Appendix E

Cultural Resources Phase I Assessment

Kimley»Horn

March 22, 2021

Ladyface Vista, LP
569 Constitution Ave, Suite H
Camarillo, California 93012

Attn: Martin Teitelbaum

Subj: Cultural Resources Phase I Assessment for Ladyface Vista Office Project (*Envicom Project # 2021-038-01*)

Dear Mr. Teitelbaum,

Envicom Corporation (Envicom) has completed a Phase I Cultural Resource Assessment for the Ladyface Vista Office Project (**Figure 1**). The Project site is located on the north side of Canwood Street in Agoura Hills, California. The Project will develop five (5) buildings with 190 parking stalls (**Figure 2**). The general location of the Project site is as follows:

United States Geological Survey 7.5' Quadrangles: Thousand Oaks, CA
Township: 1 North/Range: 18 West
Latitude: 34° 8'51.74"North/Longitude: 118°46'7.42"West

The Phase I Cultural Resource Assessment included a cultural resource record search conducted by the South Central Coastal Information Center (SCCIC) and a Native American cultural resource record search conducted by the California Native American Heritage Commission (NAHC). Both record searches examined the Project site plus a 0.25-mile area ("study area") around the Project Site (see Figure 1). Additional databases examined during the Phase I Assessment included historic regional maps, historic United States Geological Survey (USGS) maps, and historic Google Earth images. The University of California Santa Barbara (UCSB) Library Historic Aerial Photograph Database was also examined. In addition, because paleontological resources are also of concern, a record search request was made with the Natural History Museum of Los Angeles County (NHM), which used the same 0.25-mile study area.

The purpose of a cultural resource record search is to identify any known cultural resources previously recorded within or immediately adjacent to the proposed Project property, to provide cultural resource context for the Project from the examination of the study area, and to assess the overall cultural resource sensitivity of the Project region, based on the number of resources present in the region as identified by the SCCIC. A cultural resource is often defined as any building, structure, object, or archaeological site older than 50-years in age and can include historic or prehistoric locations of human habitation or occupation.

RECORD SEARCH RESULTS

SCCIC and NAHC Record Searches

On February 4, 2021, Envicom submitted a request to the SCCIC to conduct a search of their database for cultural resources located within the Subject Property, and within the surrounding study area (defined as the Subject Property, plus a 0.25-mile buffer area) for regional cultural resource context and sensitivity (see **Figure 1**). The record search included a request for all complete site records for cultural resources within or

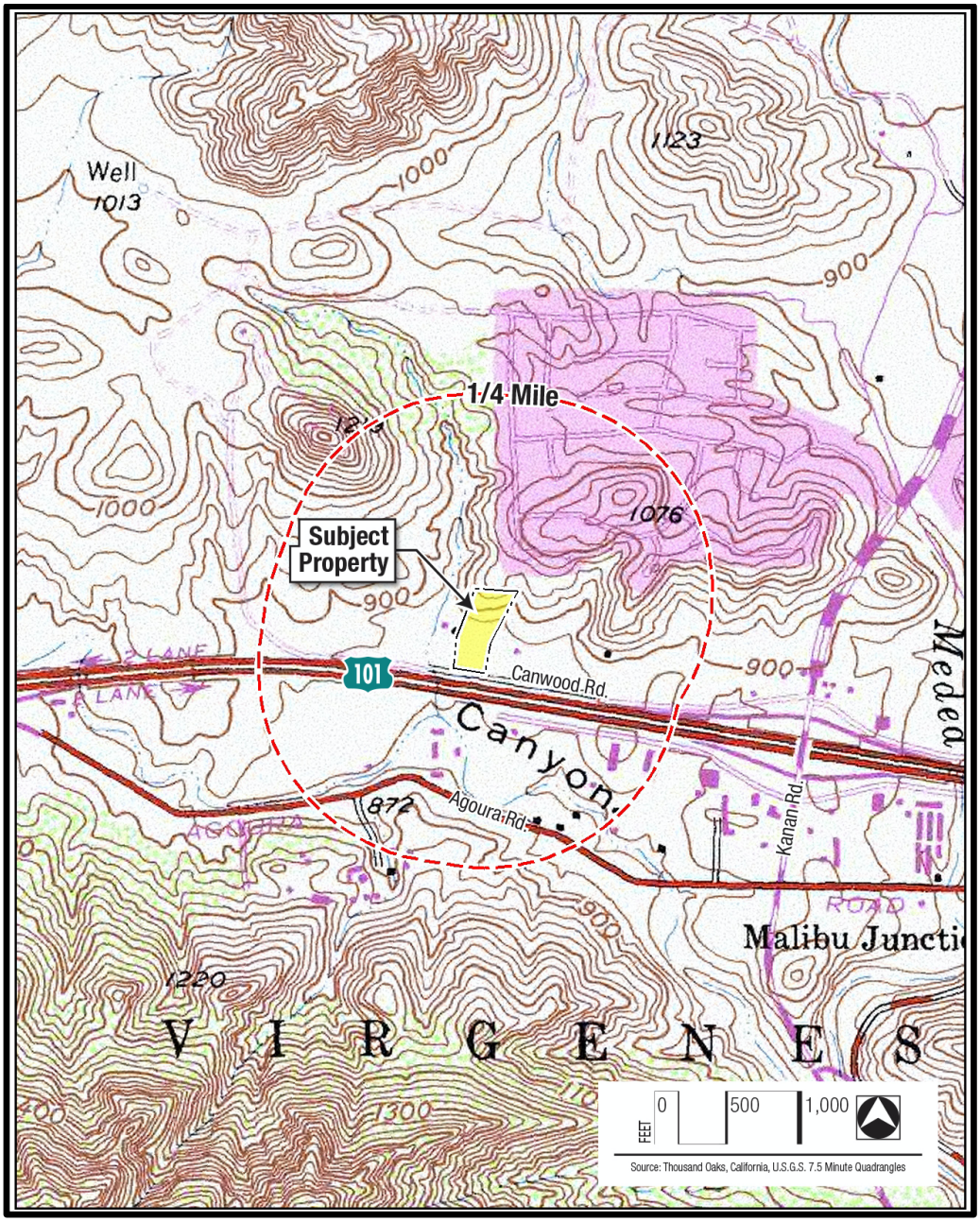


Figure 1: Project location in Los Angeles County, California, with the 0.25-mile study area shown (1981 Thousand Oaks Quadrangle Topographic Map).

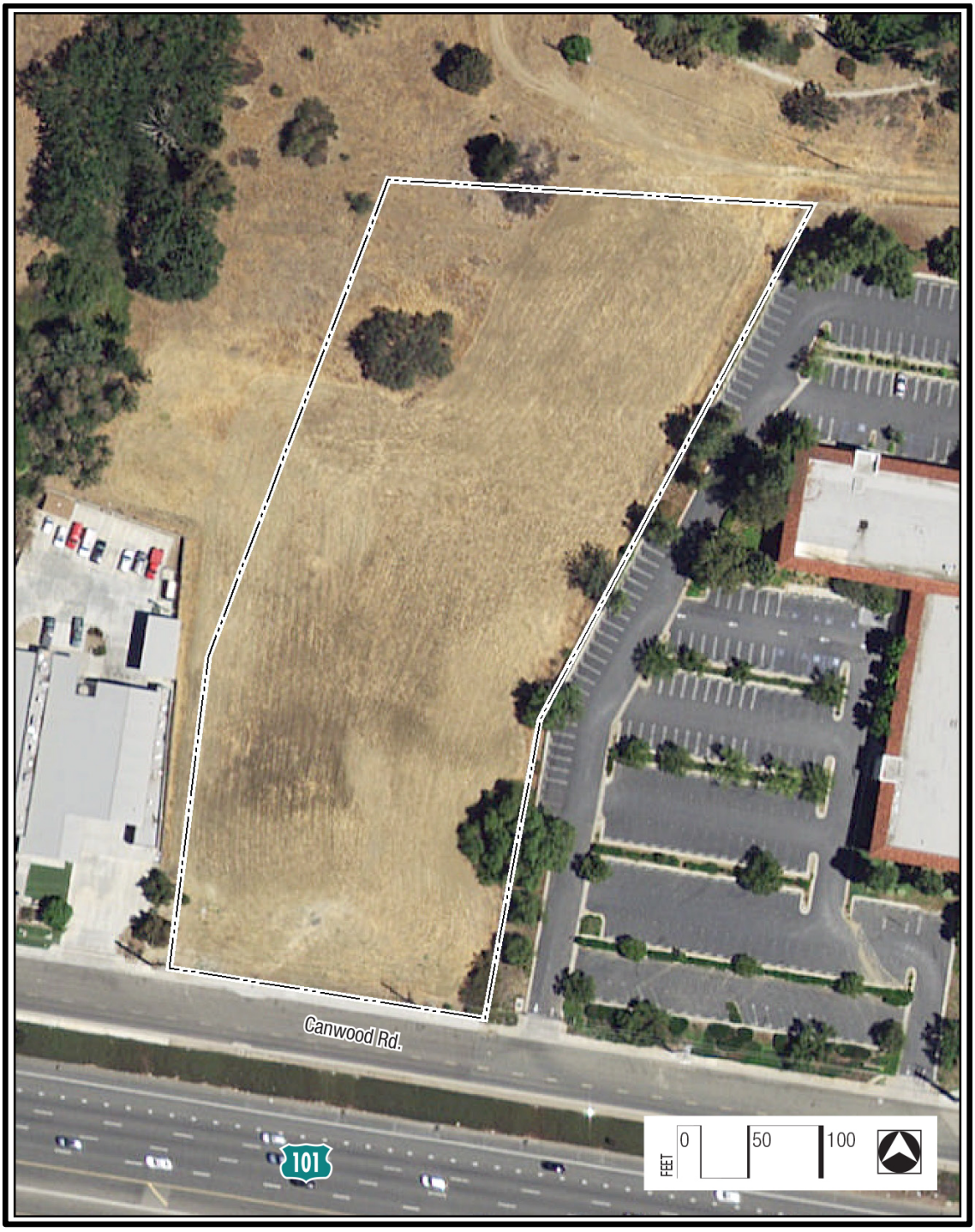


Figure 2: The Project property, showing the current conditions (2017 Google Earth Image).

adjacent to the Subject Property, as well as copies of all cultural resource technical reports that intersected with all or part of the Subject Property. Envicom also contacted the NAHC and the NHM on February 4, 2021, with a similar record search request.

Envicom received the cultural resource records search results from the SCCIC on March 11, 2021. The SCCIC record search found no previously identified cultural resources located within the Project property; but identified seven (7) cultural resource within the 0.25-mile surrounding study area; most being located to the south closer to the Santa Monica foothills. Six (6) of these resources are prehistoric in origin, and include sites with habitation evidence, burials, lithic quarrying, rock features, architectural features, hearths and pits, and lithic (stone tool debris) scatters. One (1) of these sites was an older historic homestead, located to the east of the Project property. These cultural resources are far enough away from the Project site that they will not be impacted by the Project, however, the prehistoric sites indicate a region that is sensitive for such resources.

The SCCIC further identified that there are no (0) cultural resource reports that directly involve the Project property. However, there are twenty-three (23) cultural reports that are wholly or partly within the 0.25-mile buffer. These reports did not indicate any cultural resource issues of relevance to the Project. All relevant cultural resource reports provided by the SCCIC are summarized in **Appendix A** of this report.

The results from the 2021 NAHC record search were received on February 19, 2021, 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. Envicom did not contact Native American groups on the NAHC list, as communications with Tribal Group representatives is the responsibility of the Lead/Permitting Agency, if required for this Project.

Any findings from the SCCIC as to the physical location of cultural resources, except for public-knowledge built environment resources, is considered confidential by state law and are, therefore, not included in this report. Copies of the request letter to the SCCIC, NAHC, and NHM are included in **Appendix B** of this report, as are the response letters from the NAHC and NHM. The Project geotechnical report is provided in **Appendix C**. The Principal Author's resume is provided in **Appendix D**.

Historical Map Database Search

Examination of historic maps included seventeen (17) historic USGS maps, dating between 1900 and 1981. The 1900 Triunfo Pass USGS map shows no development within the Project property, or within the local area **(Figure 3)**. The 1932 Seminole USGS map shows limited local development, but no buildings, roads, or other structures being on the Project property (**Figure 4**).

The oldest aerial photograph in the UCSB Library historic aerial photography database is from 1945 (**Figure 5**). This photo shows the Project property as undeveloped, again with some local development. Examination of historic Google Earth satellite images shows the local area and developed Project site from 1989 to current, with constant in-filling of the region with residential and commercial development, but no structures on the property at any point in time. The historic Google Earth images do show that the Project property was partially graded and impacted while the fire station immediately to the west was under construction in 2006, otherwise, no impacts were observed in any of the older images (**Figure 6**).

The review of historic maps, satellite images, and aerial images indicated that the Project property should not be considered as sensitive for older historic resources. Though regional development did take place as early as the 1930s, this development did not involve the Subject Property.

Field Survey Results

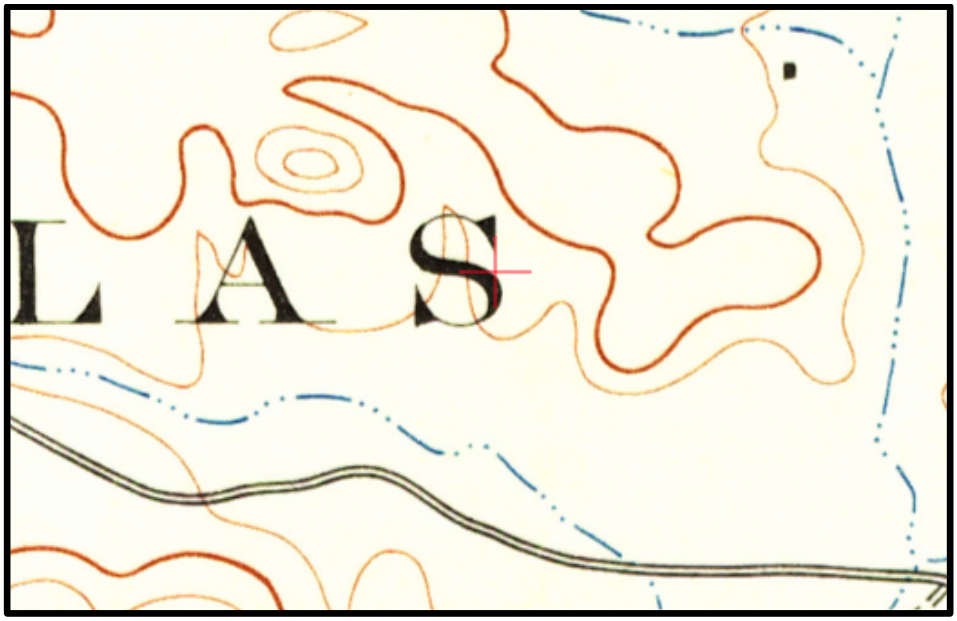
Envicom staff visited the Project property on February 18, 2021. The Project property is currently an undeveloped parcel, with a mix of impacted soil and native soil; all of which is constantly being bioturbated by rodents (**Figure 7**, **Figure 8**, **Figure 9**, and **Figure 10**). Impacts from the use of the property as a staging area during construction of the fire station to the west can still be seen, as can additional vehicular impacts from driving through the middle of the site from south to north. The Project property was also used during construction of the fire station as a source of material for filling to sandbags, as well as a spreading ground for soil from the other property. Ground visibility was excellent to fair, with large, open patches that allowed for excellent visibility of the surface. The many ground squirrel burrows, which brought up bioturbated soil from below surface, also provided numerous opportunities to examine the soil contents for artifacts. No early historic or prehistoric artifacts or features were observed on the surface. The findings were, therefore, ***negative for cultural resources within the Project property***.

Paleontological Record Search Results

The NHM record search findings were received on February 8, 2021 and indicated that the Project site is near areas considered to be sensitive for paleontological resources, which include older alluvial terrestrial formations, but also much older marine formations, such as the Topanga and Calabasas Formations (see Appendix B). The NHM recommended a paleontological survey, however, examination of the Subject Property by Envicom has identified that no bedrock formation elements are visible on the surface to assess, nor are older alluvial materials present. Further, the thorough Project geotechnical report has extensive information on the site subsurface conditions, providing a wealth of information for assessing paleontological sensitivity (see Appendix C).

The Project geotechnical report indicated that the Topanga Formation was encountered between one (1) and six-and-a-half (6.5) feet beneath the surface across the site in 2005, which supports the need for paleontological monitoring. Most of the Topanga Formation material encountered was brown siltstone and sandstone, but two bores encountered that dark gray basalt-rich layer that is often linked to the Middle Topanga at between 14 and 24 feet in depth. Conejo Volcanic intrusions were also encountered in the northern extent of the site, with some invasive remnant sandstone from the Topanga Formation.

Due to the NHM record search findings, the site visit findings, and the geotechnical report findings, Envicom does not recommend further paleontological assessment of the Project property prior to entitlement. However, Envicom does recommend a paleontological monitor be present when construction is within older alluvial materials or within the Topanga bedrock formation. Finally, the Project geotechnical report should be used to guide construction-phase paleontological monitoring efforts.



is

Figure 3: The 1900 Triunfo Pass USGS Map
(red cross marks the Project location).

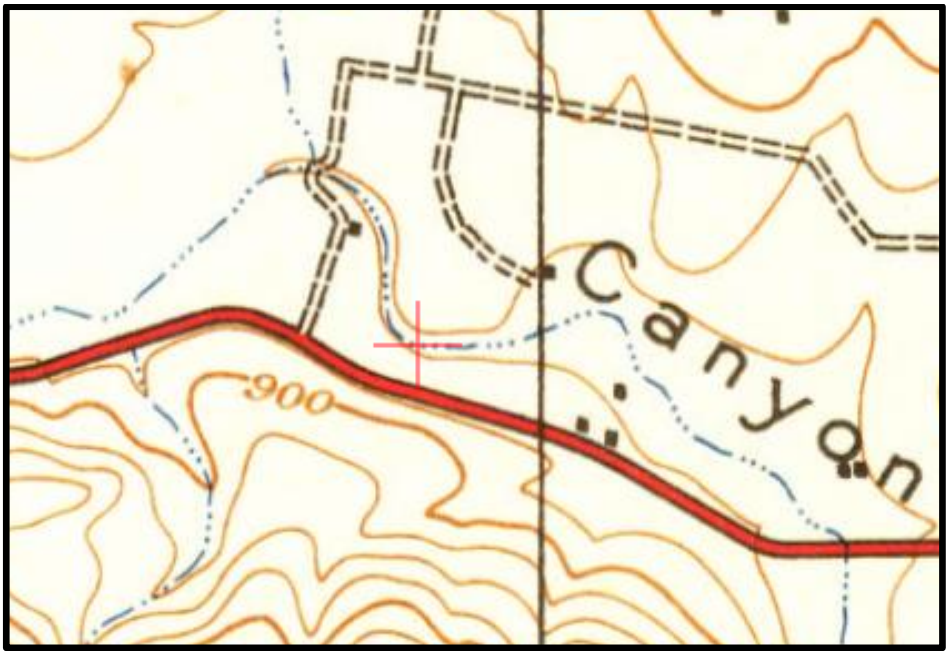


Figure 4: The 1932 Seminole USGS Map
(red cross marks the Project location).

Figure 5: The Project area in 1945 image, showing the Project property (center) (UCSB Historic Aerial Image Database).

Figure 6: Google Earth Image of the Project property in 2006, showing impacts from the construction of the fire station to the west.

Figure 7: Overview of the Project property, facing north.

Figure 8: Overview of the Project property, facing south, showing vehicular impacts in the center of the property.

Figure 9: Overview of the Project property, facing northwest.

Figure 10: Close-up of the northern half of the property, showing ground visibility, facing north.

RECOMMENDATIONS

The results of the SCCIC database record searches were negative for cultural resources within and adjacent to the Subject Property, as was the NAHC record search. The examination of the historic USGS maps and aerial photographs were negative for older historic cultural resources within the Project area. The surface assessment was also negative for cultural resources. The SCCIC, however, was positive for a number of prehistoric sites being within the surrounding study area, which indicated that the region is sensitive for prehistoric cultural resources. Even though a single older historic resource was located within the study area to the east, the Project local area should not be considered as being sensitive for older historic cultural resources due to the limited historic regional development and the lack of other older historic cultural resources within the study area.

Envicom does not recommend further paleontological assessment of the Project site; however, due to the sensitivity of the local region for prehistoric Native American cultural resources, as evidenced by the reports on file at the SCCIC, Envicom does recommend an archaeological and Native American monitor be present during construction grading activities from surface to bedrock. Envicom also recommends contingency measures for situations where cultural resources are unexpectedly encountering during grading.

The findings from the NHM were negative for paleontological resources being located on the Subject Property. While the region was identified as being sensitive for fossil resources, examination of the Project geotechnical report indicated the presence of potentially fossil-bearing sandstone formations below surface. Envicom does not recommend that a paleontological study be done prior to entitlement, due to the lack of surface rock formations and due to the detailed information already provided by the Project geotechnical report; however, Envicom does recommend that a paleontological monitor be present during excavation of older alluvial and Topanga bedrock formations on the property. If volcanic material or recent alluvial deposits are encountered, such formations do not need to be monitored.

Archaeological, Native American, and Paleontological Monitoring

A Lead Agency-approved archaeologist that meets the Secretary of Interior qualifications and a Native American monitor will be on site during Project grading from surface to bedrock. The archaeologist and the Native American monitor will be retained and paid for by the applicant. The archaeological monitor will collect any prehistoric or older historic material that is uncovered through grading, and if necessary may halt construction within 50-feet of a potentially significant cultural resource and inform the Lead Agency. If potentially significant intact deposits are encountered, then the cultural resource "discovery" protocol and communication plan will be followed, which will be formalized in a Construction Phase Monitoring Plan (see below).

Due to the area being within sensitive older alluvial material and the Topanga Bedrock Formation, a geological unit known to contain marine fossils, a qualified paleontological monitor will be on site during Project grading within these two formations. The monitor does not have to be present if recent alluvial material or volcanic material is being encountered. The paleontological monitor will be approved by the Lead Agency, and retained and paid for by the applicant.

The paleontological monitor will also be able to halt construction within 50-feet of a fossil discovery until the fossil can either be removed off-site or the Project Lead Agency is notified of the need to further assess the discovery. If the find is large enough to warrant further evaluation and/or extraction, then a fossil "discovery" protocol will be followed. This protocol will also be outlined in the Construction Phase Monitoring Plan (see below).

Archaeological Discovery

If buried materials of potential-archaeological significance are accidentally discovered within an undisturbed context during any earth-moving operation associated with the proposed Project, then all work in that area shall be halted or diverted away from the discovery to a distance of 50-feet until a qualified senior archaeologist can evaluate the nature and/or significance of the find(s). The Project communication plan (included in the Construction Phase Monitoring Plan) will be followed, and the Lead Agency will be immediately notified of the discovery.

Construction will not resume in the locality of the discovery until consultation between the senior archaeologist, the Lead Agency, applicant's representative, and all other concerned parties, takes place and reaches a conclusion approved by the Lead Agency. If a significant cultural resource is discovered during earth-moving, complete avoidance of the find is preferred. However, further survey work, evaluation tasks, or data recovery by a qualified archaeologist may be required by the Lead Agency if the resource cannot be avoided. All work in response to the discovery will be conducted by and paid for by the applicant. In response to the discovery of significant cultural resources, the Lead Agency may also add additional conditions of approval during continued site development, which may include additional cultural and/or Native American monitoring.

Any required additional monitoring will be conducted at the applicant's expense and will be described as an addendum in the Construction Phase Monitoring Plan. Any Evaluation, Data Recovery, Site Management, or other reports generated as a response to the discovery of a significant cultural resource will be submitted to the Lead Agency for review and final curation as part of the Project record. All such documents associated with the discovery of cultural resources will be transmitted to the SCCIC at the end of the Project.

Paleontological Discovery

If buried materials of potentially-paleontological significance are accidentally discovered within an undisturbed context during any earth-moving operation associated with the proposed Project, then all work in that area shall be halted or diverted away from the discovery to a distance of 50 feet until a qualified senior paleontologist can evaluate the nature and/or significance of the find(s). The Project communication plan (included in the Construction Phase Monitoring Plan) will be followed and the Lead Agency will be immediately notified of the discovery.

Construction will not resume in the locality of the discovery until consultation between the senior paleontologist, the Lead Agency, the applicant's representative, and all other concerned parties, takes place and reaches a conclusion approved by the Lead Agency. If a significant paleontological resource is discovered during earth-moving, complete avoidance of the find is preferred. However, further survey work, evaluation tasks, or fossil recovery of the significant resource by a qualified paleontologist may be required by the Lead Agency if the resource cannot be avoided. This work will be conducted and paid for by the applicant. In response to the discovery of significant paleontological resources, the Lead Agency may also add additional conditions, which may include additional paleontological monitoring.

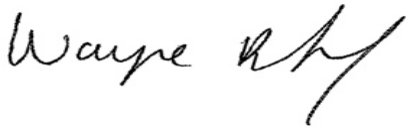
Any required additional monitoring will be outlined in an addendum to the Construction Phase Monitoring Plan. Any assessment, evaluation, fossil recovery, or other reports that are generated as a response to the discovery of a significant paleontological resource will be submitted to the Lead Agency for review and final curation as part of the Project record. All such documents associated with the discovery of paleontological resources will be transmitted to the NHM at the end of the Project.

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, the Coroner will notify the Native American Heritage Commission (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 shall also establish additional appropriate mitigation measures for further site development, which may include additional archaeological and Native American monitoring or subsurface testing, conducted and paid for by the applicant. All responses to the discovery of human remains will be outlined in a Recovery and/or Management Plan submitted to the Lead Agency for review. Any required additional monitoring will be outlined in an addendum to the Construction Phase Monitoring Plan.

