County of Ventura Planning Division

800 South Victoria Avenue, Ventura, CA 93009-1740 • (805) 654-2488 • https://rma.venturacounty.gov/divisions/planning/

Initial Study for Durable Goods Rental Use & Warehouse Building

Section A – Project Description

1. **Project Case Number:** PL24-0021

2. **Name of Applicant:** Jake Rolls for Jakran LLC, 11351 County Drive, Ventura, California, 93004

3. **Project Location and Assessor's Parcel Number (APN):** 11351 County Drive, Ventura, California, 93004; APN 090-0-110-300.

4. **General Plan Land Use Designation and Zoning Designation of the Project Site:**

   a. **Countywide General Plan Land Use Map Designation:** Industrial

   b. **Saticoy Area Plan Land Use Map Designation**: Industrial

   c. **Zoning Designation:** M1-10,000 sq. ft. (Industrial Park, 10,000 sq. ft. minimum lot size)

5. **Description of the Environmental Setting:** The proposed project site is comprised of a dirt and gravel surface and is largely undeveloped except for stored materials, equipment, and/or machinery. The boundaries of the project site are lined with concrete walls or chain link fencing. The site is located within the industrial designated area of Ventura County. The site is surrounded by properties designated industrial to the east, south, and west. The properties adjacent to the north are designated industrial and agricultural. Commercial, industrial, and government land uses and structures are located to the east of project site. A commercial storage use is located to the south of project site. Vacant land (contiguous to the project site) and residential land uses (located approximately 270 feet) are located to the west of the project site. The Franklin Barranca (a Ventura County Redline Jurisdictional Channel, adjacent to the project site) and agricultural property are located approximately 50 feet to the north.

6. **Project Description:** The applicant requests approval of a Conditional Use Permit (CUP) for a 30 year term for the Rental and Leasing of Durable Goods and a Planned Development (PD) Permit for Warehousing and Storage on an undeveloped, 2.25 acre portion of APN 090-0-110-300. The sales of durable goods would be allowed as an accessory use to the principal use of renting and leasing durable goods. The accessory sales of durable goods would conform with the provisions of the Ventura County Non-Coastal Zoning Ordinance (NCZO). The PD Permit would authorize the construction and use of a new building for the rental,

leasing, and sales of durable goods and for warehousing and storage as allowed by the NCZO. The project also includes the following components:

1) Construction of an approximately 16,938 sq. ft. (gross floor area) warehouse building with storage area, offices, conference room, restroom facilities, and mezzanine storage;
2) Construction of an approximately 267 sq. ft. trash enclosure;
3) Construction of an 8-foot-tall masonry screening wall with entrance gate;
4) Construction of Amapola Drive in accordance with County Road Plate B-3S[C];
5) Proposed establishment of an approximately 33,870 sq. ft. outside storage, outside sales, and outside display area sited to the rear of the proposed warehouse. Items stored in the outside storage, sales, and display area shall not exceed 15 feet in height;
6) Installation of landscaping, parking areas, and other improvements as detailed on the proposed site plans and in the final conditions of approval for the project;
7) Installation of security measures (video surveillance and lighting). The proposed standing, pole-mounted lighting fixtures would be 30 feet tall (maximum), and all lighting would comply with NCZO lighting standards; and,
8) Installation of cool roof coverings, insulated glass, and extra thermal insulation in the design of the proposed warehouse building.

The proposed hours of operation are Monday through Friday from 4:00 a.m. to 6:00 p.m., and Saturdays from 5:00 a.m. to 12:00 p.m. The facility will be closed on Sunday. The following additional operational details are proposed:

- 25 new employees. A maximum of 20 employees would work for/in the warehousing use and the remaining five employees would work in the office for rental/leasing/sales of durable goods use.
- 20 customer trips per day
- 40 truck trips per day

An existing masonry wall along the western/northwestern property line would reduce truck noise generated by the proposed project. The existing wall is nine and one-half feet tall as measured from the grade of the project site and is eight feet tall as measured from the neighboring property which is at a higher grade. A maximum of three trucks running simultaneously between 4:00 a.m. and 6:00 a.m. on or adjacent to the project site would be allowed. Also, project-related truck travel would be limited to Amapola Avenue and to County Drive to/from Los Angeles Avenue/SR 118. To avoid truck travel through the nearby residential area, truck travel into or west of the intersection of Amapola Avenue and Rosal Lane would be prohibited.

To identify and protect potential cultural resources, the applicant will retain a cultural monitor to monitor the following specific development activities during the construction phase of the proposed project:

- For all development between 0 – 3 inches in depth, no monitoring will be provided.
- For all development between 3 inches and 18 inches in depth, the applicant will notify the cultural monitor at least 24 hours before work begins and will invite the monitor to observe the development work on-site. The monitor will be able to determine if continued monitoring will be provided for the duration of work between 18 inches and 36 inches in depth.
- For all development below 3 feet in depth, the applicant will hire a cultural monitor to determine whether sensitive Native soils would be impacted.

If any cultural resources would be uncovered during ground disturbance or construction activities, the cultural monitor and any construction-related personnel would comply with the Ventura County Planning Division's standard Archaeological Resources Discovered During Grading condition.

Ventura Water currently provides water to the project site. The applicant will implement reasonable water conservation measures including, but not limited to, low flow fixtures and equipment to minimize the proposed project's water demand.

Saticoy Sanitary District currently provides sewage disposal service. For any required new water and sewage disposal services, the proposed project would be conditioned to obtain the appropriate approvals from Ventura Water and the Saticoy Sanitary District. A paved driveway from the project site to Amapola Drive will provide access to the project site.

7. List of Responsible and Trustee Agencies: None.

8. Methodology for Evaluating Cumulative Impacts: County staff utilized a combination of the "list approach" methodology and "plan approach" methodology in evaluating the combination of the project's impacts with related impacts from other projects to determine whether such impacts are cumulatively considerable. In utilizing the list approach, staff prepared the following list of pending and recently approved Ventura County Planning Division projects that are located within a three-mile radius of the proposed project site and that may have similar effects as those of the proposed project:

Permit No.	Description	Status
PL17-0156	Continuation Permit for continued use of an existing C-6 California contracting office and woodworking shop located at 1140 S Wells Road in Saticoy to abate violation CV17-0450.	Pending

Permit No.	Description	Status
PL20-0080	New 10-year LCA Contract application for the 368.26 acre property located at the southwest corner of Rice Road and Central Avenue, Oxnard, CA. APNs:144-0-110-305 and -575	Pending
PL22-0054	Minor Modification to extend the CUP an additional 10 years. Project consists of a wireless communication facility with a 109 foot tall monopole with 12 panel antennas in three sectors.	Pending
PL22-0063	The Ventura County Sheriff's Department is requesting a modification to their current CUP 4735-2 for the use of the site to house inmates and to extend the CUP for an additional 30 year term.	Pending
PL22-0108	Application for Rescission/Re-entry for LCA Contract No. 75-4.1 for a 10 year LCA Agricultural Contract.	Pending
PL22-0119	A Minor Modification to extend CUP 5089 for the continued operation of three outdoor contractor service yard areas.	Pending
PL22-0123	Permit Adjustment to install new 2,000 gallon fuel tank, fuel dispensers, piping and related equipment at an existing keylock gas station addressed as 3815 Vineyard Avenue.	Pending
PL22-0170	A CUP to construct a 5,650 sq. ft. office building and a 4,200 sq. ft. shop building at an existing Southern California Edison substation.	Pending
PL24-0079	Vulcan Materials Company Zone Text Amendment to Support Accessory Uses to Existing Stand-Alone Batch Plants	Pending
PL24-0097	Minor Modification to a CUP for a 10-year time extension to an existing Wireless Communication Facility (WCF).	Pending
PL24-0131	CUP for a Retail Lumber and Building Material Sales Yard at a site with existing structures, parking, and infrastructure.	Pending
PL25-0019	Requested commercial contractor service and storage yard and voluntary merger to delete interior lot line between the two lots.	Pending
PL25-0045	Permit Adjustment to modify Condition of Approval No. 8 of Case No. PL17-0154 for the development and operation of new Commercial Organics Processing Operation. The Permit Adjustment would extend time period authorizing the issuance of a Zoning Clearance for construction.	Recently-Approved
PL25-0059	Permit Adjustment to Conditional Use Permit 3608 to authorize the conversion of the existing 700 sq.	Pending

Permit No.	Description	Status
	ft. wood-frame office into a Caretaker's Unit. The property is currently permitted to operate a RV storage yard	
PL25-0063	A Conditional Use Permit request for Hollandia Produce, LLC. for a greenhouse operation.	Pending
PL25-0075	Minor Modification to an existing Conditional Use Permit (CUP) for the continued use, operation, and maintenance of an existing wireless communication facility for an additional 10-year time period.	Pending

For applicable environmental issues in Section B (below), Planning staff evaluated the combined effects of the proposed project and of the projects identified in Table 1 (above).

The plan approach relies on the Program Environmental Impact Report (EIR) for the Ventura County 2040 General Plan, which was certified in September of 2020. As described throughout this Initial Study, the proposed project would be consistent with the County's General Plan. As such, the proposed development has already been reviewed for potential cumulative impacts at a programmatic level. The General Plan Update EIR is hereby incorporated by reference and can be reviewed using this link: https://rma.venturacounty.gov/divisions/planning/ventura-county-general-plan/.

Section B – Initial Study Checklist and Discussion of Responses[1]

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
RESOURCES:								
1. Air Quality (VCAPCD)								
Will the proposed project:								
a) Exceed any of the thresholds set forth in the air quality assessment guidelines as adopted and periodically updated by the Ventura County Air Pollution Control District (VCAPCD), or be inconsistent with the Air Quality Management Plan?		x				x		
b) Be consistent with the applicable General Plan Goals and Policies for Item 1 of the Initial Study Assessment Guidelines?		x				x		

Impact Discussion:

1a. and 1b. The Ventura County Air Pollution Control District (VCAPCD) reviewed and analyzed the proposed project. The VCAPCD determined that the project's individual and cumulative regional air quality, local air quality, and greenhouse gas emissions impacts would be less than significant and that the project would not exceed applicable air quality thresholds. The VCAPCD applied conditions of approval to the PD Permit and CUP to minimize fugitive dust and particulate matter during construction and to minimize the discharge of air contaminants (non-compost related odors, dust, etc.) during the operational phase of the project. Based on analysis from the VCAPCD and Planning staff, it was determined that the project will be consistent with applicable General Plan Goals and Policies.

Mitigation/Residual Impact(s)

Not applicable.

[1] The threshold criteria in this Initial Study are derived from the *Ventura County Initial Study Assessment Guidelines* (April 26, 2011). For additional information on the threshold criteria (e.g., definitions of issues and technical terms, and the methodology for analyzing each impact), please see the *Ventura County Initial Study Assessment Guidelines*.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
2A. Water Resources – Groundwater Quantity (WPD)								
Will the proposed project:								
1) Directly or indirectly decrease, either individually or cumulatively, the net quantity of groundwater in a groundwater basin that is overdrafted or create an overdrafted groundwater basin?		x				x		
2) In groundwater basins that are not overdrafted, or are not in hydrologic continuity with an overdrafted basin, result in net groundwater extraction that will individually or cumulatively cause overdrafted basin(s)?		x				x		
3) In areas where the groundwater basin and/or hydrologic unit condition is not well known or documented and there is evidence of overdraft based upon declining water levels in a well or wells, propose any net increase in groundwater extraction from that groundwater basin and/or hydrologic unit?	x				x			
4) Regardless of items 1-3 above, result in 1.0 acre-feet, or less, of net annual increase in groundwater extraction?		x				x		
5) Be consistent with the applicable General Plan Goals and Policies for Item 2A of the Initial Study Assessment Guidelines?		x				x		

Impact Discussion:

2A-1. According to the Ventura County Watershed Protection—Groundwater Section, the project site overlies the Santa Clara River Valley – Santa Paula Subbasin (Department of Water Resources [DWR] Basin No. 4-004.04), designated as very low priority subbasin. The Subbasin is hydrogeologically connected to the Oxnard Subbasin, designated by DWR as critically overdrafted. The site is provided with water by the City of Ventura. Per the 2020 Urban Water Management Plan for the City of San Buenaventura, the City obtains water from groundwater wells in the Mound, Oxnard and Santa Paula Subbasins. About 65% of the City's water is sourced from groundwater wells within these three subbasins. Other sources of water for the City of Ventura include

Ventura River and Lake Casitas. Water will continue to be provided by the City of Ventura via a preexisting ¾ inch water meter serving the parcel.

Although the proposed project is not located within a groundwater basin that is overdrafted, its purveyor extracts groundwater from the Oxnard Subbasin, designated by DWR as critically overdrafted. Nevertheless, Ventura County Watershed Protection—Groundwater Section will require the applicant to implement reasonable water conservation measures including but not limited to, low flow fixtures and equipment to minimize the proposed project's water demand, as required by the Ventura County Building Code.

2A-2. The site overlies the Santa Clara River Valley – Santa Paula Subbasin (DWR Basin No. 4-004.04), an adjudicated subbasin designated as very low priority. The Subbasin is hydrogeologically connected to the Oxnard Subbasin, designated by DWR as critically overdrafted. The site is provided with water by the City of Ventura. Per the 2020 Urban Water Management Plan for the City of San Buenaventura, the City obtains water from groundwater wells in the Mound, Oxnard and Santa Paula Subbasins. About 65% of the City's water is sourced from groundwater wells within these three subbasins. Other sources of water for the City of Ventura include Ventura River and Lake Casitas. Water will continue to be provided by the City of Ventura via a preexisting ¾ inch water meter serving the parcel.

The proposed project will not result in net groundwater extraction that will individually or cumulatively cause an overdrafted basin.

2A-3. The question is not applicable, because the proposed project overlies a well-documented groundwater basin.

2A-4. It is unclear if the proposed project will result in any net annual increase in groundwater extraction as the application materials did not include water demand estimates. It is known that the site is provided with water by the City of Ventura (Ventura Water). Per the 2020 Urban Water Management Plan for the City of San Buenaventura, the City obtains water from groundwater wells in the Mound, Oxnard and Santa Paula Subbasins. About 65% of the City's water is sourced from groundwater wells within these three subbasins. Other sources of water for the City of Ventura include Ventura River and Lake Casitas.

The Ventura County Watershed Protection—Groundwater Section will require the applicant to implement reasonable water conservation measures including but not limited to, low flow fixtures and equipment to minimize the proposed project's water demand, as required by the Ventura County Building Code. In their analysis of the proposed project, the Groundwater Section staff did not identify any potentially significant impacts to groundwater quantity that could result from the proposed project.

2A-5. The Ventura County Watershed Protection—Groundwater Section did not identify any inconsistencies with the applicable General Plan Goals and Policies for Item 2A

(groundwater quantity). As mentioned above, the Groundwater Section will require the applicant to implement reasonable water conservation measures including but not limited to low flow fixtures and equipment to minimize the proposed project's water demand, as required by the Ventura County Building Code.

Mitigation/Residual Impact(s)

Not applicable.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
2B. Water Resources - Groundwater Quality (WPD)								
Will the proposed project:								
1) Individually or cumulatively degrade the quality of groundwater and cause groundwater to exceed groundwater quality objectives set by the Basin Plan?		x				x		
2) Cause the quality of groundwater to fail to meet the groundwater quality objectives set by the Basin Plan?		x				x		
3) Propose the use of groundwater in any capacity and be located within two miles of the boundary of a former or current test site for rocket engines?	x				x			
4) Be consistent with the applicable General Plan Goals and Policies for Item 2B of the Initial Study Assessment Guidelines?		x				x		

Impact Discussion:

2B-1. According to the Ventura County Watershed Protection—Groundwater Section, the proposed project will not individually or cumulatively degrade the quality of groundwater or cause groundwater to exceed groundwater quality objectives set by the Basin Plan. Sewer service is provided to the site by the Saticoy Sanitary District. A sewer service Will Serve Letter (dated September 10, 2025) was provided and is valid until March 10, 2026.

2B-2. Sewer service is provided to the site by the Saticoy Sanitary District. A sewer service Will Serve Letter (dated September 10, 2025) was provided and is valid until

March 10, 2026. The proposed project will not cause the quality of groundwater to fail to meet the groundwater quality objectives set by the Basin Plan.

2B-3. The project is not located within two miles of the boundary of a former or current test site for rocket engines.

2B-4. Based on the above information, the proposed project will be consistent with the applicable General Plan Goals and Policies for Item 2B of the Initial Study Assessment Guidelines and is considered less than significant.

Mitigation/Residual Impact(s)

Not applicable.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
2C. Water Resources - Surface Water Quantity (WPD)								
Will the proposed project:								
1) Increase surface water consumptive use (demand), either individually or cumulatively, in a fully appropriated stream reach as designated by SWRCB or where unappropriated surface water is unavailable?		x				x		
2) Increase surface water consumptive use (demand) including but not limited to diversion or dewatering downstream reaches, either individually or cumulatively, resulting in an adverse impact to one or more of the beneficial uses listed in the Basin Plan?		x				x		
3) Be consistent with the applicable General Plan Goals and Policies for Item 2C of the Initial Study Assessment Guidelines?		x				x		

Impact Discussion:

2C-1. According to the Ventura County Watershed Protection—Groundwater Section, surface water from a fully appropriated stream reach is not proposed to be used for this project.

The site is provided with water by the City of Ventura. Per the 2020 Urban Water Management Plan for the City of San Buenaventura, the City obtains water from groundwater wells in the Mound, Oxnard and Santa Paula Subbasins. About 65% of the City's water is sourced from groundwater wells within these three subbasins. Other sources of water for the City of Ventura include Ventura River and Lake Casitas.

2C-2. Surface water from a diverted or dewatered downstream reach is not proposed to be used for this project.

The site is provided with water by the City of Ventura. Per the 2020 Urban Water Management Plan for the City of San Buenaventura, the City obtains water from groundwater wells in the Mound, Oxnard and Santa Paula Subbasins. About 65% of the City's water is sourced from groundwater wells within these three subbasins. Other sources of water for the City of Ventura include Ventura River and Lake Casitas.

2C-3. The proposed project will be consistent with the applicable General Plan Goals and Policies for Item 2C of the Initial Study Assessment Guidelines and is considered less than significant to surface water quantity.

Mitigation/Residual Impact(s)

Not applicable.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
2D. Water Resources - Surface Water Quality (WPD)								
Will the proposed project:								
1) Individually or cumulatively degrade the quality of surface water causing it to exceed water quality objectives as contained in Chapter 3 of the three Basin Plans?		x				x		
2) Directly or indirectly cause storm water quality to exceed water quality objectives or standards in the applicable MS4 Permit or any other NPDES Permits?		x				x		
3) Be consistent with the applicable General Plan Goals and Policies for Item 2D of the Initial Study Assessment Guidelines?	x				x			

Impact Discussion:

2D-1. The Ventura County Watershed Protection—County Stormwater Program reviewed and analyzed this issue. The proposed project will not individually or cumulatively degrade the quality of surface water causing it to exceed water quality objectives as contained in Chapter 3 of the Los Angeles Basin Plan as applicable for this area. Surface Water Quality is deemed Less than Significant (LS) because the proposed project is not expected to result in a violation of any surface water quality standards as defined in the Los Angeles Basin Plan.

2D-.2 The project is a 2.42-acre portion of APN 090-0-110-300 known as Suite C and located at 11351 County Drive in Saticoy. The proposal is considered a new development within the County Urban Infill Area and includes construction of a 16,938 square foot (sf) building, outdoor equipment storage area of approximately 33,870 sf, parking lots and landscape areas. The proposed conditional use is for the rental, leasing and sales of equipment and durable goods.

In accordance with the Ventura Countywide Municipal Stormwater National Pollutant Discharge Elimination System (NPDES) Permit CAS004002 (Permit), “Planning and Land Development Program” Subpart 4.E, the proposed project shall meet performance criteria defined in Section 4.E.III of the Permit and the Ventura County Technical Guidance Manual 2011, Errata Update 2018 (TGM). In accordance with the Ventura Countywide Municipal Stormwater NPDES Permit CAS004002, “Development Construction Program” Subpart 4.F, the applicant will be required to include construction Best Management Practices (BMPs) designed to ensure compliance and implementation of an effective combination of erosion and sediment control measures as a condition of approval for a disturbed site area greater than 1 acre (Table 7 in Subpart 4.F, SW-2). Additionally, the project is subject to coverage under the NPDES General Construction Permit (No. CAS000002) which has been made a condition of approval.

As such, neither the individual project nor the cumulative threshold for significance would be exceeded and the project is expected to have a Less than Significant (LS) impact related to water quality objectives or standards in the applicable MS4 Permit (Ventura Countywide Municipal Stormwater NPDES Permit CAS004002) or any other NPDES Permits.

2D-3. The proposed project is consistent with the applicable General Plan Goals and Policies for Initial Study Assessment Guidelines (ISAG) Item 2D.

Mitigation/Residual Impact(s)

Not applicable.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
3A. Mineral Resources – Aggregate (Plng.)								
Will the proposed project:								
1) Be located on or immediately adjacent to land zoned Mineral Resource Protection (MRP) overlay zone, or adjacent to a principal access road for a site that is the subject of an existing aggregate Conditional Use Permit (CUP), and have the potential to hamper or preclude extraction of or access to the aggregate resources?		x				x		
2) Have a cumulative impact on aggregate resources if, when considered with other pending and recently approved projects in the area, the project hampers or precludes extraction or access to identified resources?						x		
3) Be consistent with the applicable General Plan Goals and Policies for Item 3A of the Initial Study Assessment Guidelines?		x				x		

Impact Discussion:

3A-1 and 3A-2. As part of Planning staff's analysis of this issue, Planning staff utilized the Ventura County Resource Management Agency Geographic Information Services (RMA GIS) Viewer. While the proposed project site is located adjacent to land zoned within the Mineral Resource Protection (MRP) overlay zone, it is not adjacent to a principal access road for any site that is the subject of an active, pending, or recently approved aggregate CUP. The proposed project does not have the potential to hamper or preclude extraction of or access to the aggregate resources.

3A-3. The proposed project is consistent with all applicable General Plan and Area Plan goals and policies related to aggregate resources.

Mitigation/Residual Impact(s)

Not applicable.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
3B. Mineral Resources – Petroleum (Plng.)								
Will the proposed project:								
1) Be located on or immediately adjacent to any known petroleum resource area, or adjacent to a principal access road for a site that is the subject of an existing petroleum CUP, and have the potential to hamper or preclude access to petroleum resources?		x				x		
2) Be consistent with the applicable General Plan Goals and Policies for Item 3B of the Initial Study Assessment Guidelines?		x				x		

Impact Discussion:

3B-1. As part of Planning staff's analysis of this issue, Planning staff utilized the RMA GIS Viewer. While the proposed project site is located adjacent to land zoned within the MRP overlay zone, it is not located on or adjacent to any known petroleum resource area. It is not adjacent to a principal access road for any site that is the subject of an active, pending, or recently approved petroleum CUP. The proposed project does not have the potential to hamper or preclude extraction of or access to petroleum resources.

3B-2. The proposed project is consistent with all applicable General Plan and Area Plan goals and policies related to petroleum resources.

Mitigation/Residual Impact(s)

Not applicable.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
4. Biological Resources								
4A. Species								
Will the proposed project, directly or indirectly:								
1) Impact one or more plant species by reducing the species' population, reducing the species' habitat, fragmenting its habitat, or restricting its reproductive capacity?		x				x		
2) Impact one or more animal species by reducing the species' population, reducing the species' habitat, fragmenting its habitat, or restricting its reproductive capacity?		x				x		

Impact Discussion:

4A-1 and 4A-2. A biological survey of the proposed project site was performed by Pax Environmental, Inc., a qualified biological consultant approved by the Ventura County Planning Division. Pax included in their survey and report (July 8, 2024) a record search for special-status plants, special-status wildlife, sensitive natural communities, critical habitat, and other sensitive resources species potentially occurring in the project area. Sources utilized during the records search included the California Natural Diversity Database (CNDDB) (CDFW, 2024), the California Native Plant Society's (CNPS) Inventory of Rare and Endangered Vascular Plants of California (CNPS, 2024), and United States Fish & Wildlife Service (USFWS) Threatened and Endangered Species Active Critical Habitat Report (USFWS, 2024). Pax also conducted a reconnaissance-level field survey of the project site on June 6, 2024.

Pax found the proposed project site to be composed of mostly non-native ruderal/disturbed vegetation communities and habitats which are typically associated with human-centric land uses such as roads and development. The project site is located within range of the tricolored blackbird (Threatened Species) and the coastal California gnatcatcher (Threatened Species. However, according to the RMA GIS Viewer, the project site and its immediate surroundings are disturbed by development or agricultural operations and do not have vegetation that serves as critical habitat for these two species. Pax stated that no special-status species were observed during the survey and no special-status species are likely to occur within the project site. Pax observed that the project site does provide some foraging habitat for nesting birds and recommends measures to avoid and minimize construction related impacts (vegetation removal, land clearing, ground disturbance, etc.) to nesting birds and raptors. Planning will impose its standard nesting bird permit condition which includes avoidance and minimization

measures similar to those recommended by Pax. Pax concluded that the proposed project would have negligible impacts on biological resources.

Additionally, the County's RMA GIS Viewer identified the site within the Foothill yellow legged frog range; however, the Foothill yellow legged frog has been extirpated from Ventura County since 2016 by the Center for Biological Diversity[2]. The designation of the project site within the range of the Foothill yellow legged frog within the RMA GIS Viewer is inaccurate, and therefore, there are no impacts to the Foothill yellow legged frog as it is no longer found within the County.

Mitigation/Residual Impact(s)

Not applicable.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
4B. Ecological Communities - Sensitive Plant Communities								
Will the proposed project:								
1) Temporarily or permanently remove sensitive plant communities through construction, grading, clearing, or other activities?	x				x			
2) Result in indirect impacts from project operation at levels that will degrade the health of a sensitive plant community?	x				x			

Impact Discussion:

4B-1 and 4B-2. As mentioned above, Pax Environmental, Inc., found the proposed project site composed of mostly non-native ruderal/disturbed vegetation communities and habitats which are typically associated with human-centric land uses such as roads and development. The project site does not include high quality or sensitive habitat features. No impacts to sensitive natural communities are expected.

Mitigation/Residual Impact(s)

Not applicable.

[2] https://www.biologicaldiversity.org/species/amphibians/foothill_yellow-legged_frog/pdfs/FYLF_state_petition_12-14-16.pdf

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
4C. Ecological Communities - Waters and Wetlands								
Will the proposed project:								
1) Cause any of the following activities within waters or wetlands: removal of vegetation; grading; obstruction or diversion of water flow; change in velocity, siltation, volume of flow, or runoff rate; placement of fill; placement of structures; construction of a road crossing; placement of culverts or other underground piping; or any disturbance of the substratum?		x				x		
2) Result in disruptions to wetland or riparian plant communities that will isolate or substantially interrupt contiguous habitats, block seed dispersal routes, or increase vulnerability of wetland species to exotic weed invasion or local extirpation?		x				x		
3) Interfere with ongoing maintenance of hydrological conditions in a water or wetland?		x				x		
4) Provide an adequate buffer for protecting the functions and values of existing waters or wetlands?		x				x		

Impact Discussion:

4C-1. and 4C-2. The Franklin Barranca (a Ventura County Redline Jurisdictional Channel) is located adjacent to, but outside of the proposed project site. The Franklin Barranca is a concrete channel that directs waters to the Santa Clara River. The RMA GIS Viewer indicates that the project site does not contain a stream, creek, river, wetland, seep, pond, or riparian habitat area associated with any surface water features. Pax Environmental, Inc., stated that no wetland or wetland indicator features were documented on the project site. Visual inspection of the project site by the Pax biologist revealed no existing riparian vegetation or other characteristics associated with wetlands in the project site. Pax concluded that the proposed project would have negligible impacts on biological resources.

4C-3. and 4C-4. As mentioned above, the proposed project would be developed and operated outside of the Franklin Barranca which is off site and adjacent to the northern

property line of the project site. In accordance with the Ventura Countywide Municipal Stormwater National Pollutant Discharge Elimination System Permit (CAS004002), the project will be conditioned to include construction BMPs designed to ensure compliance and implementation of an effective combination of erosion and sediment control measures. The project will also be subject to post-construction requirements for surface water quality and stormwater runoff. These conditions will result in compliance with federal and local standards and will minimize pollutants from entering the Franklin Barranca and the Santa Clara River.

Mitigation/Residual Impact(s)

Not applicable.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
4D. Ecological Communities - Environmentally Sensitive Habitat Areas (ESHA) (Applies to Coastal Zone Only)								
Will the proposed project:								
1) Temporarily or permanently remove ESHA or disturb ESHA buffers through construction, grading, clearing, or other activities and uses (ESHA buffers are within 100 feet of the boundary of ESHA as defined in Section 8172-1 of the Coastal Zoning Ordinance)?	x				x			
2) Result in indirect impacts from project operation at levels that will degrade the health of an ESHA?	x				x			

Impact Discussion:

4D-1. and 4D-2. The proposed project is not located within the Coastal Zone and will not adversely impact lands designated as ESHA.

Mitigation/Residual Impact(s)

Not applicable.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
4E. Habitat Connectivity								
Will the proposed project:								
1) Remove habitat within a wildlife movement corridor?	x				x			
2) Isolate habitat?	x				x			
3) Construct or create barriers that impede fish and/or wildlife movement, migration or long term connectivity or interfere with wildlife access to foraging habitat, breeding habitat, water sources, or other areas necessary for their reproduction?	x				x			
4) Intimidate fish or wildlife via the introduction of noise, light, development or increased human presence?	x				x			

Impact Discussion:

4E-1, 4E-2, 4E-3, and 4E-4. According to the RMA GIS Viewer, the proposed project site is not located within a Ventura County Habitat Connectivity and Wildlife Corridor or a Critical Wildlife Passage Area. The project will not result in adverse impacts to wildlife movement or habitat within County established or recognized corridors or passage areas.

Mitigation/Residual Impact(s)

Not applicable.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
4F. Will the proposed project be consistent with the applicable General Plan Goals and Policies for Item 4 of the Initial Study Assessment Guidelines?		x				x		

Impact Discussion:

4F. Pax Environmental, Inc., concluded that the proposed project will have negligible impacts on biological resources. The proposed project is consistent with all applicable General Plan and Area Plan goals and policies related to biological resources.

Mitigation/Residual Impact(s)

Not applicable.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
5A. Agricultural Resources – Soils (Plng.)								
Will the proposed project:								
1) Result in the direct and/or indirect loss of soils designated Prime, Statewide Importance, Unique or Local Importance, beyond the threshold amounts set forth in Section 5a.C of the Initial Study Assessment Guidelines?	x				x			
2) Involve a General Plan amendment that will result in the loss of agricultural soils?	x				x			
3) Be consistent with the applicable General Plan Goals and Policies for Item 5A of the Initial Study Assessment Guidelines?	x				x			

Impact Discussion:

5A-1 and 5A-2. As part of Planning staff's analysis of this issue, staff utilized the RMA GIS Viewer. The proposed project site is not located within any lands or soils designated Prime, Statewide Importance, Unique or Local Importance and, therefore, will not result in the direct and/or indirect loss of such soils. The proposed project does not involve a General Plan amendment that will result in the loss of agricultural soils.

5A-3. The proposed project is consistent with all applicable General Plan and Area Plan goals and policies related to agricultural soils impacts.

Mitigation/Residual Impact(s)

Not applicable.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
5B. Agricultural Resources - Land Use Incompatibility (AG.)								
Will the proposed project:								
1) If not defined as Agriculture or Agricultural Operations in the zoning ordinances, be closer than the threshold distances set forth in Section 5b.C of the Initial Study Assessment Guidelines?		x				x		
2) Be consistent with the applicable General Plan Goals and Policies for Item 5b of the Initial Study Assessment Guidelines?		x				x		

Impact Discussion:

5B-1. The Ventura County Department of Agriculture/Weights & Measures reviewed and analyzed this issue. The proposed project, as a warehouse, office space, outdoor storage, and associated parking, is not agricultural use and therefore subject to the threshold distances. Further, the project parcel is closer than threshold distances: approximately 42 ft from parcel 090-0-160-045 (Prime). However, the project is eligible for deviation from the threshold distances under criterion k. (The non-agricultural use is a continuing Industrial use with no substantial changes in existing land use incompatibility). Also, the project is sited on the parcel as to be approximately 323 ft. from the offsite classified farmland, further than the threshold distances. In addition, to limit or prevent the entry of service technicians or other facility personnel to the permitted site during a pesticide application, the applicant will be required to designate a point of contact and post the contact information on or at the proposed project site. As such, the Project Impacts are Less Than Significant.

5B-2. General Plan Policy AG-2.1 states that "The County shall ensure that discretionary development adjacent to Agriculturally designated lands does not conflict with agricultural use of those lands". The proposed project parcel is near to Agricultural designated lands on parcels 090-0-160-045 & 090-0-160-075. As such, the policy applies to the project. However, as noted above the proposed project is sited outside the setback distances required by the Ventura County Agricultural/Urban Buffer policy. In addition, to limit or prevent the entry of service technicians or other facility personnel to the permitted site during a pesticide application, the applicant will be required to designate a point of contact and post the contact information on or at the proposed project site. As such, the project impacts due to this policy are Less Than Significant.

Mitigation/Residual Impact(s)

Not applicable.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
6. Scenic Resources (Plng.)								
Will the proposed project:								
a) Be located within an area that has a scenic resource that is visible from a public viewing location, and physically alter the scenic resource either individually or cumulatively when combined with recently approved, current, and reasonably foreseeable future projects?	x				x			
b) Be located within an area that has a scenic resource that is visible from a public viewing location, and substantially obstruct, degrade, or obscure the scenic vista, either individually or cumulatively when combined with recently approved, current, and reasonably foreseeable future projects?	x				x			
c) Be consistent with the applicable General Plan Goals and Policies for Item 6 of the Initial Study Assessment Guidelines?	x				x			

Impact Discussion:

6a. and 6b. As part of Planning staff's analysis of this issue, Planning staff utilized the RMA GIS Viewer and conducted a site visit. The proposed project site is not located within the County's Scenic Resource Protection Overlay Zone and no scenic resources are

located on the site. While the site is located within the boundary of an Eligible County Scenic Highway (SR 118), it is not visible from this highway.

6c. The proposed project is consistent with all applicable General Plan and Area Plan goals and policies related to scenic resources impacts.

Mitigation/Residual Impact(s)

Not applicable.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
7. Paleontological Resources								
Will the proposed project:								
a) For the area of the property that is disturbed by or during the construction of the proposed project, result in a direct or indirect impact to areas of paleontological significance?		x				x		
b) Contribute to the progressive loss of exposed rock in Ventura County that can be studied and prospected for fossil remains?		x				x		
c) Be consistent with the applicable General Plan Goals and Policies for Item 7 of the Initial Study Assessment Guidelines?		x				x		

Impact Discussion:

7a. According to the Geotechnical Engineering Study from Advanced Geotechnical Services, Inc. (January 29, 2024) provided with the project application, "younger" Quaternary alluvium soils are located at or near the surface and subsurface of the proposed project site (p. 4). To determine the paleontological significance of any geologic formations that could be exposed in the proposed project's disturbance area, Planning staff reviewed the paleontology layer in the RMA GIS Viewer. The RMA GIS viewer indicated the paleontological importance of the project area to be "undetermined." Next, Planning staff reviewed paleontological research information collected by a qualified cultural resource professional (Envicom Corp.) to determine the paleontological significance of the proposed project site. Envicom requested a fossil records search from Natural History Museum of Los Angeles County (NHMLAC) for any paleontological discoveries previously recorded on the subject property or on the surrounding project study area. NHMLAC's record search response was negative for any paleontological

discoveries in or adjacent to the proposed project area. Envicom concluded that the project area is not sensitive for paleontological resources. Envicom recommended "contingency measures" for the project construction phase to be followed in the event unexpected fossil resources are encountered during project subsurface excavation activities (Cultural Resources Phase 1 Assessment/Survey, August 26, 2025). To address Envicom's recommendations, Planning will impose its standard permit condition of approval requiring that, in the event any paleontological resources are discovered during development work, the applicant must cease development work in the discovery area, preserve the area, have the resource assessed by a paleontological consultant or professional geologist, and obtain Planning Director's written concurrence with the recommended disposition of the site before resuming development work. Planning's standard paleontological resources condition of approval includes resource protection measures equal to those recommended by Envicom.

7b. Dr. Wayne Bischoff of Envicom Corp. visited the project property on July 10, 2025, and completed a "systematic/opportunistic survey of the project site…The flat nature of the site supported a history of grading…The overall ground visibility was good to excellent, and native alluvial soil, characterized by rounded cobbles…" (p. 7) Dr. Bischoff did not observe any paleontological resources during his survey. Also, Envicom's assessment and survey did mention any exposed rock in the project area that should be studied and prospected for fossil remains.

7c. The proposed project is consistent with all applicable goals and policies related to paleontological assessment and protection.

Mitigation/Residual Impact(s)

Not applicable.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
8A. Cultural Resources - Archaeological								
Will the proposed project:								
1) Demolish or materially alter in an adverse manner those physical characteristics that account for the inclusion of the resource in a local register of historical resources pursuant to Section 5020.1(k) requirements of Section 5024.1(g) of the Public Resources Code?		x				x		
2) Demolish or materially alter in an adverse manner those physical characteristics of an archaeological resource that convey its archaeological significance and that justify its eligibility for inclusion in the California Register of Historical Resources as determined by a lead agency for the purposes of CEQA?		x				x		
3) Be consistent with the applicable General Plan Goals and Policies for Item 8A of the Initial Study Assessment Guidelines?		x				x		

Impact Discussion:

8A-1 and -2. The Planning Division requested a project review of potential cultural resources within the proposed project area from the South Central Coastal Information Center (SCCIC) (California State University, Fullerton) which recommended a Phase 1 archeological survey of the project area from a professional archeologist. Envicom Corporation (the applicant's qualified archeological and cultural resources consultant) conducted a Phase 1 Assessment/Survey of the proposed project area. Staff from Envicom searched the California Historical Resources Information System (CHRIS) database at the SCCIC for cultural resources located within the proposed project's development footprint and within a surrounding 0.25-mile study area. Envicom also examined other sources for cultural resources including the sacred lands database housed by the California Native American Heritage Commission (NAHC), the United States Geological Survey (USGS) maps, the University of California Santa Barbara Library Historical Aerial Photograph Database photographs, and historical Google Earth satellite images.

The Phase I Assessment/Survey did not identify any potentially significant prehistoric or historic cultural resources within the proposed project area or within 0.25 miles of the project area. The findings from CHRIS record search and other sources indicated that no previously recorded prehistoric resources are located on the project property. While four

historic resources (commercial and residential structures from the 19th and 20th centuries) were found to be located within the surrounding 0.25-mile cultural resource study area, none were found to be eligible for the California Register of Historical Resources. Also, the project region was not determined to be sensitive for prehistoric or older historical cultural resources. In addition, Envicom's staff conducted a systematic field survey of the proposed project site but found no prehistoric or older historical resources. Envicom recommended contingency language for discretionary permits to cover the unexpected discovery of prehistoric or older historical archaeological material during construction.

Planning will impose its standard Archaeological Resources Discovered During Grading condition which satisfies the recommendations included in Envicom's Phase 1 Assessment/Survey. The condition will require that, in the event any archeological or historical resources are discovered during the development activities of the construction phase, the applicant must cease work to a distance of 30 feet of the discovery, preserve the discovery area, obtain a County-approved archaeologist to assess the discovery and provide recommendations in a written report for the proper disposition of the site, obtain Planning Director's written concurrence of the recommended disposition of the site before resuming development work, and implement the agreed-upon recommendations. The report will be submitted to the SCCIC at the conclusion of the project.

Additionally, the same standard condition requires that in the event any human burial remains are discovered during any ground disturbance work, the applicant must cease the work in the discovery area, preserve the area, immediately notify the County Coroner and the Planning Director, obtain the services of a County-approved archaeologist and, if necessary, Native American Monitor(s) to assess the discovery and provide recommendations on the proper disposition of the site in a written report, obtain Planning Director's written concurrence of the recommended disposition of the site before resuming development work, and implement the agree-upon recommendations. If human remains are determined to be prehistoric, in accordance with Health and Safety Code the Coroner will notify the NAHC to notify the Most Likely Descendant (MLD). The MLD must inspect the site and may recommend scientific removal and nondestructive analysis of human remains associated with Native American burials and an appropriate re-interment site.

Although the Phase I did not require onsite monitoring, the applicant has voluntarily revised the project description so that for all development between 3 inches and 18 inches in depth, the applicant will notify the cultural monitor at least 24 hours before work begins and will invite the monitor to observe the development work on-site. The monitor will be able to determine if continued monitoring will be provided for the duration of work between 18 inches and 36 inches in depth. Additionally, for all development below 3 feet in depth, the applicant will hire a cultural monitor to determine whether sensitive Native soils would be impacted.

On July 21, 2025, the Planning Division contacted the NAHC to secure a tribal consultation list pursuant to AB 52. On July 22, 2025, the NAHC provided a list of tribes that are traditionally and culturally affiliated with the geographic area of the proposed

project. On July 24, 2025, Planning contacted the following tribes and/or tribal representatives of the tribes to provide the opportunity for each tribe to consult with Planning about the proposed project:

- Barbareño/Ventureño Band of Mission Indians
- Chumash Council of Bakersfield
- Coastal Band of the Chumash Nation
- Northern Chumash Tribal Council
- Santa Ynez Band of Chumash Indians

On September 30, 2025, Planning initiated AB 52 Native American consultation with the Santa Ynez Band of Chumash Indians pursuant to the band's request for consultation. After the release of the draft ND for public review and comment, and pursuant to AB 52, County staff will continue consultation with the Santa Ynez Band of the Chumash Indians regarding the contents of the ND. The County will conclude AB 52 consultation prior to requesting the Planning Director's adoption of the ND. No other California Native American tribes have requested formal AB 52 consultation.

8A-3. The proposed project is consistent with all applicable goals and policies related to paleontological assessment and protection.

Mitigation/Residual Impact(s)

Not applicable.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
8B. Cultural Resources – Historic (Plng.)								
Will the proposed project:								
1) Demolish or materially alter in an adverse manner those physical characteristics of a historical resource that convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the California Register of Historical Resources?		x				x		
2) Demolish or materially alter in an adverse manner those physical characteristics that account for its inclusion in a local register of historical resources pursuant to Section 5020.1(k) of the Public Resources Code or its identification in a historical resources survey meeting the requirements of Section 5024.1(g) of the Public Resources Code?		x				x		
3) Demolish or materially alter in an adverse manner those physical characteristics of a historical resource that convey its historical significance and that justify its eligibility for inclusion in the California Register of Historical Resources as determined by a lead agency for purposes of CEQA?		x				x		
4) Demolish, relocate, or alter an historical resource such that the significance of the historical resource will be impaired [Public Resources Code, Sec. 5020(q)]?		x				x		

Impact Discussion:

8B-1, 2, 3, and 4. The Ventura County Cultural Heritage Board Program Planner reviewed the subject parcel for potential historic resources and determined that no historic resources exist. As described above in Section B-8A, a Phase 1 archeological survey of the project area was conducted by Envicom Corporation which concluded that cultural resources are not within the proposed project site. The Phase 1 also stated that the project study area beyond the proposed project site was not sensitive for prehistoric/archaeological resources and that historical resources discovered in the study area were not eligible for the California Register of Historical Resources. Therefore, Envicom recommended only contingency measures for the project construction-phase to be followed in the case that unexpected archaeological or historic resources are

encountered during project subsurface development activities. To address Envicom's recommended contingency language in the permit, Planning will impose its standard Archaeological Resources Discovered During Grading condition to protect such resources which may be discovered during subsurface development of the construction phase of the proposed project (as discussed above in detail in subsection 8A. and in the project description). On September 30, 2025, the County initiated AB 52 Native American consultation as discussed above in subsection 8A.

Mitigation/Residual Impact(s)

Not applicable.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
9. Coastal Beaches and Sand Dunes								
Will the proposed project:								
a) Cause a direct or indirect adverse physical change to a coastal beach or sand dune, which is inconsistent with any of the coastal beaches and coastal sand dunes policies of the California Coastal Act, corresponding Coastal Act regulations, Ventura County Coastal Area Plan, or the Ventura County General Plan Goals, Policies and Programs?	x				x			
b) When considered together with one or more recently approved, current, and reasonably foreseeable probable future projects, result in a direct or indirect, adverse physical change to a coastal beach or sand dune?					x			
c) Be consistent with the applicable General Plan Goals and Policies for Item 9 of the Initial Study Assessment Guidelines?	x				x			

Impact Discussion:

9a., b., and c. This environmental issue is not applicable because the proposed project is not located within the coastal area.

Mitigation/Residual Impact(s)

Not applicable.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
10. Fault Rupture Hazard (PWA)								
Will the proposed project:								
a) Be at risk with respect to fault rupture in its location within a State of California designated Alquist-Priolo Special Fault Study Zone?		x						
b) Be at risk with respect to fault rupture in its location within a County of Ventura designated Fault Hazard Area?		x						
c) Be consistent with the applicable General Plan Goals and Policies for Item 10 of the Initial Study Assessment Guidelines?		x				x		

Impact Discussion:

10a. and 10b. Any discussion of potential impacts of seismic and geologic hazards to the proposed project is provided for informational purposes only and is required by neither California Environmental Quality Act (CEQA) nor subject to its requirements. There are no known active or potentially active faults extending through the proposed project based on State of California Earthquake Fault Zones in accordance with the Alquist-Priolo Earthquake Fault Zoning Act, and Ventura County General Plan Section 7.4 Geologic and Seismic Hazards, HAZ-4.1, HAZ-4.2, and HAZ-4.17. Furthermore, no habitable structures are proposed at this time within 50 feet of a mapped trace of an active fault. Finally, any structure constructed on site will be subject to Building Permits which will be reviewed by the Division of Building and Safety to meet current Building Code Requirements, including seismic safety requirements.

There is no known cumulative fault rupture hazard impact that will occur as a result of other approved, proposed, or probable projects.

10c. Based on the above information, the proposed project is consistent with the applicable General Plan Policy, HAZ-4.1, HAZ-4.2 (linear projects), and HAZ-4.17.

Mitigation/Residual Impact(s)

Not applicable.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
11. Ground Shaking Hazard (PWA)								
Will the proposed project:								
a) Be built in accordance with all applicable requirements of the Ventura County Building Code?		x				x		
b) Be consistent with the applicable General Plan Goals and Policies for Item 11 of the Initial Study Assessment Guidelines?		x				x		

Impact Discussion:

11a. Any discussion of potential impacts of seismic and geologic hazards to the proposed project is provided for informational purposes only and is neither required by CEQA nor subject to its requirements. The property will be subject to moderate to strong ground shaking from seismic events on local and regional fault systems. The County of Ventura Building Code adopted from the California Building Code, dated 2022, Chapter 16, Section 1613 requires structures to be designed to withstand this ground shaking. The requirements of the building code will reduce the effects of ground shaking to less than significant.

The hazards from ground shaking will affect each project individually; and no cumulative ground shaking hazard will occur as a result of other approved, proposed, or probable projects.

11b. Based on the above information, the proposed project is consistent with the applicable General Plan Policy HAZ-4.3.

Mitigation/Residual Impact(s)

Not applicable.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
12. Liquefaction Hazards (PWA)								
Will the proposed project:								
a) Expose people or structures to potential adverse effects, including the risk of loss, injury, or death involving liquefaction because it is located within a Seismic Hazards Zone?		x						
b) Be consistent with the applicable General Plan Goals and Policies for Item 12 of the Initial Study Assessment Guidelines?		x				x		

Impact Discussion:

12a. Any discussion of potential impacts of seismic and geologic hazards to the proposed project is provided for informational purposes only and is neither required by CEQA nor subject to its requirements. The property is located within a potential liquefaction zone based on the State of California Seismic Hazards Maps for the County of Ventura. A geotechnical engineering study (dated January 29, 2024) was prepared by Advanced Geotechnical Services, Inc. The report included an evaluation of liquefaction potential based on data obtained from field investigation and concluded that manifestation of liquefaction is not considered likely. These maps are used as the basis for delineating the potential liquefaction hazards within the county.

The Ventura County General Plan Chapter 7, HAZ-4.8, requires the county to not allow development of habitable structures within areas prone to liquefaction unless a geotechnical engineering report is performed, and sufficient safeguards are incorporated. A geotechnical engineering study (dated January 29, 2024) was prepared by Advanced Geotechnical Services, Inc. The report included an evaluation of liquefaction potential based on data obtained from field investigation and concluded that manifestation of liquefaction is not considered likely. Mitigation recommendations were provided in the report and will be part of a building permit application process in accordance with the Ventura County Building Code adopted from the California Building Code, dated 2022, Chapter 18, Section 1803.3. The potential hazards resulting from liquefaction are considered to be less than significant.

The hazards from liquefaction will affect each project individually; and no cumulative liquefaction hazard will occur as a result of other approved, proposed, or probable projects.

12b. Based on the above information, the proposed project is consistent with the applicable General Plan Policy, HAZ-4.8.

Mitigation/Residual Impact(s)

Not applicable.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
13. Seiche and Tsunami Hazards (PWA)								
Will the proposed project:								
a) Be located within about 10 to 20 feet of vertical elevation from an enclosed body of water such as a lake or reservoir?	x							
b) Be located in a mapped area of tsunami hazard as shown on the County General Plan maps?	x							
c) Be consistent with the applicable General Plan Goals and Policies for Item 13 of the Initial Study Assessment Guidelines?	x				x			

Impact Discussion:

13a. Any discussion of potential impacts of seismic and geologic hazards to the proposed project is provided for informational purposes only and is neither required by CEQA nor subject to its requirements. The project is not mapped within 10 to 20 vertical feet of closed water body and based on the Ventura County General Plan, Chapter 7, Section HAZ-4.14, HAZ-4.18 and Ventura County General Plan Background Report Section 11.2, Figure 11.9. the site is not located adjacent to a closed or restricted body of water based on aerial imagery review (photos dated May 2023) and is not subject to seiche hazard. There is no hazard from potential seiche and no impact to the proposed project.

13b. Any discussion of potential impacts of seismic and geologic hazards to the proposed project is provided for informational purposes only and is neither required by CEQA nor subject to its requirements. The project is not mapped within a tsunami inundation zone based on the Ventura County General Plan, Chapter 7, Section HAZ-2.7 and Ventura County General Plan Background Report Section 11.2, Figure 11.9. There is no impact from potential hazards from tsunami.

The hazards from seiche and tsunami will affect each project individually; and no cumulative seiche and tsunami hazard will occur as a result of other approved, proposed, or probable projects.

13c. Based on the above information, the project is consistent with the applicable General Plan Policy HAZ-2.7 and HAZ-4.14.

Mitigation/Residual Impact(s)

Not applicable.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
14. Landslide/Mudflow Hazard (PWA)								
Will the proposed project:								
a) Result in a landslide/mudflow hazard, as determined by the Public Works Agency Certified Engineering Geologist, based on the location of the site or project within, or outside of mapped landslides, potential earthquake induced landslide zones, and geomorphology of hillside terrain?		x						
b) Be consistent with the applicable General Plan Goals and Policies for Item 14 of the Initial Study Assessment Guidelines?		x				x		

Impact Discussion:

14a. Any discussion of potential impacts of seismic and geologic hazards to the proposed project is provided for Informational purposes only and is neither required by CEQA nor subject to its requirements. The proposed site is not located within a mapped landslide, not located within a hillside area and not located in a potentially seismically induced landslide zone, based on analysis conducted by the California Geological Survey as part of California Seismic Hazards Mapping Act, 1991, Public Resources Code Sections 2690-2699.6 and on Figure 11-3 in the Ventura County General Plan Background Report, Section 11.1. The impacts to the project resulting from landslide and mudslide hazards are considered to be less than significant.

The hazards from landslides/mudslides will affect each project individually; and no cumulative landslide/mudslide hazard will occur as a result of other approved, proposed, or probable projects.

14b. Based on the above information, the proposed project is consistent with the applicable General Plan Policies, HAZ-4.4, HAZ-4.9, HAZ 4-10, and HAZ-4.11.

Mitigation/Residual Impact(s)

Not applicable.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
15. Expansive Soils Hazards (PWA)								
Will the proposed project:								
a) Expose people or structures to potential adverse effects, including the risk of loss, injury, or death involving soil expansion because it is located within a soils expansive hazard zone or where soils with an expansion index greater than 20 are present?		x						
b) Be consistent with the applicable General Plan Goals and Policies for Item 15 of the Initial Study Assessment Guidelines?		x				x		

Impact Discussion:

15a. Any discussion of potential impacts of seismic and geologic hazards to the proposed project is provided for informational purposes only and is neither required by CEQA nor subject to its requirements. The geotechnical engineering study (dated January 29, 2024) prepared by Advanced Geotechnical Services, Inc. indicated that the upper site soils obtained from a site investigation have an expansion index of 76 (medium expansion). The report provided recommendations to reduce impacts from expansive soils. Future development of the site will be subject to the requirements of the County of Ventura Building code adopted from the California Building Code, dated 2022, Section 1803.5.3 that require mitigation of potential adverse effects of expansive soils. The hazard associated with adverse effects of expansive soils is considered to be less than significant.

The hazards from expansive soils will affect each project individually; and no cumulative expansive soils hazard will occur as a result of other approved, proposed, or probable projects.

15b. Therefore, the proposed project is consistent with the applicable General Plan Policy HAZ-4.13.

Mitigation/Residual Impact(s)

Not applicable.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
16. Subsidence Hazard (PWA)								
Will the proposed project:								
a) Expose people or structures to potential adverse effects, including the risk of loss, injury, or death involving subsidence because it is located within a subsidence hazard zone?		x						
b) Be consistent with the applicable General Plan Goals and Policies for Item 16 of the Initial Study Assessment Guidelines?		x				x		

Impact Discussion:

16a. Any discussion of potential impacts of seismic and geologic hazards to the proposed project is provided for informational purposes only and is neither required by CEQA nor subject to its requirements. The project site could be potentially located within an area of known potential subsidence hazards. However, the project does not propose the construction of new extraction wells (Policy HAZ-4.14, 4.15, 4.16). A subsidence hazard to an area may be caused by the removal of oil, gas and/or water such that the overburden load that the liquid used to support is placed on the rock or sediment structure and this material becomes compressed producing a net loss in volume and a depression in the land surface. Therefore, the subsidence hazard is considered less than significant.

The hazards from subsidence will affect each project individually; and no cumulative subsidence hazard will occur as a result of other approved, proposed, or probable projects.

16b. Based on the above information, the proposed project is consistent with the applicable General Plan Policies HAZ-4.14, HAZ-4.15, and HAZ-4.16.

Mitigation/Residual Impact(s)

Not applicable.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
17a. Hydraulic Hazards – Non-FEMA (PWA)								
Will the proposed project:								
1) Result in a potential erosion/siltation hazard and flooding hazard pursuant to any of the following documents (individually, collectively, or in combination with one another): • 2007 Ventura County Building Code Ordinance No.4369 • Ventura County Land Development Manual • Ventura County Subdivision Ordinance • Ventura County Coastal Zoning Ordinance • Ventura County Non-Coastal Zoning Ordinance • Ventura County Standard Land Development Specifications • Ventura County Road Standards • Ventura County Watershed Protection District Hydrology Manual • County of Ventura Stormwater Quality Ordinance, Ordinance No. 4142 • Ventura County Hillside Erosion Control Ordinance, Ordinance No. 3539 and Ordinance No. 3683 • Ventura County Municipal Storm Water NPDES Permit • State General Construction Permit • State General Industrial Permit • National Pollutant Discharge Elimination System (NPDES)?		x				x		
2) Be consistent with the applicable General Plan Goals and Policies for Item 17A of the Initial Study Assessment Guidelines?		x				x		

Impact Discussion:

17A-1. The project proposes an on-site underground storm water infiltration basin and use of an existing detention basin to attenuate peak storm water flows as described in the Drainage Report for Jakran Sales and Retail Phase 2, prepared by Jensen Design & Survey, Inc., (dated February 5, 2024). No increase in flooding hazard or potential for erosion or siltation will occur as a result of the project.

17A-2. Per the hydrology calculations/report included in the project submittal, the proposed site storm water runoff volumes will not exceed the existing conditions. Future construction will be completed according to current codes and standards. Therefore, the project is consistent with the applicable General Plan Goals and Policies for Item 17a of the Initial Study Assessment Guidelines.

Mitigation/Residual Impact(s)

Not applicable.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
17b. Hydraulic Hazards – FEMA (WPD)								
Will the proposed project:								
1) Be located outside of the boundaries of a Special Flood Hazard Area and entirely within a FEMA-determined 'X-Unshaded' flood zone (beyond the 0.2% annual chance floodplain: beyond the 500-year floodplain)?		x				x		
2) Be located outside of the boundaries of a Special Flood Hazard Area and entirely within a FEMA-determined 'X-Shaded' flood zone (within the 0.2% annual chance floodplain: within the 500-year floodplain)?		x				x		
3) Be located, in part or in whole, within the boundaries of a Special Flood Hazard Area (1% annual chance floodplain: 100-year), but located entirely outside of the boundaries of the Regulatory Floodway?		x				x		
4) Be located, in part or in whole, within the boundaries of the Regulatory Floodway, as determined using the 'Effective' and latest available DFIRMs provided by FEMA?		x				x		
5) Be consistent with the applicable General Plan Goals and Policies for Item 17B of the Initial Study Assessment Guidelines?		x				x		

Impact Discussion:

17B-1., 17B-2., 17B-3., and 17B-4. The proposed project site is in a location identified by the Federal Emergency Management Agency (FEMA) as an area of Moderate Flood Hazard Zone X Shaded. This is evidenced on FEMA Map Panel 06111C0770E effective

January 20, 2010. The Ventura County Watershed Protection—Watershed Planning and Permits Division imposed a condition on the project requiring the applicant to obtain a Flood Zone Clearance. The proposed development with this condition would result in less than significant project impacts for hydraulic hazards – FEMA.

17B-5. The proposed project is consistent with all applicable goals and policies related to FEMA hydraulic hazards.

Mitigation/Residual Impact(s)

Not applicable.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
18. Fire Hazards (VCFPD)								
Will the proposed project:								
a) Be located within High Fire Hazard Areas/Fire Hazard Severity Zones or Hazardous Watershed Fire Areas?	x				x			
b) Be consistent with the applicable General Plan Goals and Policies for Item 18 of the Initial Study Assessment Guidelines?	x				x			

Impact Discussion:

18a. According to the RMA GIS Viewer, the proposed project will not be located within a High or Very Fire Hazard Severity Zone for the Local or State Responsibility Area.

18b. General Plan and Area Plan policies related to high fire hazard areas are not applicable because the proposed project is not located within such areas.

Mitigation/Residual Impact(s)

Not applicable.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
19. Aviation Hazards (Airports)								
Will the proposed project:								
a) Comply with the County's Airport Comprehensive Land Use Plan and pre-established federal criteria set forth in Federal Aviation Regulation Part 77 (Obstruction Standards)?	x				x			
b) Will the proposed project result in residential development, a church, a school, or high commercial business located within a sphere of influence of a County airport?	x				x			
c) Be consistent with the applicable General Plan Goals and Policies for Item 19 of the Initial Study Assessment Guidelines?	x				x			

Impact Discussion:

19a., 19b., and 19c. The Aviation Hazards issue is not applicable because the proposed project is not located within a Ventura County Airport Sphere of Influence or airport safety zone identified in the County's Airport Comprehensive Land Use Plan.

Mitigation/Residual Impact(s)

Not applicable.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
20a. Hazardous Materials/Waste – Materials (EHD/Fire)								
Will the proposed project:								
1) Utilize hazardous materials in compliance with applicable state and local requirements as set forth in Section 20a of the Initial Study Assessment Guidelines?	x				x			
2) Be consistent with the applicable General Plan Goals and Policies for Item 20a of the Initial Study Assessment Guidelines?	x				x			

Impact Discussion:

20A-1. The proposed project involves a PD Permit and CUP request to develop a durable goods rental and leasing facility. The utilization of hazardous materials has not been proposed which requires permitting or inspection from Ventura County Environmental Health Division/Certified Unified Program Agency. No project specific or cumulative impact related to hazardous materials is expected.

20A-2. The proposed project will not utilize hazardous materials and is consistent with the General Plan for Item 20a of the Initial Study Assessment Guidelines.

Mitigation/Residual Impact(s)

Not applicable.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
20b. Hazardous Materials/Waste – Waste (EHD)								
Will the proposed project:								
1) Comply with applicable state and local requirements as set forth in Section 20b of the Initial Study Assessment Guidelines?	x				x			
2) Be consistent with the applicable General Plan Goals and Policies for Item 20b of the Initial Study Assessment Guidelines?	x				x			

Impact Discussion:

20b-1. The proposed project involves a PD Permit request to develop a durable goods rental and leasing facility and will not generate hazardous wastes which requires a Ventura County Environmental Health Division/Certified Unified Program Agency permit. No project specific or cumulative impact related to hazardous waste is expected.

20b-2. The proposed project will not generate hazardous wastes and is consistent with the General Plan for Item 20b of the Initial Study Assessment Guidelines.

Mitigation/Residual Impact(s)

Not applicable.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
21. Noise and Vibration								
Will the proposed project:								
a) Either individually or when combined with other recently approved, pending, and probable future projects, produce noise in excess of the standards for noise in the Ventura County General Plan Goals, Policies and Programs (Section 2.16) or the applicable Area Plan?		x				x		
b) Either individually or when combined with other recently approved, pending, and probable future projects, include construction activities involving blasting, pile-driving, vibratory compaction, demolition, and drilling or excavation which exceed the threshold criteria provided in the Transit Noise and Vibration Impact Assessment (Section 12.2)?		x				x		
c) Result in a transit use located within any of the critical distances of the vibration-sensitive uses listed in Table 1 (Initial Study Assessment Guidelines, Section 21)?	x				x			
d) Generate new heavy vehicle (e.g., semi-truck or bus) trips on uneven roadways located within proximity to sensitive uses that have the potential to either individually or when combined with other recently approved, pending, and probable future projects, exceed the threshold criteria of the Transit Use Thresholds for rubber-tire heavy vehicle uses (Initial Study Assessment Guidelines, Section 21-D, Table 1, Item No. 3)?		x				x		
e) Involve blasting, pile-driving, vibratory compaction, demolition, drilling, excavation, or other similar types of vibration-generating activities which have the potential to either individually or when combined with other recently approved, pending, and probable future projects, exceed the threshold criteria provided in the Transit Noise and Vibration Impact Assessment [Hanson, Carl E., David A. Towers, and Lance D. Meister. (May 2006) Section 12.2]?		x				x		

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
f) Be consistent with the applicable General Plan Goals and Policies for Item 21 of the Initial Study Assessment Guidelines?		x				x		

Impact Discussion:

21a. The proposed project would generate noise from truck activity and truck trips (a maximum of 40 trips per day) necessary for shipping and receiving during the operational phase of the project. Planning staff utilized the RMA GIS Viewer to identify the closest sensitive uses to the proposed project. The closest sensitive uses are the Rosal Lane residences located approximately 270 feet from the western boundary of the proposed project site.

A Noise Impact Study (February 20, 2009) was prepared for the existing Jakran leasing and rental yard operations on the same property as the proposed project site. The noise study measured existing truck activity noise levels at the residences on Rosal Lane. The study included the existing nine and one-half feet tall masonry wall located at western boundary line of the subject property. The study determined that with the existing noise-reducing sound wall, the truck activity noise did not exceed the following County noise standards at the Rosal Lane residences:

a. Leq1H of 55dB(A) or ambient noise level plus 3dB(A), whichever is greater, during any hour from 6:00 a.m. to 7:00 p.m.;
b. Leq1H of 50dB(A) or ambient noise level plus 3dB(A), whichever is greater, during any hour from 7:00 p.m. to 10:00 p.m.; and
c. Leq1H of 45dB(A) or ambient noise level plus 3dB(A), whichever is greater, during any hour from 10:00 p.m. to 6:00 a.m. (Note: Four trucks or more operating simultaneously at this nighttime period would exceed this nighttime standard.)

Based on the results of the 2009 Noise Impact Study and the fact that no noise-related complaints about the existing rental and leasing operation on the subject property have been recorded by the Ventura County Planning Division, the proposed project would be conditioned to ensure that truck noise does not exceed the current General Plan noise standards of Policy HAZ-9.2. The existing noise-reducing nine and one-half feet tall masonry wall along the western property line of the subject property would be required to remain in place. Also, a maximum of only three trucks running simultaneously between 4:00 a.m. and 6:00 a.m. on or adjacent to the project site would be permitted. In addition, project-related truck travel would be limited to Amapola Avenue and to County Drive to/from Los Angeles Avenue/SR 118. To avoid truck travel through the nearby residential area, truck travel into or west of the intersection of Amapola Avenue and Rosal Lane would be prohibited. Furthermore, the project would be conditioned to ensure that noise

levels remain appropriate for the geographic area and that they do not become objectionable.

During the construction phase of the proposed project, noise is expected to be generated. However, the construction phase would be temporary. By restricting the noise-generating activities of construction and ground disturbance to the days and times during which residential uses are not "noise-sensitive," noise impacts would be less than significant. To ensure this, the applicant would be required to limit noise-generating construction and ground disturbance activities to the daytime (i.e., 7:00 a.m. to 7:00 p.m., Monday through Friday, and 9:00 a.m. to 7:00 p.m., Saturday, Sunday, and local holidays), which is the time during which residential uses typically are not noise sensitive (County of Ventura Construction Noise Threshold Criteria and Control Plan, July 2010, page 5, Figure 3).

The nearest other recently approved, pending, and probable future project is located approximately 3,500 distant and on the opposite of the Santa Clara River from the proposed project site. The contribution of noise (operational or construction) from other pending and recently approved projects to noise generated by the proposed would be negligible or nonexistent.

21b. and 21e. The proposed project would involve construction activities typical for the development of a warehouse building, trash enclosure, parking lot, paving, and infrastructure (pipes, electrical systems, lights, etc.) such as grading, digging, and trenching. No pile driving or blasting is anticipated. No off-property buildings are located immediately contiguous to the project site. The project site is approximately 270 feet from the closest sensitive uses (residences on Rosal Lane). Future development of the site would be subject to the requirements of the Ventura County Building Code (VCBC) in effect at the time permits are requested. Section J101.7 of the VCBC states that the owner/permittee of the property on which the grading occurs shall be responsible for the prevention of damage to the adjacent property and that no person shall excavate on land sufficiently close to the property line to endanger any adjoining property without taking adequate measures to protect such property from damage that might result. The applicant is required to comply with these requirements. In addition, Ventura County Public Works Agency inspectors would monitor the proposed grading to verify that the work is done in compliance with the approved plans and reports.

21c. The proposed project does not involve any transit uses.

21d: While the proposed project would involve heavy vehicle (i.e., truck) trips for shipping and receiving, the project would be conditioned to ensure that truck activity would not occur on Rosal Lane (where the nearest residences are located). Within the project area, project-related truck travel would be limited to County Drive and the segment of Amapola Avenue east of the intersection of Amapola Avenue and Rosal Lane. Trucks would utilize only County Drive and Amapola Avenue to/from Los Angeles Avenue/SR 118.

21f. The proposed project would be consistent with the applicable General Plan and Area Plan policies for Item 21 of the Initial Study Assessment Guidelines.

Mitigation/Residual Impact(s)

Not applicable.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
22. Daytime Glare								
Will the proposed project:								
a) Create a new source of disability glare or discomfort glare for motorists travelling along any road of the County Regional Road Network?	x				x			
b) Be consistent with the applicable General Plan Goals and Policies for Item 22 of the Initial Study Assessment Guidelines?	x				x			

Impact Discussion:

22a. As part of Planning staff's analysis of this issue, Planning staff utilized the RMA GIS Viewer and conducted a site visit. The proposed building and trash enclosure structure will be composed of masonry and/or painted surfaces. The proposed structures are not located adjacent to a road of the County Regional Road Network (RRN). The closest road segment of the RRN is Los Angeles Avenue/SR 118 which is located approximately 1,000 feet from the proposed project site. Numerous buildings intervene between Los Angeles Avenue/SR 118 and the project site which will make the proposed structures unnoticeable to those traveling along Los Angeles Avenue/SR 118.

22b. The proposed project is consistent with all applicable General Plan and Area Plan goals and policies related to daytime glare impacts.

Mitigation/Residual Impact(s)

Not applicable.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
23. Public Health (EHD)								
Will the proposed project:								
a) Result in impacts to public health from environmental factors as set forth in Section 23 of the Initial Study Assessment Guidelines?	x				x			
b) Be consistent with the applicable General Plan Goals and Policies for Item 23 of the Initial Study Assessment Guidelines?	x				x			

Impact Discussion:

23a. According to the Ventura County Resource Management Agency—Environmental Health Division, the proposed project is a request for a PD Permit to develop a durable goods rental and leasing facility and will not adversely affect public health. No project specific or cumulative impact related to public health is expected.

23b. Based on the current project description, the proposed project is consistent with the General Plan for Item 23 of the Initial Study Assessment Guidelines and will not adversely affect public health.

Mitigation/Residual Impact(s)

Not applicable.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
24. Greenhouse Gases (VCAPCD)								
Will the proposed project:								
a) Result in environmental impacts from greenhouse gas emissions, either project specifically or cumulatively, as set forth in CEQA Guidelines §§ 15064(h)(3), 15064.4, 15130(b)(1)(B) and -(d), and 15183.5?		x				x		

Impact Discussion:

24a. The VCAPCD analyzed the proposed project for impacts related to greenhouse gas emissions. The VCAPCD calculated the project's greenhouse gas emissions to be 447.19 metric tons carbon dioxide equivalent per year (MTCO2e/yr) which is below the threshold of significance of 3,000 MTCO2e/yr utilized by the VCAPCD. The VCAPCD concluded that greenhouse gas emissions impacts will be less than significant.

Mitigation/Residual Impact(s)

Not applicable.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
25. Community Character (Plng.)								
Will the proposed project:								
a) Either individually or cumulatively when combined with recently approved, current, and reasonably foreseeable probable future projects, introduce physical development that is incompatible with existing land uses, architectural form or style, site design/layout, or density/parcel sizes within the community in which the project site is located?		x				x		
b) Be consistent with the applicable General Plan Goals and Policies for Item 25 of the Initial Study Assessment Guidelines?		x				x		

Impact Discussion:

25a. The proposed two-story warehouse building and single-story trash enclosure structure will be composed of masonry and/or painted surfaces. The materials and colors of the proposed structures will match the materials and colors of the existing two-story Rolls Scaffolding building located on the same lot. Proposed landscaping composed of shrubs and trees will be installed to soften public views of the proposed project site. The proposed commercial-industrial project is consistent with the industrial M1 zone in which it will be located. The structures will be designed and laid out so that they're compliant with NCZO building standards.

25b. The proposed project is consistent with applicable General Plan and Area Plan goals and policies related to community character.

Mitigation/Residual Impact(s)

Not applicable.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
26. Housing (Plng.)								
Will the proposed project:								
a) Eliminate three or more dwelling units that are affordable to: • moderate-income households that are located within the Coastal Zone; and/or, • lower-income households?	x				x			
b) Involve construction which has an impact on the demand for additional housing due to potential housing demand created by construction workers?		x				x		
c) Result in 30 or more new full-time-equivalent lower-income employees?		x				x		
d) Be consistent with the applicable General Plan Goals and Policies for Item 26 of the Initial Study Assessment Guidelines?		x				x		

Impact Discussion:

26a. The proposed project will not eliminate any existing or proposed dwelling units.

26b. As stated in the Ventura County Initial Study Assessment Guidelines (p. 146), any project that involves construction has an impact on the demand for additional housing due to potential housing demand created by construction workers. However, construction worker demand is a less than significant project-specific and cumulative impact because construction work is short-term and there is a sufficient pool of construction workers within Ventura County and the Los Angeles metropolitan regions.

26c. The proposed project will result in a total maximum of 25 new full-time equivalent employees which is below the threshold of 30 or more full-time-equivalent (lower-income) employees.

26d. The proposed project is consistent with applicable General Plan and Area Plan goals and policies related to housing.

Mitigation/Residual Impact(s)

Not applicable.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
27a(1). Transportation & Circulation - Roads and Highways - Level of Service (LOS) (PWA)								
Will the proposed project:								
a) Cause existing roads within the Regional Road Network or Local Road Network that are currently functioning at an acceptable LOS to function below an acceptable LOS?		x				x		

Impact Discussion:

27a(1)-a. Any discussion of potential impacts of the Level of Service for traffic to the proposed project is provided for informational purposes only and is neither required by CEQA nor subject to its requirements. According to Figure 4.1 of the Ventura County General Plan, the level of service for County Drive (a County-maintained local roadway) adjacent to the project site is LOS C which is considered to be an acceptable LOS pursuant to General Plan Policy CTM-1.3. According to Figure 4.1 of the Ventura County General Plan, the LOS for State Route 118 (the nearest segment of the Regional Road Network to the project site) is LOS D which is considered to be an acceptable LOS pursuant to General Plan Policy CTM-1.3. The project site is outside of the SR 118 Traffic Impact Area.

Additionally, the Ventura County Public Works Agency – Roads & Transportation Department evaluated the proposed project's potential for increased average daily trips (ADTs) and Vehicle Miles Traveled (VMT). The Roads & Transportation Department determined that the proposed project would not result in a significant increase in allowable ADTs or VMTs. No evidence was provided by the Roads & Transportation Department that the proposed development would cause local roads to function below an acceptable LOS.

Mitigation/Residual Impact(s)

Not applicable.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
27a(2). Transportation & Circulation - Roads and Highways - Safety and Design of Public Roads (PWA)								
Will the proposed project:								
a) Have an Adverse, Significant Project-Specific or Cumulative Impact to the Safety and Design of Roads or Intersections within the Regional Road Network (RRN) or Local Road Network (LRN)?		x				x		

Impact Discussion:

27a(2)-a. The Ventura County Public Works Agency – Roads & Transportation Department reviewed the proposed project for safety and design of public roads. The Roads & Transportation Department conditioned the project requiring the applicant to design and construct Amapola Avenue in conformance with County road standards for commercial or industrial projects.

Mitigation/Residual Impact(s)

Not applicable.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
27a(3). Transportation & Circulation - Roads & Highways – Safety & Design of Private Access (VCFPD)								
a) If a private road or private access is proposed, will the design of the private road meet the adopted Private Road Guidelines and access standards of the VCFPD as listed in the Initial Study Assessment Guidelines?		x				x		
b) Will the project be consistent with the applicable General Plan Goals and Policies for Item 27a(3) of the Initial Study Assessment Guidelines?		x				x		

Impact Discussion:

27a(3)-a. The proposed project does not include new roads or lengthy private access driveways but will include a reconfiguration of County Drive to be adjacent to the existing and proposed structures. A proposed driveway apron will connect the project site to Amapola Avenue. The Ventura County Fire Protection District (VCFPD) reviewed the proposed project. The VCFPD conditioned the project to require the proposed vehicle access gate to be located in an area that ensures vehicles waiting to enter the project site may be completely off Amapola Avenue. Also, the VCFPD imposed project conditions requiring VCFPD clearance and permit approvals for any project construction. These conditions will ensure the project's private access complies with applicable fire codes.

27a(3)-b. The proposed project is consistent with applicable General Plan and Area Plan goals and policies related to safety & design of private access.

Mitigation/Residual Impact(s)

Not applicable.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
27a(4). Transportation & Circulation - Roads & Highways - Tactical Access (VCFPD)								
Will the proposed project:								
a) Involve a road or access, public or private, that complies with VCFPD adopted Private Road Guidelines?		x				x		
b) Be consistent with the applicable General Plan Goals and Policies for Item 27a(4) of the Initial Study Assessment Guidelines?		x				x		

Impact Discussion:

27a(4)-a. The proposed project does not include new roads or lengthy private access driveways but will include a reconfiguration of County Drive to be adjacent to the existing and proposed structures. A proposed driveway apron will connect the project site to Amapola Avenue. The VCFPD reviewed the proposed project. The VCFPD conditioned the project to require the proposed vehicle access gate to be located in an area that ensures vehicles waiting to enter the project site may be completely off Amapola Avenue. Also, the VCFPD imposed project conditions requiring VCFPD clearance and permit

approvals for any project construction. These conditions will ensure the project's tactical access complies with applicable fire codes.

27a(4)-b. The proposed project is consistent with applicable General Plan and Area Plan goals and policies related to tactical access.

Mitigation/Residual Impact(s)

Not applicable.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
27b. Transportation & Circulation - Pedestrian/Bicycle Facilities (PWA/Plng.)								
Will the proposed project:								
1) Will the Project have an Adverse, Significant Project-Specific or Cumulative Impact to Pedestrian and Bicycle Facilities within the Regional Road Network (RRN) or Local Road Network (LRN)?		x				x		
2) Generate or attract pedestrian/bicycle traffic volumes meeting requirements for protected highway crossings or pedestrian and bicycle facilities?		x				x		
3) Be consistent with the applicable General Plan Goals and Policies for Item 27b of the Initial Study Assessment Guidelines?		x				x		

Impact Discussion:

27b-1 and 27b-2. Currently there are no designated sidewalks along or bike lanes on the segments of Amapola Avenue or County Drive adjacent to the subject property. The Ventura County Public Works Agency – Roads & Transportation Department reviewed the proposed project for pedestrian and bicycle facilities. The Roads & Transportation Department conditioned the project requiring the applicant to design and construct Amapola Avenue and sidewalks (north and south of Amapola Avenue) the area adjacent to the subject property. The southern sidewalk would connect with the existing sidewalk segments of Amapola Avenue and County Drive which are not adjacent to the subject property.

In addition, Roads & Transportation stated that the proposed project would not generate pedestrian or bicycle traffic that will significantly impact pedestrian and bicycle safety.

27b-3. The proposed project is consistent with applicable General Plan and Area Plan goals and policies related to pedestrian and bicycle facilities.

Mitigation/Residual Impact(s)

Not applicable.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
27c. Transportation & Circulation - Bus Transit								
Will the proposed project:								
1) Substantially interfere with existing bus transit facilities or routes, or create a substantial increase in demand for additional or new bus transit facilities/services?		x				x		
2) Be consistent with the applicable General Plan Goals and Policies for Item 27c of the Initial Study Assessment Guidelines?		x				x		

Impact Discussion:

27c-1. According to the RMA GIS Viewer, the proposed project site is located within the Gold Coast Transit District service area. According to the current Gold Coast Transit District Map, the closest transit stop is located near the intersection of Los Angeles Avenue and Nardo Street approximately 1,100 feet from the proposed project site. While the proposed project would generate 25 new full-time employees, it is anticipated that the majority of employees would utilize transportation means other than bus transit. The proposed project is not expected to substantially interfere with existing Gold Coast Transit facilities or substantially increase the demand for additional bus transit facilities or services.

27c-2. The proposed project is consistent with applicable General Plan and Area Plan goals and policies related to bus transit.

Mitigation/Residual Impact(s)

Not applicable.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
27d. Transportation & Circulation - Railroads								
Will the proposed project:								
1) Individually or cumulatively, substantially interfere with an existing railroad's facilities or operations?		x				x		
2) Be consistent with the applicable General Plan Goals and Policies for Item 27d of the Initial Study Assessment Guidelines?		x				x		

Impact Discussion:

27d-1. According to the RMA GIS Viewer, the proposed project site is located approximately 900 feet from the nearest railroad crossing (near the intersection of Alelia Avenue and Azahar Street). While the proposed project would generate additional traffic trips, it is unlikely that such trips would result in substantial interference with existing railroad facilities or operations.

27d-2. The proposed project is consistent with applicable General Plan and Area Plan goals and policies related to railroads.

Mitigation/Residual Impact(s)

Not applicable.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
27e. Transportation & Circulation – Airports (Airports)								
Will the proposed project:								
1) Have the potential to generate complaints and concerns regarding interference with airports?	x				x			
2) Be located within the sphere of influence of either County operated airport?	x				x			
3) Be consistent with the applicable General Plan Goals and Policies for Item 27e of the Initial Study Assessment Guidelines?	x				x			

Impact Discussion:

27e-1, 27e-2, and 27e-3. According to the RMA GIS Viewer, the proposed project site is not located within an Airport Safety Zone or Airport Sphere of Influence. County policies related to airports do not apply.

Mitigation/Residual Impact(s)

Not applicable.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
27f. Transportation & Circulation - Harbor Facilities (Harbors)								
Will the proposed project:								
1) Involve construction or an operation that will increase the demand for commercial boat traffic and/or adjacent commercial boat facilities?		x				x		
2) Be consistent with the applicable General Plan Goals and Policies for Item 27f of the Initial Study Assessment Guidelines?		x				x		

Impact Discussion:

27f-1. The proposed project site is not located near a harbor. The proposed project would rely primarily on trucking for its receiving and deliveries of items. The proposed project is expected to have a less than significant impact on boat traffic and facilities.

27f-2. The proposed project is consistent with applicable General Plan and Area Plan goals and policies related to harbor facilities.

Mitigation/Residual Impact(s)

Not applicable.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
27g. Transportation & Circulation - Pipelines								
Will the proposed project:								
1) Substantially interfere with, or compromise the integrity or affect the operation of, an existing pipeline?	x				x			
2) Be consistent with the applicable General Plan Goals and Policies for Item 27g of the Initial Study Assessment Guidelines?	x				x			

Impact Discussion:

27g-1. According to the RMA GIS Viewer, the proposed project will not be located adjacent to or directly impact a minor or major pipeline. The nearest pipeline is located approximately 500 feet west of the proposed project site.

27g-2. The proposed project is consistent with applicable General Plan and Area Plan goals and policies related to pipelines.

Mitigation/Residual Impact(s)

Not applicable.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
28a. Water Supply – Quality (EHD)								
Will the proposed project:								
1) Comply with applicable state and local requirements as set forth in Section 28a of the Initial Study Assessment Guidelines?	x				x			
2) Be consistent with the applicable General Plan Goals and Policies for Item 28a of the Initial Study Assessment Guidelines?	x				x			

Impact Discussion:

28a-1. Ventura County Resource Management Agency—Environmental Division (EHD) reviewed and analyzed the proposed project for impacts to water supply—quality. The applicant states that domestic water service for the proposed project will be provided by Ventura Water. Confirmation of water availability is contingent upon Ventura Water accepting the applicant's proposed construction design, as well as payment to the City of Ventura of all fees associated with connection to the existing water distribution system. EHD conditioned the project requiring the applicant to obtain approval of potable water from EHD prior to issuance of the Zoning Clearance for construction of the proposed project. EHD's approval will include EHD's acceptance of a Water Service Agreement from Ventura Water and proof of conformance with California Plumbing Code, Ventura County Building Code, and Ventura County General Plan as it relates to potable water supplies.

28a-2. EHD determined that the proposed project is consistent with the General Plan for Item 28a of the Initial Study Assessment Guidelines regarding permanent domestic water supply.

Mitigation/Residual Impact(s)

Not applicable.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
28b. Water Supply – Quantity (WPD)								
Will the proposed project:								
1) Have a permanent supply of water?		x				x		
2) Either individually or cumulatively when combined with recently approved, current, and reasonably foreseeable probable future projects, introduce physical development that will adversely affect the water supply - quantity of the hydrologic unit in which the project site is located?		x				x		
3) Be consistent with the applicable General Plan Goals and Policies for Item 28b of the Initial Study Assessment Guidelines?		x				x		

Impact Discussion:

28b-1. The proposed project site is currently supplied with water by the City of Ventura (Ventura Water). The proposed project has been conditioned requiring the applicant to obtain a Water Service Agreement from Ventura Water before the commencement of construction. The Ventura County Watershed Protection—Groundwater Section confirms that Ventura Water is considered to be a permanent supply of water.

28b-2. It is unclear if the proposed project will result in any net annual increase in groundwater extraction as the application materials did not include water demand estimates. It is known that the site is provided with water by Ventura Water. Per the 2020 Urban Water Management Plan for the City of San Buenaventura, the City obtains water from groundwater wells in the Mound, Oxnard and Santa Paula Subbasins. About 65% of the City's water is sourced from groundwater wells within these three subbasins. Other sources of water for the City of Ventura include Ventura River and Lake Casitas.

The Groundwater Section has imposed a condition requiring the applicant to implement reasonable water conservation measures including but not limited to, low flow fixtures and equipment to minimize the proposed project's water demand. The condition will also require the applicant to implement administrative measures included but not limited to leak reporting, inspection, and prevention.

28b-3. The proposed project will be consistent with the applicable General Plan and Area Plan Goals and Policies for Item 28b of the Initial Study Assessment Guidelines.

Mitigation/Residual Impact(s)

Not applicable.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
28c. Water Supply - Fire Flow Requirements (VCFPD)								
Will the proposed project:								
1) Meet the required fire flow?		x				x		
2) Be consistent with the applicable General Plan Goals and Policies for Item 28c of the Initial Study Assessment Guidelines?		x				x		

Impact Discussion:

28c-1. The VCFPD reviewed the proposed project and applied a condition requiring that the applicant demonstrate compliance with the current adopted edition of the International Fire Code Appendix B (with adopted Amendments) or the applicable Water Manual for the jurisdiction (whichever is more restrictive). The applicant must verify that the water purveyor (Ventura Water) can provide the required volume and duration at the project prior to obtaining a building permit for the project.

28c-2. The proposed project is consistent with applicable General Plan and Area Plan goals and policies related to fire flow.

Mitigation/Residual Impact(s)

Not applicable.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
29a. Waste Treatment & Disposal Facilities - Individual Sewage Disposal Systems (EHD)								
Will the proposed project:								
1) Comply with applicable state and local requirements as set forth in Section 29a of the Initial Study Assessment Guidelines?	x				x			
2) Be consistent with the applicable General Plan Goals and Policies for Item 29a of the Initial Study Assessment Guidelines?	x				x			

Impact Discussion:

29a-1. The proposed project has an existing connection to a public sewerage utility and will not utilize an onsite wastewater treatment system. According to EHD, the project will not have any project-specific or cumulative impacts related to an onsite wastewater treatment system.

29a-2. According to EHD, the proposed project is consistent with General Plan for Item 29a of the Initial Study Assessment Guidelines regarding sewage disposal and connection to public sewer.

Mitigation/Residual Impact(s)

Not applicable.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
29b. Waste Treatment & Disposal Facilities - Sewage Collection/Treatment Facilities (EHD)								
Will the proposed project:								
1) Comply with applicable state and local requirements as set forth in Section 29b of the Initial Study Assessment Guidelines?	x				x			
2) Be consistent with the applicable General Plan Goals and Policies for Item 29b of the Initial Study Assessment Guidelines?	x				x			

Impact Discussion:

29b-1. Proposed project will utilize an existing connection to Saticoy Sanitary District for domestic sewage disposal. A sewer service Will Serve Letter (dated September 10, 2025) was provided and is valid until March 10, 2026. EHD determined that the project will not have any project-specific or cumulative impacts to a sewage collection facility.

29b-2. According to EHD, the proposed project is consistent with General Plan for Item 29b of the Initial Study Assessment Guidelines regarding sewage disposal and connection to public sewer.

Mitigation/Residual Impact(s)

Not applicable.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
29c. Waste Treatment & Disposal Facilities - Solid Waste Management (PWA)								
Will the proposed project:								
1) Have a direct or indirect adverse effect on a landfill such that the project impairs the landfill's disposal capacity in terms of reducing its useful life to less than 15 years?		x				x		
2) Be consistent with the applicable General Plan Goals and Policies for Item 29c of the Initial Study Assessment Guidelines?		x				x		

Impact Discussion:

29c-1. The Ventura County Public Works Agency—Integrated Waste Management District reviewed and analyzed the proposed project's effect on solid waste management. As required by California Public Resources Code (PRC) 41701, Ventura County's Countywide Siting Element, adopted in June 2001 and updated annually, confirms Ventura County has at least 15 years of disposal capacity available for waste generated by in-County projects. Because the County currently exceeds the minimum disposal capacity required by state PRC, the proposed project will have less than a significant project-specific impacts upon Ventura County's solid waste disposal capacity.

29c-2. In accordance with California's Green Building Standards Code (CALGreen) and Ventura County Ordinance No. 4590, all discretionary permit applicants, unless those exempt under Section 4773-4 of the ordinance, whose proposed project includes construction and/or demolition activities to reuse, salvage, recycle, or compost the current required diversion amount prescribed in CALGreen of the solid waste generated by their project. Public Works Agency-Water & Sanitation Department's construction and demolition waste diversion program ensures the CALGreen diversion goal is met prior to issuance of a final Zoning Clearance for Use Inauguration or occupancy, consistent with Ventura County General Plan's Solid and Hazardous Waste Goals PFS 5.3 and 5.9. Therefore, the proposed project will have less than significant project-specific impacts and will not make a cumulatively considerable contribution to significant cumulative impacts related to the Ventura County General Plan's goals and policies for solid waste disposal capacity.

Mitigation/Residual Impact(s)

Not applicable.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
29d. Waste Treatment & Disposal Facilities - Solid Waste Facilities (EHD)								
Will the proposed project:								
1) Comply with applicable state and local requirements as set forth in Section 29d of the Initial Study Assessment Guidelines?	x				x			
2) Be consistent with the applicable General Plan Goals and Policies for Item 29d of the Initial Study Assessment Guidelines?	x				x			

Impact Discussion:

29d-1. The proposed project does not involve a solid waste operation or facility. EHD determined that the project will not have any project-specific or cumulative impacts related to a solid waste operation or facility.

29d-2. The proposed project does not involve a solid waste operation or facility and, according to EHD, is consistent with the General Plan for Item 29d of the Initial Study Assessment Guidelines.

