	No	40		79.1	50.0	0.0
Front End Loader	No	40		79.1	50.0	0.0

Results

Noise Limits (dBA)

Noise Limit Exceedance (dBA)

Equipment	Calculated (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq	Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq
Front End Loader	79.1	75.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	79.1	75.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	79.1	78.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 06/26/2026
Case Description: Building Construction

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Building Construction	Residential	65.0	55.0	50.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Impact Pile Driver	Yes	20		101.3	50.0	0.0
Man Lift	No	20		74.7	50.0	0.0
Backhoe	No	40		77.6	50.0	0.0

Results

Noise Limits (dBA)

Noise Limit Exceedance (dBA)

Equipment	Calculated (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq	Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq
Impact Pile Driver	101.3	94.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Man Lift	74.7	67.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	77.6	73.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	101.3	94.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 06/26/2026
Case Description: Paving

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Paving	Residential	65.0	55.0	50.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Roller	No	20		80.0	50.0	0.0

Results

Noise Limits (dBA)

Noise Limit Exceedance (dBA)

Equipment	Calculated (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq	Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq
Roller	80.0	73.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	80.0	73.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 06/26/2026
Case Description: Staging

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Staging	Residential	65.0	55.0	50.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Pickup Truck	No	40		75.0	50.0	0.0
Pickup Truck	No	40		75.0	50.0	0.0
Pickup Truck	No	40		75.0	50.0	0.0

Results

Noise Limits (dBA)

Noise Limit Exceedance (dBA)

Equipment	Calculated (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq	Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq
Pickup Truck	75.0	71.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Pickup Truck	75.0	71.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Pickup Truck	75.0	71.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	75.0	75.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

250 kW-600 V, 1500 Vdc String Inverters for North America



CPS SCH250K-T-US-600

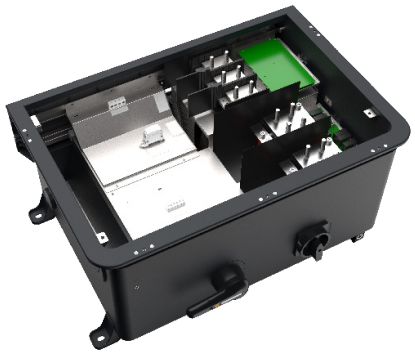
The CPS 250 kW-600 V three-phase string inverters are designed for ground mount applications. The units are high performance, advanced, and reliable inverters designed specifically for the North American environment and grid. High efficiency at 98.83% peak and 98.4% CEC, wide operating voltages, broad temperature ranges, and a NEMA Type 4X enclosure enable this inverter platform to operate at high performance across many applications. The CPS 250 kW-600 V products ship with the Distributed or Centralized Wire Box, each fully integrated and separable with AC and DC disconnect switches. Enhanced DC wire boxes allow DC disconnection under short circuit conditions. The CPS FlexOM Gateway enables communication, controls, and remote product upgrades.

Key Features

- UL 1741-SA/SB and IEEE1547-2018 certified
- Touch-safe DC Fuse holders add convenience and safety
- CPS FlexOM Gateway enables remote firmware upgrades
- Integrated AC and DC disconnect switches
- Enhanced DC wire boxes
- Copper- and aluminum-compatible AC connections
- NEMA Type 4X outdoor rated enclosure
- Advanced Smart-Grid features
- kVA headroom yields 250 kW @ 0.95 PF
- PID mitigation function
- Separable wire box design for fast service
- Distributed or Centralized wire box options