Sincerely,



Dr. Wayne Bischoff, Envicom Director of Cultural Resources (Principal)
and Ms. Samantha Renta

ATTACHMENTS:

Appendix A: List of Previously Completed Cultural Resource Reports in the Project Property and Surrounding Study Area
Appendix B: SCCIC, NAHC, and NHM Request Letters, and the NAHC and NHM response letters
Appendix C: The Project Geotechnical Report
Appendix D: Resume of Dr. Wayne Bischoff (Principal)

APPENDIX A

List of Previously Completed Cultural Resource Reports in the Project Property and Surrounding Study Area

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
LA-00392		1977	Hector, Susan M.	An Archaeological Resource Survey and Impact Assessment of Trailer Lifer Publishing Co., C.u.p. 1191, Los Angeles County	University of California, Los Angeles Archaeological Survey	
LA-00819		1980	Leach, Melinda	An Archaeological Resources Assessment of the Proposed Medical Office Facility Site Located North of Canwood Street and West of Kannan Road, Agoura, California	University of California, Los Angeles Archaeological Survey	
LA-00926		1976	D'Altroy, Terence N.	Assessment of the Impact on Archaeological Resources of the Proposed Development of Two Parcels of Land West of Agoura, Los Angeles County		19-000846
LA-01768		1989	Singer, Clay A. and John E. Atwood	Cultural Resources Survey and Impact Assessment for the Proposed Agours Canyon Ranch Center in the City of Agours Hills, Los Angeles County, California	C.A. Singer & Associates, Inc.	19-000041, 19-000313, 19-000314, 19-000467, 19-001027, 19-001059, 19-001436, 19-001438
LA-01791	Paleo -	1989	Hatheway, Roger and Jeanette McKenna	Archaeological, Historical, Architectural, and Paleontological Investigation of the Kanan Road Interchange at Route 101 (ventura Freeway) Project Area, Agoura Hills, Los Angeles County, California	Hatheway and McKenna	
LA-01916		1989	McKenna, Jeanette A., Roger G. Hatheway, and Paul E. Langenwalter II	Historic Property Survey Report: the Kanan Road Interchange at Route 101 (ventura Freeway) Project Area, Agoura Hills, Los Angeles County, California	Hatheway & McKenna	19-100207, 19-100208, 19-100209, 19-100210
LA-01977		1980	Rosen, Martin D.	Archaeological Evaluation of Tract No. 37246, Agoura, California	University of California, Los Angeles Archaeological Survey	19-000846
LA-02409		1982	Stelle, Kenneth and Albert Galiardo	For Improvements of the Operational Characteristics of Route 101, the Ventura Freeway in Los Angeles and Ventura Counties, Between Route 405 in Los Angeles, and the Santa Clara River in Oxnard	Caltrans and Federal Highway Commission	56-000654
LA-03355		1996	Maki, Mary K and Larry Carbone	A Phase 2 Archaeological Investigation at Site CA-LAN-467 and an Extended Phase 1 Archaeological Investigation at Site CA-LAN-1436 for the Creekside Center Project, Agoura Hills, Los Angeles County, California	Fugro West, Inc.	19-000467, 19-001436

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
LA-03546		1996	Wlodarski, Robert J.	A Phase 1 Archaeological Study Bikeway Gap Closure Project Cities of Calabasas, Agoura Hills, Westlake Village and Unincorporated Los Angeles County, California	Historical, Environmental, Archaeological, Research, Team	19-000041, 19-000042, 19-000229, 19-000238, 19-000243, 19-000315, 19-000320, 19-000413, 19-000420, 19-000463, 19-000467, 19-000669, 19-000842, 19-000862, 19-000890, 19-000972, 19-001021, 19-001027, 19-001099, 19-001352, 56-000071, 56-000095, 56-000096, 56-000179, 56-000186, 56-000242, 56-000261, 56-000341, 56-000342, 56-000737, 56-000865
LA-03742		1982	Romani, John F.	Archaeological Survey Report for the 07-la/ven 101 Project P.m. 17.1-38.2/0.0-22.7 07351 - 076620	California Department of Transportation	19-000041, 19-000042, 19-000044, 19-000111, 19-000133, 19-000238, 19-000315, 19-000320, 19-000321, 19-000345, 19-000420, 19-000461, 19-000462, 19-000463, 19-000464, 19-000466, 19-000642, 19-000669, 19-000776, 19-000862, 19-000890, 19-000964, 19-000970, 19-000972, 19-001027, 19-001064, 19-001099, 56-000271, 56-000565, 56-000620, 56-000654
LA-07679		2004	Wlodarski, Robert J.	A Phase I Archaeological Study for 29515 Canwood Street City of Agoura Hills, County of Los Angeles. California	Historical, Environmental, Archaeological, Research, Team	
LA-09152		2008	Wlodarski, Robert J.	A Phase I Archaeological Study for Proposed Improvements to APN#2061-033-015 The Proposed Gupta Corporate Offices (Tentative address: 29760 Agoura Road) City of Agoura Hills, County of Los Angeles, California	Historical, Environmental, Archaeological, Research, Team	19-000320, 19-000321, 19-000432, 19-000462, 19-000671, 19-000776, 19-000842, 19-000970, 19-000971, 19-001021, 19-001024, 19-001027, 19-001069, 19-001236
LA-09862		2009	Toren, George A. and John F. Romani	Archaeological Reconnaissance Report: Two Parcels located within the City of Agoura Hills, Los Angeles County, CA	Compass Rose	19-000467, 19-001027
LA-09902		2009	A. George Toren and John F. Romani	Results of the Extended Phase I Archaeological Investigation at CA-Lan-1027 located within the Gateway Foursquare Church property, City of Agoura Hills, Los Angeles County, California	Compass Rose Archaeological, Inc.	19-001027
LA-10208		2001	Sylvia, Barbara	Negative Archaeological Survey Report: Metal Beam Guardrail (MBGR) Along Sections of Route 101 From Route 134 to the Ventura County Line.	Caltrans District 7	

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
LA-10390		2010	Schmidt, James and John F. Romani	Archaeological Reconnaissance Report: Gateway 2 (Por APN 2061-033-013), located within the City of Agoura Hills, Los Angeles County, California	Compass Rose Archaeological, Inc.	19-000467, 19-001027
LA-10475		2010	Toren, A. George and Gwen R. Romani	Phase I Archaeological Survey: The Las Virgenes municipal water district 1235 ft. backbone system improvement program: Agoura Hills pipeline alignment	Compass Rose Archaeological, Inc.	19-000041, 19-000467, 19-000671, 19-000726, 19-001069, 19-001352, 19-100207, 19-100208, 19-100209, 56-000040
LA-10578		2009	Fortier, Jana	TEA21 Rural Roadside Inventory: Native American Consultation and Ethnographic Study Caltrans District 7, County of Los Angeles	ICF Jones & Stokes	
LA-10778		2010	King, Chester	Archaeological Backhoe Test Excavation Program to Determine if Cultural Deposits Exist beneath Agoura Road in the Areas of CA-LAN-41 and CA-LAN-467, Las Virgenes Municipal Water District (LVMWD) Backbone System Improvement Program... Agoura Hills	Topanga Anthropological Consultants	19-000041, 19-000467
LA-11835		2011	Grimes, Teresa and Dory, Elysha	Agoura Road Widening, 29008 Agoura Road Agoura Hills, CA Historic Resource Report	Galvin Preservation Associates	
LA-11836		2012	unknown	Agoura Road Widening, Draft Initial Study and Mitigated Negative Declaration	GPA Environmental	19-000041, 19-000314, 19-000462, 19-000463, 19-000467, 19-000842, 19-001027, 19-001069, 19-001236, 19-001352, 19-100207, 19-100208, 19-100209, 19-100210
LA-12308	Paleo -	2011	Harper, Caprice and Turner, Robin	Cultural Resources and Paleontological Resources Assessment for the Agoura Road Widening Project, Agoura Hills, Los Angeles County, California	ArchaeoPaleo Resource Management	19-000041, 19-000463, 19-000467, 19-000842

APPENDIX B
SCCIC, NAHC, and NHM Request Letters,
and the NAHC and NHM Response Letters

California Historical Resources Information System

CHRIS Data Request Form

ACCESS AND USE AGREEMENT NO.: _____ **IC FILE NO.:** _____

To: Information Center

Print Name: Samantha Renta Date: 2/4/2021

Affiliation: Envicom Corporation

Address: 4165 E. Thousand Oaks Blvd

City: Westlake Village State: CA Zip: 91362

Phone: 818-879-4700 Fax: _____ Email: srenta@envicomcorporation.com

Billing Address (if different than above): _____

Billing Email: wbischoff@envicomcorporation.com Billing Phone: 818-879-4700

Project Name / Reference: Ladyface Vista Office Project, #2021-038-01

Project Street Address: _____

County or Counties: Los Angeles

Township/Range/UTMs: T 1N, R 18W, 34.51'51.74"N, 118.46'7.42"W

USGS 7.5' Quad(s): Thousand Oaks

PRIORITY RESPONSE (Additional Fee): yes ☐ / no ☐

TOTAL FEE NOT TO EXCEED: $400.00
(If blank, the Information Center will contact you if the fee is expected to exceed $1,000.00)

Special Instructions:

Information Center Use Only

Date of CHRIS Data Provided for this Request: _____

Confidential Data Included in Response: yes ☐ / no ☐

Notes: _____

CHRIS Data Request Form

Mark the request form as needed. Attach a PDF of your project area (with the radius if applicable) mapped on a 7.5' USGS topographic quadrangle to scale 1:24000 ratio 1:1 neither enlarged nor reduced and include a shapefile of your project area, if available. Shapefiles are the current CHRIS standard for submitting digital spatial data for your project area or radius. **Check with the appropriate IC for current availability of digital data products.**

- Documents will be provided in PDF format. Paper copies will only be provided if PDFs are not available at the time of the request or under specially arranged circumstances.
- Location information will be provided as a digital map product (Custom Maps or GIS data) unless the area has not yet been digitized. In such circumstances, the IC may provide hand drawn maps.
- In addition to the $150/hr. staff time fee, client will be charged the Custom Map fee when GIS is required to complete the request [e.g., a map printout or map image/PDF is requested and no GIS Data is requested, or an electronic product is requested (derived from GIS data) but no mapping is requested].

For product fees, see the CHRIS IC Fee Structure on the OHP website.

1. Map Format Choice:

Select One: Custom GIS Maps ☑ GIS Data ☐ Custom GIS Maps **and** GIS Data ☐ No Maps ☐

Any selection below left unmarked will be considered a "no. "

Location Information:

	Within project area	Within 0.25 mi. radius
ARCHAEOLOGICAL Resource Locations[1]	yes ☑ / no ☐	yes ☑ / no ☐
NON-ARCHAEOLOGICAL Resource Locations	yes ☑ / no ☐	yes ☑ / no ☐
Report Locations[1]	yes ☑ / no ☐	yes ☑ / no ☐
"Other" Report Locations[2]	yes ☐ / no ☐	yes ☐ / no ☐

3. Database Information:
(contact the IC for product examples, or visit the SSJVIC website for examples)

	Within project area	Within 0.25 mi. radius
ARCHAEOLOGICAL Resource Database[1]		
List (PDF format)	yes ☑ / no ☐	yes ☑ / no ☐
Detail (PDF format)	yes ☑ / no ☐	yes ☑ / no ☐
Excel Spreadsheet	yes ☐ / no ☑	yes ☐ / no ☑
NON-ARCHAEOLOGICAL Resource Database		
List (PDF format)	yes ☑ / no ☐	yes ☐ / no ☑
Detail (PDF format)	yes ☑ / no ☐	yes ☐ / no ☑
Excel Spreadsheet	yes ☐ / no ☑	yes ☐ / no ☐
Report Database[1]		
List (PDF format)	yes ☑ / no ☐	yes ☑ / no ☐
Detail (PDF format)	yes ☑ / no ☐	yes ☑ / no ☐
Excel Spreadsheet	yes ☐ / no ☑	yes ☐ / no ☑
Include "Other" Reports [2]	yes ☐ / no ☑	yes ☐ / no ☑

4. Document PDFs (paper copy only upon request)**:**

	Within project area	Within 0.25 mi. radius
ARCHAEOLOGICAL Resource Records[1]	yes ☑ / no ☐	yes ☐ / no ☑
NON-ARCHAEOLOGICAL Resource Records	yes ☑ / no ☐	yes ☐ / no ☑
Reports[1]	yes ☑ / no ☐	yes ☐ / no ☑
"Other" Reports[2]	yes ☑ / no ☐	yes ☐ / no ☑

CHRIS Data Request Form

5. Eligibility Listings and Documentation:

	Within project area	Within 0.25 mi. radius
OHP Built Environment Resources Directory[3]:		
Directory listing only (Excel format)	yes ☐ / no ☑	yes ☐ / no ☑
Associated documentation[4]	yes ☐ / no ☑	yes ☐ / no ☑
OHP Archaeological Resources Directory[1,5]:		
Directory listing only (Excel format)	yes ☑ / no ☐	yes ☐ / no ☑
Associated documentation[4]	yes ☑ / no ☐	yes ☐ / no ☑
***California Inventory of Historic Resources* (1976):**		
Directory listing only (PDF format)	yes ☑ / no ☐	yes ☑ / no ☐
Associated documentation[4]	yes ☑ / no ☐	yes ☑ / no ☐

6. Additional Information:

The following sources of information may be available through the Information Center. However, several of these sources are now available on the OHP website and can be accessed directly. The Office of Historic Preservation makes no guarantees about the availability, completeness, or accuracy of the information provided through these sources. Indicate below if the Information Center should review and provide documentation (if available) of any of the following sources as part of this request.

Caltrans Bridge Survey	yes ☑ / no ☐
Ethnographic Information	yes ☑ / no ☐
Historical Literature	yes ☑ / no ☐
Historical Maps	yes ☐ / no ☑
Local Inventories	yes ☑ / no ☐
GLO and/or Rancho Plat Maps	yes ☑ / no ☐
Shipwreck Inventory	yes ☐ / no ☑
Soil Survey Maps	yes ☐ / no ☑

---

[1] In order to receive archaeological information, requestor must meet qualifications as specified in Section III of the current version of the California Historical Resources Information System Information Center Rules of Operation Manual and be identified as an Authorized User or Conditional User under an active CHRIS Access and Use Agreement.

[2] "Other" Reports GIS layer consists of report study areas for which the report content is almost entirely non-fieldwork related (e.g., local/regional history, or overview) and/or for which the presentation of the study area boundary may or may not add value to a record search.

[3] Provided as Excel spreadsheets with no cost for the rows; the only cost for this component is IC staff time. Includes, but not limited to, information regarding National Register of Historic Places, California Register of Historical Resources, California State Historical Landmarks, California State Points of Historical Interest, and historic building surveys. Previously known as the HRI and then as the HPD, it is now known as the Built Environment Resources Directory (BERD). The Office of Historic Preservation compiles this documentation and it is the source of the official status codes for evaluated resources.

[4] Associated documentation will vary by resource. Contact the IC for further details.

[5] Provided as Excel spreadsheets with no cost for the rows; the only cost for this component is IC staff time. Previously known as the Archaeological Determinations of Eligibility, now it is known as the Archaeological Resources Directory (ARD). The Office of Historic Preservation compiles this documentation and it is the source of the official status codes for evaluated resources.

February 4, 2021

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

Subj: Cultural Resources Phase I Assessment for Ladyface Vista Office Project
(Envicom Project #2021-038-01)

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:

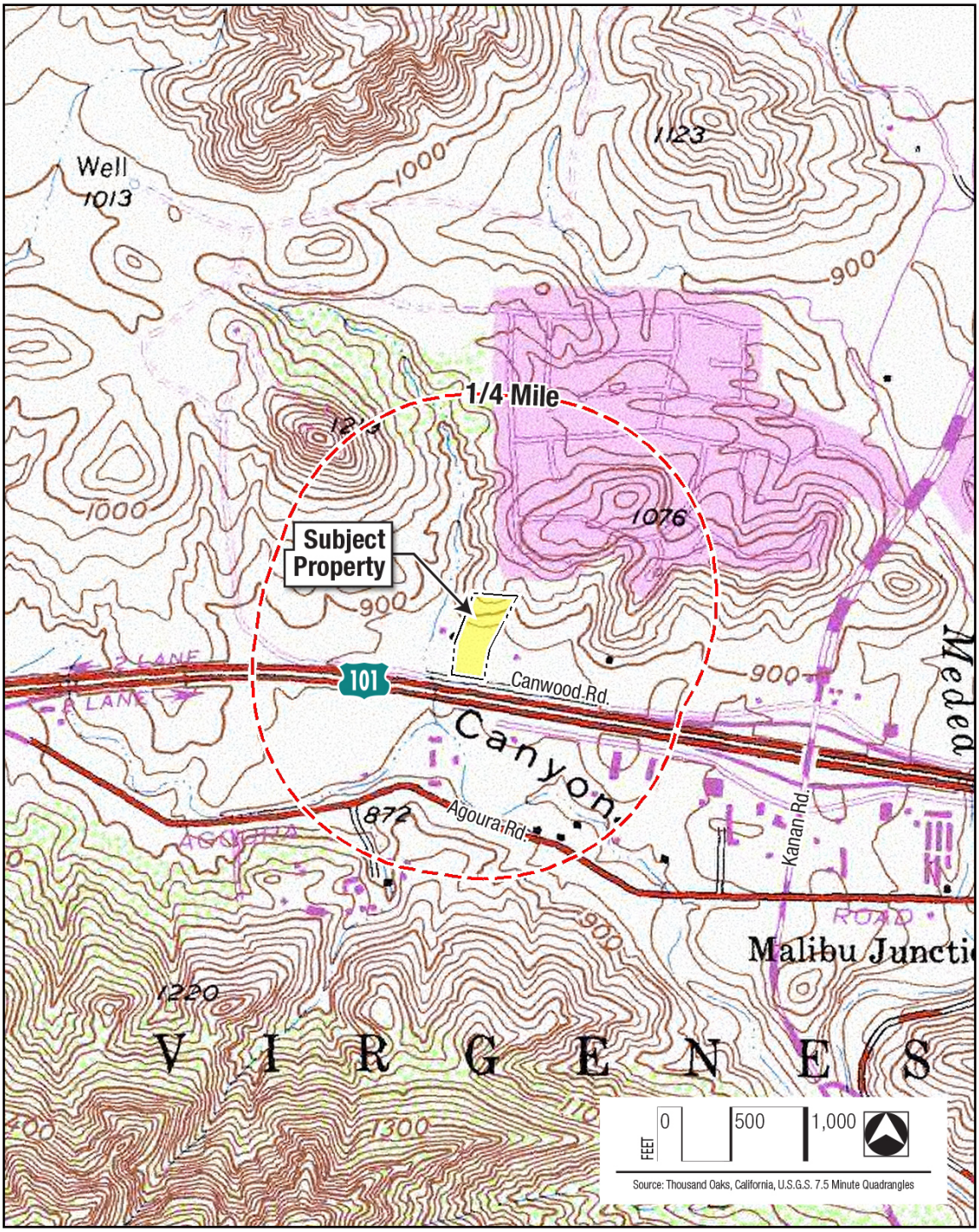
United States Geological Survey 7.5' Quadrangles: Thousand Oaks, CA
Township: 1 North/Range: 18 West
Latitude: 34° 8'51.74"North/Longitude: 118°46'7.42"West
County: Los Angeles

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

Sincerely,

Wayne Bischoff
Director of Cultural Resources

Attachment:
Project vicinity map on 1:24,000 topographic map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Canyon
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ROAD
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1300
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1,000
Source: Thousand Oaks, California, U.S.G.S. 7.5 Minute Quadrangles

February 4, 2021

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

Subj: Cultural Resources Phase I Assessment for Ladyface Vista Office Project
(Envicom Project #2021-038-01)

To Whom It May Concern,

Envicom Corporation (Envicom) is requesting a record search of the Natural History Museum of Los Angeles County (NHM) 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:

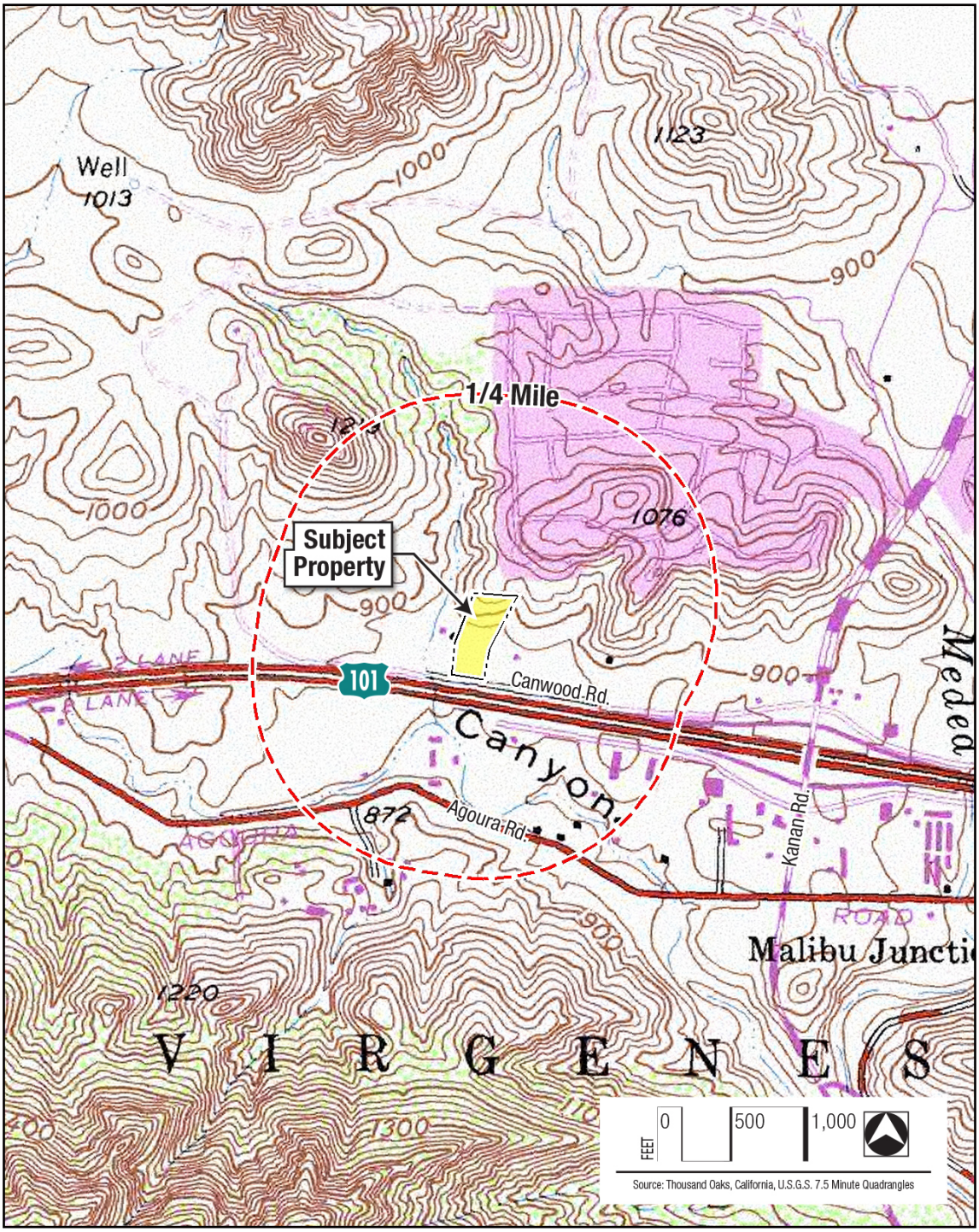
United States Geological Survey 7.5' Quadrangles: Thousand Oaks, CA
Township: 1 North/Range: 18 West
Latitude: 34° 8'51.74"North/Longitude: 118°46'7.42"West

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

Sincerely,

Wayne Bischoff
Director of Cultural Resources

Attachment:
Project vicinity map on 1:24,000 topographic map


Well
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Malibu Junct
ROAD
1200
V I R G E N E S
1300
FEET
0
500
1,000
Source: Thousand Oaks, California, U.S.G.S. 7.5 Minute Quadrangles

NATIVE AMERICAN HERITAGE COMMISSION

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710
nahc@nahc.ca.gov
NAHC.ca.gov

February 19, 2021

Wayne Bischoff
Envicom Corporation

Via Email to: wbischoff@envicomcorporation.com

Re: Cultural Resources Phase I Assessment for Ladyface Vista Office Project, Los Angeles County

Dear Dr. Bischoff:

A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information you have submitted for the above referenced project. The results were negative. However, the absence of specific site information in the SLF does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

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. I suggest you contact all of those indicated; if they cannot supply information, they might recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call or email to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from tribes, please notify me. With your assistance, we can assure that our lists contain current information.

If you have any questions or need additional information, please contact me at my email address: Andrew.Green@nahc.ca.gov.

Sincerely,

Andrew Green

Andrew Green
Cultural Resources Analyst

Attachment

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

February 7, 2021

Envicom Corporation
Attn: Wayne Bischoff

re: Paleontological resources for the Ladyface Vista Office Project (Envicom Project #2021-038-01)

Dear Wayne:

I have conducted a thorough search of our paleontology collection records for the locality and specimen data for proposed development at the Ladyface Vista Office project area as outlined on the portion of the Thousand Oaks USGS topographic quadrangle map that you sent to me via e-mail on February 04, 2021. We do not have any fossil localities that lie directly within the proposed project area, but we do have fossil localities nearby from the same sedimentary deposits that 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.

Locality Number	Location	Formation	Taxa	Depth
LACM VP 3213	S of Ventura Freeway along S Westlake Blvd	Unknown formation (Pleistocene alluvial sediments)	Terrestrial vertebrates; Xenartha	Unknown
LACM VP 7660	The Lakes at Thousand Oaks development project; SE of intersection of Thousand Oaks Blvd & Conejo School Rd	Unknown Formation (Pleistocene; stream deposits)	Mastodon (*Mammut americanum*)	Unknown
LACM IP 16931, 16932	E side of Liberty Canyon, SE of Agoura	Calabasas Formation	Invertebrates, including pteropods	Unknown
LACM IP 21019, 20626	N of Stokes Canyon, E of Las Virgenes Rd.	Topanga Formation	Invertebrates	Unknown
LACM VP 1680	Conejo Valley; 1 mi NW of Newbury	Unknown formation (Pleistocene, silty	Mammoth (*Mammuthus*); horse family (Equidae)	14-15 ft bgs

	Park	clay member)		
LACM VP 6381, LACM IP 2645	N of Calabasas Peak, E of Mulholland Hwy	Topanga Formation	Mackerel shark (*Isurus*), invertebrates	Unknown

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

This records search covers only the records of the Natural History Museum of Los Angeles County ("NHMLA"). It is not intended as a paleontological assessment of the project area for the purposes of CEQA or 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 full paleontological assessment of the project area be conducted by a paleontologist meeting Bureau of Land Management or Society of Vertebrate Paleontology standards.

Sincerely,

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

enclosure: invoice

APPENDIX C
The Project Geotechnical Report

Geotechnical Site Evaluation
Ladyface Vista Business Center
29555 Canwood Street
Agoura Hills, California

prepared for

Martin Teitelbaum Construction, Inc.
569 Constitution Avenue, Suite H
Camarillo, California 93012

GORIAN & ASSOCIATES, INC.

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GORIAN & ASSOCIATES, INC.

Applied Earth Sciences
Geotechnical Engineers
Engineering Geologists
DSA Accepted Testing Laboratory
Special Inspection and Materials Testing

3595 Old Conejo Road
Thousand Oaks
California 91320-2122
805 375-9262
805 375-9263 fax

February 22, 2021

Martin Teitelbaum Construction, Inc.
569 Constitution Avenue, Suite H
Camarillo, California 93012

Work Order: 3187-0-0-100

Subject: **Geotechnical Site Evaluation, Ladyface Vista Business Center, 29555 Canwood Street, Agoura Hills, California**

1. INTRODUCTION

The following report contains the results of our geotechnical site evaluation addressing design and construction of the Ladyface Vista Business Center at 29555 Canwood Street in Agoura Hills, California. Based on a review of the 20 scale preliminary concept plans prepared by pk:architecture (dated September 28, 2020) the development will include five detached buildings surrounded by surface parking and drive areas on the existing gently sloping terrain, as well as retaining walls in several locations. The *Site Plan Study* serves as a base for the attached Geotechnical Map (Plate 1).

Borings were used to obtain data on the subsurface consisting of Miocene-age Topanga formation bedrock overlain by a thin layer of fill and topsoil as described herein. The field exploration was supplemented with laboratory testing to determine mechanical properties of the encountered soils. In addition, research was performed that indicated the site is not within Earthquake Fault, Liquefaction, or Landslide Zones (CGS, *Earthquake Zones of Required Investigation* website). Based on our site evaluation, the site is suitable for the proposed construction from a geotechnical standpoint provided recommendations presented herein are implemented in the project design and construction. Descriptions of the site and geologic units along with our conclusions and recommendations are presented within the text of this report.

2. PROPOSED DEVELOPMENT

Based on a review of the *Site Plan Study* prepared by pk:architecture, the development will include five buildings with a total of 21,100 square feet with 56,546 square feet of paving for 109 surface parking stalls and drive areas. Retaining walls are proposed on the northern, eastern and southern sides of the site. Conventional grading operations consisting of cut and fill grading are anticipated to achieve design grades. The fills will be on the order of 15 feet (southern portion, building 3) and the cuts will be on the order of 20 feet (northern portion, retaining walls). An underground storm water retention system is also proposed within the parking and drive area just south of buildings 3 and 4. Access to the property will be from Canwood Street.

3. SCOPE OF GEOTECHNICAL SERVICES

Our site evaluation was performed in accordance with generally accepted geotechnical engineering practices under the direction of a California state registered geotechnical engineer and certified engineering geologist. These services included the following:

3.1 ARCHIVAL REVIEW

Pertinent geologic/geotechnical data in our files was reviewed including regional geologic maps, geotechnical/geologic hazard maps, and Alquist-Priolo earthquake fault-rupture hazard zone maps.

3.2 GEOTECHNICAL SUBSURFACE EXPLORATION

Three borings were drilled, sampled, and logged ranging in depth from 41 feet (B-1) to 19.5 feet (B-2) below the existing ground surface (bgs). The borings were drilled utilizing a subcontractor supplied and operated truck-mounted bucket auger drill rig equipped with a 24-inch bucket. The borings were observed by a geologist from this office, who logged the underlying materials and obtained both bulk and relatively undisturbed drive soil and bedrock samples for laboratory analyses and to characterize the subsurface soil and bedrock conditions. Safety permitting, at the conclusion of drilling and sampling, the geologist downhole logged the borings to obtain pertinent geologic structure to be utilized in the site evaluation.

At the conclusion of drilling, logging and sampling, the excavations were backfilled with spoils from the borings and tamped with the Kelly bar. The backfilled materials may settle with time, therefore, the owner or his representative should periodically observe the boring locations and fill any depressions that may occur.

3.3 LOCATION OF UNDERGROUND UTILITIES

Prior to mobilizing any drilling equipment for the field exploration, the boring locations were located in the field and marked. Per State mandated protocol, Underground Service Alert "Dig Alert" was informed at least 48 hours before the scheduled drilling time to aid in locating underground utility lines that may be adjacent to our proposed boring locations.