Mitigation/Residual Impact(s)

Not appliable.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
30. Utilities (Plng)								
Will the proposed project:								

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
a) Individually or cumulatively cause a disruption or re-routing of an existing utility facility?		x				x		
b) Individually or cumulatively increase demand on a utility that results in expansion of an existing utility facility which has the potential for secondary environmental impacts?		x				x		
c) Be consistent with the applicable General Plan Goals and Policies for Item 30 of the Initial Study Assessment Guidelines?		x				x		

Impact Discussion:

30a. and 30b. Electrical service would be provided by Southern California Edison and gas service would be provided by Southern California Gas. According to information provided by the agent, existing electricity and gas lines would not have to be increased in size. Also, existing overhead electrical facilities and gas lines would not have to be relocated. The agent also states that the proposed project does not involve the installation of new off-site electrical transmission and distribution facilities and does not involve the installation of new off-site gas mains.

30c. The proposed development would not have adverse impacts on utility facilities, and it would be consistent with the applicable General Plan and Area Plan Goals and Policies that pertain to item 30.

Mitigation/Residual Impact(s)

Not applicable.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
31a. Flood Control Facilities/Watercourses - Watershed Protection District (WPD)								
Will the proposed project:								
1) Either directly or indirectly, impact flood control facilities and watercourses by obstructing, impairing, diverting, impeding, or altering the characteristics of the flow of water, resulting in exposing adjacent property and the community to increased risk for flood hazards?		x				x		
2) Be consistent with the applicable General Plan Goals and Policies for Item 31a of the Initial Study Assessment Guidelines?		x				x		

Impact Discussion:

31a-1. The proposed project is situated approximately 50 feet from the Franklin Barranca which is a Ventura County Watershed Protection (WP) jurisdictional redline channel. No new or modified direct stormwater drainage connections to this WP channel, activities within WP's easement, or activities over, under, or within the redline channel appear to be proposed or indicated on the applicant's submitted materials.

This proposed project would result in an increase of impervious area within the subject property. It is understood that impacts from the proposed increase in impervious area and stormwater drainage design within the project site will be required to be mitigated to less than significant under the conditions imposed by County of Ventura Public Works Agency and/or Resource Management Agency—Building & Safety Division. The mitigation requires that runoff from the proposed project site be released at no greater than the existing flow rate and in such manner as not to cause an adverse impact downstream in peak discharge, velocity, or duration.

WP staff determines that the proposed project design with the conditions mentioned above mitigates the direct and indirect project-specific and cumulative impacts to flood control facilities and watercourses. Therefore, the environmental impact is less than significant on redline channels under the jurisdiction of the Ventura County Public Works Agency - Watershed Protection.

31a-2. The proposed project is consistent with all applicable General Plan and Area Plan goals and policies related to item 31a.

Mitigation/Residual Impact(s)

Not applicable.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
31b. Flood Control Facilities/Watercourses - Other Facilities (PWA)								
Will the proposed project:								
1) Result in the possibility of deposition of sediment and debris materials within existing channels and allied obstruction of flow?		x				x		
2) Impact the capacity of the channel and the potential for overflow during design storm conditions?		x				x		
3) Result in the potential for increased runoff and the effects on Areas of Special Flood Hazard and regulatory channels both on and off site?		x				x		
4) Involve an increase in flow to and from natural and man-made drainage channels and facilities?		x				x		
5) Be consistent with the applicable General Plan Goals and Policies for Item 31b of the Initial Study Assessment Guidelines?		x				x		

Impact Discussion:

31b-1. The proposed project includes proposed stormwater pretreatment and treatment, where it is then routed to infiltration and detention basins. Therefore, there will be no increase in sediment discharge or obstruction of flows in existing channels.

31b-2. Future development of the property is regulated by the Ventura County Grading Code to maintain pre-development drainage conditions and includes a proposed stormwater detention basin as shown on the Preliminary Grading Plan. Therefore, no impact to the capacity of drainage channels or potential for increasing overflow from existing conditions.

31b-3. The subject parcel is located outside of an Area of Special Flood Hazard. The development drainage conditions will remain unchanged from existing conditions with no increase in runoff, therefore no impact to the flood hazard zone or regulatory channels.

31b-4. Per the drainage report included in the project submittal, the proposed site storm water runoff volumes will not exceed the existing conditions (no increase).

31b-5. The project will not result in an increase to stormwater runoff and project drainage patterns will remain similar to existing conditions. There will be no adverse effects to Areas of Special Flood Hazard, regulatory channels, and natural and man-made channels. The project will be completed according to current codes and standards. Therefore the project is consistent with the applicable General Plan Goals and Policies for Item 31b of the Initial Study Assessment Guidelines.

Mitigation/Residual Impact(s)

Not applicable.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
32. Law Enforcement/Emergency Services (Sheriff)								
Will the proposed project:								
a) Have the potential to increase demand for law enforcement or emergency services?		x				x		
b) Be consistent with the applicable General Plan Goals and Policies for Item 32 of the Initial Study Assessment Guidelines?		x				x		

Impact Discussion:

32a. The Ventura County Sheriff's Office and the VCFPD reviewed the proposed project and did not identify any increased demand for law enforcement or emergency services.

32b. The proposed project is consistent with all applicable General Plan and Area Plan goals and policies related to law enforcement or emergency services.

Mitigation/Residual Impact(s)

Not applicable.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
33a. Fire Protection Services - Distance and Response (VCFPD)								
Will the proposed project:								
1) Be located in excess of five miles, measured from the apron of the fire station to the structure or pad of the proposed structure, from a full-time paid fire department?		x				x		
2) Require additional fire stations and personnel, given the estimated response time from the nearest full-time paid fire department to the project site?		x				x		
3) Be consistent with the applicable General Plan Goals and Policies for Item 33a of the Initial Study Assessment Guidelines?		x				x		

Impact Discussion:

33a-1. The proposed project is located less than one mile from City of Ventura Fire Station No. 6.

33a-2. VCFPD staff stated that the proposed project would not require additional fire stations or personnel.

33a-3. The proposed project is consistent with all applicable General Plan and Area Plan goals and policies related to fire protection services—distance and response.

Mitigation/Residual Impact(s)

Not applicable.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
33b. Fire Protection Services – Personnel, Equipment, and Facilities (VCFPD)								
Will the proposed project:								
1) Result in the need for additional personnel?		x				x		
2) Magnitude or the distance from existing facilities indicate that a new facility or additional equipment will be required?		x				x		
3) Be consistent with the applicable General Plan Goals and Policies for Item 33b of the Initial Study Assessment Guidelines?		x				x		

Impact Discussion:

33b-1. and 33b-2. VCFPD staff stated that the proposed project would not require additional fire stations, personnel, or equipment.

33b-3. The proposed project is consistent with all applicable General Plan and Area Plan goals and policies related to fire protection services— personnel, equipment, and facilities.

Mitigation/Residual Impact(s)

Not applicable.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
34a. Education - Schools								
Will the proposed project:								
1) Substantially interfere with the operations of an existing school facility?	x				x			
2) Be consistent with the applicable General Plan Goals and Policies for Item 34a of the Initial Study Assessment Guidelines?	x				x			

Impact Discussion:

34a-1. The proposed project is non-residential in nature. According to the ISAGs, non-residential projects would not have an impact on the demand for schools. In addition, the proposed non-residential project is not located adjacent to a school (the closest school, Saticoy School, is located approximately 4,000 feet away). Therefore, the proposed project would not interfere with the operations of an existing school facility.

34a-2. County policies related to interference with schools do not apply.

Mitigation/Residual Impact(s)

Not applicable.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
34b. Education - Public Libraries (Lib. Agency)								
Will the proposed project:								
1) Substantially interfere with the operations of an existing public library facility?	x							
2) Put additional demands on a public library facility which is currently deemed overcrowded?	x							
3) Limit the ability of individuals to access public library facilities by private vehicle or alternative transportation modes?	x							
4) In combination with other approved projects in its vicinity, cause a public library facility to become overcrowded?					x			
5) Be consistent with the applicable General Plan Goals and Policies for Item 34b of the Initial Study Assessment Guidelines?	x				x			

Impact Discussion:

34b-1., 34b-2., 34b-3., 34b-4., and 34b-5. The proposed project is non-residential in nature. According to the ISAGs, non-residential projects would not have an impact on the demand for public libraries. In addition, the proposed non-residential project is not located adjacent to a library (the closest library, Saticoy School, is located approximately 1,260 feet away). The proposed non-residential project would not substantially interfere with the operations of an existing public library facility, put additional demands on a public library facility which is currently deemed overcrowded, or limit the ability of individuals to access public library facilities. County policies related to public libraries do not apply.

Mitigation/Residual Impact(s)

Not applicable.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
35. Recreation Facilities (GSA)								
Will the proposed project:								
a) Cause an increase in the demand for recreation, parks, and/or trails and corridors?	x				x			
b) Cause a decrease in recreation, parks, and/or trails or corridors when measured against the following standards: • Local Parks/Facilities - 5 acres of developable land (less than 15% slope) per 1,000 population; • Regional Parks/Facilities - 5 acres of developable land per 1,000 population; or, • Regional Trails/Corridors - 2.5 miles per 1,000 population?	x				x			
c) Impede future development of Recreation Parks/Facilities and/or Regional Trails/Corridors?	x				x			
d) Be consistent with the applicable General Plan Goals and Policies for Item 35 of the Initial Study Assessment Guidelines?	x				x			

Impact Discussion:

35a., 35b., and 35c. Because the proposed project does not involve a subdivision or increase in housing, it would not cause an increase in the demand for recreation, parks, or trails. Also, the proposed project would not decrease or impede the development of recreational areas, parks, and/or trails and corridors because it would not be located in or adjacent to public recreational areas, parks, trails and corridors, and/or open space land owned by Ventura County, state, or federal government.

35d. The proposed project would be consistent with the applicable General Plan or Area Plan Goals and Policies for Item 35.

Mitigation/Residual Impact(s)

Not applicable.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
36. Tribal Cultural Resources								
Would the project:								
a) Cause a substantially adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is graphically defined in terms of size, scope of the landscape, sacred place, or object with cultural value to a California Native American tribe.		x				x		
b) Listed or eligible for listing in the California Register of Historical Resources, or in the local register of historical resources as defined in Public Resources Code Section 5020.1(k)? or		x				x		
c) A resource determined by the Lead Agency, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1.		x				x		

Impact Discussion:

36a. and 36b. As mentioned above, the Phase I Assessment/Survey findings from the CHRIS record search and other sources identified no previously recorded tribal (archaeological) resources are located on or within 0.25 miles of the project property. The Phase I Assessment/Survey did not identify any potentially significant prehistoric or historic cultural resources within the proposed project area or within 0.25 miles of the project area.

Envicom staff conducted a systematic field survey of the proposed project site but found no prehistoric or older historical resources. While four historical resources (commercial and residential buildings from the 19th and 20th centuries) were found to be located within the surrounding 0.25-mile cultural resource study area extending beyond the proposed

project site, none were found to be eligible for the California Register of Historical Resources. Additionally, Planning Division's Cultural Heritage Program planner reviewed the proposed project and concluded that there are no potential historic resources associated with the subject property.

As stated in Section B-8A.(above), the Phase 1 archeological survey concluded that cultural resources are not within the project site and the project region was determined not to be sensitive for prehistoric or older historical cultural resources. Therefore, Envicom recommended only contingency measures for the project construction-phase to be followed in the case that unexpected archaeological or historic resources are encountered during project subsurface development activities. To address Envicom's recommended contingency language in the permit, the Planning Division will impose its standard Archaeological Resources Discovered During Grading condition to protect such resources which may be discovered by the applicant and construction-related personnel during subsurface development of the proposed project. In addition, the applicant will retain a cultural monitor to assess subsurface development activities for cultural resources (including tribal cultural resources and human burial remains) below three inches in depth. (For details, see Section B-8A. and the project description above.)

Additionally, the same standard condition requires that in the event any human burial remains are discovered during any ground disturbance work, the applicant must cease the work in the discovery area, preserve the area, immediately notify the County Coroner and the Planning Director, obtain the services of a County-approved archaeologist and, if necessary, Native American Monitor(s) to assess the discovery and provide recommendations on the proper disposition of the site in a written report, obtain Planning Director's written concurrence of the recommended disposition of the site before resuming development work, and implement the agree-upon recommendations. If human remains are determined to be prehistoric, in accordance with Health and Safety Code the Coroner will notify the NAHC to notify the MLD. The MLD shall inspect the site and may recommend scientific removal and nondestructive analysis of human remains associated with Native American burial and an appropriate re-interment site.

On July 21, 2025, the Planning Division contacted the NAHC to secure a tribal consultation list pursuant to AB 52. On July 22, 2025, the NAHC provided a list of tribes that are traditionally and culturally affiliated with the geographic area of the proposed project. On July 24, 2025, Planning contacted the following tribes and/or tribal representatives of the tribes to provide the opportunity for each tribe to consult with Planning about the proposed project:

- Barbareño/Ventureño Band of Mission Indians
- Chumash Council of Bakersfield
- Coastal Band of the Chumash Nation
- Northern Chumash Tribal Council
- Santa Ynez Band of Chumash Indians

On September 30, 2025, Planning initiated SB 18 and AB 52 Native American consultation with the Santa Ynez Band of Chumash Indians pursuant to the band's request for consultation. After the release of the draft ND for public review and comment, and pursuant to AB 52, County staff will continue consultation with the Santa Ynez Band of the Chumash Indians regarding the contents of the ND. The County will conclude AB 52 consultation prior to requesting the Planning Director's adoption of the ND. No other California Native American tribes have requested formal AB 52 consultation.

36c. California Public Resources Code Section 5024.1(c) states that a resource may be listed as a historical resource in the California Register if it meets certain criteria of the National Register of Historic Places (e.g., if a resource is associated with events that contributed significantly to California history or cultural heritage or if the resource yielded/may likely yield information important in prehistory or history). Planning staff reviewed the National Register of Historic Places criteria and determined that, based on the CHRIS record search and all information and evidence obtained about the proposed project, there is no evidence that resources exist that meet the criteria of the National Register of Historic Places. As mentioned above, in the event that any archeological or historical resources are discovered during ground disturbance during construction, the resources would be protected and preserved through the implementation of the Archaeological Resources Discovered During Grading condition.

Mitigation/Residual Impact(s)

Not applicable.

Issue (Responsible Department)*	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
37. Energy								
Would the project:								
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?		x				x		
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?		x				x		

Impact Discussion:

37a. and 37b. The proposed project would be required to comply with the applicable energy efficiency standards contained in Part 6 (California Energy Code) of the VCBC. Compliance with the applicable energy efficiency standards would reduce the inefficient and unnecessary consumption of energy resources.

While the policies and programs of the Ventura County General Plan do not compel privately-initiated discretionary development to comply with specific renewable energy or energy efficiency standards or requirements, the Saticoy Area Plan includes the following energy reduction policy to which the proposed project must comply:

LU-1.2: *Discretionary development shall be designed to reduce energy consumption by implementing one or more of the following building techniques:*

a. Install solar panels on roofs of residential, commercial or industrial buildings;
b. Install a "cool roof" (a roof that reflects and discharges heat);
c. Plant trees to shade structures and reduce interior heat gain;
d. Use passive solar design techniques for buildings;
e. Install dual-paned windows; and
f. Install extra insulation.

The applicant proposes to install cool roof coverings, insulated glass, and extra thermal insulation in the design of the proposed warehouse building which will reduce energy consumption and address items e. and f. of Policy LU-1.2.

Therefore, the proposed project would not result in potentially significant environmental effects due to the wasteful, inefficient, or unnecessary consumption of energy or conflict with a known local renewable or energy efficiency plan. Impacts are considered to be less than significant.

Mitigation/Residual Impact(s)

Not applicable.

Issue (Responsible Department) *	Project Impact Degree Of Effect**				Cumulative Impact Degree Of Effect**			
	N	LS	PS-M	PS	N	LS	PS-M	PS
38. Wildfire								
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?		x				x		
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?		x				x		
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?		x				x		
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?		x				x		

Impact Discussion:

38a, 38b, and 38c. According to the RMA GIS Viewer, the proposed project will not be located within a High or Very Fire Hazard Severity Zone designated for a Local or State Responsibility Area. The nearest State Responsibility Area of High severity is approximately 1,200 feet from the proposed project site. The nearest State Responsibility Area of Very High severity is approximately 1,500 feet from the proposed project site. The proposed project would be located less than one mile from City of Ventura Fire Station No. 6. VCFPD staff stated that the proposed project would not require additional fire stations or personnel. Also, the VCFPD would require that adequate fire flow is available at the proposed project site, that VCFPD vehicles are provided adequate access to the project site, and that automatic fire sprinkler system(s) must be installed as required by the VCFPD. Furthermore, the VCFPD did not identify any adverse fire-protection related effects that would result from the proposed project.

38d. The proposed project would be consistent with the applicable General Plan or Area Plan Goals and Policies for fire protection.

Mitigation/Residual Impact(s)

Not applicable.

***Key to the agencies/departments that are responsible for the analysis of the items above:**

Airports - Department Of Airports	AG. - Agricultural Department	VCAPCD - Air Pollution Control District
EHD - Environmental Health Division	VCFPD - Fire Protection District	GSA - General Services Agency
Harbors - Harbor Department	Lib. Agency - Library Services Agency	Plng. - Planning Division
PWA - Public Works Agency	Sheriff - Sheriff's Department	WPD – Watershed Protection District

****Key to Impact Degree of Effect:**

N – No Impact
LS – Less than Significant Impact
PS-M – Potentially Significant but Mitigable Impact
PS – Potentially Significant Impact

Section C – Mandatory Findings of Significance

Based on the information contained within Section B:		
	Yes	**No**
1. Does the project have the potential to 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, 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?		x
2. Does the project have the potential to achieve short-term, to the disadvantage of long-term, environmental goals? (A short-term impact on the environment is one that occurs in a relatively brief, definitive period of time while long-term impacts will endure well into the future).		x
3. 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 effect of other current projects, and the effect of probable future projects. (Several projects may have relatively small individual impacts on two or more resources, but the total of those impacts on the environment is significant.)		x
4. Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?		x

Findings Discussion:

1. As stated in Section B above, the proposed project would be located within an industrial zone which has been cleared and graded. The applicant's qualified biological consultant (Pax Environmental, Inc.) found the proposed project site to be composed of mostly non-native ruderal/disturbed vegetation communities and habitats which are typically associated with human-centric land uses such as roads and development. Pax stated that no special-status species are likely to occur within the project site. Pax observed that the project site does provide some foraging habitat for nesting birds and recommends measures to avoid and minimize construction related impacts (vegetation removal, land clearing, ground disturbance, etc.) to nesting birds and raptors. Planning will impose its standard nesting bird permit condition which includes avoidance and minimization measures similar to those recommended by Pax. Pax concluded that the proposed project would have negligible impacts on biological resources. Therefore, the proposed project does not have the potential to 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, 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.

2. As stated in Section B, the proposed project does not have the potential to achieve short-term, to the disadvantage of long-term, environmental goals. For instance, while the proposed project would result in increased impervious surface area, the County Stormwater Program has imposed a permit condition to reduce adverse impacts to the surface water quality. The applicant would be required to implement post-construction stormwater best management practices to retain/treat the new impervious surface water runoff and to provide a maintenance plan and annual verification of ongoing maintenance of the post-construction stormwater management control system. Implementation of this condition would ensure individual and cumulative impacts to existing impaired downstream waterbodies and water quality objectives would be avoided.

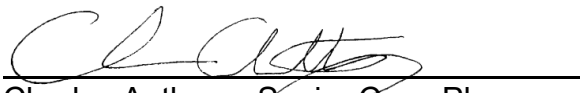
3. For applicable environmental issues in Section B, Planning staff utilized a combination of the "list approach" methodology and "plan approach" methodology in evaluating the combination of the project's impacts with related impacts from other projects to determine whether such impacts are cumulatively considerable (for more details of this approach, see Section A.8.). For instance, the proposed project was analyzed for community character to determine if it would result in cumulatively considerable impacts. The proposed two-story warehouse building and single-story trash enclosure structure would be composed of materials and colors similar to the existing two-story Rolls Scaffolding building located on the same lot. The proposed structures would be compatible with the eclectic design of the existing commercial and industrial buildings in the surrounding area and be similar in height of several other existing commercial/industrial buildings on County Drive. Planning staff considered the pending and recently-approved Ventura County Planning Division projects that are located within a three-mile radius of the proposed project site and determined that there are no pending or recently-approved projects that would be constructed within the visible vicinity. Planning staff also utilized the plan approach by relying on the Program EIR for the Ventura County General Plan, which was updated and certified in September of 2020. The proposed project would be consistent with the County's General Plan. As such, the proposed project would not have any cumulatively considerable effects with regard to community character.

4. Throughout Section B, Planning and County staff evaluated the proposed project's environmental effects that would cause substantial adverse effects on human beings, either directly or indirectly. Staff found that the project would not result in any significant adverse environmental effects to human beings (either directly or indirectly) or the environment.

Section D – Determination of Environmental Document

Based on this initial evaluation:

[X]	I find the proposed project **could not** have a significant effect on the environment, and a **Negative Declaration** should 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 the mitigation measure(s) described in Section B of the Initial Study will be applied to the project. A **Mitigated Negative Declaration** should be prepared.
[ ]	I find the proposed project, individually and/or cumulatively, MAY have a significant effect on the environment and an **Environmental Impact Report** (EIR) is required.*
[ ]	I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" 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 potentially 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.**



Charles Anthony, ~~Senior~~ Case Planner

January 27, 2026
Date

Attachments:

Attachment 1 – Aerial Location Map
Attachment 2 – Project Plans
Attachment 3 – Map of Pending/Approved Projects Used in the Cumulative Impacts Analysis
Attachment 4 – Works Cited

Attachment 1 – Map

Ventura County,California
Resource Management Agency
GIS Development & Mapping Services
Map Created on 10-09-2025
This aerial imagery is under the
copyrights of Vexcel 2024

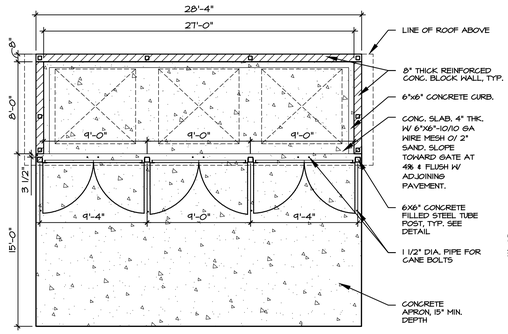
County of Ventura
Plannig Director Hearing
APN: 090-0-110-300
11351 County Rd..
Ventura CA 93004

Aerial Photography

0 100 200 Feet

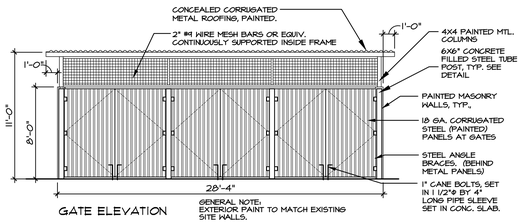
RH

Attachment 2 -- Plans



2 FRONT LOAD TRASH ENCLOSURE - PLAN

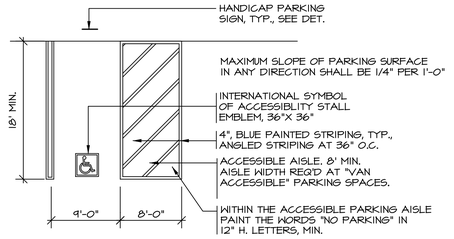
1/4" = 1'-0"



GATE ELEVATION

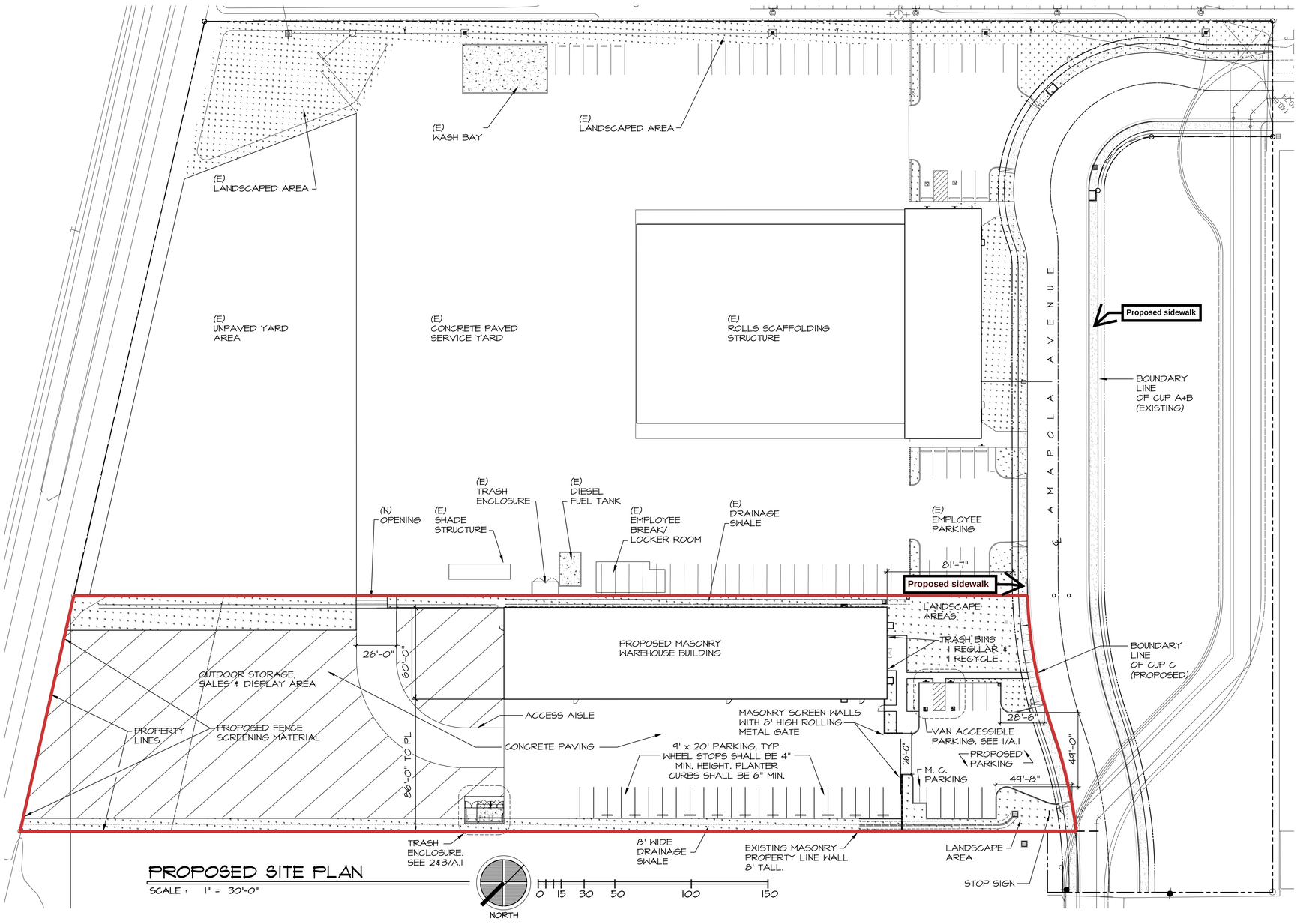
3 TRASH ENCLOSURE FRONT ELEV.

1/4" = 1'-0"



1 VAN ACCESSIBLE PARKING SPACE

1/8" = 1'-0"



PROPOSED SITE PLAN

SCALE : 1" = 30'-0"

PROJECT DATA

PROJECT ADDRESS:
COUNTY DRIVE,
SATICOY, CA 93004

PROJECT APN#:	090-0-110-300
USE ZONE:	M-1 (SATICOY AREA PLAN)
LOT SIZE	405,876 SF
CONSTRUCTION TYPE:	V-N
OCCUPANCY:	B, F-1
SPRINKLERED:	YES, SYSTEM WILL BE UNDER SEPARATE PERMIT

PROJECT DESCRIPTION:

A 1 STORY BUILDING WITH A MEZZANINE IS PROPOSED.
THE BUILDING WILL CONSIST OF:

-OFFICE SPACE	= 1,741 SF
-WAREHOUSE	=13,301 SF
-MEZZANINE/STORAGE	= 1,890 SF
TOTAL BUILDING AREA	=16,938 SF

TOTAL SITE AREA = 405,979 SF 9.32 AC

AREA CALCS CUP A+B: (EXISTING) CUP: LU06-0012

SITE AREA	= 243,292 SF	5.59 AC
BUILDINGS	= 39,969 SF	=16.4%
LANDSCAPE	= 31,884 SF	= 13.1%
PAVING	= 171,439 SF	=70.5%

AREA CALCS CUP C: (PROPOSED)
SITE AREA = 98,010 SF 2.25 AC

MAIN BLDG.	= 15,048 SF
TRASH ENCL.	= 267 SF
TOTAL BLDG.	= 15,315 SF =15.6%
LANDSCAPE	= 11,745 SF = 12.0%
PAVING	= 71,068 SF =72.4%
(PARKING/VEHICLE ACCESS	= 37,198 SF)
(EXTERIOR STORAGE	= 33,870 SF)

AREA OUTSIDE OF THE CUP BOUNDARY:
SITE AREA = 64,559 SF 1.48 AC

TOTAL SITE / BUILDING AREA COVERAGE:
TOTAL BLDG. AREA = 55,284 SF / 405,979 SF = 13.6%

PARKING DATA

PARKING CALCULATION CUP C: (PROPOSED)

- WAREHOUSE	=13,301 SF/ 500	= 27 SPACES
- MEZZANINE/STOR	= 1,890 SF/ 1500	= 1 SPACES
- OFFICE	= 1,741 SF/ 300	= 6 SPACES
TOTAL		34 SPACES

PARKING PROVIDED =35 SPACES
(33 AUTO SPACES)
(2 MOTORCYCLE SPACES)

GENERAL NOTES

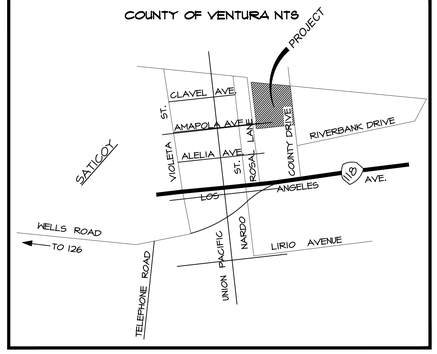
A. THE FOLLOWING MATERIALS WILL BE USED IN THE PROJECT TO REDUCE ENERGY CONSUMPTION:

- COOL ROOF COVERINGS
- INSULATED GLASS
- EXTRA THERMAL INSULATION

B. ALL UTILITIES WILL BE UNDERGROUND PER SEC. 8109-3.1.1.

VICINITY MAP

COUNTY OF VENTURA NTS



REVISIONS	DATE
1 PLANNING CORRECTIONS	10/24/2024
2 CIVIL REVISIONS	11/27/2024
3 PLANNING COORDINATION	05/14/2025

LICENSED ARCHITECT JOHN N. MULLER 36120 REN. 02/28/27 STATE OF CALIFORNIA

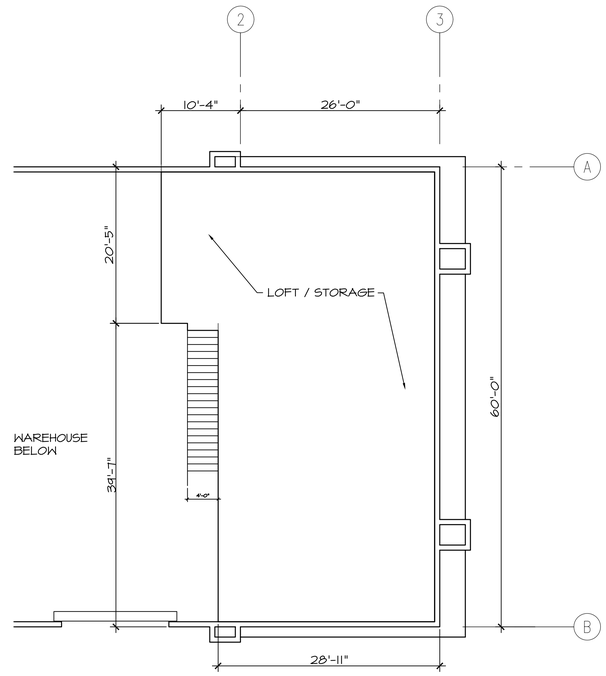
MULLER WORTHY ARCHITECTS
1451-D RICE AVENUE OXNARD, CA 93030
(805) 983-7411 WWW.MULLERWORTHY.COM

SHEET TITLE: PROPOSED SITE / FLOOR PLAN

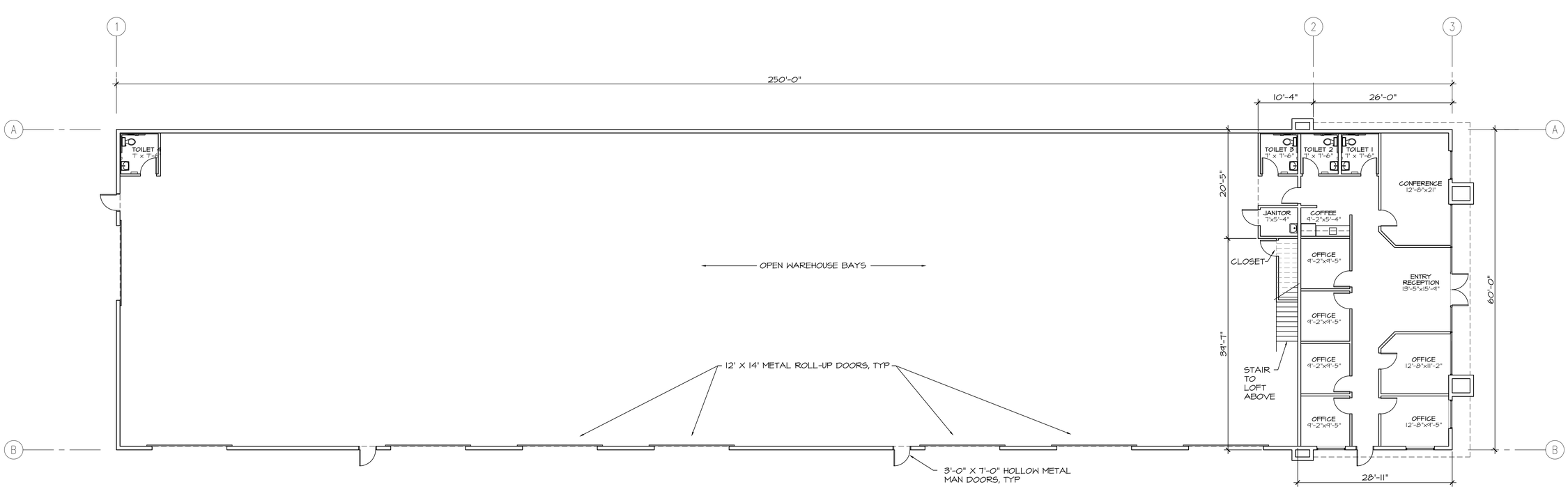
PROJECT TITLE:
Proposed Warehouse Building for:
ROLLS SCAFFOLDING
COUNTY DR, VENTURA, CA 93004

PROJECT NO. 2021-014
DATE 12/05/2023
SET PLANNING SUBMITTAL
PERMIT / LUP / PLAN CHK#. ---
SHEET NO. A.1

PLOTTED: 5/14/2025 6:08 PM



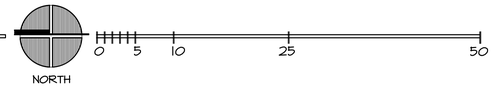
MEZZANINE PLAN



FIRST FLOOR PLAN

PROPOSED FLOOR PLANS

SCALE : 1/8" = 1'-0"



	REVISIONS	DATE

LICENSED ARCHITECT
JOHN A. MULLER IV
No. C-13616
REN. 02/28/25
STATE OF CALIFORNIA

MULLER WORTHY ARCHITECTS
1451-D RICE AVENUE OXNARD, CA 93030
P 805-983-7411 WWW.MULLERWORTHY.COM

SHEET TITLE
FLOOR PLAN

PROJECT TITLE
Proposed Warehouse Building for:
ROLLS SCAFOLDING
COUNTY DR, VENTURA, CA 93004

PROJECT NO.
2021-014
DATE:
12/05/2023
SET:
PLANNING SUBMITTAL
PERMIT / LUP / PLAN CHK#.

SHEET NO.
A.2
PLOTTED: 9/3/2024 12:39 PM

FINISH SCHEDULE

A. CONCRETE MASONRY UNIT (CMU): DARK ANGELES BLOCK, PRECISION
COLOR: SIENNA BROWN

B. CMU: LIGHT, ANGELES BLOCK, SPLIT FACE
COLOR: CANYONBLUFF

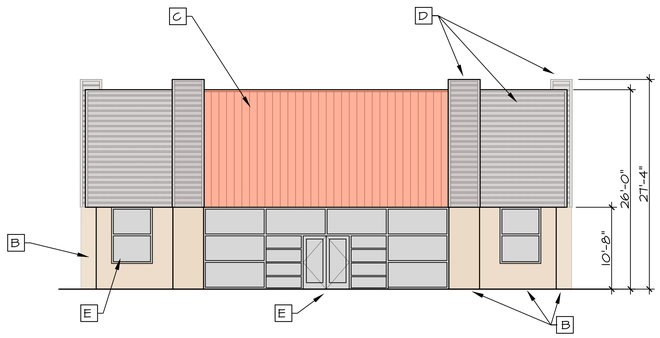
C. METAL: STANDING SEAM SIDING, KYNAR FINISH
PROFILE TO MATCH ADJACENT ROLLS BLD'G
COLOR: RED, TO MATCH ADJACENT ROLLS BLD'G

D. METAL: RIBBED SIDING, KYNAR FINISH
PROFILE TO MATCH ADJACENT ROLLS BLD'G
COLOR: GRAY TO MATCH ADJACENT ROLLS BLD'G

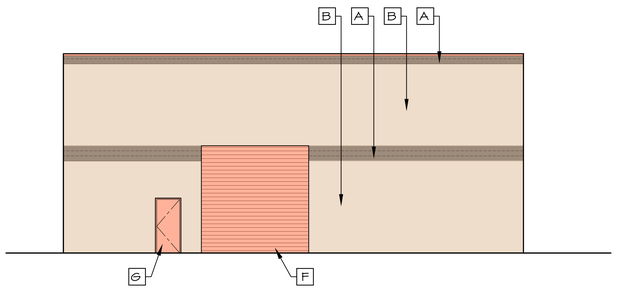
E. ALUMINUM STORE FRONT SYSTEM:
FRAME COLOR: CLR ANODIZED ALUMINUM, MATCH ADJACENT ROLLS BLD'G
GLASS COLOR: SOLAR GRAY, MATCH ADJACENT ROLLS BLD'G

F. PREFINISHED OVERHEAD DOOR.
COLOR: RED TO MATCH STANDING SEAM PANELS @ ADJACENT ROLLS BLD'G

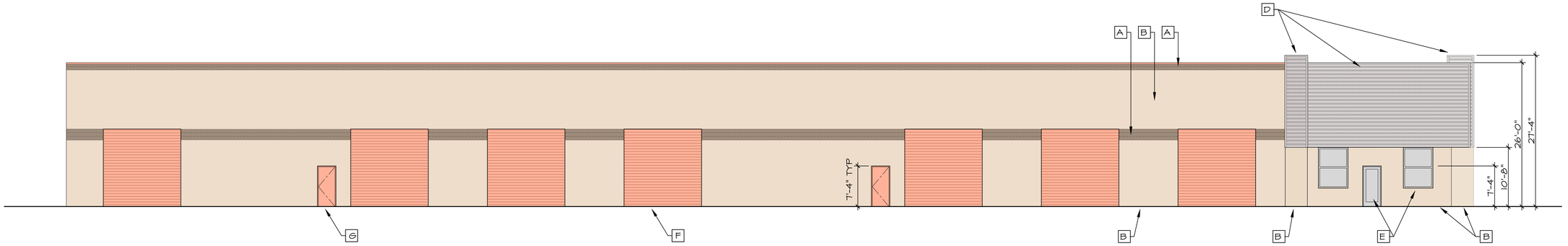
G. PREFINISHED HOLLOW METAL DOOR.
COLOR: RED TO MATCH STANDING SEAM PANELS @ ADJACENT ROLLS BLD'G



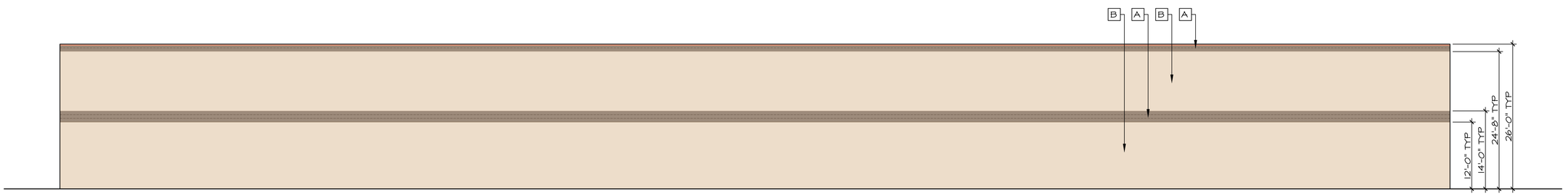
SOUTH ELEVATION
SCALE : 1/8" = 1'-0"



NORTH ELEVATION
SCALE : 1/8" = 1'-0"



WEST ELEVATION
SCALE : 1/8" = 1'-0"



EAST ELEVATION
SCALE : 1/8" = 1'-0"

PROPOSED ELEVATIONS
SCALE : 1/8" = 1'-0"
0 5 10 25 50

REVISIONS	DATE

LICENSED ARCHITECT
JOHN A. MULLER IV
No. C-31614
REN. 02/28/25
STATE OF CALIFORNIA

1451-D RICE AVENUE OXNARD, CA. 93030
P 805-983-7411 WWW.MULLERWORTHY.COM

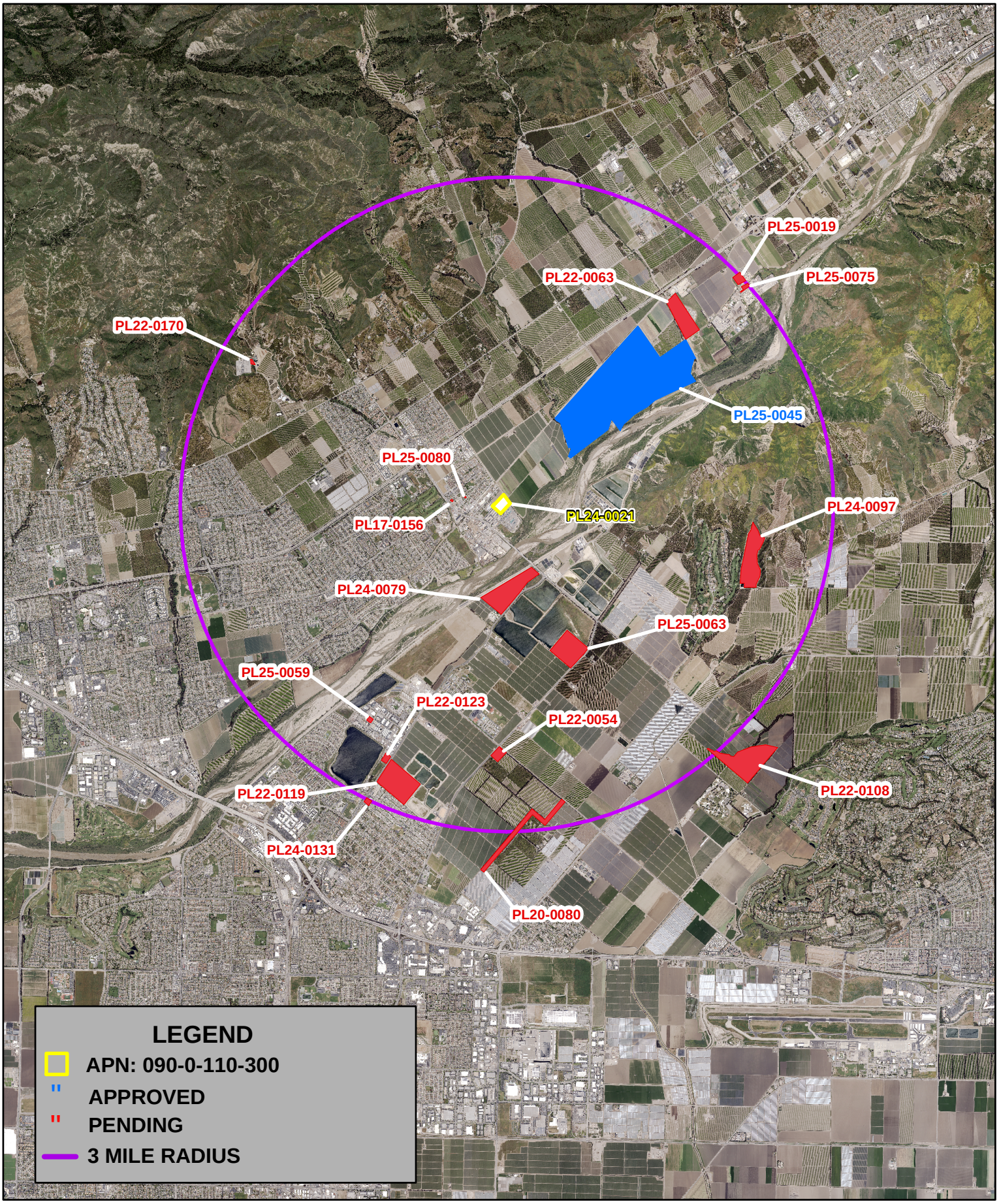
MULLER MORTHY ARCHITECTS

SHEET TITLE:
EXTERIOR ELEVATIONS

PROJECT TITLE:
Proposed Warehouse Building for:
ROLLS SCAFOLDING
COUNTY DR, VENTURA, CA 93004

PROJECT NO.: 2021-014
DATE: 12/05/2023
SET: PLANNING SUBMITTAL
PERMIT / LUP / PLAN CHK#: ---
SHEET NO.: A.3
PLOTTED: 9/3/2024 12:40 PM

Attachment 3 -- Map of Pending & Approved Projects



Ventura County,California
Resource Management Agency
GIS Development & Mapping Services
Map Created on 01-20-2026
This aerial imagery is under the copyrights of Pictometry
Source: Vexcel 2024

COUNTY of VENTURA

RMAgis

3 Miles Radius Map of parcel
APN: 090-0-110-300
Project: PL24-0021

0 0.5 1 Miles

É RH

Attachment 4 – Works Cited

Biological Survey and Report, July 8, 2024, Pax Environmental, Inc.

Cultural Resources Phase 1 Assessment/Survey, August 26, 2025, Envicom Corporation

Drainage Report, February 5, 2024, Jensen Design & Survey, Inc.

Geotechnical Engineering Study, January 29, 2024, Advanced Geotechnical Services, Inc.

Noise Impact Study, February 20, 2009, Morris Engineering Company

PAX
Environmental, Inc.

226 West Ojai Ave STE 101 #157 Ojai, CA 93023 805.633.9218 www.paxenviro.com

July 8, 2024

Attn: Jake Rolls, Manager
Jakran, LLC
11351 Country Drive Suite B
Ventura, California 93004
jrolls@rollsscaffold.com

Re: 11351 County Drive Biological Survey and Report / (APN: 090-0-110-300) Ventura, Ventura County, California

Dear Mr. Rolls:

This report summarizes the results of a biological survey performed by Pax Environmental, Inc. (Pax) to assess existing biological conditions for the project at (APN: 090-0-110-300) in Ventura, Ventura County, California (Study Area). The proposed Project entails building out the last portion of APN 090-0-110-300 as Suite C at 11351 Country Drive (Project). The Project site is a portion of the 105,284 square foot parcel.

Data collected during the surveys focused on existing habitat and site conditions, hydrological features, and any special-status species with the potential to occur. This report includes the findings of the surveys and includes a vegetation community analysis, maps (Appendix A); representative photos of the Study Area (Appendix B), an inventory of observed plants (Appendix C), and wildlife (Appendix D).

Methods

Literature and Desktop Review

Prior to performing the field survey, Pax performed a records search for special-status plants, special-status wildlife, sensitive natural communities, critical habitat, and other sensitive resources species potentially occurring in the Study Area. Sources utilized during the records search included the California Natural Diversity Database (CNDDB) (CDFW, 2024), the California Native Plant Society's (CNPS) Inventory of Rare and Endangered Vascular Plants of California (CNPS, 2024), USFWS Threatened and Endangered Species Active Critical Habitat Report (USFWS, 2024), U.S. Geological Survey (USGS) topographic maps (USGS, 2024), and Natural Resource Conservation Service (NRCS) soils information (NRCS, 2024). The records search was performed using a 10-mile radius around the Study Area in all eight cardinal directions.

Field Surveys

A reconnaissance-level survey was conducted on June 6, 2024, by Pax Environmental, Inc. senior biologist, Ivett Plascencia. Table 1 summarizes the environmental conditions of the site at the time of the field survey. This survey consisted of meandering transects across the Study Area and a visual search for plants and wildlife, or evidence of their presence (scat, tracks, burrows, nests, etc.), with 100% visual coverage of the Study Area. Identifiable species were noted and recorded upon detection. Following the

initial survey, a determination of the likelihood of occurrence was made for special-status species that were not detected based on species or habitat elements observed during the survey, as well as putative flowering phenology (e.g., habitat type, elevation, slope, soil, etc.)

Table 1. Survey conditions

Date	Start/ End Time	Temperature (°Fahrenheit)	Cloud Cover (%)	Wind Speed (miles/hour)	Surveyor
6/6/2024	1400/1800	70	0	0-5 mph	Ivett Plascencia

Biological Resources

General Site Conditions

The Project site is located within the unincorporated town of Saticoy in the County of Ventura, which consists largely of industrial and agricultural areas surrounded by developments to the south and west, and agricultural lands to the north. The site is depicted on the USGS 7.5-minute topographic quadrangle within the San Bernardino Principal Meridian Section 00, Township 1 North and Range 16 West (Figure 1 and Figure 2). The topography is nearly uniform within the Project site with elevations average 154 feet above mean sea level (amsl). Representative photos depicting conditions at the site are included in Appendix B.

Much of the Project site is hard packed soil and dominated by weedy species. No unique land features such as cliff faces, rock outcrops, bluff, or stream banks were observed during the survey. Soils in the study area are comprised of San Emigdio-Urban land complex with 0 to 2 percent slopes (Figure 4). The San Emigdio series are very deep, well drained soils that formed in dominantly sedimentary alluvium. They are found on fans and floodplains with slopes of 0 to 15 percent where the mean annual precipitation is about 15 inches, and the mean annual air temperature is 62 degrees F.

Flora

The Study Area is composed of ruderal/disturbed habitat as depicted in Figure 3. The surrounding area consists of agricultural, indusial, riverine and forested/shrub riparian. Descriptions of the communities within the Study Area are included below, and a list of dominant native and non-native plant species observed during the site survey are included in Table 2 and Appendix C.

Table 2. Vegetation communities and habitats in the study area.

Vegetation Community	Acreage	% Coverage of Study Area
Ruderal	0.28	35
Non-native dominated woodland	0.52	65
Total	0.80	100

Non-native ruderal/disturbed habitat: Disturbed and ruderal habitats are typically associated with human-centric land uses, such as roads and development. This land use differs from “developed” in the amount of disturbance and can support a greater diversity of native species than an area defined as “developed.” Areas used by humans can be subjected to altered hydrology due to runoff from

impervious or compacted substrates and increased introduction of non-native species due to introductions from vehicles and livestock. Human practices, such as weed whipping and tilling, can also contribute to disturbance and proliferation of non-native species when not implemented appropriately.

Fauna

Wildlife observed during the June 6, 2024, survey were species that are common in ruderal/disturbed habitat within Ventura County. A complete list of wildlife species observed during the site survey is included in Appendix D. The Project Area has low habitat suitability for nesting birds but does provide some foraging habitat which may be utilized throughout the year. No special-status wildlife species were observed during the survey.

Special Status Species

While marginally suitable habitat is present for several special-status wildlife and plant species within the Study Area, no special-status species were observed during the surveys and are no special-status species are likely to occur within the Study Area. Critical habitat for the federally endangered southwestern willow flycatcher (*Empidonax traillii extimus*) is located to the south and east of the Project along the Santa Clara River corridor (Figure 5). Tricolored blackbird (*Agelaius tricolor*) and the coastal California gnatcatcher (*Polioptila californica californica*) have also been observed within a mile of the Study Area.

Sensitive Natural Communities

The CNDDB records search identified ten special-status natural communities occurring in the Project region, none of which occur within the Project site. In addition, no wetland or wetland indicator features were documented on the Project site. No impacts to any Sensitive Natural Communities are expected.

Discussion

The development of the Project will have negligible impacts on biological resources. This is due to the disturbed nature of the Study Area with its mostly non-native vegetation and lack of high quality or sensitive habitat features. Visual inspection of the area revealed no existing riparian vegetation or other characteristics associated with wetlands in the Study Area. Vegetation removal should be scheduled outside of bird breeding season (February 1 – August 15); if this is unavoidable, then preconstruction surveys and monitoring protocols should be implemented to minimize impact to nesting birds (BIO-1).

Recommended Avoidance and Minimization Measures

BIO-1. Pre-construction Surveys for Nesting Raptors and Birds. The applicant shall ensure the following actions are undertaken to avoid and minimize potential impacts to nesting birds: To the extent feasible, removal of vegetation within suitable nesting bird habitats will be scheduled to avoid the nesting season and occur between September and January. For activities that cannot avoid the nesting season (February 1 to August 15), not more than 30 days prior to initiation of construction activities (e.g. mobilization and

staging), a qualified biologist shall conduct pre-construction surveys for nesting raptors and other native nesting birds. The survey for the presence of nesting raptors shall cover all areas within the disturbance footprint plus a 500-foot buffer where access can be secured. Survey reports shall be submitted to the County Department of Planning and Building at least one week prior to initiating construction, and within one week of completing surveys for ongoing activities. If active nests (nests with eggs or chicks) are located, the qualified biologist shall establish an appropriate avoidance buffer ranging from 50 to 300 feet based on the species biology and the current and anticipated disturbance levels occurring in vicinity of the nest, and 500 feet for nests of fully protected species (such as white-tailed kite) and raptors. All buffers shall be marked using high-visibility flagging, fencing, and/or signage. No construction activities shall be allowed within the buffers until the young have fledged from the nest or the nest fails, unless approved by the qualified biologist. The qualified biologist shall confirm that breeding/nesting is complete, and the young have fledged the nest prior to removal of the buffer. Encroachment into the buffer shall be conducted at the discretion of the qualified biologist. Monitoring reports summarizing nest avoidance measures, including buffers, fledge dates, and documentation of the avoidance of fully protected species, if applicable, shall be submitted to the County Department of Planning and Building monthly while nest buffers are in place or while activities are occurring within the specified buffer of an inactive nest of a fully protected species.

Please feel free to contact us if you have any questions or concerns.

Sincerely,

Andy Fredell, M.S. | Project Manager/Senior Biologist

References

California Department of Fish and Wildlife (CDFW). 2024. California Natural Diversity Database (CNDDB). Available at: https://map.dfg.ca.gov/rarefind/view/RareFind.aspx [accessed June 2024]

California Department of Fish and Wildlife. 2024. California Sensitive Natural Communities. Dated: May 2023. Available at: https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=153609&inline [accessed June 2024].

California Native Plant Society (CNPS), Rare Plant Program. 2024. Rare Plant Inventory (online edition, v9.5). Website https://www.rareplants.cnps.org [accessed June 2024].

CNPS. 2024. A Manual of California Vegetation, Online Edition. http://www.cnps.org/cnps/vegetation/ [accessed June 2024]. California Native Plant Society, Sacramento, CA.

Chesser, R. T., S. M. Billerman, K. J. Burns, C. Cicero, J. L. Dunn, B. E. Hernández-Baños, R. A. Jiménez, A. W. Kratter, N. A. Mason, P. C. Rasmussen, J. V. Remsen, Jr., and K. Winker. 2024. Checklist of North American Birds (online). American Ornithological Society. Available at: https://checklist.americanornithology.org/taxa/ [accessed June 2024].

Consortium of California Herbaria (CCH) [web application]. 2024. Berkeley, California: The Calflora Database [a non-profit organization]. Available: http://www.calflora.org/ [accessed June 2024].

eBird. 2024. eBird: An online database of bird distribution and abundance [web application]. eBird, Cornell Lab of Ornithology, Ithaca, New York. Available: http://www.ebird.org [accessed June 2024].

Jameson Jr, E.W. and H.J. Peters. 2004. Mammals of California. University of California Press, Berkeley, California, USA.

Jepson Flora Project (eds.) 2024. Jepson eFlora, http://ucjeps.berkeley.edu/eflora/ [accessed June 2024].

Sibley, D.A. 2003. The Sibley Field Guide to Birds of Western North America. New York. Alfred A. Knopf.

U.S. Fish and Wildlife Service, National Wetlands Inventory. 2024. Available at: https://fwsprimary.wim.usgs.gov/wetlands/apps/wetlands-mapper/ [accessed June 2024].

United States Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS). 2024 Web Soil Survey. National Cooperative Soil Survey. Available at: http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm [accessed June 2024].

United States Department of Interior (USDI), U.S. Geologic Survey (USGS). 2024 National Cooperative Geologic Mapping Program. National Geologic Map Database. Available at: http://ngmdb.usgs.gov/ngmdb/ngmdb_home.html [accessed June 2024].

Appendix A. Maps

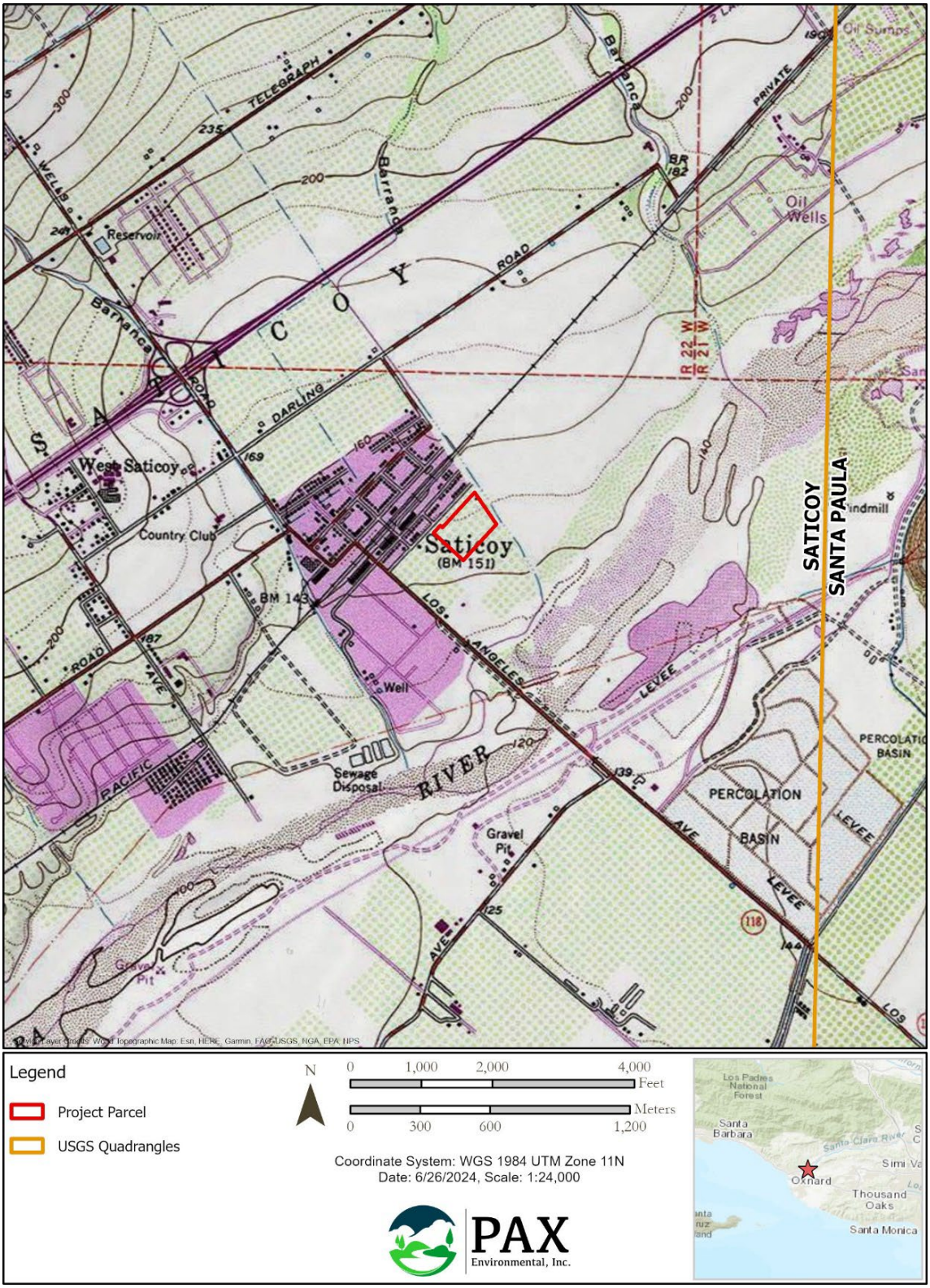


Figure 1. Project location

Figure 2. Project overview map

Figure 3. National wetlands inventory and national hydrological dataset map

Figure 4. USDA soils map

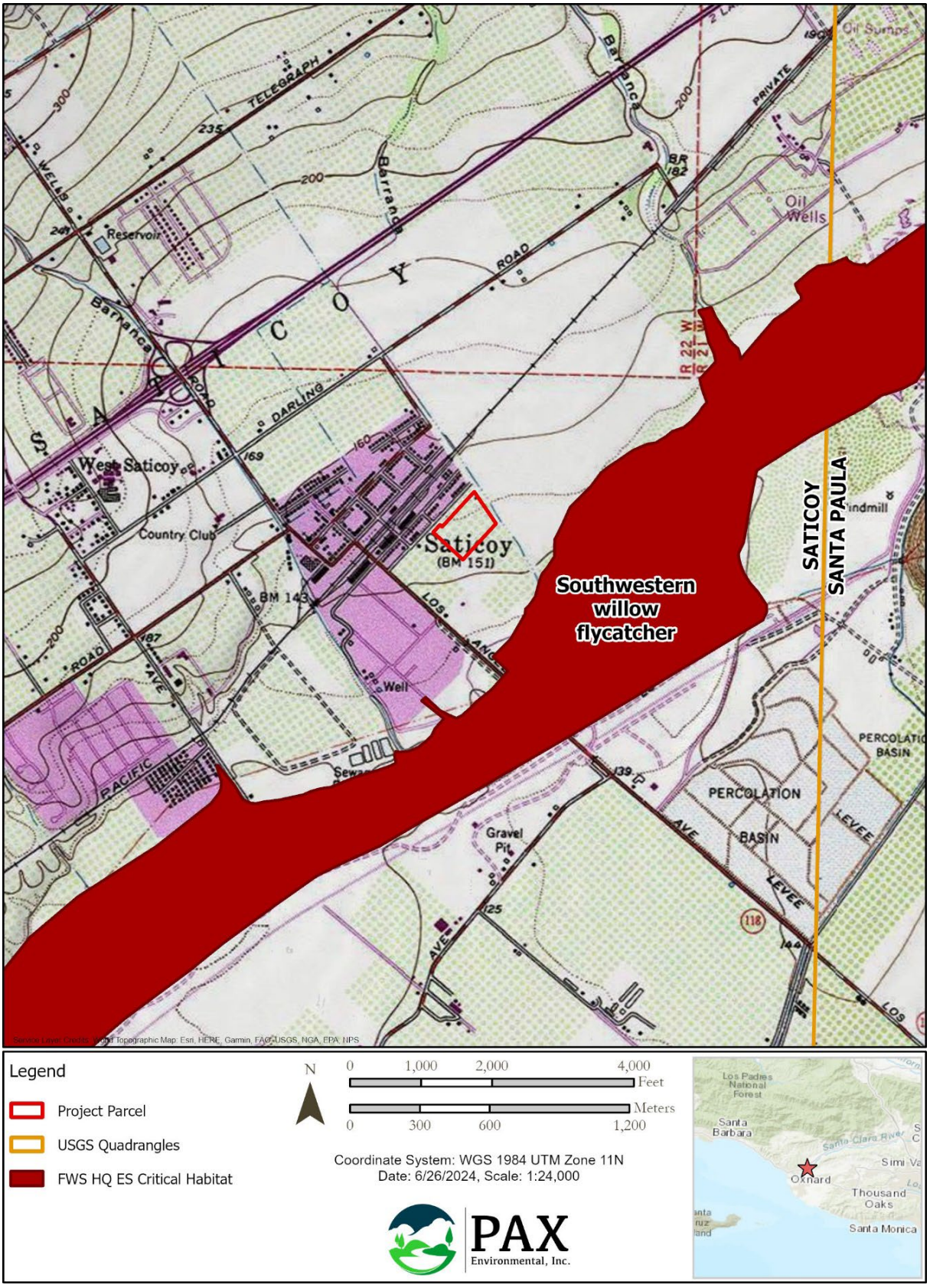


Figure 5. Critical habitat map

Appendix B: Representative Site Photographs

Photo 1. View of Project area looking north adjacent to Country Drive.

Photo 2. View of southern part of the Project area looking southeast from inside the cup parcel (foreground), Suite A and B (background) and County Drive on the right.

Photo 3. North facing photo of the Project area from the center of the cup parcel, featuring ruderal habitat, hard packed soil (left) and non-native weeds (right).

Photo 4. View of Project area looking northeast from the center of the cup parcel, hard packed soil (foreground) and non-native weeds in the background.

Photo 5. View of Project area looking south from the center of the cup parcel, Suite C entrance in the background.

Photo 6. South facing photo the project area and ruderal habitat vegetation.

Photo 7. Northeast facing image of ruderal habitat in the Project area.

Photo 8. Southwest facing image of ruderal habitat in Project area.

Photo 9. North facing image of ruderal habitat in Project area.

Photo 10. East facing photo of the already completed occupied Suite B entrance at 11351 County Drive Ventura, California.

Photo 11. North facing photo of the already completed and occupied Suite A entrance at 11351 County Drive Ventura, California

Appendix C: Plant Species Observed in the Project Site

Scientific Name	Common Name	Family	California Native Status/Cal-IPC rating
Washingtonia robusta	Mexican fan palm	Asteraceae	non-native/moderate invasive
Bromus rubens	Red brome	Poaceae	non-native/highly invasive
Malva parviflora	Cheeseweed mallow	Malvaceae	non-native
Brassica nigra	Black mustard	Brassicaceae	non-native/moderate invasive
Helminthotheca echioides	Bristly ox-tongue	Asteraceae	non-native/limited invasive
Nicotiana glauca	Tree tobacco	Solanaceae	non-native/moderate
Westringia fruticosa	Coastal rosemary	Lamiaceae	non-native
Hemerocallis fulva	Ditch Lilly	Asphodelaceae	non-native
Syagrus romanzoffiana	Queen palm	Arecaceae	non-native
Medicago polymorpha	Bur clover	Fabaceae	non-native/invasive limited
Erigeron canadensis	Canada horseweed	Asteraceae	non-native
Rumex crispus	Curly dock	Polygonaceae	non-native/limited
Salsola tragus	Russianthistle	Chenophodiaceae	non-native/limited
Hordeum murinum	Foxtail barley	Poaceae	non-native/moderate
Polygonum aviculare	Prostrate knotweed	Polygonaceae	non-native
Plantago lanceolata	Narrow leaved plantain	Plantaginaceae	non-native/limited
Lepidium draba	Whitetop	Brassicaceae	non-native/moderate
Raphanus sativus	Cultivated radish	Brassicaceae	non-native/limited
Erodium cicutarium	Redstem stork's bill	Geraniaceae	non-native/limited
Chenopodiastrum murale	Needle leaf goosefoot	Chenopodiaceae	non-native
Avena fauta	Wild oat	Poaceae	non-native/moderate
Lactuca serriola	Prickly lettuce	Asteraceae	non-native/
Erigeron bonariensis	Flax-leaved horseweed	Asteraceae	non-native/
Convolvulus arvensis	Field bindweed	Convolvulaceae	non-native/
Portulaca oleracea	Common purslane	Portulacaceae	non-native/
Sonchus asper	Spiny sowthistle	Asteraceae	non-native/
Ligustrum japonicum	Japanese privet	Oleaceae	non-native/
Callistemon citrinus	Crimson bottlebrush	Myrtaceae	non-native/
Agapanthus praecox	Lilly of the Nile	Amaryllidaceae	non-native/
Phoenix roebelenii	Dwarf date palm	Asteraceae	non-native/
Pandorea jasminoides	Bower vine	Bignonias	non-native/
Cuphea hyssopifolia	Mexican heather	Lythraceae	non-native/
Vicia sativa	Common vetch	Fabaceae	non-native/
Medicago lupulina	Black medic	Fabaceae	non-native/
Polypogon viridis	Water beard grass	Poaceae	non-native

Scientific Name	Common Name	Family	California Native Status/Cal-IPC rating
Polypogon monspeliensis	Rabbitsfoot grass	Poaceae	non-native/limited
Rhaphiolepis indica	Indian hawthorn	Rosaceae	non-native
Euphorbia peplus	Petty Spurge	Euphorbiaceae	non-native
Taraxacum officinale	Common dandelion	Asteraceae	non-native
Helichrysum luteoalbum	Jersey cudweed	Asteraceae	non-native

Appendix D: Wildlife Species Observed in the Project Site

Scientific Name	Common Name	Family	California Native Status
Birds			
Sayornis saya	Say's phoebe	Tyrannidae	native
Mimus polyglottos	Northern mockingbird	Mimidae	native
Corvus brachyrhynchos	American crow	Corvidae	native
Haemorhous mexicanus	House finch	Fringillidae	native
Passer domesticus	House sparrow	Passeridae	non-native
Spinus psaltria	Lesser goldfinch	Fringillidae	native
Streptopelia decaocto	Eurasian collared-dove	Columbidae	non-native
Invertebrates			
Pieris rapae	Cabbage white	Pieridae	native

August 26, 2025

JAKRAN, LLC
11351 County Drive
Ventura, CA 93004

Attn: Jake Rolls

Subj: Cultural Resources Phase I Assessment/Survey for 11351 County Drive, Saticoy, Ventura County, California (*Envicom Project #2025-086-01*)

Dear: Mr. Rolls

Envicom Corporation (Envicom) has completed a Phase I Cultural Resource Assessment/Survey for the 11351 County Drive Project, located in Saticoy, Ventura County, California (project) (**Figure 1** and **Figure 2**). The project is proposed for an approximately 2.23-acre currently vacant site located on the northwestern edge of Assessor Parcel Number (APN) 090-0-110-300. The applicant proposes to develop a one-story building with a mezzanine, in addition to a trash enclosure, parking areas, exterior storage space, and landscaping (**Figure 3**).

United States Geological Survey 7.5' Quadrangle: Saticoy, 2022
Township/Range: Section 00, Township 3 North, Range 21 West
Latitude/Longitude: 34°17'02.95"N/ -119°08'35.27"E

The purpose of the Phase I Cultural Resource Survey/Assessment is to fully inventory known or previously unknown cultural resources that are located on or immediately adjacent to the project development site, as well as to determine the overall sensitivity of the site for cultural resources that may be unexpectedly discovered during project grading and trenching. The inventory of cultural resources provided in the report is built from known databases, including from previously recorded cultural resources stored within the California Historical Resources Information System (CHRIS), and from historical databases and historical records, as well as from a site pedestrian survey. Such resources can include prehistoric or historical archaeological sites, historical built environment structures or features, or tribal cultural resources (TCRs). Additionally, the record searches examine a 0.25-mile area around the project development site (the project "study area") in order to provide cultural and tribal resource context for the project and to assess the overall cultural resource sensitivity of the project region (see Figure 1).

Databases examined for the Phase I Survey/Assessment include previously recorded cultural resources housed by the CHRIS South Central Coastal Information Center (SCCIC), and the sacred lands database housed by the California Native American Heritage Commission (NAHC). Additional databases examined include historical United States Geological Survey (USGS) maps, the University of California Santa Barbara (UCSB) Library Historical Aerial Photograph Database photographs, and historical Google Earth satellite images. All of these record searches assess the project development site plus a 0.25-mile buffer area around the project site.

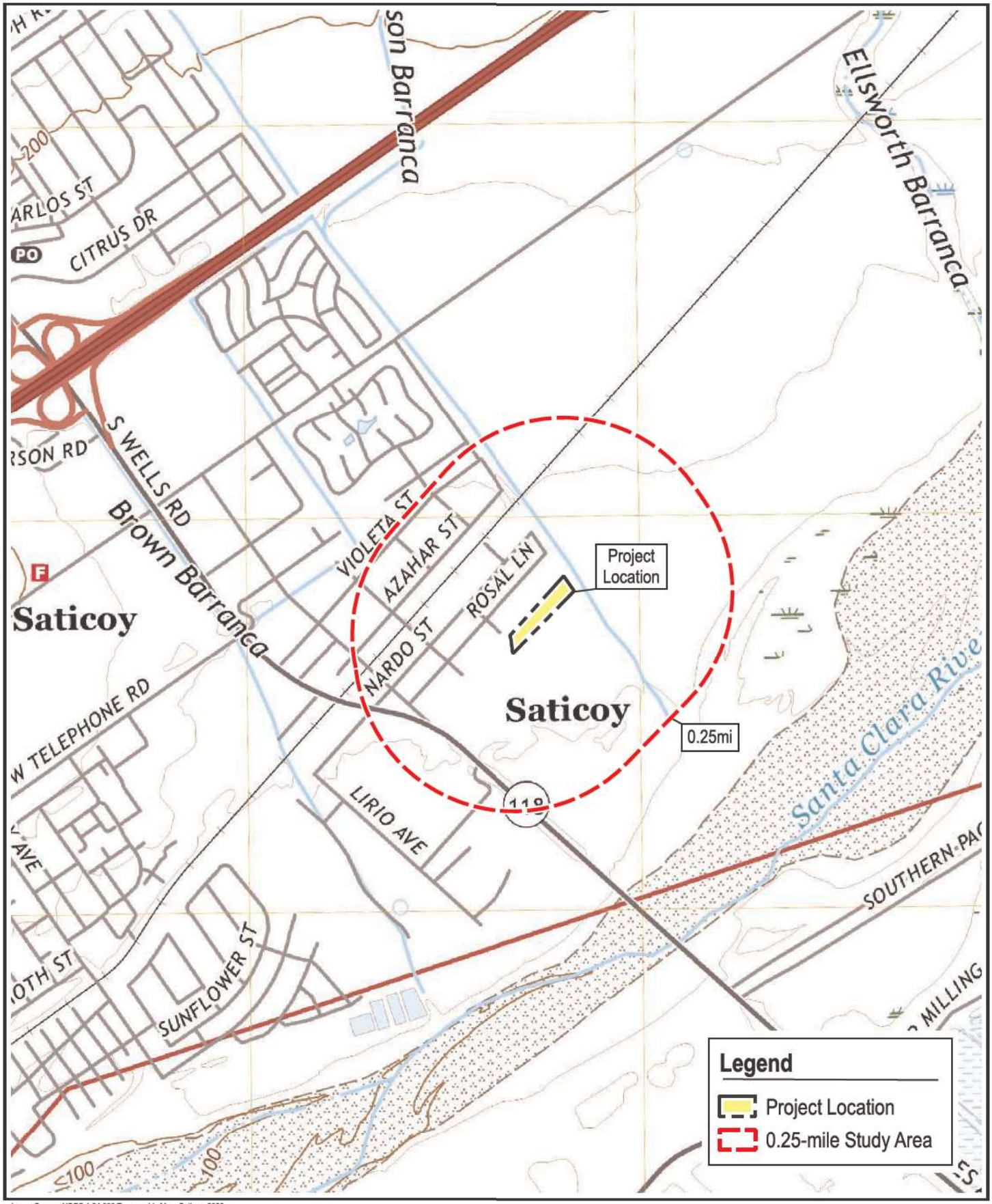


Image Source: USGS 1:24,000 Topographic Map: Saticoy, 2022.

11351 COUNTY DRIVE CULTURAL PHASE I

envicom

USGS Map with Project Location and 0.25-mile Study Area

0 500 1,000 ft

FIGURE 1

Image Source: ESRI World Imagery, 2024.

11351 COUNTY DRIVE CULTURAL PHASE I

envicom

Aerial Map Showing Site Conditions

0 40 80 ft

FIGURE 2

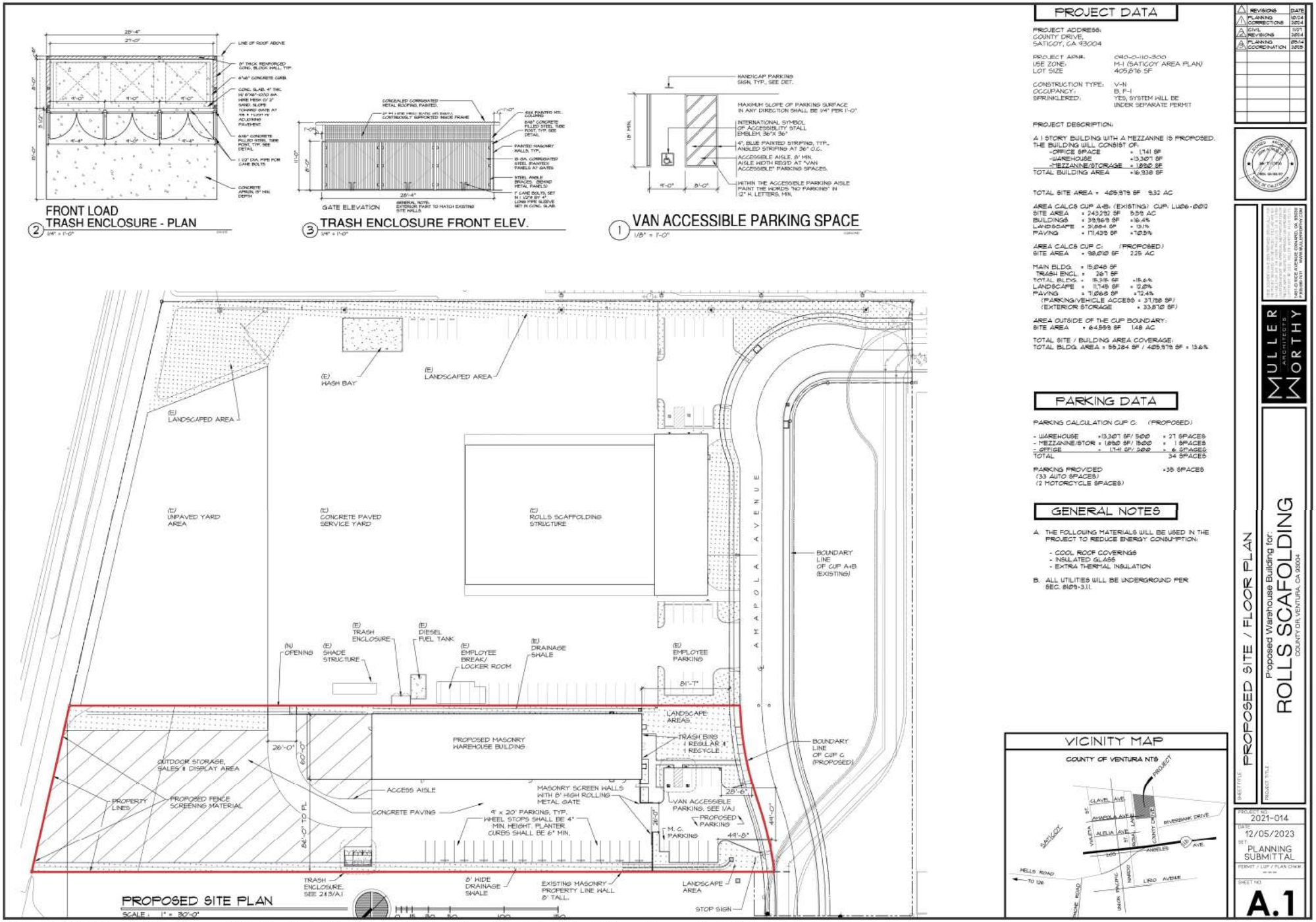


Figure 3: 11351 County Drive Proposed Site Plan. Project location marked by red box. Oriented southeast. (Image Source: Project Proposal)

The purpose of the Phase I systematic pedestrian survey of the project development footprint is to identify whether cultural resources are located on the surface of the project area that have not previously been identified or recorded in the CHRIS system. Any previously recorded cultural resources are also revisited and assessed during the pedestrian survey. The survey is conducted in accordance with Secretary of the Interior's Standards and Guidelines for Archaeological and Historic Preservation (*48 FR 44716, Sept. 29, 1983*). Archaeological staff employed also all meet the educational and/or experience requirements outlined in *48 FR 44716, Sept. 29, 1983*.

Since the cultural resource assessment was negative for cultural resources within or adjacent to the project property, a letter report format will be used for the cultural resource report (this document). Because paleontological resources were a concern, geological maps were examined to assess the project site's paleontological sensitivity. Envicom also contacted the Natural History Museum of Los Angeles County (NHMLAC) and requested that they search their database for fossil resources previously identified on or near the project site.

Generally, a potential cultural resource is defined as any building, structure, object, or archaeological site older than 50-years in age, and can include historical or prehistoric locations of human habitation or occupation. A detailed definition and clarifications on the criteria are provided by the California Office of Historic Preservation guidelines, United States Department of the Interior guidelines, and *36 Code of Federal Regulations 60.4* of the National Register criteria. Best practices are that Native American monitors should be culturally associated with the project region. Archaeological monitors should have a basic understanding of prehistoric artifacts and sites, and should have experience working directly with Native American monitors on construction projects.

Standard Field Survey Methodology

A systematic field survey follows five-meter transects where possible, but transitions to opportunistic examination of the landscape when brush or terrain does not allow for the systematic walking of the project site. Opportunistic examination also takes place in more open areas, or locations where evidence of rodent disturbance, deflation, and/or erosion may provide an understanding of the site subsurface conditions. During the site survey, site conditions, including human disturbances or features, ground visibility, site soils, bedrock outcrops, vegetation, and other significant human impacts or natural features, are recorded. Any other conditions that may have influenced the accuracy of the site survey, such as time of year and weather, are also noted.

If the systematic pedestrian survey is determined to be adequate to assess the site surface for evidence of cultural resources, then the findings are summarized in the Phase I report (this document). Any newly identified cultural resources or cultural resources that require updating will then be mapped using georeferenced maps or by using a GPS unit with sub-meter accuracy. All of the cultural resource information is then recorded on State of California Department of Parks and Recreation (DPR) forms. If the cultural resource Principal determines that subsurface testing (shovel test pits or test units) is needed to complete the Phase I report, then the subsurface testing information is also added to the final Phase I survey report and to the DPR form.

RECORD SEARCH RESULTS

SCCIC and NAHC Record Searches

Envicom set up an in-person site visit to the SCCIC on July 23, 2025, to have Envicom staff search the CHRIS database for cultural resources located within the project development footprint and within the surrounding 0.25-mile study area (see Figure 1). The record search included a request for all previously recorded cultural resource site records located within or adjacent to the project survey area, as well as copies of all cultural resource technical reports that intersected with all or part of the project property and surrounding study area. A similar request was made to the NAHC on July 11, 2025.

The findings from the SCCIC record search indicated that no previously recorded cultural resources were located on the project property. Four (4) cultural resources (P-19-152755, P-19-152760, P-19-152761, and P-19-152762) were located within the surrounding 0.25-mile study area. P-19-152755 consists of commercial buildings recorded by California Department of Transportation (CALTRANS) that were constructed from the 1950s up through the 1980s. CALTRANS evaluated these structures and did not find any to be eligible to the California Register of Historical Resources (CRHR). P-152760 consisted of several residential buildings located along Alelia Avenue that dated to between the 1880s and 1930s, and that were also recorded by CALTRANS in the 1980s. CALTRANS evaluated the structures and also found that they were not eligible for the CRHR. P-19-152761 consisted of several residential buildings located along Los Angeles Avenue that dated to between 1915 and 1940, and that were also recorded by CALTRANS in the 1980s. CALTRANS evaluated the structures and also found that they were not eligible for the CRHR. P-19-152762 consisted of several commercial buildings located along Los Angeles Avenue that dated to between 1893 and 1912, and that were also recorded by CALTRANS in the 1980s. CALTRANS evaluated the structures and also found that they were not eligible for the CRHR. None of these resources is immediately adjacent to the subject property and will, therefore, not be subject to direct project effects. Due to none of the resources being evaluated as being eligible to the CRHR, indirect effects from the project will also not impact these resources

The SCCIC indicated that two (2) previously written cultural resource reports (VN-332, and VN-2302) directly involved the project site. VN-332 was a large area record search project completed by archaeologist Robert Lopez in 1978 and titled "An Archaeological Reconnaissance of the Three Proposed Alternatives for the Upgrading of the Saticoy Sanitation District Facilities, Ventura County, California." This large-scale overview did not identify any cultural resources within the project site. However, a pedestrian survey of the report area was not conducted. VN-2302 was also a large area record search conducted by archaeologist Mary Maki of Conejo Archaeological Consultants in 2006. This large-scale overview again did not identify any cultural resources within the project site. Again, a pedestrian survey of the report area was not conducted.

The results from the NAHC record search were received on July 15, 2025, with negative findings. If the Lead/Permitting Agency for the project is required to perform an Assembly Bill (AB)-52 process, the NAHC letter should be made a part of the Native American consultation record. Further, Envicom did not contact Native American groups provided on the NAHC list, as communications with Tribal Group representatives is the responsibility of the Lead/Permitting

Agency, if required for this project. A copy of the request letter to the NAHC and the response letter from the NAHC are included in **Appendix A** of this report.

The inclusion of the NAHC provided list of tribal contacts is in this report for the benefit of any project Lead/Permitting Agenc(ies). All information on cultural resource physical location supplied by the SCCIC, except for historical public-knowledge built environment resources, is considered confidential by state law and is, therefore, not included in this report if applicable.

Historical Map Database Search

Envicom examined the USGS database of historical USGS maps for the project site. The database contains thirty-one (31) historical maps that include the project site. These maps date to between 1903 and 2022. Envicom supplemented the USGS map findings with aerial imagery from the UCSB Library historic aerial photograph database, and with historical satellite imagery from Google Earth Pro.

The earliest evidence of historical activity on the site is a 1938 aerial photograph, which shows the property as part of an orchard (**Figure 4**). This orchard is also shown in the 1942 Santa Paula USGS map (**Figure 5**). The property remained part of an orchard until at least 1962, when rows of trees are still visible in aerial imagery. By 1994, the trees had been removed and the property was a plowed agricultural field (**Figure 6**). The property remained an agricultural field until approximately 2009, when the Rolls Scaffold Inc. building first appears in satellite imagery (**Figure 7**). Since 2009, the project area has been graded, used as a parking lot, and used for outdoor storage (**Figure 8** and **Figure 9**, and **Figure 10**). The project area is in similar condition, as an empty lot, in the most recent satellite images from 2025 (**Figure 11**).

The historical map and aerial image database study, therefore, indicated that the project site was used as agricultural land during the mid-20th century, followed by commercial storage. However, no structures were ever built on the project site, and the entirety of the development footprint has been disturbed by modern agricultural development followed by site grading. The project area, therefore, is not likely to contain older historical material nor prehistoric resources except within a highly disturbed context. However, Envicom does recommend contingency language for any project Conditional Use Permit (CUP) to cover the unexpected discovery of prehistoric or older historical archaeological material during construction.