250 kW-600 V Distributed Wire Box



250 kW-600 V Centralized Wire Box

This device complies with part 15 of the FCC Rules

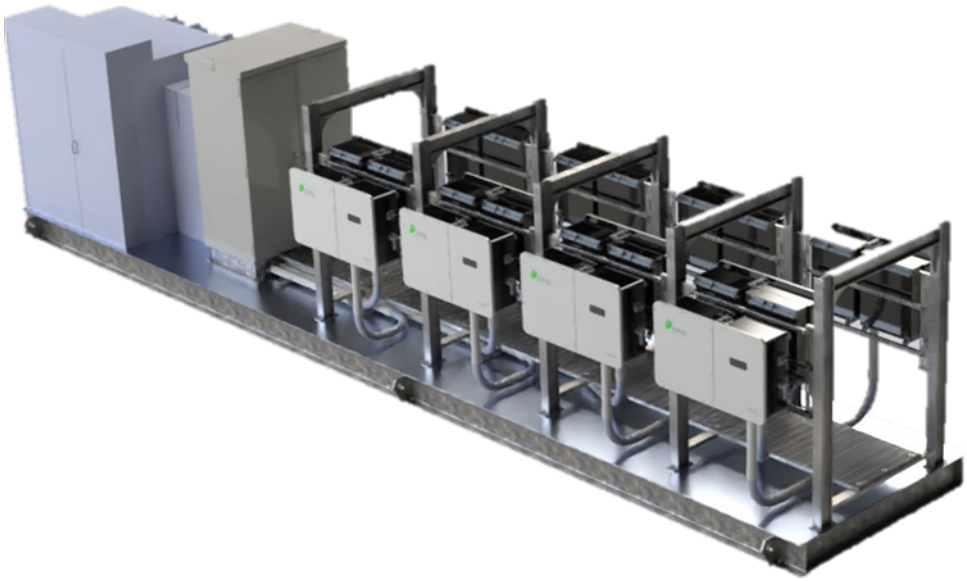
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Model Name	CPS SCH250K-T-US-600
DC Input	
Max. PV power	425 kW
Max. DC input voltage	1500 V
Operating DC input voltage range	860-1450 Vdc
Start-up DC input voltage / power	900 V / 250 W
Number of MPP trackers	1
MPPT voltage range for Pnom[1]	900-1300 Vdc
Max. PV short-circuit current[2]	450 A
Number of DC inputs	Distributed Wire Box: 30 PV source circuits, fused Centralized Wire Box: 1 input circuit, 1-2 terminations per pole, non-fused
DC disconnection type	Distributed Wire box: Enhanced DC switches Centralized Wire Box: Enhanced DC disconnect
DC surge protection	Type II MOV
AC Output	
Rated AC output power	250 kW
Max. AC apparent power (selectable[3])	250 kVA / 264 kVA (@ PF >0.95)
Rated output voltage	600 Vac
Output voltage range[4]	528-660 Vac
Grid connection type[5]	3Φ / PE / N (neutral optional)
Max. AC output current @ 600 Vac	241 A (@ 250 kVA) / 254 A (@ 264 kVA)
Rated output frequency	60 Hz
Output frequency range[4]	57-63 Hz
Power factor	>0.99 (±0.8 adjustable)
Current TRD	< 3%
Max. fault current contribution (1 cycle RMS)	274 A
Max. OCPD rating	400 A
AC disconnection type	Load-rated AC switch
AC surge protection	Type II MOV
System	
Topology	Transformerless
Max. efficiency	98.83%
CEC efficiency	98.4%
Night consumption[6]	< 16 W
Environment	
Enclosure protection degree	NEMA Type 4X
Cooling method	Variable speed cooling fans
Operating temperature range	-22°F to 140°F / -30°C to 60°C (derating from 108°F / 42°C)
Non-operating temperature range[7]	-40°F to 158°F / -40°C to 70°C
Operating humidity	0-95%
Operating altitude	≤ 13123 ft / 4000 m
Audible noise	< 80 dBA @ 1 m and 77°F (25°C)
Display and Communication	
User interface and display	LED indicators; Bluetooth and app
Inverter monitoring	Modbus RS485
Site-level monitoring	CPS FlexOM Gateway (1 per 32 inverters)
Modbus data mapping	SunSpec / CPS
Remote diagnostics / firmware upgrade functions	Standard / (with FlexOM Gateway)
Mechanical	
Dimensions (W × H × D)	Powerhead: 28.46 × 33 × 13.98 in (723 × 840 × 355 mm) Wire Box: 23.11 × 33 × 13.98 in (587 × 840 × 355 mm)
Weight (approximate)	Powerhead: 175 lb (79.5 kg) Wire Box: 106 lb (48 kg)
Mounting / installation angle	Vertical
AC termination	M12 stud type terminal [3Φ] (wire range: 350 kcmil-750 kcmil CU/AL; lugs not supplied) Screw clamp terminal block [N] (#12-1/0 AWG CU/AL)
DC termination	Distributed Wire Box: Screw clamp fuse holder (wire range: #14-#8 AWG CU) Centralized Wire Box: Busbar (<600 kcmil CU/AL [2 terminations per pole]; lugs not supplied)
Fused string inputs	Distributed Wire Boxes: 30 A fuses provided
Safety	
Certifications and standards	UL 1741-SA/SB Ed. 3, CSA-C22.2 NO.107.1-01, IEEE 1547-2018, FCC Part 15, UL 1699B[8]
Selectable grid standard	IEEE 1547a-2014, IEEE 1547-2018, CA Rule 21, ISO-NE, HECO
Smart-grid features	Volt-RideThru, Freq-RideThru, Ramp-Rate, Specified-PF, Volt-VAR, Freq-Watt, Volt-Watt
Warranty	
Standard	5 years
Extended terms	10, 15, and 20 years