3.4 LABORATORY TESTING

A program of laboratory testing was performed on selected soil and bedrock samples obtained from the field during the subsurface exploration. Testing included in-situ moisture and density determinations, compaction characteristics, shear strength parameters, expansion, and consolidation potential. In addition, corrosion testing of a selected sample was performed by an independent subcontracted laboratory.

3.5 GEOTECHNICAL ENGINEERING ANALYSIS AND REPORT PREPARATION

The results of our archival review, field exploration, laboratory testing programs and engineering analyses were used to develop geotechnical recommendations for design and construction of the Ladyface Vista Business Center. The results of our findings are provided in this formal report that includes:

a) A description of soil, bedrock and groundwater conditions, as encountered during the subsurface exploration, including Logs of Subsurface Data (Appendix A) and a Geotechnical Map (Plate 1). Geotechnical Cross Sections A-A’ (Plate 2) were prepared illustrating subsurface conditions and for use in slope stability / soil nail wall analyses.

b) A description of the laboratory testing program, including test results (Appendix B).

c) Discussion and geotechnical recommendations regarding:
   i. Geologic hazards including seismic setting of the site and faulting;

ii. Seismic design criteria;
iii. Soil expansion potential;
iv. Slope stability;
v. Site preparation and remedial grading;
vi. Conventional foundation design and construction;
vii. Retaining wall design parameters including backfill recommendations;
viii. Soil nail retaining walls;
ix. Lateral earth pressures;
x. Slab-on-grade and hardscape design;
xi. Preliminary pavement recommendations; and
xii. Soil chemistry analysis, by subcontract.

4. SITE DESCRIPTION

The site is at 29555 Canwood Street in Agoura Hills, California and consists of approximately 3.45 acres of gently sloping hillside terrain. The property is bounded by Los Angeles County Fire Station 89 to the west (29575 Canwood Street), an existing medical building (29525 Canwood Street) to the east, single family residential housing Tract 23760 to the north, and Canwood Street on the south side. Improvements along Canwood Street include curb and gutter as well as a sidewalk. The southerly facing hillside is characterized by a moderate growth of seasonal weeds and grasses previously disced for weed abatement and several mature oak trees. Drainage of the site is by sheet flow towards the south where it is in turn captured by Canwood Street storm drain improvements. Total relief of the site is on the order of 76 feet.

5. BACKGROUND

This office prepared geotechnical reports for design and construction of two projects on the northern side of Canwood Street (29501 and 29353), which are to the east and in close proximity to the subject site. The following provides a description of previously conducted site evaluations in this area by this office as well as other consultants.

Preliminary geotechnical site evaluations and grading compaction reports for Tract 23760 (located north of the subject property) were both prepared by Robert Stone and Associates (RSA) in 1969 and 1970 (Gorian 2005). The RSA reports indicate the Topanga Formation and Conejo Volcanics underlie the area just north of the proposed Ladyface Vista Business Center (29555 Canwood Street). RSA characterized the Topanga Formation as being discontinuous and found as irregular patches within the Conejo Volcanics and as large masses containing scattered volcanic beds. The Conejo Volcanics generally consist of intrusions, lava flows, and massive agglomerate and breccia beds of andesitic and basaltic composition. RSA indicated the bedding within the Topanga Formations is inclined northward at moderate to locally steep angles because the area is on the south flank of an east-west trending syncline.

In 1977 Geolabs performed a geotechnical investigation for a skateboard park which has since been developed into a medical building (29525 Canwood Street) and indicated the site was underlain by bedrock of the Miocene-age Topanga Formation (Gorian, 2005). Their test pit logs indicate the bedrock is generally inclined to the north at moderate angles (32° to 36°), however, locally the bedding was observed to dip steeply (51° to 55°) to the southwest.

In 1981 Kovacs-Byer and Associates, Inc. performed an additional geotechnical investigation within the skateboard park for a medical office building at 29525 Canwood Street (Gorian, 2005). They concurred with Geolabs (1977) that the site was underlain by the Topanga Formation with some localized areas of

basaltic intrusions. Structurally, they indicated the bedrock was inclined to the north at moderate to steep angles (27° to 70°), however, small folds were found and interpreted to be near the basalt contact.

In 1998, this office prepared a geotechnical investigation report for Lot 54 (29501 Canwood Street) on the northern side of Canwood Street (Gorian, 1998). The field exploration included excavating two 24-inch diameter bucket auger borings to depths ranging from 21 to 42 feet and three backhoe trenches ranging in depth from 3.5 to 6 feet below the existing ground surface. In 2005, this office prepared a G*eotechnical Update Investigation* report which included the drilling sampling and logging of three additional 24-inch diameter bucket auger borings to depths ranging from 16 to 31 feet below the existing ground surface (Gorian, 2005).

The following is reiterated for clarity from the Gorian 2005 report. With the exception of Boring B-3, all five bucket borings performed by Gorian (B-1 through B-5) encountered bedrock of the Miocene-age Topanga Formation at depths ranging from 2 to 5 feet bgs. In boring B-3, Topanga Formation was encountered below the volcanic intrusion at an approximate depth of 6.5 feet bgs. The backhoe trenches also exposed Topanga Formation at depths ranging from 1 to 2.5 feet below the existing ground surface.

Bedrock of the Topanga Formation as encountered in the all of the exploratory borings and trenches consists predominately of brown to light olive brown siltstone and argillaceous shale with localized inter-bedded fine-grained sandstone. However, in boring B-1 the uppermost portion of the Topanga Formation consists of 1.5 feet of light olive brown volcanic conglomerate in a weathered yet indurated condition. At a depth of 24.5 and 14 feet below the ground surface in boring B-1 and B-2 respectively, the bedrock transitions into a dark gray siltstone in an indurated and damp condition. Generally, above this dark gray siltstone, the bedrock is slightly weathered and locally moderately fractured.

Based on our subsurface exploration, the bedrock is inclined to the northwest and northeast at moderate to steep angles (24° to 85°). Bedding attitudes presented in the referenced reports on adjacent properties are consistent with the bedrock orientation observed during this site evaluation (29555 Canwood Street). Regional geologic maps (Weber, 1984 and Dibblee, 1993) indicate the bedrock is inclined to the north at moderate to steep angles (35° to 65°). Structurally, Dibblee indicates a tightly folded syncline exists near the contact of the Topanga Formation and the Conejo Volcanics resulting in overturned bedding within the Topanga Formation. The contact between these two units was not encountered on-site but was reported to be approximately 180 feet north of the proposed development within Tract 23760 (RSA, 1969).

After stage grading operations (borrow area) on the site (29501 Canwood Street), additional field mapping was performed and revealed that a Conejo Volcanic intrusion does exist on the site. The Topanga Formation is tightly folded on the north side of the Conejo Volcanics intrusion. Just north of the contact with the Conejo Volcanics, the Topanga Formation is folded into a syncline that trends generally east-west with the southern limb inclined at 88° and the northern limb inclined at 61° to 65°. Just north of the syncline is an anticline also trending east-west, with the north limb inclined to the north at moderate angles (26° to 38°). Boring B-1 is located on the northern limb of this anticline with bedding attitudes inclined at moderate to steep angles.

As observed during previous field mapping, the Conejo Volcanics generally consist of yellowish brown to gray basalt in a slightly weathered and fractured condition. Based on field mapping, it appears the exposed Conejo Volcanics intrusion in contact with the Topanga Formation is steeply inclined to the north (88°).

In 1999, Converse Consultants prepared a *Geotechnical Investigation Report* for a fire station at 29575 Canwood Street (Converse, 1999). This site is adjacent and just west of the subject site. The evaluation

included drilling sampling and logging seven hollow stem auger borings to depths ranging from 11 feet to 51 feet below the existing ground surface. The alluvium encountered was reported to vary in thickness from 4 feet to 23 feet and the underlying bedrock was referred to as the Calabasas Formation of the upper Topanga Group. The alluvium was described as a fat clay with an expansion index of 132 and the bedrock was described as yellowish brown to gray siltstone interbedded with brown and gray claystone with some sandstone interbeds noted. Shallow groundwater was reported. There is no readily available geotechnical map attached to this report.

In 2001, Converse Consultants prepared an updated geotechnical report for the fire station (Converse, 2001). The report indicates the site was unchanged since 1999.

In 2004, Mactec prepared a *Report of Supplementary Geotechnical Investigation* for the Fire Station at 29575 Canwood Street (Mactec, 2004a). The investigation included drilling logging and sampling five borings to 3 feet deep and seven test pits in the northern half of the site. This report indicated bedrock was much shallower than Converse reported and geotechnical recommendations were presented for footings to be in bedrock. Recommendations to dewater the site due to the shallow groundwater conditions were also presented.

In September of 2004, the County of Los Angeles, Department of Public Works, Geotechnical and Materials Engineering Division issued a Geologic Review Sheet and Soils Engineering Review Sheet dated September 16 (LADPW, 2004a) regarding Mactec's 2004 report. Mactec then prepared a report with geotechnical and geologic responses to the comments presented by LADPW (Mactec, 2004b). The project was subsequently approved as indicated in the LADPW review letter dated October 5 and 6, 2004 (CLADPW, 2004b).

In 2007, this office prepared the *Rough Grading Compaction Test Report* for 29501 Canwood Street (Gorian, 2007a). The exposed geologic conditions encountered during the grading operation are reiterated below for completeness.

Both cut slope and retaining wall backcut excavations expose bedrock of the Miocene-age Topanga Formation, which is locally intruded by dikes of Conejo Volcanics. The bedrock as exposed in these excavations generally consists of laminated to thinly bedded, medium brown to light gray silty shale and argillaceous siltstone with occasional beds of fine to medium-grained sandstone. The bedrock is moderately indurated and slightly to moderately weathered, fractured with some iron oxide staining on fracture surfaces.

Structurally, geologic mapping of the cut slopes and wall backcuts during grading revealed the Topanga Formation materials to be moderately folded yet generally inclined in a northerly direction at moderate to near vertical angles (44° to 75°). However, in the northeastern portion of the site a localized anticlinal fold trending generally east west was observed with bedding on the southern limb inclined towards the south at steep angles (70° to 71°). Locally, the Topanga Formation is intruded with volcanic rocks of the Conejo Volcanics. The volcanic intrusions appear as isolated patches and masses of yellowish brown to dark gray fine-grained basalt in a damp and fractured condition.

Also, in 2007, this office prepared a geotechnical report for design and construction of a fitness center at 29353 Canwood Street (Gorian, 2007b). The site evaluation included the drilling logging and sampling of four bucket auger borings. The encountered geologic conditions are reiterated herein for completeness.

Bedrock of the Miocene-age Topanga Formation as encountered in each exploratory boring generally consists of yellowish brown to light olive brown argillaceous siltstone and gray shale with localized inter-beds of yellow silty fine-grained sandstone and limy siltstone beds in a damp to very moist and moder-ately indurated condition. These sedimentary units are typically thinly bedded, fissile, and contain some

manganese and iron oxide staining. At depth, the color of the bedrock commonly grades to brown (siltstone) and dark gray (shale) before becoming very dark gray. In boring B-2 as described below, an intrusive body of Conejo Volcanics basalt was encountered.

Structurally, based on our subsurface exploration, the bedrock is inclined to the northwest and northeast at moderate to steep angles (37° to 66°). Bedding attitudes presented in the referenced reports on adjacent properties are consistent with the bedrock orientation observed during this investigation. Regional geologic maps (Weber, 1984 and Dibblee, 1993) indicate the bedrock is inclined northward at moderate to steep angles (35° to 65°). Dibblee indicates a tightly folded syncline exists near the contact of the Topanga Formation and the Conejo Volcanics to the north of the proposed development resulting in overturned bedding within the Topanga Formation.

An isolated outcrop of Topanga Formation siltstone was observed within the surrounding Conejo Volcanics in the extreme northeastern portion of the site. The bedding within the sedimentary rock was mapped as being vertical. The approximate contact between the Topanga Formation and Conejo Volcanics is irregular and is considerably higher on the slope than regional geologic maps show. A large sandstone outcrop near the contact appears to be inclined towards the northeast at a steep angle (70°).

An intrusion of Miocene-age Conejo Volcanics was encountered during the investigation within boring B-2 at a depth of 2.5 feet and extended to a minimum depth of 11 feet before the drilling operation was stopped. The intrusion generally consists of dark gray fine-grained basalt in a damp and indurated to highly indurated condition. Similar intrusions were found to the west (Gorian 2005).

The volcanic bedrock as observed in boring B-2 is typically fractured yet indurated. Conventional grading equipment was able to cut the volcanic intrusions encountered during grading of the property directly to the west. However, difficult drilling was encountered in boring B-2 in the volcanic rock, therefore hard bedrock should be anticipated on-site.

Based on field mapping operations, the upper reaches of the site are underlain by volcanic rock that outcrops in many locations. Based on a review of regional geologic maps (Weber, 1984, Dibblee, 1993), the inferred contact between the Conejo Volcanic and the Topanga Formation on this site is at about elevation 900.0. However, based on our recent boring B-1 at elevation 925.0 and the field mapping, this contact is higher on the hillside and is irregular. An isolated outcropping of the Topanga Formation was observed within the larger volcanic body in the extreme northeastern portion of the site.

6. SITE GEOLOGY

The subject site at 29555 Canwood Street is underlain at depth by bedrock referred to as the Topanga Formation mantled with topsoil and locally artificial fill deposits. Descriptions of these units are presented below and in the attached Logs of Subsurface Data (Appendix A). The interpreted geologic structure is illustrated on the attached Geotechnical Cross Section A-A' (Plate 2).

6.1 ARTIFICIAL FILL

Artificial fill deposits were encountered in boring B-3 with a thickness of 1 foot. The artificial fill generally consists of brown silty clay mottled with dark brown silty clay in a wet and stiff condition. No other artificial fill deposits were encountered but the surface of the ground in the southern most portion of the site is locally covered with gravel and concrete debris indicated additional artificial fill deposits may exist but do not appear to be more than surficial deposits. Regardless, the artificial fill is not considered suitable for structural support and should be removed to competent underlying materials prior to structural fill placement.

6.2 TOPSOIL
Surficial soils mantling the bedrock are referred to as topsoil. Topsoil was encountered in all of the borings and varies in thickness from 2 feet (B-3) to 3.5 feet (B-1). As encountered, the topsoil generally consists of brown silty clay with some sand and shale fragments in a moist and stiff to very stiff condition. These soils are considered to be very expansive.

6.3 TOPANGA FORMATION
Bedrock of the Miocene-age Topanga formation underlies the site at depth and was encountered in all of the exploratory borings. As encountered near the ground surface, the sedimentary bedrock generally consists of yellowish brown clayey siltstone interbedded with yellowish brown to olive gray to gray claystone in a moist condition. Locally these fine-grained sediments are interbedded with yellowish brown silty fine-grained sandstone and limy siltstone. The limy siltstone in B-2 was indurated and difficult to drill resulting in refusal conditions. The bedrock is typically thinly bedded, fissile and fractured yet tight. Some iron oxide and manganese oxide staining was noted.

At depth, the bedrock grades to dark gray in color and generally consists of unoxidized clayey siltstone interbedded with claystone with thin (1" to 2" thick) gray to light yellowish brown silty fine-grained sandstone beds in a hard and damp condition. No critically expansive clay seams (Bentonite) was observed.

Structurally, the bedrock is inclined towards the northeast and northwest at moderate to near vertical angles (37º to 86º). The site appears to be on the southern limb of a generally east west trending synclinal fold as previously described in the *Background* section herein.

6.4 GROUNDWATER
Groundwater was not encountered to the maximum depth explored, 41 feet (B-1) below the existing ground surface.

6.5 LANDSLIDES
No landslides are present within or near the site nor are any shown on regional geologic maps.

6.6 FAULTING AND SEISMICITY
The site, like any in the southern California area, is in a seismically active region prone to occasional damaging earthquakes. The destructive power of earthquakes can be grouped into fault-rupture, ground shaking (strong motion), and secondary effects of ground shaking such as tsunami, liquefaction, settlement, mass wasting, and flooding from dam failures.

The hazard of fault-rupture is generally thought to be associated with a relatively narrow zone along well-defined pre-existing active faults. No doubt there is and will be exceptions to this, because it is not possible to predict the precise location of a new fault where none existed before (CDMG, 1975). No Holocene-active faults are known to cross the site nor is the project site currently located within an Alquist-Priolo (A-P) Earthquake Fault Zone as defined by the State Geologist (CGS 2018). The closest active fault is the Chatsworth fault zone, which lies approximately 4.5 miles northeast of the site. The potential for ground rupture on-site due to faulting during the time period of concern is considered remote.

Although no active or potentially active faults are known to exist within or adjacent the site, the area will be subject to strong ground motion from occasional earthquakes in the region. Four significant earthquakes have occurred epicentered within a 40± mile radius of the site within the last eight decades; the March 11, 1933 Long Beach earthquake (6.4 magnitude), the February 9, 1971 San Fernando earthquake (6.6 magnitude), the October 1, 1987 Whittier Narrows earthquake (5.9 magnitude) and the January 17, 1994 Northridge earthquake (6.7 magnitude). Significant earthquakes will likely occur in this area

within the life expectancy of the project and the site will experience strong ground shaking from these events.

Based on the latest United States Geological Survey (USGS) interactive web application, Unified Hazard Tool https://earthquake.usgs.gov/hazards/interactive/ probabilistic seismic hazard analyses (PSHA) predict the Design Basis Earthquake (475-year return period) peak horizontal ground acceleration will be on the order of 0.39g for the alluvial soil conditions of the class C site. The mean magnitude from this PSHA is 6.64 (Mw) with a mean distance of approximately 18.0 km from the property. Utilizing a 2% chance of being exceeded in 50 years (2475-year return period) peak horizontal ground acceleration will be on the order of 0.68g for the soil conditions on site. The mean magnitude from this PSHA is 6.73 (Mw) with a mean distance of approximately 13.8 km from the property.

Secondary effects of strong ground motion include tsunami, seiche, liquefaction, seismic settlement, earthquake triggered landslides, and flooding from dam failures. Tsunamis are impulsively generated water waves that can cause damage to shoreline areas. A seiche is an oscillation wave within an enclosed body of water. The site is not near the ocean or adjacent a body of water and, therefore, is not subject to tsunami and seiche hazards. Furthermore, the site is not prone to earthquake triggered landslides due to the relatively low relief in the area, nor is the site in the vicinity of a dam failure inundation zone. The site is not within a State designated seismic hazard zone for liquefaction potential (CGS, *Earthquake Zones of Required Investigation* website).

7. CONCLUSIONS AND RECOMMENDATIONS

7.1 GENERAL

The site was evaluated from a geotechnical site standpoint and is considered suitable for the proposed office building project as described herein at 29555 Canwood Street in Agoura Hills, California. The bedrock deposits underlying the site are suitable for support of the structure. However, remedial grading is proposed to prepare the site as discussed hater herein. Differential settlement should be negligible. The project may be developed as described earlier in this report provided recommendations presented herein are followed and incorporated into the project design and construction.

7.2 GEOTECHNICAL SEISMIC DESIGN

As previously discussed, active faults identified by the State are not onsite nor is the site within an Alquist-Priolo Earthquake Fault Zone. Nevertheless, the site is within a seismically active region prone to occasional damaging earthquakes.

Structures within the site may be designed using procedures for seismic design presented in ASCE/SEI 7-16. Mapped acceleration parameters are initially determined for sites having a shear wave velocity of 2,500 feet per second (Section C11.4.4). The S_s and S_1 values are adjusted to obtain the maximum considered earthquake (MCE) spectral acceleration values for the site based on its site class of C. The seismic design parameters for the site's coordinates (latitude 34.1479 N and longitude 118.7687 W) were obtained from the web based Seismic Design Maps: https://seismicmaps.org/. The parameters are presented on the following page.

The purpose of the building code earthquake provisions is primarily to safeguard against major structural failures and loss of life, not to limit damage nor maintain function. Therefore, values provided in the building code should be considered minimum design values and should be used with the understanding site acceleration could be higher than addressed by code-based parameters. Cracking of walls and possible structural damage should be anticipated in a significant seismic event.

SEISMIC PARAMETER	VALUE PER CBC
Short Period Mapped Acceleration (S_s)	1.455g
Long Period Mapped Acceleration (S_1)	0.514g
Site Class Definition	C
Site Coefficient (F_a)	1.2
Site Coefficient (F_v)	1.486
$S_{MS} = F_aS_s$	1.746g
$S_{M1} = F_vS_1$	0.764g
$S_{DS} = 2/3S_{MS}$	1.164g
$S_{D1} = 2/3S_{M1}$	0.509g
PGA_M	0.728g
Seismic Design Category	D

7.3 SITE PREPARATION AND GRADING

7.3.1 General

The building pads will be graded using a combination of cut and fill grading. Remedial grading will consist of the removal of the upper soils and undercutting the bedrock in transition areas from cut to fill. The recommendations herein are for the preparation of the site for the proposed construction. Grading including site preparation, excavation, and fill placement should be per the city of Agoura Hills Grading Ordinance.

7.3.2 Site Cleanup

Deleterious surface materials, including trash, debris, vegetation, rocks, and organic materials on-site should be removed from the areas of grading and construction should be removed prior to grading.

7.3.3 Soil and Bedrock Removals

Within areas of grading and construction and 5 feet beyond, soil and bedrock removals should extend to firm in-place bedrock. In some areas, this may be 2 to 3 feet below the soil and bedrock contact. However, soil removals should not extend below a 2(horizontal)1(vertical) line extending down from the property lines. The removal bottom should be observed by this office to evaluate if local areas exist where deeper removals are necessary.

Where soil removal may not be feasible such as along the property lines, it may be necessary to deepen the retaining wall footings or provide compaction of the bottom of the retaining wall footings. The need for deepened footings or in footing compaction should be determined based on observation of the exposed footing excavations by this firm.

Conventional grading equipment should be capable of performing the excavations necessary to achieve design grades. However, due to the presence of locally indurated volcanic intrusions it is possible that production of oversize rock will occur if large indurated rock bodies are encountered.

7.3.4 Building Area Undercuts

In addition to the removals indicated above, the building areas and within the building foundation influence zones, overexcavation should extend to a depth of at least 5 feet below the existing or proposed grade or 3 feet below foundations, whichever is the deeper overexcavation. The bottom of the removal should extend at least 5 foot outside the perimeter of the building or foundation, whichever is greater. The undercut area should be observed by this office prior to fill placement.

7.3.5 Preparation of Fill Areas
Areas to receive fill should be processed before placing fill. Processing should consist of surface scarification to a minimum depth of 8 inches, moisture conditioning to slightly over the optimum moisture content, and recompaction to a minimum of 90% relative compaction.

7.3.6 Relative Compaction
Relative compaction is the ratio of the in-place dry soil density to the maximum dry soil density determined in general accordance with ASTM test method D 1557.

7.3.7 Keying and Benching
Fills placed on slopes steeper than 5(horizontal):1(vertical) should be keyed and benched (horizontal benches) into firm competent in-place bedrock (after required removals are made). Keyways should be a minimum of 15 feet wide and cut a minimum depth of 2 feet at the toe into firm competent in-place bedrock. Keyways should be tilted into the slope and should be at least 3 feet deep at the heel (measured from below the slope toe elevation). A representative of this office should observe the keyways and benches prior to placing fill. Horizontal benches should be a minimum of 5 feet wide, i.e., a minimum 5 feet of competent material. The vertical portion of the bench in competent bedrock should not exceed 5 feet.

7.3.8 Fill Placement
On-site materials obtained from excavations may be used as fill soils. Where possible, the higher expansive soils encountered should be exported from the site or placed outside the building area. Fill soils should be free of deleterious materials including trash, debris, and organic matter.

Fill containing excavated rock up to 8-inch size may be used for engineered compacted fill, however, rock within three feet of the footings should be maintained at less than 6 inches. It may be desirable to keep rock larger than 3 inches outside of the building area. Rock should not be permitted to nest with unfilled voids. The fill should contain less than 30% of material from 6 to 8 inch maximum diameters. The fills should be placed in thin lifts, at slightly over optimum moisture content, and compacted to 90 percent relative compaction.

7.3.9 Temporary Excavations
During construction, excavation and maintenance of safe and stable slope angles are the responsibility of the contractor, who should consider the subsurface conditions and the method of operation. All subsurface construction should conform to the requirements of OSHA. Surcharge loads should be setback from the top of temporary excavations a minimum horizontal distance equal to the depth of the cut or 10 feet, whichever is more. All excavated backfill should be properly placed and compacted.

7.3.10 Utility Trenches
Backfill of utility trenches within building, parking, and drive areas should be compacted to a minimum of 90% relative compaction.

7.3.11 Shrinkage/Bulking
Shrinkage or bulking is the volume loss or gain respectively of soils excavated and recompacted. Shrinkage of the upper 5 feet of soil and bedrock from cut to fill is estimated to be approximately 5 to 10 percent; i.e., 1 cubic yard of cut will yield approximately 0.9 to 0.95 cubic yards of engineered compacted fill. Bulking is the volume expansion of the earth materials from cut to fill. The amount of volume change will depend on the material in situ density, the final compacted density achieved, etc. For excavations below 5 feet, the bedrock is expected to bulk 5 to 10 percent, i.e., 1 cubic yard of cut will yield 1.05 to 1.10 cubic yards of engineered compacted fill. In addition to the shrinkage/bulking values, subsidence or a loss of 0.1 to 0.2 feet should be considered for stripping of vegetation and densification of the surface soils.

Shrinkage / bulking values presented are based on an assumption that fills will be compacted to an average of 93% of the maximum dry soil density. The actual in-place compacted density can vary with the type of soil compacted, the compacting effort applied to the soil, and the in situ moisture content. These values are provided for gross estimating purposes only. If quantities are critical, it is recommended that test strips be performed and monitored at the site using the actual grading equipment to be utilized for the grading operations.

7.4 SLOPE CONSTRUCTION

7.4.1 General

Manufactured fill and cut slopes may be constructed at maximum gradient of 2(horizontal):1(vertical). At this time cut slopes are not planned and the cut at the northern edge of the development will be supported by a retaining wall possibly a soil nail wall.

7.4.2 Fill Slopes

Fill slopes should be keyed and benched into competent bedrock materials, as previously recommended. Select grading will be required when placing fill materials within 20 feet of permanent slope faces. Fill soils near slope faces should average at least 250 psf cohesive shear strength and 25 friction.

Where possible, the outer slope faces should be overfilled and trimmed back to provide for firm, well-compacted surfaces. The slope faces should be sheep footed and/or grid rolled if the slopes are not trimmed back. The slope faces should be tested and reworked as necessary to achieve the required compaction.

7.4.3 Cut (Retaining Wall) Slopes

Though cut slopes are not anticipated as this time, bedding within the site is inclined into the retaining wall excavation and will be grossly stable. Cuts should be evaluated by an engineering geologist from our office.

Depending on the time of year and precipitation, seepage could be encountered at the toe of a cut slope or retaining wall. At these locations, a toe of cut subdrain should be installed to remove subsurface water migrating towards the toe. This toe of slope drain may be omitted where a retaining wall with proper back drainage is constructed at the toe of slope.

The drain should be a minimum of 2 to 3 feet below the toe of slope and should consist of a 4 inch diameter perforated Schedule 40 PVC or equivalent. The pipe should be placed with perforations down approximately 3 to 6 inches from the bottom of the excavation. The pipe should be contained in a minimum 2 cubic feet of ¾ inch crushed rock. The rock should be wrapped in filter fabric with joints overlapped 12 inch minimum. The rock should be covered by 1 foot of compacted soil backfill.

The outlet pipe should be non-perforated 4 inch diameter PVC. A concrete cutoff wall should be installed at the transition from perforated to non-perforated pipe. The subdrain excavation should be observed this office prior to backfilling.

7.4.4 Slope Maintenance

Slopes within the site will require maintenance or protection to reduce the risk of erosion and degradation with time due to natural or other conditions. Slope (requiring planting) planting should consist of dense, deep rooting, drought resistant groundcover with shrubs and trees. A reliable irrigation system should be installed, adjusted so that over watering does not occur, and periodically checked for leakage. Over watering of slopes should be avoided because it can cause expansion, erosion, and surficial failures. A uniform, near optimum moisture content should be maintained below the slope surface. Slopes should not be over watered and should not be watered before forecasted rain. Drainage structures should be

kept in good condition and clean. Burrowing animals (e.g., ground squirrels) can destroy slopes; therefore, where present, immediate measures should be taken to eliminate them.