Field Survey Results

Dr. Wayne Bischoff of Envicom visited the project property on July 10, 2025, and completed a systematic/opportunistic survey of the project site (**Figure 12** and **Figure 13**). Most of the project area was a flat, vacant lot. The flat nature of the site supported a history of grading, as has previously been discussed. Vegetation primarily consisted of small to medium shrubs and weeds. vegetation was sparce in the site's center, but became denser around the site's perimeter (**Figure 14** and **Figure 15**). The overall ground visibility was good to excellent, and native alluvial soil, characterized by rounded cobbles, was observed in a few locations (**Figure 16** and **Figure 17**). A metal fence bisected the site (**Figure 18**). The northeastern third of the site was being used for outdoor storage

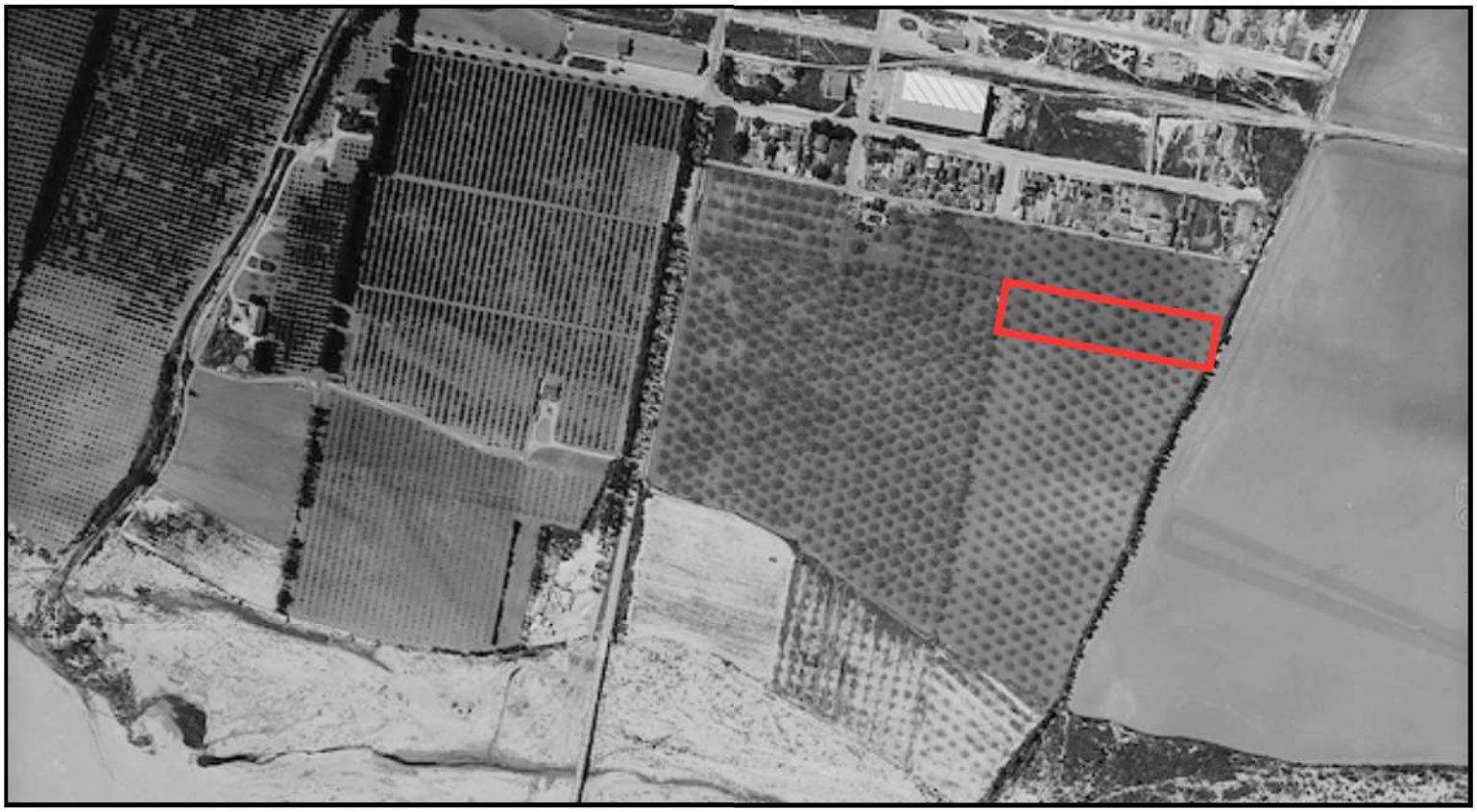


Figure 4: 1938 Aerial Image. The project location is marked by the red box. Oriented northwest. (Image Source: UCSB Aerial Photography Database)

Figure 5: 1942 USGS Map. The project location is marked by the red box. Larger green dots indicate an orchard. Oriented north.
(Image Source: USGS 1:62,500 Topographic Map: Santa Paula, CA, 1942)

Figure 6: 1994 Satellite Image. The project location is marked by the red box. The property is a flat field. Oriented northwest. (Image Source: Google Earth Pro)

Figure 7: 2009 Satellite Image. The project location is marked by the red box. The Rolls Scaffold Inc. building is to the southeast. Oriented north. (Image Source: Google Earth Pro)

Figure 8: 2012 Satellite Image. The project location is marked by the red box. The property has been graded. Oriented north. (Image Source: Google Earth Pro)

Figure 9: 2013 Satellite Image. The project location is marked by the red box. The project area is being used for parking and storage. Oriented north. (Image Source: Google Earth Pro)

Figure 10: 2018 Satellite Image. The project location is marked by the red box. The project area is in use as a storage area. Oriented north. (Image Source: Google Earth Pro)

Figure 11: 2025 Satellite Image. The project location is marked by the red box. The project area is a mostly vacant lot. Oriented north. (Image Source: Google Earth Pro)

Figure 12: Project site overview. Facing north.

Figure 13: Project site overview. Facing northeast.

Figure 14: Sparce vegetation at the center of the site. Facing southwest.

Figure 15: Denser vegetation around the site's perimeter. Facing southwest.

Figure 16: Area with good ground visibility where potential native soil is visible.

Figure 17: Potential exposed native soil, characterized by sub-rounded to rounded gravel.

Figure 18: Fencing running through the site, parallel with the project area's southeastern edge. Facing southwest.

Figure 19: Outdoor storage in the northeastern portion of the project area. Facing north.

at the time of the site visit (**Figure 19**). No prehistoric, older historical, or paleontological resources were observed during the site visit.

Paleontological Assessment

Envicom requested on July 11, 2025, that the NHMLAC examine their fossil records database for any paleontological discoveries previously recorded on the subject property or on the surrounding project study area (see Appendix A). In addition, Envicom examined the T.W. Dibblee and H.E. Ehrenspeck 1992 Geologic map of the Saticoy quadrangle, Ventura County, California (**Figure 20**). The map shows that the project property is on Holocene alluvium (Qa) soils. Holocene alluvium occurs in modern floodplain contexts, and is characterized by subrounded to rounded pebbles and cobbles within sand or sedimentary matrix. This geology is consistent with the soil observed during Envicom's site visit (**Figure 21**).

Envicom received the NHMLAC record search response on July 5, 2025, with negative findings for the project site. The NHMLAC record search always provides the closest fossil discovery localities, which were in Simi Valley, east of Alamos Canyon and north of Hwy 118 (Pleistocene terrace deposit); north of Simi Valley, off of Legacy Dr. (Pleistocene alluvium deposit); in Thousand Oaks, near Thousand Oaks Blvd and S. Conejo School Rd. (surface float deposit); and in Simi Valley, near the First Street offramp from westbound Simi Valley Freeway (Sespe Formation). None of these fossil localities are near the project site. Since the project is unlikely to reach a depth where older intact bedrock is impacted beneath the modern surface alluvial soils, fossil discovery at the site is unlikely. Any fossils found within the Holocene alluvial material would be secondary transported material that is not within its original context. The project site is, therefore, not sensitive for paleontological resources.

The NHMLAC also recommended a full paleontological assessment be conducted, which is their standard recommendation for all record search findings reports. However, given that the site is entirely within recent Holocene soils with no bedrock exposed on the surface, Envicom does not recommend further paleontological assessment of the project site for paleontological resources. However, Envicom does recommend contingency language for any project Conditional Use Permit to cover the unexpected discovery of fossil material during construction.

Recommendations:

The results of the SCCIC and NAHC database record searches were negative for cultural resources within the project development site, and the project region was not determined to be sensitive for prehistoric or older historical cultural resources. The historical map and aerial photograph record search likewise determined that the site had been subject to many years of modern agriculture development and more recent surface grading, and was therefore not sensitive for older historical resources. The paleontological record search did not identify any previously recorded fossil localities on or near the project site, nor was the project area determined to be sensitive for paleontological resources. Envicom recommends only contingency measures for the project construction-phase to be followed in the case that unexpected archaeological or fossil resources are encountered during project subsurface excavation activities. The Principal Author's resume is provided in **Appendix B** of this report.

Figure 20: Geology underlying the project location. The project location is marked by the red box. Light tan (Qa) represents Holocene alluvium. Oriented north. (Source: T.W. Dibblee and H.E. Ehrenspeck 1992 Geologic map of the Simi quadrangle, Ventura County, California)

Figure 21: Alluvial cobbles visible throughout the project site.

Recommendation 1: Archaeological, Tribal, and Fossil Resource Discovery Protocol

If potentially significant intact archaeological, Tribal, or fossil deposits are encountered within an undisturbed context, or in contexts that do not readily allow for expedient site removal, then a cultural resource "discovery" protocol will be followed. If older historical or prehistoric features, artifact concentrations, prehistoric material, or sensitive fossil material, is encountered during project grading and subsurface excavation within native soils or original context, then all work in that area shall be halted or diverted away from the discovery to a distance of 30-feet until a qualified senior archaeologist, Native American monitor or their supervisor, or paleontologist can evaluate the nature and/or significance of the find(s). If a senior archaeologist, Native American monitor or their supervisor, or a paleontologist confirms that the discovery is potentially significant, then the Lead/Permitting Agency will be contacted and informed of the discovery immediately.

Construction will not resume in the locality of the discovery until consultation between the senior archaeologist, Native American monitor or their supervisor, paleontologist, the owner's representative, the Lead/Permitting Agency, and any other concerned parties (such as other Native American Tribal Groups), takes place and reaches a conclusion approved by the Lead/Permitting Agency. If a significant archaeological, TCR, or fossil resource is discovered during earth-moving, complete avoidance of the find is preferred. However, if the discovery cannot be avoided, further survey work, evaluation tasks, or data recovery of the significant resource may be required by the Lead/Permitting Agency. All individual reports will be submitted to the SCCIC, the Native American monitoring organization, or to the NHMLAC at the conclusion of the Project. Curation agreements may also need to be made with appropriate depositories.

Recommendation 2: Inadvertent Discovery of Human Remains

The inadvertent discovery of human remains is always a possibility during ground disturbances; State of California Health and Safety Code Section 7050.5 addresses these findings. This code section states that in the event human remains are uncovered, no further disturbance shall occur until the County Coroner has made a determination as to the origin and disposition of the remains pursuant to PRC Section 5097.98. The coroner must be notified of the find immediately, together with the City and the property owner.

If the human remains are determined to be prehistoric, in accordance with the Health and Safety Code the Coroner will notify the NAHC, which will determine and notify a Most Likely Descendant (MLD). The MLD shall complete the inspection of the site within 48 hours of notification and may recommend scientific removal and nondestructive analysis of human remains and items associated with Native American burials and an appropriate re-internment site.

The Lead/Permitting Agency and a qualified archaeologist, with possible Native American involvement, shall also establish additional appropriate mitigation measures for further site development, which may include additional archaeological and/or Native American monitoring, or subsurface testing that will be paid for by the applicant. All responses to the discovery of human

remains will be outlined in a Recovery and/or Management Plan that will be submitted to the Lead/Permitting Agency for final review.

Sincerely,

Dr. Wayne Bischoff, Principal
(co-author, Rowan Barton, M.Sc.)

cc: Nichole Garner, Sanbell

ATTACHMENTS:

Appendix A: The NAHC and NHMLAC Record Search Request Letters, and the NAHC and NHMLAC Response Letters.
Appendix B: Resume of Principal Investigator (Dr. Wayne Bischoff)

APPENDIX A
The NAHC and NHMLAC Record Search Request Letters, and the NAHC and NHMLAC Response Letters

July 11, 2025

Native American Heritage Commission
1550 Harbor Boulevard, Room 100
West Sacramento, CA 95691

Subj: Project to Provide a Cultural Resource Phase I for 11351 County Drive, Saticoy, Ventura County, California *(Envicom Project #2025-086-01)*

To Whom It May Concern,

Envicom Corporation (Envicom) is requesting a record review of the Native American Heritage Commission (NAHC) records of cultural resources for the Project site, plus a **0.25-mile study area**. We also request a list of Tribal Group representatives for the area in the event we need to contact their offices. The Project site is located at:

United States Geological Survey 7.5' Quadrangle: Saticoy, 2022
County: Ventura County

Envicom appreciates the NAHC's help with this request. For correspondence or questions regarding this Project, please contact Dr. Wayne Bischoff at 818-879-4700 ext. 229 (wbischoff@envicomcorporation.com).

Sincerely,

Rowan Barton
Staff Archaeologist

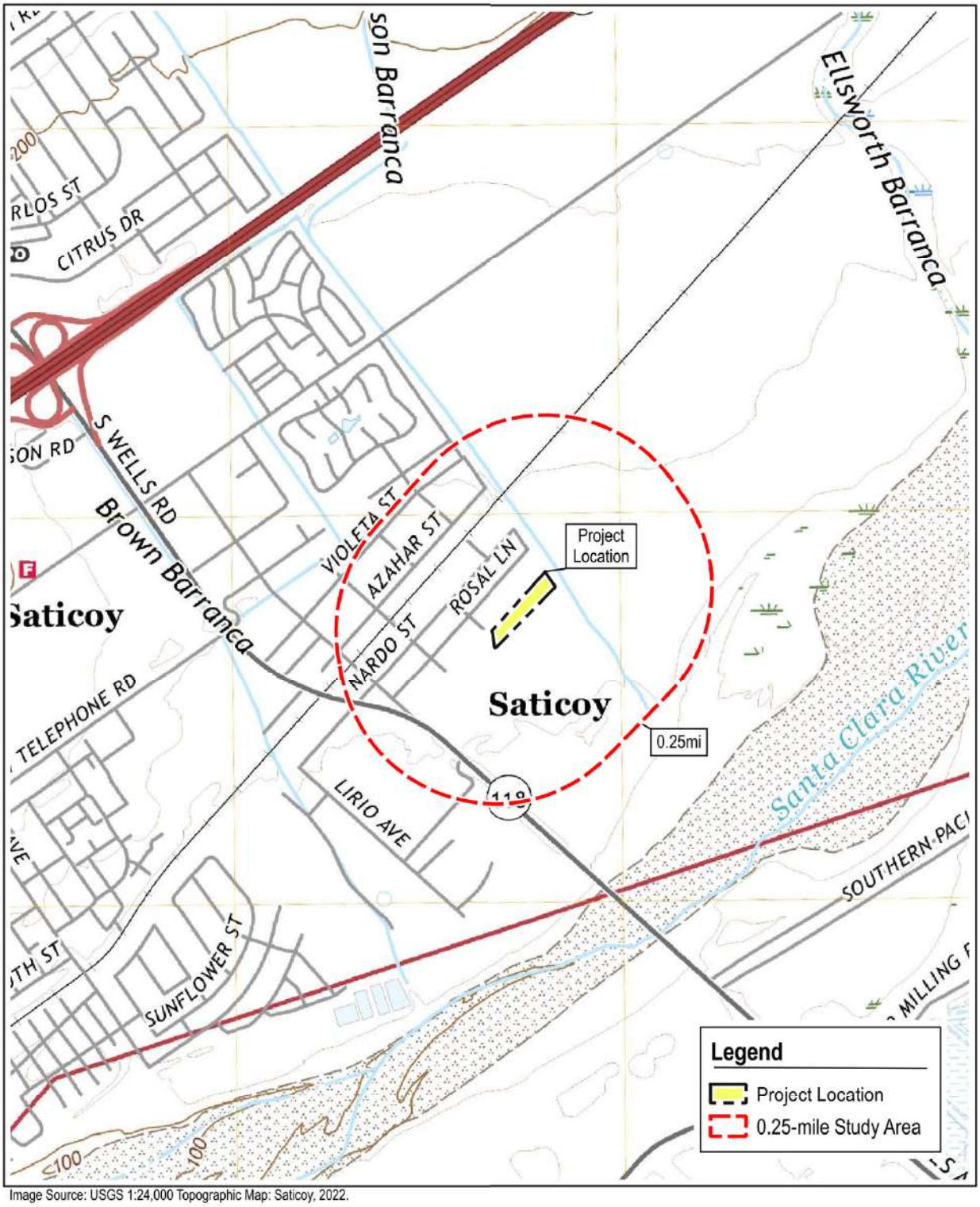


Image Source: USGS 1:24,000 Topographic Map: Saticoy, 2022.

11351 COUNTY DRIVE CULTURAL PHASE I

envicom

USGS Map with Project Location and 0.25-mile Study Area

0 500 1,000 ft

Sacred Lands File & Native American Contacts List Request

Native American Heritage Commission
1550 Harbor Blvd, Suite 100
West Sacramento, CA 95691
916-373-3710
916-373-5471 – Fax
nahc@nahc.ca.gov

Information Below is Required for a Sacred Lands File Search

Project: 11351 County Drive, Saticoy, Ventura County, California (Envicom Project #2025-086-01)

County: Ventura County

USGS Quadrangle Name: Saticoy, 2022

Township: 3N **Range:** 21W **Section(s):** 00

Company/Firm/Agency: Envicom Corporation

Street Address: 4165 E Thousand Oaks Blvd #290, Thousand Oaks, CA

City: Thousand Oaks, CA **Zip:** 91362

Phone: (818) 879-4700

Fax:

Email: wbischoff@envicomcorporation.com

Project Description:

Project to Provide a Cultural Resource Phase I for 11351 County Drive, Saticoy, Ventura County, California (Envicom Project #2025-086-01)

July 11, 2025

Natural History Museum of Los Angeles
900 Exposition Blvd.
Los Angeles, CA 90007

Subj: Project to Provide a Cultural Resource Phase I for 11351 County Drive, Saticoy, Ventura County, California *(Envicom Project #2025-086-01)*

To Whom It May Concern,

Envicom Corporation (Envicom) is requesting a record search of the Natural History Museum of Los Angeles County (NHMLAC) database for paleontological resources/sensitivity for the Project site and surrounding area (within 0.25 mile of the Project site), as well as a map/listing of all paleontological resources previously identified within the attached Project site, plus the 0.25-mile study area. The Project site is located at:

United States Geological Survey 7.5' Quadrangle: Saticoy, 2022
County: Ventura County

Envicom appreciates the NHMLAC's help with this request. For correspondence or questions regarding this Project, please contact Dr. Wayne Bischoff at 818-879-4700 ext. 229 (wbischoff@envicomcorporation.com).

Sincerely,

Rowan Barton
Staff Archaeologist

Attachment:

Project vicinity map on 1:24,000 topographic map

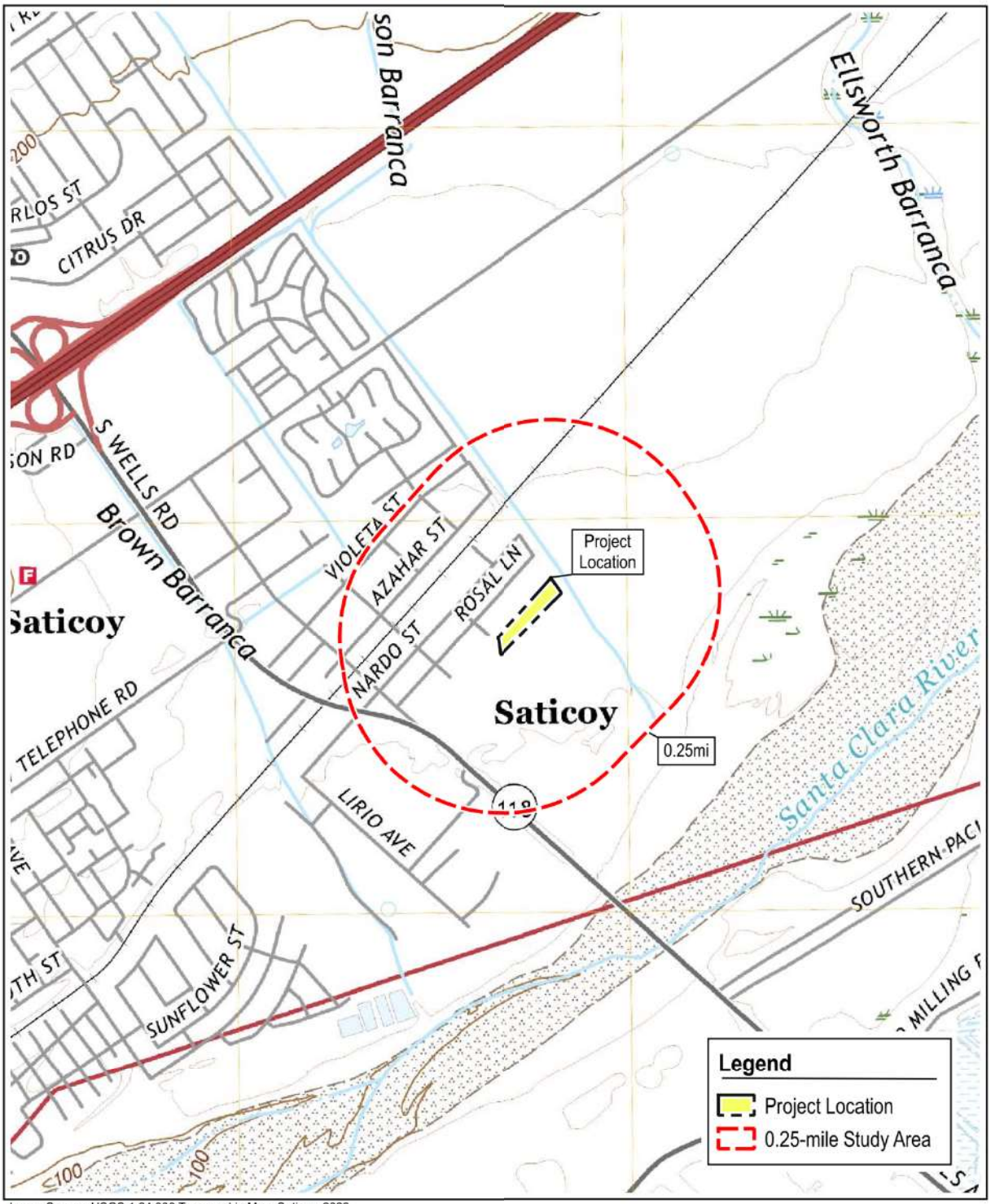


Image Source: USGS 1:24,000 Topographic Map: Saticoy, 2022.

11351 COUNTY DRIVE CULTURAL PHASE I

envicom

USGS Map with Project Location and 0.25-mile Study Area

0 500 1,000 ft

NATIVE AMERICAN HERITAGE COMMISSION

NAHC HEADQUARTERS
1550 HARBOR BOULEVARD
SUITE 100
WEST SACRAMENTO,
CALIFORNIA 95691
(916) 373-3710
NAHC@NAHC.CA.GOV

July 15, 2025

Wayne Bischoff
Envicom Corporation

Via Email to: ***wbischoff@envicomcorporation.com***

Re: 11351 County Drive #2025-086-01 Project, Ventura County

To Whom It May Concern:

As requested, a record 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. Please note that tribes do not always record their sacred sites in the SLF, nor are they required to do so. As such, a 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 who may also have knowledge of cultural resources in the project area. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. Please contact all of those listed; if they cannot supply information, they may recommend others with specific knowledge. 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 notify 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) archaeological 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
Ventura County
7/15/2025

County	Tribe Name	Fed (F) Non-Fed (N)	Contact Person	Contact Address	Phone #	Fax #	Email Address	Cultural Affiliation	Counties	Last Updated
Ventura	Barbareño/Ventureño Band of Mission Indians	N	Cultural Resource Committee,	P.O. Box 364 Ojai, CA, 93024	(805) 746-6685		CR@bvbmi.com	Chumash	Kern,Los Angeles,San Luis Obispo,Santa Barbara,Ventura	6/19/2023
	Chumash Council of Bakersfield	N	Julio Quair, Chairperson	729 Texas Street Bakersfield, CA, 93307	(661) 322-0121		chumashtribe@sbcglobal.net	Chumash	Kern,Los Angeles,San Luis Obispo,Santa Barbara,Ventura	
	Coastal Band of the Chumash Nation	N	Mati Waiya, Tribal Chair	16500 S Mountain Drive Santa Paula, CA, 93060	(805) 794-1248		tribalchair@coastalband.org	Chumash	Kern,Los Angeles,San Luis Obispo,Santa Barbara,Ventura	5/14/2025
	Coastal Band of the Chumash Nation	N	Michael Khuz-Zarate, CBCN Vice Chairman	5151 W Vartikian Ave. Fresno, CA, 93722	(559) 761-9827		mkhus70@gmail.com	Chumash	Kern,Los Angeles,San Luis Obispo,Santa Barbara,Ventura	5/14/2025
	Coastal Band of the Chumash Nation	N	Janet Hall, CBCN Cultural Resources Manager	1529 West Lemon Ave. Lompoc, CA, 93436	(805) 451-8757		tasinhall@yahoo.com	Chumash	Kern,Los Angeles,San Luis Obispo,Santa Barbara,Ventura	5/14/2025
	Northern Chumash Tribal Council	N	Violet Walker, Chairperson	P.O. Box 6533 Los Osos, CA, 93412	(760) 549-3532		violetsagewalker@gmail.com	Chumash	Kern,Los Angeles,San Luis Obispo,Santa Barbara,Ventura	6/5/2023
	Santa Ynez Band of Chumash Indians	F	Sam Cohen, Government & Legal Affairs Director	100 Via Juana Road Santa Ynez, CA, 93460			scohen@chumash.gov	Chumash	Kern,Los Angeles,San Luis Obispo,Santa Barbara,Ventura	7/6/2023
	Santa Ynez Band of Chumash Indians	F	, General CRM Consultation Account	100 Via Juana Road Santa Ynez, CA, 93460			CRMConsultation@chumash.gov	Chumash	Kern,Los Angeles,San Luis Obispo,Santa Barbara,Ventura	4/28/2025
	Santa Ynez Band of Chumash Indians	F	Wendy Teeter, Cultural Resources Archaeologist	100 Via Juana Road Santa Ynez, CA, 93460	(805) 325-8630		wteeter@chumash.gov	Chumash	Kern,Los Angeles,San Luis Obispo,Santa Barbara,Ventura	7/6/2023
	Santa Ynez Band of Chumash Indians	F	Nakia Zavalla, Tribal Historic Preservation Officer	100 Via Juana Road Santa Ynez, CA, 93460			nzavalla@chumash.gov	Chumash	Kern,Los Angeles,San Luis Obispo,Santa Barbara,Ventura	7/6/2023

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.

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed 11351 County Drive #2025-086-01 Project, Ventura County.

Record: PROJ-2025-003850
Report Type: List of Tribes
Counties: Ventura
NAHC Group: All

Natural History Museum
of Los Angeles County
900 Exposition Boulevard
Los Angeles, CA 90007

tel 213.763.DINO
www.nhm.org

Research & Collections

e-mail: paleorecords@nhm.org

July 20, 2025

Envicom Corporation
Attn: Rowan Barton

re: Paleontological resources records search for the 11351 County Drive Project (Envicom Project #2025-086-01)

Dear Rowan:

I have conducted a search of our paleontology collection records for the proposed development at the 11351 County Drive project area as outlined on the portion of the Saticoy USGS topographic quadrangle map that you sent to me via e-mail on July 11, 2025. We do not have fossil localities that have been recorded or georeferenced directly within the proposed project area, but we do have fossil localities nearby from similar sedimentary deposits that may occur in the proposed project area, either at the surface or at depth.

The following table shows the closest known localities in the collection of the Natural History Museum of Los Angeles County (NHMLA).

Locality Number	Location	Formation	Taxa	Depth
LACM VP 5883	Northwest flank of the Los Posas Hills, west of the Los Posas Country Club	Saugus Formation (marine facies)	Perissodactyla; bivalves	Unknown, collected during grading
LACM VP 6470	Long Canyon, NW of where Long Canyon enters the Santa Clara Valley	Saugus Formation	Horse (*Equus*)	Unknown
LACM VP CIT211	West bank of Sexton Canyon, just south of intersection with Lake Canyon	San Pedro Sand	Sea duck (*Chendytes*); Invertebrates (Gastropods - *Nassarius fossatus*, *Olivella pedroana;* bivalves - *Cryptomya californica;* and others)	Unknown
LACM VP CIT586	Near Camarillo, CA	Unknown formation (Pleistocene)	Mastodon (Mammutidae)	Unknown

VP, Vertebrate Paleontology; IP, Invertebrate Paleontology; bgs, below ground surface

This records search is limited to the records of the NHMLA. It is not intended as a paleontological assessment of the project for the purposes of California Environmental Quality

Act (CEQA) or National Environmental Policy Act (NEPA). Potentially fossil-bearing units are present in the project area, either at the surface or in the subsurface. As such, NHMLA recommends that a paleontological assessment be conducted by a paleontologist meeting Federal (43 Code of Federal Regulations Part 49.110) or Society of Vertebrate Paleontology standards for compliance with applicable regulations, such as CEQA or NEPA.

Sincerely,

Alyssa Bell, Ph.D.
Natural History Museum of Los Angeles County

APPENDIX B
Resume of Principal Investigator (Dr. Wayne Bischoff)

envicom
CORPORATION

DR. WAYNE BISCHOFF
Director of Cultural Resources

Years of Experience
Over 30 years

Education
Ph.D. Anthropology, Michigan State University

B.A. Anthropology, Purdue University

Certifications
Registry of Professional Archaeologists (RPA #32450562)

Hazwoper 24-hour

Professional Affiliations
Society for California Archaeology

Southern California Paleontological Society

Society of Vertebrate Paleontoloty

Ventura County Archaeolgical Society

Specialized Training
Built Environment Assessments

Paleontological Assessments

Ethnographic Reports

AB-52/Tribal Consultation

Dr. Bischoff has over 30 years of experience in managing cultural resource projects and ensuring compliance with the California Environmental Quality Act (CEQA), Section 106 of the National Historic Preservation Act (NHPA), the National Environmental Protection Act (NEPA), and state, county, city, and local government cultural laws, guidelines, and procedures. He is experienced with the City of Los Angeles, having completed dozens of cultural resource projects within the City and surrounding municipalities. He has also completed numerous cultural, paleontological, and built environment projects throughout Los Angeles County. Dr. Bischoff has worked with all Tribal Groups of the Greater Los Angeles area and has provided expert consultation, including Assembly Bill (AB) 52 consultation, writing support, and coordination. He has also written, planned, and enforced cultural resource components of many forms of CEQA and NEPA documents and been a part of Memorandum of Agreement (MOA), Memorandum of Understanding (MOU), and Programmatic Agreement (PA) development teams.

Dr. Bischoff's experience includes residential and commercial development, public works, storm and sewer projects, environmental restoration, water resources, energy and transmission line, highway and bridge, telecommunication, educational facility, and park and trail project. Dr. Bischoff has been the principal or project manager for hundreds of cultural projects in California, including Phase I literature searches and surveys, Phase I(b) subsurface surveys, Phase II evaluations, and Phase III data recoveries.

Dr. Bischoff also has extensive experience consulting with state and federal agencies, including the State Historic Preservation Office (SHPO), California Department of Transportation (Caltrans), the Department of Defense, the General Services Agency (GSA), California Department of Parks and Recreation, the U.S. Department of Agriculture (USDA), many U.S. Army Corps of Engineers (ACOE) districts, Fish and Wildlife, the California Public Utilities Commission (CPUC), and the National Park Service, among others.

REPRESENTATIVE PROJECT EXPERIENCE

Phase I Survey of 28730 Agoura Road, City of Agoura Hills, Los Angeles

Principal and Project Manager for this commercial project, which included SCCIC, NAHC, and NHM record searches and a site survey. A large prehistoric site was discovered and mapped as part of this project. The prehistoric site was evaluated as part of the study, creating a combined Phase I/Phase II report for the City (January 2024 – Current).

Phase I Survey of the Westwood Lane Residential Housing Project, City of Grand Terrace,County of San Bernardino County

Principal and Project Manager for this 60+ acre project, which included SCCIC, NAHC, and NHM record searches and a site survey. (January 2024 – Current).

Cultural Resource Monitoring for the Sanborn II Solar Farm project, County of Kern

Native American, archaeological, and paleontological monitoring principal for this large Terra Gen project. Project includes updating numerous cultural resources and the recordation of new isolates (January 2024 – Current).

Completion of a Positive Findings Combined Phase I Survey and Phase II Evaluation Report for 3555 Chaney Avenue, City of Altadena, County of Los Angeles

Principal and Project Manager for the Phase I/Phase II report, which included SCCIC, NHM, and NAHC record searches. The project also involved the mapping and completion of a DPR for a large Late-19th Century brickmaking industrial site, which was later evaluated and recommended to be eligible to the CRHR (September 2023 – Current).

Orange County Health Care Center Arch/Paleo Monitoring, City of Irvine, County of Orange

Principal and Project Manager for this archaeological and paleontological monitoring project, which included a WEAP, and other post-construction tasks (July 2023 – Current).

Archaeological Monitoring for the Rancho Sierra Affordable Housing Project, City of Los Angeles, City of Camarillo, County of Ventura

Principal and Project Manager for this archaeological monitoring project (May 2023 – Current).

Paleontological Monitoring of 4827 Sepulveda, City of Los Angeles, Area of Sherman Oaks, County of Los Angeles

Principal and Project Manager for this large paleontological monitoring project. (July 2022 – Current).

Archaeological Monitoring for the 623 South La Brea Affordable Housing Project, City of Los Angeles, County of Los Angeles

Principal and Project Manager for this archaeological monitoring project, which included a detailed project Monitoring Plan, WEAP, and other pre-construction tasks (January 2022 – Current).

Los Angeles Unified Schools Department (LAUSD) Environmental On-Call (including cultural resources), City of Los Angeles, County of Los Angeles

Principal, Project Manager, and cultural resource consultant as needed. Envicom was one of 15 companies to be awarded this large on-call contract. (February 2017 – Current).

Paleontological Monitoring of the Citrus Commons Project, City of Los Angeles, Area of Sherman Oaks, County of Los Angeles

Principal and Project Manager for this paleontological monitoring project. This project led to a large salvage project where over 4000 Late Pleistocene animal bones and bone fragments were collected, cleaned, and stabilized. Over a dozen animal species were represented, with 30% of an extinct bison being plaster jacketed for later processing. The La Brea Tarpits staff completed a partial species identification report for the faunal collection. The Natural History Museum of Los Angeles County identified the collection as the largest ever discovered in the San Fernando Valley. The collection will be curated at CSUCI for future research projects. (October 2021 – March 2024).

Completion of a Historical Built Environment Impact Report for 4403 Thatcher Road, City of Ojai, County of Ventura

Principal and author for this built environment impacts assessment and partial evaluation project for the Twin Peaks Ranch historical site, which included an indirect impacts and viewshed impacts assessment (February 2024 – March 2024).

Phase I Survey of Additional Segments of the Agoura Hills Recreational Center Trail Project, City of Agoura Hills, County of Los Angeles

Principal and Field Director for this public trail survey, which surveyed additional loop segments for the Agoura Hills Recreational Center Trail. (February 2024 – March 2024).

Phase I Survey of the Calabasas Kia Dealership 2nd Parcel, Calabasas, County of Los Angeles

Principal and project manager for this Phase I survey, which included SCCIC and NAHC record searches and a site visit (March 2024).

Phase I Survey of the Sagebrush III Battery Storage Project, Terra Gen Windfarms, County of Kern

Principal and Project Manager for this 300+ acre project, which included a record search and a site survey. (January 2024 – March 2024).

Peer Review of the Cultural Phase I Report for 4875 Spring Housing Project, City of Moorpark, County of Ventura

Peer review was conducted on behalf of the County of Ventura for this project (December 2023 – February 2024).

Phase I Survey of 1118 North Signal Street, City of Ojai, County of Ventura

Principal and Project Manager for this residential project, which included a report of findings, but with the City allowing monitoring instead of the standard record searches. (February 2024).

Native American consultation for the City of Thousand Oaks on the 1651 Lynn Road Project, City of Thousand Oaks, County of Ventura

Native American consultant for this 17-lot residential subdivision project (February 2024).

North Canyon Ranch 170-acre Residential Subdivision, City of Simi Valley, County of Ventura

Cultural resource consultant for entitlement process. (November 2023 – February 2024).

Phase I Survey of 23755 Newhall Avenue, City of Santa Clarita, County of Los Angeles(revised)

Updating the original 2021 report of findings for this commercial project, including with geotechnical information (January 2024 – February 2024).

Phase I Survey of 1449 North Montgomery Street, City of Ojai, County of Ventura

Principal and Project Manager for this residential project, which included a report of findings, but with the City allowing monitoring instead of the standard record searches. (January 2024).

Phase I Survey of 727 Grand Avenue, City of Los Angeles, County of Los Angeles

Principal and Field Director for this survey project, which includes SCCIC, NIIM, and NAIIC record searches and a site visit. Addressing a 1963 utilitarian parking structure was also an issue for the project. Envicom also produced a Native American Ethnographic Report for the project following the latest City guidelines (November 2021 – January 2024).

Completion of Primary and Building DPR Forms for 4884 North Ventura Avenue, City of Ventura, County of Ventura

Principal for this built environment survey and DPR completion project (January 2024).

Phase I Survey of 4181 Ruffin Road, City of San Diego, County of San Diego

Principal and Project Manager for this commercial development project, which included SCIC, NAHC, and SDNHM record searches. This project involved positive findings from the NAHC. (November 2023 – January 2024).

Native American Consultation for the 9143 DeSoto Project, 4181 Ruffin Road, City of Los Angeles, County of Los Angeles

Envicom conducted a NAHC record search and provided Native American consultation for the project team. (December 2023 – January 2024).

Peer Review of the Cultural Phase I Report for the Xia TTM 68203 Project, City of Palmdale, County of Los Angeles

Peer review was conducted on behalf of the City for this project (December 2023).

Archaeological and Paleontological Monitoring for the Wisteria at Warner Center Project, City of Los Angeles, Area of Woodland Hills, County of Los Angeles

Principal and Project Manager for this archaeological monitoring project, which included a detailed project Monitoring Plan, WEAP, and other pre-construction tasks, including bio sweeps (November 2022 – November 2023).

Newport Crossings, City of Newport Beach, County of Orange

Principal and Project Manager for this archaeological and paleontological monitoring project, which included a WEAP, and other pre-construction tasks (March 2023 – October 2023).

Phase I Survey of the LAUSD Canoga Park High School, City of Los Angeles, Area of Canoga Park, County of Los Angeles

Principal and Project Manager for this survey project, which included SCCIC, NHM, and NAHC record searches. (July 2023 – September 2023).

Phase I Survey of 5825 Philip Avenue, City Malibu, County of Los Angeles

Principal and Project Manager for this residential development project, which included SCCIC and NAHC record searches (July 2023 – September 2023).

Phase I Survey of the Western Segment of the Agoura Hills Recreational Center Trail Project, and the Phase II Evaluation of Three Prehistoric Archaeological Sites, City of Agoura Hills, County of Los Angeles

Principal and Field Director for this public trail survey and evaluation project, which surveyed an additional segment of the Agoura Hills Recreational Center Trail. The discovery of three (3) prehistoric sites led to separate evaluation work, which recommended that one of the sites was eligible to the CRHR due to the presence of complex prehistoric features, task areas, and extensive lithic artifacts (April 2023 – September 2023).

Phase I Survey of 210 East Matilija, City of Ojai, County of Ventura

Principal and Project Manager for this residential development project, which included SCCIC and NAHC record searches (July 2023 – August 2023).

Phase I Survey of the Studio City Mixed-Use Project, City of Los Angeles, County of Los Angeles

Principal and Project Manager for this mixed-use development project, which included SCCIC, NAHC, and NHM record searches (May 2023 – August 2023).

Phase I Survey of the Calabasas Kia Dealership, City of Calabasas, County of Los Angeles

Principal and project manager for this small Phase I survey, which included SCCIC and NAHC record searches and a site visit (December 2022 – August 2023).

Response to Peer Review of the Saugus Gas Station CATEX project, City of Santa Clarita, County of Los Angeles

Peer review was conducted on behalf of the City for this project, with Envicom providing comments and edits to the original cultural report to reflect current conditions (June 2023 – July 2023).

Phase I Survey of the Rancho Potrero Equestrian Center Lighting Project, City of Thousand Oaks, Ventura

Principal and Project Manager for this project, which included SCCIC/NAHC/NHM record searches and a site visit. (April 2023 – July 2023).

Cultural Monitoring of the Riverpark Landing Commercial Development Project, City of Oxnard, County of Ventura

Principal and Project Manager for the archaeological monitoring of this small commercial development project (October 2022 – July 2023).

Phase I Survey for the Soledad Mixed Use Project, City of Santa Clarita, County of Los Angeles

Principal and Project Manager for this project, which included updating a previous report, addressing third-party review questions, and updating project paleontological studies. (March 2023 – June 2023).

Phase I Survey of the Pearblossom Gas Station Project, Unincorporated Area of the County of Los Angeles

Principal and Field Director for this commercial development project, which included SCCIC, NAHC, and NHM record searches. During survey work, an older historical cultural resource was discovered.

Additional tasks involved determining that the identified site was not part of a nearby State of California Landmark; the Llano del Rio socialist commune (1914 to 1918). Shovel tests were placed within the existing older historical cultural resource and an updated DPR for the site were also completed (May 2022 – April 2023).

Phase I Survey of 514 Vista Hermosa, City of Ojai, County of Ventura

Principal and Project Manager for this project, which included an SCCIC/NAHC record search and a site visit. (April 2023 – April 2023).

Phase I Survey of the Princeton Road Mixed-Use Project, City of Moorpark, County of Ventura

Principal and Project Manager for this large 21-acre commercial project, which included SCCIC, NHM, and NAHC record searches and a site survey. This project involved assessing a large destroyed prehistoric site that once was located on the property. (April 2022 – March 2023).

Phase III Data Recovery and Monitoring of CA-VEN-271, City of Thousand Oaks, County of Ventura

Principal and Project Manager for this data recovery project to take place before monitoring of construction of The Oaks multi-family residential project (October 2022 – March 2023).

Consultant for the 40th Street and Avenue L Project, City of Lancaster, County of Los Angeles

Dr. Bischoff addressed Tataviam comments on the Phase I report and drafted a response memo for use by the Client during the entitlement and AB-52 consultation process as needed (March 2023 – March 2023).

1413 Michigan Avenue Archaeological and Native American Monitoring and SHPO Reporting Coordination for a HUD housing project, City of Santa Monica, County of Los Angeles

Envicom completed archaeological and Native American monitoring tasks for this HUD housing project. During monitoring, an older historical cultural resource with a prehistoric element was discovered. Additional tasks related to the discovery included the completion of a DPR and the cleaning, processing, and tabulation of a large number of historical and prehistoric artifacts. The project also involved periodic reporting to SHPO and the creation of a final monitoring report (June 2022 – February 2023).

Archaeological and Paleontological Monitoring for the San Pedro High School Upgrade Project for LAUSD, City of Long Beach, County of Los Angeles (Phase 1) (with Samantha Renta and PaleoWest subconsultants).

Principal and Project Manager for this large archaeological and paleontological monitoring project. PaleoWest was involved with monitoring Miocene bedrock formations, which recovered a dolphin rib and many fish bones and scales. Envicom was involved with the salvage and data recovery of a large amount of Pleistocene (100,000 bp) shells and invertebrates in a layer linked to the second Palos Verdes terrace. Dr. Austin Hendy of the Natural History Museum of Los Angeles County was involved in this data recovery as methodology consultant and speciation expert. The Pleistocene collection will be housed at the NHM when cleaning and tabulation are completed. (June 2021 – February 2023).

Phase I Survey of 32420 Pacific Coast Highway, City of Malibu, County of Los Angeles

Principal and project manager for this small Phase I survey, which included SCCIC and NAHC record searches and a site visit (December 2022 – January 2023).

28116 Pacific Coast Highway Archaeological Monitoring, City of Malibu, County of Los Angeles

Principal and Project Manager for this small archaeological monitoring project. A final monitoring memo was produced for the project. (May 2022 – January 2023).

Phase I Survey of 31335 Lobo Canyon Road, City of Agoura Hills, County of Los Angeles

Principal and project manager for a project SCCIC record search and consultation tasks (December 2022 – January 2023).

Phase I Survey of 21415 Plummer Street Industrial Project, City of Los Angeles, Area of Chatsworth, County of Los Angeles

Principal and project manager for this small Phase I survey, which included SCCIC and NAHC record searches and a site visit. Project later completed as a CATEX (December 2022 – January 2023).

Phase I Survey of 21605 Plummer Street Industrial Project, City of Los Angeles, Area of Chatsworth, County of Los Angeles

Principal and project manager for this small Phase I survey, which included SCCIC and NAHC record searches and a site visit. Project later completed as a CATEX (December 2022 – January 2023).

1100 Rancho Conejo Cultural Resource Monitoring: Demolition Phase, City of Thousand Oaks, County of Ventura

Principal and Project Manager for this large demolition-phase archaeological and paleontological monitoring project. A final monitoring report will be produced for the project. (July 2022 – January 2023).

Phase I Survey of 1046 Cuyama, City of Ojai, County of Ventura

Principal and project manager for this small Phase I survey, which included SCCIC and NAHC record searches and a site visit (November 2022 – January 2023).

Phase I Survey of 1090 Cuyama, City of Ojai, County of Ventura County

Principal and project manager for this small Phase I survey, which included SCCIC and NAHC record searches and a site visit (November 2022 – January 2023).

Development of a Data Recovery Plan for 31800 Broad Beach Road, City of Malibu, County of Los Angeles

Principal and project manager for the authoring of a project data recovery plan for this Malibu Beach project (December 2022 – January 2023).

Phase I Survey of the Canwood Mixed-Use Development Project and the Phase II Evaluation of the Canwood 1 Historical Cultural Resource, City of Agoura Hills, County of Los Angeles

Principal and Project Manager for this large mixed-use project, which included SCCIC and NAHC record searches and a site survey as well as the evaluation and recordation of an early 20th Century historical site. (January 2022 – January 2023).

Phase I Survey of 3555 Chaney Avenue, City of Altadena, County of Los Angeles

Principal and Project Manager for this survey of 40-acres of mostly undeveloped land, which included SCCIC, NHM, and NAHC record searches. The survey work led to the discovery of a large Late-19th Century brickmaking industrial site, which was mapped in full (July 2022 – December 2022).

Phase I Survey of 210 Del Norte, City of Ojai, County of Ventura

Principal and project manager for this small Phase I survey, which included SCCIC and NAHC record searches (October 2022 – November 2022).

Phase I Survey of 3802 Avenida Simi, City of Simi Valley, County of Ventura

Principal and Field Director for this survey project for Habitat for Humanity, which included SCCIC and NAHC record searches (July 2022 – November 2022).

2150 Hillcrest Phase I Survey, City of Thousand Oaks, County of Ventura

Principal and Project Manager for this commercial project that involved SCCIC and NAHC record searches (August 2022 – November 2022).

Phase I Survey of 21555 Roscoe, City of Canoga Park, County of Los Angeles

Principal and Project Manager for this survey project, which included SCCIC and NAHC record searches. Addressing several older built environment structures of various integrities was an issue for the project (July 2022 – November 2022).

Pepperdine University: Native American Consultation, City of Malibu, County of Los Angeles

I have provided Pepperdine University professional advice and consultation on a variety of Native American subjects and consultation issues for their current and upcoming development projects (January 2020 – November 2022).

Paleontological consultant for the Riverwalk I Project, City of Santa Clarita, County of Los Angeles

Principal paleontological consultant for this commercial and residential project, which included the drafting of a memo for the City regarding planned site conditions not triggering paleo monitoring of the project. (October 2022 – October 2022).

Archaeological Monitoring at the Sakioka Business Park, City of Oxnard, County of Ventura

Project Manager for this large archaeological monitoring project, which included the recordation of a significant early historic cultural resource (1860s through 1920s) and the processing of hundreds of older historic artifacts. (October 2020 – October 2022).

Phase I Survey of 1651 Lynn Road, City of Thousand Oaks, County of Ventura

Principal and Field Director for this 17-lot residential subdivision project, which included SCCIC and NAHC record searches (June 2022 – September 2022).

Phase I Survey of the Calle Tecate Commercial Project, City of Camarillo, County of Ventura

Principal and Project Manager for this survey project, which included SCCIC and NAHC record searches (August 2022 – September 2022).

Peer Review of the Cultural Phase I Report for the Santa Clarita TTM 68203 Project, City of Santa Clarita, County of Los Angeles

Peer review was conducted on behalf of the City for this project (August 2022 – September 2022).

Phase I Survey of the Oxnard Landing Commercial Development Project, City of Oxnard, County of Ventura

Principal and Project Manager for this small commercial development project, which included a site survey and archaeological monitoring of all site subsurface activities. (March 2022 – August 2022).

Phase I Survey of the Agoura Recreational Center Trail Project, and the Phase II Evaluation of Five Prehistoric Archaeological Sites, City of Agoura Hills, County of Los Angeles

Principal and Field Director for this public trail survey and evaluation project, which included SCCIC, and NAHC record searches, as well as a survey of multiple proposed trail alignments. The discovery of five (5) prehistoric sites led to separate evaluation work, which recommended that three sites were eligible to the CRHR due to the presence of complex prehistoric features, task areas, and extensive lithic artifacts (April 2022 – August 2022).

Phase I Survey of 1502 San Rafael Street, City of Ojai, County of Ventura

Principal and Project Manager for this small survey project, which included SCCIC and NAHC record searches. Due to SCCIC delays involving staffing problems, the City of Ojai granted Envicom a variance to produce the cultural report without state information center data (June 2022 – August 2022).

Agoura Gateway Project, City of Agoura Hills, County of Los Angeles

Consultant for Native American consultation and project scoping. (July 2022 – August 2022).

5506 Pacific Avenue, City of Los Angeles, Area of Venice, County of Los Angeles County

Consultant for the applicant in addressing California Coastal Commission monitoring directives on a site constructed entirely of artificial fill. (July 2022).

Phase I Survey of the Paramount Senior Assisted Living Center, City of Los Angeles, Area of Paramount, County of Los Angeles

Principal and Field Director for this survey project, which includes SCCIC, NHM, and NAHC record searches. This project also required the DPR recordation of a 1950s church, which will be demolished as part of the project. An additional 1920s built environment resource was also assessed as not being eligible for evaluation due to evaluation during a previous project (November 2021 – June 2022).

CA-LAN-320 Phased Evaluation Project, City of Agoura Hills, County of Los Angeles

Principal and Project Manager for the phased evaluation (Phase II) of CA-LAN-320 in response to potential impacts from the construction of the Conrad N. Hilton Foundation Phase 2 Campus Building. The site is a prehistoric Chumash residential and ceremonial center of over 80-acres in size and that was used by prehistoric Native Americans from 300 B.C. to the late 1700s. Dozens of test units, hundreds of shovel test pits, surface collection, and surface feature mapping have been completed to date planned. (August 2015 – June 2022).

Phase I Survey of the Rancho Santa Susana Park Phase 4 Development, City of Simi Valley, County of Ventura

Principal and Project Manager for this 4-acre commercial project for the Rancho Simi Parks Department, which included SCCIC and NAHC record searches and a site survey. (March 2022 – May 2022).

Phase I Survey of 6500 Sunset Boulevard, City of Los Angeles, County of Los Angeles

Principal and Field Director for this survey project, which includes SCCIC, NHM, and NAHC record searches. Project was put on hold at the draft report stage (October 2021 – April 2022).

Phase I(b) Survey of APN 673-0-460-190, City of Newbury Park, County of Ventura

Principal and Project Manager for this residential development project, which included subsurface shovel test pits as part of the surface survey as well as construction phase monitoring (April 2022 – April 2022).

Peer Review of the Cultural Phase I Report for the Eternal Valley Cemetery Expansion, City of Santa Clarita, County of Los Angeles

Peer review was conducted on behalf of the City for this project (February 2022 – April 2022).

Phase I Survey of the Rolling Oaks Proposed Open Space, City of Thousand Oaks, County of Ventura

Principal and Project Manager for this proposed park property for the Conejo Recreation and Parks District, which included SCCIC and NAHC record searches. (December 2021 – April 2022).

Phase I Survey of 4303 Ocean View Drive, City of Malibu, County of Los Angeles

Principal and Project Manager for this residential development project, which included SCCIC and NAHC record searches (December 2021 – April 2022).

Phase I Survey of 3948 Las Flores Canyon Road, City of Malibu, County of Los Angeles

Principal and Project Manager for this residential development project, which included SCCIC and NAHC record searches (December 2021 – April 2022).

Phase I Survey of 3942 Las Flores Canyon Road, City of Malibu, County of Los Angeles

Principal and Project Manager for this residential development project, which included SCCIC and NAHC record searches (December 2021 – April 2022).

Phase I Survey of 21373 Rambla Vista Road, City of Malibu, County of Los Angeles

Principal and Project Manager for this residential development project, which included SCCIC and NAHC record searches (December 2021 – April 2022).

Phase I Survey of 21425 Rambla Vista Road, City of Malibu, County of Los Angeles

Principal and Project Manager for this residential development project, which included SCCIC and NAHC record searches (December 2021 – April 2022).

Phase II Evaluation of the "Lancaster 3" site, Lancaster Tract 72534, City of Lancaster, County of Los Angeles

Principal and Project manager for this evaluation report, which evaluated an older historical archaeological site as per CRHR Criteria 1, 2, and 4. Two temporal elements were identified; one from the early 20th Century, and another from the 1950s/1960s. Neither was recommended as eligible (December 2021 – April 2022).

1413 Michigan Avenue NEPA Environmental Assessment (EA) for a HUD housing project, City of Santa Monica, County of Los Angeles

Cultural Resource consultant for the project, which involved potential impacts to a City historic landmark – the Nikkei Hall – and authoring a "No Impact" letter to SHPO for the Client. Tasks also included consultation with SHPO and Tribal Groups, and support of an architectural evaluation of the structure as per the NRHP and CRHR. A final DPR for the local landmark was also produced by the project team (October 2021 – April 2022).

Phase I Survey of the Palmdale 70 Affordable Housing Project, City of Palmdale, County of Los Angeles

Principal and Project Manager for this affordable housing residential development project, which included SCCIC, NHM, and NAHC record searches (January 2022 – March 2022).

Phase I Survey of 400 Gorham Road, City of Ojai, County of Ventura

This was a NEPA/Section 106 project. Principal and Project Manager for this affordable housing project, which included an SCCIC and NAHC record searches. (January 2022 – March 2022).

Archaeological and Paleontological Monitoring of the Twin Lakes Water Tank Construction for the Las Virgenes Water District, City of Los Angeles, Area of Porter Ranch, County of Los Angeles

Principal and Project Manager for this archaeological and paleontological monitoring project. (November 2021 – March 2022).

Oakmont Senior Living Historic and Archaeological Display Production, Agoura Hills, Los Angeles County, CA.

Project Manager for this historical interpretation display project (October 2020 – March 2022).

Phase I Survey of 5809 Trancas Canyon Road, City of Malibu, County of Los Angeles

Principal and Project Manager for this residential development project, which included SCCIC and NAHC record searches (December 2021 – February 2022).

Phase I Survey of a Parcel at 30th Street and Avenue I, City of Lancaster, County of Los Angeles

Principal and Project Manager for this residential development project, which included an SCCIC, NAHC, and NHM record searches and a site visit. Additional tasks included a paleontological survey of the property and the recordation of a large 1930s/1940s residential archaeological site (September 2021 – February 2022).

Phase I Survey of 325 and 391 Hampshire, City of Thousand Oaks, County of Ventura

Principal and Project Manager for this mixed-use development project, which included an SCCIC, NAHC, and NHM record searches and a site visit. This project also included an architectural assessment and evaluation of the utilitarian commercial building (August 2021 – February 2022).

Phase I Survey of 2301 Santiago Court, City of Oxnard, County of Ventura

Principal and Project Manager for this 4-acre commercial project, which included a record search and a site survey. (October 2021 – January 2022).

Phase I Survey of 5868 Deerhead Road, City of Malibu, County of Los Angeles

Principal and Project Manager for this residential development project, which included a SCCIC and NAHC record search and a site visit (October 2021 – January 2022).

Oakmont Senior Housing Archaeological, Paleontological, and Native American Monitoring Project, City of Agoura Hills, County of Los Angeles

Principal and Project Manager for this archaeological, paleontological, and Native American monitoring project. (January 2020 – January 2022).

Phase I Survey of a Parcel at 40th Street and Avenue L, City of Lancaster, County of Los Angeles

Principal and Project Manager for this residential development project, which included an SCCIC, NAHC, and NHM record searches and a site visit. Additional tasks included a paleontological survey of the property (September 2021 – December 2021).

Phase I Survey of the Sagebrush II Battery Storage Project, Terra Gen Windfarms, County of Kern

Principal and Project Manager for this project, which included a record search and a site survey. (October 2021 – December 2021).

Phase I Survey of the Rob's Acre Battery Storage Project, Terra Gen Windfarms, County of Kern

Principal and Project Manager for this project, which included a record search and a site survey. (October 2021 – December 2021).

Phase I Survey of the Sagebrush I (extended) Battery Storage Project, Terra Gen Windfarms, County of Kern

Principal and Project Manager for this project, which included a Bakersfield record search and a site survey. (October 2021 – December 2021).

Phase I Survey of the Barrera Hacienda Heights Residential Project, Unincorporated Area, County of Los Angeles

Principal and Project Manager for this 12-acre residential development project, which included an SCCIC, NAHC, and NHM record searches and a site visit. (August 2021 – December 2021).

Phase I Survey of 11480 Sulphur Mountain Road, UnincorporatedArea, County of Ventura

Principal and Project Manager for this commercial development project, which included a SCCIC and NAHC record search and a site visit (September 2021 – November 2021).

Phase I Survey of 710 West Harvard, City of Santa Paula, County of Ventura

This is a NEPA/Section 106 project. Principal and Project Manager for this mixed-use development project, which included an SCCIC and NAHC record searches and a site visit. This project also included later consultation with the Client and City on the discovery of a previously unknown historic well (August 2021 – November 2021).

Phase I Survey of the Bixby Villas Development Project, City of Long Beach, County of Los Angeles

Principal and Project Manager for this residential development project, which included an SCCIC and NAHC record searches and a site visit. (July 2021 – November 2021).

Phase I Survey of the Dorothy Drive Residential Development Project, City of Agoura Hills, County of Los Angeles County, CA.

Principal and Project Manager for this 9-acre residential development project, which included an SCCIC, NHM, and NAHC record searches and a site visit. (August 2021 – September 2021).

Archaeological, Paleontological, and Native American Monitoring for the JPA/Las Virgenes Water District Solar Farm Expansion, City of Calabasas, County of Los Angeles

Principal and Project Manager for this monitoring project. This project encountered a prehistoric lithic scatter at depth, which included lithic material, a point fragment, and groundstone artifacts. An older historic hearth was also discovered. The project concluded with a prehistoric site form and a small display at the Las Virgenes Water District headquarters (April 2020 – September 2021).

Phase I Survey of the Agoura Yard Development Project, City of Agoura Hills, County of Los Angeles

Principal and Project Manager for this mixed-use development project, which included an SCCIC and NAHC record searches and a site visit. (July 2021 – September 2021).

Cultural Resource Monitoring for the Oasis Windmill Farm Phase II, County of Kern

Project manager for the monitoring of impacts to cultural resources as part of the Oasis Windmill Farm Phase II upgrade. Project including updating numerous cultural resources and the recordation of one new prehistoric site with bedrock milling and other surface features (March 2021 – August 2021).

Phase I Survey of the Sagebrush Battery Storage Project, Terra Gen Windfarms, County of Kern

Principal and Project Manager for this project, which included a Bakersfield record search and a site survey. (July 2021 – August 2021).

Ferro Ditch Biological and Archaeological Monitoring, County of Ventura Public Works Osteology, Area of Somis, County of Ventura

Principal Archaeologist and Project Osteologist for this public improvement project. This project also involved the field analysis of excavated bones as being non-human. (January 2021 – July 2021).

Phase I Survey of "The Malibu Club" Project, City of Malibu, County of Los Angeles

Principal and Project Manager for this commercial development project, which included an SCCIC, NAHC, and NHM record searches and a site visit. (June 2021 – July 2021).

Phase I Survey of the Moorpark 67 Residential Development Project, City of Moorpark, County of Ventura

Principal and Project Manager for this 67-acre project, which included an SCCIC, NAHC, and NHM record searches and a site visit, as well as responses to peer review. (May 2021 – July 2021).

Review of Technical Documents, Cultural Resource Consultant for the City of Agoura Hills, and EIR Cultural Section Writing for "The Agoura Village Expansion" project, City of Agoura Hills, County of Los Angeles

Professional review of project cultural resource documents and authoring of cultural resource section of MND for this large mixed-use project. The primary challenge is that the entire development is located on a CRHR-eligible prehistoric Native American cultural resource. (January 2018 – June 2021).

Archaeological Monitoring for 1055 North Signal, City of Ojai, County of Ventura

Principal and Project Manager for this small archaeological monitoring project. (February 2021 – June 2021).

Phase I Survey of the Agoura Kanan Village Project; Additional Project Areas to be Impacted, City of Agoura Hills, County of Los Angeles

Principal and Project Manager for this project, which involved the survey of additional project areas and the recordation and updating of two previously known prehistoric cultural resources. (April 2021 – May 2021).

Phase I Survey of 22825 West Roscoe, Area of West Hills, County of Los Angeles

Principal and Project Manager for this project, which included an SCCIC and NAHC record searches and a site visit. (April 2021 – May 2021).

Phase I Survey of 23755 Newhall Avenue, City of Santa Clarita, County of Los Angeles

Principal and Project Manager for this project, which included an SCCIC and NAHC record searches and a site visit. The discovery of an older historic cultural resource also resulted in the recordation of a cultural resource on State of California DPR forms. A paleontological survey report was also completed by PaleoWest as per the NHM findings (March 2021 – May 2021).

Phase I Survey of a Property on Giles Road, Area of Lake Sherwood, County of Ventura

Principal and Project Manager for this project, which included an SCCIC and NHAC record search and a site visit. Exploration of all rock shelters and cache openings on the property for historic artifacts was part of this project. A pre-construction survey was also completed for the project. (July 2020 – May 2021).

Phase I Survey of 12772 San Fernando Road, Area of Sylmar, City of Los Angeles, County of Los Angeles

Principal and Project Manager for this project, which included an SCCIC and NAHC record searches and a site visit. (March 2021 – May 2021).

Phase I Survey of a large parcel located off of West Avenue I, Area of Antelope Valley, City of Lancaster, County of Los Angeles

Principal and Project Manager for this project, which included an SCCIC, NHM, and NAHC record searches and a site visit. The discovery of an older historic cultural resource also resulted in the recordation of a cultural resource on State of California DPR forms. A paleontological survey report was also completed by PaleoWest as per the NHM findings (March 2021 – April 2021).

Phase I Survey of 2140 Stunt Road, Unincorporated Area, County of Los Angeles

Principal and Project Manager for this project, which included an SCCIC and NAHC record searches and a site visit. (March 2021 – April 2021).

Arts District Archaeological Monitoring Project, City of Los Angeles, County of Los Angeles

Principal and Project Manager for this archaeological monitoring project. (October 2020 – April 2021).

Phase I Survey of the Lynch Land and Cattle Property, Area of Somis, County of Ventura

Principal and Project Manager for this project, which included an SCCIC and NAHC record searches and a site visit. (February 2021 – April 2021).

Phase I Survey of 3870 Puerco Canyon Road (Lot 1), City of Malibu, County of Los Angeles

Principal and Project Manager for this project, which included an SCCIC record search and a site visit. (February 2021 – April 2021).

Phase I Survey of 3870 Puerco Canyon Road (Lot 2), City of Malibu, County of Los Angeles

Principal and Project Manager for this project, which included an SCCIC record search and a site visit. (February 2021 – April 2021).

Phase I Survey of the Ladyface Vista project, City of Agoura Hills, County of Los Angeles

Principal and Project Manager for this project, which included SCCIC, NAHC, and NHM record searches and a site visit. This large project had complex paleontological issues, which Envicom addressed with the NHM report and an excellent geotechnical report (February 2021 – March 2021).

Phase I Survey of the Central Plaza Shopping Center Project, City of Camarillo, County of Ventura

Principal and Project Manager for this project, which included SCCIC, NAHC, and NHM record searches and a site visit. (February 2021 – March 2021).

Phase I Survey of 3426 Serra Road, City of Malibu, County of Los Angeles

Principal and Project Manager for this project, which included an SCCIC record search and a site visit. (January 2021 – March 2021).

Oakmont Senior Living Historic and Archaeological Display Production, City of Simi Valley, County of Ventura

Project Manager for this historical interpretation display project (with the Strathearn Historic Park and Museum) (September 2020 – February 2021).

Cultural Resource Monitoring for the Oasis Windmill Farm, County of Kern

Project manager for the monitoring of impacts in six cultural resources as part of the Oasis Windmill Farm upgrade (August 2020 – February 2021).

Archaeological Monitoring at the Arctic Cold Industrial Project Site, City of Oxnard, County of Ventura

Project Manager for this large archaeological and Native American monitoring project. (November 2020 – February 2021).

Phase Ib (subsurface) Survey 239 Oak Glen Avenue, City of Ojai, County of Ventura

Principal and Project Manager for this City-requested Phase Ib survey, which included the excavation of six shovel test pits and a comprehensive site assessment to supplement work completed in 2020 as the "Rancho Ojai" project. (February 2021 – February 2021).

Entitlement Phase Cultural Resource Tasks, Arrowhead Estate Residential Development, City of Banning, County of Riverside

Project Manager for all cultural tasks, which included HAER documentation of the Gilman House Channel, team meetings, and the development of a construction phase Monitoring Plan that incorporated the history of the St. Boniface Indian School. (January 2021 – February 2021).

Phase I Survey of a Proposed Little Rock Mobile Home Park, Unincorporated Area, County of Los Angeles

Principal and Project Manager for this project, which included an SCCIC record search and a site visit. The recordation of a large early 20th Century residential and farm complex on State of California DPR forms was also completed as part of this project. A paleontological survey report was also completed by PaleoWest as per the NHM findings (November 2020 – February 2021).

Phase I survey of the Chadwick School Development Project, City of Palos Verdes, County of Los Angeles

Principal and Project Manager for this project, which included an SCCIC record search and a site visit. (December 2020 – February 2021).

Phase I Survey of 3142 Subida Circle, City of Santa Rosa, County of Sonoma

Principal and Project Manager for this project, which included an SCCIC and NAHC record search and a site survey. (August 2020 – February 2021).

Keyes Porsche Archaeological, Paleontological, and Native American Monitoring Project, Area of Woodland Hills, County of Los Angeles

Principal and Project Manager for this archaeological, paleontological, and Native American monitoring project. (August 2020 – February 2021).

Los Angeles Unified School District (LAUSD) Environmental On-Call for Archaeological and Paleontological tasks, County of Los Angeles

Principal, Project Manager, and cultural resource task completion as needed. Envicom is one of three selected vendors for one year, with four potential renewable years in the contract (eventually rolled in with LAUSD environmental on-call contract) (February 2019 – February 2021).

Conrad N. Hilton Foundation Phase Ib of Proposed Phase II Building Locations, City of Agoura Hills, County of Los Angeles

This project involved the excavation of 48 shovel test pits within the western periphery of cultural resource CA-LAN-320 on Foundation property. (January 2020 – January 2021).

Phase I Survey of the Sandefer Residential Project, Unincorporated Area, County of Ventura

Principal and Project Manager for this project, which included an SCCIC and NAHC record search and a site survey. (August 2020 – January 2021).

Phase I Survey of 122 acres of the Canyon Ostara residential development project, City of Malibu, County of Los Angeles

Principal and Project Manager for this project, which included an SCCIC and NAHC record search and a site survey. (August 2020 – January 2021).

Summit View Apartments Project Paleontological Monitoring for this Veterans Housing Project, City of Los Angeles, County of Los Angeles

Principal and Project Manager for this paleontological monitoring project. (February 2020 – January 2021).

Native American Monitoring at the Los Angeles International Airport (LAX), City of Los Angeles, County of Los Angeles

Project Manager for this long term Native American monitoring project, which includes a Discovery Plan and a final Monitoring Report. (October 2020 – December 2020).

18800 Gale Avenue Archaeological, Biological, and Paleontological Monitoring Project, Area of Rowland Heights, Countu of Los Angeles

Principal and Project Manager for this archaeological, biological, and paleontological monitoring project. (November 2019 – December 2020).

Phase I survey of 410 Tico Road, City of Ojai, County of Ventura

Principal and Project Manager for this project, which included an SCCIC record search and a site visit. (November 2020 – December 2020).

Phase I Survey of a property within the Rancho Ojai subdivision, City of Ojai, County of Ventura

Principal and Project Manager for this project, which included an SCCIC record search and a site visit. (October 2020 – November 2020).

Fillmore Terrace Phase I and Native American Consultation, City of Fillmore, County of Ventura

Principal and Project Manager for this large low-income housing project, which included an SCCIC record search, site visit, and Native American consultation on behalf of the City. (September 2020 – October 2020).

Phase I Survey of 730 South Vermont, City of Los Angeles, County of Los Angeles

Principal and Project Manager for this project, which included an SCCIC, NAHC, and NHM record searches and a site visit. (June 2020 – October 2020).

Phase I Survey of the Reconstruction of the Brookview Ranch Riding and Event Venue, School of Management Building, County of Los Angeles

Principal and Project Manager for this riding venue rebuild and expansion. Project included a SCCIC/NAHC record search and a site visit. One of the challenges has been integrating a prehistoric cultural resource immediately north of the project development, but on the project property, into the assessment recommendations (July 2019 – September 2020).

Phase I Survey of 715 Del Oro Drive, City of Ojai, County of Ventura

Principal and Project Manager for this project, which included an SCCIC/NAHC record search and a site visit. (June 2020 – August 2020).

Phase I Survey of 604 Gridley Road, City of Ojai, County of Ventura

Principal and Project Manager for this project, which included an SCCIC/NAHC record search and a site visit. (July 2020 – August 2020).

Phase I Survey of the 5041 Lankershim Hotel Property, Area of North Hollywood, County of Los Angeles

Principal and Project Manager for this project, which included an SCCIC, NHM, NAHC record searches and a site visit. (May 2020 – July 2020).

Phase II Evaluation of CA-LAN-41 within the Boundary of the Agoura Village project, City of Agoura Hills, County of Los Angeles

Principal and Project Manager for the completion of an Evaluation (Phase II) of a complex prehistoric cultural resource within the boundary of the Agoura Village project. The Phase II involved the excavation of ten test units, dozens of shovel test pits, as well as more detailed mapping of the site. (January 2019 – July 2020).

Phase I Survey of 6544 Wandermere Road, City of Malibu, County of Los Angeles

Principal and Project Manager for this project, which included an SCCIC record search and a site visit. (June 2020 – July 2020).

Phase I Survey of 5841 Busch Drive, City of Malibu, County of Los Angeles

Principal and Project Manager for this project, which included an SCCIC record search and a site visit. (May 2020 – July 2020).

Archaeological and Paleontological Monitoring for the Agoura Landmark Development Project, City of Agoura Hills, County of Los Angeles

Principal and Project Manager for this monitoring project. A positive findings report was also completed and submitted to the City after the discovery of a small lithic scatter within the development footprint (January 2019 – July 2020).

Phase I Survey 505 Centre Street, City of Los Angeles, County of Los Angeles

Principal and Project Manager for this project, which included an SCCIC, NAHC, and NHM record searches and a site visit. This complex project had multiple built environment concerns, including the adjacent San Pedro Commercial Historic District (April 2020 – June 2020).

Paleontological Phase I Survey of an Agricultural Development Parcel in Balcom Canyon, Area of Somis, County of Ventura

Author for this project, which included a detailed geological and paleontological statement for the proposed project. (June 2020).

Cultural Resource Discovery Plan for the Oasis and Point Wind Windmill Farm, County of Kern

Author of the discovery plan for upgrades to two large windmill farms for Terra Gen. (March – April 2020).

Phase II Evaluation of Six Native American Archaeological Sites for the Terra Gen Oasis Windmill Farm, County of Kern

Principal and Project Manager for this archaeological evaluation project, which utilized shovel test pits and test units to evaluate six prehistoric Native American cultural resources that would be impacted by future windfarm development. (March 2020 – April 2020).

Phase I Survey of The Emerald Residential Project, City of Lancaster, County of Los Angeles

Principal and Project Manager for this approximately 5-acre housing project, which included an SCCIC/NAHC/NHM record searches and a site visit. (February 2020 – April 2020).

Phase I Survey of The West Palmdale Residential Complex Project, City of Palmdale, County of Los Angeles

Principal and Project Manager for this approximately 35-acre housing project, which included an SCCIC/NAHC/NHM record searches and a site visit. (February 2020 – April 2020).

Conrad N. Hilton Foundation Geotech Boring Archaeological and Paleontological Monitoring, City of Agoura Hills, County of Los Angeles

This project involved the monitoring of geotech trench and drilling sites within Foundation and Las Virgenes Water District properties within the City of Agoura Hills. (January 2020 – April 2020).

Phase I Survey of 4510 Via Vienta, City of Malibu, County of Los Angeles

Principal and Project Manager for this project, which included an SCCIC record search and a site visit. (January 2020 – April 2020).

Phase I Survey of the Proposed California Lutheran University, School of Management Building, City of Thousand Oaks, County of Ventura

Principal and Project Manager for this university project. Project included a SCCIC/NAHC record search and a site visit. (December 2019 – April 2020).

Phase I Survey of the Twin Lakes Water Tank Project, Area of Porter Ranch, County of Los Angeles

Principal and Project Manager for the completion of a SCCIC/NAHC record search, NAHC record search request, and a site survey for the Los Virgenes Municipal Water District. (October 2019 – April 2020).

Phase I Survey of the Castaic Apartments Project, Town of Castaic, County of Los Angeles

Principal and Project Manager for this large 105-acre mixed use development project, which included an SCCIC/NAHC record search, an NHM record search, and a site visit. The cultural survey discovered two complex older historic sites, which required extensive recordation and evaluation (July 2019 – April 2020).

Sierra West Assisted Living Project, City of Santa Clarita, County of Los Angeles

Principal and Project Manager for this group residential project. Project included NHM/SCCIC/NAHC record searches, and a site visit. A project challenge was addressing historic early 20th Century structures, including an early stagecoach station, which once were located on the property, as well as the proximity of the parcel to a historic (1880s) cemetery. (October 2019 – April 2020).

Phase I Survey of 1175 Camille Drive, City of Ojai, County of Ventura

Principal and Project Manager for this project, which included an SCCIC/NAHC record search and a site visit. (January 2020 – February 2020).

Vineland and Cleon Self Storage Project Phase I Cultural Survey, City of Burbank, County of Los Angeles

Principal and Project Manager for this commercial project. Project included NHM/SCCIC/NAHC record searches, but no site visit due to extensive urbanization. (December 2019 – January 2020).

Phase I Survey of 5617 Busch Drive, City of Malibu, County of Los Angeles

Principal and Project Manager for this project, which included an SCCIC record search and a site visit. (December 2019 – January 2020).

Cultural Resource Monitoring of the 21110 Oxnard Hotel project, Area of Woodland Hills, County of Los Angeles

Principal and Project Manager for this monitoring project. (August 2019 – January 2020).

Phase I Survey of the Riverwalk II Mixed-Use Project, City of Santa Clarita, County of Los Angeles

Principal and Project Manager for this commercial and Residential Project. Project included a SCCIC/NAHC record search and a site visit. (December 2019 – December 2019).

Phase I Survey of 5814 Philip Road, City of Malibu, County of Los Angeles

Principal and Project Manager for this project, which included an SCCIC record search and a site visit. (October 2019 – December 2019).

Phase I Survey of Improvements to the Coronado Golf Course, City of San Diego, County of San Diego

Principal and Project Manager for this project, which included an SCCIC/NAHC record search only. (October 2019 – November 2019).

Phase I Survey of 6208 Tapia Drive, City of Malibu, County of Los Angeles

Principal and Project Manager for this project, which included an SCCIC record search and a site visit. (October 2019 – November 2019).

Phase I Survey of 6711 Wandermere Road, City of Malibu, County of Los Angeles

Principal and Project Manager for this project, which included an SCCIC record search and a site visit. (September 2019 – October 2019).

Phase I Survey of 5820 Foxview Drive, City of Malibu, County of Los Angeles

Principal and Project Manager for residential project, which included an SCCIC/NAHC record search, an NHM record search, and a site visit. (September 2019 – October 2019).

Phase I Survey of the new Keyes Porsche Auto Dealership, Area of Woodland Hills, County of Los Angeles

Principal and Project Manager for this project, which included an SCCIC/NAHC/NHM record search, a site visit, and the production of a separate Ethnographic Assessment Report for the project. Envicom also supported the Lead Agency in AB-52 consultation with the Tataviam and Tongva Tribal Groups. (August 2019 – October 2019).

Cultural Resource Monitoring of the 21121 Van Owen development project, Area of Canoga Park, County of Los Angeles

Principal and Project Manager for this monitoring project. (September 2019).

Phase I Survey of the Avenue 34 Mixed-Use Development Project, City of Los Angeles, County of Los Angeles

Principal and Project Manager for this project, which included an SCCIC/NAHC record search and a site visit. (August 2019 – September 2019).

Phase I Survey of the Faith Lutheran Senior Living Project, City of Inglewood, Los Angeles County, CA.

Principal and Project Manager for this project, which included an SCCIC/NAHC record search and a site visit. (August 2019 – September 2019).

Phase II Evaluation of Cultural Resource CA-LAN-513 within the Boundary of 6282 Sea Star Estates Residential Development within the City of Malibu, County of Los Angeles

Principal and Project Manager for this Phase II evaluation, which involved surface examination only due to plowed field conditions. No evidence of a cultural resource was found. (September 2019).

Phase I Survey of an Agricultural Development Parcel in Balcom Canyon, Area of Somis, County of Ventura

Principal and Project Manager for this project, which included an SCCIC/NAHC record search, a site visit, and the recordation of a prehistoric site at the edge of the project boundary. (July 2019 – August 2019).

Phase I Survey of 31215 Bailard Road, City of Malibu, County of Los Angeles

Principal and Project Manager for this project, which included an SCCIC record search and a site visit. (July 2019 – August 2019).

Phase II Evaluation of the Proposed Location of the Printz Colony House within the Strathearn Historic Park, City of Simi Valley, County of Ventura

Principal and Project Manager for this Phase II evaluation of part of the 1880s Strathearn Farmstead. Evaluation tasks included the excavation of shovel test pits and a single test unit, construction monitoring, and a combined report for the Rancho Simi Recreation and Parks District (June 2019 – July 2019).

Phase I Survey of the Parks LA project, City of Los Angeles, County of Los Angeles

Principal and Project Manager for this project, which included an SCCIC/NAHC/NHM record search, a site visit, and a Natural History Museum paleontological assessment. (June 2019 – July 2019).

Phase I Survey of the Rancho Malibu residential development project, City of Malibu, County of Los Angeles

Principal and Project Manager for this project, which included an SCCIC/NAHC/NHM record search, a site visit, and a Natural History Museum paleontological assessment. (June 2019 – July 2019).

Phase I Survey of 380 South Rosemead, City of Los Angeles, County of Los Angeles

Principal and Project Manager for this development project, which included an SCCIC/NAHC/NHM record search, a site visit, and a Natural History Museum paleontological assessment. (May 2019 – June 2019).

Phase II Evaluation of CA-LAN-129 and CA-LAN-129a, two prehistoric sites, and CA-LAN-4363H, an early historic site, City of Calabasas, County of Los Angeles

Principal and Project Manager for the evaluation of these three sites as part of permitting with the Corps of Engineers. The evaluation was written to NRHP/SHPO standards. (May 2019 – June 2019).

Phase I Survey of 1160 Sulphur Mountain Road, City of Ojai, County of Ventura

Principal and Project Manager for this residential development project, which included a SCCIC/NAHC record search and a site visit (May 2019 – May 2019).

Phase I Survey of the Cal Grow Farms Project, City of Perris, County of Riverside

Principal and Project Manager for this agricultural development project, which included a SCCIC/NAHC/NHM record search and a site visit. (March 2019 – May 2019).

Phase I Survey of the Riverwalk Mixed-Use Project, City of Santa Clarita, County of Los Angeles

Principal and Project Manager for this commercial and Residential Project. Project included a SCCIC/NAHC record search and a site visit. (March 2019 – May 2019).

Phase I Survey of the West Village Project, City of Calabasas, County of Los Angeles

Principal and Project Manager for this Army Corps of Engineers (ACOE) permitting project. Project included a SCCIC/NAHC/NHM record search and a site visit, as well as SHPO review of the final report. (March 2019 – May 2019).

Phase I Survey of the Belvedere Middle School Improvements Project, City of Los Angeles, County of Los Angeles

Principal and Project Manager for the completion of a SCCIC/NAHC record search and NAHC record search request for LAUSD. (November 2018 – April 2019).

Phase I Survey "The Angel" Project, City of Los Angeles, County of Los Angeles

Principal and Project Manager for this low-income housing project in the San Fernando Valley. Project included a SCCIC/NAHC record search and a site visit. (January 2019 – March 2019).

Fourth and Hewitt, City of City of Los Angeles, County of Los Angeles

Principal and Project Manager for a cultural resource record search for the development of a new office building within a commercial urban environment. Project also included a paleontological assessment of the property due to an extensively deep planned parking garage and Native American concerns. Also completed with an Ethnographic Report to meet AB-52 criteria. Another key issue was determining whether a historic built environment assessment was needed. (February 2017 – March 2019).

Phase I Survey of the Deer Lake Water Tank Project, Area of Porter Ranch, City of Los Angeles

Principal and Project Manager for the completion of a SCCIC/NAHC record search, NAHC record search request, and a site survey for the Las Virgenes Municipal Water District. (November 2018 – March 2019).

Phase I Survey of the Sherwood Development Corporation, Tract 4409, Unincorporated Area, County of Ventura

Principal and Project Manager for this Army Corps of Engineers (ACOE) permitting project. Project included a SCCIC/NAHC record search and a site visit, as well as SHPO review. (January 2019 – February 2019).

City of Thousand Oaks Environmental On-Call (Including Cultural Resources), City of Thousand Oaks, County of Ventura

Envicom was selected as one of a limited number of on-call environmental firms for the City. (June 2015 – December 2018).

Phase II Evaluation of Cultural Resource CA-LAN-513 within the Boundary of 6361 Sea Star Estates Residential Development within the City of Malibu, County of Los Angeles

Principal and Project Manager for this Phase II evaluation, which involved limited shovel test pits and surface examination. No evidence of a cultural resource was found. (November 2018 – December 2018).

Phase I Survey for the Massilia Spa Project, Unincorporated Area, County of Los Angeles

Principal and Project Manager for the completion of a SCCIC/NAHC record search, NAHC record search request, and a site survey. Project also includes an inventory and initial assessment of over a dozen 1930 through 1990 structures on the property (June 2018 – December 2018).

Phase I Survey of the Conejo Creek Park, City of Thousand Oaks, County of Ventura

Principal and Project Manager for the completion of a SCCIC/NAHC record search, NAHC record search request, and a site survey. (August 2018 – November 2018).

Phase I Survey of the Butler Ranch, Unincorporated area near West Simi Valley, County of Ventura

Principal and Project Manager for the completion of a Phase I record search, NAHC record search request, and a site survey of this 332-acre low density residential development project. (May 2018 – October 2018).

Valencia Travel Village, City of Valencia, County of Los Angeles

Principal and Project Manager for the completion of a Phase I for trailer park and recreation center. (August 2018 – October 2018).

Phase I Survey of the JPA Solar Farm, City of Calabasas, County of Los Angeles

Principal and Project Manager for the completion of a SCCIC/NAHC record search, NAHC record search request, and a site survey for the Las Virgenes Municipal Water District. This 20-acre solar project also addressed a large prehistoric Native American site located next to and partially on the property. Project included Native American consultation with the Lead Agency and the Tatatviam and the recordation of two prehistoric petroglyphs (August 2018 – October 2018).

Simi BMX Course Phase I Survey, City of Simi Valley, County of Ventura

Principal and Project Manager for the completion of a SCCIC/NAHC record search, NAHC record search request, and a site survey. (July 2018 – August 2018).

Phase I Paleontological Survey of the 3467 Camino de la Cumbre Property, Area of Sherman Oaks, County of Los Angeles

Principal and Project Manager for the completion of a Natural History Museum record search and paleo report. (August 2018).

Phase I Survey of the proposed 113-133 West Plymouth Street multiple unit residential development, City of Inglewood, County of Los Angeles (with Samantha Whittington, Debbie Balam, and Charlie Fazzone).

Principal and Project Manager for the completion of a SCCIC/NAHC record search, paleontological record search, NAHC record search request, and a site survey. Additional tasks included writing for the cultural section of the MND document (April 2018 – August 2018).

Phase I Survey for the 17-acre Olivas Park Extension commercial development project in City of Ventura, County of Ventura

Principal and Project Manager for the completion of a SCCIC/NAHC record search, NAHC record search request, and a site survey, followed by limited monitoring. (January 2018 – June 2018).

Phase I(b) Survey of the proposed Forrest Club 50-acre private club development, County of Los Angeles (with Samantha Whittington and Charlie Fazzone).

Principal and Project Manager for the completion of a SCCIC/NAHC record search, NAHC record search request, and a site survey. In addition, 24 shovel test pits were excavated across the locations of two 1920s historic cabins. No further work was required. (April 2018 – June 2018).

Phase I Survey for the Ascension Lutheran Church Master Plan and MND, City of Thousand Oaks, California, County of Los Angeles

Principal and Project Manager for the completion of a SCCIC/NAHC record search, NAHC record search request, and a site survey. (May 2018 – June 2018).

Cultural, Paleo, and Native American Monitoring for the Agoura Hills Marriott Development Project, City of Agoura Hills, County of Los Angeles

Principal and Project Manager for this monitoring project. During monitoring, a prehistoric Chumash cultural resource was discovered (number not yet assigned), which led to artifact collection, analysis, and a final report of findings that was submitted to the City (January 2018 – June 2018).

Phase I Survey for the Mulholland Senior Living Project, County of Los Angeles

Principal and Project Manager for the completion of a SCCIC/NAHC record search, NAHC record search request, and a site survey. (May 2018 – May 2018).

Phase I Survey of the proposed Tapo at Alamo EIR for a mixed-use development project, City of Simi Valley, County of Ventura (with Samantha Whittington and Debbie Balam).

Principal and Project Manager for the completion of a SCCIC/NAHC record search, NAHC record search request, and a site survey. (March 2018 – May 2018).

Phase I Survey of the Upper Bailey Road tract, Area of Sylmar, City of Los Angeles, County of Los Angeles (with Samantha Whittington and Debbie Balam).

Principal and Project Manager for the completion of a SCCIC/NAHC record search, NAHC record search request, and a site survey. (December 2017 – April 2018).

Phase I Survey of the Lower Bailey Road tract, Area of Sylmar, City of Los Angeles, County of Los Angeles (with Samantha Whittington and Debbie Balam).

Principal and Project Manager for the completion of a SCCIC/NAHC record search, NAHC record search request, and a site survey. (December 2017 – April 2018).

Historic Structure Evaluation of Blythe Elementary School for LAUSD, City of Los Angeles, County of Los Angeles

Project Manager for this project, with Chattel, Inc., being the historic preservation consultant. (February 2018 – April 2018).

Historic Structure Evaluation of Robert Hill Lane Elementary School for LAUSD, City of Los Angeles, County of Los Angeles

Project Manager for this project, with Chattel, Inc., being the historic preservation consultant. (February 2018 – April 2018).

Historic Structure Evaluation of James Madison Middle School for LAUSD, City of Los Angeles, County of Los Angeles

Project Manager for this project, with Chattel, Inc., being the historic preservation consultant. School was found eligible for the CRHR. (February 2018 – April 2018).

Historic Structure Evaluation of 54th Street Elementary School for LAUSD, City of Los Angeles, County of Los Angeles

Project Manager for this project, with Chattel, Inc., being the historic preservation consultant. School was found eligible for the CRHR. (February 2018 – April 2018).

Historic Structure Evaluation of Chapman Elementary School for LAUSD, City of Los Angeles, County of Los Angeles

Project Manager for this project, with Chattel, Inc., being the historic preservation consultant. (February 2018 – April 2018).

Historic Structure Evaluation of Dena Street Elementary School for LAUSD, City of Los Angeles, County of Los Angeles

Project Manager for this project, with Chattel, Inc., being the historic preservation consultant. (February 2018 – April 2018).

Historic Structure Evaluation of Patrick Henry Middle School for LAUSD, City of Los Angeles, County of Los Angeles

Project Manager for this project, with Chattel, Inc., being the historic preservation consultant. School was found eligible for the CRHR. (February 2018 – April 2018).

Historic Structure Evaluation of Richland Avenue Elementary School for LAUSD, City of Los Angeles, County of Los Angeles

Project Manager for this project, with Chattel, Inc., being the historic preservation consultant. (February 2018 – April 2018).

Marinette Road Residential Development, Area of Pacific Palisades, City of Los Angeles, County of Los Angeles

Principal and project manager for this development project, which included a SCCIC/NAHC record search, site survey, Tribal Group scoping letters, and agency consultation. The major challenge was that the project property was within the Will Rogers State Monument and National Register site boundary. An update for this project was conducted in 2018 to include AB-52 compliance. (February 2015 – May 2015; January 2018 – April 2018).

Phase I Survey for 6956 Dume Drive, City of Malibu, County of Los Angeles

Principal and Project Manager for the completion of an SCCIC record search, and a site survey. (February 2018 – March 2018).

Phase I Survey of roughly 50-acres for Improvements on the Saddlerock Ranch/Malibu Wines Property in the Area of the Santa Monica Mountains, County of Los Angeles

Principal and Project Manager for the completion of a SCCIC/NAHC record search, NAHC scoping, and a site survey. This project involves upgrades to the winery existing structures and public buildings, as well as road and parking improvements. Part of this project is located near a National Register Chumash rock art site as well as other prehistoric resources (November 2016 – March 2018).

Phase I Survey for 28730 Grayfox, City of Malibu, County of Los Angeles

Principal and Project Manager for the completion of an SCCIC and NAHC record search, and a site survey. (January 2018 – February 2018).

Phase I Survey for 11681 Foothill Boulevard, a multiple-unit residential project, Area of Sylmar, County of Los Angeles

Principal and Project Manager for the completion of a SCCIC/NAHC record search, NAHC record search request, and a site survey. This project also included a Native American Tribal Cultural Resource Assessment. (November 2017 – February 2018).

Phase I Survey for a single-family property development along Yerba Buena Road, County of Ventura

Principal and Project Manager for the completion of an SCCIC and NAHC record search, and a site survey. (December 2017 – January 2018).

Phase I Survey for 34134 Mulholland Highway, County of Los Angeles

Principal and Project Manager for the completion of a SCCIC/NAHC record search, NAHC record search request, and a site survey. (December 2017 – January 2018).

Faunal, Osteological, Archaeological, and Fossil Consultation for Citadel Environmental and Turner-Hunt for the Hollywood Park Development Project (new Rams NFL Stadium), City of Inglewood, County of Los Angeles

Osteological and paleontological consultant for Kiewit, Turner, and Citadel for the construction of the new Rams NFL stadium in Ingelwood. Project included discovery and recordation of modern and fossil mammal bones. I was the official on-call cultural/paleo professional for the Rams Stadium project, being called in to deal with modern faunal and Pleistocene fossil remains found during excavation. I worked closely with the construction team to get an expert on site within 24-hours of the discovery, with the goal of getting the discovery assessed and the construction team back to work as soon as possible. (December 2016 – January 2018).

Phase I Survey for 24600 Thousand Peaks Road, City of Calabasas, County of Los Angeles

Principal and Project Manager for the completion of a SCCIC/NAHC record search, NAHC record search request, and a site survey. (November 2017 – January 2018).