1) See user manual for further information regarding MPPT voltage range specifications.
2) The sum of parallel-connected PV module short-circuit currents.
3) Inverter is factory set to 250 kVA by default. Contact CPS to enable the 264 kVA setting.
4) The "output voltage range" and "output frequency range" may differ according to the specific grid standard.
5) Delta configurations must not be corner-grounded.
6) Consumption may be higher when PID function is enabled.
7) See user manual for further requirements regarding non-operating conditions.
8) AFCI function available for Distributed wire boxes only.

Skidded String MV Station



The CPS skidded string medium voltage station combines the strengths of string inverters in a centralized layout, optimizing energy production and control granularity. This high performance, pre-integrated system is not only designed for reliability, but additionally reduces on-site labor, shortens installation time, and lowers total project costs. The station can support up to twelve (12) CPS 250 kW-600 V inverters with centralized wire boxes on a single steel skid and is compatible with DC combiners and/or trunk-bus cabling for design flexibility.

Key Features

- Offers 2.5 MW and 3 MW options to maximize power density and ease of deployment
- Separable wire box design in the inverters to reduce O&M time and improve serviceability
- Fully integrated plug-and-play solution to simplify procurement and installation
- Includes an MV transformer and a 600 V switchboard
- US-made skid materials and transformer options available

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Product	CPS 2.5/3 MW Skidded String MV Station	
DC Input		
Max. DC voltage	1500 V	
MMPT voltage range	860-1450 V	
No. of MPPTs per inverter	1	
Max. PV short-circuit current	450 A per inverter	
DC inputs	10	12
AC Output		
AC output power	2500 kW @ 107.6°F (42°C)	3000 kW @ 107.6°F (42°C)
Max. AC apparent power output (selectable)[1]	2500 kVA / 2640 kVA @ 107.6°F (42°C)	3000 kVA / 3168 kVA @ 107.6°F (42°C)
Rated output frequency	60 Hz	
Output frequency range	57-63 Hz	
Power factor	> 0.99 (±0.8 adjustable)	
Current TRD (inverter)	< 3%	
Max. efficiency (inverter)	98.83%	
CEC efficiency (inverter)	98.4%	
AC Switchgear		
OCPD	10 circuit breakers	12 circuit breakers
Main breaker	Included	
Transformer		
Transformer rated capacity	2700 kVA	3300 kVA
High voltage	12.47-34.5 kV	
Low voltage	600 V	
Transformer vector	Dy1 (optional: YNyn0, Yd1)	
Transformer cooling methods	KNAN	
General Data		
Max. operating altitude	3280.8 ft / 1000 m (standard)	
PID mitigation function	Included	
H-frame	Included	
Auxiliary transformer	5 kVA	
Approx. dimensions (W × H × D)	9 × 7 × 40 ft (2.7 × 2.1 × 12.2 m)	
Approx. weight	17 T	

1) Each inverter is factory set to 250 kVA by default. Contact CPS to enable the 264 kVA setting.

Mitigation Monitoring and Reporting Program

The Initial Study-Mitigated Negative Declaration identifies the applicable mitigation measures that will be implemented to reduce the impacts associated with the North Locust Tree Road Solar Project. The California Environmental Quality Act (CEQA) requires a public agency to adopt a monitoring and reporting program for assessing and ensuring compliance with any required mitigation measures applied to proposed development. As stated in section 21081.6(a)(1) of the Public Resources Code:

> ...the public agency shall adopt a reporting or monitoring program for the changes made to the project or conditions of project approval, adopted in order to mitigate or avoid significant effects on the environment.