7.4.5 Slope Stability

Slope stability was analyzed for the cross section in Plate 2 to demonstrate the stability of the slope and soil nail retaining wall. Our analyses considered non-circular type and circular failures with the use of the computer program Slide2D by Rocscience. Static and pseudo-static analyses were performed using the Spencer Method. Pseudo-static analyses were completed using a horizontal acceleration coefficient of 0.15g. The stability of slopes is commonly stated in terms of the slope's calculated factor of safety. The generally accepted lower limit for factor of safety is 1.5 and 1.1 for static and pseudo-static conditions, respectively. Acceptable factors of safety were obtained; the results are presented in Appendix C. The material strengths used in the analysis for the bedrock are a Ø of 28 degrees and a cohesion of 410 pounds per square foot. The analyses were performed to demonstrate the suitability of using soil nails to support the proposed cut along the northern edge of the development. The wall design should be by an engineer specializing in soil nail wall design.

7.5 SOIL EXPANSIVENESS

A soil expansion test was performed on a representative soil sample obtained from the site. Test results indicate the underlying materials have a high expansion potential, in the 91-130 Expansion Index range. Additional expansion tests should be performed at the conclusion of the recommended remedial grading.

Expansive soils contain clay particles that change in volume (shrink or swell) due to a change in the soil moisture content. The amount of volume change depends upon the soil swell potential (amount of expansive clay in the soil), availability of water to the soil, and the soil confining pressure. Swelling occurs when soils containing clay become wet due to excessive water from poor surface drainage, over-irrigation of lawns and planters, and sprinkler or plumbing leaks. Swelling clay soils can cause distress to structures, walks, drains, and patio slabs.

Swelling clay soils can cause distress to construction (generally as uplift). Construction on expansive soil has an inherent risk that should be acknowledged and understood by the developer/property owner. The geotechnical recommendations presented herein are intended to reduce the potential for expansive soil action. However, these recommendations are not intended, nor designed to provide complete and full mitigation of expansive soil conditions.

7.6 FOUNDATION RECOMMENDATIONS

7.6.1 Conventional Footings

The proposed structures will be supported on continuous or isolated footings underlain by engineered compacted soil as addressed above and may be designed for an allowable bearing pressure of 2,500 pounds per square foot (psf). The allowable net bearing pressure may be increased by one-third when considering wind or seismic loads. The weight of concrete below grade may be excluded from the footing load.

Footings should be embedded a minimum of 24 inches below the interior pad grade (not top of slab) or 36 inches below the exterior grade, whichever provides the deeper embedment. The exterior grade should be the lowest adjacent rough grade or permanent lowest grade, whichever is deeper.

The footing width should be a minimum of eighteen inches for continuous footings and twenty-four inches for isolated footings. Footing reinforcement should be per the structural engineer's recommendations. However, minimum continuous footing reinforcement should consist of two number five bars in the top and bottom (total of 4 bars). Perimeter isolated footings should be tied together with a grade beam extending 36 inches deep below the lowest adjacent grade.

Shallow footings adjacent retaining walls, should be included in the design of the wall or stepped down below a 2(horizonal):1(vertical) plane projecting upward from the bottom of wall footings.

7.6.2 Lateral Resistance

Lateral forces on foundations may be resisted by lateral passive earth pressure and base friction. Passive earth pressure may be assumed equal to an equivalent fluid pressure of 300 pounds per cubic foot for level ground, however should not exceed 2,000 pounds per square foot. This allowable passive pressure may be used adjacent a descending slope provided the footing has the appropriate setback to slope face. A coefficient of friction of 0.30 may be assumed along the base of concrete elements cast directly against the subgrade. Passive earth pressure and friction may be combined with no reductions.

7.6.3 Mat Slab Design Data

Mat slabs may be designed using an allowable soil bearing pressure of 1,500 pounds per square foot or a modulus of subgrade reaction "K" of 125 pounds per cubic inch (pci) at the surface of a properly prepared building pad. The project structural engineer should determine the steel reinforcement and concrete compressive strength. The slabs supporting interior steel stud walls should be a minimum of 8 inches thick.

7.6.4 Estimated Foundation Settlements

Static settlement of footings should be evaluated once building footing locations and structural loads are known. However, footing settlement for static loading is anticipated on the order of 1 inch or less, with a maximum differential settlement of 1± inch over a span of approximately 30 feet or between adjacent individual footings. This is provided building construction is started directly after footing excavation, footings are cast soon after the footing excavation, and construction is completed in a timely manner. Settlements due to static loading are expected to occur rapidly as the loads are applied.

All structures settle during construction and some minor settlement of structures can occur after construction during the life of the project. Minor wall cracking could occur within the structure associated with expansion and contraction of the structural members. In addition, wall or slab cracking may be associated with settlement or expansive soil movement. Additional settlement/soil movement could occur if the soils dry or become saturated due to excessive water infiltration generally caused by excessive irrigation, poor drainage, etc.

7.6.5 Footing and Beam Excavations

Footing and grade beam excavation should be cut square and level; and cleaned of slough and soils silted into the excavations during the premoistening operations. Soil excavated from the footing trenches should not be spread over areas of construction unless properly compacted. A representative of this office should observe the footing excavations prior to placing reinforcing steel. The footings should be cast as soon as possible to avoid deep desiccation of the footing subsoils.

7.6.6 Premoistening

Footing subsoils should be premoistened to 3% over the optimum moisture content for a depth of 18 inches. Saturated soils or soils silted into the footing excavations should be removed prior to concrete placement.

7.7 SLABS-ON-GRADE

7.7.1 Site Preparation

Concrete slabs on-grade not used for structural support may be supported on compacted engineered fill soils. Slab subgrade soils should be recompacted prior to placing the aggregate subbase, if the soils were disturbed during footing or utility construction.

7.8 Design Data
Interior concrete slabs on-grade not used for structural support should be 5 inches thick and underlain by 6-inch-thick layer of ½ inch or larger clean aggregate or per applicable building codes, whichever is the more restrictive. The slab should be reinforced with a minimum of number 4 bars at 18-inch centers in each direction. The reinforcement should be placed and kept at slab mid-depth.

7.9 Premoistening
Soils under lightly loaded slabs on-grade should be premoistened to 3% over the optimum moisture content for a depth of 18 inches.

7.9.1 Moisture Vapor Retarder
A moisture vapor retarder layer should be incorporated into the slab on-grade design within the building interior. The water vapor retarder should be one that is specifically designed as a vapor retarder and consist of a minimum 15 mil extruded polyolefin plastic and comply with Class A requirements under ASTM E1745 (*Standard Specification for Plastic Water Vapor Retarders Used in Contact with Soil or Granular Fill under Concrete Slabs*). The vapor retarder should be installed in accordance with ASTM E1643. The water vapor retarder should be installed in direct contact with the concrete slab along with a concrete mix design to control bleeding, shrinkage, and curling (ACI 302.2R). The vapor retarder shall be installed over a minimum 6-inch-thick layer of ½ inch or larger clean aggregate or per applicable building codes, whichever is the more restrictive. The vapor retarder should be placed per ASTM E1643-98(2005) *Standard Practice for Installation of Water Vapor Retarders Used in Contact with Earth or Granular Fill Under Concrete Slabs*. All joints should be lapped and sealed along with proper sealing of perforations such as for plumbing. In addition, various trades and the concrete contractor should be required to protect the moisture retarder during construction.

Perforations through the moisture vapor retarder such as at pipes, conduits, columns, grade beams, and wall footing penetrations should be sealed per the manufacture's specifications or ASTM E1643. Proper construction practices should be followed during construction of slabs on-grade. Repair and seal tears or punctures in the moisture barrier that may result from the construction process prior to concrete placement.

Minimizing shrinkage cracks in the slab on-grade can further minimize moisture vapor emissions. A properly cured slab utilizing low-slump concrete will reduce the risk of shrinkage cracks in the slab as described herein.

The concrete contractor should make the necessary changes in the concrete placement and curing for concrete placed directly over the retarder. Placing the concrete directly on top of the moisture vapor retarder layer allows the layer to be observed for damage directly prior to concrete placement.

The slabs should be tested for moisture content prior to the selection of the flooring and adhesives. Moisture in the slabs should not exceed the flooring manufacture's specifications. The concrete surface should be sealed per the manufacture's specifications if the moisture readings are excessive. It may be necessary to select floor coverings that are applicable to high moisture conditions.

7.9.2 Concrete Placement and Cracking
Minor cracking of concrete slabs is common and generally the result of concrete shrinkage continuing after construction. Concrete shrinks as it cures resulting in shrinkage tension within the concrete mass. Since concrete is weak in tension, development of tension results in cracks within the concrete. Concrete should be placed using procedures to minimize the cracking within the slab. Shrinkage cracks can become excessive if water is added to the concrete above the allowable limit and proper finishing and curing practices are not followed. Concrete mixing, placement, finishing, and curing should be performed per the American Concrete Institute Guide for Concrete Floor and Slab Construction (ACI 302.1). Con-

crete slump during concrete placement should not exceed the design slump specified by the structural engineer. Concrete slabs on grade should be provided with tooled or saw cut (saw cuts should be made the same day a maximum within few hours of the pour or per the structural engineer's recommendations) crack control joints at 10-15 foot centers or as specified by the structural engineer.

7.10 EXTERIOR SLABS AND WALKWAYS (Hardscape)

Lightly loaded exterior concrete hardscape (non-auto traffic) and walkways should be a minimum of 4 inches thick and underlain by a minimum of 4 inches of sand. Slabs should be reinforced with a minimum of #3 bars on 24-inch centers in each direction placed at mid-height in the slab. Slabs should have crack control joints at intervals of 10 to 15 feet or per the structural engineer's recommendation. Sidewalks may be constructed of non-reinforced concrete provided they are cut into square panels (i.e., 4-foot-wide walks should be cut into 4 foot by 4-foot squares).

Concrete slab subgrade soils should be properly placed and compacted for support of concrete flatwork. Prior to placing concrete, subgrade soils should be premoistened to a minimum of 3% over the optimum moisture content for a minimum depth of 18 inches. Proper premoistening can reduce the risk of slab subgrade expansion, if used in addition to other preventive measures.

7.11 TOP OF SLOPE DEEPENED EDGE

Exterior slabs at or near the top of slope should have a reinforced 12 inch wide deepened edge extending a minimum of 24 inches below the slab. The edge should be reinforced with a minimum of 2 number 4 bars in the top and bottom.

Where a driveway will be at the top of a slope it should be constructed with a deepened edge. The bottom of the edge should have sufficient depth to provide a bottom of edge to slope setback of at least 10 feet (discounting the outer 2 feet of the slope). The edge should be constructed with two number five bars in the top and bottom. Vertical reinforcement of #4 bars should be installed on 24 inch centers. The vertical steel should extend to the bottom edge reinforcement and extended a minimum of 36 inches into the slab.

7.12 CORROSION AND CHEMICAL TESTING

The results are presented herein of analytical laboratory testing to evaluate the potential for corrosion of materials in contact with the onsite soils. Testing was performed by Project X Corrosion Engineering on a soil sample considered to represent the onsite soils (the test results are attached hereto in Appendix B). From ACI Table 19.3.1.1, the evaluated soil is categorized as Class S0. The required concrete design requirements for this exposure class can be obtained from ACI Table 19.3.2.1. The potential for corrosion of metals in contact with the onsite soils is very severely corrosive as determined from Table 1. (The tables are presented in Appendix B) For specific recommendations, a corrosion engineer should be consulted.

7.13 RETAINING WALL DESIGN

7.13.1 Foundations

Retaining wall footings should be design in accordance with foundation design recommendations previously provided herein for bearing capacity, lateral resistance, embedment, etc.

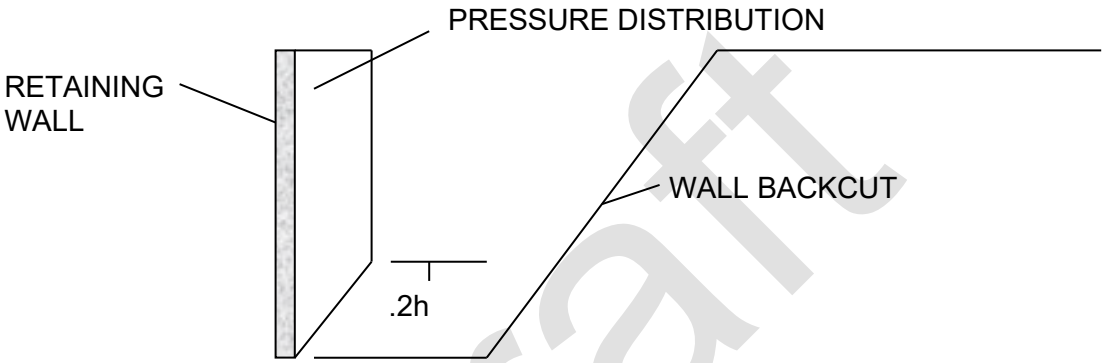
7.13.2 Active Pressures

Retaining walls should be designed to resist an active pressure exerted by compacted backfill or retained soil/bedrock. Retaining walls that may yield at the top may be designed for an equivalent fluid pressure equal to 45 and 65 psf for a level or 2(horizontal):1(vertical) sloped backfill, respectively. The pressures may be used for walls supporting either cut or certified compacted fill consisting of on-site soils. To

prevent saturation of backfill and to reduce problems with expansive soil pressures against the back of the retaining wall, the walls should be equipped with a drainage system as described below.

Permanent braced retaining walls should be designed for a pressure of 40H (psf) where H is the height of the retained soil. The pressure distribution should be over the area shown below. A surface surcharge of 300 pounds per square foot (psf) should be included in the design where the shoring is near traffic zones. Surcharge on the wall from loads directly adjacent the wall can be evaluated by this office on an individual basis. The backdrain should be designed as described below.

A representative of this office should observe retaining wall backcuts in bedrock for adverse geologic conditions.



NTS

7.13.3 Seismic Pressure

Lateral seismic soil pressure is not required for retaining walls under 6 feet high. Walls over 6 feet high should be designed for a total seismic load of the static and dynamic load increments:

$$P_{ae} = P_{static} + \Delta P_{ae} = F_1 + F_2$$

P_{static} is determined based on active or at-rest conditions. The dynamic load increment, ΔP_{ae} (F2), shall be determined using the following equations for different wall type and backfill conditions (after Agusti and Sitar, 2013):

Basement (restrained) walls with level backfill: ΔPae = 40 pcf

Cantilever (unrestrained) wall with level backfill: ΔPae = 25 pcf

Cantilever (unrestrained) wall with sloping backfill*: ΔPae = 42 pcf

*Applicable for sloping backfill that is no steeper than 2:1 (horizontal:vertical).

7.13.4 Soil Nail Retaining Walls

Soil nail walls consist of steel bar inserted and grouted in to holes drilled at an approximate angle shown in the detail be low to provide a reinforced soil mass to support the ground behind the wall. Normally, soil nail walls are constructed in vertical segments with each segment being 5 to 6 foot high. The nails are installed after which the backcut face is covered with shotcrete. Therefore, backfill is not necessary for a soil nail wall. See the typical section on the following page excerpted from the Federal Highway Administration *Soil Nail Walls Reference Manual* in which can be found design procedures. The walls may be designed using the soil parameters used in the slope stability analyses presented in this report. The soil nail wall should be designed by an engineer specializing in soil nail wall design and construction.

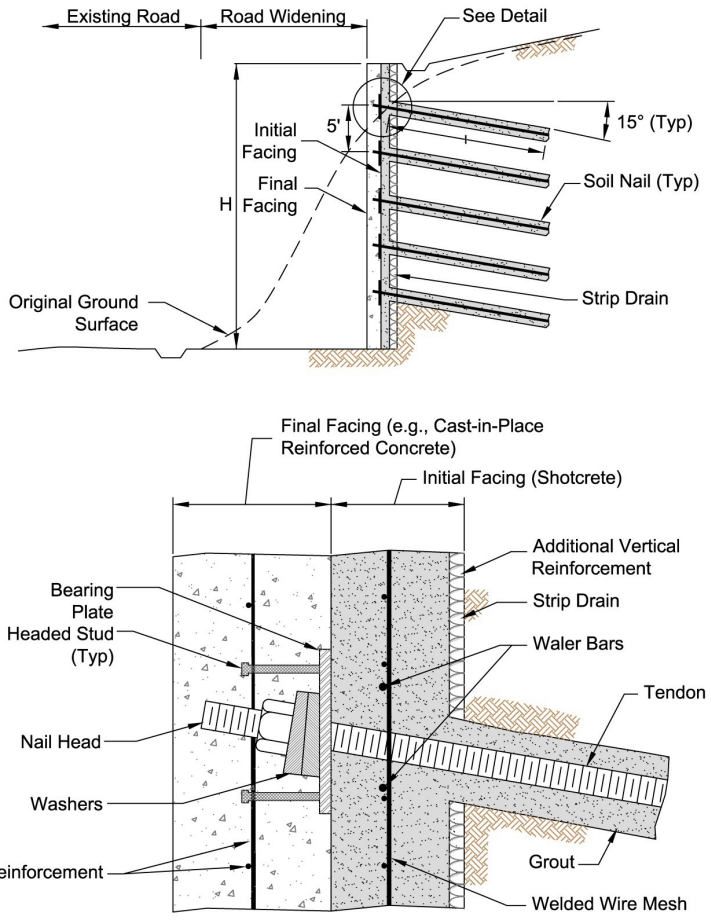


Figure 2.1: Typical cross-section of a soil nail wall. Modified after Porterfield et al. (1994).

7.13.5 Retaining Wall Drainage and Backfill

A drainage system should be constructed behind the retaining walls to relieve buildup of hydrostatic pressures. In addition, the back of the walls should be waterproofed. The drainage system may consist of either a drainage composite or granular drain consisting of a minimum 12 inch wide zone of clean sand and #4 rock at a 1:1 ratio. The drainage system should extend to within 2 feet of finish grade with the upper 2 feet backfilled with native material. A layer of filter cloth should be placed to separate the granular drainage material from the native backfill. The drainage system should be hydraulically connected to a perimeter pipe drain consisting of a minimum 4 inch diameter perforated PVC (Schedule 40) pipe or equivalent. Drainpipe may be laid horizontally on the footing however, the pipe invert should be at least 6 inches below the top of slab-on-grade. The outlet pipe from the perimeter drain should be a non-perforated 4 inch diameter PVC (Schedule 40) pipe that is sloped to and connected to a storm drain system or sump. An as-built plan should be prepared detailing the location of the wall drainage system.

Wall backfill should be compacted to a minimum of 90% of the maximum soil density using light equipment. Walls at the toe of slopes should have a concrete drainage swale placed behind the wall at the toe of slope to collect surface run off from the slope face.

7.14 PRELIMINARY PAVEMENT DESIGN

For preliminary planning based on an estimated "R" Value of 5 and a Traffic Index of 5, assume 3 inches of A/C over 10 inches of aggregate base for drive areas and 3 inches of A/C over 7 inches of aggregate base for parking stalls. The structural sections should be confirmed after conclusion of grading. The upper 6 inches of subgrade, and the base material, should be compacted to at least 90 and 95 percent of the maximum dry density, respectively, just prior to placing the asphalt.

A preliminary structural section for the widening of Canwood Street may consist of 4 inches of asphalt concrete on 17 inches of aggregate base. This preliminary section is based on a design traffic index of 7 and an assumed R-value of less than 10.

Concrete pavement should be considered in driveways that will receive high abrasion loads, and in areas subject to repeated heavy truck loads, such as trash pickup areas. The concrete pavement in these areas should be a minimum 7-inch thick with No. 3 bars at 18 inches on centers in both directions or per the structural engineer's design. The slab should be underlain by 4 inches of Class 2 aggregate base compacted to a minimum 95% relative compaction. Concrete should have a minimum 28 day compressive strength of 3500 psi. Concrete pavement subgrade soils should be premoistened to a minimum of 3% above the optimum moisture content for a minimum depth of 18 inches.

Planter areas should be graded and constructed so that excess water collected by an area drain system or drained onto and not beneath the adjacent AC pavement. Consideration should be given to deepening the curbs adjacent to planters so that water is prevented from entering the pavement base and saturating the pavement subgrade. Concrete curbs near the top of descending slopes should be embedded so the bottom of the curb has a setback of at least 5 feet to the slope face.

SITE DRAINAGE

Positive drainage should be provided away from structures during and after construction per the grading plan or applicable building codes. Water should not be allowed to gather or pond against foundations. In addition, planters near a structure should be constructed so that irrigation water will not saturate footing and slab subgrade soils.

PLAN REVIEW

This office should review the grading, building, and foundation plans prior to starting site grading.

CLOSURE

This report was prepared under the direction of a registered geotechnical engineer. No warranty, express or implied, is made as to conclusions and professional advice included in this report. Gorian and Associates, Inc. disclaim responsibility and liability for problems that may occur if the recommendations presented in this report are not followed.

This report was prepared for Martin Teitelbaum Construction, Inc. and design consultants solely for design and construction of the development described herein. This report may not contain sufficient information for other uses or the purposes of other parties. These recommendations should not be extrapolated to areas not covered by this report or used for other development without consulting Gorian and Associates, Inc.

The recommendations are based on interpretations of the subsurface conditions concluded from information gained from previous grading observations and a surficial site reconnaissance. The interpretations may differ from actual subsurface conditions, which can vary horizontally and vertically across the site. Persons using this report for bidding or construction purposes should perform such independent investigations as they deem necessary. This office should observe all aspects of field construction addressed in this report.

Services of Gorian and Associates, Inc. or this report should not be construed to relieve the owner or any construction contractor from their responsibility or liabilities, or for maintaining a safe jobsite. Neither the professional activities of Gorian and Associates, Inc. nor the presence of our employees shall be construed to imply Gorian and Associates, Inc. has responsibility for methods of work performance, superintendence, sequencing of construction, or safety in, on, or about the jobsite.

oOo

Please contact our office if you have questions regarding the information or recommendations contained in this report, or require additional consultation.

Respectfully,

Gorian and Associates, Inc.

By: Jerome J. Blunck, GE 151
Principal Geotechnical Engineer

William F. Cavan, CEG 1161
Principal Engineering Geologist

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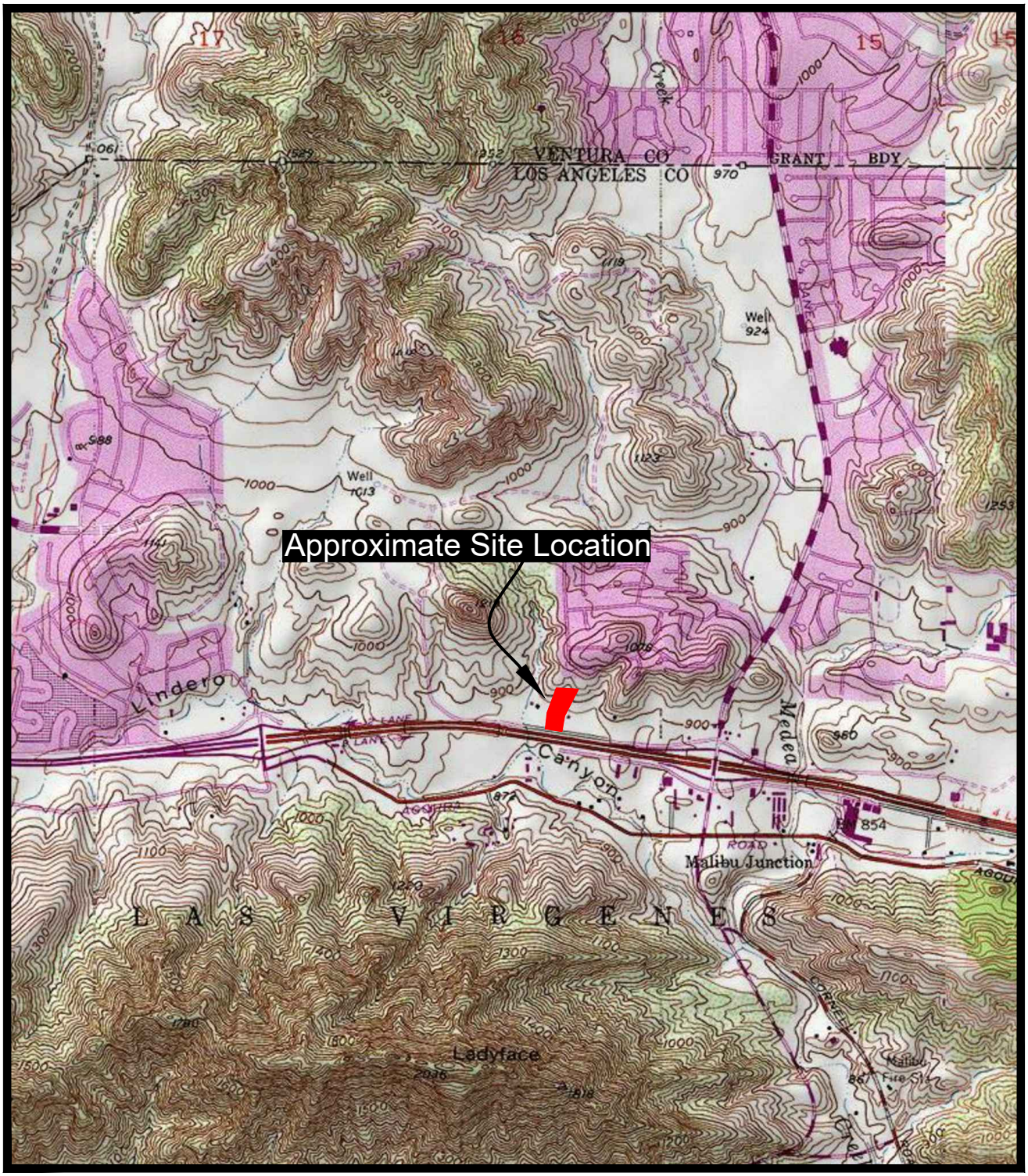
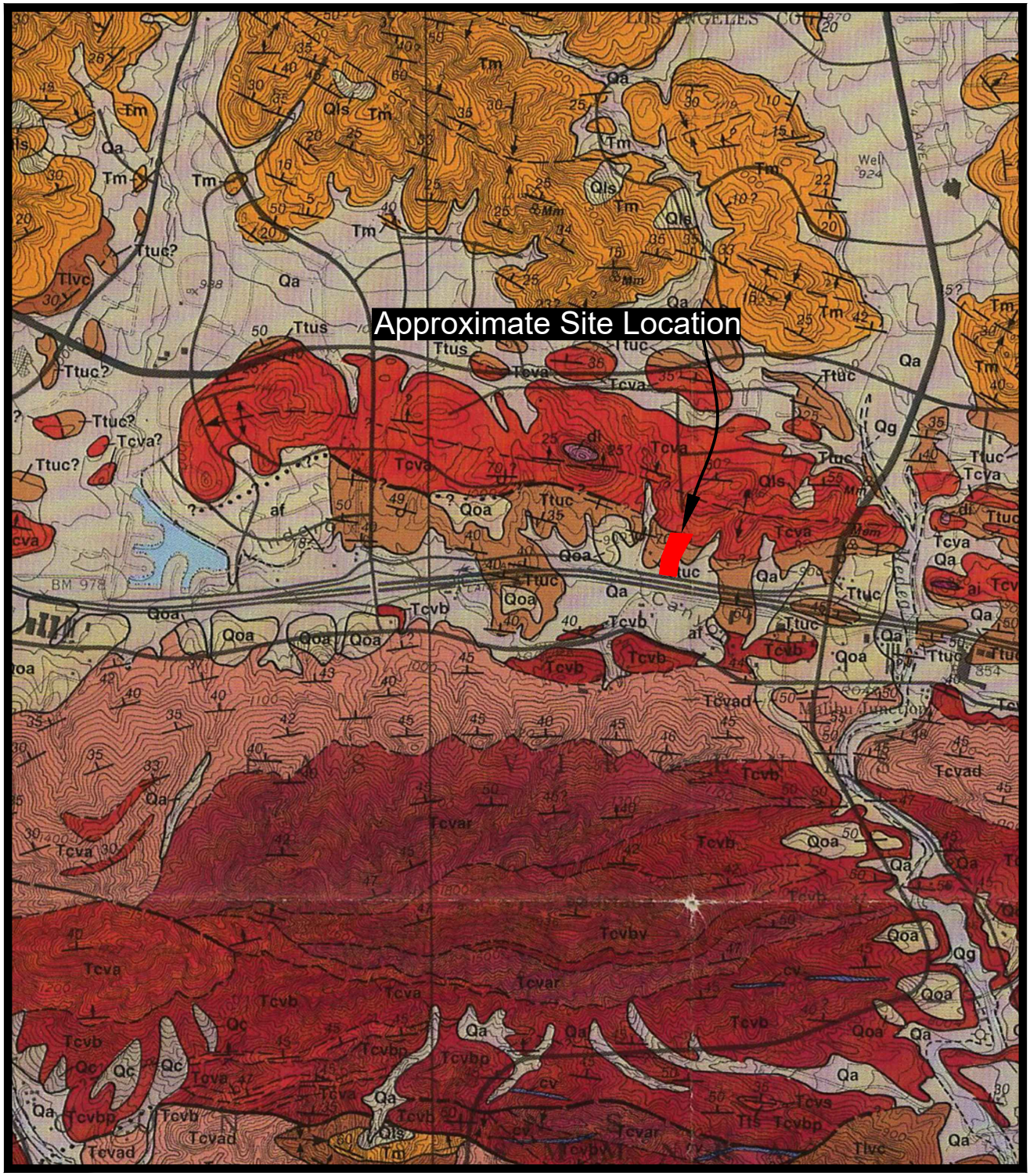