Phase I Survey for 28929 Grayfox, City of Malibu, California, County of Los Angeles

Principal and Project Manager for the completion of an SCCIC and NAHC record search, and a site survey. (November 2017 – January 2018).

Manzanita School Phase Ia Survey for a 20.27-acre private school development, Area of Topanga Canyon, County of Los Angeles

Principal and Project Manager for the completion of an SCCIC and NAHC record search, and a site survey. This project also assessed built environment resources, which included early 1900s buildings, early 1900s water control features, culverts, and bridges, and 1950s landscaping elements (May 2017 – January 2018).

Phase I Survey for the 181 to 187 Monterey Road Condominium Project, a small residential development, City of South Pasadena, County of Los Angeles

Principal and Project Manager for the completion of an SCCIC and NAHC record search, and a site survey. (July 2017 – January 2018).

Phase I Survey for the Agoura Village project, a 7.37-acre Commercial Subdivision, City of Agoura Hills, County of Los Angeles County

Principal and Project Manager for the completion of a SCCIC/NAHC record search, NAHC scoping, and a Phase Ia site survey. The Phase Ia survey was followed by a Phase Ib subsurface survey and an updated site form for a previously known prehistoric cultural resource that includes the entire project area. (October 2016 – December 2017).

Phase I survey for 22866 Beckledge Terrace, City of Malibu, County of Los Angeles

Principal and Project Manager for the completion of a SCCIC/NAHC record search, NAHC record search request, and a site survey. (September 2017 – November 2017).

Lynn Road Residential Development Project, Construction Monitoring, Area of Newbury Park, County of Ventura

Principal and Project Manager for the surface collection and construction monitoring for this 10-acre residential construction project. (October 2017 – November 2017.)

Phase II Evaluation of two cultural resources located on the Oakmont project property, City of Agoura Hills, County of Los Angeles

Principal and Project Manager for the evaluation of a prehistoric cultural resource and a 1920s-1980s historic homestead cultural resource. Evaluation tasks included shovel test pits, and a test unit for the prehistoric cultural resource, and detailed mapping and documents research for the historic cultural resource. A combined report for both Oakmont projects was produced for the City. (August 2017 – October 2017).

Pomona Environmental On-Call (Including Cultural Resources), City of Pomona, County of Los Angeles

Envicom successful won inclusion as one of six on-call environmental firms for the City. (October 2014 – October 2017).

Phase I Survey for the Oakmont commercial project, a 5.75-acre development in the City of Agoura Hills, County of Los Angeles

Principal and Project Manager for the completion of NAHC record search, and a Phase Ia site survey. The Phase Ia survey identified two (2) cultural resources; a 1920s historic homestead foundation, and a large prehistoric archaeological site. (August 2017 – October 2017).

Phase I Assessment of the West Hills Crest 37-acre Residential Subdivision in West Hills, City of Los Angeles, County of Los Angeles

Principal and Project Manager for the completion of a SCCIC/NAHC record search and project area site survey. A key issue for this project was the record search being positive for a prehistoric cultural resource within the development area. This resource, CA-LAN-1223, was further investigated with 22 shovel test pits, and evaluated as not being a significant cultural resource. (February 2017 – October 2017).

San Bernardino Cultural, Historic Architecture, and Paleontology On-Call, County of San Bernardino, CA.

Envicom successful won inclusion in the limited on-call pool. (October 2014 – October 2017).

Phase I Survey for 15498 LaPeyre Court, a residential development, City of Moorpark, County of Ventura

The project was actually in the unincorporated area of Ventura County. Principal and Project Manager for the completion of a SCCIC/NAHC record search, NAHC record search request, and a site survey. Project also included coordination with numerous biology tasks. (August 2017 – September 2017).

Canyon View Estates Paleontological Survey, City of Santa Clarita, County of Los Angeles

Principal and Project Manager for this paleontological record search, site survey, and report. (August – September 2017).

North Canyon Ranch 170-acre Residential Subdivision, City of Simi Valley, County of Ventura

Principal and Project Manager for the completion of a SCCIC/NAHC record search and project area site survey. A key issue for this project was a previously disturbed cultural resource within the project area, the destruction of which needed to be addressed in the final report. (May 2017 – August 2017).

Phase I Survey for the 12300 Valley Boulevard Hotel, a commercial development, City of El Monte, County of Los Angeles

Principal and Project Manager for the completion of a SCCIC/NAHC record search, NAHC record search request, and a site survey for this small residential development. (June 2017 – August 2017).

Phase Ia Survey for the Holiday Inn Express Hotel, a commercial development, City of El Monte, County of Los Angeles

Principal and Project Manager for the completion of a SCCIC/NAHC record search, NAHC record search request, and a site survey for this small residential development. (July 2017 – August 2017).

Arcadia Town Homes MND Phase I Cultural Assessment for a multi-unit residential development, City of Arcadia, County of Los Angeles

Principal and Project Manager for the completion of a SCCIC/NAHC record search, NAHC record search request, and a site survey for this multi-unit residential development. (May 2017 – August 2017).

Phase I Survey for 3800 Figueroa, an apartment complex development, City of Los Angeles, County of Los Angeles

Principal and Project Manager for the completion of a SCCIC/NAHC record search, NAHC record search request, and a site survey for apartment complex development. (June 2017 – August 2017).

Phase I Survey for the Copper Canyon Project, a 5-acre residential development, Area of Santa Clarita, county of Los Angeles

Principal and Project Manager for the completion of a SCCIC/NAHC record search, NAHC record search request, and a site survey. Also part of the project was the resurvey of two previously recorded cultural resources within the project boundary. (May 2017 – July 2017).

Phase Ia Survey for the Oneonta Hillside Drive, a residential development, City of South Pasadena, County of Los Angeles

Principal and Project Manager for the completion of an SCCIC and NAHC record search, and a site survey. (May 2017 – July 2017).

Construction Monitoring for Parcel 2058-003-010, Area of Lobo Canyon, County of Los Angeles

Principal and Project Manager for the surface collection and construction monitoring for this single-family residential construction project. (July 2017).

Phase I Survey for the 6625 Bradley Road, a residential development, Area of Somis, County of Ventura

Principal and Project Manager for the completion of a SCCIC/NAHC record search, NAHC record search request, and a site survey for this small residential development. (June 2017 – July 2017).

11172 Santa Paula Road Phase Ia Survey for a 5.5-acre Agricultural property, Area of Ojai, California, County of Ventura

Principal and Project Manager for the completion of a SCCIC/NAHC record search, NAHC record search request, and a site survey. (May 2017 – June 2017).

Pepperdine University Campus Life Project: Updated Cultural Resources Record Search, City of Malibu, County of Los Angeles

Principal and Project Manager for an updated record search and letter report for the Pepperdine Campus Life housing, facilities, and trail development project. This update was part of an amended campus-wide EIR (December 2017 – June 2017).

Pepperdine University Campus Life Project: Phase I survey of new Baseball Field development, City of Malibu, County of Los Angeles

Principal and Project Manager for the addition of the campus baseball field as part of the larger Pepperdine Campus Life housing, facilities, and trail development project. (February 2017 – June 2017).

6658 Reseda Boulevard, Area of Reseda, County of Los Angeles

Principal and Project Manager for a Phase 1 record search for this urban mixed-use project. (March 2017 – May 2017).

Paradise Valley Development Project Environmental Impact Report and Impact Statement, County of Riverside

Author of the cultural section for this EIR for a housing and mixed-use development of over 2200-acres east of Indio, California. Also reviewed original technical documents, and incorporated legal and agency comments. Mitigation measures included the management and monitoring of dozens of cultural resources, sensitive soils, and paleontological resources. (October 2014 – March 2017).

Phase I Cultural Resources Survey for Parcel 2058-003-010, Area of Lobo Canyon, county of Los Angeles

Principal and Project Manager for completion of a Phase I and Army Corps of Engineers permit for the project (ACOE, Los Angeles District). Extensive communications and consultation with the ACOE and SHPO. (July 2016 – March 2017).

Phase I Survey for a 1.33-acre Mixed-Use development, Area of Northridge at the corner of Nordoff and Darby Streets, County of Los Angeles

Principal and Project Manager for the completion of a SCCIC/NAHC record search, NAHC scoping, and a site survey. This project included a built-environment assessment of existing historic structures (October 2016 – February 2017).

Phase I Survey for a 0.5-acre Residential Subdivision in the City of Los Angeles at the end of Crisler Way, County of Los Angeles County

Principal and Project Manager for the completion of a SCCIC/NAHC record search, NAHC record search request, and a site survey. (October 2016 – February 2017).

Deer Lake Residential Development Cultural Monitoring, Area of Porter Ranch, County of Los Angeles

Principal and Project Manager for the cultural monitoring of eight cultural resources within the project development boundary. This project includes the writing of a final Monitoring Report. (May 2016 – February 2017).

Phase I Survey for a 0.5-acre Mixed Use Development Project on Camarillo Avenue, Area of North Hollywood, County of Los Angeles

Principal and Cultural Project Manager for the completion of a SCCIC/NAHC record search, NAHC scoping, and a site survey. This project also included a historic built environment assessment (November 2016 – January 2017).

Phase I Survey for a 14-acre Residential Subdivision, Area of Woodland Hills, County of Los Angeles

Principal and Project Manager for the completion of a SCCIC/NAHC record search, NAHC scoping, and a site survey. This project involved consultation with the City of Los Angeles on AB-52 (July 2016 – January 2017).

Lynn Road Residential Development Project, Area of Newbury Park, County of Ventura

Principal and Project Manager for the Phase Ia and Phase Ib survey of this 10-acre parcel. A large prehistoric Middle-Period seasonal settlement was discovered, which required subsurface testing and extensive mapping of surface hearths, yucca roasters, and dwelling features. Project included public testimony before the Thousand Oaks Planning Commission. (September 2015 – December 2016).

Pepperdine University Campus Life Project: Debris Basin Excavation Cultural and Paleontological Resource Monitoring, City of Malibu, County of Los Angeles

Principal and Project Manager for cultural resource monitoring of Phase I of the Pepperdine Campus Life housing, facilities, and trail development project. (August – October 2016).

Trail Construction Monitoring, Conrad N. Hilton Foundation, County of Los Angeles

Principal and Project Manager for the development of a pedestrian foot trail loop between the Foundation and the nearby "Ridge" professional building, including the excavation of dozens of shovel test pits and a major surface collection of prehistoric artifacts, including trail construction monitoring. (August – September 2016).

Conrad N. Hilton Foundation Trail Project Cultural Assessment, City of Agoura Hills, County of Los Angeles

Project Manager for the Phase 1b survey of a new pedestrian access trail linking off-site office space with the Foundation campus buildings. Project included the excavation of over 30 shovel test pits and the recording of numerous prehistoric features. (May – August 2016).

32640 Pacific Coast Highway Phase I Cultural Resource Survey, City of Santa Monica, County of Los Angeles

Principal and Project Manager for the Phase I cultural resource assessment of a ravine rehabilitation project between the Pacific Coast Highway and the Pacific Ocean. Included a SCCIC/NAHC record search, site survey, and technical report. (May 2015 – June 2016).

CA-LAN-320 Project Compliance Plans, and Native American and Lead Agency Consultation, City of Agoura Hills, County of Los Angeles

Tasks included the authoring of a cultural resource Treatment and Data Recovery Plan, a cultural resource Management Plan, and a Curation Plan for all artifacts, as well as the organization of meetings with the Chumash Tribal Groups and the Lead Agency. (April 2015 – June 2016).

Canyon Park Homes, Area of Sylmar, County of Los Angeles

Native American Tribal Group consultation and pre-construction monitoring for this 80-acre residential property development, as well as EIR section writing. (February 2015 – March 2016).

Oakwood Schools Built Environment and Archaeological Assessment, Area of North Hollywood, County of Los Angeles

Principal and Project Manager for the Phase I cultural resource assessment of the project property prior to the construction of a new middle and high school campus within the North Hollywood area. Challenging tasks included Native American ghost writing for the lead agency (City of Los Angeles) and addressing a modern human cremation garden in the report (November 2015 – February 2016).

Floral Canyon Residential Development Cultural Resource Survey, Area of North Hollywood, County of Los Angeles

Principal and Project Manager for this Phase Ia cultural resource survey of an 8-acrea property. The cultural resource parts of the CEQA checklist were also completed. (September – December 2015).

Hilton Property Phase 3 Construction Site Phase Ib Cultural Resources Survey, City of Agoura Hills, County of Los Angeles County

Principal and Project manager for this extensive preliminary survey project, including excavation of over 200 shovel test pits and 4 test units to define the boundaries of a prehistoric ceremonial site of over 80-acres in size, used by Chumash Native Americans from 400 A.D. to the late 1700s. Recordation of over 190-features and 11,500 artifacts. Second phase will include data recovery tasks and an amended Environmental Impact Report. (February 2014 – March 20 15).

Blessed Theresa Church Construction, City of Winchester, County of Riverside

Cultural consultation including cultural/paleo monitoring issues. (April 2014 – July 2014).

Village at Los Carneros, City of Goleta, County of Santa Barbara

Reviewed all previous technical studies and wrote part of the cultural sections of the Environmental Impact Report for this residential house development project. (March 2014 – April 2014).

3121 Old Topanga Canyon Road Phase I Survey and Literature Search, City of Calabasas, County of Los Angeles

Principal and Project manager for this residential development project, including NAHC letters, literature review, site survey, paleontological survey and literature search, final technical report, and the writing of the cultural resources section of the Environmental Impact Report. (March 2014 – April 2014).

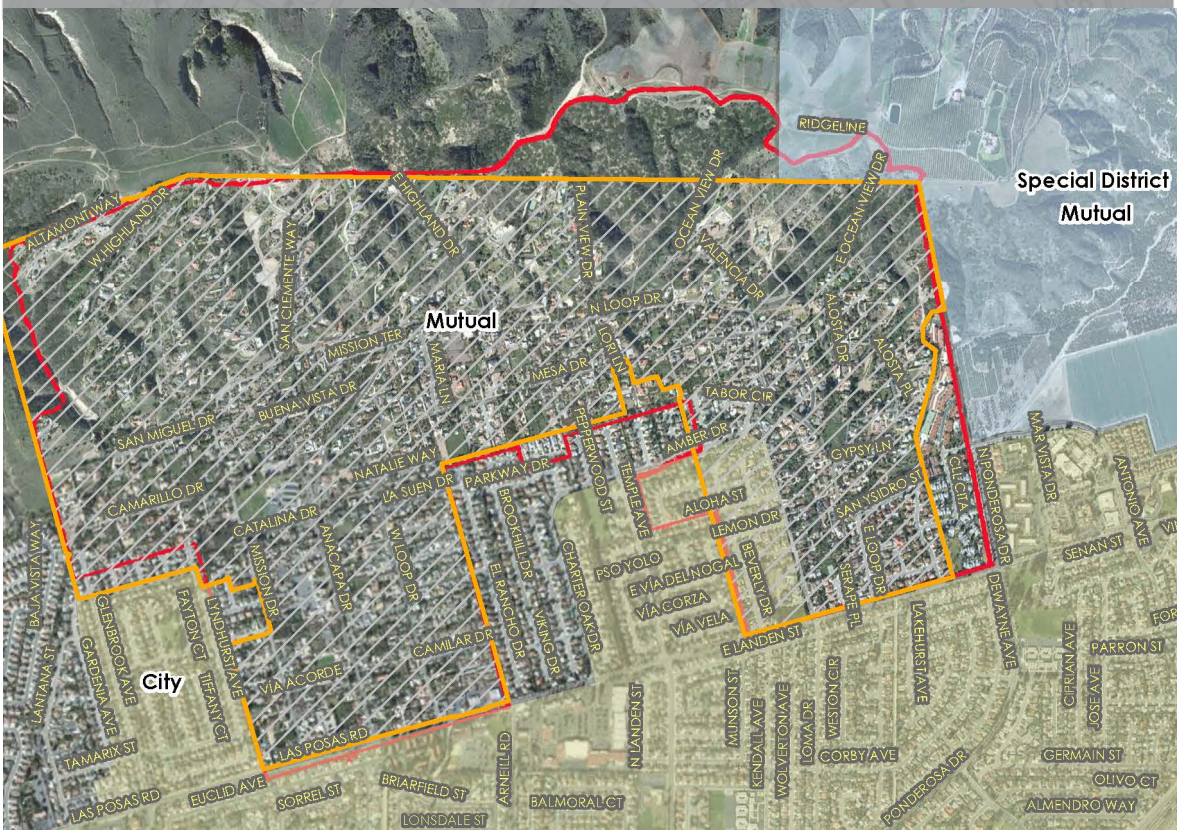
JENSEN DESIGN & SURVEY, INC

1672 Donlon Street
Ventura, CA 93003
Local 805.654.6977
Fax 805.654.6979
www.jdscivil.com

DRAINAGE REPORT

JAKRAN SALES AND RETAIL PHASE 2

for: **JAKE ROLLS**



DRAINAGE REPORT

JAKRAN SALES AND RETAIL PHASE 2

APN: 090-0-110-300

11351 County Dr.
Saticoy, CA 93004

prepared for:
JAKE ROLLS
11351 County Road
Ventura 93004

prepared by:
Jensen Design & Survey, Inc.
1672 Donlon St.
Ventura, CA 93003

Kinsey Hensley

February 5, 2024

TABLE OF CONTENTS

APPENDICES

1.0 PROJECT OVERVIEW

1.1. PROJECT DESCRIPTION & LOCATION

Jakran Sales and Retail is proposing a new warehouse building (15,000 SF), parking improvements (28,462 SF), landscaping (23,881 SF), and open storage (37,500 SF) as part of the second phase of the development within the parcel. The proposed project is located at 11351 County Drive, Saticoy, CA within the unincorporated area of Ventura County (County) boundaries. The project site is bordered by: the Franklin-Wasson Barranca to the north, Ampola Avenue to the south, a developed parcel to the east, and Rosal Lane to the west.

The parcel is split into three phases of development. The first phase of development was completed in 2008 (G.P. No. 10011). The first phase consisted of a warehouse, parking improvements, and drainage improvements including a percolation/detention basin. All improvements incorporated into the original development accommodate the future improvements and developed condition of Phase 2. The existing conditions of the entire 9.32 acre parcel and design of the detention basin are defined in the Hydrology Report dated June 13, 2007. Phase 2 is the middle 2.42 acres of the 9.32 acre parcel (APN: 090-0-110-300). Phase 3, the eastern 3.67 acres of the parcel adjacent to Rosal Lane, will remain undeveloped. This drainage study will only focus on the Phase 2 development.

1.2. SITE CONDITIONS

The site for phase two is currently compacted dirt and used a temporary vehicle loading/parking area.

1.2.1. Existing Drainage Patterns

The 2.30 acre area for Phase 2 is presently undeveloped and predominantly devoid of vegetation. The ground is compacted dirt and limits natural infiltration due to the vehicle loading. Existing drainage patterns generally drain in the southeastern direction. A vegetated swale with an infiltration trench for treatment of a portion of Phase 1 development sloping south on the east side of the future Phase 2 development was constructed during Phase 1 construction. A catch basin and 24” storm drain pipe was installed at the end of the swale at the southeast corner of the Phase 2 development. The storm drain discharges into a detention basin (constructed during Phase 1), then to the Franklin-Wasson Channel, and ultimately to the Santa Clara River. The Phase 3 (drainage area P5) stormwater runs onto the Phase 2 project area.

1.2.2. Proposed Drainage Patterns

The runoff patterns from the developed condition will maintain the existing drainage patterns and low points. It consists of an onsite storm drain system, vegetated swales and a CDS unit for pretreatment, and underground infiltration chambers for treatment. The Phase 2 area will be split into three drainage areas and include a portion of the Phase 1 drainage area (1.11 acres) for treatment. The drainage area limits and stormwater treatment devices are depicted in Exhibit B.

The southwestern drainage (P4A, 0.83 acres) runoff will overland flow towards a 100-foot-long vegetated swale for pretreatment on the western perimeter of the project area. A catch basin and storm drain will be installed at the end of the swale to discharge runoff into the underground infiltration chamber.

The northern drainage area (P4B, 1.14 acres) runoff will overland flow to a 100-foot-long vegetated swale for pretreatment on the eastern edge of the site. There is a catch basin and storm drain at the end of the swale to discharge runoff into the underground infiltration chamber.

The southern drainage area (P4C, 0.23 acres) runoff will overland flow into a new catch basin and storm drain. The storm drain will convey runoff into a Contech CDS unit for pretreatment and into the underground infiltration chamber.

The 1.11-acre southwestern drainage area of Phase 1 includes 0.06 acres of Phase 2 area, for a total drainage area of 1.17 acres (P9). The runoff will overland flow into a new catch basin and storm drain located in the southeastern area of Phase 2. The storm drain will convey runoff into a Contech CDS unit for pretreatment and into the underground infiltration chamber.

Overflow from the infiltration chamber will connect to the existing 24” storm drain pipe for Phase 1, which discharges into the existing detention basin. This is the drainage discharge point for all drainage areas contributing runoff into the infiltration chambers (P4A, P4B, P4C, and P9).

Stormwater runoff from undeveloped Phase 3 portion of the property (P5) will be collected into a new catch basin and storm drain pipe. The storm drain pipe will run easterly along the frontage of Phase 2 and connect to the existing 24” storm drain system, ultimately discharging runoff into the detention basin.

1.3. REPORT OBJECTIVE

The intent of this report is to meet the current County of Ventura requirements. This report will show the onsite storm drain system is properly sized and improve the existing drainage conditions. The site will meet detention and stormwater treatment requirements.

2.0 DESIGN METHODOLOGY

2.1. EXISTING ON-SITE FLOWS

Existing on-site flows for the entire tributary area was calculated in the Phase I Report, dated June 13, 2007. The Phase I report uses rainfall zone K, a legacy rain zone. The updated rainfall zone is SCR3. The updated rainfall zone SCR3 is less conservative than the legacy rainfall zone K. This report uses the original Phase I Report for consistency with the overall development. The undeveloped site was broken into 10 drainage zones labeled E1-E10. The longest time of concentration for the entire site is used for each storm event. The time of concentration for the site for the 10, 50, and 100-year storm events was 15 min, 12 min, and 10 min, respectively. The entire tributary area is 13.19 acres. The Ventura County NRCS soil type is 4. The existing drainage is summarized in Exhibit A. The 10, 50, and 100-year peak discharges were calculated for the site using VCRat:

Table 1: Existing Site Flows

Drainage Area	Area (ac)	Q10 (cfs)	Q50 (cfs)	Q100 (cfs)
E1	0.77	1.33	1.69	2.34
E2	3.07	1.02	6.75	9.33
E3	1.32	4.08	2.90	4.01
E4	3.64	1.76	8.01	11.06
E5	0.54	4.84	1.19	1.64
Total (Onsite)	9.34	0.72	20.55	28.39
E6	1.72	12.42	3.78	5.23
E7	0.20	2.29	0.44	0.61
E8	1.76	0.27	3.87	5.35
E9	0.03	2.34	0.07	0.09
E10	0.14	0.04	0.31	0.43
Total =	13.19	**17.49**	**29.08**	**40.12**

Storm Event (Years)	Time of Concentration	Intensity (in/hr)		C	Runoff Q (cfs)
10	15		2.04	0.67	18.04
25	13		2.43	0.72	23.09
50	12		2.9	0.77	29.48

2.2. PROPOSED ON-SITE FLOWS

The proposed condition will use the same rainfall zone as the existing condition. The time of concentration for the developed condition assumes all subareas are for future project build-out.

The proposed Phase 2 project is not increasing impervious area compared to the original 2007 assumptions required for detention. This Phase 2 project will not require any detention or analysis of the existing storm drain as that was installed as a private system and accounted for future development. The flow rates are shown as reference.

This Phase 2 project will however show the proposed drainage areas related to treatment and pretreatment in order to be consistent with the latest County MS4 standards. The table below reflects the drainage areas on Exhibit B.

Table 2: Proposed Site Flows

Drainage Area	Area (ac)	Q10 (cfs)	Q50 (cfs)	Q100 (cfs)
Unit	1.00	1.69	2.78	3.17
P4A	0.83	1.41	2.32	2.65
P4B	1.14	1.93	3.17	3.62
P4C	0.23	0.39	0.64	0.73
P9	1.11	1.88	3.09	3.52
P5 (Dev. Future)	3.67	6.20	10.20	11.63
P8 (Dev. Future)	1.01	1.71	2.81	3.20

3.0 Q100 PAD PROTECTION

The site is in Zone B according to the Federal Emergency Management Agency (FEMA) map. The site grading directs runoff away from all buildings.

4.0 DETENTION

Phase 2 drainage will convey runoff to a detention basin that currently exists in the Phase 1 area. Phase 3 drainage area will collect and convey runoff to the existing detention basin in Phase 1. The detention basin was designed for a total drainage area of 13.19 acres.

5.0 STORMWATER TREATMENT MEASURES

Stormwater treatment measures were designed in accordance with the Ventura County 2011 Technical Guidance Manual. Supporting documents can be found in the appendices.

Site field tests were conducted to determine the feasibility of infiltration treatment. The site consisted of native alluvial soils, gravel, silty sand, and sand. Groundwater was not encountered in any of the borings excavated during site exploration. Percolation tests revealed that the infiltration rate at the proposed underground infiltration chamber location was 2.5 in/hr.

The site is required to provide treatment for stormwater runoff. The volume-based treatment BMP selected for the Phase 2 project is an underground infiltration chamber (3,240 SF). Overland surface runoff will undergo pretreatment via 100-foot length vegetated swale or Contech CDS unit prior to entering this BMP. The underground infiltration chamber will service drainage areas P4A, P4B, P4C, and P9 for a total drainage area of 3.37 acres. The project will consist of 86.65% impervious area, which is 2.92 acres of the 3.37-acre drainage area. The allowable effective impervious area (EIA) is 0.17 acres. The required impervious area to be retained (A_{retain}) is 2.75 acres, and the required volume to be retained (SQDV) is 0.163 acre-feet (7,116.4 cubic feet). The infiltration BMP is designed to meet MS4 post-construction requirements.

6.0 CONCLUSIONS

The drainage system for this project is designed to meet the Ventura County 2011 Technical Guidance Manual standards. The building pad elevation is protected from the 100-year storm event. Pre-treatment is provided using vegetated swales and a Contech CDS unit. Primary treatment is provided using underground infiltration chambers with an overflow system connected to the existing 24” storm drain line.

7.0 APPENDICES

APPENDIX A: HYDROLOGY EXHIBITS

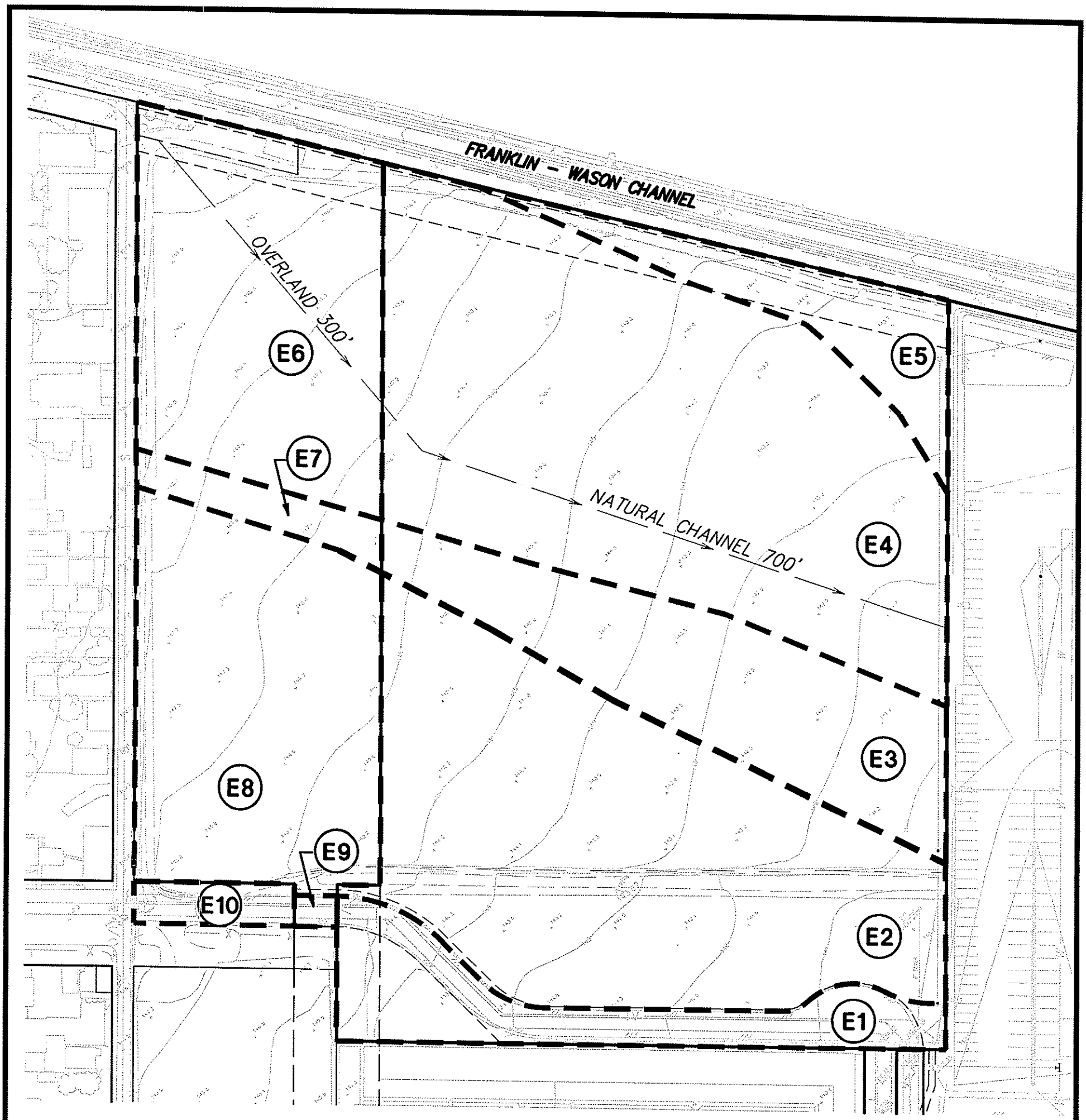
APPENDIX B: VENTURA COUNTY STORMWATER FORMS

APPENDIX C: STORMWATER TREATMENT CALCULATIONS

APPENDIX D: CONTECH CDS AND INFILTRATION BASIN PRELIMINARY SIZING

APPENDIX E: SOILS PERCOLATION TESTING

APPENDIX F: HISTORICAL REPORT FOR REFERENCE



EXISTING DRAINAGE

SUBAREA	ACRE	EXIST. Q_{10} (cfs)	EXIST. Q_{50} (cfs)	EXIST. Q_{100} (cfs)
UNIT	1.0	1.33	2.20	3.04
E1	0.77	1.02	1.69	2.34
E2	3.07	4.08	6.75	9.33
E3	1.32	1.76	2.90	4.01
E4	3.64	4.84	8.01	11.06
E5	0.54	0.72	1.19	1.64
TOTAL (ONSITE)	9.34	12.42	20.55	28.39
E6	1.72	2.29	3.78	5.23
E7	0.20	0.27	0.44	0.61
E8	1.76	2.34	3.87	5.35
E9	0.03	0.04	0.07	0.09
E10	0.14	0.19	0.31	0.43
TOTAL EXISTING	13.19	17.49	29.08	40.12

NOTE: UNIT FLOW RATES FOR EXISTING CONDITIONS WERE CALCULATED USING VENTURA COUNTY TIME OF CONCENTRATION CALCULATOR V2.5 FOR EACH STORM EVENT. THE RUNOFF FOR THE SAMPLE AREA WAS CALCULATED USING THE RATIONAL METHOD (Q=CIA).

100' 0' 200'

SCALE: 1"=100'

JENSEN DESIGN & SURVEY, INC
www.jdscivil.com
1672 DONLON STREET
VENTURA, CALIF. 93003
PHONE 805/654-6977
FAX 805/654-6979

EXHIBIT A

EXISTING CONDITION

SHEET 1 OF 1

Sep 04, 2008

J:\ROL23964\Eng\Exhibits\HYDRO\3964_EXIST-june.dwg Sep 04, 2008, 10:17am kpascoe

FRANKLIN – WASON CHANNEL

PHASE III (FUTURE)

PHASE II

PHASE I (EXISTING)

P4B

P4A

P4C

P5

P9

P8

CONCRETE BLOCK MASONRY WALL

TOP SLOPE

UNPAVED ROAD

DIRT ROAD

EX. ASPHALT/GRAVEL TRANSITION

PROPOSED EQUIPMENT STORAGE BUILDING

INFILTRATION CHAMBERS (3240 SQ.FT.)

100' PRETREATMENT SWALE A

100' PRETREATMENT SWALE B

18"X18" CATCH BASIN AND 6" PVC CONNECTED TO CDS UNIT

18"X18" CATCH BASIN AND 6" PVC CONNECTED TO INFILTRATION CHAMBERS

18"X18" CATCH BASIN AND 6" PVC CONNECTED TO INFILTRATION CHAMBERS

18"X18" CATCH BASIN AND 6" PVC CONNECTED TO CDS UNIT

OVERFLOW CONNECTED TO EXISTING STORM DRAIN

P5 CATCH BASIN AND 6" PVC CONNECTED TO EXISTING 24" STORM DRAIN SYSTEM

P5 DRAINAGE CONNECTION

CDS UNIT WITH 6" PVC CONNECTED TO INFILTRATION CHAMBERS

NOTE: UNIT FLOW RATES FOR PROPOSED CONDITIONS WERE CALCULATED USING VENTURA COUNTY WATERSHED PROTECTION DISTRICTS TIME OF CONCENTRATION CALCULATION V2.5. THE RATIONAL FORMULA (Q=CIA)WAS APPLIED TO SAMPLE SUB-AREA P5&P4. THIS UNIT FLOW RATE WAS THEN PRORATED TO ATTAIN RUNOFF VALUES FOR THE REST OF THE DEVELOPED SITE.

PROPOSED DRAINAGE SUBAREA

SUBAREA	ACRE	PROPOSED Q_{10} (cfs)	PROPOSED Q_{50} (cfs)	PROPOSED Q_{100} (cfs)
UNIT	1.00	1.69	2.78	3.17
P4A	0.83	1.41	2.32	2.65
P4B	1.14	1.93	3.17	3.62
P4C	0.23	0.39	0.64	0.73
P9	1.17	1.98	3.25	3.71

LEGEND

- LIMITS OF DRAINAGE AREA
- P4 — DRAINAGE AREA
- PATH OF TRAVEL (Tc)
- TREATMENT AREA
- FLOW AREA DIRECTION
- Q100 OVERLAND FLOW PATH

30' 0' 60'

SCALE: 1"=60'

JENSEN DESIGN & SURVEY, INC
www.jdscivil.com
1672 DONLON STREET
VENTURA, CALIF. 93003
PHONE 805/654-6977
FAX 805/654-6979

EXHIBIT B

PHASE II DRAINAGE AND TREATMENT

SHEET 1 OF 1

Feb 05, 2024

J: \ROL23964\Eng\Exhibits\HYDRO\PHASE 2\3964_PROP-phase 2_ONSITE.dwg Feb 05, 2024, 11:49am ebihis

VENTURA COUNTYWIDE STORMWATER QUALITY PROGRAM
POST-CONSTRUCTION STORMWATER MANAGEMENT PLAN (PCSMP)
FOR
Jakran Sales and Retail Phase 2
PARCEL #: 090-0-110-300

Project Name: Jakran Sales and Retail Phase 2

Preparation/Revision Date: **1/30/2024**

Prepared for:

Name of Owner/Developer:	Jake Rolls
Stress Address:	11351 County Road
City, State, Zip Code:	Ventura, CA, 93004
Telephone:	805-216-6026

Prepared by:

Name and Title of Preparer:	Kinsey Hensley
Company Name:	Jensen Design and Survey, Inc.
Stress Address:	1672 Donlon Street
City, State, Zip Code:	Ventura, CA, 93003
Telephone:	805-633-2231

I hereby certify that the information provided in this Application is correct.

Application Prepared by: Kinsey Hensley, P.E. Jensen Design & Survey Inc.
Print Name and Firm

Signed
Signature of Project Engineer in the Firm Named Above

Title

Affix Professional registration stamp of the person named above with signature and expiration date

Project Name: Jakran Sales and Retail Phase 2

STEP 1: DETERMINE PROJECT APPLICABILITY

Instructions:
For new development projects, answer yes, no, or NA to questions (1) - (10) below.
For redevelopment projects , answer yes, no, or NA to questions (11) - (13) below.

NEW DEVELOPMENT PROJECTS	
Does the new development project fall within categories (1) - (10) below?	
Project Type and/or Characteristics	**Y/N/NA**
1) Development projects equal to 1 acre or greater of disturbed area that adds more than 10,000 square feet of impervious surface area **→go to Step 2**	Y
2) Industrial parks with 10,000 square feet or more of total altered surface area **→go to Step 2**	N/A
3) Commercial strip malls with 10,000 square feet or more of impervious surface area **→go to Step 2**	N/A
4) Retail gasoline outlets with 5,000 square feet or more of total altered surface area **→go to Step 2**	N/A
5) Restaurants (Standard Industrial Classification (SIC) of 5812) with 5,000 square feet or more of total altered surface area **→go to Step 2**	N/A
6) Parking lots with 5,000 square feet or more of impervious surface area, or with 25 or more parking spaces **→go to Step 2**	Y
7) Streets, roads, highways, and freeway construction of 10,000 square feet or more of impervious surface area **→ go to Roadway Projects**	N/A
8) Automotive service facilities (Standard Industrial Classification (SIC) of 5013, 5014, 5511, 5541, 7532-7534 and 7536-7539) of 5,000 square feet or more of total altered surface area **→go to Step 2**	N/A
9) Projects located in or directly adjacent to, or discharging directly to an Environmentally Sensitive Area (ESA), where the development will: a. Discharge stormwater runoff that is likely to impact a sensitive biological species or habitat; and b. Create 2,500 square feet or more of impervious surface area **→go to Step 2**	N/A
10) Single-family hillside homes (see Section 2 of the TGM for specific requirements) **→go to SF Hillside**	N/A

Project Name: Jakran Sales and Retail Phase 2

PROJECT APPLICABILITY, CONT.

REDEVELOPMENT PROJECTS	
For redevelopment projects that fall within categories (1) through (9) above, and that conduct land-disturbing activities that result in the creation, or addition, or replacement of 5,000 square feet or more of impervious surface area on an already developed site, answer questions 11-13 below.Existing single-family dwelling and accessory structures are exempt from redevelopment projects unless such projects create, add, or replace 10,000 square feet of impervious surface area.	
Project Type and/or Characteristics	**Y/N/NA**
11) Projects where redevelopment results in an alteration to more than fifty percent of impervious surfaces of a previously existing development, and the existing development was not subject to the post development stormwater quality control requirements of Board Order 00-108, these projects must mitigate the entire redevelopment project area **→go to Step 2**	N/A
12) Projects where redevelopment results in an alteration to more than fifty percent of impervious surfaces of a previously existing development, and the existing development was subject to the post development stormwater quality control requirements of Board Order 00-108, the project must mitigate only the altered portion of the redevelopment project area and not the entire project area **→go to Step 2**	N/A
13) Projects where redevelopment results in an alteration of less than fifty percent of impervious surfaces of a previously existing development these projects must mitigate only the altered portion of the redevelopment project area and not the entire project area **→go to Step 2**	N/A

Project Name: Jakran Sales and Retail Phase 2

STEP 2: ASSESS SITE CONDITIONS

Provide an assessment of the project site using the following tables

New Development Project General Characteristics

General Project Characteristics	Area (acres)
Total Project Site Area	3.37
Total Disturbed Area	2.28
Total Existing (Pre-Project) Impervious Area	0.84
Post-Project Impervious Area [1]	2.92
Area of Green Roof (ET-1) [1]	0.00
Area Draining to Hydrologic Source Controls (ET-2) [1]	0.00
Revised Post-Project Impervious Area	2.92
Project Imperviousness (%)	86.65%

Redevelopment Project General Characteristics

General Project Characteristics	Area (acres)
Total Project Site Area	
Total Altered Area [6]	
Total Existing (Pre-Project) Impervious Area	
Was existing (pre-project) impervious area subject to post-development stormwater quality control requirements? [2]	
Amount of Existing Impervious Area Altered [3]	
Amount of Impervious Area Added	
% Alteration of Existing Impervious Area [4]	N/A
Post-Project Impervious Area (Impervious Area to be Mitigated) [1], [4]	0.00
Area of Green Roof (ET-1) [1]	
Area Draining to Hydrologic Source Controls (ET-2) [1]	
Revised Post-Project Impervious Area	0.00
Project Imperviousness (%) [5]	

Project Name: Jakran Sales and Retail Phase 2

Project Description

Briefly describe project:
This project is proposing a new warehouse building, parking improvements, landscaping, and open storage as part of the second phase of development within the parcel.
Describe current and proposed zoning and land use designation:
Reference document: Conditions of Approval for LU09-0012. The project lies in an M-1 zoned parcel. There have been no known previous uses other than agriculture. The permitted proposed land use is granted for only buildings and structures, parking areas, landscape areas, roadways, driveways, fences, walls and signs.
Describe topography of project area. Identify low and high points and the location of steep slopes (provide a range of grades):
The 2.30-acre area for Phase 2 is currently undeveloped and predominantly devoid of vegetation. The existing drainage patterns generally drain in the southeastern direction. The highest point in the northwest corner of the property is approximately 149.25'. The lowest point in the southeastern corner of the property is approximately 141.00'. The proposed project area will maintain existing drainage patterns and low points.
Describe the site's soil types (A, B, C, D) and geological conditions
Native, younger alluvial soils and gravel. Alluvium in the west primarily clayey soils, and primarily silty sand and sand in the east. Soil type *Attach soil type information*

Project Name: Jakran Sales and Retail Phase 2

Project Description, cont'd

Describe the site's groundwater conditions (e.g. depth to seasonal high groundwater):
Geotechnical field explorations did not encounter any groundwater in any of the borings excavated. The historical high groundwater is about 10 feet (Seismic Hazard Zone Report for the Saticoy area - California Geological Survey, CGS, 2003a).

Is there offsite drainage on the site? If so, identify the location(s) and source(s) of offsite drainage and the volume of water running onto the site:
There is no offsite drainage on the site.
Describe any existing utilities within the project area that would limit the possible locations of certain BMPs:
There are no existing utilities within the project area that would limit the possible locations of certain BMP's.
Describe any environmentally sensitive areas (e.g. riparian areas, wetlands) within the project area:
There are no environmentally sensitive areas within the project area.

Geotechnical considerations:	
Does the site contain any of the following characteristics:	**Y/N/NA**
Collapsible Soil	N
Expansion Soil	Y
Potential for seismically-inducted soil liquefaction	Y
Additional considerations:	
Attach relevant geotechnical information	

Project Name: Jakran Sales and Retail Phase 2

STEP 2: POLLUTANTS OF CONCERN

Pollutants of Concern (See Section 3.3 of TGM)

Activity / Potential Land Uses	Potential Pollutant*								
	Sediment	Nutrients	Metals	Pesticides	Oxygen Demanding Substances	Toxic Organics	Oil & Grease	Bacteria	Trash and Debris
Parking Lots	X		X		X	X			X
Landscaping		X		X					
Warehouse building	X		X			X			X

*Denote potential pollutant with "x"

Receiving Waterbody Listings (see Section 3.3. of TGM)

Receiving Waterbody (watershed indicated in parentheses)	**Constituent Group [7]**	**Distance to Project (ft)**
Santa Clara River (Santa Clara)	Salts, Bacteria, Nutrients, Toxicity	2112.00
Other [fill in if necessary]		

[1] Applicant should enter post-project impervious cover prior to accounting for green roof and hydrologic source control (HSC) credits. Volume reduction provided by green roofs and HSCs are accounted for implicitly in the sizing calcuations for BMPs by assuming the roof area covered by a green roof or the area draining to a HSC is pervious rather than impervious when caluclating the runoff coefficient for the site. Green roofs and HSCs are not required to be considered for all project locations and types. In order to obtain credit, Green Roofs and HSCs must be designed as specified in the TGM. Additional detail on Green Roofs (ET-1) and HSCs (ET-2) can be found in Section 6 of the TGM.

[2] Land-disturbing activity that results in the creation or addition or replacement of less than 5,000 square feet of impervious surface area on an already developed site, or that results in a decrease in impervious area which was subject to the post development stormwater quality control requirements of Board Order 00-108, is not subject to mitigation unless so directed by the local permitting agency

[3] Redevelopment does not include routine maintenance activities that are conducted to maintain the original line and grade, hydraulic capacity, or original purpose of the facility or emergency redevelopment activity required to protect public health and safety. Impervious surface replacement, such as the reconstruction of parking lots and roadways, that does not disturb additional area and maintains the original grade and alignment, is considered a routine maintenance activity. Agencies' flood control, drainage, and wet utilities projects that maintain original line and grade or hydraulic capacity are considered routine maintenance. Redevelopment also does not include the repaving of existing roads to maintain original line and grade.

[4] "% Alteration of Existing Impervious Area" determines the 50% threshold which is key in determining portion of site that must comply with post-construction requirements - see Step 1 redevelopment categories for more detail. The amount of "Post Project Impervious Area" that must adhere to post-construction requirements is dependant on 50% threshold

[5] "Project Imperviousness" is calculated using the "Total Project Area" except when redevelopment projects that must mitigate only the altered portion of the redevelopment project area. In this case, the "Total Disturbed Area" is used to calculate "Project Imperviousness"

[6] For the purposes of this calculation, Total Altered Area shall mean any area that is altered as a result of land disturbance, such as clearing, grading, grubbing, and excavation. This excludes areas used exclusively for temporary stockpiling.

[7] If a waterbody is listed for "toxicity" and the cause and/or contribution to toxicity is known, then the consituent group known to contribute to toxicity are listed here (in lieu of listing "toxicity")

Project Name: Jakran Sales and Retail Phase 2

STEP 3: APPLY SITE DESIGN PRINCIPLES AND TECHNIQUES

Provide a brief description of site design principles and techniques included within the proposed project site.

Site Design Measures [1]	Included? Y/N/NA	Brief Description of the Site Design Measure
Site Planning	Y	Designing infiltration chamber, pretreatment, and stormwater overflow measure.
Protect and Restore Natural Areas	N	
Minimize Land Disturbance	N	
Minimize Impervious Cover	N	
Apply LID at Various Scales	Y	Designing swales for pretreatment and infiltration chamber.
Implement Integrated Water Resource Management Practices	Y	Providing low flow irrigation system.

[1] Refer to Section 4.2 - 4.7 of the TGM for applicable Design Criteria.

Project Name: Jakran Sales and Retail Phase 2

STEP 4: APPLY SOURCE CONTROL MEASURES

Provide a brief description of the source control measures included in the proposed project site.

Site-Specific Source Control Measures[1]	Included? Y/N/NA	Brief Description of the Source Control Measure
S-1: Storm Drain Message and Signage	Y	
S-2: Outdoor Material Storage Area Design	N	
S-3: Outdoor Trash Storage and Waste Handling Area Design	Y	Proposing trash enclosure with roof.
S-4: Outdoor Loading/Unloading Dock Area Design	N	
S-5: Outdoor Repair/Maintenance Bay Design	N/A	
S-6: Outdoor Vehicle /Equipment/ Accessory Washing Area Design	N/A	
S-7: Fueling Area Design	N/A	
S-8: Proof of Control Measure Maintenance	Y	Providing Operation and Maintenance Plan.

[1] Refer to Fact Sheets in Section 5 of the TGM for detailed information and design criteria

Project Name: Jakran Sales and Retail Phase 2

STEP 5: APPLY BMPS TO REDUCE EIA TO <=5%

New development and redevelopment projects (Categories 1-6, 8, and 9) must reduce EIA to <=5%

Step 5a: Calculate Allowable EIA

EIA is defined as impervious area that is hydrologically connected via sheet flow over a hardened conveyance or impervious surface without any intervening medium to mitigate flow volume.

The allowable "EIA" for a project is calculated as:

$$EIA_{allowable} = (A_{project})*(\%_{allowable}) \quad \text{Equation 2-1}$$

Where:

$EIA_{allowable}$ = The maximum impervious area from which runoff can be treated and discharged offsite (and not retained onsite) [acres]

$A_{project}$ = The total project area [acres] [1]

$\%_{allowable}$ = 5 percent

Input:		**Units**
$A_{project}$ [1]	3.37	Acres
$\%_{allowable}$	5.00%	Percent
$EIA_{allowable}$	**0.17**	Acres

Step 5b: Calculate Impervious Area to be Retained

The impervious area from which runoff must be retained onsite is the total impervious area minus the EIA allowable, which should be calculated as follows:

$$A_{retain} = TIA - EIA_{allowable} = (IMP*A_{project}) - EIA_{allowable} \quad \text{Equation 2-2}$$

Where:

A_{retain} = the drainage area from which runoff must be retained [acres]

TIA = total impervious area [acres]

IMP = imperviousness of project area (%)

Input:		**Units**
Imperviousness	86.65%	
$A_{project}$ [1]	3.37	Acres
$EIA_{allowable}$	0.17	Acres
A_{retain}	**2.75**	Acres

Project Name: Jakran Sales and Retail Phase 2

BMPS TO REDUCE EIA TO <=5%, CONT.

Step 5c: Calculate the Volume to be Retained (SQDV)

The runoff volume that is to be retained onsite should be calculated using Equation 2-3 below:

$$V_{retain} = C*(0.75/12)*A_{retain}$$ Equation 2-3

Where:

V_{retain} = The stormwater quality design volume (SQDV) that must be retained onsite [ac-ft]

C = runoff coefficient (equals 0.95 for impervious surfaces)

Input:		**Units**
C	0.95	
A_{retain}	2.75	Acres
V_{retain}	0.163	ac-ft
	53,234.8	gallons
	7,116.4	cu.ft.

Continue to Step 5d

Project Name: Jakran Sales and Retail Phase 2

STEP 5d: SELECT RETENTION BMPs

Select and size Retention BMPs to meet the 5% EIA Requirement. Retention BMPs include INF1-6, RWH-1, and ET 1 and 2. See TGM, Section 6 for more information.

Retention BMPs	Included? Y/N	Drainage Area Retained (acres) [2]	Drainage Area Runoff Coefficient	Volume Retained (SQDV) (ac-ft) [1],[2]	If not applicable, state brief reason
Infiltration BMPs					
INF-1: Infiltration Basin	Y	2.75	0.95	0.163	
INF-2: Infiltration Trench	N		0.95		
INF-3: Bioretention	N		0.95		
INF-4: Drywell	N		0.95		
INF-5: Permeable Pavement	N		0.95		
INF-6: Proprietary Infiltration	N		0.95		
INF-7: Bioinfiltration	N		0.95		
Rainwater Harvesting BMPs					
RWH-1: Rainwater Harvesting	N		2		
			TOTAL Volume Retained	0.163	ac-ft
				53,234.8	gallons
				7,116.4	cu.ft.
			REMAINING Volume to meet 5% EIA requirement	0.000	ac-ft
				0	gallons
				0	cu.ft.

[1] SQDV Methodology #3 used here.

[2] If a Retention BMP is used more than once on a site (i.e., 2 Infiltration Trenches implemented on one site) then drainage area and volume retained shown here should be additive. A separate BMP sizing worksheet (see Appendix E of the TGM) should be submitted for each BMP.

If onsite Retention BMPs cannot feasibly be used to meet the 5% EIA Requirement, move onto Step 5e; if 5%EIA Requirement is met go to Step 7

	Y/N/NA

A completed copy of the applicable "BMP Sizing Worksheet(s)" for the project's Retention BMPs from Appendix E of the TGM is included as an attachment. BMPs must be sized to meet the SQDV or SQDF (See Section 2 Step 7 of the TGM).	Y

Project Name: Jakran Sales and Retail Phase 2

Job No: ROLS23964

Date: 2/6/2024

Drainage Area Name: P4B+P4C+P9 for CDS unit sizing only

Step 1: Determine Water Quality Design Flow				
1-1	Enter Project Area (Acres), $A_{project}$	$A_{project}$=	2.54	ac
1-2	Enter impervious fraction, IMP	IMP =	0.8623	
1-3	Determine pervious runoff coefficient using Table E-1, C_p	C_p =	0.95	
1-4	Calculate runoff coefficient $C=0.95*IMP + C_p(1-IMP)$	C =	0.95	
1-5	Enter design rainfall intensity (in/hr), i	i =	0.75	in/hr
1-6	Calculate water quality design flow (cfs), SQDF - CiA	SQDF =	1.80975	cfs*

*The calculated SQDF is for CDS unit sizing only

INF-1 - Infiltration Basin

Designer:	Kinsey Hensley
Project Proponent:	ROLS23964
Date:	2/5/2024
Project:	Jakran Sales and Retail Phase 2
Location:	Infiltration Chamber on south side of parking lot

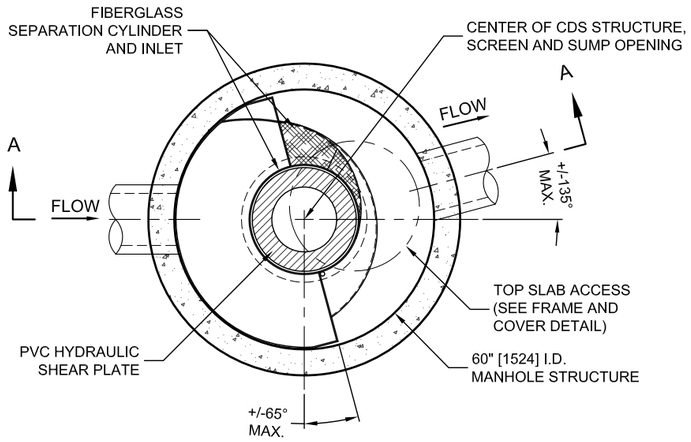
Type of Vegetation: (Check type used or describe "Other"

_____ Native Grass
_____ Irrigated Turf Grass
_____ Other

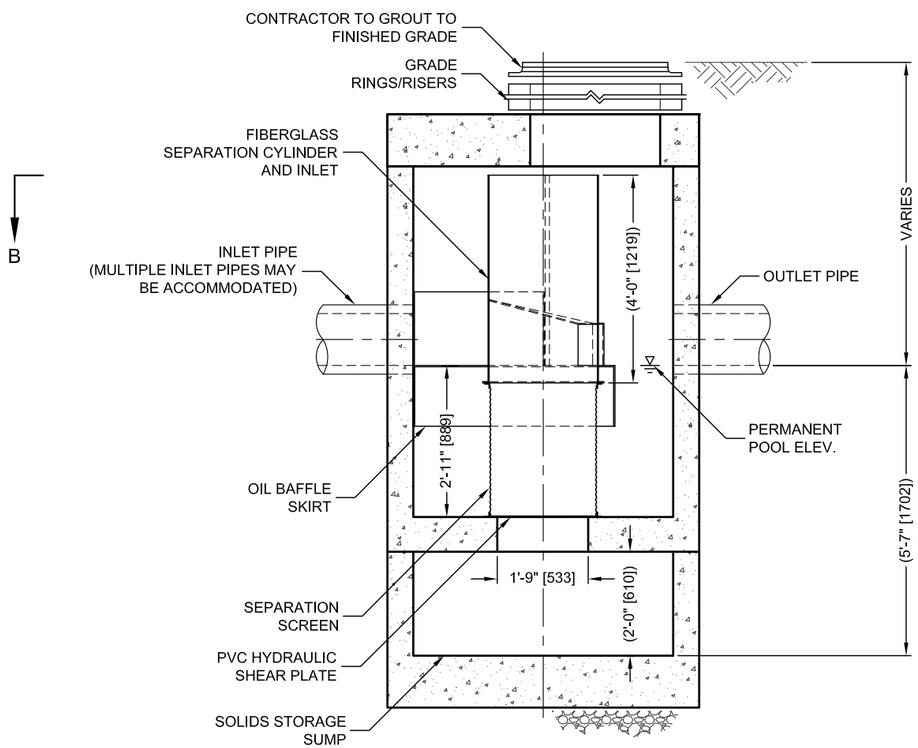
Step 1: SQDV Calculated using TGM form (VCPWA-CSP_Revision_2021)		SQDV=	7116.40	cf
Step 2: Determine the design percolation rate				
2-1	Enter measured soil percolation rate (in/hr) 0.5 in/hr minimum. $P_{measured}$	$P_{measured}$=	2.5	in/hr
2-2	Determine percolation rate correction factor, S_A based on suitability assessment (see Section 6 INF-1, Table 6-2)	S_A =	1.25	
2-3	Determine percolation rate correction factor, S_B based on design (see Section 6 INF-1)	S_B =	2.25	
2-4	Calculate Combine safety factor, $S = S_A * S_B$	S =	2.8125	
2-5	Calculate the design percolation rate (in/hr) $P_{design} = P_{measured}/S$	P_{design} =	0.889	in/hr
Step 3: Calculate the surface area				
3-1	Enter required drain time (hours, 72 hours max, t	t =	72	hr
3-2	Calculate max. depth of runoff that can be infiltrated within the t (ft), d_{max} = $P_{design}*t/12$	d_{max} =	5.333	ft
3-3	For Basins, Select ponding depth dp such that $d_p <= d_{max}$	d_p =	3.5	ft
3-6	Enter the time to fill infiltration basin with water (sue 2 hours for most designs), T	T =	2	hrs
3-7	Calculate Infiltrating surface area for infiltration basin $A_b = SQDV/(TP_{design}/12+d_p)$	A_b =	1950.7	sf

*This project provides 3,240 square feet of infiltrating surface area.

Step 4: Size the forebay (infiltration trenches)				
If a separate pre-treatment unit is designed for the infiltration facility, skip to Step 5. If not complete Step 4				
4-1	Calculate the Volume of the forebay (cf), $V_{forebay}$=0.25*SQDV	$V_{forebay}$	1779.1	ct
4-2	Determine forebay depth (ft), $d_{forebay}$	$d_{forebay}$ =	N/A	ft
4-3	Calculate forebay bottom surface area (cf) $A_{forebay} = V_{forebay} / d_{forebay}$	$A_{forebay}$ =	#VALUE!	sf
4-4	Provide outlet pipe such that the forebay drains to the			
Step 5: Provide Conveyance Capacity for Filter Clogging				
5-1	The infiltration Facility should be placed off-line, but an			



PLAN VIEW B-B
N.T.S.

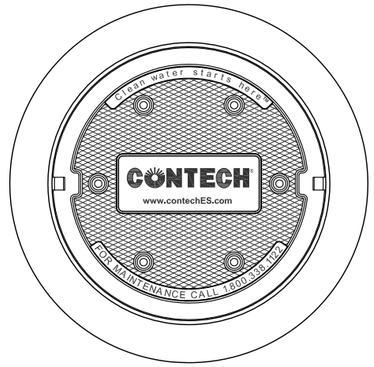


ELEVATION A-A
N.T.S.

CDS2025-5-C DESIGN NOTES

THE STANDARD CDS2025-5-C CONFIGURATION IS SHOWN. ALTERNATE CONFIGURATIONS ARE AVAILABLE AND ARE LISTED BELOW. SOME CONFIGURATIONS MAY BE COMBINED TO SUIT SITE REQUIREMENTS.

CONFIGURATION DESCRIPTION
GRATED INLET ONLY (NO INLET PIPE)
GRATED INLET WITH INLET PIPE OR PIPES
CURB INLET ONLY (NO INLET PIPE)
CURB INLET WITH INLET PIPE OR PIPES
SEPARATE OIL BAFFLE (SINGLE INLET PIPE REQUIRED FOR THIS CONFIGURATION)
SEDIMENT WEIR FOR NJDEP / NJCAT CONFORMING UNITS



FRAME AND COVER
(DIAMETER VARIES)
N.T.S.

SITE SPECIFIC DATA REQUIREMENTS

STRUCTURE ID	
WATER QUALITY FLOW RATE (CFS OR L/s)	*
PEAK FLOW RATE (CFS OR L/s)	*
RETURN PERIOD OF PEAK FLOW (YRS)	*
SCREEN APERTURE (2400 OR 4700)	*

PIPE DATA:	I.E.	MATERIAL	DIAMETER
INLET PIPE 1	*	*	*
INLET PIPE 2	*	*	*
OUTLET PIPE	*	*	*

RIM ELEVATION	*

ANTI-FLOTATION BALLAST	WIDTH	HEIGHT
	*	*

NOTES/SPECIAL REQUIREMENTS:

* PER ENGINEER OF RECORD

GENERAL NOTES
1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. DIMENSIONS MARKED WITH ( ) ARE REFERENCE DIMENSIONS. ACTUAL DIMENSIONS MAY VARY.
3. FOR FABRICATION DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHTS, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS LLC REPRESENTATIVE. www.contechES.com
4. CDS WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING.
5. STRUCTURE SHALL MEET AASHTO HS20 AND CASTINGS SHALL MEET HS20 (AASHTO M 306) LOAD RATING, ASSUMING GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION.
6. PVC HYDRAULIC SHEAR PLATE IS PLACED ON SHELF AT BOTTOM OF SCREEN CYLINDER. REMOVE AND REPLACE AS NECESSARY DURING MAINTENANCE CLEANING.

INSTALLATION NOTES
A. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE CDS MANHOLE STRUCTURE (LIFTING CLUTCHES PROVIDED).
C. CONTRACTOR TO ADD JOINT SEALANT BETWEEN ALL STRUCTURE SECTIONS, AND ASSEMBLE STRUCTURE.
D. CONTRACTOR TO PROVIDE, INSTALL, AND GROUT PIPES. MATCH PIPE INVERTS WITH ELEVATIONS SHOWN.
E. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO ASSURE UNIT IS WATER TIGHT, HOLDING WATER TO FLOWLINE INVERT MINIMUM. IT IS SUGGESTED THAT ALL JOINTS BELOW PIPE INVERTS ARE GROUTED.

CONTECH ENGINEERED SOLUTIONS LLC
www.contechES.com
9025 Centre Pointe Dr., Suite 400, West Chester, OH 45069
800-338-1122 513-645-7000 513-645-7993 FAX

CDS2025-5-C
INLINE CDS
STANDARD DETAIL

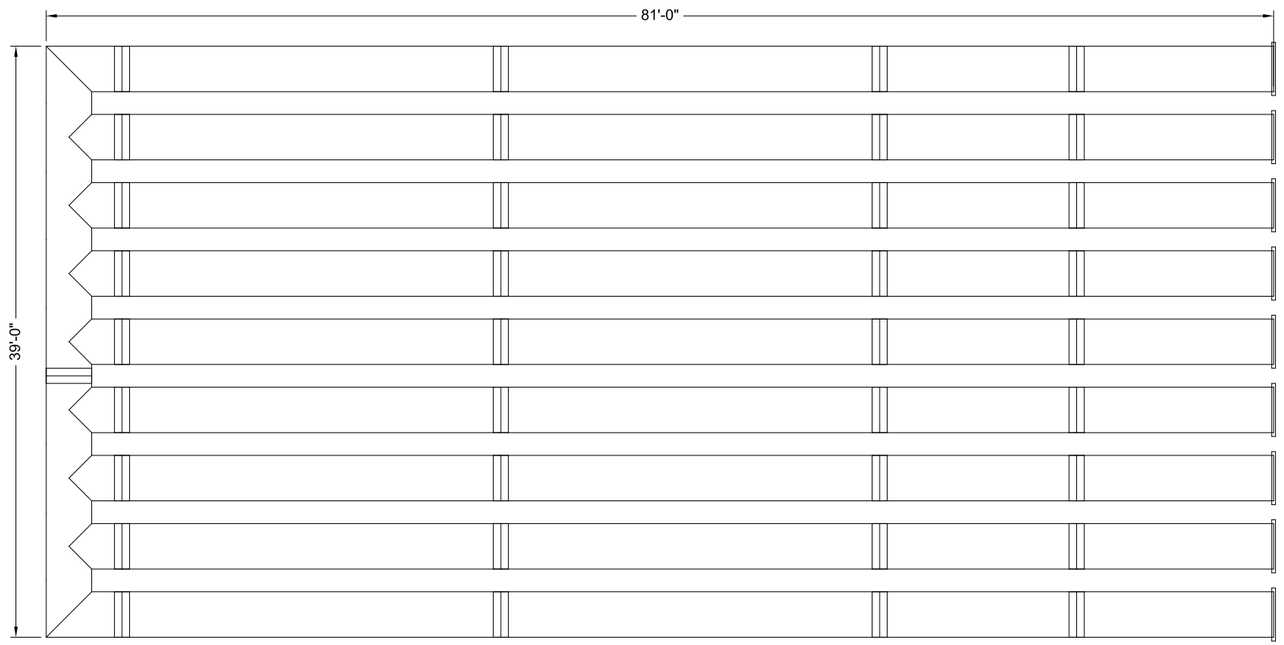
PROJECT SUMMARY

CALCULATION DETAILS
- LOADING = HS20/HS25
- APPROX. LINEAR FOOTAGE = 741 LF

STORAGE SUMMARY
- STORAGE VOLUME REQUIRED = 7,200 CF
- PIPE STORAGE VOLUME = 5,238 CF
- BACKFILL STORAGE VOLUME = 1,988 CF
- TOTAL STORAGE PROVIDED = 7,226 CF

PIPE DETAILS
- DIAMETER = 36"
- CORRUGATION = 2 2/3x1/2
- GAGE = 16
- COATING = ALT2
- WALL TYPE = PERFORATED
- BARREL SPACING = 18"

BACKFILL DETAILS
- WIDTH AT ENDS = 12"
- ABOVE PIPE = 0"
- WIDTH AT SIDES = 12"
- BELOW PIPE = 0"



NOTES

- ALL RISER AND STUB DIMENSIONS ARE TO CENTERLINE. ALL ELEVATIONS, DIMENSIONS, AND LOCATIONS OF RISERS AND INLETS, SHALL BE VERIFIED BY THE ENGINEER OF RECORD PRIOR TO RELEASING FOR FABRICATION.
- ALL FITTINGS AND REINFORCEMENT COMPLY WITH ASTM A998.
- ALL RISERS AND STUBS ARE 2⅔" x ½" CORRUGATION AND 16 GAGE UNLESS OTHERWISE NOTED.
- RISERS TO BE FIELD TRIMMED TO GRADE.
- QUANTITY OF PIPE SHOWN DOES NOT PROVIDE EXTRA PIPE FOR CONNECTING THE SYSTEM TO EXISTING PIPE OR DRAINAGE STRUCTURES. OUR SYSTEM AS DETAILED PROVIDES NOMINAL INLET AND/OR OUTLET PIPE STUB FOR CONNECTION TO EXISTING DRAINAGE FACILITIES. IF ADDITIONAL PIPE IS NEEDED IT IS THE RESPONSIBILITY OF THE CONTRACTOR.
- BAND TYPE TO BE DETERMINED UPON FINAL DESIGN.
- THE PROJECT SUMMARY IS REFLECTIVE OF THE DYODS DESIGN, QUANTITIES ARE APPROX. AND SHOULD BE VERIFIED UPON FINAL DESIGN AND APPROVAL. FOR EXAMPLE, TOTAL EXCAVATION DOES NOT CONSIDER ALL VARIABLES SUCH AS SHORING AND ONLY ACCOUNTS FOR MATERIAL WITHIN THE ESTIMATED EXCAVATION FOOTPRINT.
- THESE DRAWINGS ARE FOR CONCEPTUAL PURPOSES AND DO NOT REFLECT ANY LOCAL PREFERENCES OR REGULATIONS. PLEASE CONTACT YOUR LOCAL CONTECH REP FOR MODIFICATIONS.

ASSEMBLY

SCALE: 1" = 10'

C:\EXPORTS\TEMPLATES\CMP_V8.DWG 10/18/2019 10:02 AM

DATE	REVISION DESCRIPTION	BY

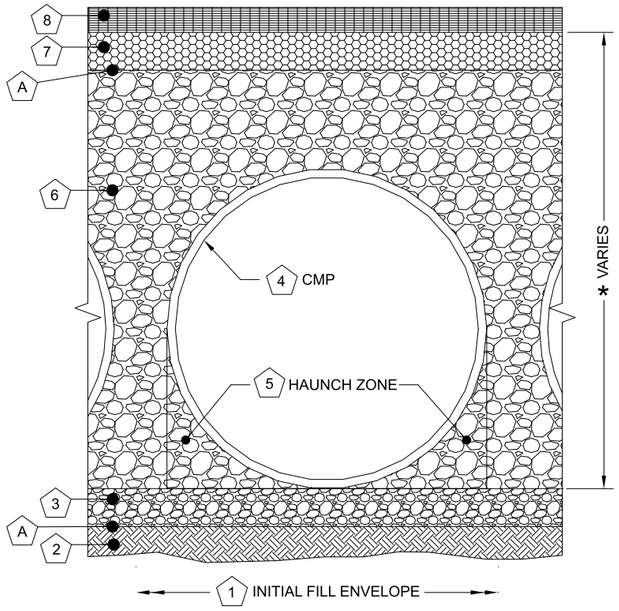
CONTECH ENGINEERED SOLUTIONS LLC
www.ContechES.com
9025 Centre Pointe Dr., Suite 400, West Chester, OH 45069
800-338-1122 513-645-7000 513-645-7993 FAX

CONTECH CMP DETENTION SYSTEMS

CONTECH **DYODS** DRAWING

DYO32598 Rolls
CMP
Ventura, CA
DETENTION SYSTEM

PROJECT No.:	SEQ. No.:	DATE:
22102	32598	5/30/2023
DESIGNED: DYO	DRAWN: DYO	
CHECKED: DYO	APPROVED: DYO	
SHEET NO.: 1		



	Infiltration Systems - CMP Infiltration & CMP Perforated Drainage Pipe			
	Material Location	Description	Material Designation	Designation
8	Rigid or Flexible Pavement (if applicable)			
7	Road Base (if applicable			
A	Geotextile Layer	Non-Woven Geotextile	CONTECH C-40 or C-45	Engineer Decision for consideration to prevent soil migration into varying soil types. Wrap the trench only.
6	Backfill	Infiltration pipe systems have a pipe perforation sized of 3/8" diameter. An open graded, free draining stone, with a particle size of ½" – 2 ½" diameter is recommended.	AASHTO M 145-A-1 or AASHTO M 43 - 3, 4	Material shall be worked into the pipe haunches by means of shovel-slicing, rodding, air-tamper, vibratory rod, or other effective methods. Compaction of all placed fill material is necessary and shall be considered adequate when no further yielding of the material is observed under the compactor, or under foot, and the Project Engineer or his representative is satisfied with the level of compaction"
3	Bedding Stone	Well graded granular bedding material w/maximum particle size of 3"	AASHTO M43 - 3,357,4,467, 5, 56, 57	For soil aggregates larger than 3/8" a dedicated bedding layer is not required for CMP. Pipe may be placed on the trench bottom comprised of native suitable well graded & granular material. For Arch pipes it is recommended to be shaped to a relatively flat bottom or fine-grade the foundation to a slight v-shape. Soil aggregates less than 3/8" and unsuitable material should be over-excavated and re-placed with a 4"-6" layer of well graded & granular stone per the material designation.
A	Geotextile Layer	None	None	Contech does not recommend geotextiles be placed under the invert of Infiltration systems due to the propensity for geotextiles to clog over time.
*	Note: The listed AASHTO designations are for gradation only. The stone must also be angular and clean.			

1 MINIMUM WIDTH DEPENDS ON SITE CONDITIONS AND ENGINEERING JUDGEMENT.

FOUNDATION/BEDDING PREPARATION

2 PRIOR TO PLACING THE BEDDING, THE FOUNDATION MUST BE CONSTRUCTED TO A UNIFORM AND STABLE GRADE. IN THE EVENT THAT UNSUITABLE FOUNDATION MATERIALS ARE ENCOUNTERED DURING EXCAVATION, THEY SHALL BE REMOVED AND BROUGHT BACK TO THE GRADE WITH A FILL MATERIAL AS APPROVED BY THE ENGINEER.

5 HAUNCH ZONE MATERIAL SHALL BE PLACED AND UNIFORMLY COMPACTED WITHOUT SOFT SPOTS.

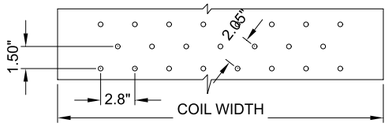
BACKFILL

MATERIAL SHALL BE PLACED IN 8"-10" MAXIMUM LIFTS. INADEQUATE COMPACTION CAN LEAD TO EXCESSIVE DEFLECTIONS WITHIN THE SYSTEM AND SETTLEMENT OF THE SOILS OVER THE SYSTEM. BACKFILL SHALL BE PLACED SUCH THAT THERE IS NO MORE THAN A TWO-LIFT DIFFERENTIAL BETWEEN THE SIDES OF ANY PIPE IN THE SYSTEM AT ALL TIMES DURING THE BACKFILL PROCESS. BACKFILL SHALL BE ADVANCED ALONG THE LENGTH OF THE SYSTEM AT THE SAME RATE TO AVOID DIFFERENTIAL LOADING ON ANY PIPES IN THE SYSTEM.

EQUIPMENT USED TO PLACE AND COMPACT THE BACKFILL SHALL BE OF A SIZE AND TYPE SO AS NOT TO DISTORT, DAMAGE, OR DISPLACE THE PIPE. ATTENTION MUST BE GIVEN TO PROVIDING ADEQUATE MINIMUM COVER FOR SUCH EQUIPMENT. MAINTAIN BALANCED LOADING ON ALL PIPES IN THE SYSTEM DURING ALL SUCH OPERATIONS.

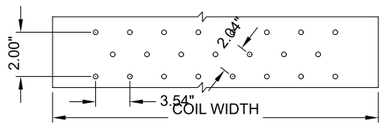
OTHER ALTERNATE BACKFILL MATERIAL MAY BE ALLOWED DEPENDING ON SITE SPECIFIC CONDITIONS. REFER TO TYPICAL BACKFILL DETAIL FOR MATERIAL REQUIRED.

2 2/3" x 1/2" CORRUGATION - STEEL AND ALUMINUM CMP EDGE SPACING EQUAL ON BOTH SIDES



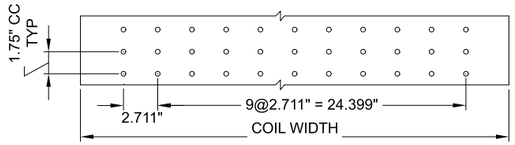
OPEN AREA = 3.76 SQ IN/SQ FT

3" x 1" CORRUGATION - STEEL AND ALUMINUM CMP (COIL PROVIDED FROM CONTECH LANTANA, FL PLANT)



OPEN AREA = 4.16 SQ IN/SQ FT

5" x 1" CORRUGATION - STEEL ONLY
EDGE SPACING EQUAL ON BOTH SIDES



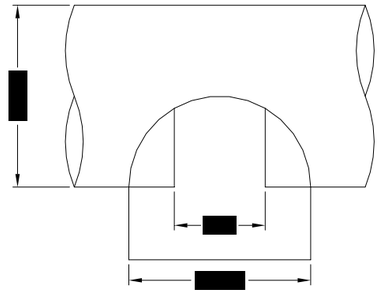
OPEN AREA = 3.33 SQ IN/SQ FT

NOTES:

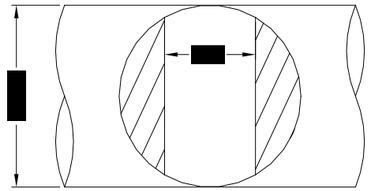
1. PERFORATIONS MEET AASHTO AND ASTM SPECIFICATIONS.
2. PERFORATION OPEN AREA PER SQUARE FOOT OF PIPE IS BASED ON THE NOMINAL DIAMETER AND LENGTH OF PIPE.
3. ALL DIMENSIONS ARE SUBJECT TO MANUFACTURING TOLERANCES.
4. ALL HOLES ⌀3/8".

TYPICAL PERFORATION DETAIL

SCALE: N.T.S.



PLAN

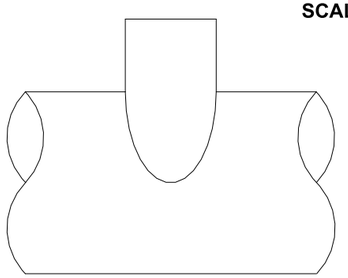


FRONT

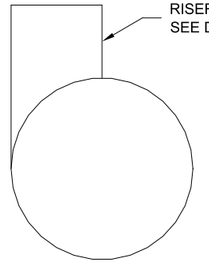
NOTE:
MANWAY DETAIL APPLICABLE FOR CMP SYSTEMS WITH DIAMETERS 48" AND LARGER. MANWAYS MAY BE REQUIRED ON SMALLER SYSTEMS DEPENDING ON ACTUAL SITE SPECIFIC CONDITIONS.

TYPICAL MANWAY DETAIL

SCALE: N.T.S.



ELEVATION

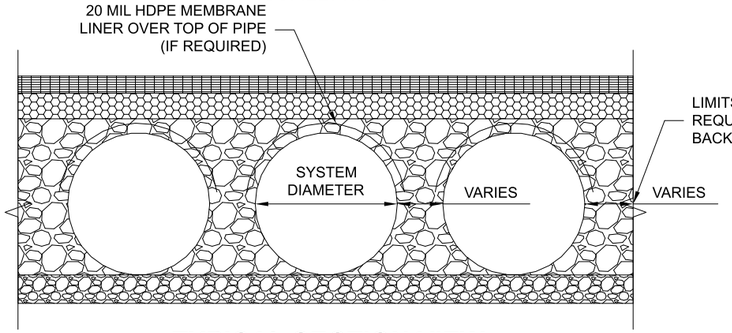


END

NOTE:
LADDERS ARE OPTIONAL AND ARE NOT REQUIRED FOR ALL SYSTEMS.

TYPICAL RISER DETAIL

SCALE: N.T.S.



TYPICAL SECTION VIEW

LINER OVER ROWS
SCALE: N.T.S.

NOTE: IF SALTING AGENTS FOR SNOW AND ICE REMOVAL ARE USED ON OR NEAR THE PROJECT, AN HDPE MEMBRANE LINER IS RECOMMENDED WITH THE SYSTEM. THE IMPERMEABLE LINER IS INTENDED TO HELP PROTECT THE SYSTEM FROM THE POTENTIAL ADVERSE EFFECTS THAT MAY RESULT FROM A CHANGE IN THE SURROUNDING ENVIRONMENT OVER A PERIOD OF TIME. PLEASE REFER TO THE CORRUGATED METAL PIPE DETENTION DESIGN GUIDE FOR ADDITIONAL INFORMATION.

DATE	REVISION DESCRIPTION	BY

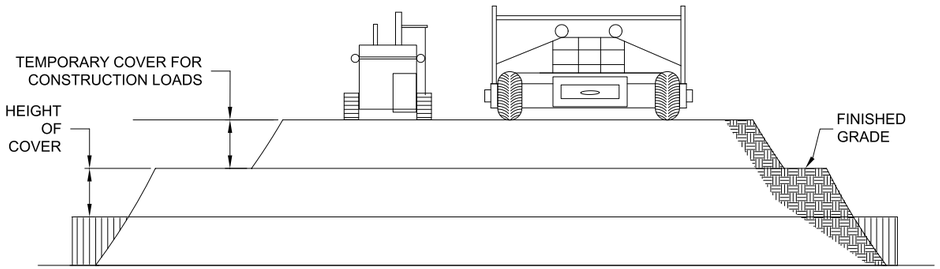
CONTECH ENGINEERED SOLUTIONS LLC
www.ContechES.com
9025 Centre Pointe Dr., Suite 400, West Chester, OH 45069
800-338-1122 513-645-7000 513-645-7993 FAX

CONTECH CMP DETENTION SYSTEMS
CONTECH DYODS DRAWING

DYO32598 Rolls
CMP
Ventura, CA
DETENTION SYSTEM

PROJECT No.:	SEQ. No.:	DATE:
22102	32598	5/30/2023
DESIGNED: DYO	DRAWN: DYO	
CHECKED: DYO	APPROVED: DYO	
SHEET NO.: 1		

C:\EXPORTS\TEMPLATES\CMP_V8.DWG 10/18/2019 10:02 AM



CONSTRUCTION LOADS

FOR TEMPORARY CONSTRUCTION VEHICLE LOADS, AN EXTRA AMOUNT OF COMPACTED COVER MAY BE REQUIRED OVER THE TOP OF THE PIPE. THE HEIGHT-OF-COVER SHALL MEET THE MINIMUM REQUIREMENTS SHOWN IN THE TABLE BELOW. THE USE OF HEAVY CONSTRUCTION EQUIPMENT NECESSITATES GREATER PROTECTION FOR THE PIPE THAN FINISHED GRADE COVER MINIMUMS FOR NORMAL HIGHWAY TRAFFIC.

PIPE SPAN, INCHES	AXLE LOADS (kips)			
	18-50	50-75	75-110	110-150
	MINIMUM COVER (FT)			
12-42	2.0	2.5	3.0	3.0
48-72	3.0	3.0	3.5	4.0
78-120	3.0	3.5	4.0	4.0
126-144	3.5	4.0	4.5	4.5

*MINIMUM COVER MAY VARY, DEPENDING ON LOCAL CONDITIONS. THE CONTRACTOR MUST PROVIDE THE ADDITIONAL COVER REQUIRED TO AVOID DAMAGE TO THE PIPE. MINIMUM COVER IS MEASURED FROM THE TOP OF THE PIPE TO THE TOP OF THE MAINTAINED CONSTRUCTION ROADWAY SURFACE.

CONSTRUCTION LOADING DIAGRAM

SCALE: N.T.S.

SPECIFICATION FOR DESIGNED DETENTION SYSTEM:

SCOPE
THIS SPECIFICATION COVERS THE MANUFACTURE AND INSTALLATION OF THE DESIGNED DETENTION SYSTEM DETAILED IN THE PROJECT PLANS.

MATERIAL
THE MATERIAL SHALL CONFORM TO THE APPLICABLE REQUIREMENTS LISTED BELOW:

ALUMINIZED TYPE 2 STEEL COILS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M-274 OR ASTM A-92.

THE GALVANIZED STEEL COILS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M-218 OR ASTM A-929.

THE POLYMER COATED STEEL COILS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M-246 OR ASTM A-742.

THE ALUMINUM COILS SHALL CONFORM TO THE APPLICABLE OF AASHTO M-197 OR ASTM B-744.

CONSTRUCTION LOADS
CONSTRUCTION LOADS MAY BE HIGHER THAN FINAL LOADS. FOLLOW THE MANUFACTURER'S OR NCSPA GUIDELINES.

PIPE
THE PIPE SHALL BE MANUFACTURED IN ACCORDANCE TO THE APPLICABLE REQUIREMENTS LISTED BELOW:

ALUMINIZED TYPE 2: AASHTO M-36 OR ASTM A-760

GALVANIZED: AASHTO M-36 OR ASTM A-760

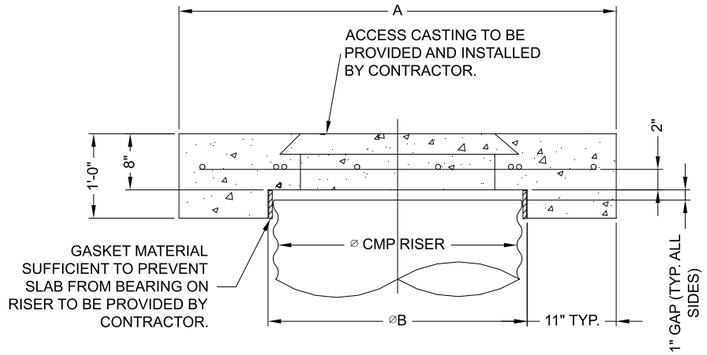
APPLICABLE POLYMER COATED: AASHTO M-245 OR ASTM A-762

ALUMINUM: AASHTO M-196 OR ASTM B-745

APPLICABLE
HANDLING AND ASSEMBLY
SHALL BE IN ACCORDANCE WITH NCSP'S (NATIONAL CORRUGATED STEEL PIPE ASSOCIATION) FOR ALUMINIZED TYPE 2, GALVANIZED OR POLYMER COATED STEEL. SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS FOR ALUMINUM PIPE.
REQUIREMENTS
INSTALLATION
SHALL BE IN ACCORDANCE WITH AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, SECTION 26, DIVISION II DIVISION II OR ASTM A-798 (FOR ALUMINIZED TYPE 2, GALVANIZED OR POLYMER COATED STEEL) OR ASTM B-788 (FOR ALUMINUM PIPE) AND IN CONFORMANCE WITH THE PROJECT PLANS AND SPECIFICATIONS. IF THERE ARE ANY INCONSISTENCIES OR CONFLICTS THE CONTRACTOR SHOULD DISCUSS AND RESOLVE WITH THE SITE ENGINEER.

IT IS ALWAYS THE RESPONSIBILITY OF THE CONTRACTOR TO FOLLOW OSHA GUIDELINES FOR SAFE PRACTICES.

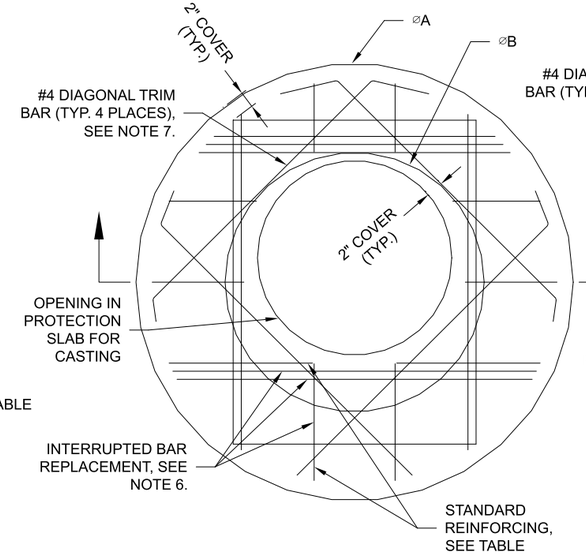
NOTE:
THESE DRAWINGS ARE FOR CONCEPTUAL PURPOSES AND DO NOT REFLECT ANY LOCAL PREFERENCES OR REGULATIONS. PLEASE CONTACT YOUR LOCAL CONTECH REP FOR MODIFICATIONS.



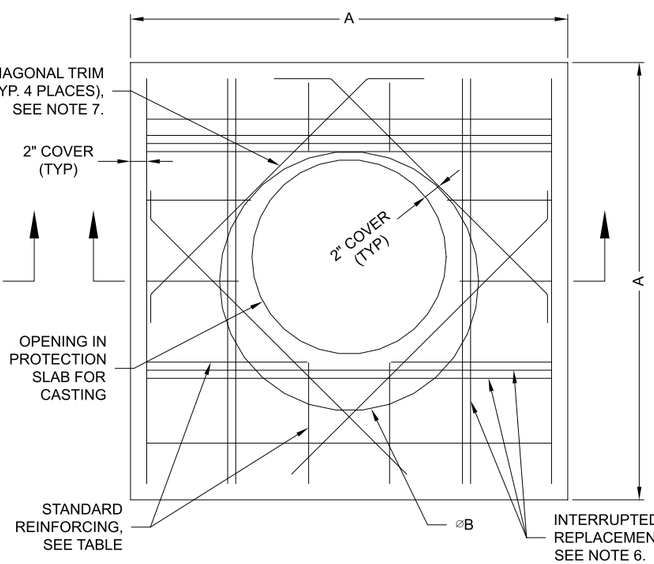
SECTION VIEW

REINFORCING TABLE				
⌀ CMP RISER	A	⌀ B	REINFORCING	**BEARING PRESSURE (PSF)
24"	⌀ 4' 4'X4'	26"	#5 @ 12" OCEW #5 @ 12" OCEW	2,410 1,780
30"	⌀ 4'-6" 4'-6" X 4'-6"	32"	#5 @ 12" OCEW #5 @ 12" OCEW	2,120 1,530
36"	⌀ 5' 5' X 5'	38"	#5 @ 10" OCEW #5 @ 10" OCEW	1,890 1,350
42"	⌀ 5'-6" 5'-6" X 5'-6"	44"	#5 @ 10" OCEW #5 @ 9" OCEW	1,720 1,210
48"	⌀ 6' 6' X 6'	50"	#5 @ 9" OCEW #5 @ 8" OCEW	1,600 1,100

** ASSUMED SOIL BEARING CAPACITY



ROUND OPTION PLAN VIEW



SQUARE OPTION PLAN VIEW

NOTES:

1. DESIGN IN ACCORDANCE WITH AASHTO, 17th EDITION.
2. DESIGN LOAD HS25.
3. EARTH COVER = 1' MAX.
4. CONCRETE STRENGTH = 3,500 psi
5. REINFORCING STEEL = ASTM A615, GRADE 60.
6. PROVIDE ADDITIONAL REINFORCING AROUND OPENINGS EQUAL TO THE BARS INTERRUPTED, HALF EACH SIDE. ADDITIONAL BARS TO BE IN THE SAME PLANE.
7. TRIM OPENING WITH DIAGONAL #4 BARS, EXTEND BARS A MINIMUM OF 12" BEYOND OPENING, BEND BARS AS REQUIRED TO MAINTAIN BAR COVER.
8. PROTECTION SLAB AND ALL MATERIALS TO BE PROVIDED AND INSTALLED BY CONTRACTOR.
9. DETAIL DESIGN BY DELTA ENGINEERING, BINGHAMTON, NY.

MANHOLE CAP DETAIL

SCALE: N.T.S.