Section 21081.6 also provides general guidelines for implementing mitigation monitoring programs and indicates that specific reporting and/or monitoring requirements, to be enforced during project implementation, shall be defined as part of adopting an Initial Study-Mitigated Negative Declaration.

To ensure that the mitigation measures are properly implemented, a monitoring program has been devised which identifies the timing and responsibility for monitoring each measure. The project Applicant will have the responsibility for implementing the measures that apply to development activity, and the various San Joaquin County departments will have the primary responsibility for monitoring and reporting the implementation of the mitigation measures.

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Mitigation Measure	Implementation Procedures	Monitoring and Reporting Action	Monitoring Timing	Monitoring Responsibility	Compliance Verification (Initial, Date, Comments)
Air Quality					
AQ-1: Minimize Personnel and Public Exposure to Valley Fever					
Prior to site preparation, grading activities, or ground disturbance, the Project Applicant shall prepare a Fugitive Dust Control Plan for the Project. The Fugitive Dust Control Plan shall include the following at a minimum: • Equipment, vehicles, and other items shall be cleaned thoroughly of dust before they are moved off-site to other work locations. • Wherever possible, grading, and trenching work shall be phased, so that earth-moving equipment works well ahead or down-wind of workers on the ground. • The area immediately behind grading or trenching equipment shall be sprayed with water before ground workers move into the area. • If a water truck runs out of water before dust is dampened sufficiently, ground workers exposed to dust are to leave the area until a full truck resumes water spraying. • All heavy-duty earth-moving vehicles shall be closed-cab and equipped with a High Efficiency Particulate Arrestance-filtered air system, or High Efficiency masks that can be worn by the vehicle operators. • N95 respirators shall be available to on-site workers for the duration of the construction period. • Workers shall receive training to recognize the symptoms of Valley Fever and shall be instructed to promptly report suspected symptoms of work-related Valley Fever to a supervisor. Evidence of training shall be kept on-site for review as required by regulatory agencies. • Valley Fever information shall be available on-site for all construction personnel. The information shall provide, at a minimum, a description of the symptoms, health effects, preventative measures, and treatment.	The Project Applicant shall prepare and submit a Fugitive Dust Control Plan to the San Joaquin County Department of Community Development for review.	Verify that a Fugitive Dust Control Plan is completed.	Prior to ground disturbance.	San Joaquin County Department of Community Development	
	The Project Applicant shall implement the requirements of the Fugitive Dust Control Plan.	Verify measures are implemented during construction as needed.	During site preparation, grading, and ground disturbance.		
Biological Resources					
BIO-1: Pre-construction Nesting Bird Surveys					
A preconstruction nesting bird survey shall be performed by a qualified biologist no earlier than one week prior to any ground disturbance or vegetation removal activities that start during the nesting season (February 1–August 31) to determine if any native birds are nesting on or near the Project Site (including a 250-foot buffer for raptors, where accessible). Should the Project be accessed via Access Road B and improvements to the road are necessary, the nesting bird survey shall be extended to incorporate Access Road B and shall include a 250-foot buffer for raptors, as accessible. If any active nests are detected during surveys, a suitable avoidance buffer from the nests shall be determined by a qualified biologist based on species, location, and extent and type of planned construction activity. These nests would be avoided until the chicks have fledged and/or the nests are no longer active, as determined by the qualified biologist. Any ground disturbance or suitable nesting habitat (i.e., trees and vegetation) that would need to be removed under the Project shall occur outside of the bird breeding season (September 1–January 31) to avoid impacts to nesting birds, when feasible.	If construction starts during the nesting season (February 1-August 31), a nesting bird survey shall be conducted by a qualified biologist of the disturbance area plus a 250-foot buffer for raptors, where accessible.	Verify that surveying has occurred if construction starts during the nesting season (February 1-August 31).	Prior to construction.	San Joaquin County Department of Community Development	
	If active nests are detected, establish an appropriate avoidance buffer and assign a biological monitor, as necessary.	Enforce appropriate avoidance buffer and confirm biological monitor presence, as necessary.	Prior to construction, as necessary.		
Cultural Resources					
CUL-1: Workers Environmental Awareness Program					
Prior to the start of ground-disturbing activities, including grading, trenching, excavation for utility poles and equipment pads, fence installation, and construction of Access Road B if required, the Project Applicant shall retain a qualified archaeologist to develop and deliver a Workers' Environmental Awareness Program (WEAP) training for all construction personnel. The WEAP shall describe the types of archaeological and tribal cultural resources that may occur in the Project area, summarize the legal obligations for protecting such resources (including CEQA Guidelines Section 15064.5 and Public Resources Code Sections 5097.5 and 5097.98), and explain the procedures to be followed in the event of an unanticipated discovery, including immediate work stoppage within the vicinity of the find and notification of the qualified archaeologist and appropriate agencies. Documentation of WEAP attendance shall be maintained on site during construction and provided to the County upon request.	The Project Applicant shall retain a Qualified Archaeologist and conduct a Worker's Environmental Awareness Program (WEAP) for all workers participating in ground-disturbing activity for Project development.	Verify WEAP Training has been conducted.	Prior to ground-disturbing activities.	San Joaquin County Department of Community Development	
CUL-2: Preconstruction Survey of Access Road B and Unanticipated Discovery of Cultural Resources					