Source
United States Geological Survey, Thousand Oaks Quadrangle, California-Ventura County and Los Angeles County. 7.5 Minute Series (Topographic)

SITE VICINITY MAP

29555 Canwood Street,
Unit F Agoura Hills, California 91301

Gorian & Associates, Inc. *Applied Earth Sciences*		
Job No: 3187-0-0-100		Date: February 2021
Scale: NTS	Drawn by:	Figure 1
	Approved by:	



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EXPLANTATION

Qa - Surficial Sediments. Alluvial gravel, sand and clay of valley areas. (Holocene)
Qoa - Older Surficial Sediments. Unconsolidated to weakly
Ttuc - Upper Topanga Formation. Locally contains calcareous concretions or lenses includes few thin sandstone strata
Tcva - Conejo Volcanics. Andesitic flows and breccias

REGIONAL GEOLOGIC MAP

29555 Canwood Street,
Unit F Agoura Hills, California 91301

Gorian & Associates, Inc. *Applied Earth Sciences*		
Job No: 3187-0-0-100		Date: February 2021
Scale: NTS	Drawn by:	Figure 2
	Approved by:	

APPENDIX A

LOGS OF SUBSURFACE DATA

Project: MTC, 29555 Canwood Street, Agoura Hills

SUBSURFACE LOG

Work Order: 3187-0-0-100

Excavation Number: B-1

Page Number: 1

Date(s) Excavated 2/3/21	Logged By CHD	Excavation Location See Geotechnical Map	Approximate Surface Elevation 903½'±
Excavation Dimension 24" Dia.	Equipment Contractor Tri-Valley Drilling	Equipment Type Rig #7	Hammer Data SEE NOTE*

Elevation / Depth (ft.)	Bulk Sample Type	Blow Counts	Moisture Content (% dry weight)	Dry Density (pcf)	USCS	Soil / Lithology	Description	Remarks
0					CL		TOPSOIL: Brown silty CLAY, trace sand (moist, stiff). Some shale fragments.	
		5	20.5	104			At 2'; becoming very stiff to hard. Expansive.	
900								
							TOPANGA FORMATION: Yellowish brown clayey SILTSTONE (damp). Interbedded with yellowish brown silty fine-grained SANDSTONE, from 5' to 7'. Weathered.	
5		8	--	--				
		5	30.6	93			At 7'; becoming interbedded with olive gray silty Claystone. Some iron oxide staining. (Moist).	ATTITUDE ON BEDDING @ 7½'; N10°E/86°N
895								
10		6	32.0	91			At 10'; becoming interbedded with gray clayey Siltstone and yellowish brown Claystone.	@ 10'; N60°E/43°NW
890								
								@ 14'; E-W/53°NW
15		6	21.8	101				
							Dark gray clayey SILTSTONE (damp). Locally interbedded with Claystone and light gray silty fine-grained Sandstone.	@ 17'; N70°W/62°NE
885								
20		15	18.3	110			At 20'; 1" thick gray silty fine-grained Sandstone interbed.	
							At 22'; 2" thick gray silty fine-grained Sandstone interbed.	@ 22'; N65°W/63°NE
880								
25		11	16.7	115			At 25'; 2" thick gray silty fine-grained Sandstone interbed.	@ 25'; N65°W/55°NE
875								
30		21	17.6	112			At 30'; 1" thick gray silty fine-grained Sandstone interbed.	@ 30'; N70°W/50°NE
870							At 33'; 1" thick gray silty fine-grained Sandstone interbed.	@ 33'; N65°W/60°NE
35		24	17.1	111				
865								

GORIAN & ASSOCIATES, INC.

Project: MTC, 29555 Canwood Street, Agoura Hills

Work Order: 3187-0-0-100

SUBSURFACE LOG

Excavation Number: B-1

Elevation / Depth (ft.)	Bulk	Sample Type	Blow Counts	Moisture Content (% dry weight)	Dry Density (pcf)	USCS	Soil / Lithology	Description	Remarks
40		■	21	16.0	110				
								Total Depth 41' No Caving Observed No Groundwater Encountered	
860									
								Downhole logged to 37'	
45									
								Backfilled with cuttings and tamped.	
855									
								*NOTE: KELLY WEIGHTS 0-26' 3390# 26'-52' 2280#	
50									
850									
55									
845									
60									
840									
65									
835									
70									
830									
75									
825									
80									

GORIAN & ASSOCIATES, INC.

Project: MTC, 29555 Canwood Street, Agoura Hills

SUBSURFACE LOG

Work Order: 3187-0-0-100

Excavation Number: B-2

Page Number: 1

Date(s) Excavated 2/3/21	Logged By CHD	Excavation Location See Geotechnical Map	Approximate Surface Elevation 887'±
Excavation Dimension 24" Dia.	Equipment Contractor Tri-Valley Drilling	Equipment Type Rig #7	Hammer Data SEE NOTE*

Elevation / Depth (ft.)	Bulk Sample Type	Blow Counts	Moisture Content (% dry weight)	Dry Density (pcf)	USCS	Soil / Lithology	Description	Remarks
0					CL		TOPSOIL: Brown silty CLAY, trace sand (moist, stiff to very stiff). Some shale fragments. Expansive.	
885		1	27.4	93				
							TOPANGA FORMATION: Yellowish brown SILTSTONE (damp), interbedded with clayey SILTSTONE. Weathered. (Damp). Fractured. Manganese and iron oxide staining At 4'; thin Claystone interbed.	ATTITUDE ON BEDDING @ 4'; N80°E/42°NW
5		5	21.3	100				
880		7	25.2	95			At 7½'; becoming interbedded with olive brown to light gray Siltstone and clayey Siltstone.	
10		9	16.6	104			At 10'; locally interbedded with very dark gray clayey Siltstone (moist).	
875							At 12'; thin lamination.	@ 12'; N65°W/55°NE
15		8/6"	15.8	93.8			Below 15'; indurated yellowish brown limy Siltstone (damp).	
870							At 17'; crowd used. Slow drilling.	
20							Total Depth 19½' (Practical Refusal) No Caving Observed No Groundwater Encountered	
865							Downhole logged to 16'	
							Backfilled with cuttings and tamped.	
25							*NOTE: KELLY WEIGHTS 0-26' 3390# 26'-52' 2280#	
860								
30								
855								
35								
850								

GORIAN & ASSOCIATES, INC.

Project: MTC, 29555 Canwood Street, Agoura Hills

Work Order: 3187-0-0-100

SUBSURFACE LOG

Excavation Number: B-3

Page Number: 1

Date(s) Excavated 2/3/21	Logged By CHD	Excavation Location See Geotechnical Map	Approximate Surface Elevation 871'±
Excavation Dimension 24" Dia.	Equipment Contractor Tri-Valley Drilling	Equipment Type Rig #7	Hammer Data SEE NOTE*

Elevation / Depth (ft.)	Bulk	Sample Type	Blow Counts	Moisture Content (% dry weight)	Dry Density (pcf)	USCS	Soil / Lithology	Description	Remarks
0 / 870						CL		ARTIFICIAL FILL: Brown silty CLAY mottled with dark brown silty CLAY (wet, stiff).	
						CL		TOPSOIL: Brown silty CLAY (moist, stiff to very stiff).	
			1	22.2	101				
5 / 865			3	25.4	98			TOPANGA FORMATION: Yellowish brown clayey SILTSTONE interbedded with yellowish silty fine-grained SANDSTONE (locally). (Moist). Weathered. Fractured. At 5'; becoming interbedded with brown to gray Claystone.	
			3	28.9	93				ATTITUDE ON BEDDING @ 7'; E-W/40°N
10 / 860			3	26.4	97			Gray to dark gray clayey SILTSTONE to CLAYSTONE (moist). Locally light yellowish brown silty fine-grained Sandstone interbeds and limy Siltstone.	@10'; N80°W/48°NE
									@ 13'; N75°W/37°NE
15 / 855			9	21.7	108				@ 15'; N70°W/45°NE
20 / 850			10	21.0	108			Total Depth 21' No Caving Observed No Groundwater Encountered Downhole logged to 17' Backfilled with cuttings and tamped. *NOTE: KELLY WEIGHTS 0-26' 3390# 26'-52' 2280#	
25 / 845									
30 / 840									
35 / 835									

APPENDIX B

LABORATORY TESTING

General
Laboratory test results on selected relatively undisturbed and bulk samples are presented below. Tests were performed to evaluate the physical and engineering properties of the encountered earth materials, including in-situ moisture content and dry density, optimum moisture-maximum dry density relationships, expansion potential, and shear strength parameters. In addition, a near surface sample of the onsite soils was tested for corrosion potential by an independent laboratory.

Field Density and Moisture Tests
In situ dry density and moisture content were determined from the relatively undisturbed drive samples obtained during exploratory operations. The test results and a detailed description of the soils encountered are shown on the attached Logs of Subsurface Data, Appendix A.

Maximum Density-Optimum Moisture
Maximum density/optimum moisture tests (compaction characteristics) were performed on two selected bulk samples of the encountered materials. The tests were performed in general accordance with ASTM D 1557 test method. The results are as follows:

Sample	Visual Soil Classification	Maximum Dry Density (pcf)	Optimum Moisture Content (%)
B-1 @ 0-1''	Brown silty CLAY, trace sand	107.2	19.2
B-2 @ 4'	Yellowish brown Siltstone	98.5	21.2

Soil Expansion Test
Two representative samples of the encountered earth materials were tested for expansiveness using the Expansion Index Test method (ASTM D4829). The results are as follows:

Sample	Visual Soil Classification	Expansion Index	Expansion Range
B-1 @ 0-1'	Brown silty CLAY, trace sand	126	91 - 130
B-2 @ 4'	Yellowish brown Siltstone	67	51 - 90

Direct Shear Test
Strain controlled direct shear testing was performed on two undisturbed drive samples and one remolded sample. The sample sets were saturated prior to shearing under axial loads ranging from 920 to 3,680 psf. The shear strength results are presented as graphic summaries. Also, attached are the shear tests performed for Gorian, 2007.

Soil Corrosivity
The results of the analytical laboratory testing to evaluate the potential for soil corrosion are presented in this Appendix. The testing was performed on a soil sample considered to represent the onsite soils. From ACI Table 19.3.1.1 the evaluated soil is categorized as Class S0. The required concrete design requirements for this exposure class can be obtained from ACI Table 19.3.2.1. The site soils are

considered very severely corrosive to metals as determined from Table 1. For specific recommendations a corrosion engineer should be consulted.

ACI Table 19.3.1.1 – Exposure Categories and Classes

Category	Class	Water-soluble sulfate (SO_4^{2-}) in soil, percent by mass	Dissolved sulfate (SO_4^{2-}) in water, ppm[1]
Sulfate (S)	S0	$SO_4^{2-} < 0.10$	$SO_4^{2-} < 150$
	S1	$0.10 \le SO_4^{2-} < 0.20$	$150 \le SO_4^{2-} < 1500$ or seawater
	S2	$0.20 \le SO_4^{2-} < 2.00$	$1500 \le SO_4^{2-} < 10{,}000$
	S3	$SO_4^{2-} > 2.00$	$SO_4^{2-} > 10{,}000$

1 ppm (parts per million) = milligrams per kilogram mg/kg of dry soil weight

ACI Table 19.3.2.1 – Requirements for Concrete by Exposure Class

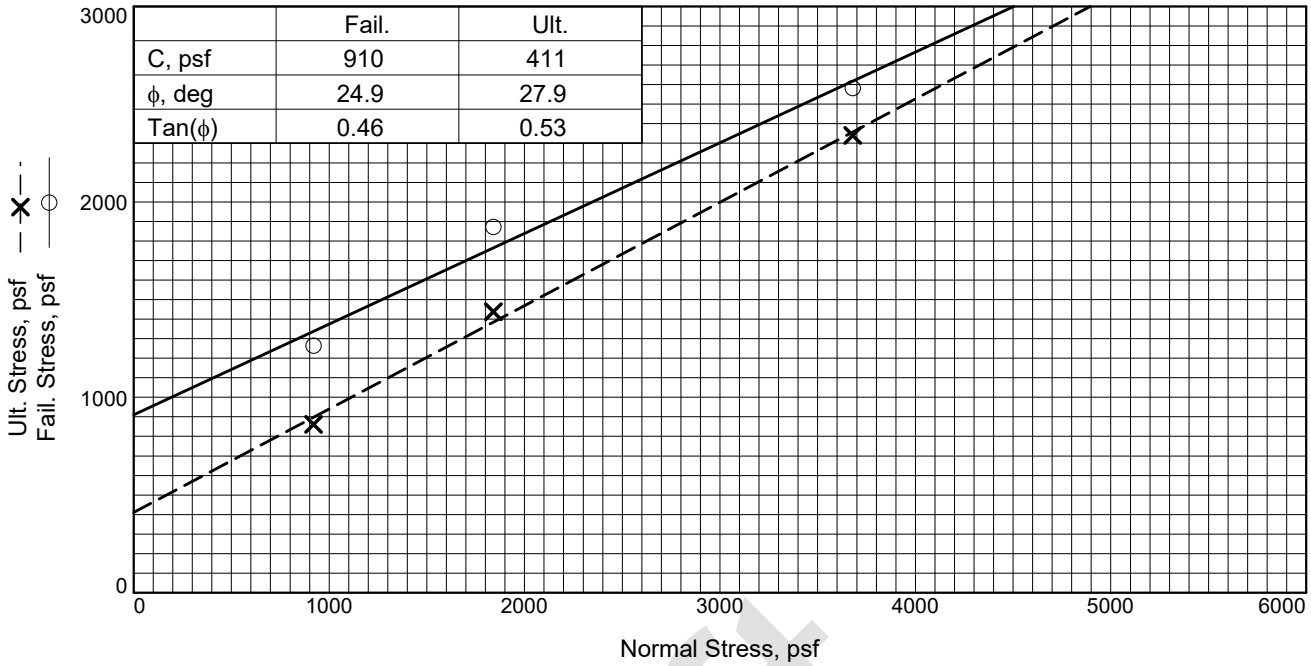
Exposure Class	Maximum *w/cm*	Minimum f_c', psi	Cementitious materials - Types			Calcium chloride admixture
			ASTM C150	ASTM C595	ASTM C1157	
S0	N/A	2500	No type restriction	No type restriction	No type restriction	No restriction
S1	0.50	4000	II	Types IP, IS, or IT with (MS) designation	MS	No restriction
S2	0.45	4500	V	Types IP, IS, or IT with (MS) designation	HS	Not permitted
S3	0.45	4500	V plus pozzolan or slag cement	Types IP, IS, or IT with (MS) designation plus pozzolan or slag cement	HS plus pozzolan or slab cement	Not permitted

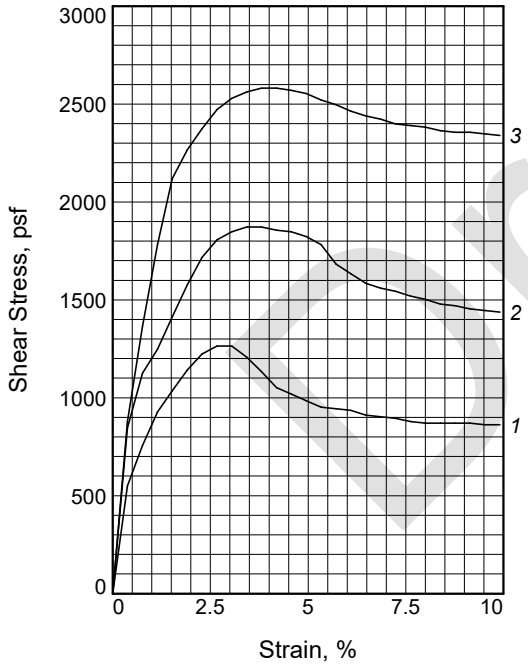
ACI Tables 19.3.1.1 and 19.3.2.1 - ACI 318-14 Building Code Requirements for Structural Concrete

Table 1. Relationship Between Soil Resistivity and Soil Corrosivity

Soil Resistivity, ohm-cm	Classification of Soil Corrosiveness
0 to 900	Very severe corrosion
900 to 2,300	Severely corrosive
2,300 to 5,000	Moderately corrosive
5,000 to 10,000	Mildly corrosive
10,000 to >10,000	Very mildly corrosive

F. O. Waters, Soil Resistivity Measurements for Corrosion Control, Corrosion. 1952, Vol, No. 12, 1952, p. 407.





Sample No.		1	2	3
Initial	Water Content, %	N/A	N/A	N/A
	Dry Density, pcf	N/A	N/A	N/A
	Saturation, %	N/A	N/A	N/A
	Void Ratio	N/A	N/A	N/A
	Diameter, in.	2.63	2.63	2.63
	Height, in.	1.00	1.00	1.00
At Test	Water Content, %	N/A	N/A	N/A
	Dry Density, pcf			
	Saturation, %			
	Void Ratio			
	Diameter, in.			
	Height, in.			
Normal Stress, psf		920	1840	3680
Fail. Stress, psf		1265	1872	2582
Strain, %		3.0	3.8	4.2
Ult. Stress, psf		862	1437	2340
Strain, %		9.9	9.9	9.9
Strain rate, in./min.		0.020	0.020	0.020

Sample Type: Relatively Undisturbed
Description: Clayey SILTSTONE interbedded w/ silty claystone

Specific Gravity=
Remarks:

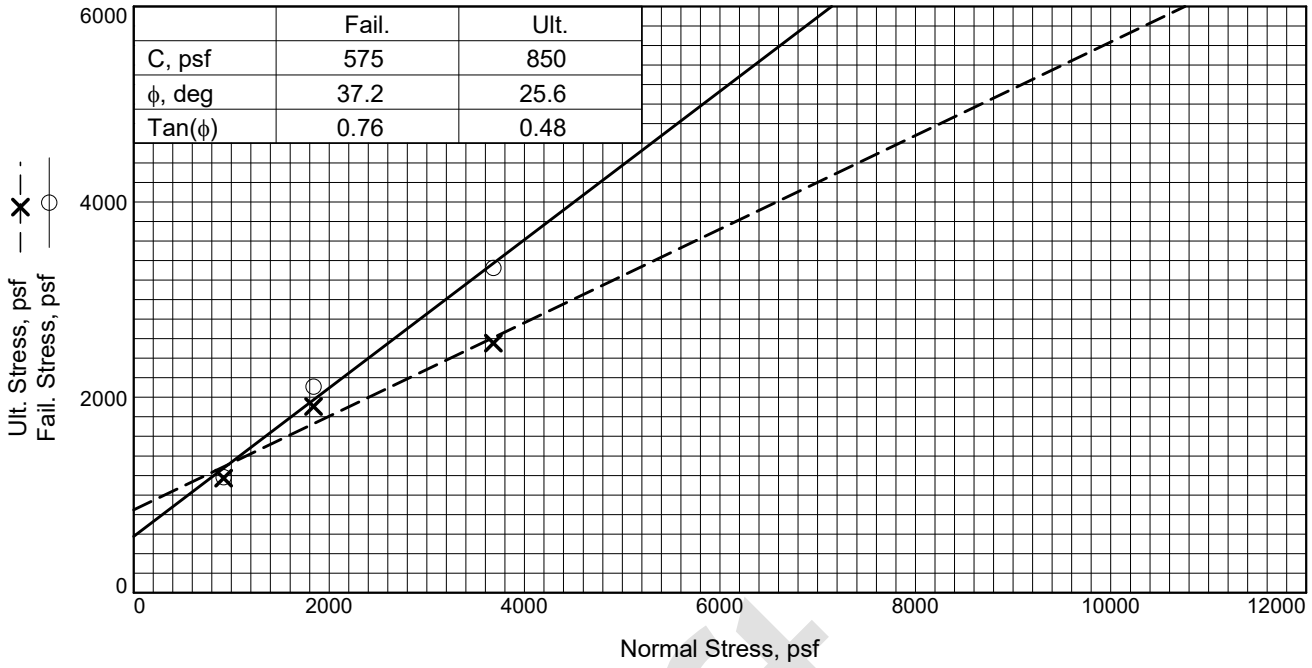
Figure _____

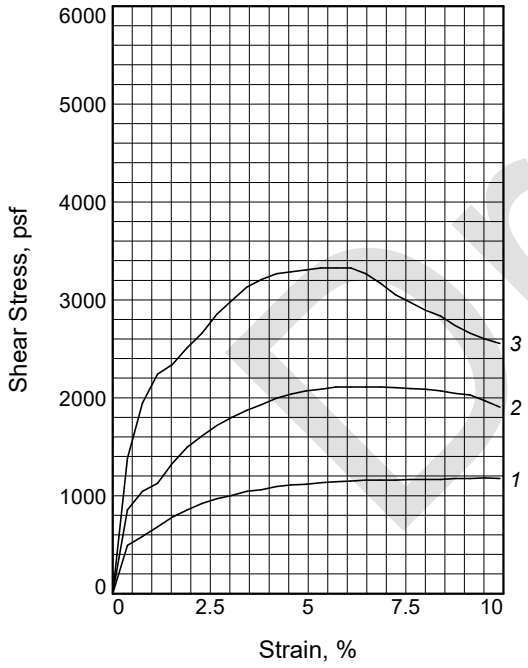
Client: MTC

Project: MTC, 29555 Canwood Street, Agoura Hills

Location: B-1
Depth: 7'
Proj. No.: 3187-0-0-100 **Date Sampled:**

DIRECT SHEAR TEST REPORT
Gorian & Associates
Thousand Oaks, CA





Sample No.		1	2	3
Initial	Water Content, %	N/A	N/A	N/A
	Dry Density, pcf	N/A	N/A	N/A
	Saturation, %	N/A	N/A	N/A
	Void Ratio	N/A	N/A	N/A
	Diameter, in.	2.63	2.63	2.63
	Height, in.	1.00	1.00	1.00
At Test	Water Content, %	N/A	N/A	N/A
	Dry Density, pcf			
	Saturation, %			
	Void Ratio			
	Diameter, in.			
	Height, in.			
Normal Stress, psf		920	1840	3680
Fail. Stress, psf		1182	2110	3325
Strain, %		9.5	6.9	6.1
Ult. Stress, psf		1174	1905	2554
Strain, %		9.9	9.9	9.9
Strain rate, in./min.		0.020	0.020	0.020

Sample Type: Relatively Undisturbed
Description: Clayey SILTSTONE interbedded w/ claystone and sandstone

Specific Gravity=
Remarks:

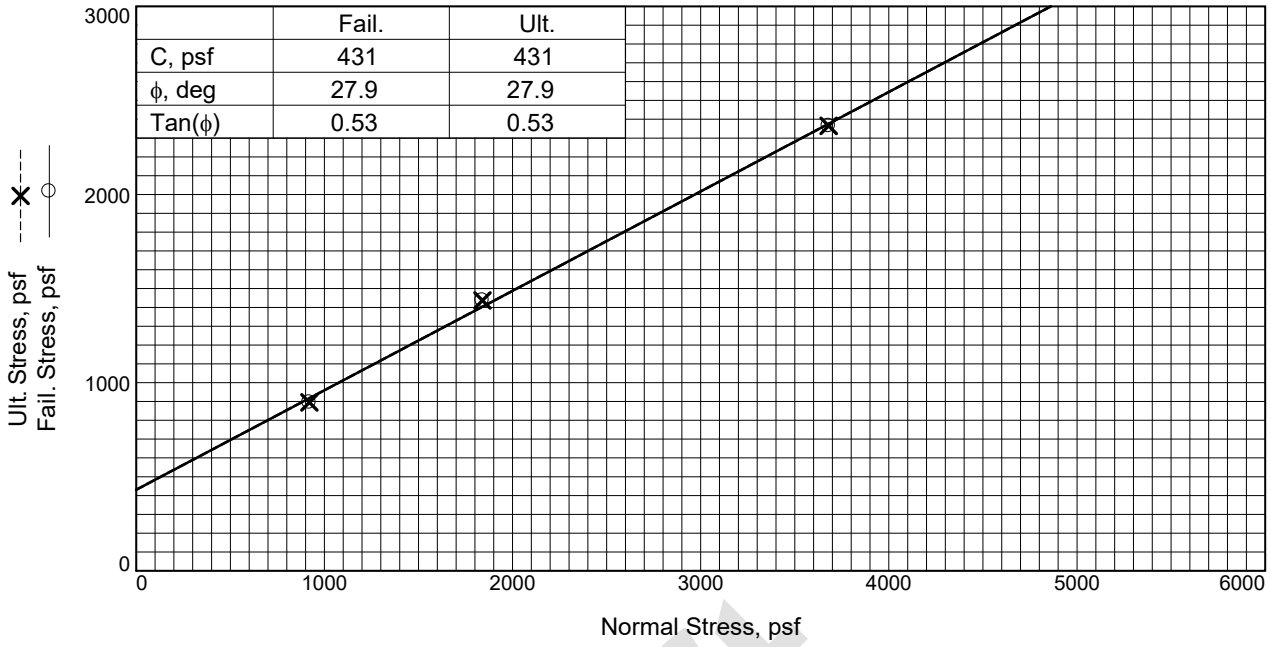
Figure _____

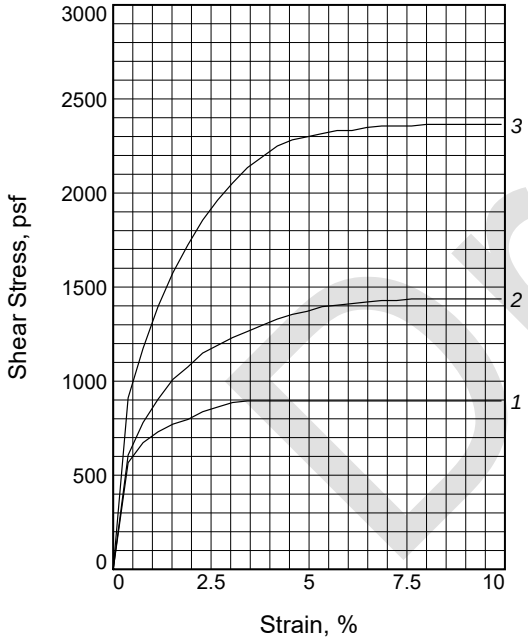
Client: MTC

Project: MTC, 29555 Canwood Street, Agoura Hills

Location: B-1
Depth: 15'
Proj. No.: 3187-0-0-100 **Date Sampled:**

DIRECT SHEAR TEST REPORT
Gorian & Associates
Thousand Oaks, CA





Sample No.		1	2	3
Initial	Water Content, %	N/A	N/A	N/A
	Dry Density, pcf	N/A	N/A	N/A
	Saturation, %	N/A	N/A	N/A
	Void Ratio	N/A	N/A	N/A
	Diameter, in.	2.63	2.63	2.63
	Height, in.	1.00	1.00	1.00
At Test	Water Content, %	37.4	37.4	37.4
	Dry Density, pcf			
	Saturation, %			
	Void Ratio			
	Diameter, in.			
	Height, in.			
Normal Stress, psf		920	1840	3680
Fail. Stress, psf		895	1437	2365
Strain, %		9.9	9.9	9.9
Ult. Stress, psf		895	1437	2365
Strain, %		9.9	9.9	9.9
Strain rate, in./min.		0.020	0.020	0.020

Sample Type: Remolded
Description:

Specific Gravity=
Remarks: 2/18/21

Figure _____

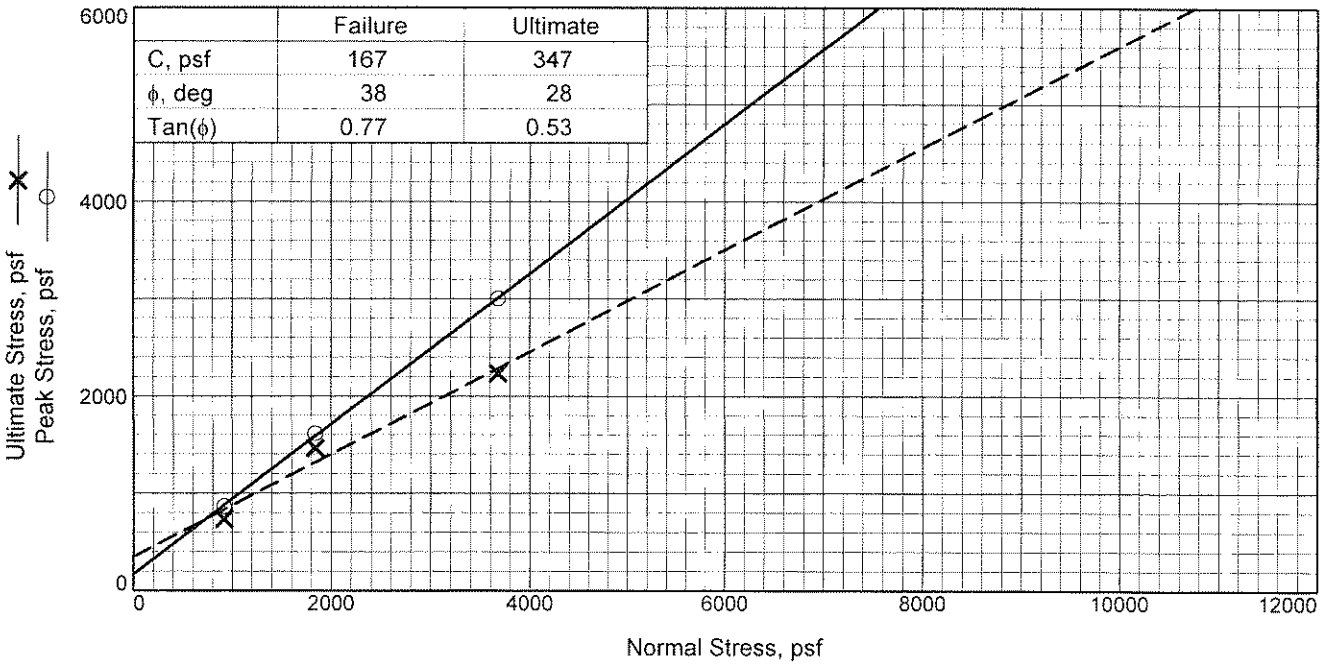
Client: MTC

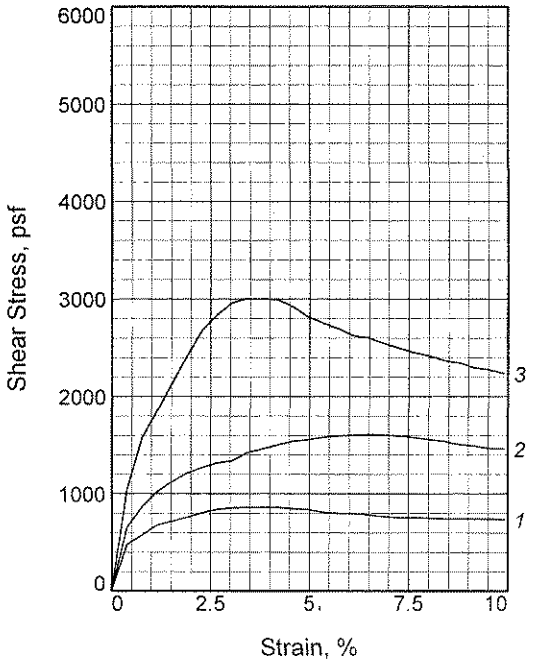
Project: MTC, 29555 Canwood Street, Agoura Hills

Location: B-2
Depth: 4.0'
Proj. No.: 3187-0-0-100 **Date Sampled:**

DIRECT SHEAR TEST REPORT
Gorian & Associates, Inc.
Thousand Oaks, CA

Tested By: CA





Sample No.		1	2	3
Initial	Water Content, %	25.9	25.9	25.9
	Dry Density, pcf	94.2	94.4	94.4
	Saturation, %	90.7	91.2	91.2
	Void Ratio	0.7566	0.7524	0.7524
	Diameter, in.	2.62	2.62	2.62
	Height, in.	1.00	1.00	1.00
At Test	Water Content, %	36.5	35.6	32.1
	Dry Density, pcf	94.2	94.4	94.4
	Saturation, %	127.8	125.3	112.9
	Void Ratio	0.7566	0.7524	0.7524
	Diameter, in.	2.62	2.62	2.62
	Height, in.	1.00	1.00	1.00
Normal Stress, psf		920	1840	3680
Peak Stress, psf		861	1611	2998
Strain, %		4.2	6.5	3.4
Ultimate Stress, psf		734	1459	2232
Strain, %		9.9	9.9	9.9
Strain rate, in./min.		0.02	0.02	0.02

Sample Type: Undisturbed, Saturated
Description: Topanga Fm. (Tt): Yellowish brown CLAYSTONE
LL= **PL=** **PI=**
Assumed Specific Gravity= 2.65
Remarks: Machine #1

Client: Dollinger Properties

Project: Dollinger Properties, 29353 Canwood Street

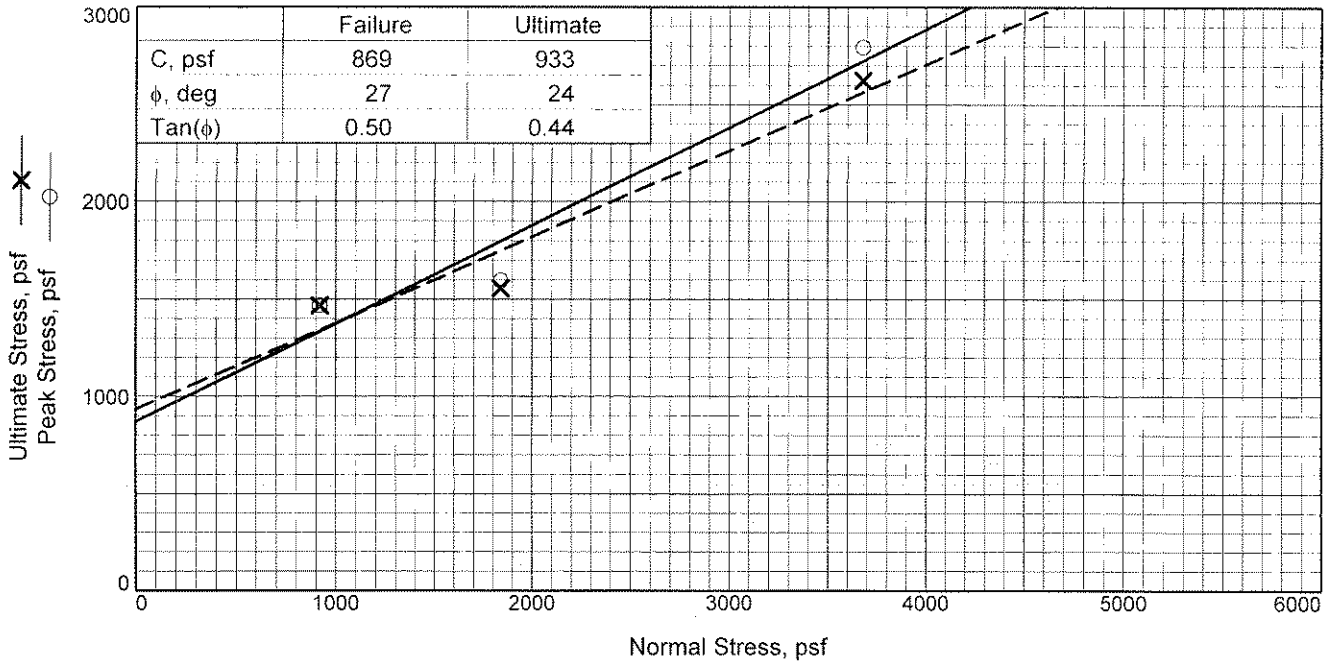
Location: B-1 @ 5'

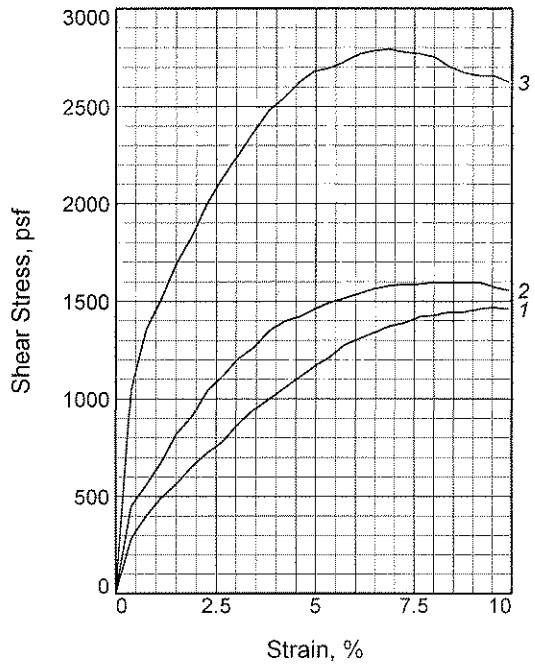
Proj. No.: 2763-0-0-100 **Date:**

DIRECT SHEAR TEST REPORT

GORIAN & ASSOCIATES, INC.

Figure B.1





Sample No.		1	2	3
Initial	Water Content, %	7.9	7.9	7.9
	Dry Density, pcf	110.0	109.8	109.8
	Saturation, %	41.6	41.3	41.3
	Void Ratio	0.5037	0.5073	0.5073
	Diameter, in.	2.62	2.62	2.62
	Height, in.	1.00	1.00	1.00
At Test	Water Content, %	18.6	17.9	16.1
	Dry Density, pcf	110.0	109.8	109.8
	Saturation, %	97.9	93.7	84.3
	Void Ratio	0.5037	0.5073	0.5073
	Diameter, in.	2.62	2.62	2.62
	Height, in.	1.00	1.00	1.00
Normal Stress, psf		920	1840	3680
Peak Stress, psf		1467	1595	2791
Strain, %		9.5	8.0	6.9
Ultimate Stress, psf		1467	1555	2623
Strain, %		9.5	9.9	9.9
Strain rate, in./min.		0.02	0.02	0.02

Sample Type: Undisturbed, Saturated

Description: Topanga Fm. (Tt): Pale yellow silty fine SANDSTONE

LL= **PL=** **PI=**

Assumed Specific Gravity= 2.65

Remarks: Machine #1

Client: Dollinger Properties

Project: Dollinger Properties, 29353 Canwood Street

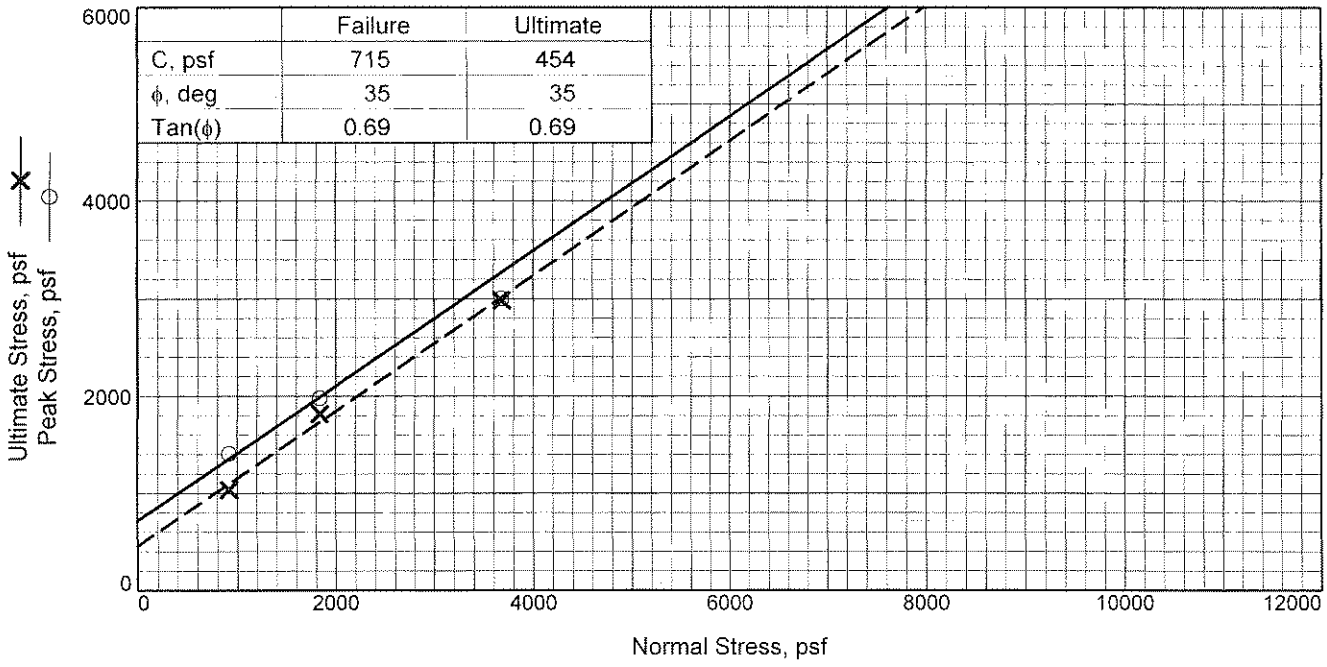
Location: B-2A @ 20'

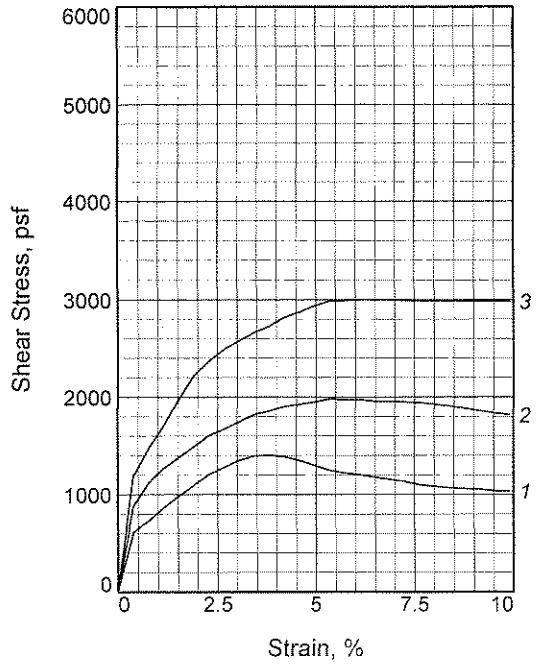
Proj. No.: 2763-0-0-100 **Date:**

DIRECT SHEAR TEST REPORT

GORIAN & ASSOCIATES, INC.

Figure B.2





Sample No.		1	2	3
Initial	Water Content, %	23.0	23.0	23.0
	Dry Density, pcf	92.5	93.0	93.0
	Saturation, %	77.4	78.2	78.3
	Void Ratio	0.7875	0.7798	0.7787
	Diameter, in.	2.62	2.62	2.62
	Height, in.	1.00	1.00	1.00
At Test	Water Content, %	31.7	32.6	30.6
	Dry Density, pcf	92.5	93.0	93.0
	Saturation, %	106.8	110.7	104.3
	Void Ratio	0.7875	0.7798	0.7787
	Diameter, in.	2.62	2.62	2.62
	Height, in.	1.00	1.00	1.00
Normal Stress, psf		920	1840	3680
Peak Stress, psf		1403	1977	2998
Strain, %		3.8	5.3	6.1
Ultimate Stress, psf		1036	1818	2982
Strain, %		9.9	9.9	9.9
Strain rate, in./min.		0.02	0.02	0.02

Sample Type: Remolded, Saturated
Description: Topange Fm. (Tt): Pale yellow clayey SILTSTONE
LL= **PL=** **PI=**
Assumed Specific Gravity= 2.65
Remarks: Machine #1

Client: Dollinger Properties

Project: Dollinger Properties, 29353 Canwood Street

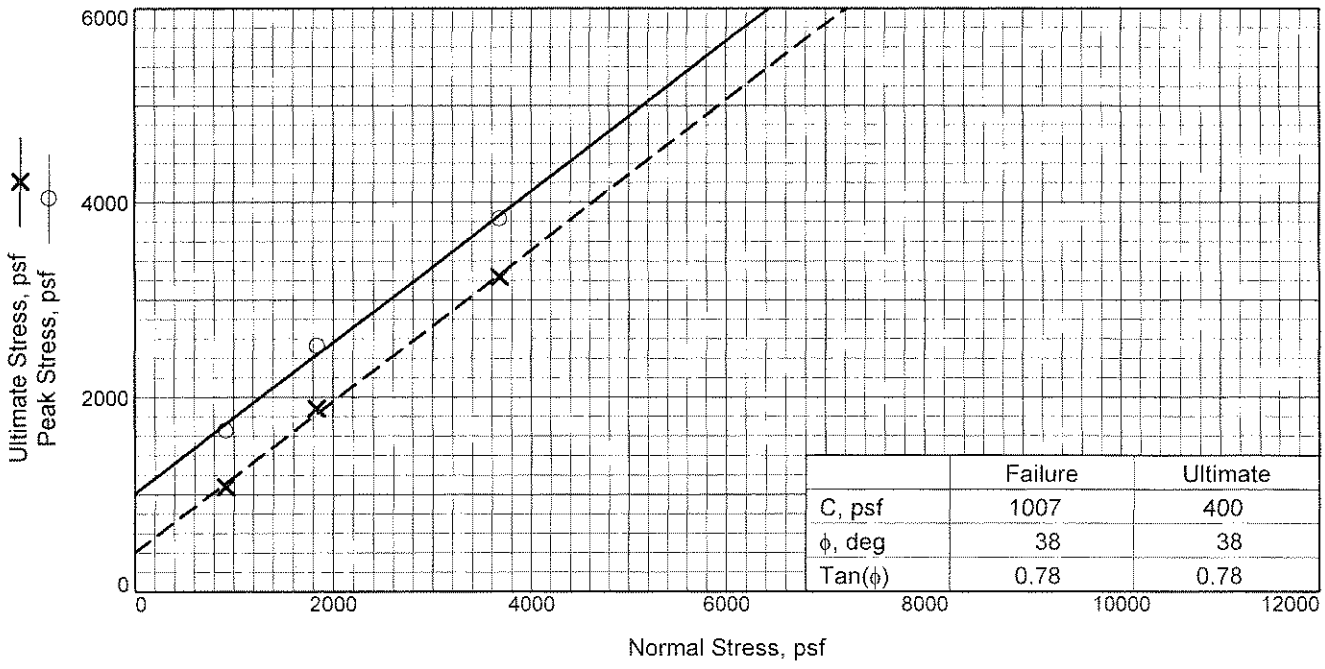
Location: B-3 @ 4'

Proj. No.: 2763-0-0-100 **Date:**

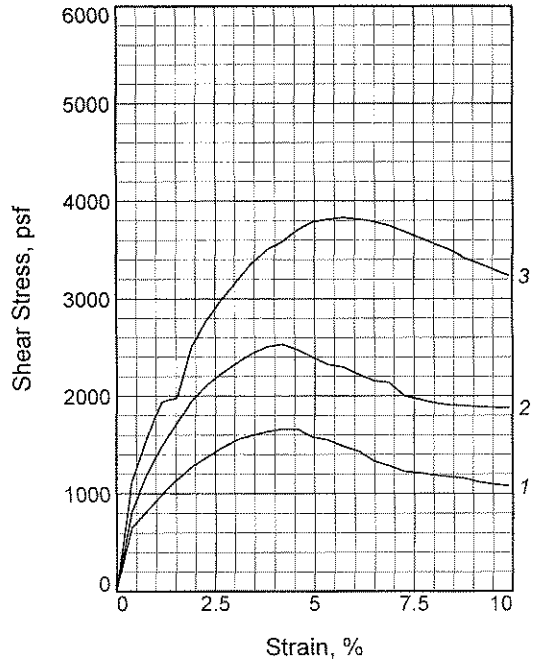
DIRECT SHEAR TEST REPORT

GORIAN & ASSOCIATES, INC.

Figure B.3



	Failure	Ultimate
C, psf	1007	400
ϕ, deg	38	38
Tan(ϕ)	0.78	0.78



Sample No.		1	2	3
Initial	Water Content, %	25.3	25.3	25.3
	Dry Density, pcf	93.9	94.5	94.5
	Saturation, %	88.0	89.2	89.2
	Void Ratio	0.7619	0.7514	0.7514
	Diameter, in.	2.62	2.62	2.62
	Height, in.	1.00	1.00	1.00
At Test	Water Content, %	30.5	28.3	24.2
	Dry Density, pcf	93.9	94.5	94.5
	Saturation, %	106.1	99.9	85.3
	Void Ratio	0.7619	0.7514	0.7514
	Diameter, in.	2.62	2.62	2.62
	Height, in.	1.00	1.00	1.00
Normal Stress, psf		920	1840	3680
Peak Stress, psf		1658	2527	3830
Strain, %		4.2	4.2	5.7
Ultimate Stress, psf		1076	1882	3235
Strain, %		9.9	9.9	9.9
Strain rate, in./min.		0.02	0.02	0.02

Sample Type: Undisturbed, Saturated
Description: Topanga Fm. (Tt): Lt. olive brown SILTSTONE/CLAYSTONE
LL= **PL=** **PI=**
Assumed Specific Gravity= 2.65
Remarks: Machine #1

Client: Dollinger Properties

Project: Dollinger Properties, 29353 Canwood Street

Location: B-3 @ 5'

Proj. No.: 2763-0-0-100 **Date:**

DIRECT SHEAR TEST REPORT

GORIAN & ASSOCIATES, INC.

Figure B.4

Soil Analysis Lab Results

Client: Gorian & Associates, Inc.
Job Name: 29555 Canwool St
Client Job Number: 3187-0-0-100
Project X Job Number: S210208C
February 10, 2021

	Method	ASTM D4327		ASTM D4327		ASTM G187		ASTM D4972	ASTM G200	SM 4500-S2-D	ASTM D4327	ASTM D6919	ASTM D6919	ASTM D6919	ASTM D6919	ASTM D6919	ASTM D6919	ASTM D4327	ASTM D4327
Bore# / Description	**Depth**	**Sulfates** SO_4^{2-}		**Chlorides** Cl^-		**Resistivity** As Rec'd | Minimum		**pH**	**Redox**	**Sulfide** S^{2-}	**Nitrate** NO_3^-	**Ammonium** NH_4^+	**Lithium** Li^+	**Sodium** Na^+	**Potassium** K^+	**Magnesium** Mg^{2+}	**Calcium** Ca^{2+}	**Fluoride** F_2^{--}	**Phosphate** PO_4^{3-}
	(ft)	(mg/kg)	(wt%)	(mg/kg)	(wt%)	(Ohm-cm)	(Ohm-cm)		(mV)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
B-2	0-1	23.5	0.0023	9.7	0.0010	697	657	7.8	129	<0.01	31.6	9.2	0.02	26.4	3.2	75.1	277.3	2.7	7.0

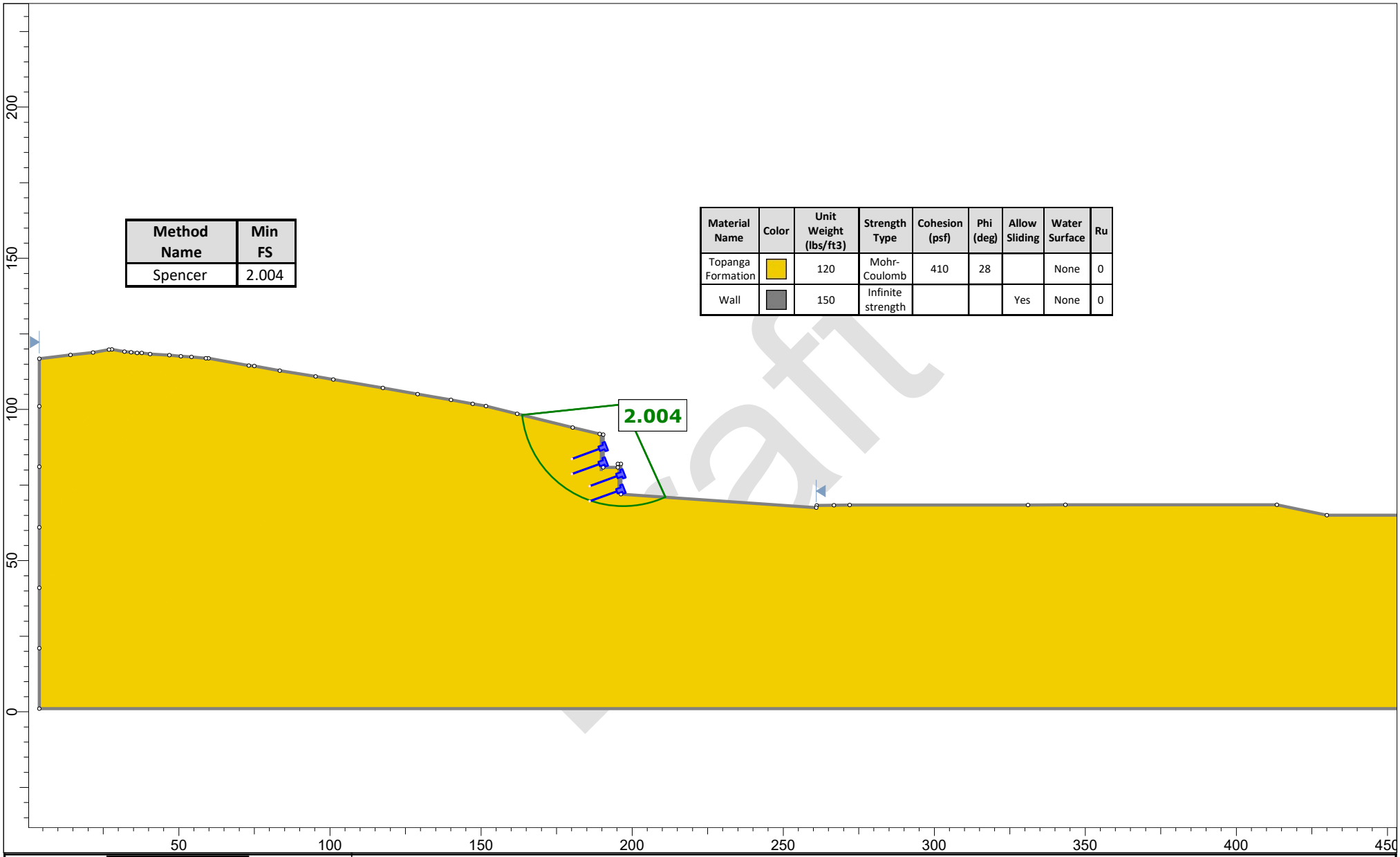
Cations and Anions, except Sulfide and Bicarbonate, tested with Ion Chromatography
mg/kg = milligrams per kilogram (parts per million) of dry soil weight
ND = 0 = Not Detected | NT = Not Tested | Unk = Unknown
Chemical Analysis performed on 1:3 Soil-To-Water extract

APPENDIX C

SLOPE STABILITY ANALYSES

Method Name	Min FS
Spencer	2.004

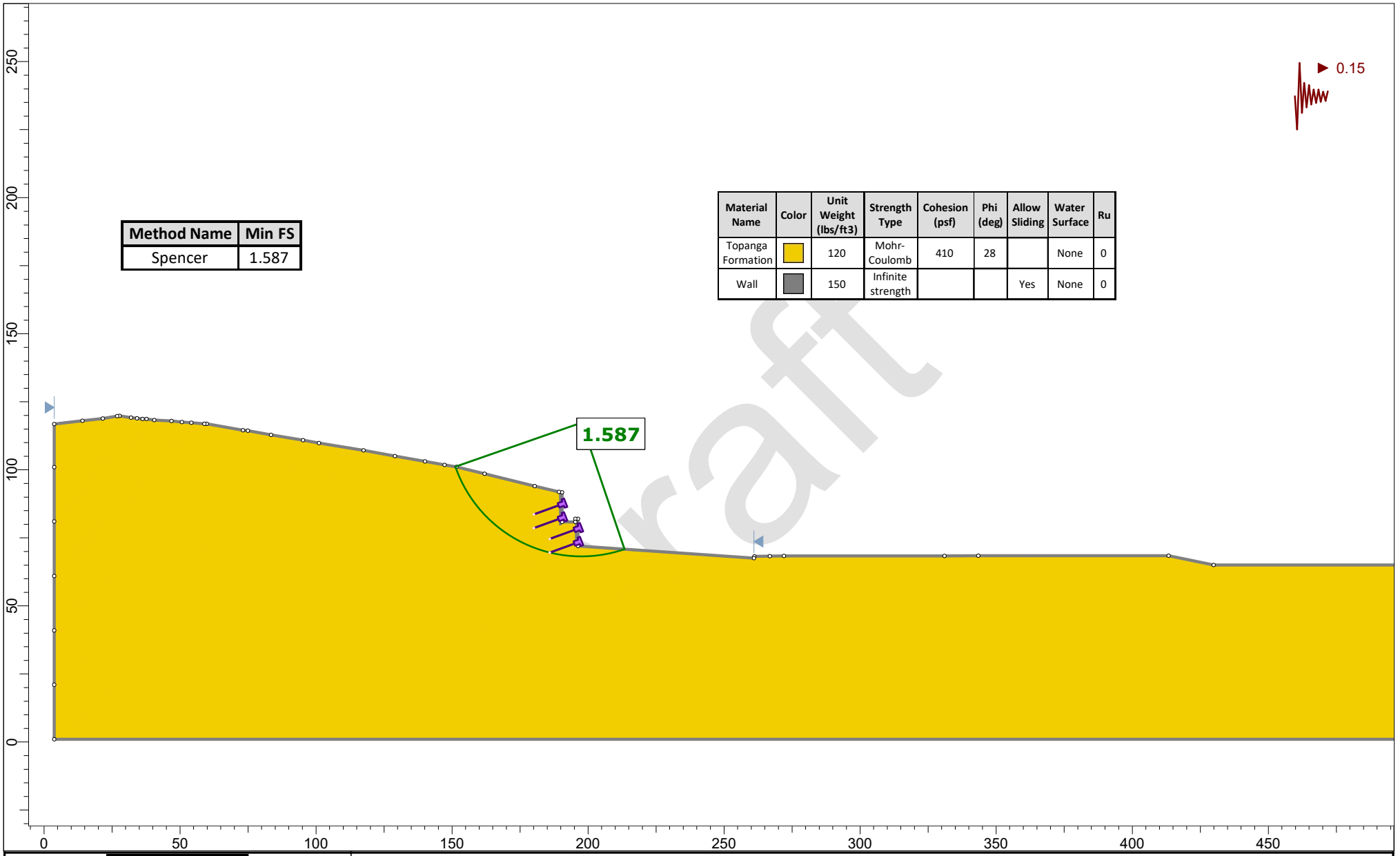
Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)	Allow Sliding	Water Surface	Ru
Topanga Formation		120	Mohr-Coulomb	410	28		None	0
Wall		150	Infinite strength			Yes	None	0



GORIAN & ASSOCIATES, INC.