DATE	REVISION DESCRIPTION	BY

CONTECH ENGINEERED SOLUTIONS LLC
www.ContechES.com
9025 Centre Pointe Dr., Suite 400, West Chester, OH 45069
800-338-1122 513-645-7000 513-645-7993 FAX

CONTECH CMP DETENTION SYSTEMS
CONTECH DYODS DRAWING

DYO32598 Rolls
CMP
Ventura, CA
DETENTION SYSTEM

PROJECT No.:	SEQ. No.:	DATE:
22102	32598	5/30/2023
DESIGNED: DYO	DRAWN: DYO	
CHECKED: DYO	APPROVED: DYO	
SHEET NO.: 1		

C:\EXPORTS\TEMPLATES\CMP_V8.DWG 10/18/2019 10:02 AM

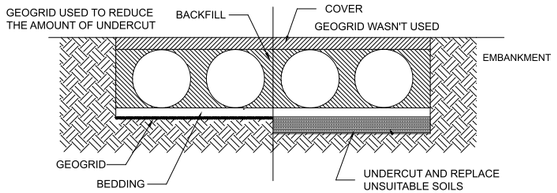
CMP DETENTION INSTALLATION GUIDE

PROPER INSTALLATION OF A FLEXIBLE UNDERGROUND DETENTION SYSTEM WILL ENSURE LONG-TERM PERFORMANCE. THE CONFIGURATION OF THESE SYSTEMS OFTEN REQUIRES SPECIAL CONSTRUCTION PRACTICES THAT DIFFER FROM CONVENTIONAL FLEXIBLE PIPE CONSTRUCTION. CONTECH ENGINEERED SOLUTIONS STRONGLY SUGGESTS SCHEDULING A PRE-CONSTRUCTION MEETING WITH YOUR LOCAL SALES ENGINEER TO DETERMINE IF ADDITIONAL MEASURES, NOT COVERED IN THIS GUIDE, ARE APPROPRIATE FOR YOUR SITE.

FOUNDATION

CONSTRUCT A FOUNDATION THAT CAN SUPPORT THE DESIGN LOADING APPLIED BY THE PIPE AND ADJACENT BACKFILL WEIGHT AS WELL AS MAINTAIN ITS INTEGRITY DURING CONSTRUCTION.

IF SOFT OR UNSUITABLE SOILS ARE ENCOUNTERED, REMOVE THE POOR SOILS DOWN TO A SUITABLE DEPTH AND THEN BUILD UP TO THE APPROPRIATE ELEVATION WITH A COMPETENT BACKFILL MATERIAL. THE STRUCTURAL FILL MATERIAL GRADATION SHOULD NOT ALLOW THE MIGRATION OF FINES, WHICH CAN CAUSE SETTLEMENT OF THE DETENTION SYSTEM OR PAVEMENT ABOVE. IF THE STRUCTURAL FILL MATERIAL IS NOT COMPATIBLE WITH THE UNDERLYING SOILS AN ENGINEERING FABRIC SHOULD BE USED AS A SEPARATOR. IN SOME CASES, USING A STIFF REINFORCING GEOGRID REDUCES OVER EXCAVATION AND REPLACEMENT FILL QUANTITIES.

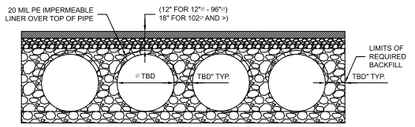


GRADE THE FOUNDATION SUBGRADE TO A UNIFORM OR SLIGHTLY SLOPING GRADE. IF THE SUBGRADE IS CLAY OR RELATIVELY NON-POROUS AND THE CONSTRUCTION SEQUENCE WILL LAST FOR AN EXTENDED PERIOD OF TIME, IT IS BEST TO SLOPE THE GRADE TO ONE END OF THE SYSTEM. THIS WILL ALLOW EXCESS WATER TO DRAIN QUICKLY, PREVENTING SATURATION OF THE SUBGRADE.

GEOMEMBRANE BARRIER

A SITE'S RESISTIVITY MAY CHANGE OVER TIME WHEN VARIOUS TYPES OF SALTING AGENTS ARE USED, SUCH AS ROAD SALTS FOR DEICING AGENTS. IF SALTING AGENTS ARE USED ON OR NEAR THE PROJECT SITE, A GEOMEMBRANE BARRIER IS RECOMMENDED WITH THE SYSTEM. THE GEOMEMBRANE LINER IS INTENDED TO HELP PROTECT THE SYSTEM FROM THE POTENTIAL ADVERSE EFFECTS THAT MAY RESULT FROM THE USE OF SUCH AGENTS INCLUDING PREMATURE CORROSION AND REDUCED ACTUAL SERVICE LIFE.

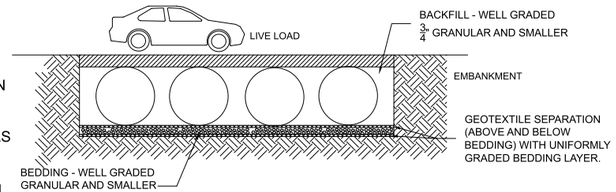
THE PROJECT'S ENGINEER OF RECORD IS TO EVALUATE WHETHER SALTING AGENTS WILL BE USED ON OR NEAR THE PROJECT SITE, AND USE HIS/HER BEST JUDGEMENT TO DETERMINE IF ANY ADDITIONAL PROTECTIVE MEASURES ARE REQUIRED. BELOW IS A TYPICAL DETAIL SHOWING THE PLACEMENT OF A GEOMEMBRANE BARRIER FOR PROJECTS WHERE SALTING AGENTS ARE USED ON OR NEAR THE PROJECT SITE.



IN-SITU TRENCH WALL

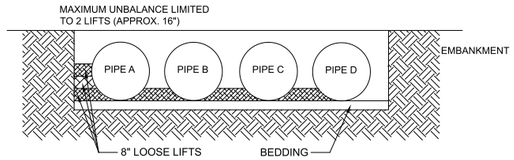
IF EXCAVATION IS REQUIRED, THE TRENCH WALL NEEDS TO BE CAPABLE OF SUPPORTING THE LOAD THAT THE PIPE SHEDS AS THE SYSTEM IS LOADED. IF SOILS ARE NOT CAPABLE OF SUPPORTING THESE LOADS, THE PIPE CAN DEFLECT. PERFORM A SIMPLE SOIL PRESSURE CHECK USING THE APPLIED LOADS TO DETERMINE THE LIMITS OF EXCAVATION BEYOND THE SPRING LINE OF THE OUTER MOST PIPES.

IN MOST CASES THE REQUIREMENTS FOR A SAFE WORK ENVIRONMENT AND PROPER BACKFILL PLACEMENT AND COMPACTION TAKE CARE OF THIS CONCERN.



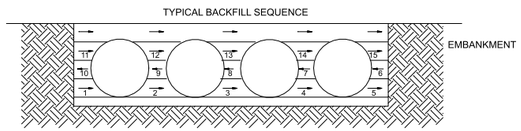
BACKFILL PLACEMENT

MATERIAL SHALL BE WORKED INTO THE PIPE HAUNCHES BY MEANS OF SHOVEL-SLICING, RODDING, AIR TAMPER, VIBRATORY ROD, OR OTHER EFFECTIVE METHODS.

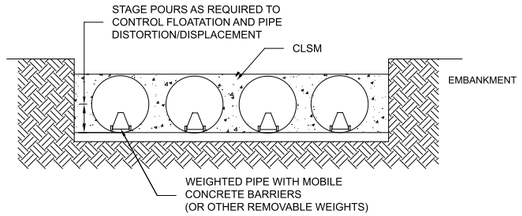


IF AASHTO T99 PROCEDURES ARE DETERMINED INFEASIBLE BY THE GEOTECHNICAL ENGINEER OF RECORD, COMPACTION IS CONSIDERED ADEQUATE WHEN NO FURTHER YIELDING OF THE MATERIAL IS OBSERVED UNDER THE COMPACTOR, OR UNDER FOOT, AND THE GEOTECHNICAL ENGINEER OF RECORD (OR REPRESENTATIVE THEREOF) IS SATISFIED WITH THE LEVEL OF COMPACTION.

FOR LARGE SYSTEMS, CONVEYOR SYSTEMS, BACKHOES WITH LONG REACHES OR DRAGLINES WITH STONE BUCKETS MAY BE USED TO PLACE BACKFILL. ONCE MINIMUM COVER FOR CONSTRUCTION LOADING ACROSS THE ENTIRE WIDTH OF THE SYSTEM IS REACHED, ADVANCE THE EQUIPMENT TO THE END OF THE RECENTLY PLACED FILL, AND BEGIN THE SEQUENCE AGAIN UNTIL THE SYSTEM IS COMPLETELY BACKFILLED. THIS TYPE OF CONSTRUCTION SEQUENCE PROVIDES ROOM FOR STOCKPILED BACKFILL DIRECTLY BEHIND THE BACKHOE, AS WELL AS THE MOVEMENT OF CONSTRUCTION TRAFFIC. MATERIAL STOCKPILES ON TOP OF THE BACKFILLED DETENTION SYSTEM SHOULD BE LIMITED TO 8- TO 10-FEET HIGH AND MUST PROVIDE BALANCED LOADING ACROSS ALL BARRELS. TO DETERMINE THE PROPER COVER OVER THE PIPES TO ALLOW THE MOVEMENT OF CONSTRUCTION EQUIPMENT SEE TABLE 1, OR CONTACT YOUR LOCAL CONTECH SALES ENGINEER.



WHEN FLOWABLE FILL IS USED, YOU MUST PREVENT PIPE FLOATATION. TYPICALLY, SMALL LIFTS ARE PLACED BETWEEN THE PIPES AND THEN ALLOWED TO SET-UP PRIOR TO THE PLACEMENT OF THE NEXT LIFT. THE ALLOWABLE THICKNESS OF THE CLSM LIFT IS A FUNCTION OF A PROPER BALANCE BETWEEN THE UPLIFT FORCE OF THE CLSM, THE OPPOSING WEIGHT OF THE PIPE, AND THE EFFECT OF OTHER RESTRAINING MEASURES. THE PIPE CAN CARRY LIMITED FLUID PRESSURE WITHOUT PIPE DISTORTION OR DISPLACEMENT, WHICH ALSO AFFECTS THE CLSM LIFT THICKNESS. YOUR LOCAL CONTECH SALES ENGINEER CAN HELP DETERMINE THE PROPER LIFT THICKNESS.

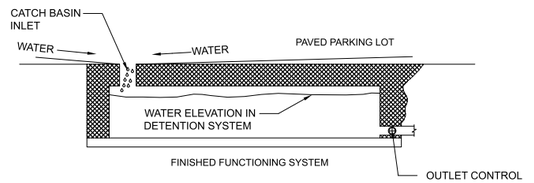


CONSTRUCTION LOADING

TYPICALLY, THE MINIMUM COVER SPECIFIED FOR A PROJECT ASSUMES H-20 LIVE LOAD. BECAUSE CONSTRUCTION LOADS OFTEN EXCEED DESIGN LIVE LOADS, INCREASED TEMPORARY MINIMUM COVER REQUIREMENTS ARE NECESSARY. SINCE CONSTRUCTION EQUIPMENT VARIES FROM JOB TO JOB, IT IS BEST TO ADDRESS EQUIPMENT SPECIFIC MINIMUM COVER REQUIREMENTS WITH YOUR LOCAL CONTECH SALES ENGINEER DURING YOUR PRE-CONSTRUCTION MEETING.

ADDITIONAL CONSIDERATIONS

BECAUSE MOST SYSTEMS ARE CONSTRUCTED BELOW-GRADE, RAINFALL CAN RAPIDLY FILL THE EXCAVATION; POTENTIALLY CAUSING FLOATATION AND MOVEMENT OF THE PREVIOUSLY PLACED PIPES. TO HELP MITIGATE POTENTIAL PROBLEMS, IT IS BEST TO START THE INSTALLATION AT THE DOWNSTREAM END WITH THE OUTLET ALREADY CONSTRUCTED TO ALLOW A ROUTE FOR THE WATER TO ESCAPE. TEMPORARY DIVERSION MEASURES MAY BE REQUIRED FOR HIGH FLOWS DUE TO THE RESTRICTED NATURE OF THE OUTLET PIPE.



CMP DETENTION SYSTEM INSPECTION AND MAINTENANCE

UNDERGROUND STORMWATER DETENTION AND INFILTRATION SYSTEMS MUST BE INSPECTED AND MAINTAINED AT REGULAR INTERVALS FOR PURPOSES OF PERFORMANCE AND LONGEVITY.

INSPECTION

INSPECTION IS THE KEY TO EFFECTIVE MAINTENANCE OF CMP DETENTION SYSTEMS AND IS EASILY PERFORMED. CONTECH RECOMMENDS ONGOING, ANNUAL INSPECTIONS. SITES WITH HIGH TRASH LOAD OR SMALL OUTLET CONTROL ORIFICES MAY NEED MORE FREQUENT INSPECTIONS. THE RATE AT WHICH THE SYSTEM COLLECTS POLLUTANTS WILL DEPEND MORE ON SITE SPECIFIC ACTIVITIES RATHER THAN THE SIZE OR CONFIGURATION OF THE SYSTEM.

INSPECTIONS SHOULD BE PERFORMED MORE OFTEN IN EQUIPMENT WASHDOWN AREAS, IN CLIMATES WHERE SANDING AND/OR SALTING OPERATIONS TAKE PLACE, AND IN OTHER VARIOUS INSTANCES IN WHICH ONE WOULD EXPECT HIGHER ACCUMULATIONS OF SEDIMENT OR ABRASIVE/ CORROSIVE CONDITIONS. A RECORD OF EACH INSPECTION IS TO BE MAINTAINED FOR THE LIFE OF THE SYSTEM

MAINTENANCE

CMP DETENTION SYSTEMS SHOULD BE CLEANED WHEN AN INSPECTION REVEALS ACCUMULATED SEDIMENT OR TRASH IS CLOGGING THE DISCHARGE ORIFICE.

ACCUMULATED SEDIMENT AND TRASH CAN TYPICALLY BE EVACUATED THROUGH THE MANHOLE OVER THE OUTLET ORIFICE. IF MAINTENANCE IS NOT PERFORMED AS RECOMMENDED, SEDIMENT AND TRASH MAY ACCUMULATE IN FRONT OF THE OUTLET ORIFICE. MANHOLE COVERS SHOULD BE SECURELY SEATED FOLLOWING CLEANING ACTIVITIES. CONTECH SUGGESTS THAT ALL SYSTEMS BE DESIGNED WITH AN ACCESS/INSPECTION MANHOLE SITUATED AT OR NEAR THE INLET AND THE OUTLET ORIFICE. SHOULD IT BE NECESSARY TO GET INSIDE THE SYSTEM TO PERFORM MAINTENANCE ACTIVITIES, ALL APPROPRIATE PRECAUTIONS REGARDING CONFINED SPACE ENTRY AND OSHA REGULATIONS SHOULD BE FOLLOWED.

ANNUAL INSPECTIONS ARE BEST PRACTICE FOR ALL UNDERGROUND SYSTEMS. DURING THIS INSPECTION, IF EVIDENCE OF SALTING/DE-ICING AGENTS IS OBSERVED WITHIN THE SYSTEM, IT IS BEST PRACTICE FOR THE SYSTEM TO BE RINSED, INCLUDING ABOVE THE SPRING LINE SOON AFTER THE SPRING THAW AS PART OF THE MAINTENANCE PROGRAM FOR THE SYSTEM.

MAINTAINING AN UNDERGROUND DETENTION OR INFILTRATION SYSTEM IS EASIEST WHEN THERE IS NO FLOW ENTERING THE SYSTEM. FOR THIS REASON, IT IS A GOOD IDEA TO SCHEDULE THE CLEANOUT DURING DRY WEATHER.

THE FOREGOING INSPECTION AND MAINTENANCE EFFORTS HELP ENSURE UNDERGROUND PIPE SYSTEMS USED FOR STORMWATER STORAGE CONTINUE TO FUNCTION AS INTENDED BY IDENTIFYING RECOMMENDED REGULAR INSPECTION AND MAINTENANCE PRACTICES. INSPECTION AND MAINTENANCE RELATED TO THE STRUCTURAL INTEGRITY OF THE PIPE OR THE SOUNDNESS OF PIPE JOINT CONNECTIONS IS BEYOND THE SCOPE OF THIS GUIDE.

C:\EXPORTS\TEMPLATES\CMP_V8.DWG 10/18/2019 10:02 AM

DATE	REVISION DESCRIPTION	BY

CONTECH ENGINEERED SOLUTIONS LLC
www.ContechES.com
9025 Centre Pointe Dr., Suite 400, West Chester, OH 45069
800-338-1122 513-645-7000 513-645-7993 FAX

CONTECH CMP DETENTION SYSTEMS
CONTECH DYODS DRAWING

DYO32598 Rolls
CMP
Ventura, CA
DETENTION SYSTEM

PROJECT No.:	SEQ. No.:	DATE:
22102	32598	5/30/2023
DESIGNED: DYO	DRAWN: DYO	
CHECKED: DYO	APPROVED: DYO	
SHEET NO.: 1		

advanced geotechnical services, inc.

April 23, 2021
Client Number 5126
Report Number 10773

Rolls Scaffold
Attn.: Jake Rolls
11351 County Drive
Saticoy, CA 93004

Percolation Testing
Proposed Stormwater Management System
11351 County Drive
Saticoy, California

In accordance with our proposal and your authorization, Advanced Geotechnical Services, Inc., (AGS) has prepared this *Percolation Testing* report for the proposed stormwater management system to be implemented at the subject site. This report presents the results of the excavation of percolation test borings at the subject site, and percolation testing.

This opportunity to be of service is sincerely appreciated. If you have any questions, or if we may be of any further assistance, please do *not* hesitate to call. We look forward to being of continued service.

Respectfully submitted,
Advanced Geotechnical Services, Inc.

Kenneth J. Palos
President

Scott Moore, GE
Principal Engineer

REGISTERED PROFESSIONAL ENGINEER
SCOTT W. MOORE
No. 2560
GEOTECHNICAL
STATE OF CALIFORNIA

cc: (5) Addressee (1) File Copy

5251 Verdugo Way, Suite L, Camarillo, California 93012
Ph 805.388.6162 / Fx 805.388.6167
info@advancedgeotechnical.com

Scope of Services

Our scope of services included (1) the excavation of eight percolation test borings at the subject site; (2) laboratory testing on samples retrieved from the borings; (3) percolation testing within the borings as described below; (4) performing calculations and providing percolation test results and final infiltration rates, and (5) preparation of this report summarizing our conclusions and recommendations regarding the use of infiltration as part of the stormwater management system at the subject site.

Site Conditions and Proposed Development

The subject site consists of an existing commercial property located at 11351 County Drive, in the Saticoy area of Ventura County, California. The overall topography of the subject site and surrounding areas is gently south to southeasterly sloping. The general location of the subject site is shown on the attached Figure 1, *Site Location Map* (Google, 2021), and a more detailed view of the site is shown on the attached *Existing Site Plan*, Plate 1 (Google, 2021). Both of these attachments were created utilizing images obtained from the Google Earth online web app.

The proposed improvements consist of the implementation of a stormwater management system, which may include the installation of new infiltration features, and/or the analysis and possible modification of existing features, including an existing swale and detention basin.

Excavation of Percolation Test Borings

The eight percolation test borings were excavated on April 5, 2021, to the approximate anticipated depth of infiltration at each of the four test locations requested, as discussed with the Project Civil Engineer, and to depths of 11 feet below the anticipated depth of infiltration. The overall depth of the test borings ranged from approximately 2 to 22 feet below the existing ground surface. The borings were excavated utilizing 8-inch diameter hollow stem auger drilling equipment, and undisturbed ring samples were taken just above the bottom of each boring. The boring locations are shown on the enclosed Plate 1, and detailed descriptions of the earth materials encountered are provided on the enclosed boring logs, Plates A-3 through A-11.

The percolation test borings were excavated in four pairs of two borings, with the shallowest boring in each pair excavated to the approximate depth of the proposed infiltration system, and the deepest boring in each pair excavated to a depth of approximately 11 feet below the proposed depth of infiltration, in accordance with the requirements of the **Ventura County Technical Manual for Stormwater Quality Control Measures, Manual Errata Update June 2018** (Geosyntec, 2018).

Earth Materials Encountered

Native, younger alluvial soils were encountered at the existing ground surface in some of the borings, and below a surface layer of gravel in others, and extended to the maximum depth explored, 22 feet below the existing site grade. The alluvium consists primarily of clayey soils in Borings P-1 and P-2, and primarily of silty sand and sand in Borings P-3 through P-8. More detailed descriptions of the earth materials encountered are provided on the enclosed boring logs.

Groundwater

Groundwater was not encountered in any of the borings excavated during our site exploration. Based on the *Depth to Historically High Groundwater* map attached as Figure 2 (CGS, 2003), the historically highest groundwater level in the vicinity of the subject site was approximately 10 feet below the existing ground surface.

Laboratory Testing

Laboratory testing to determine the existing field moisture content and dry density was performed on representative samples of soil retrieved from near the bottom of each boring. The results of this testing are presented on the enclosed boring logs, Plates A-3 through A-11.

Percolation Testing

The field percolation testing program was performed in accordance with the specifications for the falling-head borehole infiltration test method specified in Section C.6 of Appendix C of the **Ventura County Technical Manual for Stormwater Quality Control Measures, Manual Errata Update June 2018** (Geosyntec, 2018). Upon completion of the excavation and sampling operations, each test hole was prepared by installing an appropriate length of perforated PVC pipe and surrounding gravel, including a small amount of gravel at the base of the hole, and filling the test hole with water to initiate the 24-hour pre-saturation period.

At the completion of the 24-hour pre-saturation period, P-1 was found to have 21.0 inches of water remaining in the hole, and P-2 was found to have 52.875 inches of water remaining in the hole. The remainder of the holes were completely dry, meaning that all of the pre-soak water had percolated into the ground. For the testing of P-1 and P-2, the water level remaining in the hole was measured every hour for four hours, and no additional water was added. For the testing of the remainder of the holes, P-3 through P-8, each test hole was refilled with water to a height of 12-inches above the bottom of the test hole. The water drop in each test hole was then recorded after 60 minutes, and additional water was added to the test hole to restore the top of the water column to a height of 12-inches above the bottom of the test hole after each 60 minute period and reading. This process was continued for a period of 4 hours for each test hole, and the test data are included on the attached Figures 3 and 4.

The purpose of the deeper boring in each pair of borings was to confirm that there were no impediments to infiltration to a depth of at least 11 feet below the depth of infiltration, and that the percolation rate at that depth would be at least equal to the rate at the planned depth of infiltration. The lowest of the two percolation rates in each pair of borings should be utilized as the design infiltration rate.

The final infiltration rate in incher per hour, as shown in the following table, was calculated by dividing the final stabilized volume infiltrated over the last hour (or slowest period) by the area of infiltration, which includes the side walls of the boring within the average height of water column during the final hour (or slowest period), and the area at the bottom of the boring. This method of calculating the actual soil infiltration rate has been required by multiple agencies in Ventura County, and is based on the procedures outlined in the 2017 L.A. County document GS 200.2, **Guidelines for Design, Investigation, and Reporting Low Impact Development Stormwater Infiltration.**

Percolation Test Results Summary

Test Hole Number	Test Hole Depth (ft)	Final Hour Water Drop Rate (Or Slowest Rate) (in/hr)	Average Water Ht. During Final Test Hour (Or Slowest Period) (in)	*Volume* of Water Infiltrated During Final Test Hour (in^3/hr)	*Area* of Infiltration, Including Bottom and Side Walls of 4" Diam. Boring, Using Avg. Water Ht. During Final Test Hour (in^2)	Final Infiltration Rate (*Volume/Area*) (in/hr)	Final Infiltration Rate (min/in)
P-1	5	1.250	16.125	62.8	455.5	0.138	435.0
P-2	16	3.000	42.500	150.8	1118.4	0.135	445.0
P-3	2	10.750	6.625	540.4	216.8	2.493	24.1
P-4	13	12.000	6.000	603.2	201.1	3.000	20.0
P-5	2	4.750	9.625	238.8	292.2	0.817	73.4
P-6	13	12.000	6.000	603.2	201.1	3.000	20.0
P-7	11	9.250	7.375	465.0	235.6	1.973	30.4
P-8	22	11.250	6.375	565.5	210.5	2.687	22.3

Upon completion of the field testing program, the pipe was pulled from the holes, and the test holes were backfilled with the excavated soil.

Conclusions and Recommendations

The subject site is located in an area that is underlain by a transition between primarily sandy soils deposited by the Santa Clara River located to the south of the site, and primarily clayey and silty soils deposited by streams meandering southward out of the mountains to the north. Borings P-1 and P-2 are located in the northern portion of the site, within the area of the primarily clayey soils, and the remainder of the borings are located within the primarily sandy soils to the south. The percolation rates at the locations of P-1 and P-2 within the clayey soils were relatively low, as expected, and below the minimum allowable rate (Geosyntec, 2018) of 0.3 to 0.5 inches per hour required to implement infiltration (which minimum allowable rate governs is dependent on other factors). The rates at the other locations were all 0.817 inches/hour and above, and therefore infiltration would be allowed.

Infiltration Discussion

The intentional introduction of enormous amounts of water into the ground via the infiltration of onsite stormwater is a relatively new concept, and is inherently risky, regardless of any precautions which may be taken, particularly when infiltration is implemented directly below paving. As with any infiltration system, there should be careful coordination of the site utility locations with any proposed stormwater infiltration features. The proposed stormwater infiltration features should *not* be allowed to come into contact with utility trench backfill, and it is recommended that utilities not be allowed to cross above, below or through any proposed infiltration features. Infiltration features should comply with all of the minimum setback restrictions in the **Ventura County Technical Manual for Stormwater Quality Control Measures, Manual Errata Update June 2018** (Geosyntec, 2018).

Limits and Liability

All building sites are subject to elements of risk that cannot be wholly identified and/or entirely eliminated. Building sites are subject to many detrimental geotechnical hazards, including but *not* limited to the effects of water infiltration, erosion, concentrated drainage, total settlement, differential settlement, expansive soil movement, seismic shaking, fault rupture, landsliding, and slope creep. The risks from these hazards can be reduced by employing subsurface exploration, laboratory testing, analyses, and experienced geotechnical judgment. Many geotechnical hazards, however, are highly dependent on the property owner properly maintaining the site, drainage facilities, and slope and by correcting any deficiencies found during occupancy of the property in a timely manner. Even with a thorough subsurface exploration and testing program, significant variability between test locations and between sample intervals may exist. Ultimately, geotechnical recommendations are based on the experience and judgment of the geotechnical professionals in evaluating the available data from site observations, subsurface exploration, and laboratory tests. Latent defects can be concealed by earth materials, deposition, geologic history, and existing improvements. If such defects are present, they are beyond the evaluation of the geotechnical professionals. No warranty, expressed or implied, is made or intended in connection with this report, by furnishing of this report, or by any other oral or written statement. Owners and developers are responsible for retaining appropriate design professionals and qualified contractors in developing their property and for properly maintaining the property. Retaining the services of a geotechnical consultant should *not* be construed to relieve the Owner, Developer, or Contractors of their responsibilities or liabilities.

The analysis and recommendations submitted in this report are based in part on our subsurface exploration, laboratory testing, site observations, and provided data on geology and the proposed site development. Our descriptions and the boring logs may show distinctions between fill and native soils, between native (e.g., alluvium, colluvium, slopewash) and bedrock formation, and between soil type (e.g., sands and silty sands). Such distinctions were based on geologic information, grading plans when available, intermittent recovered soil/bedrock samples, and judgment. Delineations between these categories of materials may not be perfect and may be subject to change as more information becomes available. For example, judgments may be clouded when recovered samples are intermittent and small in comparison to the volume of soil under study, and macrostructure that would aid the identification process are not as apparent as they would be when the borehole is geologically downhole logged by entering the excavation. When the age of the fill is old, the difference between the structure of the fill and native materials may be less pronounced, or the degree of bedrock formation weathering sometimes makes it difficult to distinguish between overlying alluvium, colluvium, or slopewash and weathered bedrock formational material. In general, our recommendations are based more on the properties of the materials than on the category of the material

type such as fill, alluvium, colluvium, slopewash, or bedrock formation. Furthermore, the actual stratigraphy may be more variable than shown on the logs.

Although this report may comment on or discuss construction techniques or procedures for the design engineer's guidance, this report should *not* be interpreted to prescribe or dictate construction procedures or to relieve the contractor in any way of their responsibility for the construction.

Please be aware that the contract fee for our services to prepare this report does not include additional work that may be required, such as grading observation and testing, footing observations, plan review, or responses to governmental (regulatory) plan reviews associated with you obtaining a building permit. Where additional services are requested or required, you will be billed for any equipment costs and on an hourly basis for consultation or analysis.

The Geotechnical Engineer's actual scope of work during construction is very limited and does *not* assume the day-to-day physical direction of the work, minute examination of the elements, or responsibility for the safety of the contractor's workers. Our scope of services during construction consists of taking soil tests and making visual observations, sometimes on only an intermittent basis, relating to earthwork or foundation excavations for the project. We do *not* guarantee the contractor's performance, but rather look for general conformance to the intent of the plans and geotechnical report. Any discrepancy noted by us regarding earthwork or foundations will be referred to the Owner, project Engineer, Architect, or Contractor for action.

This report is issued with the understanding that it is the responsibility of the Owner, or of their representative, to ensure that the information and recommendations contained herein are called to the attention of the Architect and Engineers for the project and incorporated into the plan and that the necessary steps are taken to see that the Contractor carry out such recommendations in the field. Advanced Geotechnical Services, Inc., (AGS) has prepared this report for the exclusive use of the Client and authorized agents, and this report should *not* be considered transferable. We do recommend, however, that the report be given to future property Owners for the sole purpose of disclosing the report findings.

Findings of this report are valid as of the date of issuance. Changes in conditions of a property may occur with the passage of time whether attributable to natural processes or works of man on this or adjacent properties. Furthermore, changes in applicable or appropriate standards occur due, for example, to legislation and broadening of knowledge. Accordingly, findings of this report may be invalidated wholly or partially by changes outside our control. Therefore, *this report is subject to our review and remains valid for a maximum period of one year*, unless we issue a written opinion of its continued applicability thereafter.

In the event of any changes in the nature and design of the proposed improvements, the conclusions and recommendations contained in this report shall *not* be considered valid unless the changes are reviewed and conclusions of this report modified or verified in writing.

This report may be subject to review by controlling agencies, and any modifications they deem necessary should be made a part thereof, subject to our technical acceptance of such modifications. All submissions of this report should be in its entirety. Under no circumstances should this report be summarized and synthesized to be quoted out of context for any purpose.

Test findings and statements of professional opinion do *not* constitute a guarantee or warranty, and *no* warranties, either expressed or implied, are made as to the professional advice provided under the terms of this agreement. We have strived, however, to provide our services in accordance with generally accepted geotechnical engineering practices in this community at the time of this report.

Enc.: Appendix A, Field Exploration and Boring Logs
References
Figure 1, Site Location Map
Figure 2, Depth to Historically High Groundwater
Figure 3 Percolation Test Data Sheet 1
Figure 4 Percolation Test Data Sheet 2
Plate 1, Existing Site Plan

References

California Geological Survey (2003), **Seismic Hazard Zone Report for the Saticoy 7.5-Minute Quadrangle, Ventura County, California**, Seismic Hazard Zone Report 066.

County of Ventura (2019), **County View** website.
http://gis.ventura.org/Html5Viewer/index.html?viewer=CountyView.CountyView_gvh

Geosyntec (2018), **Ventura County Technical Manual for Stormwater Quality Control Measures, Manual Update 2018.**

Google (2019), Google Earth Interactive web application
http://www.google.com/earth/

Los Angeles, County of (2017) **Guidelines for Design, Investigation, and Reporting Low Impact Development Stormwater Infiltration,** document GS20 0.2, dated June 30, 2017.

Appendix A
Field Exploration and Boring Logs

The field exploration included a site reconnaissance and subsurface exploration. During the site reconnaissance, the surface site conditions were noted, and the approximate locations of any exploration points were determined. The following descriptions of exploration methods are generic and may include methods not used on this project. Reference to the boring logs can be made to determine which methods are applicable to this project, and any differences between what is described below and actually occurred is described on the boring logs or in the main body of the report.

The test borings were advanced by either hand digging, digging with a backhoe, or drilling. In the case of drilling, a truck-mounted rotary drilling rig with a hollow-stem auger or bucket was used to advance the borings. When we expect to encounter shallow groundwater, a wet rotary drilling operation is usually used. The method actually used is noted on the boring logs. For geologic studies when the need for visual examination of the bedding and other stratigraphic features is needed along with engineering data, the larger bucket augers are used to allow a geologist to enter the excavation for visually logging the hole. When geologically logging borings and trenches, the sides are scraped prior to logging. A prefix B is used to designate a boring made with a drilling rig. When hand dug, the boring numbers have a prefix HB. When a backhoe was used, prefixes TP (test pit) or T (trench) are used. The difference between a trench and test pit being the length of the exploration; a trench being a long narrow exploration, most commonly used for fault studies. In each case, the soils were logged by technical personnel from our office and visually classified in the field in general accordance with the Unified Soil Classification system. The field descriptions have been modified as appropriate to reflect laboratory results when preparing the final boring logs.

Relatively undisturbed samples of the subsurface materials were obtained at appropriate intervals in the borings using a steel drive sampler (2.5-inches inside diameter, 3-inches outside diameter) lined with brass, one-inch-high sample rings with a diameter of 2.4 inches. This is referred to as a modified California sampler. The boring may be advanced by drilling with a hollow-stem auger or with a wet rotary operation. If below the groundwater, the hollow-stem is filled with water or drilling mud to counteract the fluid pressure of the groundwater. The sampler was usually driven into the bottom of the borehole with successive drops of a 140-pound safety hammer connected to the sampler with either A or AW rod and falling 30 inches. An automatic hammer is usually used when drilling with a CME dill rig, and a Safe-T-Driver is used when drilling with a Mobile drill rig. When above the groundwater level, a downhole Safe-T-Driver is usually used. Studies have shown that hammer efficiencies of the automatic hammer is over 90% while that of the Safe-T-Driver is about 70%, based on impact velocities. When a bucket auger is used to advance the boring, the driving weights change with depth, depending on the weight characteristics of the telescoping kelley bar, but the height of fall is usually 18 inches. Sampler driving resistance, expressed as blows per 6 inches of penetration, is presented on the boring logs at the respective sampling depths. When the borings or trenches are excavated with a backhoe, the sampler is pushed into the soil with the force of the backhoe. A hand sampler is used when the borings or trenches are advanced by hand digging or in some cases when a backhoe is used to make the excavation. This hand sampler is similar to the conventional California sampler, but lighter weight. An approximately 8-pound hammer falling about 18 inches is used to drive the hand sampler about 6 inches into the bottom of the exploration. The type of sampler used is noted on the boring logs. In some cases the hammer weight and falling distance deviate from those given above. The actual conditions are shown on the boring logs and supersede the conditions given above.

Ring samples were retained in close-fitting, moisture tight containers for transport to our laboratory for testing. Bulk samples, which were collected from cuttings, were placed in bags and transported to our laboratory for testing.

When noted on the boring logs, standard penetration test (SPT) samples were obtained using either a 20-inch or a 32-inch long split-barrel sampler with a 2-inch outside diameter and a 1.375-inch inside diameter when liners are used (1.5-inch inside diameter without liners). Unless noted otherwise, liners are used. This sampler is driven into the soil with successive drops of a 140-pound, safety hammer falling 30 inches. The blows are recorded for each 6

inches of penetration for a total penetration of 18 or 24 inches. The sum of the number of blows for the last 12 inches of an 18-inch penetration or the middle 12 inches of a 24-inch penetration is referred to as the *N* value.

Elevations of the ground surface, if shown on the logs, were determined at the boring locations using a topographic map or determined by using a temporary bench mark shown on the *Site Plan,* (Figure 3).

Logs, which are presented on Plates at the end of this Appendix, include a description and classification of each stratum, sample locations, blow counts, groundwater conditions encountered during drilling, results from selected types of laboratory tests, and drilling information. Keys to *Soil and Bedrock Symbols and Terms* are included on Plate A-1 and Plate A-2.

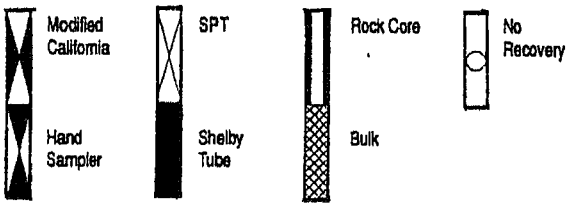
Each boring or trench, unless noted otherwise, was backfilled with cuttings at the completion of the logging and sampling. The backfill, however, may settle with time, and it is the responsibility of our client to ensure that such settlement does *not* become a liability.

Major Divisions			USCS Group Symbols	Typical Names
Coarse-Grained Soils (More than half of material is larger than No. 200 sieve)	Gravels (More than half of coarse fraction is larger than No. 4 sieve)	Clean gravels (Little or no fines)	GW	Well-graded gravels, gravel-sand mixtures, little or no fines
			GP	Poorly graded gravels, gravel-sand mixtures, little or no fines
		Gravels with fines (Appreciable amount of fines)	GM	Silty gravels, gravel-sand-silt mixtures
			GC	Clayey gravels, gravel-sand, clay mixtures
	Sands (More than half of coarse fraction is smaller than No. 4 sieve)	Clean sands (Little or no fines)	SW	Well-graded sands, gravelly sand, little or no fines
			SP	Poorly graded sands, gravelly sands little or no fines
		Sands and fines (Appreciable amount of fines)	SM	Silty sands, sand-silt mixtures
			SC	Clayey sands, sand-clay mixtures
Fine-Grained Soils (More than half of material is smaller than No. 200 sieve)	Silts and Clays Liquid Limit < 50		ML	Silts and very fine sands, rock-flour, silty or clayey fine sands, or clayey silts with slight plasticity
			CL	Inorganic clays of low or medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
			OL	Organic silts and organic silty clays of low plasticity
	Silts and Clays Liquid Limit > 50		MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts
			CH	Inorganic clays of high plasticity, fat clays
			OH	Organic clays of medium to high plasticity, organic silts
	Highly Organic Soils		Pt	Peat and other highly organic soils

Legend of Laboratory Tests

G - Grain Size	C - Consolidation	PP - Pocket Penetrometer
A - Atterberg Limits	DS - Direct Shear	CH - Chemical
P - Compaction	U - Unconfined	
S - Swell/Expansion	T - Triaxial	

Sampler Type



Terms used in this report for describing soils according to their texture or grain size distributions are generally in accordance with the Unified Soil Classification System.

Terms Describing Density and Consistency

Coarse Grained soils (major portion retained on No. 200 sieve) include (1) clean gravels, (2) silty or clayey gravels, and (3) silty, clayey, or gravelly sands. Relative density is related to SPT blow count corrected for overburden pressure or drive energy.

Density		SPT *N* Value Blows/Ft	Relative Density %
Very Loose	vl	0 to 4	0 to 15
Loose	l	4 to 10	15 to 35
Medium Dense	md	10 to 30	35 to 65
Dense	d	30 to 50	65 to 85
Very Dense	vd	> 50	85 to 100

Fine Grained soils (major portions passing No. 200 sieve) include (1) inorganic and organic silts and clays, (2) gravelly, sandy, or silty clays, and (3) clayey silts. Consistency is rated according to shear strength as indicated by penetrometer readings, direct shear, or SPT blow count.

Consistency	Shear Strength, ksf	SPT *N* Value
Very Soft	< 0.25	0 to 2
Soft	0.25 to 0.50	2 to 4
Firm	0.50 to 1.00	4 to 8
Stiff	1.00 to 2.00	8 to 16
Very Stiff	2.00 to 4.00	16 to 32
Hard	> 4.00	> 32

Terms Characterizing Soil Structure

Slickensided	Having inclined planes of weakness that are slick and glossy in appearance.
Fissured	Containing shrinkage cracks, frequently filled with fine sand or silt; usually more or less vertical.
Laminated	Composed of thin layers of varying color and texture.
Interbedded	Composed of alternate layers of different soil types.
Calcareous	Containing appreciable quantities of calcium carbonate.
Well Graded	Having wide range in grain sizes and substantial amounts of intermediate particle sizes.
Poorly Graded	Predominately one grain size, or having a range of grain sizes with some intermediate sizes missing.
Porous	Having visibly apparent void spaces through which water, air, or light may pass.

Soil Moisture

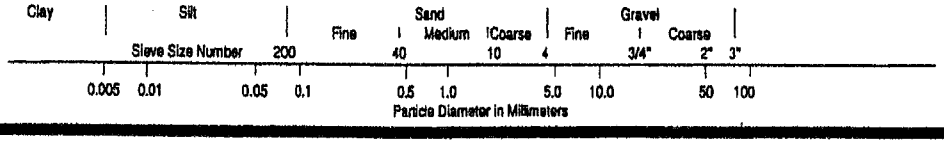
From low to high, the moisture content is indicated by:

Dry	D
Slightly Moist	Sl M
Moist (near optimum for compaction)	M
Very Moist	V M
Wet	W

Size Proportions

Designation	Percent by Weight
Trace	< 5
Few	5 to 10
Little	15 to 25
Some	30 to 45

Grain Size Distribution



Advanced Geotechnical Services

Key to Bedrock Symbols and Terms

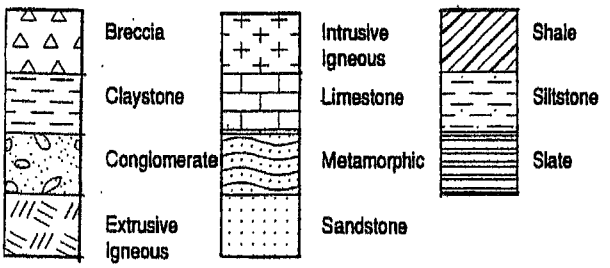
Degree of Weathering
Diagnostic Feature

Descriptive Term	Discoloration Extent	Fracture Condition	Surface Characteristics	Original Texture	Grain Boundary Condition
Unweathered	None	Closed or discolored	Unchanged	Preserved	Tight
Slightly Weathered	Less 20% of fracture spacing on both sides of fracture	Discolored, may contain thin filling	Partial discoloration	Preserved	Tight
Moderately Weathered	Greater than 20% of fracture spacing on both sides of fracture	Discolored, may contain thick filling, cemented rock	Partial to complete discoloration, not friable except poorly cemented rocks	Preserved	Partial Opening
Highly Weathered	Throughout		Friable and possibly pitted	Mainly Preserved	Partial Separation
Completely Weathered	Throughout		Resembles a soil	Partly Preserved	Complete Separation

Discontinuity Spacing

Description for Structural Feature: Bedding, Foliation, or Flow Banding	Spacing		Description for Joints, Faults, or Other Fractures
Very Thickly (Bedded, Foliated, or Banded)	More than 2 m	More than 6 ft	Very Widely (Fractured or Jointed)
Thickly	60 cm to 2 m	2 to 6 ft	Widely
Moderately	20 to 60 cm	8 to 24 in.	Medium
Thinly	60 to 200 mm	2.5 to 8 in.	Closely
Very Thinly	20 to 60 mm	0.75 to 2.5 in.	Very Closely
Description for Microstructural Features: Bedding, Foliation, or Cleavage			
Intensely (Laminated, Foliated, or Cleaved)	6 to 20 mm	0.25 to 0.75 in.	Extremely Close
Very Intensely	< 6 mm	< 0.25 in.	

Graphic Symbols - Bedrock



Rock Hardness

Classification	Field Test
Very Weak	Can be dug by hand and crushed with fingers.
Weak	Friable, can be gouged deeply with a knife and will crumble readily under light hammer blows.
Moderately Strong	Can be peeled with a knife. Material crumbles under firm blows with the sharp end of a geologic pick.
Strong	Cannot be scaped or peeled with a knife point. Hand held specimen breaks with firm blows of the pick.
Very Strong	Difficult to scratch with knife point. Cannot break hand held specimen.

Separation of Fracture Walls

Description	Separation of Walls, mm
Closed	0
Very Narrow	0 to 0.1
Narrow	0.1 to 1.0
Wide	1.0 to 5.0
Very Wide	> 5.0

Fracture Filling

Description	Definition
Clean	No fracture filling material
Stained	Discoloration of rock only. No recognizable filling material.
Filled	Fracture filled with recognizable filling material.

Surface Roughness

Description	Classification
Smooth	Appears smooth and is essentially smooth to the touch. May be slickensided.
Slightly Rough	Asperities on the fracture surfaces are visible and can be distinctly felt.
Medium Rough	Asperites are clearly visible and fracture surface feels abrasive to the touch.
Rough	Large angular asperites can be seen. Some ridge and high-side angle steps evident.
Very Rough	Near vertical steps and ridges occur on the fracture surface.

Where slickensides are observed, the direction of the slickensides should be recorded after the standard discontinuity surface description.

PLATE A-2

advanced geotechnical services, inc.

Boring Log P-1

Sheet 1 of 1

Project **Rolls Scaffold** Client No. **5126** Date Drilled **4/5/21**

Comment **11351 County Drive, Ventura**

Drilling Company/Driller **Choice Drilling** Equipment **Hollow Stem Auger**

Driving Weight (lbs) **140** Average Drop (in.) **30** Hole Diameter (in.) **8**

Elevation _____ ft Depth to Water _____ ft After _____ hrs on _____ Logged By **BW**

Depth, ft	Sample	Blows/6"	Graphic Symbol	Description of Material	Attitudes	Dry Unit Weight, pcf	Moisture Content, %	-#200, %	Other Tests
				This log, which is part of the report prepared by Advanced Geotechnical Services, Inc. for the named project, should be read together with that report for complete interpretation. This summary applies only at this boring location and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.					
				Base, dry, dense					
				Alluvium (Qa)					
				Dark yellowish brown Sandy to Silty CLAY, slightly moist to moist, stiff					
		7							
		12				105.4	19.9		
5		15							
				Total Depth Explored = 5 ft.					
				Perforated Pipe and Gravel Set in Hole 4/5/2021					
				No Groundwater Encountered					
				Pipe Pulled and Backfilled with Spoils 4/6/2021					
10									
15									
20									
25									

advanced geotechnical services, inc.

Boring Log P-2

Sheet 1 of 1

Project **Rolls Scaffold** Client No. **5126** Date Drilled **4/5/21**

Comment **11351 County Drive, Ventura**

Drilling Company/Driller **Choice Drilling** Equipment **Hollow Stem Auger**

Driving Weight (lbs) **140** Average Drop (in.) **30** Hole Diameter (in.) **8**

Elevation _____ ft Depth to Water _____ ft After _____ hrs on _____ Logged By **BW**

Depth, ft	Sample	Blows/6"	Graphic Symbol	Description of Material	Attitudes	Dry Unit Weight, pcf	Moisture Content, %	#200, %	Other Tests
				This log, which is part of the report prepared by Advanced Geotechnical Services, Inc. for the named project, should be read together with that report for complete interpretation. This summary applies only at this boring location and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.					
				Base, dry, dense					
				Alluvium (Qa)					
				Dark yellowish brown Sandy to Silty CLAY, slightly moist to moist, stiff					
5									
				Grades to					
				Moderate yellowish brown to tan					
10									
				with light brown iron oxide staining					
15		11 13 15				103.8	22.6		
				Total Depth Explored = 16 ft. Perforated Pipe and Gravel Set in Hole 4/5/2021 No Groundwater Encountered Pipe Pulled and Backfilled with Spoils 4/6/2021					
20									
25									

Plate A-4

advanced geotechnical services, inc.

Boring Log P-3

Sheet 1 of 1

Project **Rolls Scaffold** Client No. **5126** Date Drilled **4/5/21**

Comment **11351 County Drive, Ventura**

Drilling Company/Driller **Choice Drilling** Equipment **Hollow Stem Auger**

Driving Weight (lbs) **140** Average Drop (in.) **30** Hole Diameter (in.) **8**

Elevation _____ ft Depth to Water _____ ft After _____ hrs on _____ Logged By **BW**

Depth, ft	Sample	Blows/6"	Graphic Symbol	Description of Material	Attitudes	Dry Unit Weight, pcf	Moisture Content, %	-#200, %	Other Tests
		12 14 20		**Gravel** **Alluvium (Qa)** Tan Silty SAND, slightly moist, dense		111.4	12.0		
5				Total Depth Explored = 2 ft. Perforated Pipe and Gravel Set in Hole 4/5/2021 No Groundwater Encountered Pipe Pulled and Backfilled with Spoils 4/6/2021					
10									
15									
20									
25									

This log, which is part of the report prepared by Advanced Geotechnical Services, Inc. for the named project, should be read together with that report for complete interpretation. This summary applies only at this boring location and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.

advanced geotechnical services, inc.

Boring Log P-4

Sheet 1 of 1

Project **Rolls Scaffold** Client No. **5126** Date Drilled **4/5/21**

Comment **11351 County Drive, Ventura**

Drilling Company/Driller **Choice Drilling** Equipment **Hollow Stem Auger**

Driving Weight (lbs) **140** Average Drop (in.) **30** Hole Diameter (in.) **8**

Elevation _____ ft Depth to Water _____ ft After _____ hrs on _____ Logged By **BW**

Depth, ft	Sample	Blows/6"	Graphic Symbol	Description of Material	Attitudes	Dry Unit Weight, pcf	Moisture Content, %	-#200, %	Other Tests
				This log, which is part of the report prepared by Advanced Geotechnical Services, Inc. for the named project, should be read together with that report for complete interpretation. This summary applies only at this boring location and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.					
				Gravel					
				Alluvium (Qa) Tan Silty SAND, slightly moist to moist, dense					
5				with minor gravel					
10				Tan very coarse grained SAND, with light brown iron oxide staining, moist, dense					
		15 21 25				114.1	2.6		
15				Total Depth Explored = 13 ft. Perforated Pipe and Gravel Set in Hole 4/5/2021 No Groundwater Encountered Pipe Pulled and Backfilled with Spoils 4/6/2021					
20									
25									

Plate A- 6

advanced geotechnical services, inc.

Boring Log P-5

Sheet 1 of 1

Project **Rolls Scaffold** Client No. **5126** Date Drilled **4/5/21**

Comment **11351 County Drive, Ventura**

Drilling Company/Driller **Choice Drilling** Equipment **Hollow Stem Auger**

Driving Weight (lbs) **140** Average Drop (in.) **30** Hole Diameter (in.) **8**

Elevation _____ ft Depth to Water _____ ft After _____ hrs on _____ Logged By **BW**

Depth, ft	Sample	Blows/6"	Graphic Symbol	Description of Material	Attitudes	Dry Unit Weight, pcf	Moisture Content, %	-#200, %	Other Tests
		13 17 16		**Alluvium (Qa)** Tan to moderate yellowish brown Silty SAND, slightly moist, dense		110.9	9.9		
5				Total Depth Explored = 2 ft. Perforated Pipe and Gravel Set in Hole 4/5/2021 No Groundwater Encountered Pipe Pulled and Backfilled with Spoils 4/6/2021					
10									
15									
20									
25									

This log, which is part of the report prepared by Advanced Geotechnical Services, Inc. for the named project, should be read together with that report for complete interpretation. This summary applies only at this boring location and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.

advanced geotechnical services, inc.

Boring Log P-6

Sheet 1 of 1

Project **Rolls Scaffold** Client No. **5126** Date Drilled **4/5/21**

Comment **11351 County Drive, Ventura**

Drilling Company/Driller **Choice Drilling** Equipment **Hollow Stem Auger**

Driving Weight (lbs) **140** Average Drop (in.) **30** Hole Diameter (in.) **8**

Elevation _____ ft Depth to Water _____ ft After _____ hrs on _____ Logged By **BW**

Depth, ft	Sample	Blows/6"	Graphic Symbol	Description of Material	Attitudes	Dry Unit Weight, pcf	Moisture Content, %	-#200, %	Other Tests
				This log, which is part of the report prepared by Advanced Geotechnical Services, Inc. for the named project, should be read together with that report for complete interpretation. This summary applies only at this boring location and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.					
				Alluvium (Qa) Tan Silty SAND, slightly moist, dense					
5									
				Moderate yellowish brown fine to medium grained SAND with minor Silt, slightly moist to moist, dense					
10									
		13 27 30		Tan very coarse grained SAND with large Gravel, slightly moist to moist, dense		121.4	2.7		
15				Total Depth Explored = 13 ft. Perforated Pipe and Gravel Set in Hole 4/5/2021 No Groundwater Encountered Pipe Pulled and Backfilled with Spoils 4/6/2021					
20									
25									

Plate A- 8

advanced geotechnical services, inc.

Boring Log P-7

Sheet 1 of 1

Project **Rolls Scaffold** Client No. **5126** Date Drilled **4/5/21**

Comment **11351 County Drive, Ventura**

Drilling Company/Driller **Choice Drilling** Equipment **Hollow Stem Auger**

Driving Weight (lbs) **140** Average Drop (in.) **30** Hole Diameter (in.) **8**

Elevation _____ ft Depth to Water _____ ft After _____ hrs on _____ Logged By **BW**

Depth, ft	Sample	Blows/6"	Graphic Symbol	Description of Material	Attitudes	Dry Unit Weight, pcf	Moisture Content, %	-#200, %	Other Tests
				This log, which is part of the report prepared by Advanced Geotechnical Services, Inc. for the named project, should be read together with that report for complete interpretation. This summary applies only at this boring location and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.					
				Gravel					
				Alluvium (Qa) Dark yellowish brown Silty SAND, slightly moist, dense					
5				Grades to moderate yellowish brown color					
				Tan fine to medium grained SAND, slightly moist, dense					
10		5 11 21				121.5	3.5		
				Tan fine to medium grained SAND with abundant large rounded Gravel, slightly moist, dense					
15				Total Depth Explored = 11 ft. Perforated Pipe and Gravel Set in Hole 4/5/2021 No Groundwater Encountered Pipe Pulled and Backfilled with Spoils 4/6/2021					
20									
25									

Plate A- 9

advanced geotechnical services, inc.

Boring Log P-8

Sheet 1 of 1

Project **Rolls Scaffold** Client No. **5126** Date Drilled **4/5/21**

Comment **11351 County Drive, Ventura**

Drilling Company/Driller **Choice Drilling** Equipment **Hollow Stem Auger**

Driving Weight (lbs) **140** Average Drop (in.) **30** Hole Diameter (in.) **8**

Elevation _____ ft Depth to Water _____ ft After _____ hrs on _____ Logged By **BW**

Depth, ft	Sample	Blows/6"	Graphic Symbol	Description of Material	Attitudes	Dry Unit Weight, pcf	Moisture Content, %	-#200, %	Other Tests
				This log, which is part of the report prepared by Advanced Geotechnical Services, Inc. for the named project, should be read together with that report for complete interpretation. This summary applies only at this boring location and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.					
				Gravel					
				Alluvium (Qa) Moderate yellowish brown Silty SAND, slightly moist, dense					
5									
10				Tan to moderate yellowish brown medium grained SAND with abundant large rounded Gravel and small Cobble, slightly moist, dense					
15									
20		70@6"				117.0	3.5		
25				Total Depth Explored = 22 ft. Perforated Pipe and Gravel Set in Hole 4/5/2021 No Groundwater Encountered Pipe Pulled and Backfilled with Spoils 4/6/2021					

Plate A- 10

P-1 Percolation Test Data (Total Depth = 5 Feet)

Total Elapsed Time (min)	Initial Depth of Water in Bottom of Hole (in)	Final Depth of Water in Bottom of Hole (in)	Water Drop During 60-min. Interval (in)	Field Water Drop Rate (in/hr)	Field Water Drop Rate (min/in)
0	21.000*	---	---	---	---
60	21.000	19.375	1.625	1.63	36.9
120	19.375	18.000	1.375	1.38	43.6
180	18.000	16.750	1.250	1.25	48.0
240	16.750	15.500	1.250	1.25	48.0

*Water remaining from 24-hour pre-soak, no water added during testing

P-2 Percolation Test Data (Total Depth = 16 Feet)

Total Elapsed Time (min)	Initial Depth of Water in Bottom of Hole (in)	Final Depth of Water in Bottom of Hole (in)	Water Drop During 60-min. Interval (in)	Field Water Drop Rate (in/hr)	Field Water Drop Rate (min/in)
0	52.875*	---	---	---	---
60	52.875	48.250	4.625	4.63	13.0
120	48.250	44.000	4.250	4.25	14.1
180	44.000	41.000	3.000	3.00	20.0
240	41.000	37.750	3.250	3.25	18.5

*Water remaining from 24-hour pre-soak, no water added during testing

P-3 Percolation Test Data (Total Depth = 2 Feet)

Total Elapsed Time (min)	Initial Depth of Water in Bottom of Hole (in)	Final Depth of Water in Bottom of Hole (in)	Water Drop During 60-min. Interval (in)	Field Water Drop Rate (in/hr)	Field Water Drop Rate (min/in)
0	12	---	---	---	---
60	12	0.500	11.500	11.50	5.22
120	12	1.000	11.000	11.00	5.45
180	12	1.000	11.000	11.00	5.45
240	12	1.250	10.750	10.75	5.58

P-4 Percolation Test Data (Total Depth = 13 Feet)

Total Elapsed Time (min)	Initial Depth of Water in Bottom of Hole (in)	Final Depth of Water in Bottom of Hole (in)	Water Drop During 60-min. Interval (in)	Field Water Drop Rate (in/hr)	Field Water Drop Rate (min/in)
0	12	---	---	---	---
60	12	0.000	12.000	12.00	5.00
120	12	0.000	12.000	12.00	5.00
180	12	0.000	12.000	12.00	5.00
240	12	0.000	12.000	12.00	5.00

P-5 Percolation Test Data (Total Depth = 2 Feet)

Total Elapsed Time (min)	Initial Depth of Water in Bottom of Hole (in)	Final Depth of Water in Bottom of Hole (in)	Water Drop During 60-min. Interval (in)	Field Water Drop Rate (in/hr)	Field Water Drop Rate (min/in)
0	12	---	---	---	---
60	12	6.625	5.375	5.38	11.16
120	12	6.750	5.250	5.25	11.43
180	12	7.250	4.750	4.75	12.63
240	12	7.250	4.750	4.75	12.63

P-6 Percolation Test Data (Total Depth = 13 Feet)

Total Elapsed Time (min)	Initial Depth of Water in Bottom of Hole (in)	Final Depth of Water in Bottom of Hole (in)	Water Drop During 60-min. Interval (in)	Field Water Drop Rate (in/hr)	Field Water Drop Rate (min/in)
0	12	---	---	---	---
60	12	0.000	12.000	12.00	5.00
120	12	0.000	12.000	12.00	5.00
180	12	0.000	12.000	12.00	5.00
240	12	0.000	12.000	12.00	5.00

P-7 Percolation Test Data (Total Depth = 11 Feet)

Total Elapsed Time (min)	Initial Depth of Water in Bottom of Hole (in)	Final Depth of Water in Bottom of Hole (in)	Water Drop During 60-min. Interval (in)	Field Water Drop Rate (in/hr)	Field Water Drop Rate (min/in)
0	12	---	---	---	---
60	12	1.750	10.250	10.25	5.85
120	12	2.375	9.625	9.63	6.23
180	12	2.875	9.125	9.13	6.58
240	12	2.750	9.250	9.25	6.49

P-8 Percolation Test Data (Total Depth = 22 Feet)

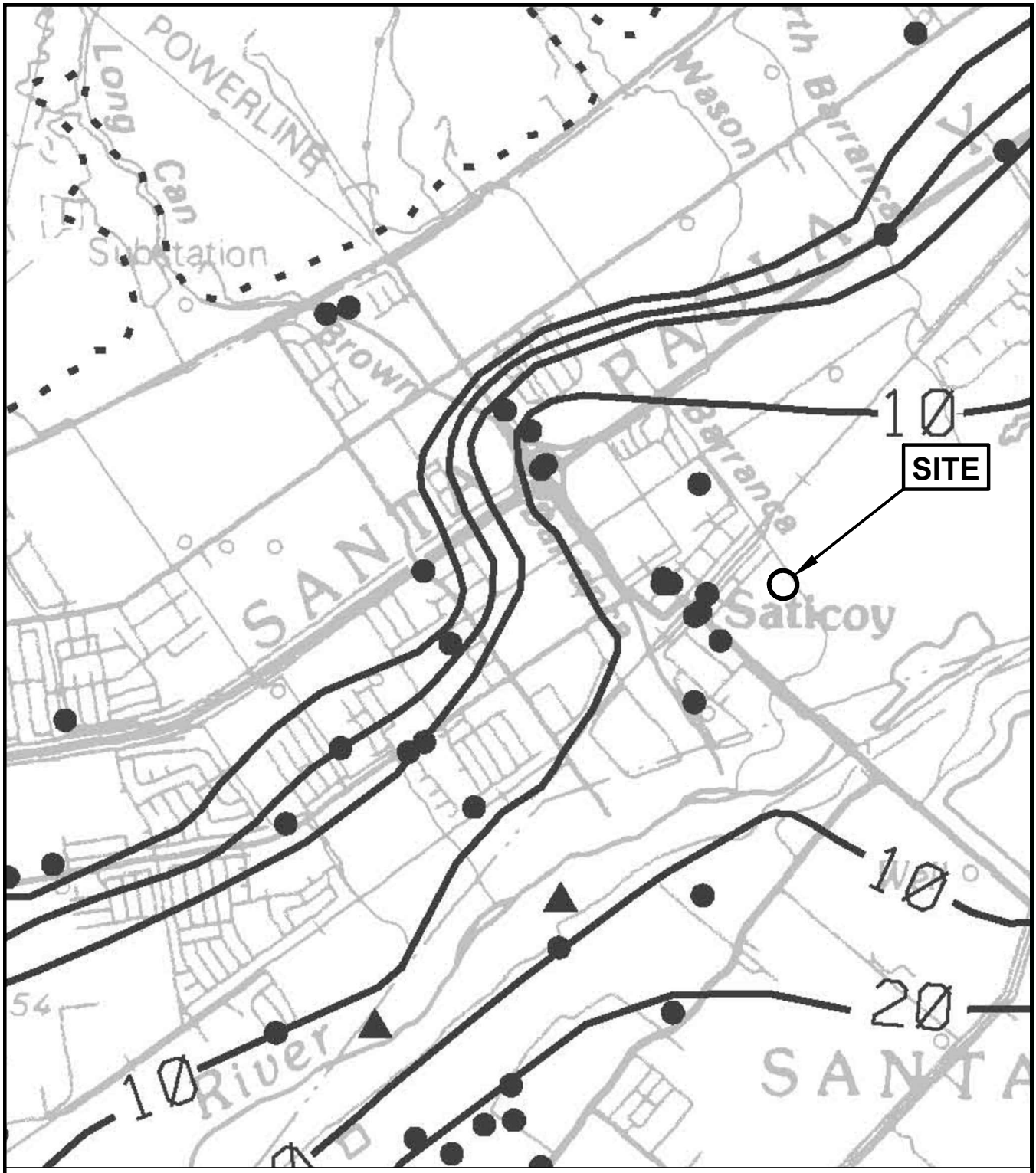
Total Elapsed Time (min)	Initial Depth of Water in Bottom of Hole (in)	Final Depth of Water in Bottom of Hole (in)	Water Drop During 60-min. Interval (in)	Field Water Drop Rate (in/hr)	Field Water Drop Rate (min/in)
0	12	---	---	---	---
60	12	0.000	12.000	12.00	5.00
120	12	0.000	12.000	12.00	5.00
180	12	0.500	11.500	11.50	5.22
240	12	0.750	11.250	11.25	5.33

Reference: Google Earth 2021

N

No Scale

Advanced Geotechnical Services	**SITE LOCATION MAP**	**ROLLS SCAFFOLD** **11351 County Drive** **Saticoy, California**	
		Client # 5126 **Report # 10773**	**FIGURE 1**



Reference: CGS, 2003 - SHZR 066

N

Scale: 1" = $\frac{1}{2}$ mile

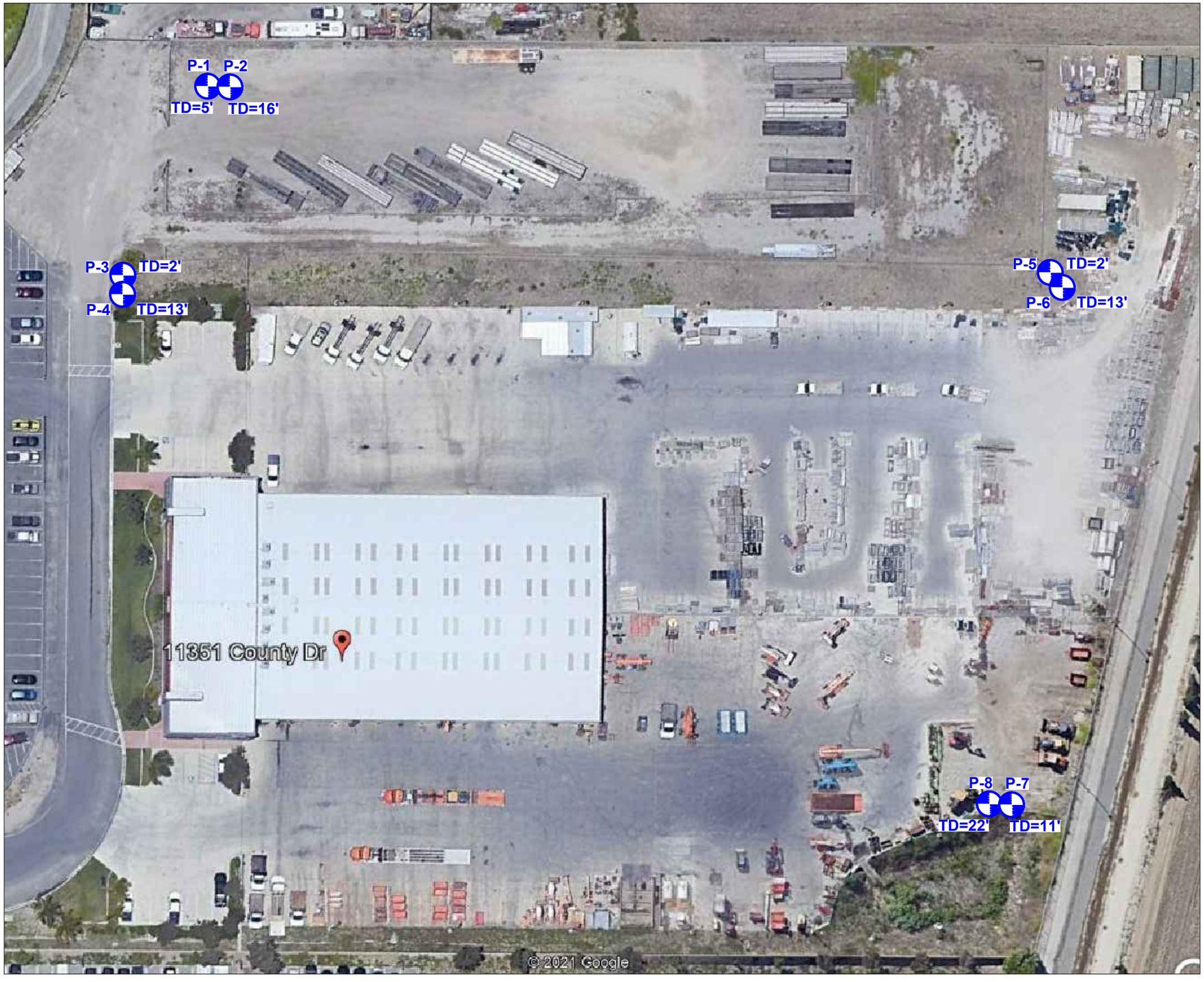
Advanced Geotechnical Services

DEPTH TO HISTORICALLY HIGH GROUNDWATER

ROLLS SCAFFOLD
11351 County Drive
Saticoy, California

Client # 5126
Report # 10773

FIGURE 2



EXISTING SITE PLAN

60' 0' 60' 120'

SCALE: 1" = 60'

EXPLANATION

P-8
TD=22'

Approximate Location of Percolation Test Boring (TD = Total Depth)

Advanced Geotechnical Services
5251 Verdugo Way, Suite L
Camarillo, California 93012
Office (805) 388-6162/Fax (805) 388-6167

ROLLS SCAFFOLD

Percolation Testing
Proposed Stormwater Management System
11351 County Drive
Saticoy, California

Client No.	5126	PLATE
Report No.	10773	1
Date	4/23/2021	
Drawing No.	10773cn5126	

JENSEN DESIGN & SURVEY, INC

1672 Donlon Street
Ventura, CA 93003
Local 805 654-6977
Fax 805 654-6979

NOTICE OF TRANSMITTAL

JOB NO: ROL02.3964.004

ATTN: **Mark Bandurraga**
County Of Ventura Watershed
Protection District

SUBJECT: Rolls Scaffolding
Hydrology

DATE: Friday, December 05, 2008

Sent by: messenger

Response from Recipient? Yes
If yes enter comment here:

WE ARE TRANSMITTING HEREWITH THE FOLLOWING:

- 1 copy of updated hydrology report with hydrograph analysis

COMMENTS:
For your use.

By: JENSEN DESIGN & SURVEY, INC

Kinsey Hensley, P.E.

K:\ROL23964\corr\3964 T Watershed Re Ph ii report.doc

JENSEN DESIGN & SURVEY, INC

1672 Donlon Street
Ventura, CA 93003
Local 805 654-6977
Fax 805 654-6979

December 5, 2008
ROL02.3964.004

Planning Division
County of Ventura
800 South Victoria L#1740
Ventura, CA, 93009

SUBJECT: Jakran Sales and Retail Phase 2 Drainage Response Letter

This letter is to address the proposed drainage comments for the Phase 2 development of Jakran Sales and Retail provided by Ventura County Watershed Protection district on August 28, 2008.

Item 1:

The maps showing the flowpaths used for the time of concentration calculations for both existing and proposed are attached.

The time of concentration for the developed condition is longer than the existing condition due to site grading and the use of storm drain systems. The existing topography drained west to east and into a storm drain along the easterly property boundary. Due to the site design for the new development, the water has been rerouted to a longer path, therefore increasing the time of concentration. Runoff from area P5 is directed overland easterly and down a natural channel to the south until it reaches the road. At the road, the runoff is collected in a storm drain system that directs the water along the property frontage and easterly properly line of Phase I into the detention basin.

Item 2:

The time of concentration for the developed condition assumes all subareas are Industrial development for future project build out. There are no 'mixed' developed and undeveloped subareas in the developed condition.

Area P5 is the farthest point from the basin and will have the longest time of concentration to reach the basin and therefore will be the 'peak' flow time. The basin is sized to handle the volumes and infiltration for a completely industrial developed 13.19 acres as shown in the proposed condition calculations in the original hydrology report by Jensen Design & Survey on June 27, 2007.

Item 3:

The hydrographs used in the determination of detention volumes in the hydrology report by Jensen Design & Survey on June 27, 2007 were generated from the original Ventura County Hydrology Manual. A new set of calculations is attached using the Ventura County Methodology for 'Fattening Hydrographs' described in Section 4.7 of the 2006 Ventura

County Hydrology Manual. The original hydrographs have been updated and the detention basin was checked using the new volumes for those storm events and still meets County outflow requirements. The updated table is shown below and the accompanying calculations and VCRat print outs are attached.

HYDROGRAPH AND BASIN INFORMATION:

	Q10	Q50	Q100
Curve Number	96	96	96
Total Design Rainstorm Depth (in)	6	8	10
Watershed Yield (in) (exhibit 13)	5.5	7.2	8
Peak Q	22	26.4	41.4
Peak Q out of Basin	13.6	15.3	15.4
Peak Q Predeveloped	17.5	17.5	17.5
Volume (cf)			
Fattened	259,618	339,768	377,665
From Original Report	213,269	323,338	421,786

*** Total Drainage Area = 13.19 ac = 574556 sq. ft.

Sincerely,

Kinsey Hensley, P.E.
Attachments

12.5.2008

REGISTERED PROFESSIONAL ENGINEER
KINSEY L. HENSLEY
LIC. #C70360
EXP. 9/10
CIVIL
STATE OF CALIFORNIA

VENTURA COUNTY
WATERSHED PROTECTION DISTRICT
PLANNING AND REGULATORY DIVISION
800 South Victoria Avenue, Ventura, California 93009
Sergio Vargas. Deputy Director - 805 650-4077

DATE: August 28, 2008

TO: Drew Madrigal, Case Planner

FROM: Sergio Vargas, P.E.
Deputy Director
Planning and Regulatory Division

SUBJECT: LU 08-0085.JAKRAN, LLC.

The Watershed Protection District has received and reviewed the Jakran Sales and Retail Phase 2 Drainage Letter dated July 14, 2008 together with the Hydrology Report that is dated June 13, 2007 both prepared, signed and stamped by Jensen Design and Survey, Inc..

The District's finds the application INCOMPLETE.

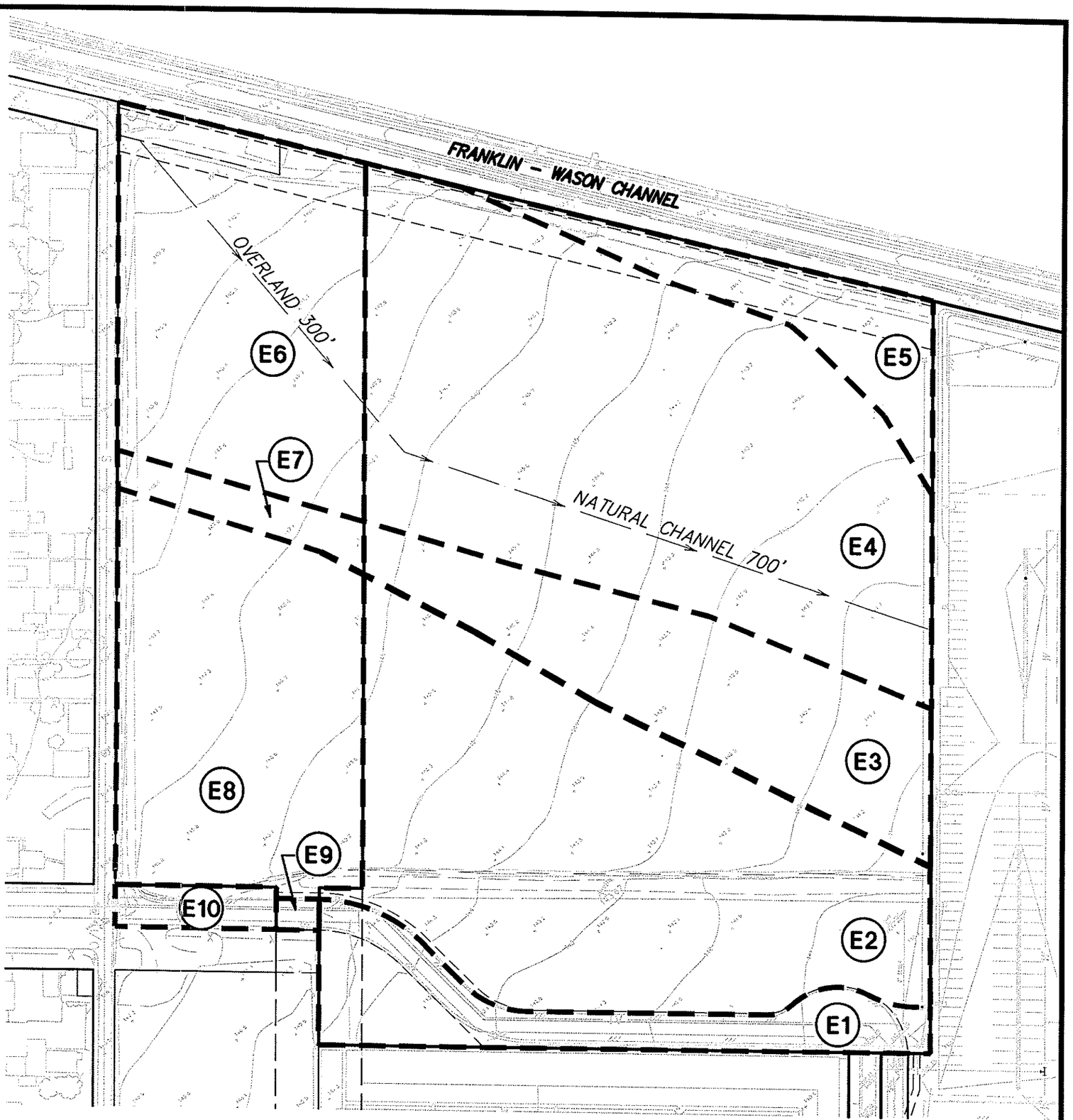
Our comments are as follows:

1. The report should provide maps showing the flowpaths used for the Tc calculations, and explain why the developed flowpath total for the developed ~6 ac is so much longer than the flowpath total for the undeveloped 13 ac parcel.

2. The developed Tc appears to assume that P5 is not developed, and thus has two flowpaths across an undeveloped portion of the project site. If they mix undeveloped and developed flow paths, they need to evaluate the entire 13 ac similar to the existing condition approach and cannot evaluate P4 and P5 and then extrapolate the results to the rest of the developed area.

3. The District Hydrology Manual does not provide a unit hydrograph that can be used with a C coefficient and the area to provide a hydrograph. The hydrographs should be generated using the District's VCRat hydrology program or as shown in Example 1 in Appendix B and the yield must be checked per Section 4.7 and adjusted if necessary. After these changes are made, the 100-yr basin outflow peak shown in Table 1.2 will likely be higher than the 50-yr peak. If not, this should be explained.

End of Text



EXISTING DRAINAGE

SUBAREA	ACRE	EXIST. Q_{10} (cfs)	EXIST. Q_{50} (cfs)	EXIST. Q_{100} (cfs)
UNIT	1.0	1.33	2.20	3.04
E1	0.77	1.02	1.69	2.34
E2	3.07	4.08	6.75	9.33
E3	1.32	1.76	2.90	4.01
E4	3.64	4.84	8.01	11.06
E5	0.54	0.72	1.19	1.64
TOTAL (ONSITE)	9.34	12.42	20.55	28.39
E6	1.72	2.29	3.78	5.23
E7	0.20	0.27	0.44	0.61
E8	1.76	2.34	3.87	5.35
E9	0.03	0.04	0.07	0.09
E10	0.14	0.19	0.31	0.43
TOTAL EXISTING	13.19	17.49	29.08	40.12

NOTE: UNIT FLOW RATES FOR EXISTING CONDITIONS WERE CALCULATED USING VENTURA COUNTY TIME OF CONCENTRATION CALCULATOR V2.5 FOR EACH STORM EVENT. THE RUNOFF FOR THE SAMPLE AREA WAS CALCULATED USING THE RATIONAL METHOD (Q=CIA).

100' 0' 200'

SCALE: 1"=100'

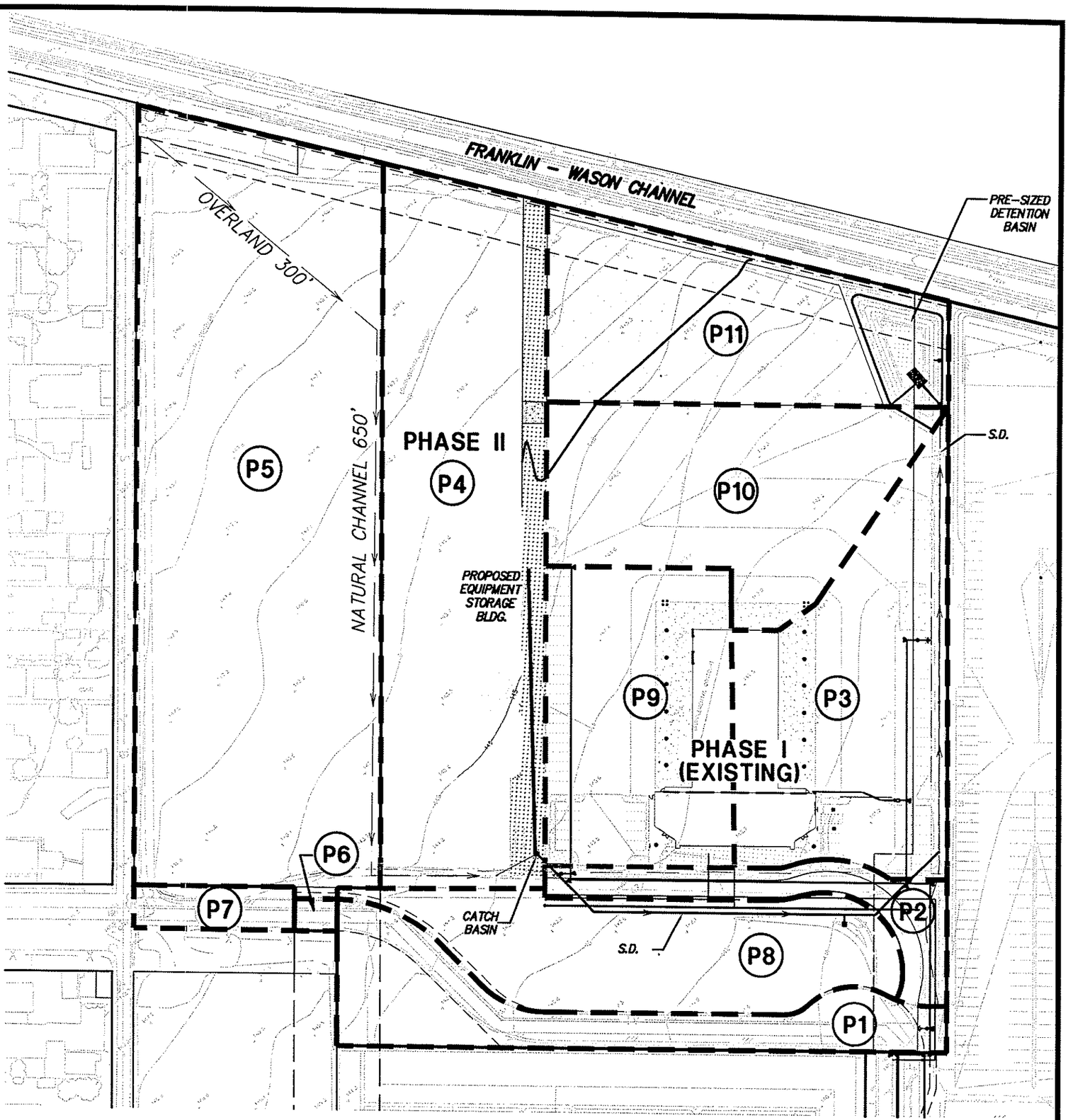
JENSEN DESIGN & SURVEY, INC
www.jdscivil.com
1672 DONLON STREET
VENTURA, CALIF. 93003
PHONE 805/654-6977
FAX 805/654-6979

EXHIBIT A
EXISTING CONDITION

SHEET 1 OF 1

Sep 04, 2008

J:\ROL23964\Eng\Exhibits\HYDRO\3964_EXIST-june.dwg Sep 04, 2008 10:17am kpascoe



NOTE: UNIT FLOW RATES FOR PROPOSED CONDITIONS WERE CALCULATED USING VENTURA COUNTY WATERSHED PROTECTION DISTRICTS TIME OF CONCENTRATION CALCULATION V2.5. THE RATIONAL FORMULAT (Q=CIA)WAS APPLIED TO SAMPLE SUB-AREA P5&P4. THIS UNIT FLOW RATE WAS THEN PRORATED TO ATTAIN RUNOFF VALUES FOR THE REST OF THE DEVELOPED SITE.