Mitigation Measure	Implementation Procedures	Monitoring and Reporting Action	Monitoring Timing	Monitoring Responsibility	Compliance Verification (Initial, Date, Comments)
Should the site be accessed via Access Road B, and improvements to that road are necessary, a preconstruction pedestrian survey for archaeological resources shall be conducted by a qualified archaeologist no later than 60 days prior to the start of construction along Access Road B, including a minimum 30-foot buffer on either side of the road where accessible. Results of the pedestrian survey would be presented in an addendum to cultural resources technical report and submitted to the lead agency for approval prior to construction. Once approved, the addendum report will be submitted to the Central California Information Center at California State University, Stanislaus. If no archaeological resources are detected during the survey, no further archaeological mitigation would be required for improvements to Access Road B. If archaeological resources are identified, the qualified archaeologist shall record the resource, evaluate its potential significance, and recommend appropriate treatment. If the resource is determined to be a historical resource or unique archaeological resource pursuant to CEQA Guidelines Section 15064.5, Project redesign to avoid the resource shall be considered where feasible; if avoidance is not feasible, additional treatment such as data recovery or other measures shall be implemented as recommended by the qualified archaeologist and approved by the County.	The Project Applicant shall retain a qualified archaeologist to conduct preconstruction pedestrian survey for archaeological resources. Results of the pedestrian survey would be presented in an addendum to cultural resources technical report.	Verify fulfillment of preconstruction survey requirements and submittal of the addendum report, as necessary.	No later than 60 days prior to the start of construction.	San Joaquin County Department of Community Development	
CUL-3: Unanticipated Discovery of Cultural Resources					
In the event that archaeological resources are unexpectedly encountered during ground-disturbing activities, work within 50 feet of the find shall halt and an archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards for archaeology (National Park Service 1983) shall be contacted immediately to evaluate the resource. If the resource is determined by the qualified archaeologist to be precontact, then a Native American representative shall also be contacted to participate in the evaluation of the resource. The qualified archaeologist will evaluate the resource for its eligibility as a historical resource or unique archaeological resource under the California Environmental Quality Act (CEQA) through appropriate means, such as archaeological testing and/or additional research, based on the nature of the find. the resource proves to be eligible for the California Register of Historical Resources (CRHR) and significant impacts to the resource cannot be avoided via Project redesign, a qualified archaeologist shall prepare a data recovery plan tailored to the physical nature and characteristics of the resource, per the requirements of CEQA Guidelines Section 15126.4(b)(3)(C). The data recovery plan shall identify data recovery excavation methods, measurable objectives, and data thresholds to reduce any significant impacts to cultural resources related to the resource. Pursuant to the data recovery plan, the qualified archaeologist and Native American representative, as appropriate, shall recover and document the scientifically consequential information that justifies the resource's significance. The County shall review and approve the treatment plan and archaeological testing as appropriate, and the resulting documentation shall be submitted to the regional repository of the California Historical Resources Information System, per CEQA Guidelines Section 15126.4(b)(3)(C).	If archaeological resources are found, halt work with 50 feet of any find and contact an archeologist to evaluate the resource.	Verify an archaeologist is contracted if archaeological resources are found.	During ground-disturbing activities if archaeological resources are found.	San Joaquin County Department of Community Development	
	Contact a Native American representative if the resource is determined to be prehistoric.	Verify a Native American representative is contacted if required.	During ground-disturbing activities if archaeological resources are found.		
	Complete archaeological testing for CRHR eligibility, as required. A qualified archaeologist shall prepare a data recovery plan, as necessary, identifying data recovery excavation methods, measurable objectives, and data thresholds to reduce any significant impacts to cultural resources related to the resource.	Review and approve the data recovery plan and archaeological testing, as appropriate.	During ground-disturbing activities if archaeological resources are found.		