SLIDEINTERPRET 9.012

Project	3187-0-0-100; 29555 Canwood Street		
Group	Group 1	Scenario	Master Scenario
Drawn By	DM	Company	Gorian & Associates, Inc.
Date	2/15/2021, 12:18:59 PM	File Name	Section A.slmd



Method Name	Min FS
Spencer	1.587

Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)	Allow Sliding	Water Surface	Ru
Topanga Formation		120	Mohr-Coulomb	410	28		None	0
Wall		150	Infinite strength			Yes	None	0

Project	3187-0-0-100; 29555 Canwood Street		
Group	Group 1	Scenario	Pseudo-Static
Drawn By	DM	Company	Gorian & Associates, Inc.
Date	2/15/2021, 12:18:59 PM	File Name	Section A.slmd

GORIAN & ASSOCIATES, INC.

SLIDEINTERPRET 9.012

Analysis Options

All Open Scenarios

Slices Type:	Vertical
Analysis Methods Used	
	Spencer
Number of slices:	100
Tolerance:	0.005
Maximum number of iterations:	75
Check malpha < 0.2:	Yes
Create Interslice boundaries at intersections with water tables and piezos:	Yes
Initial trial value of FS:	1
Steffensen Iteration:	Yes

Surface Options

All Open Scenarios

Surface Type:	Circular
Search Method:	Auto Refine Search
Divisions along slope:	200
Circles per division:	10
Number of iterations:	10
Divisions to use in next iteration:	50%
Composite Surfaces:	Disabled
Minimum Elevation:	Not Defined
Minimum Depth:	Not Defined
Minimum Area:	Not Defined
Minimum Weight:	Not Defined

Materials

Topanga Formation	
Color	
Strength Type	Mohr-Coulomb
Unit Weight [lbs/ft3]	120
Cohesion [psf]	410
Friction Angle [deg]	28
Water Surface	Assigned per scenario
Ru Value	0

Wall	
Color	
Strength Type	Infinite strength
Unit Weight [lbs/ft3]	150
Allow Sliding Along Boundary	Yes
Water Surface	Assigned per scenario
Ru Value	0

Materials In Use

Material	Group 1	Pseudo-Static
Topanga Formation	✓	✓
Wall	✓	✓

Support

Static	
Color	
Support Type	Soil Nail
Force Application	Active
Force Orientation	Parallel to Reinforcement
Out-of-Plane Spacing [ft]	5
Tensile Capacity [lb]	32725
Plate Capacity [lb]	19000
Bond Strength [lb/ft]	2460
Material Dependent	No

Pseudo-Static	
Color	
Support Type	Soil Nail
Force Application	Active
Force Orientation	Parallel to Reinforcement
Out-of-Plane Spacing [ft]	5
Tensile Capacity [lb]	43630
Plate Capacity [lb]	25000
Bond Strength [lb/ft]	3280
Material Dependent	No

Global Minimums

Group 1 - Master Scenario

Method: spencer

FS	2.004470
Center:	197.119, 101.675
Radius:	33.701
Left Slip Surface Endpoint:	163.603, 98.143
Right Slip Surface Endpoint:	210.988, 70.961
Resisting Moment:	2.10936e+06 lb-ft
Driving Moment:	1.05233e+06 lb-ft
Resisting Horizontal Force:	51268.7 lb
Driving Horizontal Force:	25577.1 lb
Active Support Moment:	-6167.66 lb-ft
Active Horizontal Support Force:	-220.18 lb
Maximum Single Support Force:	234.311 lb
Total Support Force:	234.311 lb
Total Slice Area:	596.483 ft2
Surface Horizontal Width:	47.3845 ft
Surface Average Height:	12.5881 ft

Group 1 - Pseudo-Static

Method: spencer

FS	1.587240
Center:	197.566, 117.278
Radius:	49.105
Left Slip Surface Endpoint:	151.192, 101.128
Right Slip Surface Endpoint:	213.395, 70.794
Resisting Moment:	3.86874e+06 lb-ft
Driving Moment:	2.4374e+06 lb-ft
Resisting Horizontal Force:	68301.5 lb
Driving Horizontal Force:	43031.6 lb
Total Slice Area:	809.297 ft2
Surface Horizontal Width:	62.2025 ft
Surface Average Height:	13.0107 ft

Valid and Invalid Surfaces

Group 1 - Master Scenario

Method: spencer

Number of Valid Surfaces:	693618
Number of Invalid Surfaces:	0

Group 1 - Pseudo-Static

Method: spencer

Number of Valid Surfaces: 761263
Number of Invalid Surfaces: 0

Slice Data

Group 1 - Master Scenario

Global Minimum Query (spencer) - Safety Factor: 2.00447

Slice Number	Width [ft]	Weight [lbs]	Angle of Slice Base [deg]	Base Material	Base Cohesion [psf]	Base Friction Angle [deg]	Shear Stress [psf]	Shear Strength [psf]	Base Normal Stress [psf]	Pore Pressure [psf]	Effective Normal Stress [psf]	Base Vertical Stress [psf]	Effective Vertical Stress [psf]
1	0.473845	84.8467	-81.3155	Topanga Formation	410	28	136.573	273.756	-256.238	0	-256.238	637.888	637.888
2	0.473845	224.11	-76.873	Topanga Formation	410	28	176.663	354.116	-105.102	0	-105.102	652.447	652.447
3	0.473845	321.146	-73.6667	Topanga Formation	410	28	208.37	417.672	14.4281	0	14.4281	725.464	725.464
4	0.473845	399.533	-70.9971	Topanga Formation	410	28	236.91	474.88	122.021	0	122.021	809.946	809.946
5	0.473845	466.419	-68.6534	Topanga Formation	410	28	263.381	527.939	221.811	0	221.811	895.727	895.727
6	0.473845	525.221	-66.5351	Topanga Formation	410	28	288.265	577.819	315.622	0	315.622	979.699	979.699
7	0.473845	577.906	-64.5849	Topanga Formation	410	28	311.848	625.09	404.527	0	404.527	1060.83	1060.83
8	0.473845	625.73	-62.7661	Topanga Formation	410	28	334.322	670.139	489.249	0	489.249	1138.82	1138.82
9	0.473845	669.56	-61.0536	Topanga Formation	410	28	355.827	713.245	570.322	0	570.322	1213.67	1213.67
10	0.473845	710.021	-59.4293	Topanga Formation	410	28	376.473	754.628	648.151	0	648.151	1285.48	1285.48
11	0.473845	747.583	-57.8797	Topanga Formation	410	28	396.344	794.459	723.061	0	723.061	1354.39	1354.39
12	0.473845	782.612	-56.3943	Topanga Formation	410	28	415.51	832.878	795.317	0	795.317	1420.58	1420.58
13	0.473845	815.396	-54.9649	Topanga Formation	410	28	434.031	870.002	865.137	0	865.137	1484.19	1484.19
14	0.473845	846.17	-53.5847	Topanga Formation	410	28	451.954	905.929	932.707	0	932.707	1545.38	1545.38
15	0.473845	875.128	-52.2482	Topanga Formation	410	28	469.323	940.744	998.183	0	998.183	1604.28	1604.28
16	0.473845	902.43	-50.9509	Topanga Formation	410	28	486.173	974.519	1061.71	0	1061.71	1661.03	1661.03
17	0.473845	928.214	-49.6889	Topanga Formation	410	28	502.535	1007.32	1123.39	0	1123.39	1715.73	1715.73
18	0.473845	952.595	-48.4588	Topanga Formation	410	28	518.439	1039.2	1183.34	0	1183.34	1768.48	1768.48
19	0.473845	975.675	-47.2579	Topanga Formation	410	28	533.907	1070.2	1241.66	0	1241.66	1819.39	1819.39
20	0.473845	997.541	-46.0837	Topanga Formation	410	28	548.963	1100.38	1298.41	0	1298.41	1868.55	1868.55
21	0.473845	1018.27	-44.934	Topanga Formation	410	28	563.625	1129.77	1353.69	0	1353.69	1916.01	1916.01
22	0.473845	1037.93	-43.8068	Topanga Formation	410	28	577.911	1158.4	1407.55	0	1407.55	1961.87	1961.87
23	0.473845	1056.58	-42.7006	Topanga Formation	410	28	591.837	1186.32	1460.05	0	1460.05	2006.19	2006.19
24	0.473845	1074.28	-41.6137	Topanga Formation	410	28	605.419	1213.54	1511.25	0	1511.25	2049.02	2049.02
25	0.473845	1091.07	-40.5449	Topanga Formation	410	28	618.668	1240.1	1561.19	0	1561.19	2090.42	2090.42
26	0.473845	1106.99	-39.4928	Topanga Formation	410	28	631.596	1266.02	1609.93	0	1609.93	2130.45	2130.45
27	0.473845	1122.09	-38.4565	Topanga Formation	410	28	644.216	1291.31	1657.5	0	1657.5	2169.13	2169.13
28	0.473845	1136.4	-37.4348	Topanga Formation	410	28	656.537	1316.01	1703.95	0	1703.95	2206.54	2206.54

29	0.473845	1149.95	-36.4269	Topanga Formation	410	28	668.568	1340.12	1749.3	0	1749.3	2242.7	2242.7
30	0.473845	1162.77	-35.4319	Topanga Formation	410	28	680.317	1363.68	1793.6	0	1793.6	2277.65	2277.65
31	0.473845	1174.9	-34.4491	Topanga Formation	410	28	691.794	1386.68	1836.88	0	1836.88	2311.43	2311.43
32	0.473845	1186.35	-33.4777	Topanga Formation	410	28	703.005	1409.15	1879.13	0	1879.13	2344.05	2344.05
33	0.473845	1197.14	-32.5171	Topanga Formation	410	28	713.959	1431.11	1920.42	0	1920.42	2375.56	2375.56
34	0.473845	1207.3	-31.5667	Topanga Formation	410	28	724.655	1452.55	1960.76	0	1960.76	2405.99	2405.99
35	0.473845	1216.85	-30.6258	Topanga Formation	410	28	735.107	1473.5	2000.16	0	2000.16	2435.35	2435.35
36	0.473845	1225.9	-29.694	Topanga Formation	410	28	745.359	1494.05	2038.81	0	2038.81	2463.85	2463.85
37	0.473845	1234.61	-28.7708	Topanga Formation	410	28	755.491	1514.36	2077	0	2077	2491.83	2491.83
38	0.473845	1242.78	-27.8557	Topanga Formation	410	28	765.399	1534.22	2114.35	0	2114.35	2518.85	2518.85
39	0.473845	1250.39	-26.9482	Topanga Formation	410	28	775.083	1553.63	2150.86	0	2150.86	2544.9	2544.9
40	0.473845	1257.48	-26.048	Topanga Formation	410	28	784.547	1572.6	2186.54	0	2186.54	2570.01	2570.01
41	0.473845	1264.04	-25.1547	Topanga Formation	410	28	793.796	1591.14	2221.41	0	2221.41	2594.18	2594.18
42	0.473845	1270.08	-24.2678	Topanga Formation	410	28	802.836	1609.26	2255.47	0	2255.47	2617.42	2617.42
43	0.473845	1275.63	-23.3871	Topanga Formation	410	28	811.666	1626.96	2288.75	0	2288.75	2639.78	2639.78
44	0.473845	1280.69	-22.5122	Topanga Formation	410	28	820.287	1644.24	2321.28	0	2321.28	2661.26	2661.26
45	0.473845	1285.27	-21.6428	Topanga Formation	410	28	828.713	1661.13	2353.03	0	2353.03	2681.86	2681.86
46	0.473845	1289.38	-20.7787	Topanga Formation	410	28	836.934	1677.61	2384.03	0	2384.03	2701.6	2701.6
47	0.473845	1293.02	-19.9194	Topanga Formation	410	28	844.962	1693.7	2414.27	0	2414.27	2720.47	2720.47
48	0.473845	1296.21	-19.0648	Topanga Formation	410	28	925.741	1855.62	2718.81	0	2718.81	3038.74	3038.74
49	0.473845	1298.95	-18.2146	Topanga Formation	410	28	860.432	1724.71	2472.61	0	2472.61	2755.75	2755.75
50	0.473845	1301.24	-17.3685	Topanga Formation	410	28	867.88	1739.64	2500.69	0	2500.69	2772.14	2772.14
51	0.473845	1303.1	-16.5263	Topanga Formation	410	28	875.144	1754.2	2528.08	0	2528.08	2787.75	2787.75
52	0.473845	1304.53	-15.6877	Topanga Formation	410	28	882.223	1768.39	2554.76	0	2554.76	2802.54	2802.54
53	0.473845	1305.54	-14.8526	Topanga Formation	410	28	889.118	1782.21	2580.76	0	2580.76	2816.54	2816.54
54	0.473845	1306.12	-14.0207	Topanga Formation	410	28	895.828	1795.66	2606.04	0	2606.04	2829.74	2829.74
55	0.473845	1399.84	-13.1918	Topanga Formation	410	28	952.102	1908.46	2818.19	0	2818.19	3041.36	3041.36
56	0.473845	1478.76	-12.3657	Topanga Formation	410	28	1001.29	2007.06	3003.63	0	3003.63	3223.15	3223.15
57	0.473845	1137.56	-11.5422	Topanga Formation	410	28	824.173	1652.03	2335.92	0	2335.92	2504.23	2504.23
58	0.473845	697.092	-10.7212	Topanga Formation	410	28	590.027	1182.69	1453.22	0	1453.22	1564.93	1564.93
59	0.473845	701.994	-9.90233	Topanga Formation	410	28	596.644	1195.96	1478.17	0	1478.17	1582.33	1582.33
60	0.473845	706.5	-9.08551	Topanga Formation	410	28	603.121	1208.94	1502.58	0	1502.58	1599.03	1599.03
61	0.473845	710.613	-8.27056	Topanga Formation	410	28	609.457	1221.64	1526.47	0	1526.47	1615.06	1615.06
62	0.473845	714.335	-7.45729	Topanga Formation	410	28	615.651	1234.05	1549.82	0	1549.82	1630.4	1630.4
63	0.473845	717.668	-6.64552	Topanga Formation	410	28	621.702	1246.18	1572.63	0	1572.63	1645.07	1645.07
64	0.473845	720.614	-5.8351	Topanga Formation	410	28	627.612	1258.03	1594.91	0	1594.91	1659.05	1659.05
65	0.473845	723.175	-5.02584	Topanga Formation	410	28	633.378	1269.59	1616.65	0	1616.65	1672.35	1672.35

66	0.473845	725.354	-4.21759	Topanga Formation	410	28	639.002	1280.86	1637.85	0	1637.85	1684.97	1684.97
67	0.473845	751.513	-3.41018	Topanga Formation	410	28	658.769	1320.48	1712.37	0	1712.37	1751.62	1751.62
68	0.473845	936.367	-2.60344	Topanga Formation	410	28	772.698	1548.85	2141.86	0	2141.86	2177	2177
69	0.473845	932.533	-1.79723	Topanga Formation	410	28	776.021	1555.51	2154.39	0	2154.39	2178.74	2178.74
70	0.473845	226.345	-0.991364	Topanga Formation	410	28	356.993	715.582	574.718	0	574.718	580.895	580.895
71	0.473845	224.757	-0.185699	Topanga Formation	410	28	358.164	717.928	579.129	0	579.129	580.29	580.29
72	0.473845	222.79	0.61993	Topanga Formation	410	28	359.122	719.85	582.743	0	582.743	578.857	578.857
73	0.473845	220.444	1.42568	Topanga Formation	410	28	359.865	721.338	585.541	0	585.541	576.585	576.585
74	0.473845	217.718	2.23172	Topanga Formation	410	28	360.387	722.384	587.51	0	587.51	573.465	573.465
75	0.473845	214.613	3.03819	Topanga Formation	410	28	360.683	722.978	588.625	0	588.625	569.482	569.482
76	0.473845	211.128	3.84527	Topanga Formation	410	28	360.748	723.109	588.872	0	588.872	564.625	564.625
77	0.473845	207.261	4.65311	Topanga Formation	410	28	360.578	722.767	588.228	0	588.228	558.881	558.881
78	0.473845	203.011	5.46189	Topanga Formation	410	28	360.165	721.94	586.673	0	586.673	552.234	552.234
79	0.473845	198.378	6.27175	Topanga Formation	410	28	359.504	720.614	584.181	0	584.181	544.671	544.671
80	0.473845	193.358	7.08288	Topanga Formation	410	28	358.588	718.778	580.727	0	580.727	536.172	536.172
81	0.473845	187.951	7.89543	Topanga Formation	410	28	357.409	716.416	576.284	0	576.284	526.719	526.719
82	0.473845	182.154	8.70959	Topanga Formation	410	28	355.961	713.513	570.825	0	570.825	516.294	516.294
83	0.473845	175.965	9.52552	Topanga Formation	410	28	354.234	710.052	564.316	0	564.316	504.875	504.875
84	0.473845	169.38	10.3434	Topanga Formation	410	28	352.221	706.016	556.724	0	556.724	492.439	492.439
85	0.473845	162.398	11.1634	Topanga Formation	410	28	349.91	701.385	548.014	0	548.014	478.962	478.962
86	0.473845	155.014	11.9858	Topanga Formation	410	28	347.293	696.139	538.148	0	538.148	464.419	464.419
87	0.473845	147.226	12.8107	Topanga Formation	410	28	344.358	690.255	527.082	0	527.082	448.779	448.779
88	0.473845	139.029	13.6382	Topanga Formation	410	28	341.093	683.71	514.773	0	514.773	432.013	432.013
89	0.473845	130.419	14.4687	Topanga Formation	410	28	337.484	676.477	501.171	0	501.171	414.088	414.088
90	0.473845	121.392	15.3023	Topanga Formation	410	28	333.519	668.529	486.223	0	486.223	394.968	394.968
91	0.473845	111.942	16.1392	Topanga Formation	410	28	329.182	659.835	469.871	0	469.871	374.613	374.613
92	0.473845	102.065	16.9797	Topanga Formation	410	28	324.455	650.36	452.052	0	452.052	352.982	352.982
93	0.473845	91.7554	17.824	Topanga Formation	410	28	319.321	640.07	432.699	0	432.699	330.029	330.029
94	0.473845	81.0062	18.6723	Topanga Formation	410	28	313.76	628.923	411.735	0	411.735	305.702	305.702
95	0.473845	69.8114	19.5249	Topanga Formation	410	28	307.751	616.877	389.078	0	389.078	279.947	279.947
96	0.473845	58.1639	20.3819	Topanga Formation	410	28	301.268	603.882	364.64	0	364.64	252.707	252.707
97	0.473845	46.0565	21.2438	Topanga Formation	410	28	294.285	589.886	338.318	0	338.318	223.913	223.913
98	0.473845	33.481	22.1108	Topanga Formation	410	28	286.775	574.831	310.001	0	310.001	193.492	193.492
99	0.473845	20.429	22.9831	Topanga Formation	410	28	278.703	558.651	279.571	0	279.571	161.366	161.366
100	0.473845	6.89141	23.8611	Topanga Formation	410	28	258.05	517.254	201.716	0	201.716	87.5733	87.5733

Group 1 - Pseudo-Static

Global Minimum Query (spencer) - Safety Factor: 1.58724

Slice Number	Width [ft]	Weight [lbs]	Angle of Slice Base [deg]	Base Material	Base Cohesion [psf]	Base Friction Angle [deg]	Shear Stress [psf]	Shear Strength [psf]	Base Normal Stress [psf]	Pore Pressure [psf]	Effective Normal Stress [psf]	Base Vertical Stress [psf]	Effective Vertical Stress [psf]
1	0.622025	58.9216	-69.7506	Topanga Formation	410	28	225.804	358.405	-97.0366	0	-97.0366	515.049	515.049
2	0.622025	168.291	-67.7438	Topanga Formation	410	28	240.246	381.327	-53.9251	0	-53.9251	533.133	533.133
3	0.622025	265.651	-65.897	Topanga Formation	410	28	257.743	409.1	-1.69181	0	-1.69181	574.42	574.42
4	0.622025	354.254	-64.1753	Topanga Formation	410	28	276.824	439.385	55.266	0	55.266	627.274	627.274
5	0.622025	435.666	-62.5549	Topanga Formation	410	28	296.683	470.906	114.548	0	114.548	685.805	685.805
6	0.622025	511.021	-61.0185	Topanga Formation	410	28	316.888	502.977	174.865	0	174.865	746.981	746.981
7	0.622025	581.172	-59.5534	Topanga Formation	410	28	337.197	535.212	235.491	0	235.491	809.158	809.158
8	0.622025	646.778	-58.1495	Topanga Formation	410	28	357.469	567.389	296.006	0	296.006	871.412	871.412
9	0.622025	708.364	-56.7991	Topanga Formation	410	28	377.621	599.375	356.163	0	356.163	933.209	933.209
10	0.622025	766.355	-55.4957	Topanga Formation	410	28	397.604	631.093	415.815	0	415.815	994.241	994.241
11	0.622025	821.099	-54.2342	Topanga Formation	410	28	417.388	662.495	474.875	0	474.875	1054.33	1054.33
12	0.622025	872.889	-53.0102	Topanga Formation	410	28	436.958	693.557	533.293	0	533.293	1113.37	1113.37
13	0.622025	921.973	-51.82	Topanga Formation	410	28	456.303	724.263	591.043	0	591.043	1171.32	1171.32
14	0.622025	968.561	-50.6604	Topanga Formation	410	28	475.421	754.608	648.114	0	648.114	1228.15	1228.15
15	0.622025	1012.84	-49.5288	Topanga Formation	410	28	494.312	784.591	704.502	0	704.502	1283.86	1283.86
16	0.622025	1054.96	-48.4229	Topanga Formation	410	28	512.973	814.212	760.212	0	760.212	1338.45	1338.45
17	0.622025	1095.06	-47.3405	Topanga Formation	410	28	531.411	843.477	815.251	0	815.251	1391.95	1391.95
18	0.622025	1133.2	-46.2799	Topanga Formation	410	28	549.607	872.359	869.571	0	869.571	1444.3	1444.3
19	0.622025	1169.35	-45.2395	Topanga Formation	410	28	567.525	900.799	923.059	0	923.059	1495.35	1495.35
20	0.622025	1203.8	-44.2178	Topanga Formation	410	28	585.222	928.888	975.885	0	975.885	1545.34	1545.34
21	0.622025	1236.65	-43.2135	Topanga Formation	410	28	602.705	956.637	1028.08	0	1028.08	1594.32	1594.32
22	0.622025	1267.98	-42.2255	Topanga Formation	410	28	619.977	984.053	1079.64	0	1079.64	1642.3	1642.3
23	0.622025	1297.86	-41.2528	Topanga Formation	410	28	637.044	1011.14	1130.58	0	1130.58	1689.31	1689.31
24	0.622025	1326.36	-40.2943	Topanga Formation	410	28	653.909	1037.91	1180.93	0	1180.93	1735.37	1735.37
25	0.622025	1353.52	-39.3492	Topanga Formation	410	28	670.575	1064.36	1230.68	0	1230.68	1780.5	1780.5
26	0.622025	1379.42	-38.4168	Topanga Formation	410	28	687.046	1090.51	1279.84	0	1279.84	1824.72	1824.72
27	0.622025	1404.09	-37.4962	Topanga Formation	410	28	703.325	1116.35	1328.45	0	1328.45	1868.05	1868.05
28	0.622025	1427.58	-36.5869	Topanga Formation	410	28	719.416	1141.89	1376.48	0	1376.48	1910.51	1910.51
29	0.622025	1449.94	-35.6882	Topanga Formation	410	28	735.321	1167.13	1423.95	0	1423.95	1952.1	1952.1
30	0.622025	1471.2	-34.7994	Topanga Formation	410	28	751.044	1192.09	1470.89	0	1470.89	1992.87	1992.87
31	0.622025	1491.4	-33.9202	Topanga Formation	410	28	766.587	1216.76	1517.29	0	1517.29	2032.81	2032.81
32	0.622025	1510.56	-33.0499	Topanga Formation	410	28	781.954	1241.15	1563.16	0	1563.16	2071.94	2071.94
33	0.622025	1528.73	-32.1882	Topanga Formation	410	28	797.145	1265.26	1608.51	0	1608.51	2110.27	2110.27
34	0.622025	1545.92	-31.3345	Topanga Formation	410	28	812.165	1289.1	1653.35	0	1653.35	2147.83	2147.83