PROPOSED DRAINAGE

SUBAREA	ACRE	PROPOSED Q_{10} (cfs)	PROPOSED Q_{50} (cfs)	PROPOSED Q_{100} (cfs)
UNIT	1.0	1.69	2.78	3.17
P1	0.77	1.30	2.14	2.44
P2	0.36	0.61	1.00	1.14
P3	1.35	2.28	3.75	4.28
P4	**2.30**	**3.89**	**6.39**	**7.29**
P5 (DEV. FUTR:)	3.67	6.20	10.20	11.63
P6 (EX. ROAD)	0.03	0.05	0.08	0.09
P7 (EX. ROAD)	0.14	0.24	0.39	0.44
P8 (DEV. FUTR.)	1.01	1.71	2.81	3.20
P9	1.11	1.88	3.09	3.52
P10	1.22	2.06	3.39	3.87
P11	1.23	2.07	3.42	3.90
DEVELOPED ONSITE	5.98	12.18	20.04	22.86
FUTURE DEVELOPED OFFSITE	3.67	6.20	10.20	11.63
TOTAL PROJECT RUNOFF	13.19	22.35	36.68	41.91
ALLOWABLE OUTFLOW	13.19	17.49	17.49	17.49

LEGEND

- LIMITS OF DRAINAGE AREA
- (P4) DRAINAGE AREA
- PATH OF TRAVEL (Tc)

100' 0' 200'

SCALE: 1"=100'

JENSEN DESIGN & SURVEY, INC
www.jdscivil.com
1672 DONLON STREET
VENTURA, CALIF. 93003
PHONE 805/654-6977
FAX 805/654-6979

EXHIBIT B
PROPOSED CONDITION

SHEET 1 OF 1
Sep 09, 2008

J:\ROL23964\Eng\Exhibits\HYDRO\23964_PROP-phase 2.dwg Sep 09, 2008, 8:15am kpascoe

Ventura County Watershed Protection District
Modified Rational Method Hydrology Program (VCRat v2.6)

Modified Rational Model Results Report

Job: 1 Project: ROL23964 Phase 2

Project Description

VCRat version: 2.6.2008.11
VCRain version: 200703
DOS EXE version: PC 2.2-200809

Ventura County Watershed Protection District
Modified Rational Method Hydrology Program (VCRat v2.6)

Job: 1 Project: ROL23964 Phase 2

Model Results

NODE ID (Z)	SOIL N VALUES TYPE CHNL	RAIN ZONE SIDES	TC VEL (MIN) (FT/S)	% IMP	DEPTH (FT)	AREA (AC)	FLOW (CFS)	AREA (AC)	FLOW (CFS)	TIME (MIN)	CHANNEL TYPE	LENGTH (FT)	SLOPE (FT/FT)	SIZE (FT)
1A : P5														
1A	040	K10	16	70		13	22	13	22	1154	-------	----	-------	---
2A	---	---	--	--		---	---	13	22	1154	-------	----	-------	---

```
          **********************************************************************************
          *      INCOMING HYDROGRAPH  PEAK (cfs):     22.05         VOLUME (acre-ft):      3.87      *
          *      NO HYDROGRAPH ADJUSTMENT                                                          *
          *      RUNOFF FACTOR(in):   5.50                                                         *
          *      FATTENED HYDROGRAPH  PEAK (cfs):     22.05         VOLUME (acre-ft):      5.96      *
          **********************************************************************************
     2A   ---   ---    --   --    ---    ---       13      22   ----    -------    ----  -------    ---
     3A   ---   ---    --   --    ---    ---       13      22   1154    -------    ----  -------    ---
```

Issue/Warning Messages

TYPE	ERR NO	PROCEDURE	LOCATION	MESSAGE

NO ISSUES OR WARNINGS DETECTED

HYDROGRAPH FATTENED AT 2 NORES

```
          **********************************************************************************
          *      INCOMING HYDROGRAPH  PEAK (cfs):     22.05         VOLUME (acre-ft):      3.87      *
          *      NO HYDROGRAPH ADJUSTMENT                                                          *
          *      RUNOFF FACTOR(in):   5.50                                                         *
          *      FATTENED HYDROGRAPH  PEAK (cfs):     22.05         VOLUME (acre-ft):      5.96      *
          **********************************************************************************
```

TIME (min)	PRE-ADJ (cfs)	PRE-FAT (cfs)	FATTENED (cfs)	TIME (min)	PRE-ADJ (cfs)	PRE-FAT (cfs)	FATTENED (cfs)
0	0.00	0.00	0.00	100	0.52	0.52	0.56
200	0.57	0.57	0.68	300	0.73	0.73	0.85
400	0.88	0.88	1.04	500	1.12	1.12	1.31
600	1.27	1.27	1.53	700	1.61	1.61	1.97
800	1.97	1.97	2.49	900	2.44	2.44	3.27
1000	3.38	3.38	4.89	1050	3.76	3.76	6.00
1100	4.08	4.08	7.77	1110	4.74	4.74	8.74
1120	5.43	5.43	9.78	1130	5.69	5.69	10.58
1131	5.84	5.84	10.76	1132	6.00	6.00	10.93
1133	6.15	6.15	11.10	1134	6.30	6.30	11.28
1135	6.45	6.45	11.45	1136	6.70	6.70	11.69
1137	6.94	6.94	11.92	1138	7.18	7.18	12.15
1139	7.41	7.41	12.37	1140	7.65	7.65	12.60
1141	8.01	8.01	12.90	1142	8.37	8.37	13.21

1143	8.73	8.73	13.51	1144	9.09	9.09	13.81
1145	9.45	9.45	14.10	1146	9.92	9.92	14.47
1147	10.25	10.25	14.74	1148	11.00	11.00	15.27
1149	11.99	11.99	15.93	1150	13.21	13.21	16.72
1151	15.83	15.83	18.34	1152	19.65	19.65	20.63
1153	21.87	21.87	21.94	1154	22.05	22.05	22.05

Hydrograph Printouts

TIME (min)	PRE-ADJ (cfs)	PRE-FAT (cfs)	FATTENED (cfs)	TIME (min)	PRE-ADJ (cfs)	PRE-FAT (cfs)	FATTENED (cfs)
1155	22.00	22.00	22.02	1156	21.91	21.91	21.97
1157	21.71	21.71	21.85	1158	21.50	21.50	21.72
1159	21.29	21.29	21.59	1160	21.08	21.08	21.46
1161	20.67	20.67	21.20	1162	20.15	20.15	20.87
1163	19.63	19.63	20.53	1164	18.70	18.70	19.93
1165	17.55	17.55	19.17	1166	16.16	16.16	18.26
1167	13.32	13.32	16.39	1168	9.07	9.07	13.57
1169	6.44	6.44	11.78	1170	5.94	5.94	11.38
1171	5.59	5.59	11.07	1172	5.37	5.37	10.86
1173	5.15	5.15	10.64	1174	4.93	4.93	10.42
1175	4.72	4.72	10.20	1176	4.50	4.50	9.98
1177	4.43	4.43	9.86	1178	4.36	4.36	9.74
1179	4.29	4.29	9.62	1180	4.21	4.21	9.51
1181	4.13	4.13	9.38	1182	4.04	4.04	9.25
1183	3.95	3.95	9.12	1184	3.86	3.86	9.00
1185	3.78	3.78	8.87	1186	3.69	3.69	8.74
1187	3.67	3.67	8.67	1188	3.66	3.66	8.60
1189	3.64	3.64	8.53	1190	3.62	3.62	8.46
1191	3.60	3.60	8.38	1192	3.58	3.58	8.31
1193	3.55	3.55	8.24	1194	3.53	3.53	8.16
1195	3.50	3.50	8.09	1196	3.48	3.48	8.02
1197	3.47	3.47	7.96	1198	3.46	3.46	7.90
1199	3.45	3.45	7.85	1200	3.45	3.45	7.79
1201	3.44	3.44	7.74	1202	3.43	3.43	7.68
1203	3.42	3.42	7.63	1204	3.41	3.41	7.58
1205	3.41	3.41	7.52	1206	3.40	3.40	7.47
1207	3.40	3.40	7.43	1208	3.40	3.40	7.39
1209	3.40	3.40	7.34	1210	3.40	3.40	7.30
1211	3.35	3.35	7.22	1212	3.29	3.29	7.14
1213	3.24	3.24	7.05	1214	3.19	3.19	6.97
1215	3.14	3.14	6.89	1216	3.09	3.09	6.81

1217	3.03	3.03	6.73	1218	2.98	2.98	6.65
1219	2.93	2.93	6.57	1220	2.88	2.88	6.49
1221	2.83	2.83	6.42	1222	2.78	2.78	6.34
1223	2.72	2.72	6.26	1224	2.67	2.67	6.18
1225	2.62	2.62	6.10	1226	2.57	2.57	6.03
1227	2.57	2.57	5.99	1228	2.57	2.57	5.96
1229	2.57	2.57	5.93	1230	2.57	2.57	5.90
1231	2.53	2.53	5.83	1232	2.50	2.50	5.77
1233	2.46	2.46	5.71	1234	2.42	2.42	5.65
1235	2.39	2.39	5.59	1236	2.35	2.35	5.53
1237	2.31	2.31	5.47	1238	2.28	2.28	5.41
1239	2.24	2.24	5.35	1240	2.21	2.21	5.29
1241	2.17	2.17	5.23	1242	2.13	2.13	5.17
1243	2.10	2.10	5.12	1244	2.06	2.06	5.06
1245	2.02	2.02	5.00	1246	1.99	1.99	4.94
1247	1.99	1.99	4.92	1248	1.99	1.99	4.89
1249	1.99	1.99	4.87	1250	1.99	1.99	4.84
1251	1.99	1.99	4.82	1252	1.99	1.99	4.79

TIME (min)	PRE-ADJ (cfs)	PRE-FAT (cfs)	FATTENED (cfs)	TIME (min)	PRE-ADJ (cfs)	PRE-FAT (cfs)	FATTENED (cfs)
1253	1.99	1.99	4.77	1254	1.99	1.99	4.74
1255	1.99	1.99	4.72	1256	1.99	1.99	4.70
1257	1.99	1.99	4.67	1258	1.99	1.99	4.65
1259	1.99	1.99	4.63	1260	1.99	1.99	4.61
1261	1.97	1.97	4.57	1262	1.95	1.95	4.53
1263	1.93	1.93	4.49	1264	1.91	1.91	4.46
1265	1.89	1.89	4.42	1266	1.87	1.87	4.38
1267	1.86	1.86	4.35	1268	1.84	1.84	4.31
1269	1.82	1.82	4.27	1270	1.80	1.80	4.24
1271	1.78	1.78	4.20	1272	1.76	1.76	4.17
1273	1.74	1.74	4.13	1274	1.72	1.72	4.09
1275	1.70	1.70	4.06	1276	1.69	1.69	4.02
1277	1.69	1.69	4.01	1278	1.69	1.69	3.99
1279	1.69	1.69	3.97	1280	1.69	1.69	3.95
1281	1.69	1.69	3.94	1282	1.69	1.69	3.92
1283	1.69	1.69	3.90	1284	1.69	1.69	3.89
1285	1.69	1.69	3.87	1286	1.69	1.69	3.85
1287	1.69	1.69	3.84	1288	1.69	1.69	3.82
1289	1.69	1.69	3.81	1290	1.69	1.69	3.79

1291	1.69	1.69	3.78	1292	1.69	1.69	3.76
1293	1.69	1.69	3.75	1294	1.69	1.69	3.73
1295	1.69	1.69	3.72	1296	1.69	1.69	3.70
1297	1.69	1.69	3.69	1298	1.69	1.69	3.67
1299	1.69	1.69	3.66	1300	1.69	1.69	3.64
1310	1.40	1.40	3.26	1320	1.23	1.23	2.98
1330	1.23	1.23	2.87	1340	1.23	1.23	2.78
1350	0.95	0.95	2.42	1360	0.78	0.78	2.18
1370	0.78	0.78	2.11	1380	0.78	0.78	2.04
1390	0.78	0.78	1.98	1400	0.78	0.78	1.92
1420	0.52	0.52	1.57	1440	0.52	0.52	1.48
1460	0.00	0.00	0.90	1500	0.00	0.00	0.77

HYDROGRAPH PRINTOUT AT: 3A

TOTAL AREA TO HYDROGRAPH: 13 acres
HYDROGRAPH PEAK: 22 cfs
TIME OF PEAK: 1154 minutes
HYDROGRAPH VOLUME: 5.96 acre-ft

TIME (min)	FLOW (cfs)	TIME (min)	FLOW (cfs)	TIME (min)	FLOW (cfs)	TIME (min)	FLOW (cfs)	TIME (min)	FLOW (cfs)
0	0.00	100	0.56	200	0.68	300	0.85	400	1.04
500	1.31	600	1.53	700	1.97	800	2.49	900	3.27
1000	4.89	1050	6.00	1100	7.77	1110	8.74	1120	9.78
1130	10.58	1131	10.76	1132	10.93	1133	11.10	1134	11.28
1135	11.45	1136	11.69	1137	11.92	1138	12.15	1139	12.37
1140	12.60	1141	12.90	1142	13.21	1143	13.51	1144	13.81
1145	14.10	1146	14.47	1147	14.74	1148	15.27	1149	15.93
1150	16.72	1151	18.34	1152	20.63	1153	21.94	1154	22.05
1155	22.02	1156	21.97	1157	21.85	1158	21.72	1159	21.59
1160	21.46	1161	21.20	1162	20.87	1163	20.53	1164	19.93
1165	19.17	1166	18.26	1167	16.39	1168	13.57	1169	11.78
1170	11.38	1171	11.07	1172	10.86	1173	10.64	1174	10.42
1175	10.20	1176	9.98	1177	9.86	1178	9.74	1179	9.62
1180	9.51	1181	9.38	1182	9.25	1183	9.12	1184	9.00
1185	8.87	1186	8.74	1187	8.67	1188	8.60	1189	8.53

1190	8.46	1191	8.38	1192	8.31	1193	8.24	1194	8.16
1195	8.09	1196	8.02	1197	7.96	1198	7.90	1199	7.85
1200	7.79	1201	7.74	1202	7.68	1203	7.63	1204	7.58
1205	7.52	1206	7.47	1207	7.43	1208	7.39	1209	7.34
1210	7.30	1211	7.22	1212	7.14	1213	7.05	1214	6.97
1215	6.89	1216	6.81	1217	6.73	1218	6.65	1219	6.57
1220	6.49	1221	6.42	1222	6.34	1223	6.26	1224	6.18
1225	6.10	1226	6.03	1227	5.99	1228	5.96	1229	5.93
1230	5.90	1231	5.83	1232	5.77	1233	5.71	1234	5.65
1235	5.59	1236	5.53	1237	5.47	1238	5.41	1239	5.35
1240	5.29	1241	5.23	1242	5.17	1243	5.12	1244	5.06
1245	5.00	1246	4.94	1247	4.92	1248	4.89	1249	4.87
1250	4.84	1251	4.82	1252	4.79	1253	4.77	1254	4.74
1255	4.72	1256	4.70	1257	4.67	1258	4.65	1259	4.63
1260	4.61	1261	4.57	1262	4.53	1263	4.49	1264	4.46
1265	4.42	1266	4.38	1267	4.35	1268	4.31	1269	4.27
1270	4.24	1271	4.20	1272	4.17	1273	4.13	1274	4.09
1275	4.06	1276	4.02	1277	4.01	1278	3.99	1279	3.97
1280	3.95	1281	3.94	1282	3.92	1283	3.90	1284	3.89
1285	3.87	1286	3.85	1287	3.84	1288	3.82	1289	3.81
1290	3.79	1291	3.78	1292	3.76	1293	3.75	1294	3.73
1295	3.72	1296	3.70	1297	3.69	1298	3.67	1299	3.66
1300	3.64	1310	3.26	1320	2.98	1330	2.87	1340	2.78
1350	2.42	1360	2.18	1370	2.11	1380	2.04	1390	1.98
1400	1.92	1420	1.57	1440	1.48	1460	0.90	1500	0.77

Ventura County Watershed Protection District
Modified Rational Method Hydrology Program (VCRat v2.6)

Job: 1 Project: ROL23964 Phase 2

Page: 6

VCRat Model Input

Model Lines

```
005     1  001A Header place holder
005     1  002A Header place holder
005     1  003A Header place holder
999
999
006     1  001A 040070001316K10                          G1
006     1  002A 010      099J10                      1
110
111        1.0            5.50
110
006     1  003A 010      099J10                      1  2
999
```

Ventura County Watershed Protection District
Modified Rational Method Hydrology Program (VCRat v2.6)

Modified Rational Model Results Report

Job: 1 Project: ROL23964 Phase 2

Project Description

VCRat version: 2.6.2008.11
VCRain version: 200703
DOS EXE version: PC 2.2-200809

Ventura County Watershed Protection District
Modified Rational Method Hydrology Program (VCRat v2.6)

Job: 1 Project: ROL23964 Phase 2

Model Results

NODE ID	SOIL N VALUES TYPE	RAIN ZONE	TC (MIN)	% IMP	AREA (AC)	FLOW (CFS)	ACCUMULATED DATA AREA (AC)	ACCUMULATED DATA FLOW (CFS)	ACCUMULATED DATA TIME (MIN)	ROUTING AFTER ACCUMULATION CHANNEL TYPE	LENGTH (FT)	SLOPE (FT/FT)	SIZE (FT)	H:V (Z)	CHNL	SIDES	VEL (FT/S)	DEPTH (FT)
1A : P5																		
1A	040	K50	10	70	13	36	13	36	1154	-------	----	-------	---	----	-----	-----	--	--
2A	---	---	--	--	---	---	13	36	1154	-------	----	-------	---					

```
**********************************************************************************************
*      INCOMING HYDROGRAPH  PEAK (cfs):     36.40         VOLUME (acre-ft):      5.62      *
*      NO HYDROGRAPH ADJUSTMENT                                                              *
*      RUNOFF FACTOR(in):   7.20                                                             *
*      FATTENED HYDROGRAPH  PEAK (cfs):     36.40         VOLUME (acre-ft):      7.80      *
**********************************************************************************************
```

2A	---	---	--	--	---	---	13	36	----	-------	----	-------	---
3A	---	---	--	--	---	---	13	36	1154	-------	----	-------	---

Issue/Warning Messages

TYPE	ERR NO	PROCEDURE	LOCATION	MESSAGE

NO ISSUES OR WARNINGS DETECTED

HYDROGRAPH FATTENED AT 2 NORES

```
**********************************************************************************************
*      INCOMING HYDROGRAPH  PEAK (cfs):     36.40         VOLUME (acre-ft):      5.62      *
*      NO HYDROGRAPH ADJUSTMENT                                                              *
*      RUNOFF FACTOR(in):   7.20                                                             *
*      FATTENED HYDROGRAPH  PEAK (cfs):     36.40         VOLUME (acre-ft):      7.80      *
**********************************************************************************************
```

TIME (min)	PRE-ADJ (cfs)	PRE-FAT (cfs)	FATTENED (cfs)	TIME (min)	PRE-ADJ (cfs)	PRE-FAT (cfs)	FATTENED (cfs)
0	0.00	0.00	0.00	100	0.52	0.52	0.56
200	0.93	0.93	1.03	300	1.19	1.19	1.31
400	1.56	1.56	1.71	500	1.92	1.92	2.11
600	2.39	2.39	2.63	700	2.77	2.77	3.12
800	3.09	3.09	3.59	900	3.63	3.63	4.44
1000	4.51	4.51	6.03	1050	4.61	4.61	6.92
1100	5.47	5.47	9.32	1110	6.13	6.13	10.40
1120	7.57	7.57	12.22	1130	8.11	8.11	13.36
1131	8.17	8.17	13.49	1132	8.24	8.24	13.63
1133	8.31	8.31	13.76	1134	8.38	8.38	13.90
1135	8.45	8.45	14.04	1136	9.04	9.04	14.60
1137	9.64	9.64	15.16	1138	10.24	10.24	15.72
1139	10.83	10.83	16.27	1140	11.42	11.42	16.82
1141	12.31	12.31	17.60	1142	13.20	13.20	18.37

1143	14.08	14.08	19.13	1144	14.97	14.97	19.90
1145	15.85	15.85	20.66	1146	16.45	16.45	21.19
1147	17.03	17.03	21.71	1148	17.68	17.68	22.27
1149	18.62	18.62	23.06	1150	20.57	20.57	24.59
1151	25.51	25.51	28.32	1152	31.55	31.55	32.82
1153	36.16	36.16	36.23	1154	36.40	36.40	36.40

Hydrograph Printouts

TIME (min)	PRE-ADJ (cfs)	PRE-FAT (cfs)	FATTENED (cfs)	TIME (min)	PRE-ADJ (cfs)	PRE-FAT (cfs)	FATTENED (cfs)
1155	35.90	35.90	36.03	1156	34.88	34.88	35.28
1157	33.86	33.86	34.51	1158	32.76	32.76	33.69
1159	31.38	31.38	32.63	1160	28.97	28.97	30.80
1161	22.89	22.89	26.17	1162	15.70	15.70	20.65
1163	9.77	9.77	16.04	1164	8.33	8.33	14.84
1165	7.65	7.65	14.22	1166	7.27	7.27	13.82
1167	6.89	6.89	13.43	1168	6.51	6.51	13.04
1169	6.13	6.13	12.64	1170	5.75	5.75	12.25
1171	5.67	5.67	12.09	1172	5.60	5.60	11.94
1173	5.55	5.55	11.81	1174	5.50	5.50	11.68
1175	5.45	5.45	11.55	1176	5.39	5.39	11.43
1177	5.34	5.34	11.30	1178	5.29	5.29	11.18
1179	5.24	5.24	11.06	1180	5.19	5.19	10.93
1181	5.19	5.19	10.86	1182	5.19	5.19	10.78
1183	5.19	5.19	10.71	1184	5.19	5.19	10.63
1185	5.19	5.19	10.56	1186	5.19	5.19	10.49
1187	5.19	5.19	10.42	1188	5.19	5.19	10.36
1189	5.19	5.19	10.29	1190	5.19	5.19	10.23
1191	5.11	5.11	10.10	1192	5.03	5.03	9.97
1193	4.95	4.95	9.84	1194	4.88	4.88	9.71
1195	4.80	4.80	9.59	1196	4.72	4.72	9.46
1197	4.64	4.64	9.34	1198	4.56	4.56	9.22
1199	4.49	4.49	9.10	1200	4.41	4.41	8.97
1201	4.41	4.41	8.92	1202	4.41	4.41	8.87
1203	4.41	4.41	8.81	1204	4.41	4.41	8.76
1205	4.41	4.41	8.71	1206	4.41	4.41	8.66
1207	4.41	4.41	8.62	1208	4.41	4.41	8.57
1209	4.41	4.41	8.52	1210	4.41	4.41	8.47
1211	4.33	4.33	8.36	1212	4.25	4.25	8.25
1213	4.18	4.18	8.14	1214	4.10	4.10	8.02
1215	4.02	4.02	7.91	1216	3.94	3.94	7.80

1217	3.86	3.86	7.69	1218	3.79	3.79	7.58
1219	3.71	3.71	7.47	1220	3.63	3.63	7.36
1221	3.63	3.63	7.33	1222	3.63	3.63	7.29
1223	3.63	3.63	7.25	1224	3.63	3.63	7.21
1225	3.63	3.63	7.17	1226	3.63	3.63	7.14
1227	3.63	3.63	7.10	1228	3.63	3.63	7.07
1229	3.63	3.63	7.03	1230	3.63	3.63	7.00
1231	3.58	3.58	6.92	1232	3.53	3.53	6.84
1233	3.48	3.48	6.76	1234	3.42	3.42	6.68
1235	3.37	3.37	6.60	1236	3.32	3.32	6.53
1237	3.27	3.27	6.45	1238	3.22	3.22	6.37
1239	3.16	3.16	6.29	1240	3.11	3.11	6.22
1241	3.11	3.11	6.19	1242	3.11	3.11	6.16
1243	3.11	3.11	6.13	1244	3.11	3.11	6.10
1245	3.11	3.11	6.07	1246	3.11	3.11	6.05
1247	3.11	3.11	6.02	1248	3.11	3.11	5.99
1249	3.11	3.11	5.97	1250	3.11	3.11	5.94
1251	3.11	3.11	5.92	1252	3.11	3.11	5.89

TIME (min)	PRE-ADJ (cfs)	PRE-FAT (cfs)	FATTENED (cfs)	TIME (min)	PRE-ADJ (cfs)	PRE-FAT (cfs)	FATTENED (cfs)
1253	3.11	3.11	5.87	1254	3.11	3.11	5.84
1255	3.11	3.11	5.82	1256	3.11	3.11	5.80
1257	3.11	3.11	5.77	1258	3.11	3.11	5.75
1259	3.11	3.11	5.73	1260	3.11	3.11	5.70
1261	3.09	3.09	5.66	1262	3.06	3.06	5.61
1263	3.03	3.03	5.57	1264	3.01	3.01	5.52
1265	2.98	2.98	5.48	1266	2.96	2.96	5.43
1267	2.93	2.93	5.39	1268	2.90	2.90	5.34
1269	2.88	2.88	5.30	1270	2.85	2.85	5.26
1271	2.85	2.85	5.24	1272	2.85	2.85	5.22
1273	2.85	2.85	5.20	1274	2.85	2.85	5.18
1275	2.85	2.85	5.16	1276	2.85	2.85	5.14
1277	2.85	2.85	5.12	1278	2.85	2.85	5.11
1279	2.85	2.85	5.09	1280	2.85	2.85	5.07
1281	2.85	2.85	5.05	1282	2.85	2.85	5.04
1283	2.85	2.85	5.02	1284	2.85	2.85	5.00
1285	2.85	2.85	4.99	1286	2.85	2.85	4.97
1287	2.85	2.85	4.95	1288	2.85	2.85	4.94
1289	2.85	2.85	4.92	1290	2.85	2.85	4.91

1291	2.85	2.85	4.89	1292	2.85	2.85	4.88
1293	2.85	2.85	4.86	1294	2.85	2.85	4.85
1295	2.85	2.85	4.83	1296	2.85	2.85	4.82
1297	2.85	2.85	4.80	1298	2.85	2.85	4.79
1299	2.85	2.85	4.78	1300	2.85	2.85	4.76
1310	2.07	2.07	3.90	1320	2.07	2.07	3.78
1330	2.07	2.07	3.67	1340	2.07	2.07	3.57
1350	1.30	1.30	2.74	1360	1.30	1.30	2.66
1370	1.30	1.30	2.59	1380	1.30	1.30	2.52
1390	1.30	1.30	2.46	1400	1.30	1.30	2.40
1420	0.65	0.65	1.67	1440	0.65	0.65	1.58
1460	0.00	0.00	0.87	1500	0.00	0.00	0.74

HYDROGRAPH PRINTOUT AT: 3A

TOTAL AREA TO HYDROGRAPH: 13 acres
HYDROGRAPH PEAK: 36 cfs
TIME OF PEAK: 1154 minutes
HYDROGRAPH VOLUME: 7.80 acre-ft

TIME (min)	FLOW (cfs)	TIME (min)	FLOW (cfs)	TIME (min)	FLOW (cfs)	TIME (min)	FLOW (cfs)	TIME (min)	FLOW (cfs)
0	0.00	100	0.56	200	1.03	300	1.31	400	1.71
500	2.11	600	2.63	700	3.12	800	3.59	900	4.44
1000	6.03	1050	6.92	1100	9.32	1110	10.40	1120	12.22
1130	13.36	1131	13.49	1132	13.63	1133	13.76	1134	13.90
1135	14.04	1136	14.60	1137	15.16	1138	15.72	1139	16.27
1140	16.82	1141	17.60	1142	18.37	1143	19.13	1144	19.90
1145	20.66	1146	21.19	1147	21.71	1148	22.27	1149	23.06
1150	24.59	1151	28.32	1152	32.82	1153	36.23	1154	36.40
1155	36.03	1156	35.28	1157	34.51	1158	33.69	1159	32.63
1160	30.80	1161	26.17	1162	20.65	1163	16.04	1164	14.84
1165	14.22	1166	13.82	1167	13.43	1168	13.04	1169	12.64
1170	12.25	1171	12.09	1172	11.94	1173	11.81	1174	11.68
1175	11.55	1176	11.43	1177	11.30	1178	11.18	1179	11.06
1180	10.93	1181	10.86	1182	10.78	1183	10.71	1184	10.63
1185	10.56	1186	10.49	1187	10.42	1188	10.36	1189	10.29

1190	10.23	1191	10.10	1192	9.97	1193	9.84	1194	9.71
1195	9.59	1196	9.46	1197	9.34	1198	9.22	1199	9.10
1200	8.97	1201	8.92	1202	8.87	1203	8.81	1204	8.76
1205	8.71	1206	8.66	1207	8.62	1208	8.57	1209	8.52
1210	8.47	1211	8.36	1212	8.25	1213	8.14	1214	8.02
1215	7.91	1216	7.80	1217	7.69	1218	7.58	1219	7.47
1220	7.36	1221	7.33	1222	7.29	1223	7.25	1224	7.21
1225	7.17	1226	7.14	1227	7.10	1228	7.07	1229	7.03
1230	7.00	1231	6.92	1232	6.84	1233	6.76	1234	6.68
1235	6.60	1236	6.53	1237	6.45	1238	6.37	1239	6.29
1240	6.22	1241	6.19	1242	6.16	1243	6.13	1244	6.10
1245	6.07	1246	6.05	1247	6.02	1248	5.99	1249	5.97
1250	5.94	1251	5.92	1252	5.89	1253	5.87	1254	5.84
1255	5.82	1256	5.80	1257	5.77	1258	5.75	1259	5.73
1260	5.70	1261	5.66	1262	5.61	1263	5.57	1264	5.52
1265	5.48	1266	5.43	1267	5.39	1268	5.34	1269	5.30
1270	5.26	1271	5.24	1272	5.22	1273	5.20	1274	5.18
1275	5.16	1276	5.14	1277	5.12	1278	5.11	1279	5.09
1280	5.07	1281	5.05	1282	5.04	1283	5.02	1284	5.00
1285	4.99	1286	4.97	1287	4.95	1288	4.94	1289	4.92
1290	4.91	1291	4.89	1292	4.88	1293	4.86	1294	4.85
1295	4.83	1296	4.82	1297	4.80	1298	4.79	1299	4.78
1300	4.76	1310	3.90	1320	3.78	1330	3.67	1340	3.57
1350	2.74	1360	2.66	1370	2.59	1380	2.52	1390	2.46
1400	2.40	1420	1.67	1440	1.58	1460	0.87	1500	0.74

Ventura County Watershed Protection District
Modified Rational Method Hydrology Program (VCRat v2.6)

Job: 1 Project: ROL23964 Phase 2

VCRat Model Input

Model Lines

```
005     1  001A Header place holder
005     1  002A Header place holder
005     1  003A Header place holder
999
999
006     1  001A 040070001310K50                              G1
006     1  002A 010      099J50                          1
110
111        1.0             7.20
110
006     1  003A 010      099J50                          1  2
999
```

Ventura County Watershed Protection District
Modified Rational Method Hydrology Program (VCRat v2.6)

Modified Rational Model Results Report

Job: 1 Project: ROL23964 Phase 2

Project Description

VCRat version: 2.6.2008.11
VCRain version: 200703
DOS EXE version: PC 2.2-200809

Ventura County Watershed Protection District
Modified Rational Method Hydrology Program (VCRat v2.6)

Job: 1 Project: ROL23964 Phase 2

Model Results

SUBAREA DATA AND RESULTS							ACCUMULATED DATA			ROUTING AFTER ACCUMULATION				
NODE ID	SOIL N VALUES TYPE	RAIN ZONE	TC VEL (MIN)	% IMP	AREA (AC)	FLOW (CFS)	AREA (AC)	FLOW (CFS)	TIME (MIN)	CHANNEL TYPE	LENGTH (FT)	SLOPE (FT/FT)	SIZE (FT)	H:V (Z) CHNL SIDES	(FT/S)	DEPTH (FT)

```
    1A :  P5
    1A   040   K100    10   70     13     41       13      41   1154    -------    ----  -------    ---      ----
-----  -----    --      --
    2A   ---   ---     --   --    ---    ---       13      41   1154    -------    ----  -------    ---      ----
-----  -----    --      --
          ********************************************************************************************
          *      INCOMING HYDROGRAPH  PEAK (cfs):     41.37         VOLUME (acre-ft):      7.53      *
          *      NO HYDROGRAPH ADJUSTMENT                                                            *
          *      RUNOFF FACTOR(in):   8.00                                                           *
          *      FATTENED HYDROGRAPH  PEAK (cfs):     41.37         VOLUME (acre-ft):      8.67      *
          ********************************************************************************************
    2A   ---   ---     --   --    ---    ---       13      41   ----    -------    ----  -------    ---      ----
-----  -----    --      --
    3A   ---   ---     --   --    ---    ---       13      41   1154    -------    ----  -------    ---      ----
-----  -----    --      --
```

Issue/Warning Messages

TYPE	ERR NO	PROCEDURE	LOCATION	MESSAGE

NO ISSUES OR WARNINGS DETECTED

HYDROGRAPH FATTENED AT 2 NORES

```
          ********************************************************************************************
          *      INCOMING HYDROGRAPH  PEAK (cfs):     41.37         VOLUME (acre-ft):      7.53      *
          *      NO HYDROGRAPH ADJUSTMENT                                                            *
          *      RUNOFF FACTOR(in):   8.00                                                           *
          *      FATTENED HYDROGRAPH  PEAK (cfs):     41.37         VOLUME (acre-ft):      8.67      *
          ********************************************************************************************
```

TIME (min)	PRE-ADJ (cfs)	PRE-FAT (cfs)	FATTENED (cfs)	TIME (min)	PRE-ADJ (cfs)	PRE-FAT (cfs)	FATTENED (cfs)
0	0.00	0.00	0.00	100	2.33	2.33	2.35
200	2.54	2.54	2.59	300	2.90	2.90	2.96
400	2.90	2.90	2.98	500	3.06	3.06	3.16
600	3.22	3.22	3.34	700	3.37	3.37	3.54
800	3.53	3.53	3.78	900	3.89	3.89	4.31
1000	4.51	4.51	5.31	1050	5.29	5.29	6.49

1100	5.57	5.57	7.63	1110	8.03	8.03	10.21
1120	7.20	7.20	9.77	1130	10.30	10.30	13.01
1131	10.30	10.30	13.05	1132	10.30	10.30	13.10
1133	10.52	10.52	13.35	1134	10.82	10.82	13.66
1135	11.05	11.05	13.91	1136	10.90	10.90	13.82
1137	11.27	11.27	14.21	1138	11.57	11.57	14.53
1139	11.87	11.87	14.85	1140	12.25	12.25	15.23
1141	12.93	12.93	15.89	1142	13.53	13.53	16.48
1143	13.90	13.90	16.86	1144	14.28	14.28	17.25
1145	15.33	15.33	18.23	1146	16.74	16.74	19.53
1147	17.61	17.61	20.35	1148	18.55	18.55	21.23
1149	23.18	23.18	25.36	1150	27.73	27.73	29.40
1151	27.08	27.08	28.86	1152	36.41	36.41	37.04
1153	40.79	40.79	40.86	1154	41.37	41.37	41.37

TIME (min)	PRE-ADJ (cfs)	PRE-FAT (cfs)	FATTENED (cfs)	TIME (min)	PRE-ADJ (cfs)	PRE-FAT (cfs)	FATTENED (cfs)
1155	40.72	40.72	40.80	1156	39.84	39.84	40.04
1157	38.75	38.75	39.07	1158	37.51	37.51	37.98
1159	32.47	32.47	33.54	1160	27.59	27.59	29.22
1161	27.30	27.30	28.93	1162	17.17	17.17	19.94
1163	11.80	11.80	15.12	1164	10.67	10.67	14.07
1165	9.47	9.47	12.94	1166	8.71	8.71	12.21
1167	8.03	8.03	11.54	1168	7.65	7.65	11.15
1169	7.73	7.73	11.16	1170	6.82	6.82	10.29
1171	6.74	6.74	10.17	1172	6.59	6.59	9.98
1173	6.36	6.36	9.72	1174	5.75	5.75	9.11
1175	5.82	5.82	9.13	1176	5.67	5.67	8.94
1177	5.60	5.60	8.83	1178	5.45	5.45	8.64
1179	5.08	5.08	8.27	1180	5.29	5.29	8.41
1181	5.19	5.19	8.27	1182	5.14	5.14	8.18
1183	5.08	5.08	8.09	1184	5.03	5.03	8.00
1185	5.03	5.03	7.96	1186	4.98	4.98	7.87
1187	5.03	5.03	7.88	1188	5.08	5.08	7.89
1189	5.08	5.08	7.85	1190	5.03	5.03	7.77
1191	5.03	5.03	7.73	1192	4.98	4.98	7.65

1193	5.03	5.03	7.66	1194	5.03	5.03	7.63
1195	5.03	5.03	7.59	1196	5.03	5.03	7.56
1197	5.03	5.03	7.53	1198	5.03	5.03	7.50
1199	4.98	4.98	7.42	1200	5.03	5.03	7.44
1201	4.93	4.93	7.31	1202	4.93	4.93	7.28
1203	4.82	4.82	7.15	1204	4.77	4.77	7.08
1205	4.67	4.67	6.95	1206	4.62	4.62	6.88
1207	4.56	4.56	6.80	1208	4.46	4.46	6.68
1209	4.46	4.46	6.65	1210	4.36	4.36	6.53
1211	4.36	4.36	6.50	1212	4.36	4.36	6.48
1213	4.41	4.41	6.50	1214	4.36	4.36	6.43
1215	4.36	4.36	6.41	1216	4.41	4.41	6.43
1217	4.41	4.41	6.41	1218	4.41	4.41	6.39
1219	4.36	4.36	6.32	1220	4.41	4.41	6.35
1221	4.46	4.46	6.37	1222	4.41	4.41	6.30
1223	4.36	4.36	6.23	1224	4.41	4.41	6.26
1225	4.46	4.46	6.29	1226	4.41	4.41	6.23
1227	4.36	4.36	6.16	1228	4.41	4.41	6.19
1229	4.46	4.46	6.22	1230	4.41	4.41	6.15
1231	4.36	4.36	6.08	1232	4.41	4.41	6.12
1233	4.41	4.41	6.10	1234	4.36	4.36	6.03
1235	4.36	4.36	6.02	1236	4.36	4.36	6.00
1237	4.36	4.36	5.98	1238	4.36	4.36	5.97
1239	4.31	4.31	5.90	1240	4.31	4.31	5.89
1241	4.36	4.36	5.92	1242	4.31	4.31	5.86
1243	4.31	4.31	5.84	1244	4.36	4.36	5.88
1245	4.31	4.31	5.81	1246	4.31	4.31	5.80
1247	4.36	4.36	5.83	1248	4.31	4.31	5.77
1249	4.31	4.31	5.76	1250	4.36	4.36	5.79
1251	4.31	4.31	5.73	1252	4.31	4.31	5.72

TIME (min)	PRE-ADJ (cfs)	PRE-FAT (cfs)	FATTENED (cfs)	TIME (min)	PRE-ADJ (cfs)	PRE-FAT (cfs)	FATTENED (cfs)
1253	4.36	4.36	5.75	1254	4.31	4.31	5.69
1255	4.31	4.31	5.68	1256	4.36	4.36	5.72
1257	4.31	4.31	5.65	1258	4.31	4.31	5.64

1259	4.36	4.36	5.68	1260	4.31	4.31	5.62
1261	4.31	4.31	5.61	1262	4.25	4.25	5.55
1263	4.15	4.15	5.43	1264	4.15	4.15	5.42
1265	4.15	4.15	5.41	1266	4.05	4.05	5.30
1267	3.99	3.99	5.24	1268	3.99	3.99	5.23
1269	3.94	3.94	5.17	1270	3.89	3.89	5.11
1271	3.84	3.84	5.05	1272	3.89	3.89	5.09
1273	3.94	3.94	5.13	1274	3.89	3.89	5.07
1275	3.84	3.84	5.01	1276	3.89	3.89	5.05
1277	3.94	3.94	5.09	1278	3.89	3.89	5.03
1279	3.84	3.84	4.97	1280	3.89	3.89	5.01
1281	3.94	3.94	5.06	1282	3.89	3.89	5.00
1283	3.84	3.84	4.94	1284	3.89	3.89	4.98
1285	3.94	3.94	5.02	1286	3.89	3.89	4.96
1287	3.84	3.84	4.90	1288	3.89	3.89	4.95
1289	3.94	3.94	4.99	1290	3.89	3.89	4.93
1291	3.84	3.84	4.87	1292	3.89	3.89	4.91
1293	3.89	3.89	4.91	1294	3.89	3.89	4.90
1295	3.84	3.84	4.84	1296	3.89	3.89	4.88
1297	3.94	3.94	4.93	1298	3.89	3.89	4.87
1299	3.84	3.84	4.81	1300	3.89	3.89	4.86
1310	3.22	3.22	4.13	1320	3.27	3.27	4.12
1330	3.27	3.27	4.07	1340	3.22	3.22	3.97
1350	2.44	2.44	3.16	1360	2.39	2.39	3.07
1370	2.44	2.44	3.08	1380	2.44	2.44	3.05
1390	2.39	2.39	2.96	1400	2.44	2.44	2.99
1420	1.69	1.69	2.19	1440	1.69	1.69	2.15
1460	0.00	0.00	0.44	1500	0.00	0.00	0.38

HYDROGRAPH PRINTOUT AT: 3A

TOTAL AREA TO HYDROGRAPH:	13	acres
HYDROGRAPH PEAK:	41	cfs
TIME OF PEAK:	1154	minutes

3964_proposed 100 year.out

HYDROGRAPH VOLUME: 8.67 acre-ft

TIME (min)	FLOW (cfs)	TIME (min)	FLOW (cfs)	TIME (min)	FLOW (cfs)	TIME (min)	FLOW (cfs)	TIME (min)	FLOW (cfs)
0	0.00	100	2.35	200	2.59	300	2.96	400	2.98
500	3.16	600	3.34	700	3.54	800	3.78	900	4.31
1000	5.31	1050	6.49	1100	7.63	1110	10.21	1120	9.77
1130	13.01	1131	13.05	1132	13.10	1133	13.35	1134	13.66
1135	13.91	1136	13.82	1137	14.21	1138	14.53	1139	14.85
1140	15.23	1141	15.89	1142	16.48	1143	16.86	1144	17.25
1145	18.23	1146	19.53	1147	20.35	1148	21.23	1149	25.36
1150	29.40	1151	28.86	1152	37.04	1153	40.86	1154	41.37
1155	40.80	1156	40.04	1157	39.07	1158	37.98	1159	33.54
1160	29.22	1161	28.93	1162	19.94	1163	15.12	1164	14.07
1165	12.94	1166	12.21	1167	11.54	1168	11.15	1169	11.16
1170	10.29	1171	10.17	1172	9.98	1173	9.72	1174	9.11
1175	9.13	1176	8.94	1177	8.83	1178	8.64	1179	8.27
1180	8.41	1181	8.27	1182	8.18	1183	8.09	1184	8.00
1185	7.96	1186	7.87	1187	7.88	1188	7.89	1189	7.85
1190	7.77	1191	7.73	1192	7.65	1193	7.66	1194	7.63
1195	7.59	1196	7.56	1197	7.53	1198	7.50	1199	7.42
1200	7.44	1201	7.31	1202	7.28	1203	7.15	1204	7.08
1205	6.95	1206	6.88	1207	6.80	1208	6.68	1209	6.65
1210	6.53	1211	6.50	1212	6.48	1213	6.50	1214	6.43
1215	6.41	1216	6.43	1217	6.41	1218	6.39	1219	6.32
1220	6.35	1221	6.37	1222	6.30	1223	6.23	1224	6.26
1225	6.29	1226	6.23	1227	6.16	1228	6.19	1229	6.22
1230	6.15	1231	6.08	1232	6.12	1233	6.10	1234	6.03
1235	6.02	1236	6.00	1237	5.98	1238	5.97	1239	5.90
1240	5.89	1241	5.92	1242	5.86	1243	5.84	1244	5.88
1245	5.81	1246	5.80	1247	5.83	1248	5.77	1249	5.76
1250	5.79	1251	5.73	1252	5.72	1253	5.75	1254	5.69
1255	5.68	1256	5.72	1257	5.65	1258	5.64	1259	5.68
1260	5.62	1261	5.61	1262	5.55	1263	5.43	1264	5.42
1265	5.41	1266	5.30	1267	5.24	1268	5.23	1269	5.17
1270	5.11	1271	5.05	1272	5.09	1273	5.13	1274	5.07
1275	5.01	1276	5.05	1277	5.09	1278	5.03	1279	4.97
1280	5.01	1281	5.06	1282	5.00	1283	4.94	1284	4.98
1285	5.02	1286	4.96	1287	4.90	1288	4.95	1289	4.99
1290	4.93	1291	4.87	1292	4.91	1293	4.91	1294	4.90
1295	4.84	1296	4.88	1297	4.93	1298	4.87	1299	4.81
1300	4.86	1310	4.13	1320	4.12	1330	4.07	1340	3.97
1350	3.16	1360	3.07	1370	3.08	1380	3.05	1390	2.96

1400 2.99 1420 2.19 1440 2.15 1460 0.44 1500 0.38

Ventura County Watershed Protection District
Modified Rational Method Hydrology Program (VCRat v2.6)

Job: 1 Project: ROL23964 Phase 2

VCRat Model Input

Model Lines

```
005     1  001A Header place holder
005     1  002A Header place holder
005     1  003A Header place holder
999
999
006     1  001A 040070001310B98                              G1
006     1  002A 010      099A97                          1
110
111        1.0            8.00
110
006     1  003A 010      099A97                          1  2
999
```

Hydrograph Summary Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2008 by Autodesk, Inc. v6.052

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph description
1	Manual	22.05	1	1153	332,709	------	------	------	Q10 fattened developed Tc 16
2	Manual	0.000	1	n/a	0	------	------	------	Q 50 fattened Tc 10 min
3	Manual	0.000	1	n/a	0	------	------	------	Q100 fattened
4	Reservoir	13.58	1	1167	312,149	1	140.37	46,784	BASIN OUT Q10
5	Reservoir	0.000	1	n/a	0	2	130.00	0.000	Basin Out Ph II Q50
6	Reservoir	0.000	1	n/a	0	3	130.00	0.000	Basin Out Ph II Q100

Hydrograph Summary Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2008 by Autodesk, Inc. v6.052

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph description
1	Manual	0.000	1	n/a	0	------	------	------	Q10 fattened developed Tc 16
2	Manual	36.40	1	1153	429,283	------	------	------	Q 50 fattened Tc 10 min
3	Manual	0.000	1	n/a	0	------	------	------	Q100 fattened
4	Reservoir	0.000	1	n/a	0	1	130.00	0.000	BASIN OUT Q10
5	Reservoir	15.29	1	1163	408,721	2	140.98	57,531	Basin Out Ph II Q50
6	Reservoir	0.000	1	n/a	0	3	130.00	0.000	Basin Out Ph II Q100

Hydrograph Summary Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2008 by Autodesk, Inc. v6.052

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph description
1	Manual	0.000	1	n/a	0	------	------	------	Q10 fattened developed Tc 16
2	Manual	0.000	1	n/a	0	------	------	------	Q 50 fattened Tc 10 min
3	Manual	41.37	1	1153	422,540	------	------	------	Q100 fattened
4	Reservoir	0.000	1	n/a	0	1	130.00	0.000	BASIN OUT Q10
5	Reservoir	0.000	1	n/a	0	2	130.00	0.000	Basin Out Ph II Q50
6	Reservoir	15.34	1	1162	401,979	3	141.00	57,933	Basin Out Ph II Q100

Pond Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2008 by Autodesk, Inc. v6.052 — Friday, Dec 5, 2008

Pond No. 2 - Detention Basin

Pond Data

Contours - User-defined contour areas. Average end area method used for volume calculation. Begining Elevation = 130.00 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	130.00	00	0	0
1.00	131.00	1,775	888	888
2.00	132.00	2,191	1,983	2,871
4.00	134.00	3,129	5,320	8,191
6.00	136.00	4,214	7,343	15,534
8.00	138.00	5,447	9,661	25,195
10.00	140.00	9,611	15,058	40,253
12.00	142.00	25,652	35,263	75,516

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 18.00	0.00	0.00	0.00
Span (in)	= 18.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 137.00	0.00	0.00	0.00
Length (ft)	= 30.00	0.00	0.00	0.00
Slope (%)	= 0.01	0.00	0.00	n/a
N-Value	= .013	.013	.000	n/a
Orifice Coeff.	= 0.60	0.60	0.00	0.00
Multi-Stage	= n/a	No	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	0.00	0.00	0.00
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No

Exfil.(in/hr) = 0.000 (by Wet area)

TW Elev. (ft) = 0.00

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
0.00	0	130.00	0.00	---	---	---	---	---	---	---	---	---	0.000
1.00	888	131.00	0.00	---	---	---	---	---	---	---	---	---	0.000
2.00	2,871	132.00	0.00	---	---	---	---	---	---	---	---	---	0.000
4.00	8,191	134.00	0.00	---	---	---	---	---	---	---	---	---	0.000
6.00	15,534	136.00	0.00	---	---	---	---	---	---	---	---	---	0.000
8.00	25,195	138.00	0.40 OC	---	---	---	---	---	---	---	---	---	0.395
10.00	40,253	140.00	12.16 OC	---	---	---	---	---	---	---	---	---	12.16
12.00	75,516	142.00	17.54 IC	---	---	---	---	---	---	---	---	---	17.54

VENTURA COUNTY WATERSHED PROTECTION DISTRICT
TIME OF CONCENTRATION
TC Program Version: 1.0.2007.1
Project: Rolls
Date: 12:00:00 AM
Engineer: Kinsey Pascoe
Consultant:

Watershed Name: **Existing**

Sub-Area Name: SubArea
Computing Tc for all rainfall frequencies for sub-area SubArea...

Tc for frequency = 10.00: 15.097 Minutes
DATA FOR SUB AREA 1

SUB AREA TIME OF CONCENTRATION: 15.097 min. = 15 min.

SUB AREA INPUT DATA

Sub Area Name: SubArea
Total Area (ac): 13.39
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 10
Development Type: Undeveloped
Soil Type: 4.00
Percent Impervious: 0
SUB AREA OUTPUT

Intensity (in/hr): 2.044
C Total: 0.651
Sum Q Segments (cfs): 17.82
Q Total (cfs): 17.82
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 905.84
Time of Concentration (min): 15.097

DATA FOR FLOW PATH 1

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 12.3685
Flow Type: Overland
Length (ft): 300
Top Elevation (ft): 150

Bottom Elevation (ft): 148
Percent of Sub-Area: 50
Overland Type: Valley
Development Type: Undeveloped
Map Slope: 0.0067
Effective Slope: 0.0067
Q for Flow Path (cfs): 8.91
Avg Velocity (ft/s): 0.40
Passed Scour Check: YES
Scour Velocity (ft/sec): 1.96

DATA FOR FLOW PATH 2

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 2.7288
Flow Type: Natural Channel
Length (ft): 700
Top Elevation (ft): 148
Bottom Elevation (ft): 140
Percent of Sub-Area: 50
Overland Type: Valley
Map Slope: 0.0114
Effective Slope: 0.0114
Q for Flow Path (cfs): 8.91
Q Top (cfs): 8.91
Q Bottom (cfs): 17.82
Velocity Top (ft/s): 2.60
Velocity Bottom (ft/s): 3.11
Avg Velocity (ft/s): 2.85
Wave Velocity (ft/s): 4.28

Tc for frequency = 25.00: 12.282 Minutes
DATA FOR SUB AREA 1

SUB AREA TIME OF CONCENTRATION: 12.282 min. = 12 min.

SUB AREA INPUT DATA

Sub Area Name: SubArea
Total Area (ac): 13.39
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 25
Development Type: Undeveloped
Soil Type: 4.00
Percent Impervious: 0

SUB AREA OUTPUT

Intensity (in/hr): 2.534
C Total: 0.694
Sum Q Segments (cfs): 23.56
Q Total (cfs): 23.56
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 736.91
Time of Concentration (min): 12.282

DATA FOR FLOW PATH 1

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 9.7464
Flow Type: Overland
Length (ft): 300
Top Elevation (ft): 150
Bottom Elevation (ft): 148
Percent of Sub-Area: 50
Overland Type: Valley
Development Type: Undeveloped
Map Slope: 0.0067
Effective Slope: 0.0067
Q for Flow Path (cfs): 11.78
Avg Velocity (ft/s): 0.51
Passed Scour Check: YES
Scour Velocity (ft/sec): 2.10

DATA FOR FLOW PATH 2

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 2.5355
Flow Type: Natural Channel
Length (ft): 700
Top Elevation (ft): 148
Bottom Elevation (ft): 140
Percent of Sub-Area: 50
Overland Type: Valley
Map Slope: 0.0114
Effective Slope: 0.0114
Q for Flow Path (cfs): 11.78
Q Top (cfs): 11.78
Q Bottom (cfs): 23.56
Velocity Top (ft/s): 2.79
Velocity Bottom (ft/s): 3.35
Avg Velocity (ft/s): 3.07

Wave Velocity (ft/s): 4.60

Tc for frequency = 50.00: 10.722 Minutes
DATA FOR SUB AREA 1

SUB AREA TIME OF CONCENTRATION: 10.722 min. = 11 min.

SUB AREA INPUT DATA

Sub Area Name: SubArea
Total Area (ac): 13.39
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 50
Development Type: Undeveloped
Soil Type: 4.00
Percent Impervious: 0
SUB AREA OUTPUT

Intensity (in/hr): 3.020
C Total: 0.728
Sum Q Segments (cfs): 29.43
Q Total (cfs): 29.43
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 643.32
Time of Concentration (min): 10.722

DATA FOR FLOW PATH 1

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 8.3336
Flow Type: Overland
Length (ft): 300
Top Elevation (ft): 150
Bottom Elevation (ft): 148
Percent of Sub-Area: 50
Overland Type: Valley
Development Type: Undeveloped
Map Slope: 0.0067
Effective Slope: 0.0067
Q for Flow Path (cfs): 14.72
Avg Velocity (ft/s): 0.60
Passed Scour Check: YES
Scour Velocity (ft/sec): 2.22

DATA FOR FLOW PATH 2

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 2.3883
Flow Type: Natural Channel
Length (ft): 700
Top Elevation (ft): 148
Bottom Elevation (ft): 140
Percent of Sub-Area: 50
Overland Type: Valley
Map Slope: 0.0114
Effective Slope: 0.0114
Q for Flow Path (cfs): 14.72
Q Top (cfs): 14.72
Q Bottom (cfs): 29.43
Velocity Top (ft/s): 2.95
Velocity Bottom (ft/s): 3.56
Avg Velocity (ft/s): 3.26
Wave Velocity (ft/s): 4.88

Tc for frequency = 100.00: 8.455 Minutes
DATA FOR SUB AREA 1

SUB AREA TIME OF CONCENTRATION: 8.455 min. = 8 min.

SUB AREA INPUT DATA

Sub Area Name: SubArea
Total Area (ac): 13.39
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 100
Development Type: Undeveloped
Soil Type: 4.00
Percent Impervious: 0
SUB AREA OUTPUT

Intensity (in/hr): 3.953
C Total: 0.768
Sum Q Segments (cfs): 40.66
Q Total (cfs): 40.66
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 507.31
Time of Concentration (min): 8.455

DATA FOR FLOW PATH 1

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 6.2696
Flow Type: Overland
Length (ft): 300
Top Elevation (ft): 150
Bottom Elevation (ft): 148
Percent of Sub-Area: 50
Overland Type: Valley
Development Type: Undeveloped
Map Slope: 0.0067
Effective Slope: 0.0067
Q for Flow Path (cfs): 20.33
Avg Velocity (ft/s): 0.80
Passed Scour Check: YES
Scour Velocity (ft/sec): 2.41

DATA FOR FLOW PATH 2

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 2.1856
Flow Type: Natural Channel
Length (ft): 700
Top Elevation (ft): 148
Bottom Elevation (ft): 140
Percent of Sub-Area: 50
Overland Type: Valley
Map Slope: 0.0114
Effective Slope: 0.0114
Q for Flow Path (cfs): 20.33
Q Top (cfs): 20.33
Q Bottom (cfs): 40.66
Velocity Top (ft/s): 3.22
Velocity Bottom (ft/s): 3.90
Avg Velocity (ft/s): 3.56
Wave Velocity (ft/s): 5.34

VENTURA COUNTY WATERSHED PROTECTION DISTRICT
TIME OF CONCENTRATION
TC Program Version: 1.0.2007.2
Project: Rol23964
Date: 12:00:00 AM
Engineer: Christopher M. Solis
Consultant: Jensen Design & Survey, Inc.

Watershed Name: Watershed

Sub-Area Name: SubArea
Computing Tc for all rainfall frequencies for sub-area SubArea...

Tc for frequency = 10.00: 15.887 Minutes
DATA FOR SUB AREA 1

SUB AREA TIME OF CONCENTRATION: 15.887 min. = 16 min.

SUB AREA INPUT DATA

Sub Area Name: SubArea
Total Area (ac): 5.95
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 10
Development Type: Industrial
Soil Type: 4.00
Percent Impervious: 70
SUB AREA OUTPUT

Intensity (in/hr): 1.976
C Total: 0.858
Sum Q Segments (cfs): 10.09
Q Total (cfs): 10.09
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 953.22
Time of Concentration (min): 15.887

DATA FOR FLOW PATH 1

Flow Path Name: Overland
FLOW PATH TRAVEL TIME (min): 6.6667
Flow Type: Overland
Length (ft): 200
Top Elevation (ft): 150
Bottom Elevation (ft): 148

Contributing Area (acres): 0.59
Percent of Sub-Area (%): 9.9
Overland Type: Valley
Development Type: Industrial
Map Slope: 0.0100
Effective Slope: 0.0100
Q for Flow Path (cfs): 1.00
Avg Velocity (ft/s): 0.50
Passed Scour Check: N/A
DATA FOR FLOW PATH 2

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 3.8521
Flow Type: Natural Channel
Length (ft): 650
Top Elevation (ft): 148
Bottom Elevation (ft): 141
Contributing Area (acres): 2.38
Percent of Sub-Area (%): 40.0
Overland Type: Valley
Map Slope: 0.0108
Effective Slope: 0.0108
Q for Flow Path (cfs): 4.04
Q Top (cfs): 1.00
Q Bottom (cfs): 5.04
Velocity Top (ft/s): 1.56
Velocity Bottom (ft/s): 2.19
Avg Velocity (ft/s): 1.87
Wave Velocity (ft/s): 2.81
DATA FOR FLOW PATH 3

Flow Path Name: Storm Drain
FLOW PATH TRAVEL TIME (min): 5.3683
Flow Type: Pipe
Length (ft): 875
Top Elevation (ft): 141
Bottom Elevation (ft): 131.5
Contributing Area (acres): 2.98
Percent of Sub-Area (%): 50.1
Initial Pipe Diameter (in): 36
Calculated Pipe Diameter (in): 18
Used Pipe Diameter (in): 36
Manning's N: 0.01
Map Slope: 0.0109
Q for Flow Path (cfs): 5.05
Q Top (cfs): 5.04

Q Bottom (cfs): 10.09
Avg Velocity (ft/s): 2.04
Wave Velocity (ft/s): 2.72
Tc for frequency = 25.00: 15.545 Minutes
DATA FOR SUB AREA 1

SUB AREA TIME OF CONCENTRATION: 15.545 min. = 16 min.

SUB AREA INPUT DATA

Sub Area Name: SubArea
Total Area (ac): 5.95
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 25
Development Type: Industrial
Soil Type: 4.00
Percent Impervious: 70
SUB AREA OUTPUT

Intensity (in/hr): 2.183
C Total: 0.864
Sum Q Segments (cfs): 11.22
Q Total (cfs): 11.22
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 932.73
Time of Concentration (min): 15.545

DATA FOR FLOW PATH 1

Flow Path Name: Overland
FLOW PATH TRAVEL TIME (min): 6.4575
Flow Type: Overland
Length (ft): 200
Top Elevation (ft): 150
Bottom Elevation (ft): 148
Contributing Area (acres): 0.59
Percent of Sub-Area (%): 9.9
Overland Type: Valley
Development Type: Industrial
Map Slope: 0.0100
Effective Slope: 0.0100
Q for Flow Path (cfs): 1.11
Avg Velocity (ft/s): 0.52
Passed Scour Check: N/A
DATA FOR FLOW PATH 2

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 3.7642
Flow Type: Natural Channel
Length (ft): 650
Top Elevation (ft): 148
Bottom Elevation (ft): 141
Contributing Area (acres): 2.38
Percent of Sub-Area (%): 40.0
Overland Type: Valley
Map Slope: 0.0108
Effective Slope: 0.0108
Q for Flow Path (cfs): 4.49
Q Top (cfs): 1.11
Q Bottom (cfs): 5.60
Velocity Top (ft/s): 1.59
Velocity Bottom (ft/s): 2.25
Avg Velocity (ft/s): 1.92
Wave Velocity (ft/s): 2.88
DATA FOR FLOW PATH 3

Flow Path Name: Storm Drain
FLOW PATH TRAVEL TIME (min): 5.3238
Flow Type: Pipe
Length (ft): 875
Top Elevation (ft): 141
Bottom Elevation (ft): 131.5
Contributing Area (acres): 2.98
Percent of Sub-Area (%): 50.1
Initial Pipe Diameter (in): 36
Calculated Pipe Diameter (in): 18
Used Pipe Diameter (in): 36
Manning's N: 0.01
Map Slope: 0.0109
Q for Flow Path (cfs): 5.62
Q Top (cfs): 5.60
Q Bottom (cfs): 11.22
Avg Velocity (ft/s): 2.10
Wave Velocity (ft/s): 2.74
Tc for frequency = 50.00: 10.311 Minutes
DATA FOR SUB AREA 1

SUB AREA TIME OF CONCENTRATION: 10.311 min. = 10 min.

SUB AREA INPUT DATA

Sub Area Name: SubArea
Total Area (ac): 5.95
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 50
Development Type: Industrial
Soil Type: 4.00
Percent Impervious: 70
SUB AREA OUTPUT

Intensity (in/hr): 3.161
C Total: 0.886
Sum Q Segments (cfs): 16.65
Q Total (cfs): 16.65
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 618.66
Time of Concentration (min): 10.311

DATA FOR FLOW PATH 1

Flow Path Name: Overland
FLOW PATH TRAVEL TIME (min): 3.3333
Flow Type: Overland
Length (ft): 200
Top Elevation (ft): 150
Bottom Elevation (ft): 148
Contributing Area (acres): 0.59
Percent of Sub-Area (%): 9.9
Overland Type: Valley
Development Type: Industrial
Map Slope: 0.0100
Effective Slope: 0.0100
Q for Flow Path (cfs): 1.65
Avg Velocity (ft/s): 1.00
Passed Scour Check: N/A
DATA FOR FLOW PATH 2

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 3.4449
Flow Type: Natural Channel
Length (ft): 650
Top Elevation (ft): 148
Bottom Elevation (ft): 141
Contributing Area (acres): 2.38
Percent of Sub-Area (%): 40.0
Overland Type: Valley

Map Slope: 0.0108
Effective Slope: 0.0108
Q for Flow Path (cfs): 6.66
Q Top (cfs): 1.65
Q Bottom (cfs): 8.31
Velocity Top (ft/s): 1.72
Velocity Bottom (ft/s): 2.48
Avg Velocity (ft/s): 2.10
Wave Velocity (ft/s): 3.14
DATA FOR FLOW PATH 3

Flow Path Name: Storm Drain
FLOW PATH TRAVEL TIME (min): 3.5327
Flow Type: Pipe
Length (ft): 875
Top Elevation (ft): 141
Bottom Elevation (ft): 131.5
Contributing Area (acres): 2.98
Percent of Sub-Area (%): 50.1
Initial Pipe Diameter (in): 36
Calculated Pipe Diameter (in): 21
Used Pipe Diameter (in): 36
Manning's N: 0.01
Map Slope: 0.0109
Q for Flow Path (cfs): 8.34
Q Top (cfs): 8.31
Q Bottom (cfs): 16.65
Avg Velocity (ft/s): 3.16
Wave Velocity (ft/s): 4.13
Tc for frequency = 100.00: 10.184 Minutes
DATA FOR SUB AREA 1

SUB AREA TIME OF CONCENTRATION: 10.184 min. = 10 min.

SUB AREA INPUT DATA

Sub Area Name: SubArea
Total Area (ac): 5.95
Flood Zone: 2
Rainfall Zone: K
Storm Frequency (years): 100
Development Type: Industrial
Soil Type: 4.00
Percent Impervious: 70
SUB AREA OUTPUT

Intensity (in/hr): 3.570
C Total: 0.891
Sum Q Segments (cfs): 18.93
Q Total (cfs): 18.93
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 611.05
Time of Concentration (min): 10.184

DATA FOR FLOW PATH 1

Flow Path Name: Overland
FLOW PATH TRAVEL TIME (min): 3.3333
Flow Type: Overland
Length (ft): 200
Top Elevation (ft): 150
Bottom Elevation (ft): 148
Contributing Area (acres): 0.59
Percent of Sub-Area (%): 9.9
Overland Type: Valley
Development Type: Industrial
Map Slope: 0.0100
Effective Slope: 0.0100
Q for Flow Path (cfs): 1.88
Avg Velocity (ft/s): 1.00
Passed Scour Check: N/A

DATA FOR FLOW PATH 2

Flow Path Name: FlowPath
FLOW PATH TRAVEL TIME (min): 3.3440
Flow Type: Natural Channel
Length (ft): 650
Top Elevation (ft): 148
Bottom Elevation (ft): 141
Contributing Area (acres): 2.38
Percent of Sub-Area (%): 40.0
Overland Type: Valley
Map Slope: 0.0108
Effective Slope: 0.0108
Q for Flow Path (cfs): 7.57
Q Top (cfs): 1.88
Q Bottom (cfs): 9.45
Velocity Top (ft/s): 1.76
Velocity Bottom (ft/s): 2.56
Avg Velocity (ft/s): 2.16
Wave Velocity (ft/s): 3.24

DATA FOR FLOW PATH 3

Flow Path Name: Storm Drain
FLOW PATH TRAVEL TIME (min): 3.5069
Flow Type: Pipe
Length (ft): 875
Top Elevation (ft): 141
Bottom Elevation (ft): 131.5
Contributing Area (acres): 2.98
Percent of Sub-Area (%): 50.1
Initial Pipe Diameter (in): 36
Calculated Pipe Diameter (in): 21
Used Pipe Diameter (in): 36
Manning's N: 0.01
Map Slope: 0.0109
Q for Flow Path (cfs): 9.48
Q Top (cfs): 9.45
Q Bottom (cfs): 18.93
Avg Velocity (ft/s): 3.25

advanced geotechnical services, inc.

January 29, 2024
Client Number 5126
Report Number 11216

Rolls Scaffold
Attn: Jake Rolls
11351 County Drive
Saticoy, CA 93004

Geotechnical Engineering Study
Proposed Service Building
11351 County Drive
Saticoy, California

In accordance with our proposal and your authorization, Advanced Geotechnical Services, Inc., (AGS) has prepared this *Geotechnical Engineering Study* for the proposed service building to be constructed at the subject site. This report presents the results of our data research, subsurface exploration, laboratory testing, and our professional opinions regarding the geotechnical engineering factors that may affect the proposed development.

Based on the results of this study, it is our opinion that the site is *suitable* for construction of the proposed development, provided the recommendations contained within this report are properly incorporated into the design, and implemented during construction.

This opportunity to be of service is sincerely appreciated. This report should be read from cover to cover to understand its limitations and to avoid taking a recommendation out-of-context. If you have any questions, or if we may be of any further assistance, please do *not* hesitate to call. We look forward to being of continued service.

Respectfully submitted,
Advanced Geotechnical Services, Inc.

Scott Moore, GE
Principal Geotechnical Engineer

Enclosure: *Report No. 11216*

cc: (1) Addressee (1) File Copy

5251 Verdugo Way, Suite L, Camarillo, California 93012
Ph 805.388.6162 / Fx 805.388.6167
info@advancedgeotechnical.com

GEOTECHNICAL ENGINEERING STUDY

Proposed Service Building
11351 County Drive
Saticoy, California

Report to
Rolls Scaffold
Saticoy, California

January 29, 2024
Client Number 5126
Report Number 11216

Contents

List of Appendices

1. INTRODUCTION

1.1 General Remarks

This *Geotechnical Engineering Study* has been prepared for the proposed service building to be constructed at the subject site. The purposes of this study are to (1) evaluate the seismicity of the site and potential seismic and faulting hazards, (2) identify on-site soil conditions that may affect the proposed project, and (3) provide geotechnical recommendations for use in the development of the subject site, including recommendations for site preparation, temporary excavations, foundation design, slabs-on-grade, pavement design, and drainage. This report presents the findings of our research and data review, subsurface exploration, laboratory testing, engineering analyses and evaluations, and our conclusions and recommendations.

Appendices are attached following the main report. Appendix A includes an explanation of the field exploration, and the boring logs; Appendix B includes an explanation of the laboratory testing, and the laboratory test results; Appendix C includes the CBC seismic design criteria; Appendix D includes the results of the liquefaction evaluation; Appendix E includes the references used in this study, and the Figures and Plates referenced in this report are included in Appendix F.

1.2 Scope of Services

This geotechnical engineering study included:

a. Site observation and review of geotechnical and geologic data of the general study area. A *Site Location Map* showing a broad view of the overall area where the site is located is provided as Figure 1. This figure was created using an image obtained from the Google Earth web app. The attached Plate 1, *Existing Site Plan*, shows a detailed close-up view of the current site conditions, and this exhibit was created using an image obtained from the County of Ventura *County View* website, which uses an aerial image as a base map, with County hazard information overlain. A *Proposed Site Plan* showing the proposed development is provided as Plate 2. This exhibit was created utilizing a *Proposed Site / Floor Plan* prepared by Muller Worthy Architects, dated December 5, 2023.

b. Reconnaissance of the subject site and the immediate vicinity of the subject site, including the review of nearby relevant geo reports.

c. Drilling, sampling, and logging of three recent borings at the subject site to depths between approximately 30.75 and 51.5 feet below the existing ground surface. The exploratory boring locations were determined in the field using a tape measure and approximate reference points, and thus the actual locations may deviate slightly from the locations shown on the attached Plates 1 and 2. The boring logs are included in Appendix A, along with a general description of the field operations.

d. Review of a previous geotechnical report for the subject site, which was conducted in 2005/2006, to provide recommendations for the construction of the now existing building to the south of the proposed new structure. This previous report was prepared by Earth Systems Southern California, and was entitled **Geotechnical Engineering Report for Jakran, LLC Building, Saticoy, California, VT-23619-01**, dated January 31, 2006.

e. Laboratory testing of selected samples to determine the engineering properties of on-site soils. The results of laboratory testing are presented in Appendix B, and on the boring logs in Appendix A. Soil samples will be *discarded* 30 days after the date of this report, unless this office receives a specific request and fee to retain the samples for a longer period of time.

f. Determination of seismic design criteria in conformance with the 2022 California Building Code.

g. Engineering analysis of the data and information obtained from our field study, laboratory testing, and literature review.

h. Development of geotechnical recommendations for site preparation and grading, and geotechnical design criteria for building foundations, floor slabs, temporary excavations, pavement and drainage.

i. Preparation of this report summarizing our findings, conclusions, and recommendations regarding the geotechnical aspects of the project site.

The scope of this geotechnical study did *not* include an assessment of potential environmental issues. AGS does not practice in the field of environmental assessment.

1.3 Site Description

The site of the proposed development is located at 11351 County Drive, in the Saticoy area of the County of Ventura, California. The subject site is irregular in shape, and measures a maximum of approximately 817 feet in the northeast-southwest (plan east-west) direction, and a maximum of approximately 569 feet in the northwest-southeast (plan north-south) direction, and is a total of 9.32 acres. The topography of the subject site and surrounding area is gently south to southeasterly sloping overall, based on regional topographic maps. At the time of our field exploration program, the site was in use as a vehicle and materials storage yard.

Vegetation on the site consists of low-lying natural vegetation and grasses in the area of the existing drainage swale in the southeast portion of the proposed building area, and in portions of the northeast area of proposed development.

The area surrounding the proposed new development consists of a vacant lot and small vehicle and materials storage area to the northwest, farmland to the northeast, the remainder of the subject property to the southeast, and County Drive to the southwest.

1.4 Proposed Development

The proposed development is shown on the enclosed Plate 2, *Proposed Site Plan*, and will consist of the construction of a new single-story service building, with a mezzanine/storage over the front offices, to be constructed in the northwestern portion of the site. The proposed development will also include adjacent parking and driveway areas, masonry walls, and other associated improvements, as shown on the enclosed Plate 2.

The proposed new service building will measure 250 feet by 60 feet, and will contain 13,144 square feet of maintenance shop area, 1886 square feet of first floor office space, and 1,889 square feet of mezzanine/storage space. The building will utilize masonry construction, and be a maximum of approximately 27 feet in height, with a concrete floor slab on grade. Maximum structural loads are no expected to exceed approximately 2 to 3 kips per foot for walls, and 50 to 100 kips for columns.

Grading plans were not available at the time this report was prepared, however, site grading is expected to consist of removal and recompaction of the upper site soils for support of the proposed new structure and pavement, backfill of related new utilities, and likely only minor modifications of the existing site topography, to establish grade for the building pad, driveway and parking areas, and site drainage.

Infiltration for stormwater management at the subject site was addressed in our Report entitled **Percolation Testing, Proposed Stormwater Management System, 11351 County Drive, Saticoy, California**, Report No. 10773, dated April

23, 2021. The existing drainage swale located to the southeast of the proposed building footprint is part of the stormwater management system.

2. GEOLOGIC SETTING

2.1 Geology

Geologic conditions beneath the subject property have been interpreted and characterized based upon our review of published and unpublished references, and our subsurface exploration. Our interpretations involve projections of data and assume that geologic conditions are reasonably constant between borings. Work should continue under the review of the Geotechnical Engineer to ensure that geologic conditions that may be different from those described below are recognized and evaluated as soon as possible. Certain subsurface conditions such as groundwater levels and the consistency of near-surface soils will vary with the seasons.

The subject site is located within the Saticoy USGS 7.5-minute quadrangle. According to Dibblee (1992), the subject site is underlain by younger alluvial materials, which was confirmed during our site exploration.

2.2 Faulting

Southern California is a tectonically active region subject to hazards associated with earthquakes and faulting. Based on the more recent terminology described in Special Publication 42 (CGS, 2018), faults are classified as either *Holocene-active*, *Pre-Holocene*, or *Age-undetermined*. *Holocene-active* faults are defined by the State of California as faults that have moved within the past 11,700 years, and *Pre-Holocene* faults are those that have not moved in the past 11,700 years. *Age-undetermined* faults are those where the recency of fault movement has not been determined. Alquist-Priolo Earthquake Fault Zones are zones that have been established by the State that contain *Holocene-active* surface fault traces, and projects that are located within these zones require that a subsurface fault investigation be performed to determine if active faulting affects the site.

A strand of the Oak Ridge fault is shown on the Ventura County View website (2024) extending through the subject site, and crossing the northern corner of the proposed building footprint, as shown on the attached Plate 1. According to the *Southern California Earthquake Data Center* (SCEDC, 2013), this fault is a south-dipping thrust fault, with most recent surface rupture within the Holocene period, however this segment of the fault crossing the subject site has not been identified as *Holocene-active*, based on a fault trenching study across the southwestern portion of the subject site and adjacent areas, by Fugro (2002), as depicted on the enclosed Plate 3, *Fugro Site Geologic Map*. The closest identified *Holocene-active*, and also Alquist-Priolo Earthquake Fault Zone is that associated with the Ventura Fault, located approximately 2.41 miles west of the subject site, as shown on the attached Figure 3, *Earthquake Fault and Seismic Hazard Zones Map*.

The following is excerpted from the *Southern California Earthquake Data Center* regarding the Oak Ridge Fault (SCEDC, 2013):

> *The surface trace of the Oak Ridge thrust is fairly easy to find on just about any map of the area you might have -- it forms a ridge (hence its name) to the south of its trace, and is roughly paralleled by both the Santa Clara River and California State Highway 126, from the town of Piru to the coast, just southeast of Ventura. The Oak Ridge thrust continues off shore, out to a point about 20 kilometers due south of Santa Barbara. The offshore segment is associated with a definite zone of active seismicity, though the only known Holocene surface rupture is found well onshore, between the towns of Bardsdale and Fillmore. At its eastern end, the Oak Ridge thrust becomes progressively more difficult to trace, and appears to be overthrust by the Santa Susana fault, thus becoming a blind thrust fault. Indeed, the fault associated with the 1994 Northridge earthquake is probably part of the Oak Ridge fault system, as it shares many of the characteristics of this fault. This blind thrust fault is known either as the* ***Pico Thrust****, named for the Pico Anticline (a geologic fold it is creating), or as the* ***Northridge Thrust****, for more obvious reasons.*

Since this segment of the fault crosses the subject site was confirmed by Fugro (2002) as not being *Holocene-active*, and the subject site is *not* located within an Alquist-Priolo Earthquake Fault Zone, a subsurface fault investigation *is not required* for the proposed development.

3. EARTH MATERIALS AND SUBSURFACE CONDITIONS

3.1 Alluvium (Qa)

Native, younger alluvial soils were encountered at or near the ground surface in all of the exploratory borings, and extending to the maximum depth explored, 51.5 feet below the existing site grade. Within the zone to be graded, roughly the upper 5 feet, as discussed in subsequent sections of this report, the soils consist primarily of clay and silt, with fine sand, in various combinations of sandy to clayey silt, silty clay and sandy to silty clay. These materials ranged from moist to very moist, contained occasional minor gravel, and were firm. Below 5 feet, the soils were primarily stiff clay and silt, in various combinations with fine sand just like the upper 5 feet, with a few layers of medium dense to dense silty sand and sand ranging from a few feet to several feet thick.

More detailed soil profiles, and descriptions of the earth materials encountered are provided on the enclosed boring logs.

3.2 Soil Parameters

3.2.1 Compaction

A compaction curve was developed in this study for a representative sample of the upper site soils. The maximum dry density was 119 pcf, at an optimum moisture content of 10.5 %. The upper site soils should be removed and recompacted for support of the proposed structure, pavement and other miscellaneous site improvements, as discussed in subsequent sections of this report.

3.2.2 Compressibility

Consolidation tests were performed on representative undisturbed samples of the onsite soils, and a remolded sample intended to represent the future compacted fill. The consolidation test results showed little or no tendency to hydroconsolidate within the undisturbed samples, expansion upon inundation with water for the remolded sample, and a relatively low level of overall compressibility for all of the samples within the range of expected foundation loading.

3.2.3 Shear Strength

Direct shear testing was used to measure the peak and ultimate shear strength properties of representative samples of the onsite soils, both remolded and undisturbed, in terms of a cohesion value and a friction angle. The results of the direct shear testing are presented in Appendix B of this report.

3.2.4 R-value Testing

A representative sample of the upper site soils was transported to an outside laboratory for R-value testing, and the results are attached in Appendix B. The results showed that the upper site soils have an R-value of 11.

3.2.5 Grain Size Analysis

Grain size testing was performed on representative samples of the earth materials underlying the site by using mechanical sieve analysis, and hydrometer testing. The results of the complete grain size testing are presented graphically in Appendix B of this report, and the results of the -200 sieve only analysis are presented on the boring logs.

3.2.6 Atterberg Limits

Atterberg limits testing was performed on representative samples of the clayey soils, in order to determine the plastic and liquid limits, and plasticity index. The results of the Atterberg limits testing are presented in Appendix B of this report.

3.2.7 Expansion Category

The potential of the soil to swell or expand increases with an increase in soil density, a decrease in initial moisture content, an increase in clay content, and an increase in the activity of the clay content. Expansive soils change in volume (shrink or swell) due to changes in the soil moisture content. The risk of soil expansion increases with an increase in expansion index.

The expansion index of a representative sample of the upper site soils obtained from Boring B-1 between the ground surface and a depth of 5 feet was found to be 76, which is in the *medium* expansion category. Representative samples of the blended, recompacted soils should be obtained from the surface of the building pad after grading to confirm the expansion index.

3.2.8 Corrosivity

The risk of corrosion of construction materials relates to the potential for soil-induced chemical reaction. The rate of deterioration depends on soil resistivity, texture, acidity, and chemical concentration. A representative sample of the upper site soils was transported to an outside laboratory for corrosivity testing, and the results of these tests are attached in Appendix B, and summarized in the following table. Sulfate and chloride concentrations are expressed in mg/kg on a dry weight basis.

Boring Number	Depth (ft)	Description	pH	Chloride (mg/kg)	Sulfate (mg/kg)	Resistivity (Ohms-cm)
B-1	0 – 5	SANDY SILTY CLAY	8.3	9.3	77	5200

The sulfate content is negligible (less than 1000 mg/kg) based on ACI 318, and therefore special considerations are not required for concrete which will be in contact with the onsite soils.

3.3 Groundwater

At the time of our field exploration, which was conducted to a maximum overall depth of 51.5 feet, groundwater was encountered at a depth of approximately 35 feet below the existing ground surface in Boring B-1, and was not encountered within the other two borings, which were excavated to depths between 30.75 and 31.5 feet.

Based on the historically highest groundwater map contained within the *Seismic Hazard Zone Report for the Saticoy 7.5-Minute Quadrangle, Ventura County, California* (CGS, 2003), the historically highest groundwater level in the site vicinity was approximately 10 feet below the existing ground surface, as shown on the enclosed *Depth to Historically High Groundwater* map, Figure 4.

Groundwater elevations are dependent on seasonal precipitation, irrigation, land use, and climatic conditions, among other factors, and as a result fluctuate. Therefore, water levels at the time of construction and during the life of the development may vary from the observations or conditions at the time of our field exploration.

4. SEISMICITY

4.1 Seismic Design Criteria

The seismic design of structures based on the 2022 California Building Code (CBC) utilizes the *Maximum Considered Earthquake Ground Motion*. This ground motion and the associated spectral response accelerations are then adjusted for the general type of earth materials within approximately the upper 100 feet underlying the site, termed a *Site Class*. The *Site Class* is based on parameters such as shear wave velocity, standard penetration test resistance, undrained shear strength, and earth material type. For the subject site, which is underlain by younger alluvial soils, the appropriate *Site Class* would be 'D', which corresponds to a *stiff soil*.

The site-specific seismic design criteria required by the 2022 CBC were determined utilizing the ASCE 7 Hazard Tool (2024) online web app, utilizing the currently required ASCE 7-16 Standard. The complete output from this

web app is attached in Appendix C, and the primary design parameters are summarized in the table below. The *Site Class* option of '*D – Stiff Soil*' was utilized in the analysis.

ASCE Standard	Site Class	F_a	F_v	PGA	PGA_M	S_S	S_1	S_{MS}	S_{M1}	S_{DS}	S_{D1}
7-16	D	1.0	Null*	0.851	0.937	1.929	0.724	1.929	Null*	1.286	Null*

*** See Section 11.4.8 of ASCE 7-16**

Conformance to these criteria does *not* constitute a guarantee or assurance that significant structural damage will *not* occur if a maximum level earthquake occurs. The primary goal of seismic design is to protect life and *not* to avoid all damage, since such design may be economically prohibitive.

4.2 Earthquake Effects

The intensity of ground shaking during an earthquake can result in a number of phenomena classified as ground failure, which include ground rupture due to faulting, landslides, liquefaction, and seismically induced dry settlement. Other seismic hazards include seiches and tsunamis. Descriptions of each of these phenomena and an assessment of each, as it may affect the subject site, are included in the following sections. The Seismic Hazards Mapping Act of 1990, which became effective in 1991, requires mitigation of seismic hazards to a level that does *not* cause collapse of a building intended for human occupancy, but it does *not* require mitigation to a level of no ground failure or structural damage.

4.2.1 Shallow Ground Rupture

Ground surface rupture occurs when movement along a fault is sufficient to cause a gap or rupture where the upper edge of the fault zone intersects the ground surface, and such ruptures rarely occur as single breaks or are confined to a narrow zone. More commonly, ground rupture associated with faulting is characterized by relatively short segments of faulting that occur over a broad area of the upper plate. In some cases, particularly in unconsolidated alluvial sediments, *secondary ground ruptures* can develop from a number of causes not necessarily related directly to surface rupture of the causative fault. The secondary ruptures can be caused by seismically-induced settlement, landslides, and liquefaction and its related effects, including lateral spreading and sand boils.

As discussed in the *Faulting* section of this report, a surface trace of the Oak Ridge Fault is shown on the County of Ventura *County View* website (Ventura County, 2024) as crossing the subject site, as shown by the red line on the attached Plate 1, *Existing Site Plan*, which was created utilizing an image obtained from the *County View* website. This portion of the Oak Ridge Fault is not currently zoned as an Earthquake Fault Zone on the State of California Earthquake Fault Zones Map of the Saticoy Quadrangle (CGS, 1978), and as also discussed in the *Faulting* section of this report, a fault trenching study conducted on the subject site and adjacent areas by Fugro (2002) also concluded that this segment of the fault was not *Holocene-active*. Therefore, a subsurface investigation to determine whether there are active surface fault traces crossing the site would not be deemed necessary, and the likelihood of surface rupture on the subject site would be considered remote.

4.2.2 Earthquake-Induced Landsliding

Seismically-induced landslides are slope failures that occur where the horizontal seismic forces act to induce soil failure. Seismic Hazard Maps have been released by the California Geological Survey that delineate areas that have been subject to, or are potentially subject to landsliding or permanent ground displacement as a result of earthquake-induced ground shaking. Since the majority of the subject site and surrounding areas are relatively flat, on-site earthquake-induced landsliding is *not* considered to be a hazard.

4.2.3 Seiches and Tsunamis

Seiches are an oscillation of the surface of an inland body of water that varies in period from a few minutes to several hours. Seismic ground motions can induce such oscillations. Tsunamis are large sea waves produced by submarine earthquakes or volcanic eruptions. Since the site is *not* located close to an inland body of water, and is

at an elevation sufficiently above sea level to be outside the zone of a tsunami runup, the risk of these two hazards is *not* considered pertinent to this site.

4.2.4 Evaluation of Liquefaction Potential

Liquefaction is a phenomenon in which soils below the groundwater level lose strength as a result of ground shaking due to earthquakes. The site is located in an area designated as potentially liquefiable (as indicated by the green shading) on the *Earthquake Fault and Seismic Hazard Zones Map* of the Saticoy Quadrangle, attached as Figure 3 (CGS, 2003). The results of field exploration and laboratory testing conducted as part of this investigation indicate that the subject site meets the criteria of being potentially susceptible to liquefaction. A detailed liquefaction analysis was therefore performed to further evaluate the potential and extent of possible liquefaction at this site. The results of this analysis, along with other geologic information about the area were then used to evaluate the potential for the occurrence of the different liquefaction-induced phenomena.

Boring B-1 was excavated to a depth of approximately 51.5 feet to assess the liquefaction hazard potential at the site. The geotechnical data obtained from the boring, and our laboratory test results, including standard penetration test data (SPT), percent fines, clay fraction and Atterberg limits testing, were utilized in our evaluation of liquefaction hazard potential at the site. Younger alluvial soils consisting of varying mixtures and interbedded layers of clay, silt and sand, were encountered from the ground surface to the total depth of exploration, approximately 51.5 feet.

At the time of our field exploration, groundwater was encountered in Boring B-1 at a depth of approximately 35 feet below the existing ground surface. Based on the enclosed Figure 4, *Depth to Historically High Groundwater* map (CGS, 2003), the historically highest groundwater level was identified as approximately 10 feet below the existing ground surface. The liquefaction hazard analysis was therefore performed using this historically highest groundwater level of 10 feet below the ground surface.

The methods following the recommendations of the NCEER (Youd and Idriss, 1997; Youd et al, 2001) were used in the liquefaction analysis. A design-level earthquake magnitude of 6.9, and a site acceleration of 0.937g (PGA_M) were utilized to perform the liquefaction evaluation. The blow counts obtained using a modified California sampler were multiplied by 2/3 to convert to equivalent SPT blow counts, and the unlined SPT sampler blow counts were multiplied by a factor of 1.2. An energy correction factor of 1.33 was utilized for the automatic hammer utilized during sampling, based on specific energy calibration for this particular hammer and drill rig provided by the drilling subcontractor, Choice Drilling. The blow counts were further corrected utilizing the factors shown on the attached liquefaction analysis calculation sheet Plate D-1 in Appendix D.

The results of the liquefaction analysis indicate that a potentially liquefiable sand layer was encountered between the depths of approximately 12.5 and 15 feet below the existing ground surface. The remainder of the 'primarily sandy' soil layers have corrected equivalent SPT blow counts above 30, and would therefore not be considered susceptible to liquefaction (CGS, 2008). Utilizing the procedures of Tokimatsu and Seed (1987), the maximum potential liquefaction induced settlement is anticipated to be approximately 0.44 inches. Potential differential settlement due to liquefaction is typically conservatively assumed to be up to two-thirds of the maximum total settlement, which would be approximately 0.29 inches in this case, and is typically assumed to occur over a span of as short as 30 feet.

Atterberg limits testing was also performed to determine whether representative samples of the primarily clayey and silty soils underlying the site might be 'sensitive', and subject to potential strength loss during strong ground shaking. These clayey and silty soils would not be considered potentially susceptible to typical liquefaction and the associated settlement, however. Atterberg limits testing was performed on two representative samples of the primarily silty and clayey soils underlying the site, and the results are attached in Appendix B. Earth materials with plasticity indices within the range of 12 to 18 are not considered to be sensitive and subject to potential strength

loss, whereas earth materials with plasticity indices outside this range *may* potentially be sensitive, and subject to potential strength loss, if certain site conditions are present (CGS, 2008).

One of the samples tested (B-1 @ 20') had a plasticity index of 33, and the other sample (B-1 @ 40') had a plasticity index of 23. Both of these are outside the range of 12-18, and therefore the *potential* exists that these materials *could* be 'sensitive,' and susceptible to seismically induced deformations that *may* affect certain sites, such as when the onsite and/or nearby topography is conducive to such deformations. Based on the stiff nature of these earth materials, it's our opinion that it's extremely unlikely that these materials would be sensitive, and even if potentially sensitive materials were present, and subject to strength loss during strong ground shaking, due to the relatively flat to only gently sloping nature of the subject site and surrounding areas, it would not result in any mass movements, or observable effects at the ground surface, and would therefore not have an effect on the proposed development.

Based on the relative thickness of potentially liquefiable layer to overlying non-liquefiable materials, depth to first liquefiable layer, and relatively high density of the potentially liquefiable layer, the potential for surface manifestation of liquefaction in the form of sand boils, ground fissuring or loss of bearing capacity is not considered likely (Ishihara, 1985).

4.2.5 Lateral Spreading

The subject site is located on a relatively level to only gently sloping alluvial plain, with no open channel faces or other slopes nearby, and the corrected equivalent SPT blow count was above 15 within the potentially liquefiable layer. Therefore, the risk of liquefaction-induced lateral spreading is considered to be negligible (Bartlett and Youd, 2002).

4.2.6 Dynamic Dry Settlement

Settlement of relatively loose, dry sandy soils can occur as a result of strong ground shaking resulting from an earthquake. On the subject site, the upper 5 feet of earth materials within the proposed building area will be over-excavated and recompacted for support of the proposed structure, as described in subsequent sections of this report, and this future compacted fill would not be considered prone to dynamic dry settlement. The earth materials encountered between the depths of 5 and 10 feet consist of stiff clay and silt, which would also not be considered susceptible to dynamic dry settlement. The groundwater level utilized in the liquefaction analysis was 10 feet below the existing ground surface, and therefore potential seismically-induced settlement below 10 feet has already been accounted for in the liquefaction settlement analysis, and need not be double counted.

Based on these considerations, the potential for dynamic dry settlement at the site is considered to be negligible.

5. CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions and Design Requirements

Based on the findings of our data review, subsurface exploration, laboratory testing, field testing, and engineering analyses, and within the scope of this study, the construction of the proposed structure at the subject site is considered to be *feasible* from a geotechnical engineering viewpoint, provided the recommendations contained within this report are incorporated into the plans and implemented during construction. The following sections discuss conditions that should be anticipated, and provide recommendations for use during the design and construction phase of the project.

In order to provide more uniform support for the proposed structure, and help to mitigate the effects of minor potential liquefaction-induced settlement, it is recommended that the upper earth materials be over-excavated and recompacted for support of the proposed structure. The depth of removal and recompaction should extend to a minimum of 5 feet below existing or future site grade, whichever is deeper, and a minimum of 3 feet below the bottom of all foundations. Subsequent to the required over-excavation and recompaction, the proposed structure should then be supported on conventional shallow foundations bearing exclusively in newly placed compacted fill.

More detailed and complete recommendations for the proposed development are provided in the following sections of this report.

Infiltration for stormwater management at the subject site was addressed in our Report entitled **Percolation Testing, Proposed Stormwater Management System, 11351 County Drive, Saticoy, California**, Report No. 10773, dated April 23, 2021. The existing drainage swale located to the southeast of the proposed building footprint is part of the stormwater management system. It should be noted that a minimum setback of 8 feet is required between building foundations and infiltration features.

5.1.1 Faults / Seismicity

As discussed previously in this report, a suspected surface trace of the Oak Ridge Fault crosses the subject site and proposed building area, and like most of Southern California, the site lies within a seismically active area. Earthquake resistant structural design is recommended, and is required by the Building Code. Designing structures to be earthquake-proof, however, is generally considered to be impractical, especially for private projects, due to cost limitations.

Significant damage to structures may be unavoidable during large earthquakes. Structural design based on the 2022 CBC structural analysis procedures requires the use of the seismic design parameters given previously in the *Seismic Design Criteria* section of this report. These minimum code values are intended to protect life, and may not provide an acceptable level of protection against significant damage and serious economic loss. Significantly higher than code seismic design parameters may be necessary to further reduce potential economic loss during a major seismic event. Structural Engineers, however, often regard higher than code values or procedures as impractical for use in structural design. The Structural Engineer and project Owner must decide if the level of risk associated with code values is acceptable and, if not, to assign appropriate seismic values above and beyond code values for use in structural design. It is recommended that earthquake insurance be obtained.

5.1.2 Hazardous Materials

AGS has *not* been retained to provide any type of environmental assessment of the subject property, *nor* to provide recommendations with respect to any contamination that might be present. AGS does not practice in the field of environmental assessment.

5.1.3 Landslides

The subject site and immediately surrounding areas are relatively flat to only gently sloping, and therefore landsliding is *not* considered to be a hazard to the subject site and proposed construction.

5.1.4 Cut and Fill Slopes

No cut or fill slopes are proposed for this development.

5.1.5 Excavation Characteristics

Difficult excavation during the required over-excavation and recompaction operation due to hard or cemented earth materials is not anticipated.

5.1.6 Drainage

All surface runoff must be carefully controlled and must remain a crucial element of site maintenance. Proper drainage and irrigation are important to reduce the potential for damaging ground/foundation movements due to hydroconsolidation, soil expansion or shrinkage. Final grading should provide positive drainage away from structures in compliance with the local jurisdiction's grading requirements. All pad drainage shall be collected and diverted away from the proposed structure and foundations in non-erosive devices. It is recommended that gutters and roof drains be provided, if possible, properly maintained, and discharge directly to an approved location. It is also recommended that a drainage system consisting of either positive surface drainage across the site to appropriate

locations, or a system of area drains, catch basins, and connecting lines, be utilized to capture landscape/hardscape sheetflow runoff. Any drainage piping utilized should be watertight and discharge to an appropriate location.

All underground plumbing fixtures should be absolutely leak-free. As part of the maintenance program, utility lines should be checked for leaks for early detection of water infiltrating the soils that could cause detrimental soil movements. Detected leaks should be promptly repaired. Proper drainage should also be provided away from the building footings during construction. This is especially important when construction takes place during the rainy season.

Seepage of surface irrigation water or the spread of extensive root systems into the subgrade of footings, slabs, or pavements can cause differential movements and consequent distress in these structural elements. Trees and large shrubbery should *not* be planted so that roots grow under foundations and flatwork when they reach maturity. Landscaping and watering schedules should be planned with consideration for these potential problems.

Drainage systems should be well maintained, and care should be taken to *not over* or *under* irrigate the site. Landscape watering should be held to a minimum while maintaining a uniformly moist condition without allowing the soil to dry out. During extreme hot and dry periods, adequate watering may be necessary to keep soil from separating or pulling back from the foundations. Cracks in paved surfaces should be sealed to limit infiltration of surface waters.

5.1.7 Improvements on Expansive Soils

Expansive soils contain clay minerals that change in volume due to changes in soil moisture content. Expansive soils tend to shrink (decrease in volume) when they dry out, and swell (heave or increase in volume) when they absorb moisture. The amount of volume change depends on (1) the swell potential of the soil, (2) the availability of water, (3) the restraining pressure on the soil, and (4) time. The earth materials underlying the site were found to be in the *medium* Expansion Index category.