Mitigation Measure	Implementation Procedures	Monitoring and Reporting Action	Monitoring Timing	Monitoring Responsibility	Compliance Verification (Initial, Date, Comments)
Geology and Soils					
GEO-1: Unanticipated Fossil Discovery					
Paleontological Worker Environmental Awareness Program. Prior to the start of construction, a Paleontological Principal Investigator, as defined by the SVP, or their designee shall prepare and conduct a paleontological Worker Environmental Awareness Program (WEAP) training for construction personnel regarding the appearance of fossils and the procedures for notifying paleontological staff should fossils be discovered by construction personnel. The WEAP shall discuss the potential to discover paleontological resources in the Project Site, legal obligations to protect paleontological resources, examples of paleontological resources that may be found in the Project Site, procedures in case a paleontological resource is discovered, and contact information for the Paleontological Principal Investigator. Unanticipated Discovery of Paleontological Resources. The Project Applicant shall include a standard inadvertent discovery clause in every construction contract to inform contractors of this requirement: If a potential fossil is discovered during Project construction, construction activity within 50 feet of the find shall cease until the discovery is examined by a Paleontological Principal Investigator. If the find is determined to be significant, the Paleontological Principal Investigator shall direct all mitigation efforts related to paleontological resources consistent with SVP standards, which may include, but are not limited to: paleontological monitoring; fossil salvage, preparation, and curation; and reporting to summarize the paleontological mitigation efforts that would be submitted to the lead CEQA agency.	The Project Applicant shall retain a qualified professional paleontologist to conduct WEAP training for all construction personnel.	Verify that a qualified professional paleontologist has been retained and conducted WEAP training for construction personnel.	Prior to ground disturbance.	San Joaquin County Department of Community Development	
	The Project Applicant shall include a discovery clause in every construction contract.	Verify that a standard inadvertent discovery clause has been added to every construction contract.	Prior to construction.		
	In the event of a fossil discovery by the paleontological monitor or construction personnel, halt construction activity within 50 feet of the find. If it is determined that the fossil(s) is (are) scientifically significant, follow outlined procedures.	Verify procedures are followed in the event paleontological resources are identified.	During ground disturbance, as needed.		

Mitigation Measure	Implementation Procedures	Monitoring and Reporting Action	Monitoring Timing	Monitoring Responsibility	Compliance Verification (Initial, Date, Comments)
Noise					
NOI-1: Final Design Noise Verification					
Prior to issuance of building permits, the Project applicant shall prepare a final design-level noise analysis completed by an acoustical engineer to verify operational noise levels at the nearest sensitive receptors do not exceed the County's 45 dBA Leq exterior noise standard. The Project applicant shall achieve consistency with the noise limits by implementing one of the following measures: • Install a solid barrier around the inverters to break the line of sight between the inverters and the nearest residences; • Select inverters that generate lower noise levels; or • Site the equipment further from the residences	The Project Applicant shall retain an acoustical engineer to prepare a final design-level noise analysis.	Verify completion of final design-level noise analysis.	prior to issuance of Building Permits	San Joaquin County Department of Community Development	
	The Project Applicant shall implement prescribed reduction measures, as necessary.	Verify operational noise levels at the nearest sensitive receptors do not exceed the County's 45 dBA Leq exterior nighttime noise standard.	During operation.		
		Verify prescribed reduction measures are implemented, as necessary.	During operation.		

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