The recommendations presented in this report are intended to reduce the risks associated with construction on expansive soil. Although such risks *cannot be eliminated* without the implementation of extremely costly measures such as replacement of the upper site soils with less expansive materials, or lime/cement treatment, these risks can be *reduced* with proper construction practices, and proper foundation and concrete slab design and construction, proper drainage, maintenance of landscaping and plumbing, including that associated with water service, and waste lines.

Roof gutters and downspouts should be inspected periodically. If clogged, they should be cleaned. If damaged, they should be repaired. Any separation cracks between sections of flatwork should be sealed to prevent the infiltration of water. Catch basins, grates, and subsurface drainage piping should be kept free of silt and debris. During landscaping and maintenance activities, site personnel should avoid disrupting flow patterns that were designed and created utilizing the approved grading plans.

Rodent activity should be controlled to reduce water penetration and loosening of the soil. Rodents, particularly ground squirrels, can damage improvements, and allow more extensive infiltration of water, and therefore exacerbate expansive soil movement. It is recommended that rodent control measures be part of the site maintenance program.

Large trees or vegetation with large root systems should be planted at sufficient distance from structures or concrete flatwork to prevent roots from extending under footings and slabs, in which case they could lift the footings or slabs, or alter the moisture conditions and cause movements.

In summary, proper maintenance is the *key* to reducing the risk and severity of differential movements and distress to the proposed improvements due to shrinking and swelling of the onsite soils.

5.1.8 Plan Review

When final plans become available, they should be reviewed by AGS prior to submittal to regulatory agencies for approval. Additional analysis *may* be required at that time depending on specific details of the proposed grading and improvements, and any corrections deemed necessary will be made known to the project team. Approval by this office will be indicated by signature and stamp once our recommendations have been incorporated into the design or shown as notes on the plan.

Please be aware that the contract fee for our services to prepare this report does not include additional work that will be required, such as grading observation and testing, footing observations, plan review, or responses to governmental (regulatory) plan reviews associated with obtaining a building permit. Where additional services are requested or required, you will be billed on an hourly basis for consultation or analysis. AGS requests a minimum of 24 hours be provided for plan reviews. Please anticipate additional time for plan corrections if all of our geotechnical recommendations have not been added to the plans, prior to our approving and stamping the plans.

5.1.9 Additional Recommendations

The following additional geotechnical recommendations should be incorporated into the final design and construction. All such work and design should be in conformance with local governmental regulations or the recommendations contained herein, whichever are more restrictive. The following recommendations have *not* been reviewed or approved by the County at this time. These recommendations may change based on obtaining approval from the County. Final design of the proposed project should be made following approval from the County.

5.2 Site Preparation

The area of the proposed new structure should be prepared so that foundations are bearing entirely within newly placed, certified compacted fill. General guidelines are presented below to provide a basis for quality control during site grading. It is recommended that all compacted fills be placed and compacted with engineering control under continuous observation and testing by a representative of the Geotechnical Engineer, and in accordance with the following requirements.

5.2.1 Removals

a. During the over-excavation process, the contractor should completely remove any existing foundations, floor slabs, debris pits, or subsurface trash which may be encountered. The resulting excavations should be cleaned of all loose soils, uncertified fill and organic material, inspected by representatives of AGS and Ventura County, and the excavation backfilled with compacted fill, as described below.

b. Remove all vegetation *prior* to fill placement. The general depth of stripping should be sufficiently deep to remove any root systems or organic topsoil which may be present. The removal of trees and large shrubs should include complete removal of their root structures.

c. In order to provide more uniform support for the proposed structure, and help to mitigate the effects of potential minor liquefaction-induced settlement, it is recommended that the upper earth materials be over-excavated and recompacted for support of the proposed structure. In the area of the proposed new structure, the existing soil to a minimum depth of 5 feet below the existing or future finished grade level, whichever is deeper, and a minimum of 3 feet below the bottom of all footings, should be over-excavated and recompacted.

d. In all proposed asphalt and concrete paving areas, and other miscellaneous flatwork areas (i.e., patios, walkways, etc.), a minimum of approximately 12 inches below existing grade, or 12 inches below the bottom of concrete or base section, whichever is deeper, should be over-excavated and recompacted. Any other loose or disturbed soils which may be present below a depth of 12 inches below existing and future grade should also be removed and recompacted.

e. The limits of over-excavation can be limited to the areas of the proposed structure, pavement, and other miscellaneous flatwork and improvements, but should extend a minimum distance of 5 feet beyond the outside perimeter of foundations, or to a distance equal to the depth of compacted fill below foundations, whichever is greater, and 12 inches outside pavement areas and other miscellaneous improvements. A careful search shall be made for deeper areas of loose soil during grading operations. If encountered, loose soil areas should be properly removed to the firm underlying native soil, and properly backfilled and compacted as directed by the field representative of the Project Geotechnical Engineer.

5.2.2 Bottom Stabilization

a. Based on the relatively high moisture content of the soils at the time of our field exploration, it is likely that stabilization of the bottom of over-excavation will be required to allow the operation of heavy equipment, and to allow the placement and proper compaction of fill.

b. It's our recommendation that bottom stabilization consist of alternating layers of Tensar *InterAx* Geogrid and aggregate base. Using this method, the required over-excavation should still first be made to a minimum depth of 5 feet below the existing and future grade level, and a minimum of 3 feet below bottom of footings, whichever is deeper. It is recommended that a large excavator staged outside the excavation be utilized for this initial over-excavation in any areas of pumping soils. The first layer of geogrid should then be placed directly on a relatively level, native soil bottom of over-excavation. Adjacent layers of geogrid should be overlapped a minimum of 18 inches.

c. Some type of imported aggregate base material, which may include recycled AC/PCC/AB should then be placed over the geogrid in two approximately 6-inch thick compacted layers (about 8 to 9-inch +/- loose lifts), for a total of 12 inches of compacted base, compacted to a minimum 90% compaction. The imported base does not have to meet exact road base specifications, but should have very minimal fines content, similar to base. The intent of recommending this general type of material is that it provides the necessary interlock with the geogrid, and also compacts more easily than a typical soil with more fines content, thereby reducing potential disturbance to the underlying subgrade, and increasing the ease of compaction. This type of material is also less prone to absorb excessive moisture from the very moist subgrade soils that would likely underlie the geogrid in any areas needing stabilization.

d. It is recommended that the base be properly moisture conditioned and thoroughly mixed outside the excavation prior to placement over the geogrid. It is also recommended that an excavator staged outside the excavation, or small track-mounted equipment, be utilized to place and spread the base over the geogrid. Wheel-mounted equipment and dynamic compaction methods are not recommended for this purpose, or for compaction.

e. If sufficient stabilization has not yet been achieved to allow the placement and compaction of onsite soils over the top of the first 1-foot layer of geogrid and compacted base, then another layer of geogrid should be placed on top of the base, followed by a 6-inch layer of compacted base. Again, if sufficient stabilization has not yet been achieved, another 6-inch layer of compacted base should be placed, and stabilization tested again. If stabilization has not been achieved by this time, the use of smaller and/or track-mounted equipment should be considered for use within the excavation. If necessary, another layer of geogrid could be placed, followed by another 6-inch layer of compacted base.

f. It should be noted that the geogrid stabilization described above is *only necessary if required to allow proper compaction of the necessary blanket of compacted fill*. The geogrid is *not a*

requirement for foundation support or liquefaction mitigation. It's possible, depending on the exact soil moisture conditions, time of year, amount of recent precipitation, weather, and type of equipment utilized during grading, that bottom stabilization will not be required.

5.2.3 Suitable Fill Material

a. The excavated onsite soils, cleaned of deleterious material, are suitable for re-use as compacted fill, but may require significant moisture conditioning (either drying, or the addition of water, along with thorough mixing). Rock larger than 6 inches should *not* be buried or placed in the compacted fill. Rock fragments less than 6 inches may be used provided the fragments are *not* placed in concentrated pockets, and a sufficient percentage of finer grained material surrounds and infiltrates the rock voids.

b. Any imported earth materials which may be required should generally have engineering properties similar to, or more favorable that those on the subject site, including an expansion index less than 76, and an R-value greater than 11. Imported material will require testing to verify the engineering properties, and must be approved by the Geotechnical Engineer *prior* to placement on the site.

5.2.4 Placement of Compacted Fill

a. All fill materials should be placed in controlled, horizontal layers *not* exceeding 6 to 8 inches thick, and moisture conditioned to at least 2% above optimum moisture content, but no more than approximately 5% above optimum. Fill materials should be compacted to a minimum 90% of the laboratory maximum dry density, as determined by ASTM D1557. If either the moisture content or relative compaction does *not* meet these criteria, the Contractor should rework the fill until it does meet the criteria. If the fill materials pump (flex) under the weight of construction equipment, difficulties in obtaining the required minimum compaction may be experienced. Therefore, if soil pumping occurs, it may be necessary to reduce the moisture content closer to optimum, or use construction equipment that is not as prone to cause pumping.

b. The field test methods to be used to determine the in-place dry density of the compacted fill shall be in conformance with ASTM D1556 (sand cone test method) or ASTM D2922 (nuclear gauge method).

5.2.5 Testing of Compacted Fill

a. At least one compaction test shall be performed for every 500 yd^3 of the fill material. In addition, at least one test shall be performed for every 2 feet of fill thickness.

5.2.6 Inclement Weather and Construction Delays

a. If construction delays or the weather result in the surface of the fill drying excessively, the surface should be scarified, moisture conditioned and thoroughly mixed before the next layer of fill is added.

b. During periods of wet weather and before stopping work, all loose material shall be spread and compacted, surfaces shall be sloped to drain to areas where water can be removed, and erosion protection or drainage provisions shall be made in accordance with the plans provided by the Civil Engineer. After the rainy period, a field representative of the Geotechnical Engineer should *review* the site for authorization to resume grading, and to provide any specific recommendations that may be required. As a minimum, however, surface materials previously compacted before the wet weather should be scarified, brought to the proper moisture content, and recompacted *prior* to placing additional fill.

c. Prior to placing concrete, including foundations, floor slabs, and exterior flatwork, construction sequences should be scheduled to reduce the time interval between subgrade preparation and concrete placement to avoid drying and cracking of the subgrade, or the surface should be covered or periodically wetted to prevent drying and cracking. Proper soil moisture content should be present prior to pouring concrete.

5.2.7 Responsibilities

a. Representative samples of material to be used as compacted fill should be analyzed in the laboratory by the Geotechnical Engineer to determine the physical properties of the materials. If any materials other than those previously tested are encountered during grading, the appropriate analysis of this material shall be conducted by the Geotechnical Engineer as soon as practicable. Any imported soil from off-site sources shall be approved *prior* to placement.

b. All grading work shall be observed and tested by a representative of the Project Geotechnical Engineer to confirm proper site preparation, excavation, scarification, and compaction of on-site soil, selection of satisfactory fill materials, and placement and compaction of fill. All removal areas and footing excavations shall be observed by the field representative of the Project Geotechnical Engineer before any fill or steel is placed.

c. The lateral limits and the depths of the removals should be shown by the Civil Engineer on the grading plans.

d. The grading contractor has the ultimate responsibility to achieve uniform compaction in accordance with the geotechnical report and grading specifications.

5.3 Utility Trench Backfill

The on-site soils are suitable for backfill of utility trenches from 1-foot above the top of the pipe to the surface, provided the material is free of organic matter and deleterious substances. The natural soils should provide a firm foundation for site utilities, but any soft or unstable material encountered at pipe invert should be removed and replaced with an adequate bedding material.

The site Civil Engineer in accordance with manufacturer's requirements should specify the type of bedding materials. Granular soils will need to be imported for bedding or shading of utilities. Jetting of bedding materials should *not* be permitted unless appropriate drainage is provided and the bedding has a sand equivalent greater than 50.

Trench backfill should be placed in 6 to 8-inch lifts, moisture conditioned to at least 2% over optimum moisture content, but no more than approximately 5% above optimum, and compacted to at least 90% of the maximum density as determined by ASTM D1557. Jetting of trench backfill is *not* acceptable to compact the backfill.

In areas where utility trenches pass through an existing pavement section, the trench width at the surface shall be enlarged a minimum of 6 inches on each side to provide bearing on undisturbed material for the new base and paving section to match the existing section.

5.4 Temporary Excavations

Temporary excavations of 5 feet or less in height in on-site soils may not require any special shoring. Vertical excavations more than 5 feet deep, if necessary, will require conventional shoring per CAL/OSHA Regulations, or the excavation may be laid back at a 1(H):1(V) gradient. Excavations should *not* be allowed to become soaked with water or to dry out. Surcharge loads should *not* be permitted within a horizontal distance equal to the height of the excavation from the top of the excavation, unless the excavation is properly shored. Excavations that might extend below an imaginary plane inclined at 45 degrees below the edge of an existing foundation, or below the property

line, should be properly shored. Based on the current building locations and configurations, and grading recommendations contained herein, it is not anticipated that any excavations will remove lateral support from adjacent properties, or require shoring.

5.5 Conventional Foundation Design

After the over-excavation and recompaction of the upper site soils as previously described in this report, conventional, shallow spread footings founded entirely within certified compacted fill can be utilized for foundation support for the proposed structure. The following foundation design parameters may be used in the design of conventional, shallow spread footings.

Foundations for any miscellaneous free-standing site walls or small retaining walls (retaining less than 4 feet) not rigidly connected to the proposed structure may be supported on conventional, shallow foundations bearing either entirely within compacted fill, or entirely within undisturbed native soils. In order to avoid potential excessive differential settlement, it is recommended that any given length of free standing site or retaining walls bear either entirely within compacted fill, or entirely within native soils, or a cold joint should be provided at any transition between sections of wall and footing supported on native soils and compacted fill.

5.5.1 Minimum Footing Dimensions

Minimum required foundation depths and widths are provided in the table below for the proposed building. Miscellaneous non-building site wall or small retaining wall (less than 4 feet) foundations should be embedded a minimum of 12 inches into the recommended bearing material, a minimum of 24 inches in depth below the lowest adjacent grade, and should be a minimum of 12 inches in width.

The embedment depths in the following table are into the recommended bearing material (compacted fill), or below the lowest adjacent, final grade, whichever is deeper. Where located adjacent to utility trenches, footings shall extend below a 1:1 plane projected upward from the inside bottom of the trench. Structural requirements may necessitate deeper or wider footing sizes.

Minimum Footing Embedment Depth (inches)	Minimum Continuous Footing Width (inches)	Minimum Isolated or Pad Footing Width (inches)
24	12	24

5.5.2 Allowable Bearing Pressure and Lateral Resistance

Allowable net vertical soil bearing pressure, including dead and live loads, are given below for footings founded on newly placed, certified compacted fill, or competent native soils. The bearing capacity can be increased by ⅓ when considering short duration wind or seismic loads.

Bearing Material	Allowable Bearing Pressure (psf)	Allowable Sliding Friction Coefficient	Allowable Passive Resistance (psf per foot of depth)	Maximum Passive Resistance (psf)
COMPACTED FILL	2,000	0.25	250	2,500
NATIVE SOILS (MISC. FREE-STANDING SITE WALLS OR SMALL RETAINING WALLS)	1,500	0.20	200	2,000

Resistance to lateral loads can be assumed to be provided by friction along the base of the foundation, and by passive earth pressure on the side of the footing. The allowable friction coefficient may be used with the vertical dead loads, and the allowable lateral passive pressure can be utilized for the sides of footings poured against the recommended bearing material. These allowable values can be increased by a factor of 1.5 to convert from allowable to ultimate

values. It is recommended that the upper 1-foot of soil be neglected when computing passive resistance, due to the potential for the material to become disturbed or degraded during the life of the structure. When combining passive and friction for lateral resistance, it is recommended that the passive component be reduced by one-third.

5.5.3 Foundation Settlement

Static settlement of proposed foundations due to dead and frequently applied live loads is not expected to exceed approximately 3/4-inch under the assumed loading conditions. Differential settlement is not expected to exceed approximately 1/4-inch.

The maximum settlement of the foundations as a result of liquefaction-induced settlement of the underlying soils in response to strong seismic shaking is not expected to exceed 0.44 inches. The potential differential liquefaction-induced settlement is typically assumed to be up to a maximum of approximately 2/3 of the total settlement, which would be approximately 0.29 inches, and is assumed to occur over a distance as short as 30 feet.

5.5.4 Steel Reinforcement

All foundations should be reinforced with a minimum of four #4 steel bars; two of these should be placed near the top of the foundation, and two should be placed near the bottom. Final structural details of the footings, such as footing thickness, concrete strength, and amount of reinforcement, should be established by the project Structural Engineer, but should comply with the above minimums. The results of testing of the upper onsite soils were in the *medium* expansion range. Additional expansion index testing should be performed at the time of grading to confirm the expansion index of the final, blended compacted fill pad.

5.5.5 Required Observations

Prior to placing steel or concrete in the footing excavations, an observation should be made by the field representative of the Project Geotechnical Engineer and the County Inspector, to confirm that the footing excavations are free of loose and disturbed soils, and are embedded in the recommended earth materials.

5.6 Floor Slab Design

It is recommended that the proposed service building concrete floor slab-on-grade be a minimum of 5 inches thick, and be reinforced with a minimum of #4 steel bars placed at 18 inches on center each way. The exact structural details such as slab thickness, concrete strength, reinforcement, and joint spacing, should be determined by the project engineer, especially where the slab will be subject to heavy loading from machinery, or other concentrated loading, but should comply with these minimum requirements. The results of testing of the upper onsite soils were in the *medium* expansion range. Additional expansion index testing should be performed at the time of grading to confirm the expansion index of the final, blended compacted fill pad.

Cracking of concrete flatwork can occur and is relatively common. Steel reinforcement and crack control joints are intended to reduce the risk of concrete slab cracking, as are the use of proper concrete curing, and sometimes fiber reinforced concrete. Also, concrete slabs are generally not perfectly level, but they should be within tolerances included in the project specifications.

Tile flooring can crack, reflecting cracks in the underlying concrete slab. Therefore, if tile flooring is used, the slab designer should consider additional steel reinforcement, above minimum requirements, in the design of concrete slab-on-grade where tile will be installed. Furthermore, the tile installer should consider installation methods such as using a vinyl crack isolation membrane between the tile and concrete slab, to reduce the potential for tile cracking.

If earthwork operations are conducted such that the construction sequence is not continuous, or if construction operations disturb the surficial soils, it is recommended that the exposed subgrade in proposed concrete slab areas be tested within a day of the concrete pour (or prior to placing the vapor barrier, where utilized) to verify adequate compaction and moisture conditions. If adequate compaction and moisture conditions are not demonstrated, the

disturbed subgrade should be over-excavated, scarified, and recompacted in accordance with the guidelines in the *Site Preparation* section of this report *prior* to the slab being poured, or sand and vapor barrier being placed.

5.6.1 Sand and Vapor Barrier

It is recommended that all building floor slabs be underlain by a minimum of 4 inches of sand, due to the medium expansion potential for the onsite soils. It is also recommended that a minimum 15-mil thick plastic vapor barrier be used under floor slabs in moisture sensitive areas. The vapor barrier should be installed in accordance with the recommendations contained in the latest version of ASTM E1643.

The literature is mixed regarding the preferred placement of the vapor barrier with respect to the sand and concrete slab. Some designers prefer to place the vapor directly below the concrete slab, and some prefer to sandwich the vapor barrier between layers of sand. It is the opinion of the *California Geotechnical Engineering Association* that the decision of where to place the vapor barrier does not fall under the responsibility or expertise of the Geotechnical Engineer, and we will therefore defer to the project designer on this matter. Appropriate precautions should be taken whichever placement is chosen.

Seams of the vapor barrier should be overlapped and sealed. Where pipes extend through the vapor barrier, the barrier should be sealed to the pipes. Tears or punctures in the vapor barrier should be completely repaired *prior* to placement of concrete. The concrete mix should be designed so as to minimize possible curling of the slab. The concrete slab should be allowed to cure properly before placing vinyl or other moisture-sensitive floor covering.

5.7 Asphalt and Concrete Pavement Design

5.7.1 Grading

All exterior areas to be paved with asphalt or concrete should be graded in accordance with the general recommendations for site grading as described in the *Site Preparation* section of this report. In proposed parking and driveway areas, and any other exterior flatwork areas (walkways, patios, etc.), all existing fill material and loose or disturbed soils should be removed and recompacted. The depth of over-excavation should extend to a minimum of 12 inches below either existing grade, or the bottom of future concrete, asphalt or aggregate base section, whichever is deeper. If test results show that proper moisture and compaction requirements do not exist just *prior* to placing base or placing pavements, the surface should be scarified, moisture conditioned, and properly recompacted. The subgrade should be proof-rolled to check for soft spots.

Compaction tests will be required for all asphalt and aggregate base. A minimum relative compaction of 95% is required for all asphalt, aggregate base, and upper 12 inches of subgrade soils. The aggregate base should have a minimum *R*-value of 78 and meet recognized industry specifications for aggregate base. Base materials should be placed and compacted in lifts not exceeding 6 inches. Asphalt should *not* be placed if the base is pumping. Base materials are *not* required beneath curbs and gutters, however, however regardless of whether base materials are not utilized beneath the curbs and gutters, the upper 12 inches of subgrade soils still be recompacted to at least 95% relative compaction.

5.7.2 Maintenance

Pavement section design assumes that proper maintenance practices, such as sealing and repair of localized areas of distress, are employed throughout the design life of the pavement.

5.7.3 Asphalt Pavement Design

Pavement section calculations were performed for asphalt pavement design for a range in traffic indices. Selection of the appropriate traffic index to use should be made by the Project Civil Engineer based on their knowledge of traffic flow and loadings.

The asphalt pavement sections were computed in general accordance with the Caltrans method (**California Department of Transportation Highway Design Manual**). The results of the analyses, using a design *R*-value of 7, as determined from testing of a representative sample of the upper onsite soils, after applying a 1.5 factor of safety to the tested R-value result of 11 (results attached in Appendix B), are summarized in the following table:

Traffic Index	Thickness, Inches	
	Asphalt	Aggregate Base
5.0	4	7
6.0	4	11
7.0	5	13

5.7.4 Confirmation of R-Value

If desired, or if unusual soil conditions are encountered, or if required by Ventura County, additional testing to determine the *R*-value of the subgrade soils in asphalt parking and driveway areas could be performed near the completion of grading, in order to confirm the pavement structural section. It should be noted that the pavement structural section design recommendations presented in this report may change if a different *R*-value is obtained for the actual subgrade soils.

5.7.5 Concrete Pavement Design

It is recommended that all concrete pavement subject to regular vehicular traffic be a minimum of 5 inches thick, and be underlain by a minimum of 4 inches of aggregate base. Concrete pavement subject to truck traffic should be a minimum of 7 inches thick, and be underlain by a minimum of 6 inches of aggregate base. Concrete flatwork subject only to pedestrian traffic (i.e., sidewalks, walkways, patios, etc.) should be a minimum of 5 inches thick, and need not be underlain by base. It is recommended that all exterior concrete be reinforced with a minimum of #4 steel bars placed no greater than 18 inches on center each way.

It is also recommended that the perimeter of all concrete pavement and flatwork have a reinforced, thickened edge, a minimum of 8 inches wide, and extending a minimum of 12 inches below adjacent grade. The purpose of the thickened edge is to reduce the migration of moisture to or from the area below the slab, thereby reducing the amount of moisture fluctuation below the slab, reducing shrinking and swelling and the consequent movement and distress. The use of permeable pavers or any system of un-grouted bricks or pavers is not recommended, due to the potential for increased water penetration and expansive soil movement.

5.8 Retaining Wall Design Criteria

The following general retaining wall design information is provided for use in the design of any miscellaneous small retaining walls which may be incorporated into the project design, although the exact locations and heights of any proposed retaining walls are not yet known. It is anticipated that any proposed retaining walls will retain less than 4 feet of earth materials, in which case seismic lateral forces need not be incorporated into the design (seismic lateral forces would be required for walls retaining more than 6 feet).

Retaining wall foundations may be designed utilizing the criteria provided in the *Shallow Foundation Design* section of this report.

5.8.1 Lateral Earth Pressures

The earth pressure behind retaining walls depends on the allowable wall movement, type of backfill materials, backfill slopes, surcharges, and hydrostatic pressures if any. The following equivalent fluid pressures are recommended for vertical walls with no hydrostatic pressure, no surcharge, no seismic effects, and a backfill slope with a gradient less (flatter) than 5(H):1(V). Seismic lateral forces would be in addition to the static wall pressures provided below, and would be required for walls retaining more than 6 feet, which is not currently anticipated.

	Equivalent Fluid Unit Weight, pcf			
Wall Movement	Clean Sand or Gravel Backfill (GW, GP, SW, SP)	Silty Sand or Silty Gravel Backfill (SM, GM)	Clayey Sand, Clayey Gravel Backfill (SC, GC)	Silts, Clays (ML, CL)
FREE TO DEFLECT	30	40	45	55
RESTRAINED	40	50	60	70

In areas where the retaining walls retain sloping ground steeper than 5(H):1(V), the equivalent unit weights in the above table should be increased by 13 pcf for gradients up to 2(H):1(V).

These values are applicable for backfill placed between the wall stem and an imaginary plane rising at a 45-degree angle from below the edge (heel) of the wall footing. If the onsite soil is used as backfill within this zone, or is otherwise present within this zone, the equivalent fluid unit weight associated with a soil classification of CL should be used (55 pcf for cantilever retaining walls, 70 pcf for restrained retaining walls), since it is anticipated that the blended upper site soils resulting from grading operations are likely to be silty to sandy clay. Lesser lateral forces could be utilized if clean imported sand or gravel is utilized for backfill within the 45 degree angle zone. Note that these materials will still need proper compaction and densification if utilized.

The surcharging effect of anticipated adjacent loads on the wall backfill due to traffic, footings, or other loads, should be included in the wall design. The magnitude of lateral load due to surcharging depends on the magnitude of the surcharge, the size of the surcharge-loaded area, and the distance of the surcharge from the wall. We can provide assistance in evaluating the effects of surcharge loading, if desired, once details are known and provided.

5.8.2 Backfill and Drainage

Except for the upper 18 to 24 inches, the soil immediately adjacent to backfilled retaining walls should be free-draining filter material (such as Caltrans Class 2 permeable material), or gravel wrapped in filter fabric, within a minimum horizontal distance of 1-foot from the back face of the wall. As an alternative to either one of these, a drainage tile product such as Miradrain may be applied to the back face of wall, over the waterproofing. Weep holes and/or a subdrain pipe, as appropriate, should be installed at the base of retaining walls. Subdrain pipe should consist of a minimum 4-inch diameter perforated PVC pipe meeting ASTM D2729 or better, surrounded by a minimum of 1 cubic foot of gravel per lineal foot of pipe, and the entire pipe and gravel system should be wrapped in filter fabric, such as Mirafi 140N. Accordion or similar type pipe is *not* acceptable for subdrain pipe. The top 12 to 18 inches should be backfilled with less permeable compacted fill to reduce infiltration.

During grading and backfilling operations adjacent to any wall, heavy equipment should not be allowed to operate within 5 feet laterally of the wall or within a lateral distance equal to the wall height, whichever is greater, to avoid developing excessive lateral pressures. Within this zone, only hand-operated equipment should be used to compact the backfill soils.

6. OBSERVATIONS AND TESTING

Prior to the start of site preparation and/or construction, *it is recommended that a meeting be held with the Contractor to discuss the project*. Such a meeting is also typically required by the County of Ventura. We recommend that AGS be retained to perform the following tasks prior to, and/or during construction. Please *advise* AGS a minimum 24 hours *prior* to any required site visit. *All approved plans, permits, and geotechnical reports must be at the jobsite and be made available during inspections.*

a. *Review* grading, foundation, and drainage plans to *verify* that the recommendations contained in this report have been properly interpreted and are incorporated into the project specifications. *If we are not accorded the opportunity to review these documents, we can take no responsibility for misinterpretation of our conclusions and recommendations.*

b. *Observe and advise* during all grading activities, including site preparation and placement of fill, and all foundation and retaining wall excavations, to *confirm* that suitable fill soils are placed upon competent material, and to allow design changes if subsurface conditions differ from those anticipated, *prior* to the start of construction.

c. *Observe* the installation of all drainage devices.

d. *Test* all fill placed for engineering purposes to *confirm* that suitable fill materials are used and properly compacted.

7. LIMITS AND LIABILITY

All building sites are subject to elements of risk that cannot be wholly identified and/or entirely eliminated. Building sites are subject to many detrimental geotechnical hazards, including but *not* limited to the effects of water infiltration, erosion, concentrated drainage, total settlement, differential settlement, expansive soil movement, seismic shaking, fault rupture, landsliding, and slope creep. The risks from these hazards can be reduced by employing subsurface exploration, laboratory testing, analyses, and experienced geotechnical judgment. Many geotechnical hazards, however, are highly dependent on the property owner properly maintaining the site, drainage facilities, and slope and by correcting any deficiencies found during occupancy of the property in a timely manner. Even with a thorough subsurface exploration and testing program, significant variability between test locations and between sample intervals may exist. Ultimately, geotechnical recommendations are based on the experience and judgment of the geotechnical professionals in evaluating the available data from site observations, subsurface exploration, and laboratory tests. Latent defects can be concealed by earth materials, deposition, geologic history, and existing improvements. If such defects are present, they are beyond the evaluation of the geotechnical professionals. No warranty, expressed or implied, is made or intended in connection with this report, by furnishing of this report, or by any other oral or written statement. Owners and developers are responsible for retaining appropriate design professionals and qualified contractors in developing their property and for properly maintaining the property. Retaining the services of a geotechnical consultant should *not* be construed to relieve the Owner, Developer, or Contractors of their responsibilities or liabilities.

The analysis and recommendations submitted in this report are based in part on our subsurface exploration, laboratory testing, site observations, and provided data on geology and the proposed site development. Our descriptions and the boring logs may show distinctions between fill and native soils, between native (e.g., alluvium, colluvium, slopewash) and bedrock formation, and between soil type (e.g., sands and silty sands). Such distinctions were based on geologic information, grading plans when available, intermittent recovered soil/bedrock samples, and judgment. Delineations between these categories of materials may not be perfect and may be subject to change as more information becomes available. For example, judgments may be clouded when recovered samples are intermittent and small in comparison to the volume of soil under study, and macrostructure that would aid the identification process are not as apparent as they would be when the borehole is geologically downhole logged by entering the excavation. When the age of the fill is old, the difference between the structure of the fill and native materials may be less pronounced, or the degree of bedrock formation weathering sometimes makes it difficult to distinguish between overlying alluvium, colluvium, or slopewash and weathered bedrock formational material. In general, our recommendations are based more on the properties of the materials than on the category of the material type such as fill, alluvium, colluvium, slopewash, or bedrock formation. Furthermore, the actual stratigraphy may be more variable than shown on the logs.

Although this report may comment on or discuss construction techniques or procedures for the design engineer's guidance, this report should *not* be interpreted to prescribe or dictate construction procedures or to relieve the contractor in any way of their responsibility for the construction.

Please be aware that the contract fee for our services to prepare this report does not include additional work that may be required, such as grading observation and testing, footing observations, plan review, or responses to governmental (regulatory) plan reviews associated with you obtaining a building permit. Where additional services are requested or required, you will be billed for any equipment costs and on an hourly basis for consultation or analysis.

The Geotechnical Engineer's actual scope of work during construction is very limited and does *not* assume the day-to-day physical direction of the work, minute examination of the elements, or responsibility for the safety of the contractor's workers. Our scope of services during construction consists of taking soil tests and making visual observations, sometimes on only an intermittent basis, relating to earthwork or foundation excavations for the project. We do *not* guarantee the contractor's performance, but rather look for general conformance to the intent of the plans and geotechnical report. Any discrepancy noted by us regarding earthwork or foundations will be referred to the Owner, project Engineer, Architect, or Contractor for action.

This report is issued with the understanding that it is the responsibility of the Owner, or of their representative, to ensure that the information and recommendations contained herein are called to the attention of the Architect and Engineers for the project and incorporated into the plan and that the necessary steps are taken to see that the Contractor carry out such recommendations in the field. Advanced Geotechnical Services, Inc., (AGS) has prepared this report for the exclusive use of the Client and authorized agents, and this report should *not* be considered transferable. We do recommend, however, that the report be given to future property Owners for the sole purpose of disclosing the report findings.

Findings of this report are valid as of the date of issuance. Changes in conditions of a property may occur with the passage of time whether attributable to natural processes or works of man on this or adjacent properties. Furthermore, changes in applicable or appropriate standards occur due, for example, to legislation and broadening of knowledge. Accordingly, findings of this report may be invalidated wholly or partially by changes outside our control. Therefore, *this report is subject to our review and remains valid for a maximum period of one year*, unless we issue a written opinion of its continued applicability thereafter.

In the event of any changes in the nature and design of the proposed improvements, the conclusions and recommendations contained in this report shall *not* be considered valid unless the changes are reviewed and conclusions of this report modified or verified in writing.

This report may be subject to review by controlling agencies, and any modifications they deem necessary should be made a part thereof, subject to our technical acceptance of such modifications. All submissions of this report should be in its entirety. Under no circumstances should this report be summarized and synthesized to be quoted out of context for any purpose.

Test findings and statements of professional opinion do *not* constitute a guarantee or warranty, and *no* warranties, either expressed or implied, are made as to the professional advice provided under the terms of this agreement. We have strived, however, to provide our services in accordance with generally accepted geotechnical engineering practices in this community at the time of this report.

Appendix A

Field Exploration and Boring Logs

Appendix A
Field Exploration and Boring Logs

The field exploration included a site reconnaissance and subsurface exploration. During the site reconnaissance, the surface site conditions were noted, and the approximate locations of any exploration points were determined. The following descriptions of exploration methods are generic and may include methods not used on this project. Reference to the boring logs can be made to determine which methods are applicable to this project, and any differences between what is described below and actually occurred is described on the boring logs or in the main body of the report.

The test borings were advanced by either hand digging, digging with a backhoe, or drilling. In the case of drilling, a truck-mounted rotary drilling rig with a hollow-stem auger or bucket was used to advance the borings. When we expect to encounter shallow groundwater, a wet rotary drilling operation is usually used. The method actually used is noted on the boring logs. For geologic studies when the need for visual examination of the bedding and other stratigraphic features is needed along with engineering data, the larger bucket augers are used to allow a geologist to enter the excavation for visually logging the hole. When geologically logging borings and trenches, the sides are scraped prior to logging. A prefix B is used to designate a boring made with a drilling rig. When hand dug, the boring numbers have a prefix HB. When a backhoe was used, prefixes TP (test pit) or T (trench) are used. The difference between a trench and test pit being the length of the exploration; a trench being a long narrow exploration, most commonly used for fault studies. In each case, the soils were logged by technical personnel from our office and visually classified in the field in general accordance with the Unified Soil Classification system. The field descriptions have been modified as appropriate to reflect laboratory results when preparing the final boring logs.

Relatively undisturbed samples of the subsurface materials were obtained at appropriate intervals in the borings using a steel drive sampler (2.5-inches inside diameter, 3-inches outside diameter) lined with brass, one-inch-high sample rings with a diameter of 2.4 inches. This is referred to as a modified California sampler. The boring may be advanced by drilling with a hollow-stem auger or with a wet rotary operation. If below the groundwater, the hollow-stem is filled with water or drilling mud to counteract the fluid pressure of the groundwater. The sampler was usually driven into the bottom of the borehole with successive drops of a 140-pound safety hammer connected to the sampler with either A or AW rod and falling 30 inches. An automatic hammer is usually used when drilling with a CME dill rig, and a Safe-T-Driver is used when drilling with a Mobile drill rig. When above the groundwater level, a downhole Safe-T-Driver is usually used. Studies have shown that hammer efficiencies of the automatic hammer is over 90% while that of the Safe-T-Driver is about 70%, based on impact velocities. When a bucket auger is used to advance the boring, the driving weights change with depth, depending on the weight characteristics of the telescoping kelley bar, but the height of fall is usually 18 inches. Sampler driving resistance, expressed as blows per 6 inches of penetration, is presented on the boring logs at the respective sampling depths. When the borings or trenches are excavated with a backhoe, the sampler is pushed into the soil with the force of the backhoe. A hand sampler is used when the borings or trenches are advanced by hand digging or in some cases when a backhoe is used to make the excavation. This hand sampler is similar to the conventional California sampler, but lighter weight. An approximately 8-pound hammer falling about 18 inches is used to drive the hand sampler about 6 inches into the bottom of the exploration. The type of sampler used is noted on the boring logs. In some cases the hammer weight and falling distance deviate from those given above. The actual conditions are shown on the boring logs and supersede the conditions given above.

Ring samples were retained in close-fitting, moisture tight containers for transport to our laboratory for testing. Bulk samples, which were collected from cuttings, were placed in bags and transported to our laboratory for testing.

When noted on the boring logs, standard penetration test (SPT) samples were obtained using either a 20-inch or a 32-inch long split-barrel sampler with a 2-inch outside diameter and a 1.375-inch inside diameter when liners are used (1.5-inch inside diameter without liners). Unless noted otherwise, liners are used. This sampler is driven into

the soil with successive drops of a 140-pound, safety hammer falling 30 inches. The blows are recorded for each 6 inches of penetration for a total penetration of 18 or 24 inches. The sum of the number of blows for the last 12 inches of an 18-inch penetration or the middle 12 inches of a 24-inch penetration is referred to as the *N* value.

Logs, which are presented on Plates at the end of this Appendix, include a description and classification of each stratum, sample locations, blow counts, groundwater conditions encountered during drilling, results from selected types of laboratory tests, and drilling information. Keys to *Soil and Bedrock Symbols and Terms* are included on Plate A-1 and Plate A-2.

Each boring or trench, unless noted otherwise, was backfilled with cuttings at the completion of the logging and sampling. The backfill, however, may settle with time, and it is the responsibility of our client to ensure that such settlement does *not* become a liability.

Advanced Geotechnical Services

Key to Soil Symbols and Terms

Major Divisions			USCS Group Symbols	Typical Names
Coarse-Grained Soils (More than half of material is larger than No. 200 sieve)	Gravels (More than half of coarse fraction is larger than No. 4 sieve)	Clean gravels (Little or no fines)	GW	Well-graded gravels, gravel-sand mixtures, little or no fines
			GP	Poorly graded gravels, gravel-sand mixtures, little or no fines
		Gravels with fines (Appreciable amount of fines)	GM	Silty gravels, gravel-sand-silt mixtures
			GC	Clayey gravels, gravel-sand, clay mixtures
	Sands (More than half of coarse fraction is smaller than No. 4 sieve)	Clean sands (Little or no fines)	SW	Well-graded sands, gravelly sand, little or no fines
			SP	Poorly graded sands, gravelly sands little or no fines
		Sands and fines (Appreciable amount of fines)	SM	Silty sands, sand-silt mixtures
			SC	Clayey sands, sand-clay mixtures
Fine-Grained Soils (More than half of material is smaller than No. 200 sieve)	Silts and Clays Liquid Limit < 50		ML	Silts and very fine sands, rock-flour, silty or clayey fine sands, or clayey silts with slight plasticity
			CL	Inorganic clays of low or medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
			OL	Organic silts and organic silty clays of low plasticity
	Silts and Clays Liquid Limit > 50		MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts
			CH	Inorganic clays of high plasticity, fat clays
	Highly Organic Soils		OH	Organic clays of medium to high plasticity, organic silts
			Pt	Peat and other highly organic soils

Legend of Laboratory Tests

G - Grain Size	C - Consolidation	PP - Pocket Penetrometer
A - Atterberg Limits	DS - Direct Shear	CH - Chemical
P - Compaction	U - Unconfined	
S - Swell/Expansion	T - Triaxial	

Sampler Type

Modified California / Hand Sampler

SPT / Shelby Tube

Rock Core / Bulk

No Recovery

Terms used in this report for describing soils according to their texture or grain size distributions are generally in accordance with the Unified Soil Classification System.

Terms Describing Density and Consistency

Coarse Grained soils (major portion retained on No. 200 sieve) include (1) clean gravels, (2) silty or clayey gravels, and (3) silty, clayey, or gravelly sands. Relative density is related to SPT blow count corrected for overburden pressure or drive energy.

Density		SPT *N* Value Blows/Ft	Relative Density %
Very Loose	vl	0 to 4	0 to 15
Loose	l	4 to 10	15 to 35
Medium Dense	md	10 to 30	35 to 65
Dense	d	30 to 50	65 to 85
Very Dense	vd	> 50	85 to 100

Fine Grained soils (major portions passing No. 200 sieve) include (1) inorganic and organic silts and clays, (2) gravelly, sandy, or silty clays, and (3) clayey silts. Consistency is rated according to shear strength as indicated by penetrometer readings, direct shear, or SPT blow count.

Consistency	Shear Strength, ksf	SPT *N* Value
Very Soft	< 0.25	0 to 2
Soft	0.25 to 0.50	2 to 4
Firm	0.50 to 1.00	4 to 8
Stiff	1.00 to 2.00	8 to 16
Very Stiff	2.00 to 4.00	16 to 32
Hard	> 4.00	> 32

Terms Characterizing Soil Structure

Slickensided	Having inclined planes of weakness that are slick and glossy in appearance.
Fissured	Containing shrinkage cracks, frequently filled with fine sand or silt; usually more or less vertical.
Laminated	Composed of thin layers of varying color and texture.
Interbedded	Composed of alternate layers of different soil types.
Calcareous	Containing appreciable quantities of calcium carbonate.
Well Graded	Having wide range in grain sizes and substantial amounts of intermediate particle sizes.
Poorly Graded	Predominately one grain size, or having a range of grain sizes with some intermediate sizes missing.
Porous	Having visibly apparent void spaces through which water, air, or light may pass.

Soil Moisture

From low to high, the moisture content is indicated by:

Dry	D
Slightly Moist	Sl M
Moist (near optimum for compaction)	M
Very Moist	V M
Wet	W

Size Proportions

Designation	Percent by Weight
Trace	< 5
Few	5 to 10
Little	15 to 25
Some	30 to 45

Grain Size Distribution

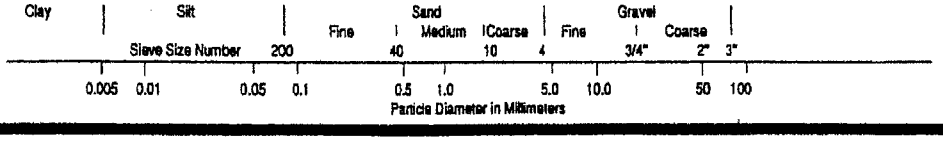


Plate A-1

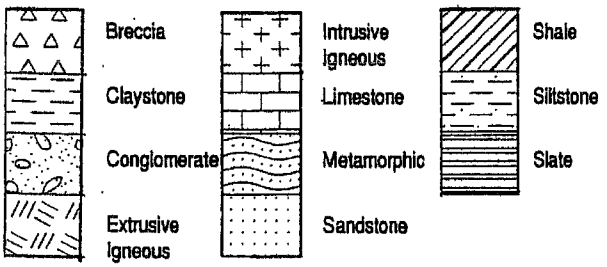
Degree of Weathering
Diagnostic Feature

Descriptive Term	Discoloration Extent	Fracture Condition	Surface Characteristics	Original Texture	Grain Boundary Condition
Unweathered	None	Closed or discolored	Unchanged	Preserved	Tight
Slightly Weathered	Less 20% of fracture spacing on both sides of fracture	Discolored, may contain thin filling	Partial discoloration	Preserved	Tight
Moderately Weathered	Greater than 20% of fracture spacing on both sides of fracture	Discolored, may contain thick filling, cemented rock	Partial to complete discoloration, not friable except poorly cemented rocks	Preserved	Partial Opening
Highly Weathered	Throughout		Friable and possibly pitted	Mainly Preserved	Partial Separation
Completely Weathered	Throughout		Resembles a soil	Partly Preserved	Complete Separation

Discontinuity Spacing

Description for Structural Feature: Bedding, Foliation, or Flow Banding	Spacing		Description for Joints, Faults, or Other Fractures
Very Thickly (Bedded, Foliated, or Banded)	More than 2 m	More than 6 ft	Very Widely (Fractured or Jointed)
Thickly	60 cm to 2 m	2 to 6 ft	Widely
Moderately	20 to 60 cm	8 to 24 in.	Medium
Thinly	60 to 200 mm	2.5 to 8 in.	Closely
Very Thinly	20 to 60 mm	0.75 to 2.5 in.	Very Closely
Description for Microstructural Features: Bedding, Foliation, or Cleavage			
Intensely (Laminated, Foliated, or Cleaved)	6 to 20 mm	0.25 to 0.75 in.	Extremely Close
Very Intensely	< 6 mm	< 0.25 in.	

Graphic Symbols - Bedrock



Rock Hardness

Classification	Field Test
Very Weak	Can be dug by hand and crushed with fingers.
Weak	Friable, can be gouged deeply with a knife and will crumble readily under light hammer blows.
Moderately Strong	Can be peeled with a knife. Material crumbles under firm blows with the sharp end of a geologic pick.
Strong	Cannot be scaped or peeled with a knife point. Hand held specimen breaks with firm blows of the pick.
Very Strong	Difficult to scratch with knife point. Cannot break hand held specimen.

Separation of Fracture Walls

Description	Separation of Walls, mm
Closed	0
Very Narrow	0 to 0.1
Narrow	0.1 to 1.0
Wide	1.0 to 5.0
Very Wide	> 5.0

Fracture Filling

Description	Definition
Clean	No fracture filling material
Stained	Discoloration of rock only. No recognizable filling material.
Filled	Fracture filled with recognizable filling material.

Surface Roughness

Description	Classification
Smooth	Appears smooth and is essentially smooth to the touch. May be slickensided.
Slightly Rough	Asperities on the fracture surfaces are visible and can be distinctly felt.
Medium Rough	Asperites are clearly visible and fracture surface feels abrasive to the touch.
Rough	Large angular asperites can be seen. Some ridge and high-side angle steps evident.
Very Rough	Near vertical steps and ridges occur on the fracture surface.

Where slickensides are observed, the direction of the slickensides should be recorded after the standard discontinuity surface description.

advanced geotechnical services, inc.

Boring Log B-1

Sheet 1 of 2

Project **Rolls Scaffold** Client No. **5126** Date Drilled **1/3/24**

Comment **11351 County Drive, Ventura**

Drilling Company/Driller **Choice Drilling** Equipment **Hollow Stem Auger**

Driving Weight (lbs) **140** Average Drop (in.) **30** Hole Diameter (in.) **8**

Elevation ____ ft Depth to Water **35.0** ft After ____ hrs on ____ Logged By **BW**

Depth, ft	Sample	Blows/6"	Graphic Symbol	Description of Material	Attitudes	Dry Unit Weight, pcf	Moisture Content, %	-#200, %	Other Tests
				This log, which is part of the report prepared by Advanced Geotechnical Services, Inc. for the named project, should be read together with that report for complete interpretation. This summary applies only at this boring location and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.					
				Alluvium (Qa) Dark grayish brown Sandy Silty CLAY, with minor gravel, very moist, firm					E.I. = 76
		4 5 8				100.1	18.8		
5		6 6 9		Moderate yellowish brown Clayey SILT, very moist, stiff		97.0	21.3		
		5 8 13		Moderate yellowish brown Sandy to Clayey SILT, very moist, stiff		99.8	16.8	85.1	
10		6 10 14		Brown Sandy to Clayey SILT, very moist, stiff		94.6	23.1		
		4 7 7		Gray coarse grained SAND with gravel, slightly moist, medium dense			4.3	3.9	
15		15 26 28		dense		112.3	4.7		
				Silty CLAY in sample tip					
		1 1 2		Moderate yellowish brown Silty CLAY, very moist, stiff			23.3		
20		2 5 6				87.8	32.6		
		1 1 2					31.9		
25		4 6 13				100.9	21.5		
		6 9 11		Moderate yellowish brown Sandy to Clayey SILT, moist, stiff			21.6		
30		21 35 38				105.9	20.5		
		7 13 30		Gray medium to coarse grained Silty SAND, wet, dense			22.0		
				(groundwater at 35 feet)					

Plate A- 3

advanced geotechnical services, inc.

Boring Log B-1

Sheet 2 of 2

Project **Rolls Scaffold** Client No. **5126** Date Drilled **1/3/24**

Comment **11351 County Drive, Ventura**

Drilling Company/Driller **Choice Drilling** Equipment **Hollow Stem Auger**

Driving Weight (lbs) **140** Average Drop (in.) **30** Hole Diameter (in.) **8**

Elevation _____ ft Depth to Water **35.0** ft After _____ hrs on _____ Logged By **BW**

Depth, ft	Sample	Blows/6"	Graphic Symbol	Description of Material	Attitudes	Dry Unit Weight, pcf	Moisture Content, %	-#200, %	Other Tests
		43 50@2.5"		Gray coarse grained SAND, wet, dense		122.3	13.9		
		6 6 9		Moderate yellowish brown fine grained Sandy to Silty CLAY, moist, stiff			24.6		
40		4 6 12		Olive gray Silty CLAY, very moist, stiff		101.4	23.1		
		5 7 8					22.7		
45		4 6 12		Olive gray Clayey SILT, slightly moist, stiff		107.1	20.1		
		6 8 10					23.7		
50		14 17 21				99.7	23.9		
				Total Depth Explored = 51.5 ft. Groundwater Encountered @ 35 ft. Backfilled with Spoils 1/3/2024					
55									
60									
65									

This log, which is part of the report prepared by Advanced Geotechnical Services, Inc. for the named project, should be read together with that report for complete interpretation. This summary applies only at this boring location and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.

advanced geotechnical services, inc.

Boring Log B-2

Sheet 1 of 1

Project **Rolls Scaffold** Client No. **5126** Date Drilled **1/3/24**

Comment **11351 County Drive, Ventura**

Drilling Company/Driller **Choice Drilling** Equipment **Hollow Stem Auger**

Driving Weight (lbs) **140** Average Drop (in.) **30** Hole Diameter (in.) **8**

Elevation _____ ft Depth to Water _____ ft After _____ hrs on _____ Logged By **BW**

Description of Material

This log, which is part of the report prepared by Advanced Geotechnical Services, Inc. for the named project, should be read together with that report for complete interpretation. This summary applies only at this boring location and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.

Depth, ft	Sample	Blows/6"	Graphic Symbol	Description of Material	Attitudes	Dry Unit Weight, pcf	Moisture Content, %	-#200, %	Other Tests
				Alluvium (Qa) Dark grayish brown Sandy Silty CLAY, very moist, firm					
		8 8 10				98.7	18.8		
5		5 7 10				93.2	28.1		
				Moderate yellowish brown Clayey SILT, moist, stiff					
		5 5 7		Moderate yellowish brown fine grained Sandy to Silty CLAY, moist, stiff		95.2	21.7		
10		4 8 13		with medium to coarse grained sand lenses		95.9	9.6		
				Gray very coarse grained SAND with Gravel, very moist, medium dense to dense					
15		7 8 10				107.0	4.7		
				Moderate yellowish brown Silty CLAY, moist, stiff					
20		4 5 9				87.7	33.7		
25		4 5 31		Olive gray Clayey SILT, with light brown iron oxide staining, moist, stiff		115.0	13.3		
				Light gray Silty SAND, moist, dense					
				Light gray coarse grained SAND, moist, dense					
30		44 50@3				111.3	6.9		
				Total Depth Explored = 30.75 ft. No Groundwater Encountered Backfilled with Spoils 1/3/2024					

Plate A- 5

advanced geotechnical services, inc.

Boring Log B-3

Sheet 1 of 1

Project **Rolls Scaffold** Client No. **5126** Date Drilled **1/3/24**

Comment **11351 County Drive, Ventura**

Drilling Company/Driller **Choice Drilling** Equipment **Hollow Stem Auger**

Driving Weight (lbs) **140** Average Drop (in.) **30** Hole Diameter (in.) **8**

Elevation _____ ft Depth to Water _____ ft After _____ hrs on _____ Logged By **BW**

Depth, ft	Sample	Blows/6"	Graphic Symbol	Description of Material	Attitudes	Dry Unit Weight, pcf	Moisture Content, %	-#200, %	Other Tests
				This log, which is part of the report prepared by Advanced Geotechnical Services, Inc. for the named project, should be read together with that report for complete interpretation. This summary applies only at this boring location and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.					
				Alluvium (Qa) Dark yellowish brown to moderate yellowish brown Sandy Silty CLAY, moist, firm					
		6 8 13		Moderate yellowish-brown Silty CLAY, very moist, firm		106.2	18.1		
5		7 11 14		stiff		106.3	18.3		
		7 9 13				109.1	18.5		
10		7 10 12				104.9	21.1		
15		4 6 6				90.6	31.0		
20		3 4 5		becomes marbled color, with calcium carbonate deposits		83.7	37.7		
25		4 7 8				101.5	22.3		
30		7 12 14				97.8	24.7		
				Total Depth Explored = 31.5 ft. No Groundwater Encountered Backfilled with Spoils 1/3/2024					

Plate A- 6

Appendix B

Laboratory Testing

Appendix B
Laboratory Testing

A laboratory test program is designed for each project to evaluate the physical and mechanical properties of the soil and bedrock materials encountered at the site during our field exploration program. Laboratory tests were conducted on representative samples for the purpose of classification and determining their properties for use in analyses and evaluations. The most common laboratory tests include moisture-density, Atterberg limits, grain-size analyses (sieve and hydrometer analyses), sand equivalent, direct shear, consolidation, compaction, expansion index, and *R*-values. The following descriptions of test methods are generic and may include methods not used on this project. Reference to the boring logs and test results on Plates attached to this appendix will show which tests were performed for this project. Laboratory testing is performed in general accordance with the most recent ASTM (2007) test designations available at the time of testing.

Classification Tests

Classification testing is performed to identify differences in material behavior and to correlate the results with shear strength and volume change characteristics of the materials. Classification testing includes unit weight (e.g., dry density), moisture content, Atterberg limits, grain size analyses (sieve and hydrometer), and sand equivalent.

Moisture-Density Test

Site soils were classified in the laboratory in accordance with the Unified Soil Classification System. Moisture contents are performed in general accordance with ASTM Test Designation D2216 and unit weights were determined in general accordance with ASTM Test Designation D2937. Field moisture contents and dry unit weights were determined for the ring samples obtained in the field. Field moisture contents and dry unit weights are shown on the boring logs in Appendix A.

Sieve Analysis

Sieve analysis tests were conducted on the on-site soils in general accordance with sieve analysis test procedure from ASTM Test Designation D422. This method covers the quantitative determination of the distribution of particle sizes in soils. If this test was performed, the results are presented on Plates attached to this appendix.

Hydrometer Test

Hydrometer tests were performed in general accordance with ASTM Test Designation D422. If this test was performed, the results are presented on Plates attached to this appendix. Samples with obviously little course material and a high percentage of fines were prepared with a wet method (ASTM Test Designation D2217) rather than air-drying the sample and pulverizing with a mortar and pedestal.

Shear Tests

Direct shear tests were performed in general accordance with ASTM D3080 to determine the shear strength parameters of undisturbed on-site soils or remolded soil specimens. The samples are usually tested in an artificially saturated condition. This is accomplished by soaking the specimens in a confined container for a period of one or 2 days, depending on the permeability of the material. The specimen, 1-inch-high and 2.4-inch-diameter, is placed in the shear device, and a vertical stress is applied to the specimen. The specimen is allowed to reach an equilibrium state (swell or consolidate). The specimen is then sheared under a constant rate of deformation. The rate of deformation for a slow test, sufficiently slow to presumably allow drainage, is selected from computed or measured consolidation rates to simulate full drainage (full dissipation of any tendency for pore water pressure changes) during shear. A rate of displacement of 0.005 inches per minute was used for the most tests. The process usually is repeated for 3 specimens, each under different vertical stresses. The results from the 3 tests are plotted on a diagram of shear stress and normal (vertical) stress at failure, and linear approximations are drawn of the failure curves to determine the angle of internal friction and cohesion. The first moisture content shown on the graphs (associated with peak values) is for either the in-situ condition or the remolded condition, and the second moisture content (associated with ultimate value) is for the soaked condition.

Consolidation Test

Consolidation tests were performed in general accordance with ASTM D2435 and D5333 on selected samples to evaluate the load-deformation characteristics of the earth soils. The tests were performed primarily on material that would be most susceptible to consolidation under anticipated foundation loading. The soil specimen, contained in a 2.4-inch-diameter, 1.0-inch-high sampling ring, is placed in a loading frame under a seating pressure of 0.1 ksf. Vertical loads are applied to the samples in several geometric increments, and the resulting deformations were recorded at selected time intervals. When the pressure reaches a preselected effective overburden pressure (often 2 ksf) and the specimen has consolidated under that pressure, the laboratory technician adds water to the test cell and records the vertical movement. After the specimen reaches equilibrium with the addition of water, the technician continues the loading process, usually up to a pressure of about 8 ksf. The specimen is then unloaded in increments, and the test is dismantled. The results of the test are presented in terms of percent volume change versus applied vertical stress. If this test was performed, the results are presented on Plates attached to this appendix.

Compaction Test

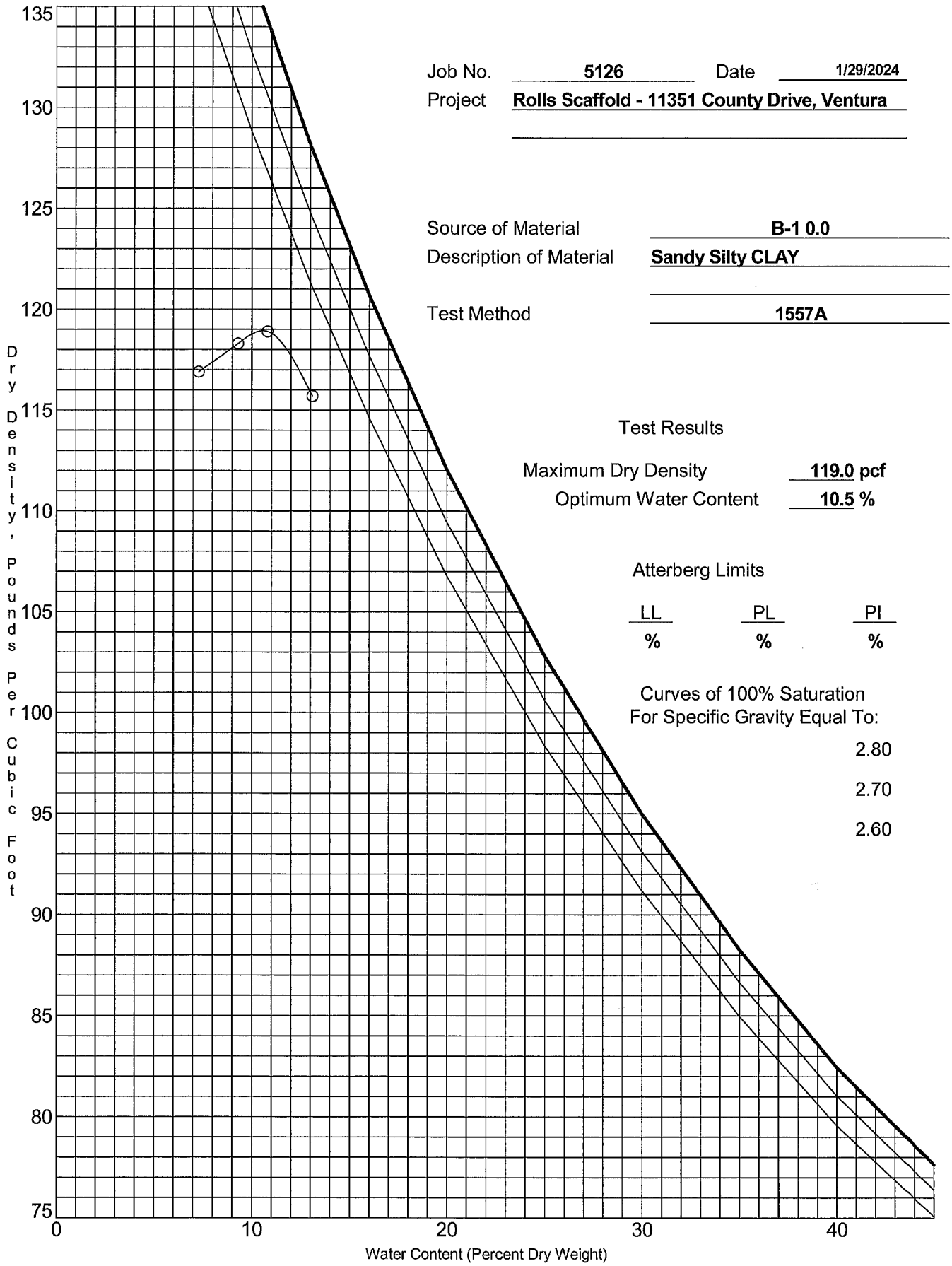
Compaction tests provide information on the relationship between moisture content and dry density of the soil compacted in a given manner. The maximum density is obtained for a given compaction effort at an optimum moisture content. Specifications for earthwork are in terms of the unit weight (or dry density) expressed as a percentage of the maximum density, and the moisture content compared to the optimum moisture content. Compaction tests were performed in general accordance with ASTM Test Designation D1557 to determine the maximum dry densities and optimum moisture contents of the on-site soils. If this test was performed, the results are presented on Plates attached to this appendix.

Expansion Index Test

The expansion index test provides an assessment of the potential for expansion or heave that could be detrimental to foundation or slab performance. Expansion Index tests are performed on shallow on-site soils in general accordance with expansion test procedures in ASTM D4829. In this test, a specimen is compacted at a degree of saturation between 45% and 55% in a 4.01-inch-diameter, 1.0-inch-high ring. The specimen is subjected to a seating pressure of 144 psf, water is added to the test cell, and swell is monitored until the expansion stops. The volume of swell is converted to an expansion index. Any test results are summarized on the boring logs in Appendix A.

Sample Remolding

In some cases remolded samples are used when performing direct shear tests and consolidation tests. Samples are remolded to a specified moisture and density by compacting the soil in a 2.42-inch-diameter sample ring. The specified moisture content is either at optimum or a few percentage points above optimum. The specified dry density is usually at a relative compaction of 90%. The required moisture is added to and mixed with dry soil, providing a homogeneous mixture. A 2.42-inch-diameter ring is placed in a 6-inch-diameter compaction mold, and soil is placed in the mold to above the ring. The soil is then compacted with a 5.5-pound hammer with a free-fall drop of 12 inches. The sample is trimmed, and the dry density is determined. If the dry density deviates more than about one pound per cubic foot from the specified dry density, the process is repeated with the number of blows altered to better achieve the specified dry density.



Job No. 5126 Date 1/29/2024

Project Rolls Scaffold - 11351 County Drive, Ventura

Source of Material B-1 0.0

Description of Material Sandy Silty CLAY

Test Method 1557A

Test Results

Maximum Dry Density 119.0 pcf

Optimum Water Content 10.5 %

Atterberg Limits

LL	PL	PI
%	%	%

Curves of 100% Saturation
For Specific Gravity Equal To:

2.80

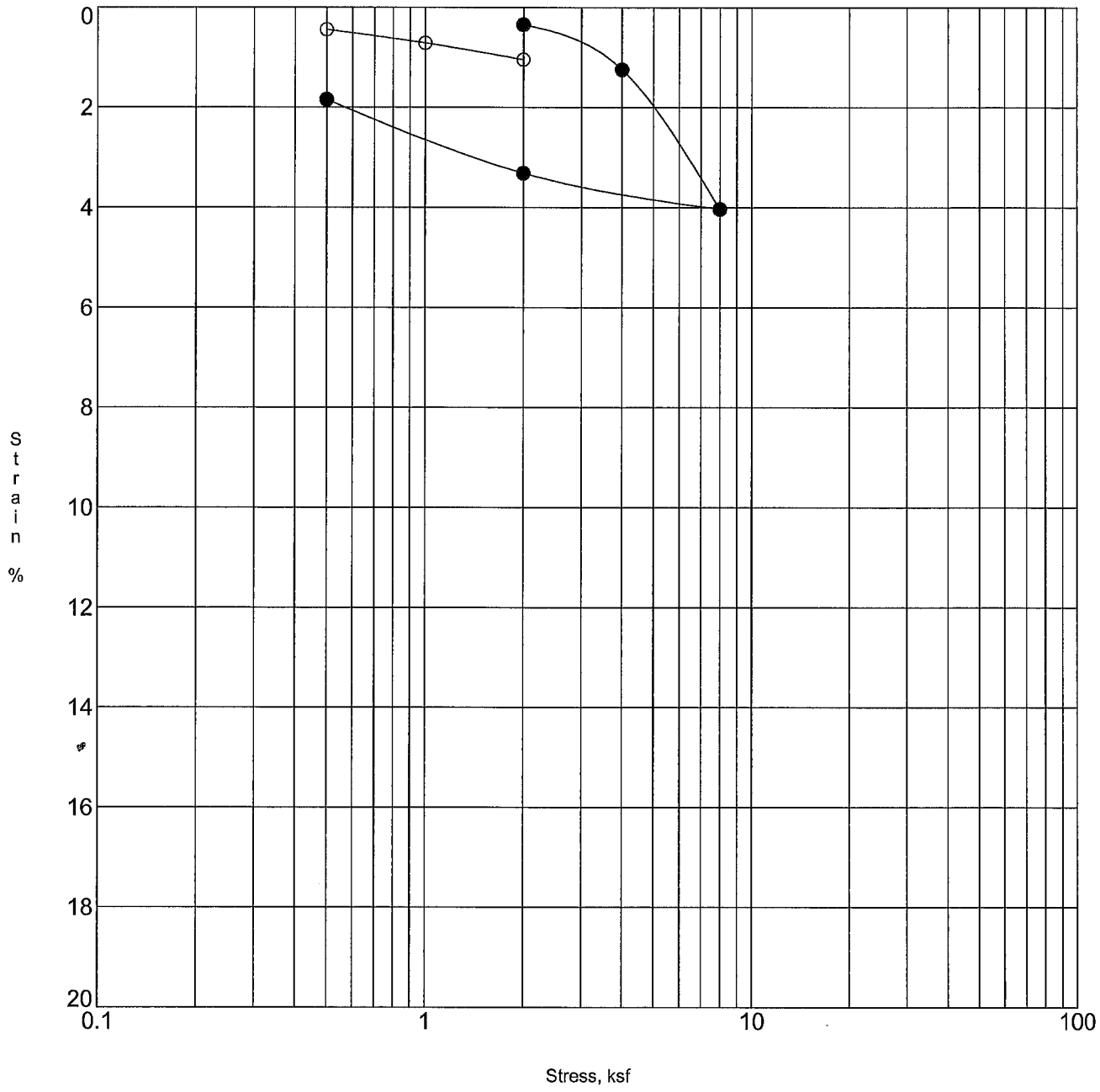
2.70

2.60

Moisture-Density Relationship

Advanced Geotechnical Services, Inc.

Plate B- 3



Open Symbol At Field Moisture, Solid Symbol After Submersion in Water

	Specimen Identification		Classification	DD	MC%
○	B-1	0.0	Sandy Silty CLAY	107.4	10.5
●	B-1	0.0	REMOLDED	111.1	18.2

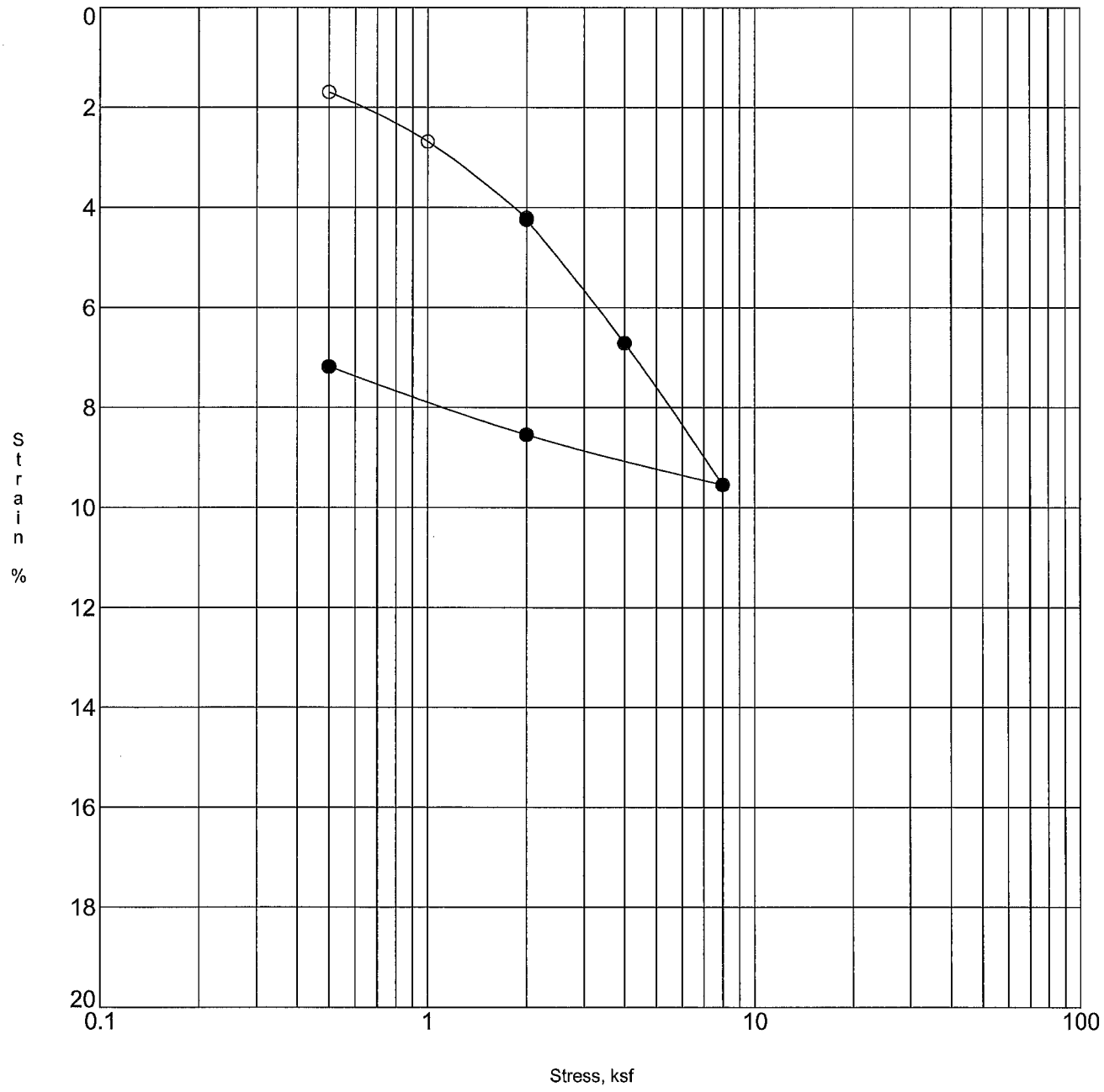
Project **Rolls Scaffold - 11351 County Drive, Ventura** Client No. **5126**

Date **1/29/24**

Consolidation Test

Advanced Geotechnical Services, Inc.

Plate B- 4



Open Symbol At Field Moisture, Solid Symbol After Submersion in Water

	Specimen Identification		Classification	DD	MC%
○	B-1	5.0	Clayey SILT	86.8	30.9
●	B-1	5.0	UNDISTURBED	94.9	28.8

Project **Rolls Scaffold - 11351 County Drive, Ventura**

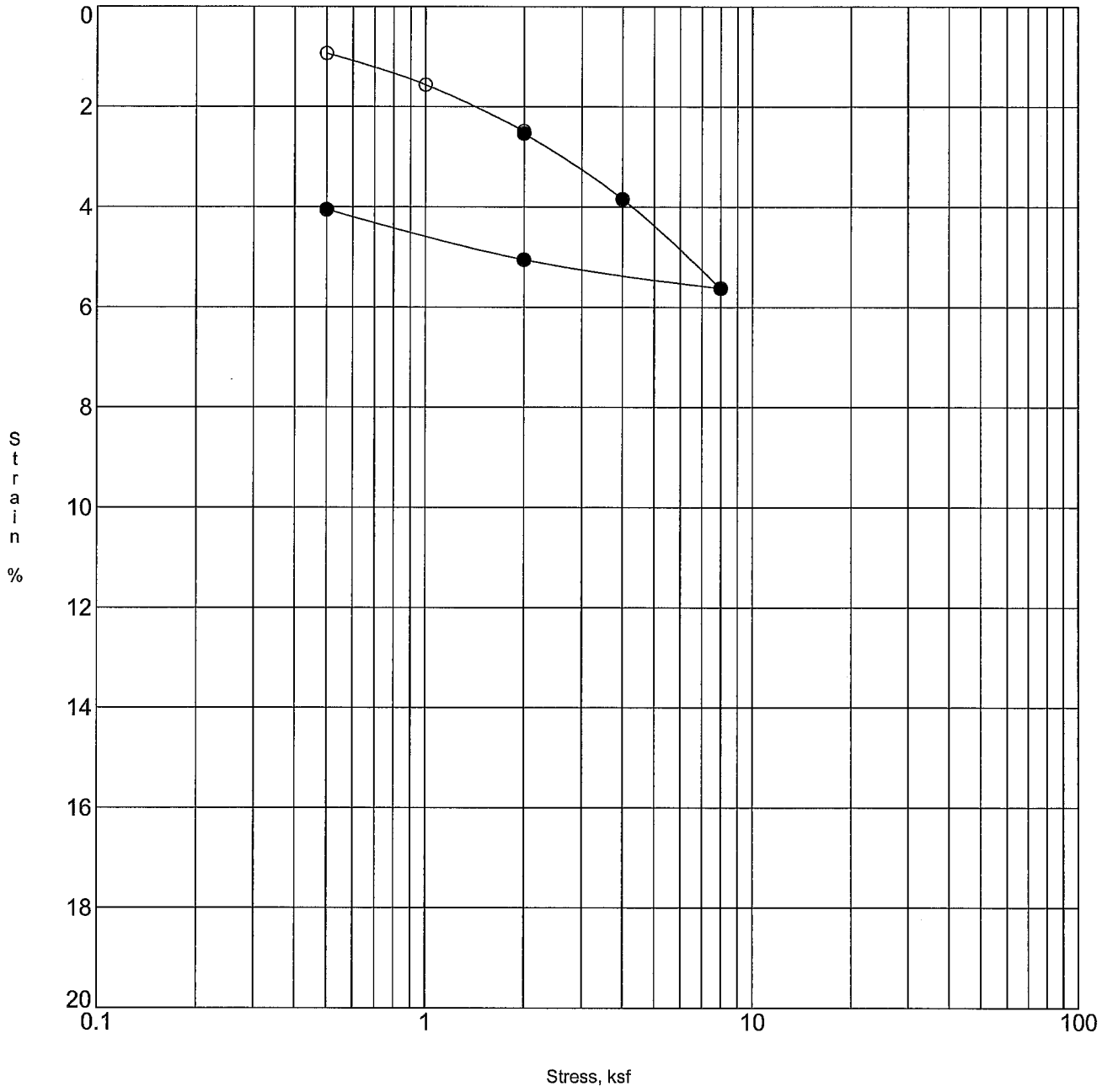
Client No. **5126**

Date **1/29/24**

Consolidation Test

Advanced Geotechnical Services, Inc.

Plate B- 5



Open Symbol At Field Moisture, Solid Symbol After Submersion in Water

Specimen Identification			Classification	DD	MC%
○	B-3	5.0	Silty CLAY	106.3	18.7
●	B-3	5.0	UNDISTURBED	111.9	18.8

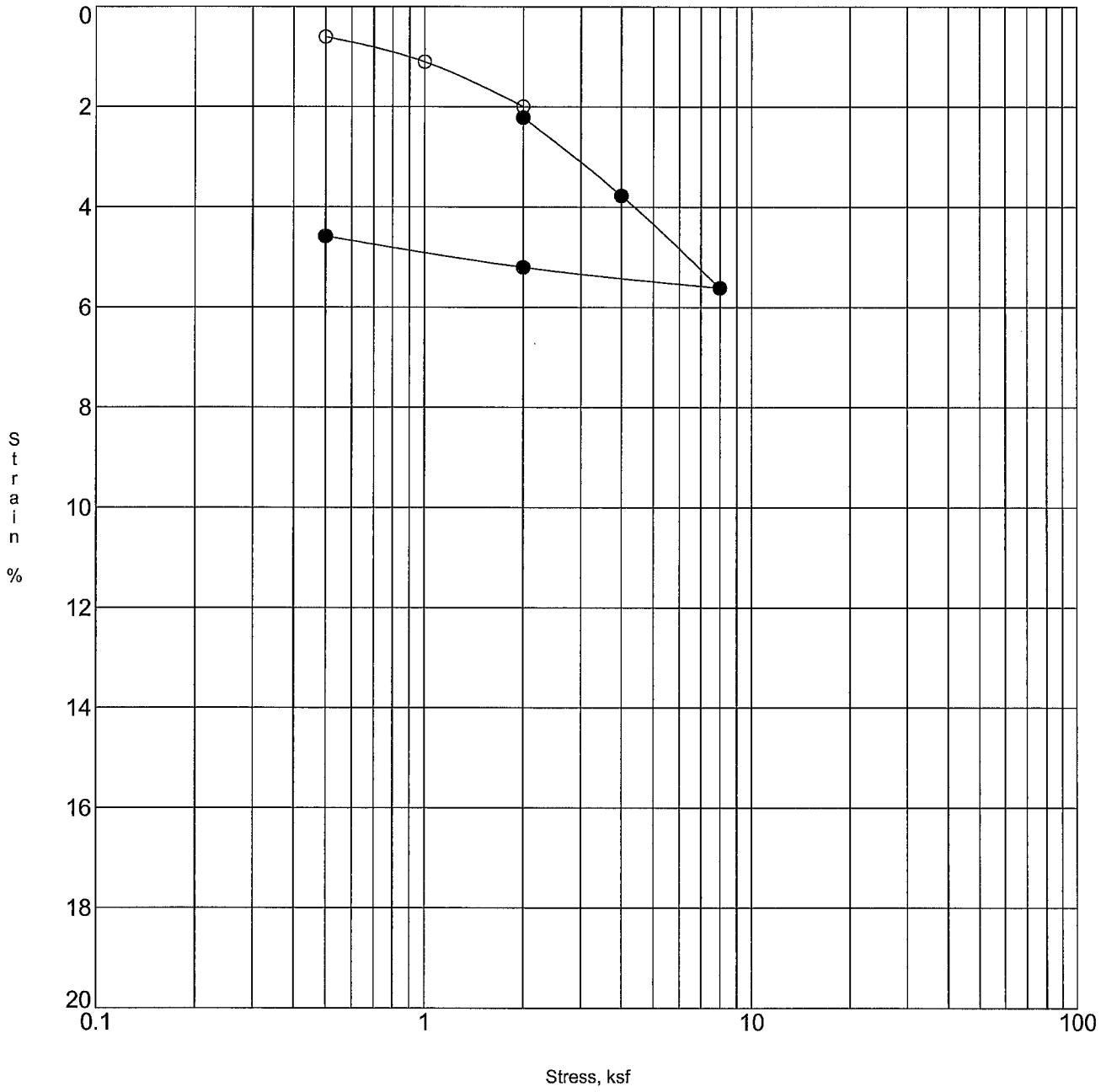
Project **Rolls Scaffold - 11351 County Drive, Ventura** Client No. **5126**

Date **1/29/24**

Consolidation Test

Advanced Geotechnical Services, Inc.

Plate B- 6



Open Symbol At Field Moisture, Solid Symbol After Submersion in Water

	Specimen Identification		Classification	DD	MC%
○	B-2	7.5	Sandy to Silty CLAY	99.2	15.8
●	B-2	7.5	UNDISTURBED	104.7	19.4

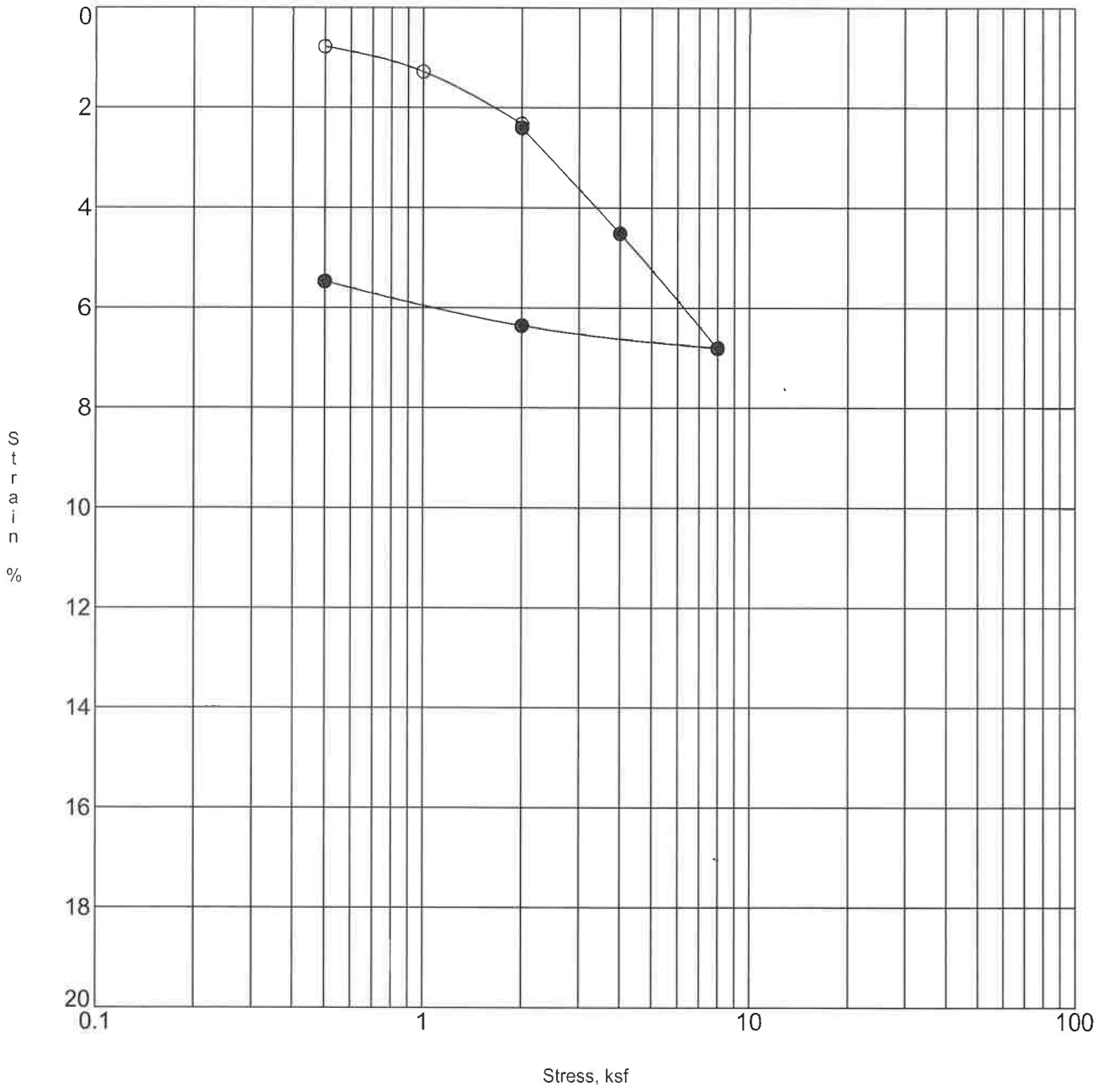
Project **Rolls Scaffold - 11351 County Drive, Ventura** Client No. **5126**

Date **1/29/24**

Consolidation Test

Advanced Geotechnical Services, Inc.

Plate B- 7



Open Symbol At Field Moisture, Solid Symbol After Submersion in Water

Specimen Identification			Classification	DD	MC%
○	B-3	7.5	Silty CLAY	106.0	18.9
●	B-3	7.5	UNDISTURBED	113.1	17.7

Project **Rolls Scaffold - 11351 County Drive, Ventura**

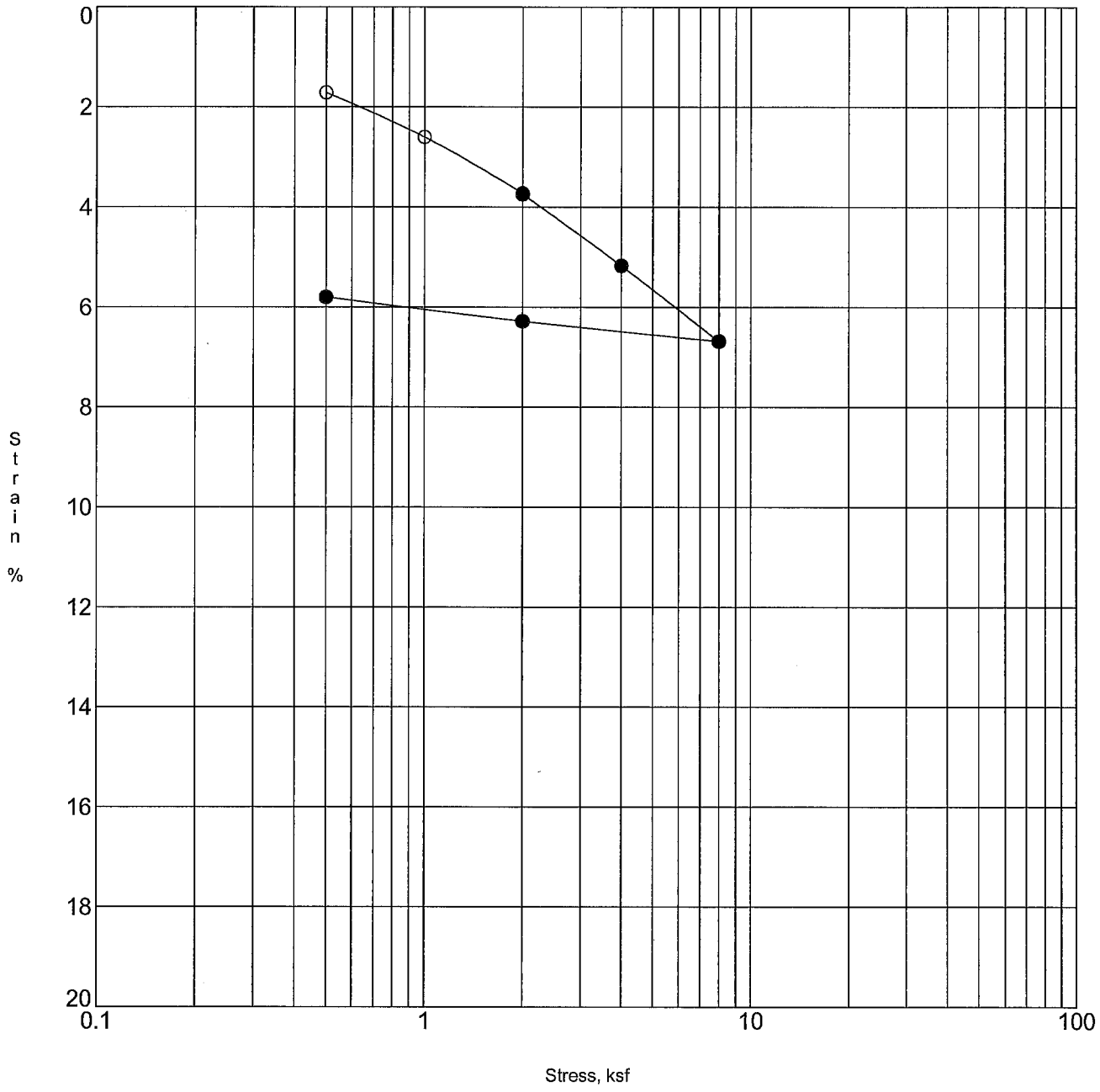
Client No. **5126**

Date **1/29/24**

Consolidation Test

Advanced Geotechnical Services, Inc.

Plate B- 8



Open Symbol At Field Moisture, Solid Symbol After Submersion in Water

	Specimen Identification		Classification	DD	MC%
○	B-1	10.0	Sandy to Clayey SILT	93.7	24.9
●	B-1	10.0	UNDISTURBED	99.9	22.5

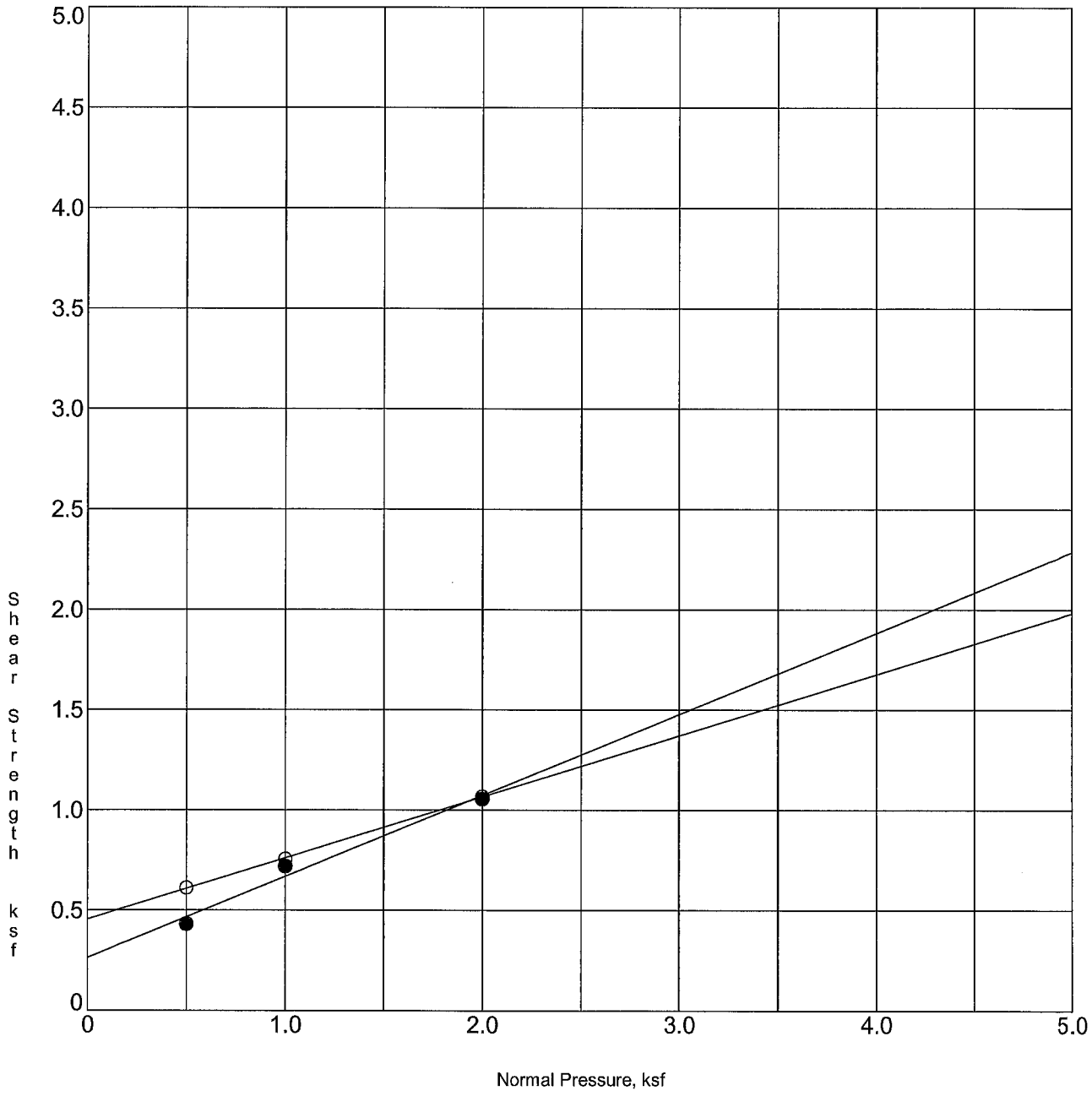
Project **Rolls Scaffold - 11351 County Drive, Ventura** Client No. **5126**

Date **1/29/24**

Consolidation Test

Advanced Geotechnical Services, Inc.

Plate B- 9



○ - Peak Shear ● - Ultimate Shear △ - Residual Shear

	Specimen Identification		Classification	DD	MC%	c, ksf	phi
○	B-1	0.0	Sandy Silty CLAY	107.6	10.3	0.46	17
●	B-1	0.0	REMOLDED	107.6	19.0	0.26	22

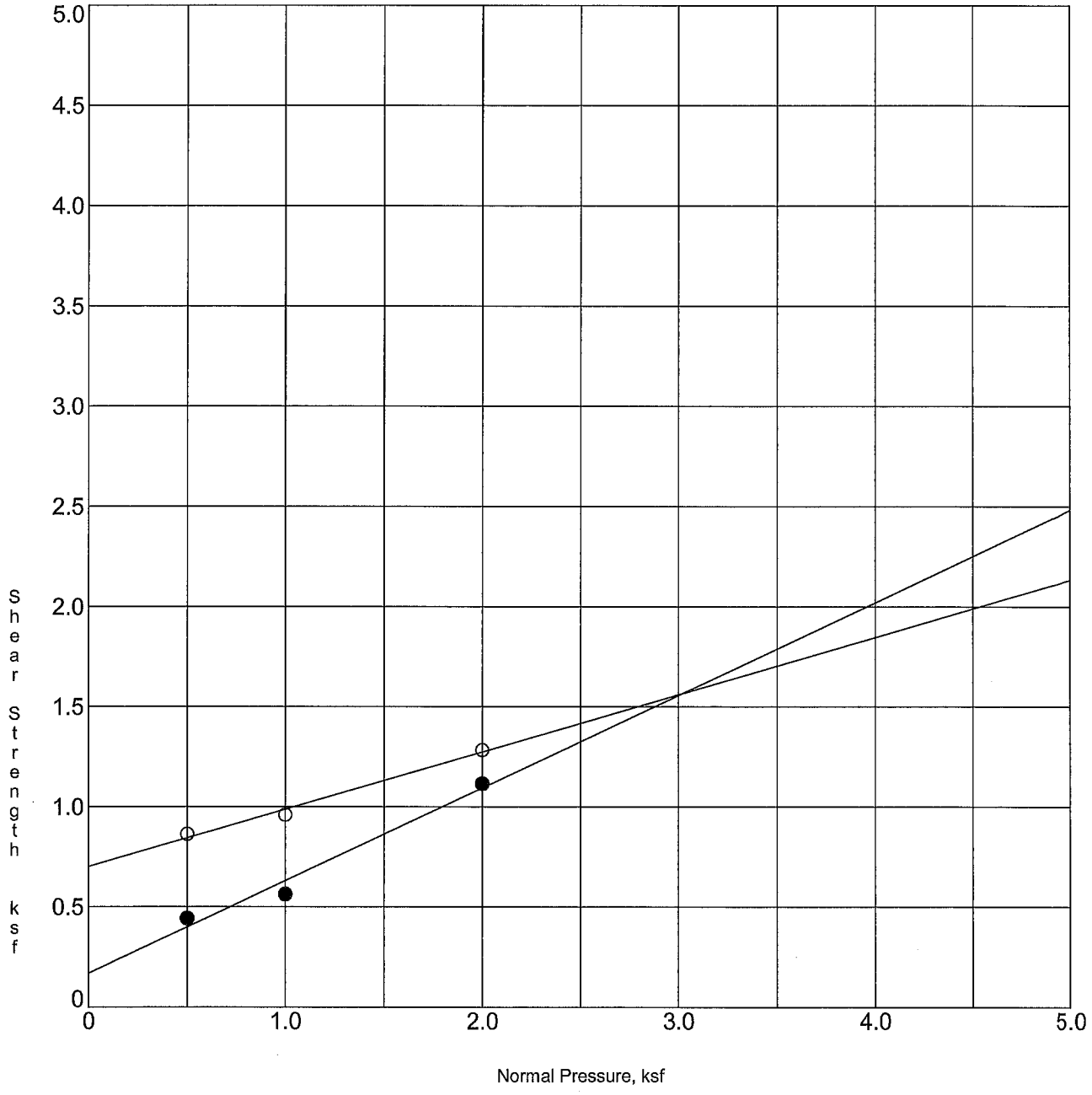
Project **Rolls Scaffold - 11351 County Drive, Ventura** Client No. **5126**

Date **1/29/24**

Shear Test Diagram

Advanced Geotechnical Services, Inc.

Plate B- 10



○ - Peak Shear ● - Ultimate Shear △ - Residual Shear

	Specimen Identification		Classification	DD	MC%	c, ksf	phi
○	B-2	5.0	Sandy Silty CLAY	97.7	21.9	0.70	16
●	B-2	5.0	UNDISTURBED	97.7	23.6	0.17	25

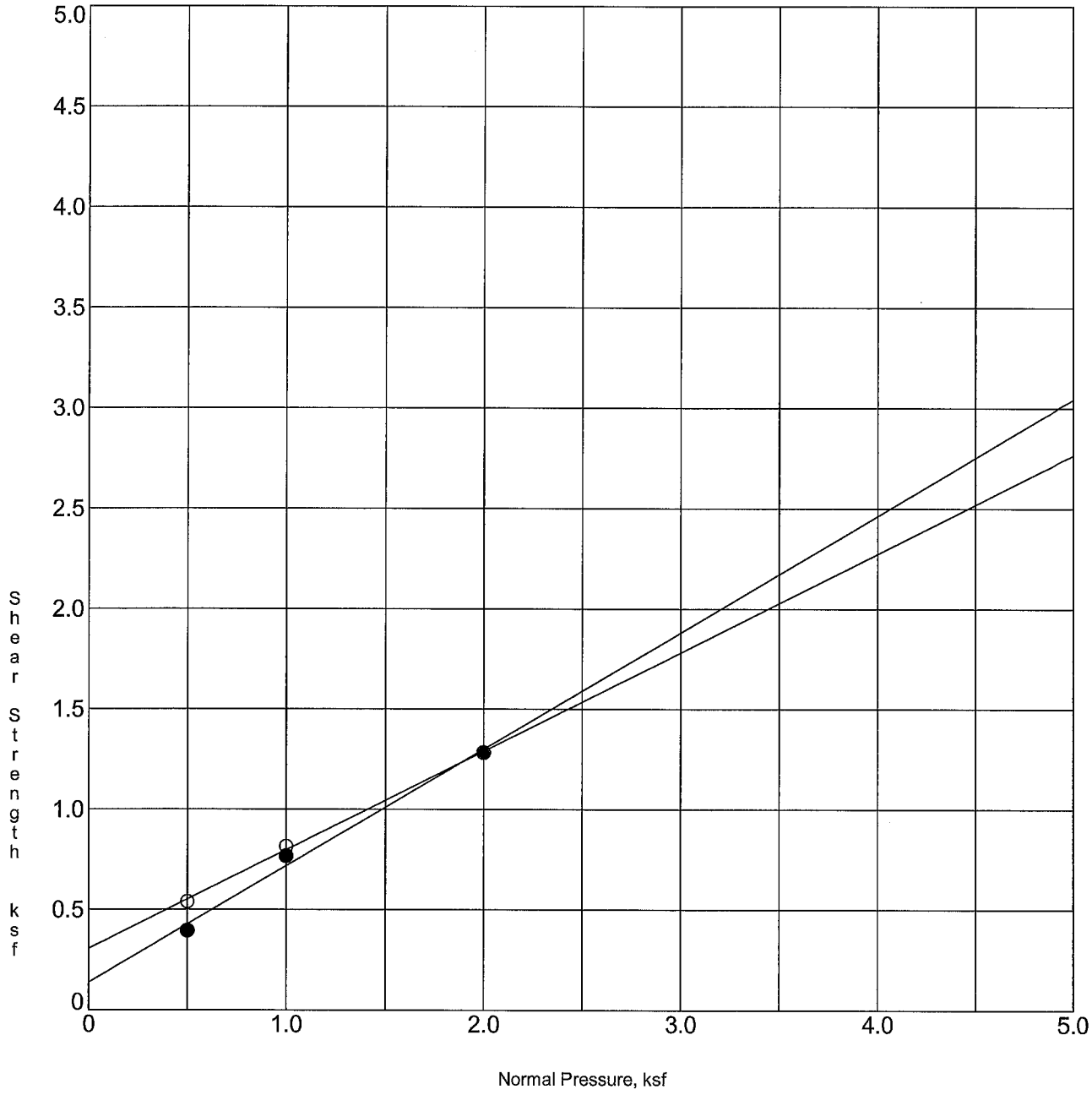
Project **Rolls Scaffold - 11351 County Drive, Ventura** Client No. **5126**

Date **1/29/24**

Shear Test Diagram

Advanced Geotechnical Services, Inc.

Plate B- 11



○ - Peak Shear ● - Ultimate Shear △ - Residual Shear

	Specimen Identification		Classification	DD	MC%	c, ksf	phi
○	B-1	7.5	Sandy to Clayey SILT	94.8	23.1	0.31	26
●	B-1	7.5	UNDISTURBED	94.8	25.8	0.14	30

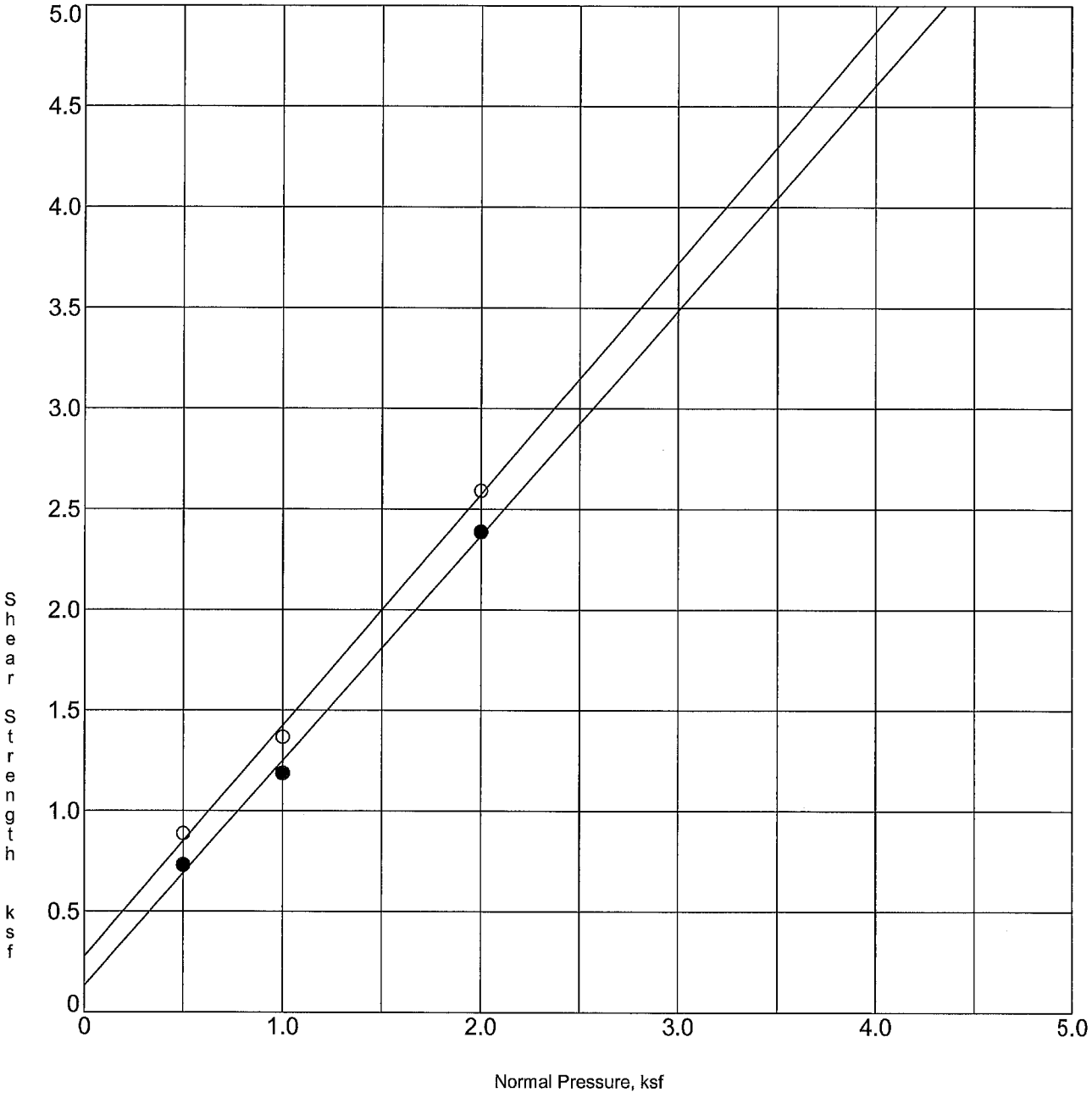
Project **Rolls Scaffold - 11351 County Drive, Ventura** Client No. **5126**

Date **1/29/24**

Shear Test Diagram

Advanced Geotechnical Services, Inc.

Plate B- 12



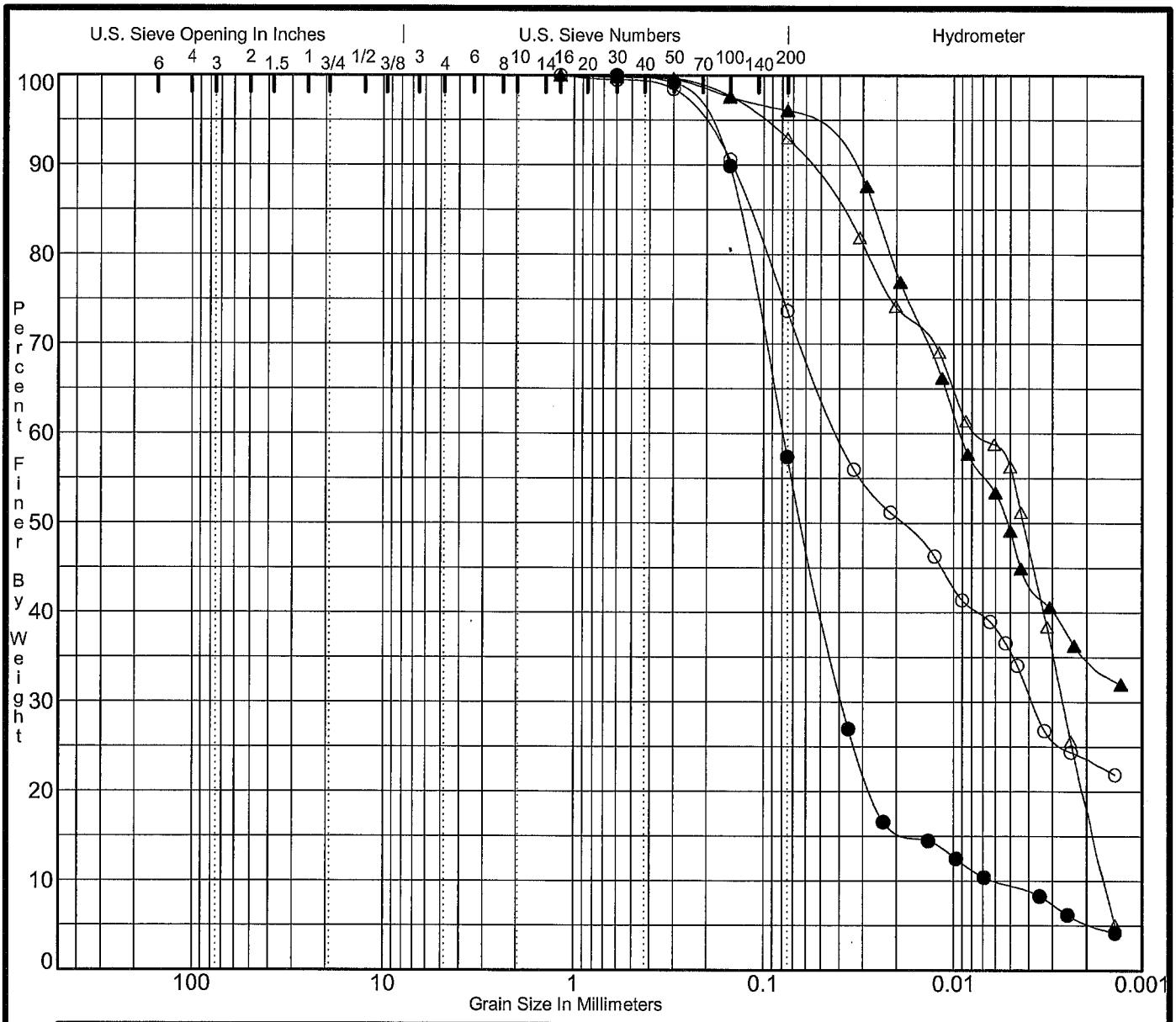
○ - Peak Shear ● - Ultimate Shear △ - Residual Shear

	Specimen Identification		Classification	DD	MC%	c, ksf	phi
○	B-2	10.0	Sandy to Silty CLAY	89.6	13.1	0.28	49
●	B-2	10.0	UNDISTURBED	89.6	27.6	0.13	48

Project **Rolls Scaffold - 11351 County Drive, Ventura** Client No. **5126**

Date **1/29/24**

Shear Test Diagram



Cobbles	Gravel		Sand			Silt Or Clay
	coarse	fine	coarse	medium	fine	

	Specimen Identification		Classification	MC%	LL	PL	PI	Cc	Cu
○	B-1	5.0	Clayey SILT						
●	B-1	10.0	Sandy to Clayey SILT						
△	B-1	20.0	Silty CLAY		54	21	33		
▲	B-1	25.0	Silty CLAY						

	Specimen Identification		D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
○	B-1	5.0	1.18				0.0	26.3	38.1	35.6
●	B-1	10.0	0.60				0.0	42.6	48.0	9.4
△	B-1	20.0	0.60				0.0	7.0	36.7	56.3
▲	B-1	25.0	1.18				0.0	3.9	47.0	49.1

Project **Rolls Scaffold - 11351 County Drive, Ventura**

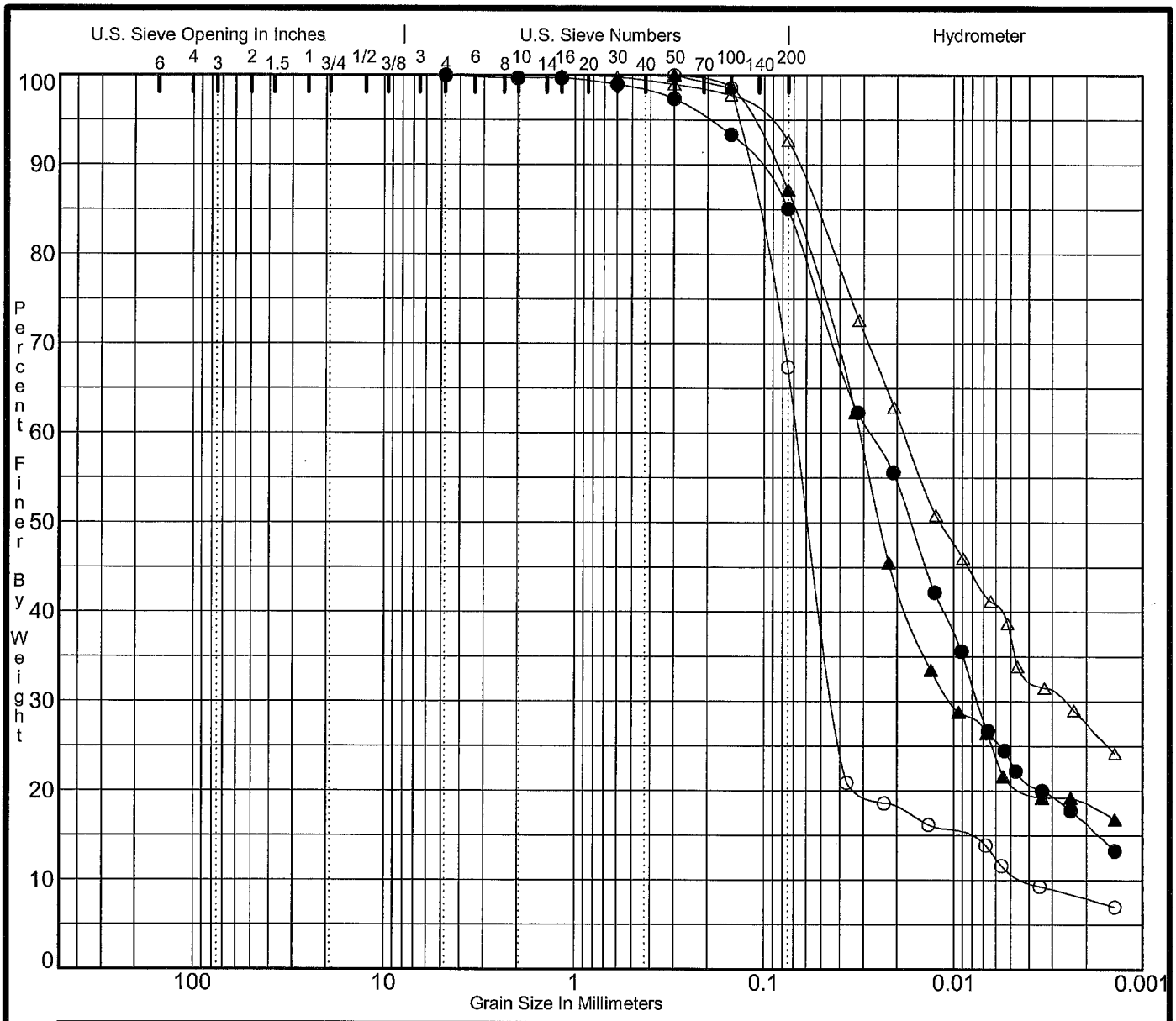
Client No. **5126**

Date **1/29/24**

Gradation Curves

Advanced Geotechnical Services, Inc.

Plate B- 14



Cobbles	Gravel		Sand			Silt Or Clay
	coarse	fine	coarse	medium	fine	

	Specimen Identification		Classification	MC%	LL	PL	PI	Cc	Cu
○	B-1	27.5	Sandy to Clayey SILT						
●	B-1	37.5	Sandy to Silty CLAY						
△	B-1	40.0	Silty CLAY		42	19	23		
▲	B-1	45.0	Clayey SILT						

	Specimen Identification		D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
○	B-1	27.5	0.30				0.0	32.6	56.4	11.0
●	B-1	37.5	4.75				0.0	14.9	61.9	23.2
△	B-1	40.0	1.18				0.0	7.3	55.5	37.2
▲	B-1	45.0	0.30				0.0	12.8	66.1	21.1

Project **Rolls Scaffold - 11351 County Drive, Ventura**

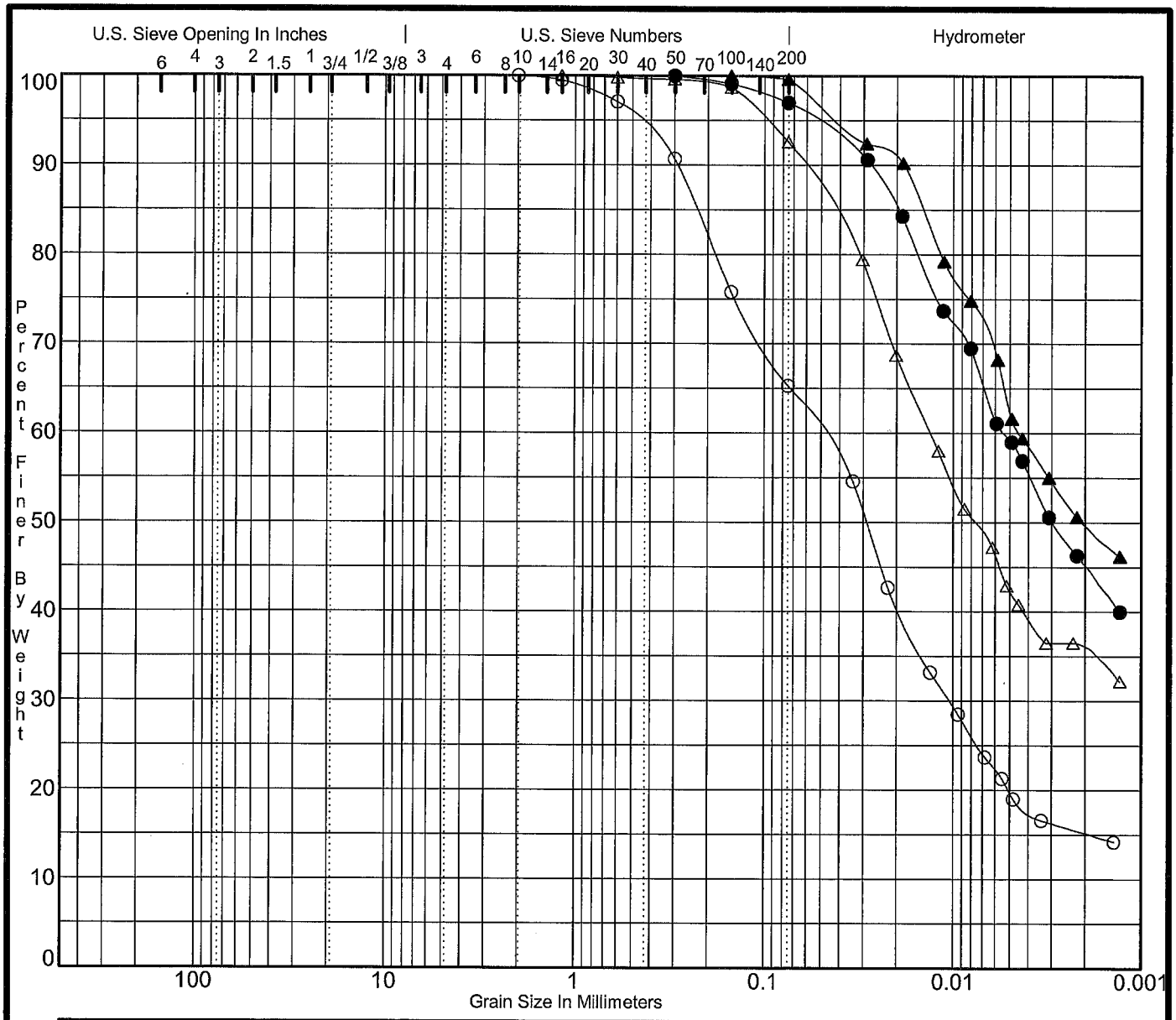
Client No. **5126**

Date **1/29/24**

Gradation Curves

Advanced Geotechnical Services, Inc.

Plate B- 15



Cobbles	Gravel		Sand			Silt Or Clay
	coarse	fine	coarse	medium	fine	

	Specimen Identification		Classification	MC%	LL	PL	PI	Cc	Cu
○	B-2	10.0	Sandy to Silty CLAY						
●	B-2	20.0	Silty CLAY						
△	B-3	10.0	Silty CLAY						
▲	B-3	15.0	Silty CLAY						

	Specimen Identification		D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
○	B-2	10.0	2.00				0.0	34.7	45.6	19.7
●	B-2	20.0	0.30				0.0	3.0	37.8	59.2
△	B-3	10.0	1.18				0.0	7.4	50.3	42.3
▲	B-3	15.0	0.15				0.0	0.4	37.2	62.4

Project **Rolls Scaffold - 11351 County Drive, Ventura**

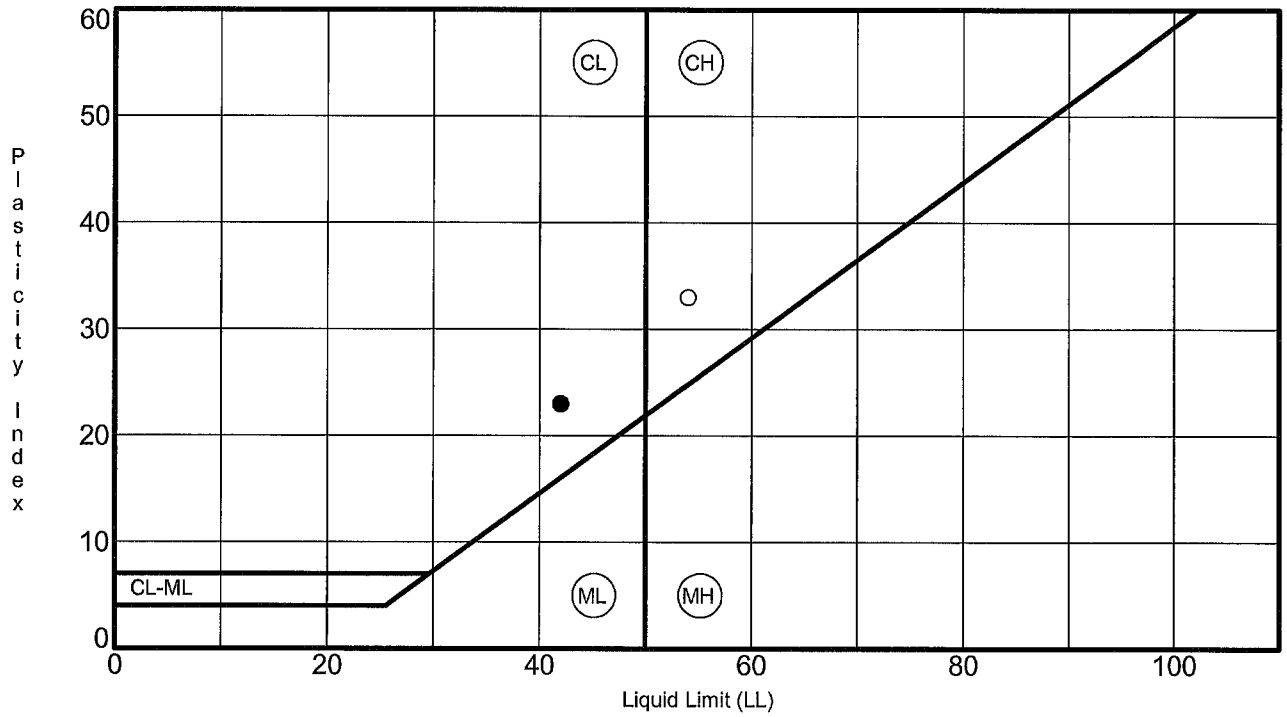
Client No. **5126**

Date **1/29/24**

Gradation Curves

Advanced Geotechnical Services, Inc.

Plate B- 16



Specimen Identification			LL	PL	PI	Fines	Classification
○	**B-1**	**20.0**	**54**	**21**	**33**		
●	**B-1**	**40.0**	**42**	**19**	**23**		

Project **Rolls Scaffold - 11351 County Drive, Ventura** Client No. **5126**

Date **1/29/24**

Atterberg Limits' Results

CAPCO
Analytical Services, Inc.

Environmental and Analytical Services-Since 1994
California State Accredited Laboratory in Accordance with ELAP Certificate # 2332

Prepared for: Advanced Geotechnical Services
5251 Verdugo Way, Suite L
Camarillo, CA 93012
Attn: Jim Bruss

Report Date: January 11, 2024
Laboratory Number: 240030
Purchase Order No: 5126-1565
Project Name: Rolls Scaffold 5126 Lab 1565
Sampled by: Jim Bruss

Enclosed are the analysis results for samples received January 4, 2024 with the Chain of Custody document. The samples were received in good condition, at 21.7°C, and they were identified and assigned the laboratory ID numbers listed below:

SAMPLE DESCRIPTION	CAS LAB NUMBER ID
B-1@0-5ft.	240030-01

By my signature below, I certify that the results contained in this laboratory report comply with applicable standards for certification by the California Department of Public Health's Environmental Laboratories Accreditation Program (ELAP), both technically and for completeness, and that, based on my inquiry of the person or persons directly responsible for performing the analyses, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete.

Anahit Aivazyan

Anahit Aivazyan, MS.
Technical Manager

If you have any further questions or concerns, please contact me at your convenience.
This report consists of 2 pages excluding the cover letter and the Chain of Custody.

CERTIFICATE OF ANALYSIS

Client: Advanced Geotechnical Services
CAS LAB NO: 240030-01
Sample ID: B-1@0-5ft
Analyst: Gloria

Date Sampled: 01/04/24
Date Received: 01/04/24
Sample Matrix: Soil

WET CHEMISTRY SUMMARY

COMPOUND	RESULTS	UNITS	DF	PQL	METHOD	ANALYZED
pH (Corrosivity)**	8.3	S.U.	1	---	9045	01/08/24
Resistivity*	5200	Ohms-cm	1	---	SM 120.1M	01/08/24
Chloride	9.3	mg/Kg	1	0.3	300.0M	01/08/24
Sulfate	77	mg/Kg	1	0.9	300.0M	01/08/24

*Sample was extracted using a 1:3 ratio of soil and DI water.
**Sample was extracted using 1:1 ratio with DI water.

DF: Dilution Factor
PQL: Practical Quantitation Limit
BQL: Below Quantitation Limit
mg/Kg: Milligrams/Kilograms(ppm)

2978 Seaborg Ave. Unit #4, Ventura, California 93003 Ph: (805)644-1095 FAX: (805)644-9947
www.capcoenv.com

Quality Control Report

Client:	Advanced Geotechnical Services	Date Sampled:	01/04/24
Sample ID:		Date Received:	01/04/24
CAS LAB NO:	240030	Date Analyzed:	01/08/24
Sample Matrix:	SOIL	Analyst:	GP

Sample Name	Qualifier	Sample Result	QC Result	Unit	Spike Level	%REC	Control Limits
Chloride (by EPA 300)							
Method Blank			BQL	mg/L			
Lab Control Sample			30.12	mg/L	30	100	90-110
240030-01 Matrix Spike		3.10	33.07	mg/L	30	100	80-120
240030-01 Matrix Spike Duplicate		3.10	33.10	mg/L	30	100	80-120
Sulfate (by EPA 300)							
Method Blank			BQL	mg/L			
Lab Control Sample			30.25	mg/L	30	101	90-110
240030-01 Matrix Spike		25.79	55.98	mg/L	30	101	80-120
240030-01 Matrix Spike Duplicate		25.79	55.99	mg/L	30	101	80-120

*ALL QC SAMPLES ARE PREPARED IN LIQUID PHASE

mg/L: Milligrams/Liter (ppm)

%Rec: Percent Recovered

BQL: Below Practical Quantitation Limit

Union MATERIALS TESTING

Resistance Value Data Summary

1/23/2024

Caltrans CT301

Client AGS
Address Advanced Geotechnical Services, Inc.
5251 Verdugo Way
Suite L
Camarillo CA, 93031

Date Tested 1/16/2024
Sample Rec. Date 1/15/2024
Date Sampled 1/15/2024

Sampled By Client
Sampl Id 267

Client Reference No On Call Testing
Project No 0110
Project AGS - On-Call Master Agreement
Material Source Rolls Scaffold (AGS CN: 1565)
Material Description Clay with sand (CL-CH), light gray, dry
Location Detail Rolls Scaffold, B-1 @ 0-5'

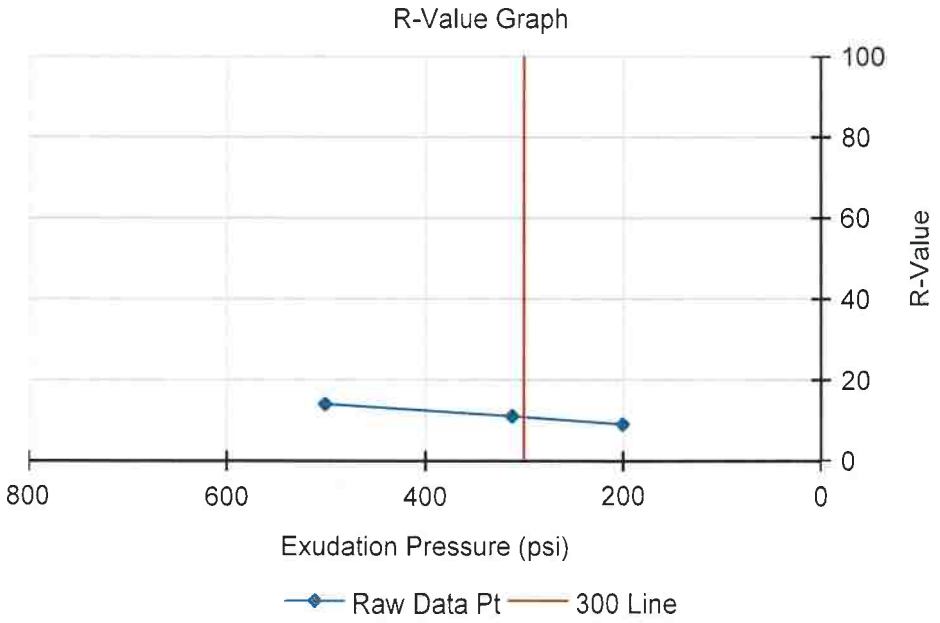
Initial Moisture Content: 12.5%

Dry Unit Weight (PCF)	Water Content (%)	Exudation Pressure (psi)	Expansion Pressure (psf)	R-Value
111.7	17.1%	502	0	14
111.1	18.1%	312	0	11
108.6	19.1%	201	0	9

R-value at Exudation Pressure of 300 psi: 11

Grading Analysis

Sieve Size	As Received	As Used
2"	100%	100%
1.5"	100%	100%
1"	100%	100%
3/4"	100%	100%
1/2"	100%	100%
3/8"	100%	100%
No. 4	99%	99%



Remarks

Technician Adam Sinutko
Digital Signature By User Login

Manager Spencer Damon
Digital Signature By User Login

Lab Address 2247 Statham Blvd. Oxnard CA, 93033
System Link http://umt.vahalo.com/assignments/1E069747-CA29-4A48-A427-978BE5206638
System Path AGS - On-Call Master Agreement / SOILS / AGGREGATE LAB / 0110 Rvalue JS240115-1

Appendix C

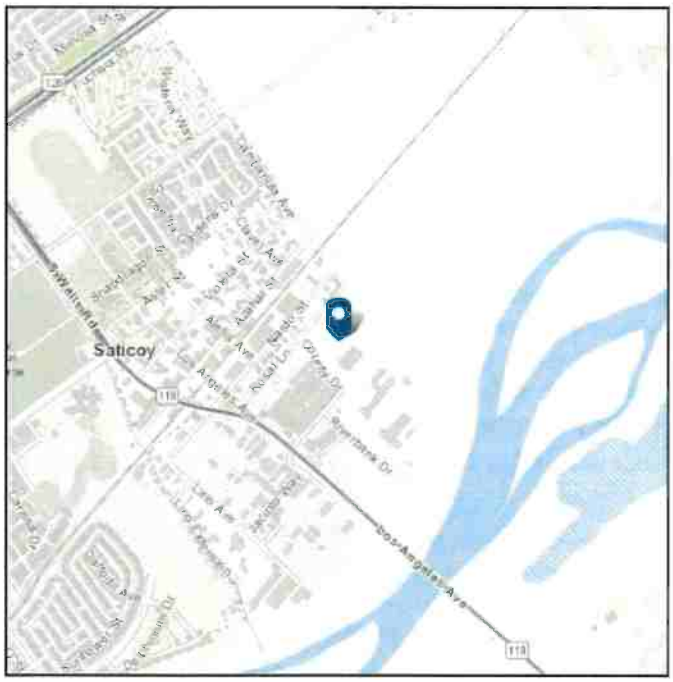
Seismic Design Criteria

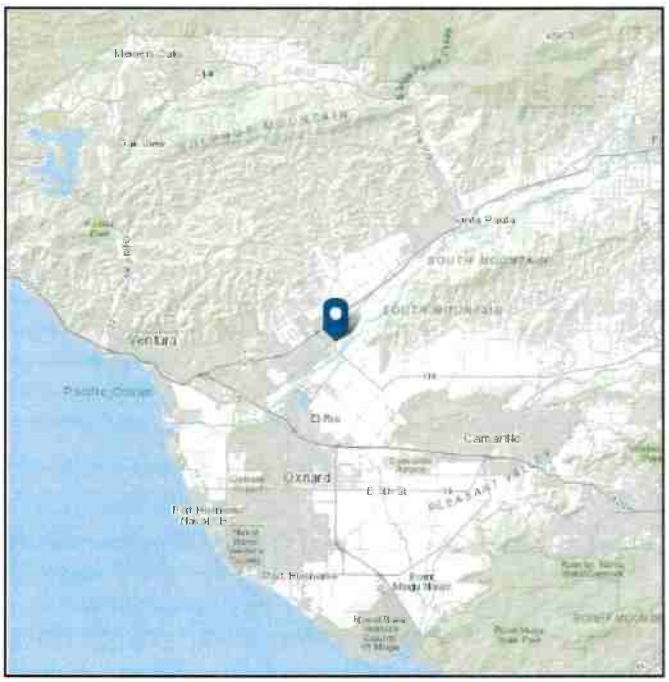
ASCE Hazards Report

Address:
No Address at This Location

Standard: ASCE/SEI 7-16
Risk Category: II
Soil Class: D - Stiff Soil

Latitude: 34.284037
Longitude: -119.143035
Elevation: 148.03050857883966 ft (NAVD 88)





ASCE
AMERICAN SOCIETY OF CIVIL ENGINEERS

Seismic

Site Soil Class: D - Stiff Soil

Results:

S_S :	1.929	S_{D1} :	N/A
S_1 :	0.724	T_L :	8
F_a :	1	PGA :	0.851
F_v :	N/A	PGA_M :	0.937
S_{MS} :	1.929	F_{PGA} :	1.1
S_{M1} :	N/A	I_e :	1
S_{DS} :	1.286	C_v :	1.486

Ground motion hazard analysis may be required. See ASCE/SEI 7-16 Section 11.4.8.

Data Accessed: Mon Jan 08 2024

Date Source: USGS Seismic Design Maps

The ASCE Hazard Tool is provided for your convenience, for informational purposes only, and is provided "as is" and without warranties of any kind. The location data included herein has been obtained from information developed, produced, and maintained by third party providers; or has been extrapolated from maps incorporated in the ASCE standard. While ASCE has made every effort to use data obtained from reliable sources or methodologies, ASCE does not make any representations or warranties as to the accuracy, completeness, reliability, currency, or quality of any data provided herein. Any third-party links provided by this Tool should not be construed as an endorsement, affiliation, relationship, or sponsorship of such third-party content by or from ASCE.

ASCE does not intend, nor should anyone interpret, the results provided by this Tool to replace the sound judgment of a competent professional, having knowledge and experience in the appropriate field(s) of practice, nor to substitute for the standard of care required of such professionals in interpreting and applying the contents of this Tool or the ASCE standard.

In using this Tool, you expressly assume all risks associated with your use. Under no circumstances shall ASCE or its officers, directors, employees, members, affiliates, or agents be liable to you or any other person for any direct, indirect, special, incidental, or consequential damages arising from or related to your use of, or reliance on, the Tool or any information obtained therein. To the fullest extent permitted by law, you agree to release and hold harmless ASCE from any and all liability of any nature arising out of or resulting from any use of data provided by the ASCE Hazard Tool.

Appendix D

Liquefaction Evaluation

Input Data in Shaded Areas

Client Number	**5126**	**Client Name**	**Rolls Scaffold**
Date Drilled	1/3/24	**Boring**	**B-1**

a_{max}/g	0.937
Magnitude	6.90
Groundwater Depth (ft)	10.0
Reference Pressure, $p_{a\ (liq)}$	2.1164
Reference Pressure, $p_{a\ (dry)}$	1.0582

N Adjustments:

For Unlined SPT Sampler	1.20	(SPT)
For Modified California Sampler	0.667	(mod Cal)
N Adjustments - Hole Diameter	1.00	
N Adjustments - Energy	1.33	
Nc	10.08	

Field Groundwater Depth (ft)	35	(Current)
Method (S = SPT)	S	(Equivalent SPT)
Unit Weight of Water (kcf)	0.0624	

NL = Not Susceptible to Liquefaction

B-1 Liquefaction Evaluation

Depth, Feet	Total Unit Weight, γ_t	Overburden Pressure, σ_v	LIQ Effective Overburden Pressure, σ_v'	Field Effective Overburden Pressure, σ_v'	C_N	r_d	$CSR_{M=7.5}$	Soil Type (see Boring Log)	% Fines	N*	$(N_1)_{60}$	Adjusted for Fines Content $(N_1)_{60}$	Rod Length Adjust	K_s	$CRR_{M=7.5}$	Safety Factor, SPT Method	Volumetric Strain	Layer Settlement, (inches)	Cumulative Liquefaction Settlement, (inches)
0.0		0.00	0.00	0.00															
2.5	0.121	0.30	0.30	0.30	1.70	1.00	0.490			50.0	101.7	101.7	0.75	1.00	5.000	Above GWT	0.000	0.000	0.000
5.0		0.61	0.61	0.61															
6.3	0.118	0.75	0.75	0.75	1.68	0.99	0.486	C	73.7	15.0	16.7	25.1	0.75	1.00	0.287	Above GWT	0.000	0.000	0.000
7.5		0.90	0.90	0.90															
8.8	0.117	1.05	1.05	1.05	1.42	0.98	0.483		85.1	21.0	22.5	32.0	0.85	1.00	0.404	Above GWT	0.000	0.000	0.000
10.0		1.19	1.19	1.19															
11.3	0.116	1.34	1.26	1.34	1.26	0.98	0.510		57.4	24.0	22.8	32.3	0.85	1.00	0.419	NL	0.000	0.000	0.000
12.5		1.48	1.33	1.48															
13.8	0.118	1.63	1.40	1.63	1.14	0.97	0.539		3.9	14.0	21.6	21.6	0.85	1.00	0.237	0.44	0.015	0.437	0.437
15.0		1.78	1.47	1.78															
16.3	0.118	1.93	1.54	1.93	1.05	0.97	0.571			54.0	47.7	47.7	0.95	1.00	5.000	NL	0.000	0.000	0.437
17.5		2.07	1.60	2.07															
18.8	0.116	2.22	1.67	2.22	0.98	0.96	0.597	C	93.0	3.0	4.4	10.3	0.95	1.00	0.113	NL	0.000	0.000	0.437
20.0		2.36	1.74	2.36															
21.3	0.116	2.51	1.81	2.51	0.92	0.95	0.617	C	93.0	11.0	8.5	15.2	0.95	1.00	0.166	NL	0.000	0.000	0.437
22.5		2.65	1.87	2.65															
23.8	0.123	2.81	1.95	2.81	0.87	0.95	0.632	C	93.0	3.0	4.0	9.7	0.95	1.00	0.107	NL	0.000	0.000	0.437
25.0		2.96	2.02	2.96															
26.3	0.123	3.11	2.10	3.11	0.82	0.94	0.642	C	96.1	19.0	13.9	21.7	1.00	1.00	0.238	NL	0.000	0.000	0.437
27.5		3.27	2.18	3.27															
28.8	0.128	3.43	2.26	3.43	0.79	0.93	0.649		67.4	20.0	25.1	35.1	1.00	1.00	5.000	NL	0.000	0.000	0.437
30.0		3.59	2.34	3.59															
31.3	0.128	3.75	2.42	3.75	0.75	0.91	0.653			73.0	48.7	48.7	1.00	0.99	5.000	NL	0.000	0.000	0.437
32.5		3.91	2.50	3.91															
33.8	0.139	4.08	2.60	4.08	0.72	0.90	0.653			43.0	49.4	49.4	1.00	0.98	5.000	NL	0.000	0.000	0.437
35.0		4.26	2.70	4.26															
36.3	0.139	4.43	2.79	4.35	0.70	0.88	0.652			100.0	61.9	61.9	1.00	0.97	5.000	NL	0.000	0.000	0.437
37.5		4.60	2.89	4.45															
38.8	0.125	4.76	2.96	4.52	0.68	0.86	0.650	C	85.1	15.0	16.4	24.6	1.00	0.96	0.269	NL	0.000	0.000	0.437
40.0		4.92	3.04	4.60															
41.3	0.125	5.07	3.12	4.68	0.67	0.84	0.649	C	92.7	18.0	12.9	20.5	1.00	0.95	0.213	NL	0.000	0.000	0.437
42.5		5.23	3.20	4.76															
43.8	0.129	5.39	3.28	4.84	0.66	0.82	0.646	C	92.7	15.0	15.8	24.0	1.00	0.95	0.255	NL	0.000	0.000	0.437
45.0		5.55	3.37	4.93															
46.3	0.129	5.71	3.45	5.01	0.65	0.79	0.642	C	87.2	18.0	10.4	17.5	1.00	0.94	0.178	NL	0.000	0.000	0.437
47.5		5.87	3.53	5.09															
48.8	0.123	6.03	3.61	5.17	0.64	0.77	0.639	C	87.2	18.0	18.4	27.1	1.00	0.93	0.303	NL	0.000	0.000	0.437
50.0		6.18	3.68	5.24															

* Field SPT blow count of 50 assumed for future compacted fill

total = 0.44

PLATE D-1

Appendix F

Report Figures and Plates

Appendix E
References

American Society for Testing and Materials (Latest Edition), **ASTM Standards**, Section 4: Construction, Volume 04.08 Soil and Rock (I): D 420 – D 5611, West Conshohocken, PA.

ASCE 7 Hazard Tool (2024) Online Web App
https://asce7hazardtool.online/

Bartlett, S. F. and Youd, T. L. (2002), *Revised Multilinear Regression Equations for Prediction of Lateral Spread Displacement*, **Journal of Geotechnical and Geoenvironmental Engineering**, Vol. 128, No. 12, ASCE, ISSN 1090-0241 / 2002/12-1007-1017, December 1, 2002.

Bray, J. D., and Sancio, R. B. (2006), **Assessment of the Liquefaction Susceptibility of Fine-Grained Soils** in *Journal of Geotechnical and Geoenvironmental Engineering*, 132(9), pp. 1165-1177.

Boulanger, R. W., and Idriss, I. M. (2006), **Liquefaction Susceptibility Criteria for Silts and Clays,** in *Journal of Geotechnical and Geoenvironmental Engineering*, 132(11), pp. 1413-1426

California Geological Survey (2008), **Guidelines for Evaluating and Mitigating Seismic Hazards in California**, Special Publication 117A.

California Geological Survey (1978), **Earthquake Fault Zones, Saticoy Quadrangle, Official Map**, Released: July 26, 1978.

California Geological Survey (2003), **Seismic Hazard Zones Report for the Saticoy 7.5-Minute Quadrangle, Ventura County, California**, Seismic Hazard Zone Report 066.

California Geological Survey (2003), **Seismic Hazard Zones, Saticoy Quadrangle, Official Map**, Released: February 14, 2003.

Department of the NAVY, NAVFAC Design Manual 7.02, (1986), **Foundations and Earth Structures**, Naval Facilities Engineering Command, September.

Dibblee, Thomas W. Jr. (1992) **Geologic Map of the Saticoy Quadrangle**, Ventura County, California, Dibblee Geological Foundation Map #DF-42, 1992.

Fugro West, Inc. (2002), ***Preliminary Geological and Geotechnical Study, County of Ventura Maintenance Yard Relocation, Industrial Park, and Residential Development, Los Angeles Avenue at Rosal Lane, Saticoy Area of Ventura County, California***, Prepared for Saticoy Land Development Company, FWI Project No. 02-32-5161 (3238.001), July 30, 2002.

Google (2024), Google Earth Interactive web application, http://www.google.com/earth/

International Conference of Building Officials and California Building Standards Commission (2022), **2022 California Building Code**.

Ishihara, K. (1985), *Stability of Natural Deposits During Earthquakes*, **Proceedings, 11th International Conference on Soil Mechanics and Foundation Engineering**, San Francisco, pp. 321-376.

Robertson, P. K. and Wride, C. E. (1997), *Cyclic Liquefaction and Its Evaluation based on the SPT and CPT*, **Proceedings of the NCEER Workshop on Evaluation of Liquefaction Resistance of Soils,** National Center for Earthquake Engineering Research, Technical Report NCEER-97-0022, pp. 41 – 87.
https://seismicmaps.org/

Southern California Earthquake Center (1999), **Recommended Procedures for Implementation of DMG Special Publication 117, Guidelines for Analyzing and Mitigating Liquefaction Hazards in California,** Martin, G. R. and Lew, M. Co-Chairs and Editors, University of Southern California, March 1999.

Tokimatsu, K. and Seed, H. B. (1987), *Evaluation of Settlements in Sands Due to Earthquake Shaking*, **Journal Geotechnical Engineering,** ASCE, Vol. 113, No. 8, pp. 861-878.

SCEDC (2013), Southern California Earthquake Data Center
https://scedc.caltech.edu/earthquake/oakridge.html

Ventura County (2024), **County View** website.
http://gis.ventura.org/Html5Viewer/index.html?viewer=CountyView.CountyView_gvh

Youd, T. L. and Idriss, I. M. (1997), *Summary Report*, **Proceedings of the NCEER Workshop on Evaluation of Liquefaction Resistance of Soils,** National Center for Earthquake Engineering Research, Technical Report NCEER-97-0022, pp. 1 – 40.

Youd et al (2001), Liquefaction Resistance of Soils: Summary Report from the 1996 and 1998 NCEER/NSF Workshop on Evaluation of Liquefaction Resistance of Soils, **Journal of Geotechnical Engineering,** ASCE, Vol. 127, No. 10, pp. 817-833.

Reference: Google Earth 2024

N

No Scale

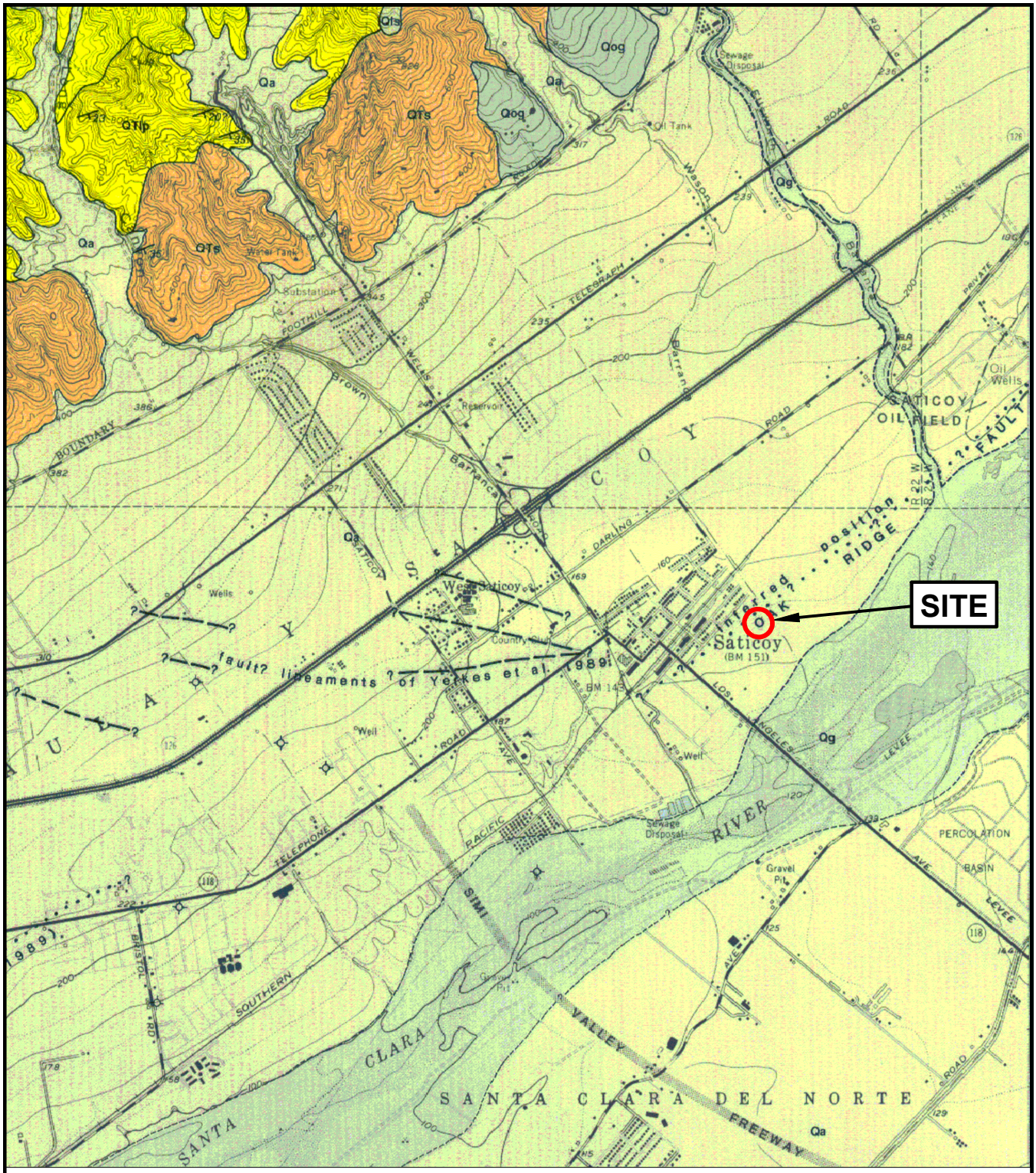
Advanced Geotechnical Services

SITE LOCATION MAP

ROLLS SCAFFOLD
11351 County Drive
Saticoy, California

Client # 5126
Report # 11216

FIGURE 1



Reference: Dibblee, 1992, Geologic Map of the Saticoy Quadrangle

N

Scale: 1" = ½ mile

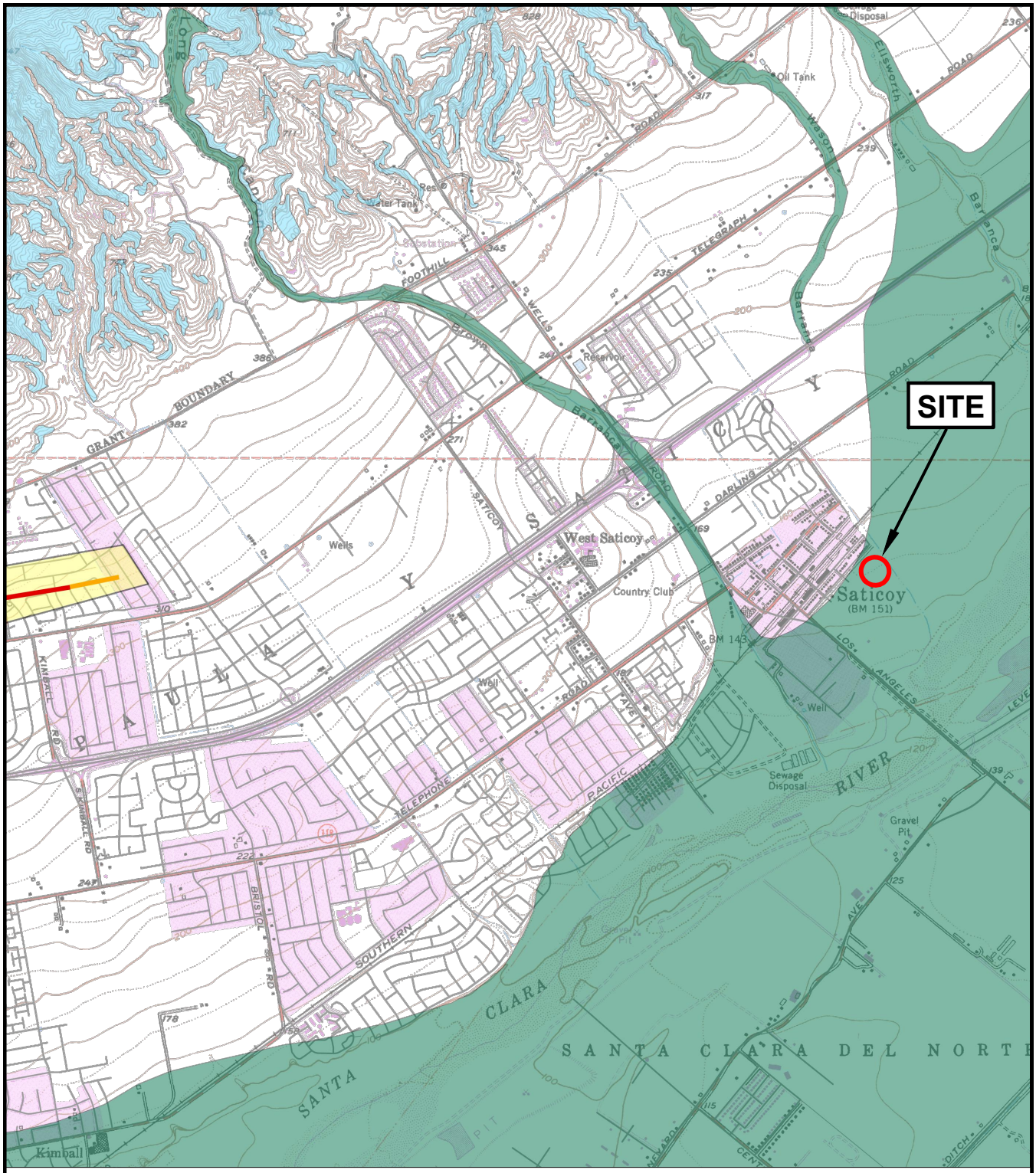
Advanced Geotechnical Services

DIBBLEE REGIONAL GEOLOGICAL MAP

ROLLS SCAFFOLD
11351 County Drive
Saticoy, California

Client # 5126
Report # 11216

FIGURE 2



Reference: CGS, 2003 - Seismic Hazard Zones, Saticoy Quadrangle
CDMG, 1978 - Special Study Zones, Saticoy Quadrangle

N

Scale: 1" = $\frac{1}{2}$ mile

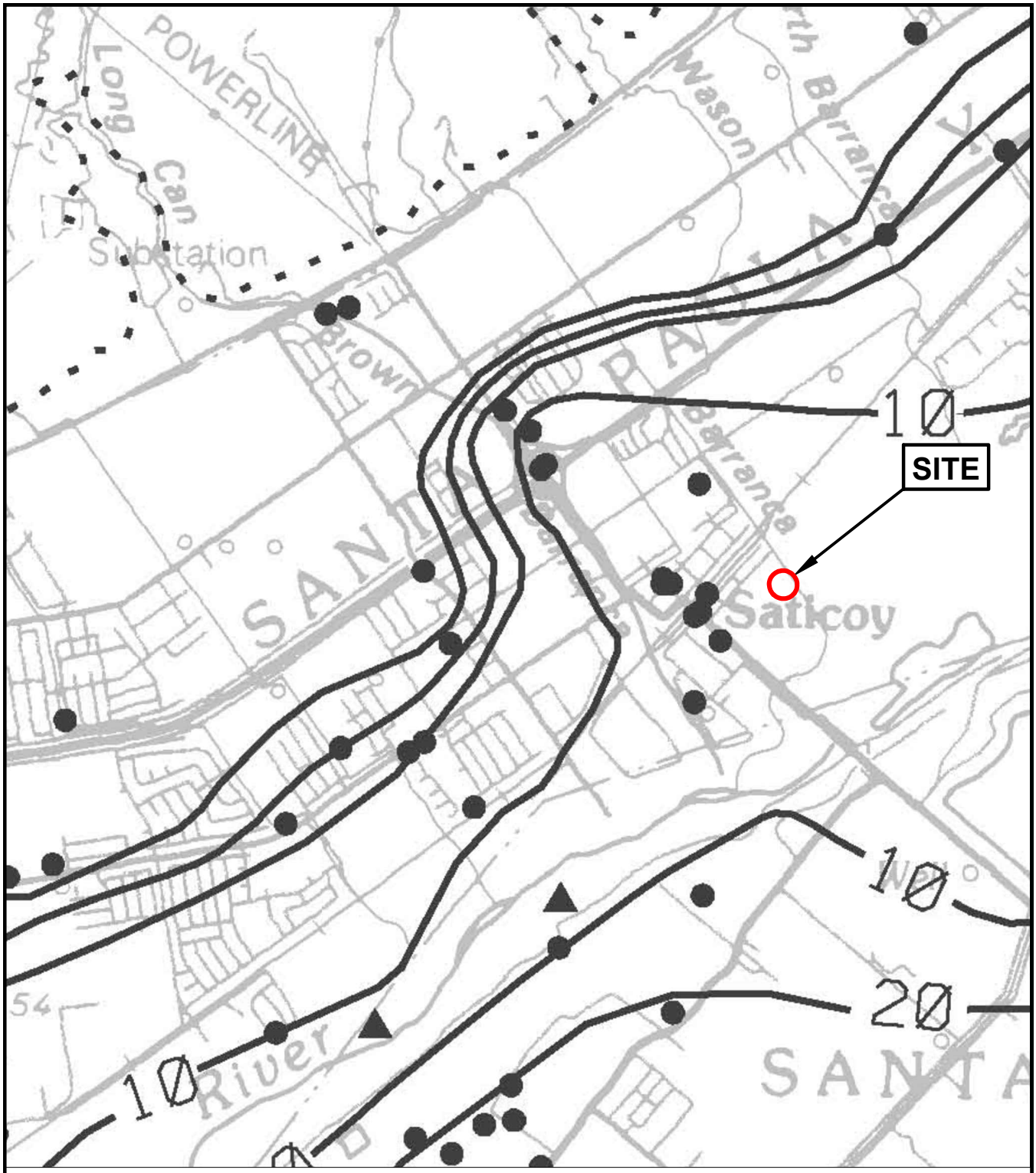
Advanced Geotechnical Services

EARTHQUAKE FAULT AND SEISMIC HAZARD ZONES MAP

ROLLS SCAFFOLD
11351 County Drive
Saticoy, California

Client # 5126
Report # 11216

FIGURE 3



Reference: CGS, 2003 - SHZR 066

N

Scale: 1" = ½ mile

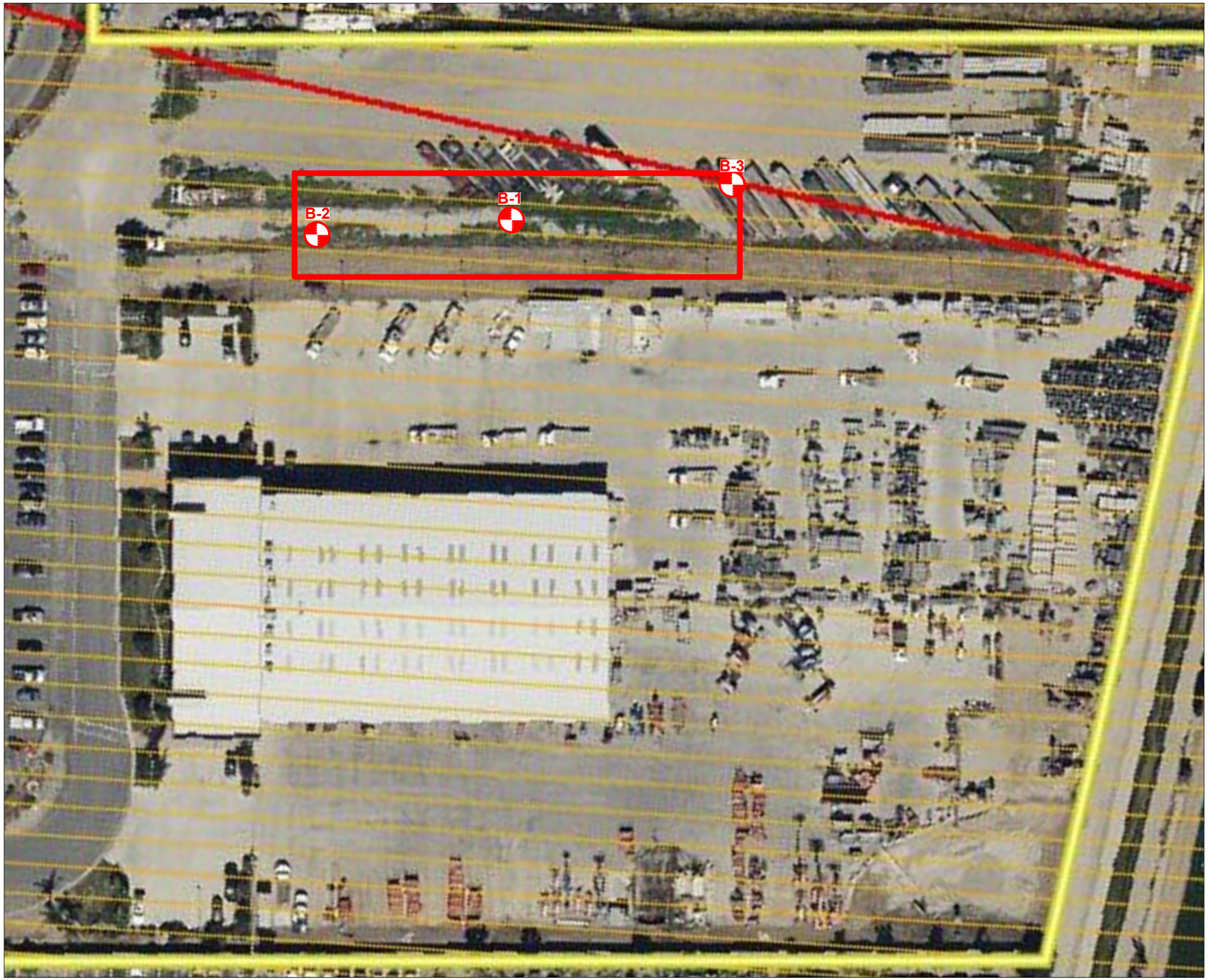
Advanced Geotechnical Services

DEPTH TO HISTORICALLY HIGH GROUNDWATER

ROLLS SCAFFOLD
11351 County Drive
Saticoy, California

Client # 5126
Report # 11216

FIGURE 4



EXISTING SITE PLAN

60' 0' 60' 120'

SCALE: 1" = 60'

EXPLANATION

B-3 Approximate Location of Exploratory Test Boring

Approximate Location of Geological Fault

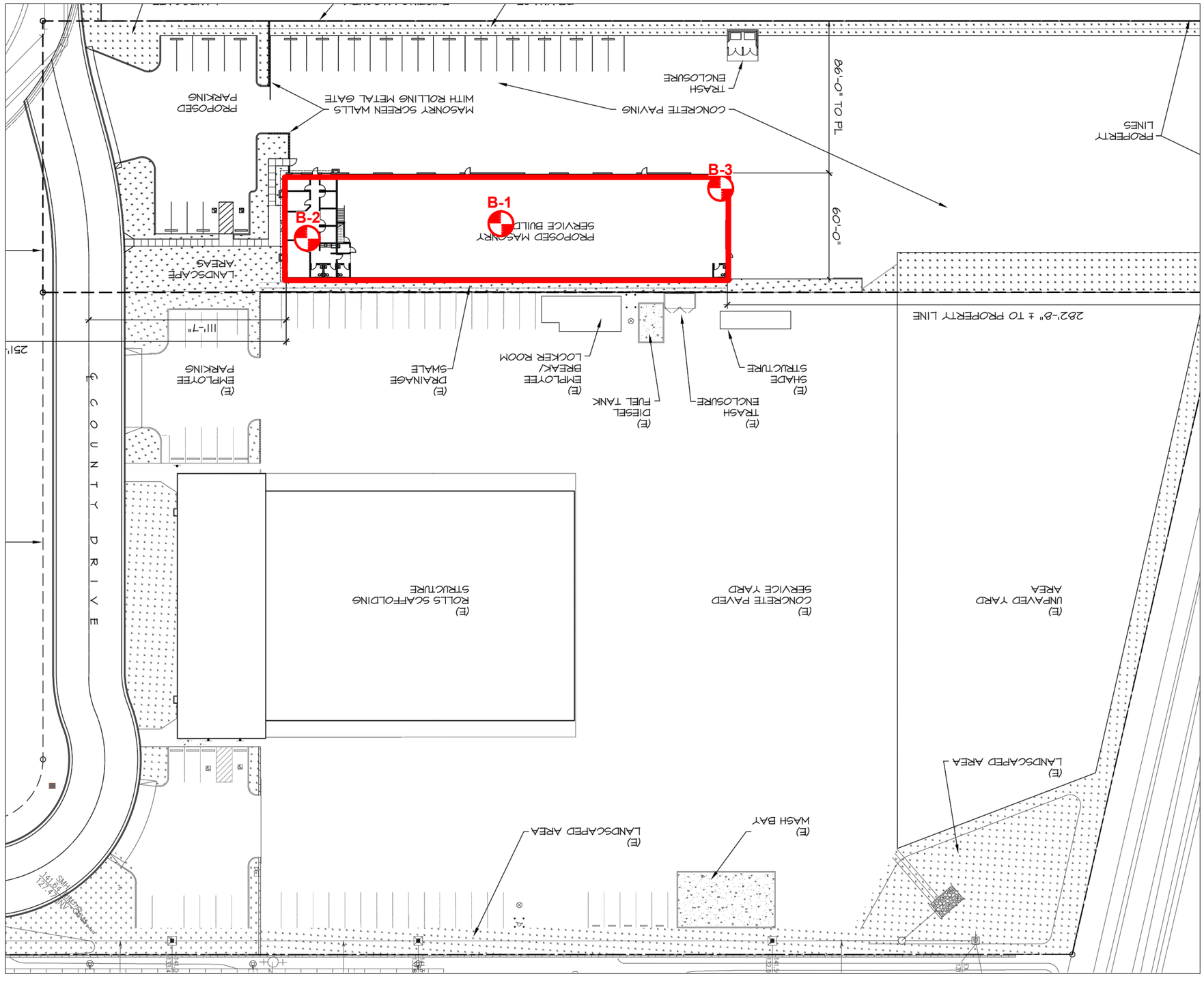
Earthquake Induced Liquefaction Hazard Zone

Advanced Geotechnical Services
5251 Verdugo Way, Suite L
Camarillo, California 93012
Office (805) 388-6162/Fax (805) 388-6167

ROLLS SCAFFOLD

Geotechnical Engineering Study
Proposed Service Building
11351 County Drive
Saticoy, California

Client No.	5126	PLATE
Report No.	11216	1
Date	1/29/2024	
Drawing No.	11216cn5126	



PROPOSED SITE PLAN

60' 0' 60' 120'

SCALE: 1" = 60'

EXPLANATION

B-3 Approximate Location of Exploratory Test Boring

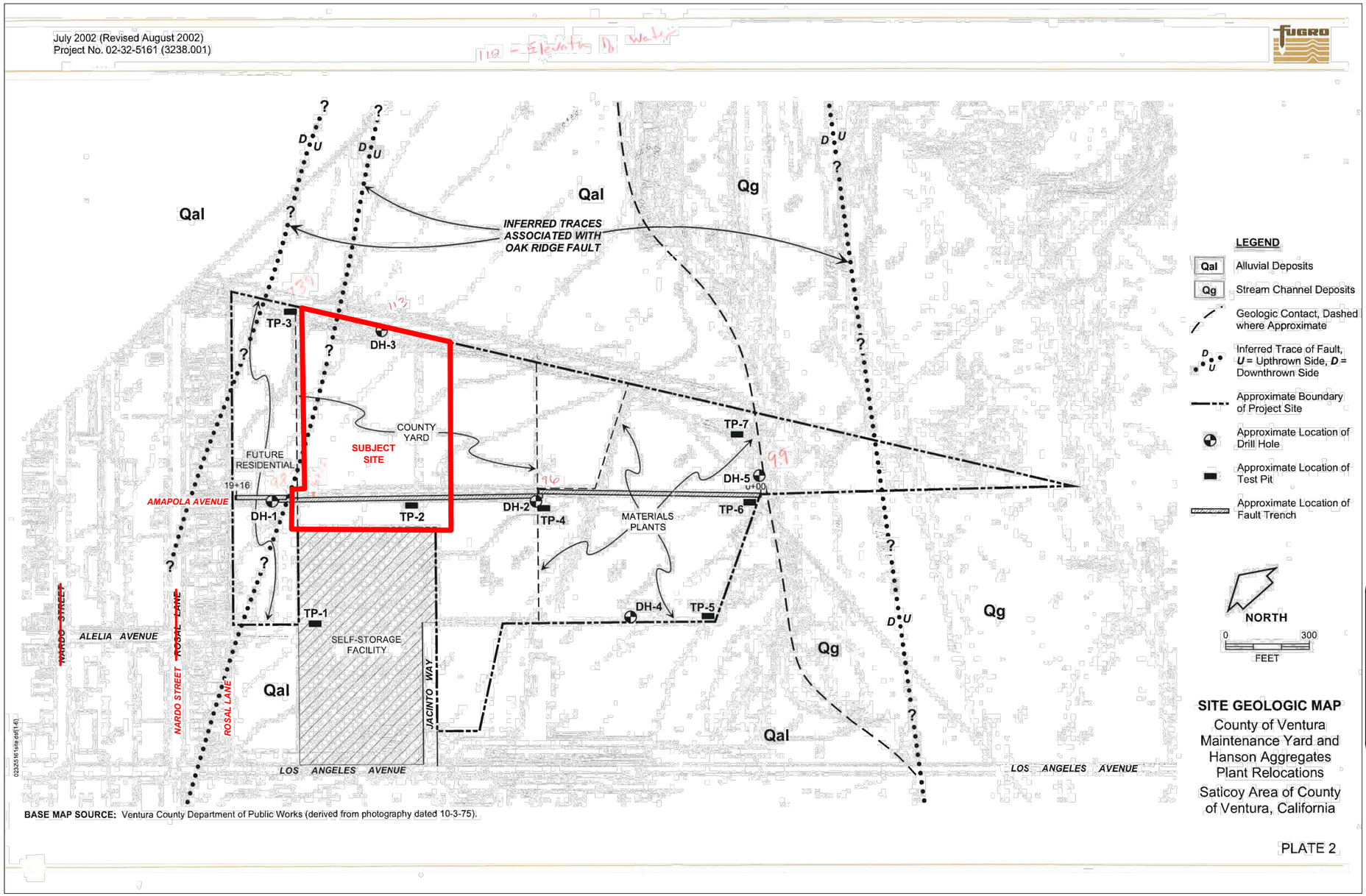
Advanced Geotechnical Services
5251 Verdugo Way, Suite L
Camarillo, California 93012
Office (805) 388-6162/Fax (805) 388-6167

ROLLS SCAFFOLD

Geotechnical Engineering Study
Proposed Service Building
11351 County Drive
Saticoy, California

Client No.	5126	PLATE 2
Report No.	11216	
Date	1/29/2024	
Drawing No.	11216cn5126	

July 2002 (Revised August 2002)
Project No. 02-32-5161 (3238.001)



LEGEND

- Qal — Alluvial Deposits
- Qg — Stream Channel Deposits
- Geologic Contact, Dashed where Approximate
- Inferred Trace of Fault, ***U*** = Upthrown Side, ***D*** = Downthrown Side
- Approximate Boundary of Project Site
- Approximate Location of Drill Hole
- Approximate Location of Test Pit
- Approximate Location of Fault Trench

SITE GEOLOGIC MAP

County of Ventura
Maintenance Yard and
Hanson Aggregates
Plant Relocations
Saticoy Area of County
of Ventura, California

PLATE 2

BASE MAP SOURCE: Ventura County Department of Public Works (derived from photography dated 10-3-75).

FUGRO SITE GEOLOGIC MAP

(With AGS Annotations)

400' 0' 400' 800'
SCALE: 1" = 400'

Advanced Geotechnical Services
5251 Verdugo Way, Suite L
Camarillo, California 93012
Office (805) 388-6162/Fax (805) 388-6167

ROLLS SCAFFOLD

Geotechnical Engineering Study
Proposed Service Building
11351 County Drive
Saticoy, California

Client No.	5126	PLATE 3
Report No.	11216	
Date	1/29/2024	
Drawing No.	11216cn5126	

MORRIS ENGINEERING COMPANY
P.O. Box 73, Fillmore, CA 93016-0073 • Ph/Fax: (805) 524-3727 • Email: FarmorBob@earthlink.net
"Sound Advice" - Noise • Pressure Pulsation • Surge • Vibration

February 20, 2009

Ms. Lisa Woodburn
JENSEN DESIGN & SURVEY, INC.
1672 Donlan Street
Ventura, CA 93003-5617

Subj.: Report A622C, Noise Impact Study with existing 9.5-foot high wall for Jakran Leasing and Rental

Ref.: Ventura County Case #LU06-0012, Jakran, LLC.

Dear Ms. Woodburn:

The Jakran leasing and rental yard operational noise impact was calculated for the residences northwest of Rosal Lane with the existing 9.5-foot high wall at the CUP boundary. The residences facing Rosal Lane are the closest noise sensitive land use. The following distances and elevations were used in the calculations in Table 2.5: The new wall is 230 feet from Rosal Lane. Rosal Lane is 20 feet wide and the houses are about 20 feet from Rosal Lane. Thus, the distance from the receiver to the wall is 270 feet. The ground elevations were 148 feet at the receiver, 147 feet at the base of the wall and 142 to 144 feet at the noise source (trucks). The receiver ear level is 5 feet above the ground. The primary noise sources from newer trucks are engine casing radiated noise and cooling fan noise. Exhaust noise is secondary, especially for idling and low speed. Tire noise is not significant at low speeds. The average height for the noise from the trucks in the yard is 5 feet above the ground.

The noise source from the yard at night is semi truck departures. The equipment is loaded on the trucks during the day. The drivers depart at night or early morning to deliver the equipment to the job site at the start of the workday.

Table 2.5 presents the calculations for truck noise impact at Rosal Lane for one, two and four trucks running simultaneously. The calculations are for two distances from the wall. The bottom two rows in the table show the hourly Leq for both without and with the 9.5-foot high wall. There were not any other structures (buildings) between the source and receiver. The one-hour sound levels are for the truck(s) running for the entire hour, the level(s) will be lower for fractions of the hour. The two distances are 20 and 176 feet southeast of the wall. Any buildings between the source and the wall will provide additional noise reduction.

Table 2.5 shows that with one truck continuously running for one hour at night the levels are 2.6 to 5.2 dBA below the 45 Leq1H nighttime limit. Even two trucks running continuously for one hour would be from 0.4 dBA over to 2.2 dBA below the

nighttime limit. Up to 16 trucks could run simultaneously and still be 0.6 dBA below the 55 Leq1H daytime limit.

In conclusion, with the 9.5-foot high wall, normal nighttime operations at the yard will be well below the Ventura County guidelines for nighttime operations, Leq1H of 45 dBA. At the residences, the daytime sound levels will be well below the County guideline of Leq1H of 55 dBA even with the equivalent of multiple trucks running simultaneously. If the trucks and equipment are southeast of the existing main building, or the proposed equipment storage building, sound levels at Rosal Lane will be further reduced.

If you have any questions, do not hesitate to call me

Very truly yours,

Robert P. Morris, P.E.
Consultant

Enc.: Table 2.5 - A-weighted Barrier Noise Reduction
Appendix A - References

TABLE 2.5
A-WEIGHTED BARRIER NOISE REDUCTION
LOADED SEMI TRUCK DEPARTURES
9.5 Foot Garden wall between M-1 and Residential Zones

DESCRIPTION	Meas-ured 1/10/07	One Truck		Two Trucks		Four Trucks	
		20' S.E.	176' S.E.	20' S.E.	176' S.E.	20' S.E.	176' S.E.
INPUT DATA:							
Ave. PWR LEVEL:							
Truck	102.3	102.3	102.3	102.3	102.3	102.3	102.3
ADJ. FOR # of Trucks	0.0	0.0	0.0	3.0	3.0	6.0	6.0
AVERAGE SOUND PWL	102.3	102.3	102.3	105.3	105.3	108.3	108.3
Physical Conditions:							
Dc (Horiz. Dist.) -Ft	50	290	446	290	446	290	446
Dbs (Barr-Source) -Ft	50	20	176	20	176	20	176
Es (Elev Source) -Ft	103.0	149.0	147.0	149.0	147.0	149.0	147.0
Eb (Elev Barrier) -Ft	98.0	156.5	156.5	156.5	156.5	156.5	156.5
Er (Elev Receiver)-Ft	103.0	153.0	153.0	153.0	153.0	153.0	153.0
Divergence (0,.5,1.0)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
OUTPUT DATA:							
Ls - Source to Rec-Ft	50	290	446	290	446	290	446
Sight Line Height -Ft	-5.0	7.2	7.1	7.2	7.1	7.2	7.1
Delta (Path diff) -Ft	-5.2494	1.3551	0.2385	1.3551	0.2385	1.3551	0.2385
Fresnel - N	-6.6283	1.7111	0.3012	1.7111	0.3012	1.7111	0.3012
Barrier Noise Red.-dB	0.0	15.3	8.9	15.3	8.9	15.3	8.9
Divergence - dB	31.7	46.9	50.7	46.9	50.7	46.9	50.7
Atmosphere Absorp -dB	0.0	0.2	0.4	0.2	0.4	0.2	0.4
Other Attenuation -dB	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Leq w/o Barrier	70.6	55.1	51.2	58.1	54.2	61.1	57.2
Leq with Barrier (Wall)	70.6	39.8	42.4	42.8	45.4	45.8	48.4

Notes:

1. Divergence Factors: 0 - 3 dB/DD (Line Source); 0.5 - 4.5 dB/DD (Traffic - Soft); 1.0 - 6 dB/DD (Hemispherical). Divergence=10*(1+D.F.)*LOG10(Ls)+2.7-5*(D.F.); D.F.=Divergence Factor.
2. Atmospheric Absorption for 20 deg. C, 50% Humidity at 500 Hz; Re: Harris.
3. Sight Line Height is height of barrier above line between Source and Receiver. If positive, the barrier is higher than the Sight Line height.
4. Above Leq values are for time truck is running. Hourly Leq1H will be lower if ambient is lower and truck runs less than an hour. For example, truck of 48 Leq for 15 minutes and ambient of 44 Leq gives 45.4 Leq1H

052689

APPENDIX B
REFERENCES

1. California Administrative Code, Title 25, Chapter 1, Subchapter 1, Article 4, January 1981.
2. International Conference of Building Officials, "Uniform Building Code", Appendix Chapter 35.
3. Gordon, C.G.; Galloway, W.J.; Kugler, B.A.; & Nelson D.L.; "Highway Noise - A Design Guide for Highway Engineers.", NCHRP Report 117 (1971) 79 pp.
4. Barry, T.M.; Reagan, J.A.; "FHWA Highway Traffic Noise Prediction Model.", Federal Highway Administration report FHWA RD-77-108, December 1978.
5. Hendriks, R.W.; "California Vehicle Emissions Levels.", California Department of Transportation report FHWA/CA/TL-87/03, January 1987.
6. U.S. Environmental Protection Agency - Office of Noise Abatement and Control, "Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety." EPA Report 550/9-74-004, March 1974, 159 pp.
7. U.S. Department of Housing and Urban Development, "Airborne, Impact, and Structureborne Noise Control in Multifamily Dwellings." Sept. 1967.
8. National Bureau of Standards Monograph 77, "Sound Insulation of Wall, Floor, and Door Constructions.", November 1964.
9. U.S. NBS, BMS 144, "Sound Insulation of Wall and Floor Constructions.", 1955.
10. Gypsum Association, " Fire Resistance Design Manual", 10th ed. 1983.
11. Heebink, T.B., "Sound Reduction of Windows in Exterior Wood Framed Walls." *Sound and Vibration*, June 1975; and "Sound Transmission Loss of Entrance Doors.", *Sound and Vibration*, June 1976.
12. Harris, C.M.(ed.), "Handbook of Noise Control", 2nd edition, McGraw-Hill, New York, 1979.
13. Beranek, L.L.(ed.), "Noise and Vibration Control", McGraw-Hill, N.Y., 1971.
14. Gray, D.E.(ed.), "American Institute of Physics Handbook", McGraw-Hill, New York, 1972.
15. Advanced Engineering Acoustics, "County of Ventura, Draft, Construction Noise Threshold Criteria And Control Measures", May 2002.
16. County of Ventura, "Ventura County, Initial Study Assessment Guidelines", February 2006.
17. Morris Engineering, Report A622 of August 15, 2006.
18. Advanced Engineering Acoustics, 3rd Party Noise Study Review of December 1, 2006.
19. Morris Engineering Report A622B of January 22, 2008.