35	0.622025	1562.18	-30.4885	Topanga Formation	410	28	827.015	1312.67	1697.68	0	1697.68	2184.61	2184.61
36	0.622025	1577.51	-29.6499	Topanga Formation	410	28	841.699	1335.98	1741.51	0	1741.51	2220.63	2220.63
37	0.622025	1591.95	-28.8181	Topanga Formation	410	28	856.218	1359.02	1784.85	0	1784.85	2255.91	2255.91
38	0.622025	1605.51	-27.9929	Topanga Formation	410	28	870.573	1381.81	1827.71	0	1827.71	2290.46	2290.46
39	0.622025	1618.21	-27.174	Topanga Formation	410	28	884.768	1404.34	1870.08	0	1870.08	2324.28	2324.28
40	0.622025	1630.09	-26.3611	Topanga Formation	410	28	898.805	1426.62	1911.98	0	1911.98	2357.39	2357.39
41	0.622025	1641.14	-25.5539	Topanga Formation	410	28	912.685	1448.65	1953.42	0	1953.42	2389.8	2389.8
42	0.622025	1651.39	-24.752	Topanga Formation	410	28	926.407	1470.43	1994.39	0	1994.39	2421.51	2421.51
43	0.622025	1660.86	-23.9553	Topanga Formation	410	28	939.984	1491.98	2034.89	0	2034.89	2452.52	2452.52
44	0.622025	1669.56	-23.1635	Topanga Formation	410	28	953.403	1513.28	2074.97	0	2074.97	2482.88	2482.88
45	0.622025	1677.5	-22.3764	Topanga Formation	410	28	966.672	1534.34	2114.59	0	2114.59	2512.55	2512.55
46	0.622025	1684.69	-21.5936	Topanga Formation	410	28	979.795	1555.17	2153.76	0	2153.76	2541.56	2541.56
47	0.622025	1691.16	-20.8151	Topanga Formation	410	28	992.78	1575.78	2192.51	0	2192.51	2569.93	2569.93
48	0.622025	1697.3	-20.0406	Topanga Formation	410	28	1005.78	1596.42	2231.33	0	2231.33	2598.21	2598.21
49	0.622025	1702.94	-19.2699	Topanga Formation	410	28	1018.74	1616.98	2270	0	2270	2626.16	2626.16
50	0.622025	1707.88	-18.5028	Topanga Formation	410	28	1031.56	1637.34	2308.29	0	2308.29	2653.5	2653.5
51	0.622025	1712.13	-17.7391	Topanga Formation	410	28	1044.25	1657.48	2346.17	0	2346.17	2680.22	2680.22
52	0.622025	1715.7	-16.9787	Topanga Formation	410	28	1056.82	1677.42	2383.67	0	2383.67	2706.34	2706.34
53	0.622025	1718.6	-16.2213	Topanga Formation	410	28	1069.25	1697.15	2420.77	0	2420.77	2731.85	2731.85
54	0.622025	1720.83	-15.4669	Topanga Formation	410	28	1081.55	1716.68	2457.51	0	2457.51	2756.77	2756.77
55	0.622025	1722.41	-14.7151	Topanga Formation	410	28	1093.73	1736.01	2493.86	0	2493.86	2781.11	2781.11
56	0.622025	1723.34	-13.966	Topanga Formation	410	28	1105.79	1755.15	2529.86	0	2529.86	2804.87	2804.87
57	0.622025	1723.62	-13.2193	Topanga Formation	410	28	1117.72	1774.09	2565.48	0	2565.48	2828.04	2828.04
58	0.622025	1723.27	-12.4748	Topanga Formation	410	28	1129.54	1792.85	2600.75	0	2600.75	2850.65	2850.65
59	0.622025	1722.28	-11.7325	Topanga Formation	410	28	1141.24	1811.42	2635.68	0	2635.68	2872.69	2872.69
60	0.622025	1720.67	-10.9922	Topanga Formation	410	28	1152.82	1829.8	2670.26	0	2670.26	2894.18	2894.18
61	0.622025	1718.43	-10.2538	Topanga Formation	410	28	1164.29	1848.01	2704.5	0	2704.5	2915.12	2915.12
62	0.622025	1842.88	-9.51704	Topanga Formation	410	28	1240.88	1969.58	2933.14	0	2933.14	3141.18	3141.18
63	0.622025	1939.6	-8.78189	Topanga Formation	410	28	1304.98	2071.31	3124.47	0	3124.47	3326.07	3326.07
64	0.622025	952.226	-8.04819	Topanga Formation	410	28	800.648	1270.82	1618.98	0	1618.98	1732.19	1732.19
65	0.622025	914.341	-7.31582	Topanga Formation	410	28	788.796	1252.01	1583.59	0	1583.59	1684.85	1684.85
66	0.622025	920.001	-6.58465	Topanga Formation	410	28	800.09	1269.93	1617.3	0	1617.3	1709.66	1709.66
67	0.622025	925.061	-5.85455	Topanga Formation	410	28	811.322	1287.76	1650.83	0	1650.83	1734.02	1734.02
68	0.622025	929.524	-5.12541	Topanga Formation	410	28	822.49	1305.49	1684.17	0	1684.17	1757.94	1757.94
69	0.622025	933.391	-4.3971	Topanga Formation	410	28	833.597	1323.12	1717.32	0	1717.32	1781.42	1781.42
70	0.622025	936.665	-3.6695	Topanga Formation	410	28	844.645	1340.65	1750.31	0	1750.31	1804.47	1804.47
71	0.622025	965.927	-2.94249	Topanga Formation	410	28	870.984	1382.46	1828.93	0	1828.93	1873.7	1873.7

72	0.622025	1214.22	-2.21596	Topanga Formation	410	28	1026.3	1628.98	2292.58	0	2292.58	2332.29	2332.29
73	0.622025	758.352	-1.48978	Topanga Formation	410	28	767.826	1218.72	1520.99	0	1520.99	1540.96	1540.96
74	0.622025	280.421	-0.763843	Topanga Formation	410	28	488.59	775.51	687.424	0	687.424	693.939	693.939
75	0.622025	277.532	-0.0380278	Topanga Formation	410	28	491.558	780.22	696.283	0	696.283	696.609	696.609
76	0.622025	274.055	0.687781	Topanga Formation	410	28	494.247	784.489	704.312	0	704.312	698.379	698.379
77	0.622025	269.99	1.4137	Topanga Formation	410	28	496.649	788.301	711.482	0	711.482	699.225	699.225
78	0.622025	265.335	2.13985	Topanga Formation	410	28	498.752	791.639	717.758	0	717.758	699.123	699.123
79	0.622025	260.092	2.86634	Topanga Formation	410	28	500.544	794.483	723.107	0	723.107	698.046	698.046
80	0.622025	254.258	3.59329	Topanga Formation	410	28	502.011	796.812	727.488	0	727.488	695.963	695.963
81	0.622025	247.832	4.32082	Topanga Formation	410	28	503.141	798.605	730.859	0	730.859	692.844	692.844
82	0.622025	240.813	5.04905	Topanga Formation	410	28	503.917	799.837	733.176	0	733.176	688.654	688.654
83	0.622025	233.199	5.7781	Topanga Formation	410	28	504.323	800.482	734.389	0	734.389	683.357	683.357
84	0.622025	224.988	6.50809	Topanga Formation	410	28	504.342	800.512	734.445	0	734.445	676.91	676.91
85	0.622025	216.177	7.23914	Topanga Formation	410	28	503.954	799.896	733.288	0	733.288	669.274	669.274
86	0.622025	206.764	7.97138	Topanga Formation	410	28	503.137	798.599	730.85	0	730.85	660.395	660.395
87	0.622025	196.745	8.70494	Topanga Formation	410	28	501.869	796.586	727.062	0	727.062	650.221	650.221
88	0.622025	186.117	9.43993	Topanga Formation	410	28	500.123	793.815	721.851	0	721.851	638.698	638.698
89	0.622025	174.876	10.1765	Topanga Formation	410	28	497.872	790.242	715.133	0	715.133	625.762	625.762
90	0.622025	163.018	10.9148	Topanga Formation	410	28	495.085	785.818	706.811	0	706.811	611.341	611.341
91	0.622025	150.539	11.6549	Topanga Formation	410	28	491.727	780.489	696.789	0	696.789	595.361	595.361
92	0.622025	137.434	12.397	Topanga Formation	410	28	487.761	774.193	684.948	0	684.948	577.734	577.734
93	0.622025	123.698	13.1412	Topanga Formation	410	28	483.144	766.866	671.167	0	671.167	558.37	558.37
94	0.622025	109.324	13.8876	Topanga Formation	410	28	477.83	758.431	655.303	0	655.303	537.162	537.162
95	0.622025	94.3078	14.6365	Topanga Formation	410	28	471.767	748.807	637.203	0	637.203	513.996	513.996
96	0.622025	78.642	15.388	Topanga Formation	410	28	464.896	737.901	616.691	0	616.691	488.743	488.743
97	0.622025	62.3199	16.1421	Topanga Formation	410	28	457.15	725.607	593.572	0	593.572	461.258	461.258
98	0.622025	45.3341	16.8992	Topanga Formation	410	28	448.458	711.81	567.623	0	567.623	431.378	431.378
99	0.622025	27.6768	17.6593	Topanga Formation	410	28	438.734	696.376	538.595	0	538.595	398.92	398.92
100	0.622025	9.33964	18.4226	Topanga Formation	410	28	442.454	702.28	549.699	0	549.699	402.32	402.32

Entity Information

Group 1

Shared Entities

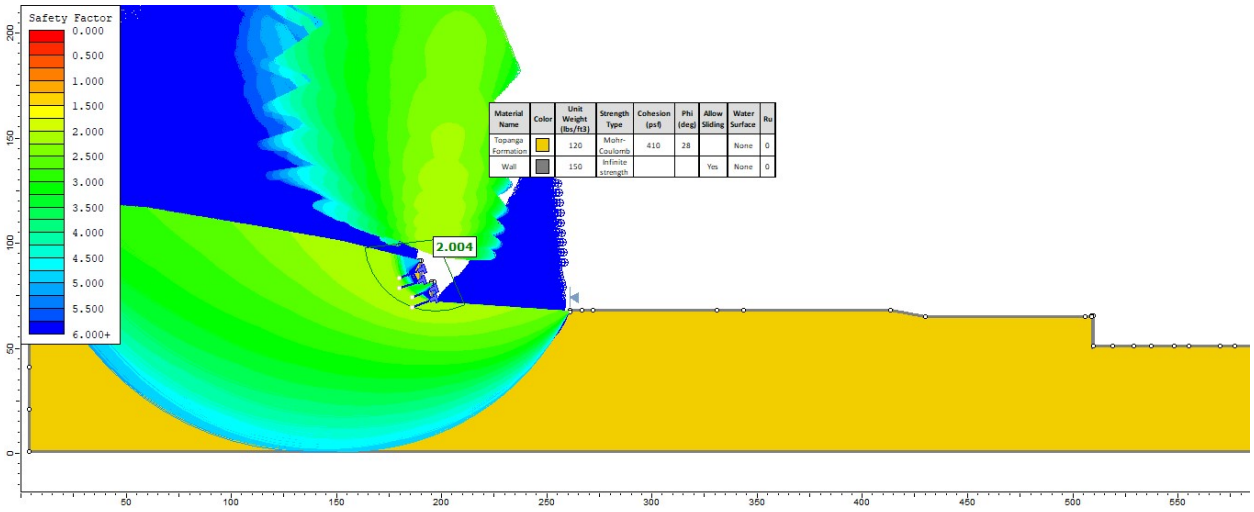
Type	Coordinates (x,y)
	603.795, 50.9923 577.248, 51.2556

External Boundary	570, 51.1846 555.424, 51.3004 548.421, 51.4141 537.448, 51.3731 528.964, 51.3095 519.189, 51.2298 509.92, 51.2298 509.92, 65.6409 508.92, 65.6409 508.92, 65.0014 505.906, 65.0014 429.906, 65.0014 413.366, 68.4393 343.366, 68.4393 331.006, 68.3511 272.006, 68.3511 266.792, 68.2546 261.091, 68.1948 260.952, 67.5022 196.295, 71.9777 196.295, 81.9777 195.295, 81.9777 195.295, 80.8231 190.406, 80.8231 190.406, 91.6758 189.295, 91.8692 180.327, 93.9832 161.963, 98.5515 151.658, 101.05 147.216, 101.796 140.038, 103.102 128.98, 105.055 117.481, 107.106 101.105, 109.846 95.2614, 110.9 83.4213, 112.829 74.9587, 114.319 73.115, 114.484 59.8448, 116.881 58.949, 116.864 54.1481, 117.304 50.6367, 117.537 46.836, 117.918 40.5097, 118.266 37.7254, 118.639 36.2039, 118.631 34.1864, 118.904 32.0271, 119.103 27.8076, 119.821 26.9083, 119.719 21.5982, 118.837 14.1164, 117.967 3.79546, 116.787 3.79546, 100.992 3.79546, 80.9923 3.79546, 60.9923 3.79546, 40.9923 3.79546, 20.9923 3.79546, 0.992306

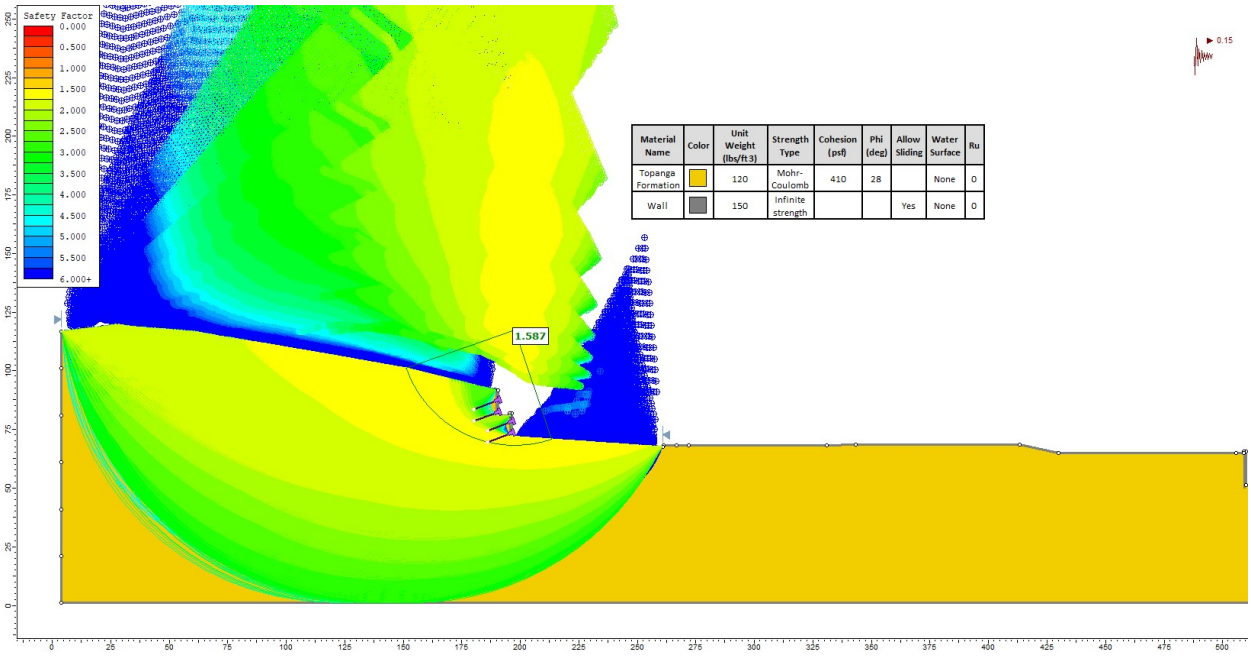
	603.795, 0.992306 603.795, 20.9923 603.795, 40.9923
Material Boundary	195.295, 80.8231 195.295, 78 195.295, 73 195.295, 71.9777 196.295, 71.9777
Material Boundary	190.406, 79.6758 189.406, 79.6758 189.406, 82 189.406, 87 189.406, 91.6758 190.406, 91.6758
Material Boundary	508.92, 65.0014 508.92, 49.6409 509.92, 49.6409 509.92, 51.2298
Material Boundary	190.406, 79.6758 190.406, 80.8231

Report Views

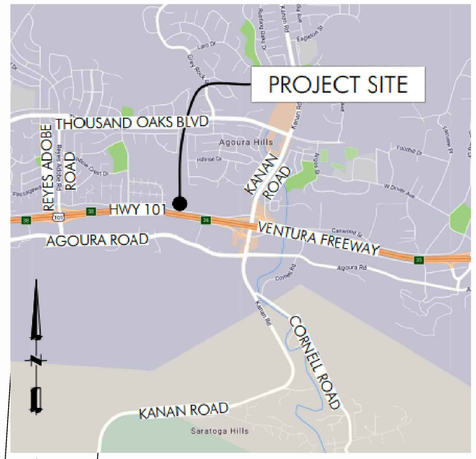
1: Group 1 - Master Scenario - spencer method



2: Group 1 - Pseudo-Static - spencer method



Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)	Allow Sliding	Water Surface	Ru
Topanga Formation		120	Mohr-Coulomb	410	28		None	0
Wall		150	Infinite strength			Yes	None	0



VICINITY MAP

PROJECT STATISTICS

SITE AREA COVERAGE BREAKDOWN

PARCEL SIZE	150,367.10 sf. (3.45 ac)	
PORTION OF PARCEL ON CANWOOD STREET	8,948.10 sf.	
NET PARCEL	141,419 sf. (3.246 AC)	100%
UNDEVELOPED LANDSCAPE	44,567 sf.	31.5%
DEVELOPED LANDSCAPE	12,718 sf.	9.0%
BUILDINGS	21,100 sf.	15%
TRASH ENCLOSURE	254 sf.	0.1%
HARDSCAPE	6,234 sf.	4.4%
PAVING	56,546 sf.	40.0%

BUILDING GROSS AREAS

BLDG 1	6,188sf.
BLDG 2	3,669sf.
BLDG 3	3,870sf.
BLDG 4	3,649sf.
BLDG 5	3,724sf.
TOTAL	21,100sf.

PARKING REQUIRED

5/1000	106 STALLS

PARKING PROVIDED

STANDARD	104 STALLS
ACCESSIBLE	5 STALLS
TOTAL	109 STALLS

OWNER/CONTRACTOR: MARTIN TEITELBAUM
569 Constitution Ave., Ste. H,
Camarillo, CA 93012; T: 805.383.2221

ARCHITECT: BRIAN POLIQUIN
5126 Clareton Drive, Ste. 110,
Agoura Hills, CA 91301; T: 818.584.0057

SCALE: 1" = 20'

0 30 60 90

NORTH

Sept. 16, 2020 • Sept. 25, 2020 • Sept. 28, 2020

BORING LOCATION MAP

Gorian & Associates, Inc.
Applied Earth Sciences

Job No: 3187-0-0-100		Date: February 2021
Scale: 1" = 20'	Drawn by:	PLATE 1
	Approved by:	

pk:architecture
5126 clareton drive, suite 110
agoura hills, california 91301
v. 818.584.0057 f. 818.584.0019
w. pkarchitecture.net

site plan study:
scale: 1" = 20'-0"

Canwood Office Campus

29555 Canwood Street, unit f
agoura hills, california 91301

A1.0

20-057.20

APPENDIX D

Resume of Dr. Wayne Bischoff (Principal)

WAYNE BISCHOFF, PH.D.

Professional Resume
Registered Professional Archaeologist (RPA #32450562)

Education

2000 - Ph.D. in Anthropology (Historical Archaeology emphasis), Michigan State University, East Lansing, MI.
1991 - Bachelor of Arts (Anthropology, Education, and U.S. History), Purdue University, West Lafayette, IN.

Professional Summary

- **Over 25 Years' Experience Managing Projects.** Projects completed under the California Environmental Quality Act (CEQA), Section 106 and 110 of the National Historic Preservation Act (NHPA), the National Environmental Protection Act (NEPA), as well as numerous other federal and state laws and permit regulations regarding cultural resources.
- **Successful Performance History.** Dr. Bischoff has managed up to 60 professional staff in multiple offices covering several states. He has completed challenged projects, developed successful cultural resource teams, and is experienced with budgeting and scoping projects, successful proposal writing, client and agency relationships, and large project management.
- **Numerous Market Sectors.** Dr. Bischoff has completed projects involving solar, wind, geothermal, and electric transmission lines; defense, public works, education, residential, and commercial development; telecommunication, mining, transportation, parks and trails, and water resources; and storm and sewer lines, industrial sites, and railroads.
- **Planning and Compliance Document Author.** Dr. Bischoff has been an author on Environmental Impact Reports (EIR), Mitigated Negative Declarations (MND), Environmental Impact Statements (EIS), Environmental Assessments (EA), Programmatic Agreements (PA), Memorandum of Agreements (MOA), Initial Studies (IS), ACOE permits, and Memorandum of Understanding (MOU).
- **Extensive Experience with Federal, State, County, and Local Agencies.** SHPOs, FHA, NPS, and CALTRANS. Multiple Bureau of Land Management districts (Barstow, Bishop, Moreno Valley, Needles, El Centro, Nevada). The Army and National Guard, Marine Corps, Navy, and Air Force. The GSA, the USDA, Forest Service, California Coastal Commission, and several USCOE districts, LACDPW, LADWP, and many regional water districts. Fish and Wildlife, the CPUC, and the Counties of Los Angeles, San Bernardino, Riverside, Ventura, Imperial, Kern, Santa Clara, Inyo, Mono, Santa Barbara, San Diego, and Orange. Many port authorities, state agencies, and local governments.
- **Consultation and Communication with Many Tribal Groups.** Tribal groups include the Chumash, Gabrielino, Tongva, Washo, Piute, Quechan, Cahuilla, Tataviam, San Manuel, Morongo, and Luiseno. ***I am a professional expert in AB-52 compliance and Tribal consultation.***
- **Over 500 Cultural Resource Projects Completed in Eleven States**. Including hundreds of Phase I Surveys, Phase II Evaluations, Phase III Data Recoveries, and Monitoring Projects. I have authored cultural resource Monitoring Plans, Evaluation Plans, Data Recovery Plans, PRIMPs, Construction Phase Management Plans, WEAPs, Feasibility Studies, and National Register and National Landmark nominations. Reports have included Cultural, Paleontological, and Built Environment resources.
- **Historic Architecture Project Management.** Including built environment surveys and inventories, building assessments and evaluations, HABS/HAER mitigation reports, landscape studies, and indirect effects reports. Subjects have included houses, commercial buildings, roads, canals, and power lines.

Professional Experience

Cultural Resources Director, Envicom Inc., Westlake Village, CA
February, 2014 – Current

As Cultural Resources Director at Envicom, I complete all cultural resource, archaeological, and paleontological phase I studies, all cultural resource evaluations and data recoveries, Native American consultation, and built environment projects for Envicom, and author cultural resource sections of permitting and planning documents, including MNDs and EIRs. Project area includes Ventura, Santa Barbara, Los Angles, Riverside, Kern, Imperial, San Diego, and San Bernardino Counties. I oversee cultural staff and work with planning teams on larger projects. I am also responsible for business development and project management tasks. I write proposals, oversee quality control, develop agency relationships, write technical reports, and manage and develop project budgets.

Projects:

- **Paleontological Monitoring of 15353 Camarillo, Sherman Oaks, CA.** Principal and Project Manager for this paleontological monitoring project. (Upcoming).
- **Archaeological and Paleontological Monitoring of the Twin Lakes Water Tank Construction for the Las Virgenes Water District, Porter Ranch, CA.** Principal and Project Manager for this monitoring project. (Upcoming).
- **Cultural Resource Tasks Associated with the Arrowhead Estates Project, Banning, CA.** Principal and Project Manager for this 65-acre residential project, which will construct 170+ houses near the historic Saint Boniface Indian School (now demolished). This project involved the National Register nomination of the Indian School, a HAER-level documentation of a stone and concrete water channel, the curation of all artifacts with the Morongo Tribal Group, the installation of historic signage, and the archaeological and Native American monitoring of the project site grading. (Upcoming).
- **Archaeological Monitoring at the Sakioka Business Park, Oxnard, Ventura County, CA.** Project Manager for this large archaeological monitoring project. (October 2020 – Current).
- **Phase I survey of the proposed Little Rock Mobile Home Park, unincorporated Los Angeles County, CA (with Samantha Renta).** Principal and Project Manager for this project, which included an SCCIC record search and a site visit. (November 2020 – Current).
- **Phase I survey of 410 Tico Road, Ojai, Ventura County, CA (with Samantha Renta).** Principal and Project Manager for this project, which included an SCCIC record search and a site visit. (November 2020 – Current).
- **Native American Monitoring at the Los Angeles International Airport (LAX), City of Los Angeles, Los Angeles County, CA.** Project Manager for this long term Native American monitoring project, which includes a Discovery Plan and a final Monitoring Report. (October 2020 – Current).
- **Oakmont Senior Living Historic and Archaeological Display Production, Agoura Hills, Los Angeles County, CA.** Project Manager for this historical interpretation display project (October 2020 to Current).
- **Arts District Archaeological Monitoring Project, Los Angeles, CA.** Principal and Project Manager for this archaeological monitoring project. (October 2020 to Current).
- **Oakmont Senior Living Historic and Archaeological Display Production, Simi Valley, Ventura County, CA.** Project Manager for this historical interpretation display project (with the Strathearn Historic Park and Museum) (September 2020 to Current).

- **Phase I Survey of 122 acres of the Canyon Ostara residential development project, Malibu, Los Angeles County, CA (with Samantha Renta).** Principal and Project Manager for this project, which included an SCCIC and NAHC record search and a site survey. (August 2020 – Current).
- **Cultural Resource Monitoring for the Oasis Windmill Farm, Kern County, CA.** Project manager for the monitoring of impacts in six cultural resources as part of the Oasis Windmill Farm upgrade (August 2020 – Current).
- **Keyes Porsche Archaeological, Paleontological, and Native American Monitoring Project, Woodland Hills, CA.** Principal and Project Manager for this archaeological, paleontological, and Native American monitoring project. (August 2020 – Current).
- **Archaeological, Paleontological, and Native American Monitoring for the JPA/Las Virgenes Water District Solar Farm Expansion, Calabasas, CA.** Principal and Project Manager for this monitoring project. This project encountered elements of a very old prehistoric site at depth, which included lithic material, groundstone artifacts, and an intact multi-episodic hearth feature (April 2020 – Current).
- **Summit View Apartments Project Paleontological Monitoring for this Veterans Housing Project, City of Los Angeles, CA.** Principal and Project Manager for this paleontological monitoring project. (February 2020 – Current).
- **Oakmont Senior Housing Archaeological, Paleontological, and Native American Monitoring Project, Agoura Hills, CA.** Principal and Project Manager for this archaeological, paleontological, and Native American monitoring project. (January 2020 – Current).
- **Conrad N. Hilton Foundation Phase Ib of Proposed Phase II Building Locations, Agoura Hills, California.** 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 – Current).
- **18800 Gale Avenue Archaeological, Biological, and Paleontological Monitoring Project, Rowland Heights, CA.** Principal and Project Manager for this archaeological, biological, and paleontological monitoring project. (November 2019 – Current).
- **Los Angeles Unified School District (LAUSD) Environmental On-Call for archaeological and paleontological tasks, Los Angeles County, CA.** 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. (February 2019 – Current).
- **Los Angeles Community College District Environmental On-Call (including cultural resources), Los Angeles County, CA.** Principal, Project Manager, and cultural resource consultant as needed. (February 2018 – Current).
- **Review of Technical Documents and EIR Cultural Section Writing for "The Agoura Village Expansion" project, Agoura Hills, Los Angeles County, CA.** 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 development is located on a significant prehistoric Native American cultural resource. (January 2018 – Current).
- **Los Angeles Unified Schools Department (LAUSD) Environmental On-Call (including cultural resources), City of Los Angeles, Los Angeles County, CA.** 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).
- **CA-LAN-320 Phased Evaluation Project, Agoura Hills, Los Angeles County, CA.** 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 – Current).

- **Phase I Survey of a property within the Rancho Ojai subdivision, Ojai, Ventura County, CA (with Samantha Renta).** 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, Fillmore, Venture County, CA (with Samantha Renta).** 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 a property on Giles Road, Lake Sherwood, Ventura County, CA (with Samantha Renta).** Principal and Project Manager for this project, which included an SCCIC 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 (July 2020 – October 2020).
- **Phase I Survey of 730 South Vermont, City of Los Angeles, Los Angeles County, CA (with Samantha Renta).** 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, CA (with Samantha Whittington).** 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, Ojai, Ventura County, CA (with Samantha Renta).** Principal and Project Manager for this project, which included an SCCIC record search and a site visit. (June 2020 – August 2020).
- **Phase I Survey of 604 Gridley Road, Ojai, Ventura County, CA (with Samantha Renta).** Principal and Project Manager for this project, which included an SCCIC record search and a site visit. (July 2020 – August 2020).
- **Phase I Survey of the Tehachapi Battery Storage Project, Terra Gen Windfarms, Kern County, CA (with Samantha Renta).** Principal and Project Manager for this project, which included a Bakersfield record search and a site survey. (July 2020 – August 2020).
- **Phase I Survey of the 5041 Lankershim Hotel Property, North Hollywood, Los Angeles County, CA (with Samantha Renta).** 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, Los Angeles County, CA.** 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, Malibu, Los Angeles County, CA (with Samantha R3nta).** 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, Malibu, Los Angeles County, CA (with Samantha Renta).** 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, Agoura Hills, CA.** Principal and Project Manager for this monitoring project. A negative findings report was also completed and submitted to the City (January 2019 – July 2020).

- **Phase I Survey 505 Centre Street, City of Los Angeles, Los Angeles County, CA (with Samantha Renta).** 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, City of Somis, Ventura County, CA.** 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, Kern County, CA.** 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, Kern County, CA.** 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, Lancaster, Los Angeles County, CA (with Samantha Renta).** 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, Palmdale, Los Angeles County, CA (with Samantha Renta).** 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, Agoura Hills, California.** 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, Malibu, Los Angeles County, CA (with Samantha Renta).** 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, Thousand Oaks, CA (with Samantha Renta).** 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, Porter Ranch, Los Angeles County, CA (with Samantha Whittington).** 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, Los Angeles County, CA (with Samantha Renta).** 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, Los Angeles County, CA (with Samantha Renta).** 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, Ojai, Ventura County, CA (with Samantha Renta).** 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, Burbank, CA (with Samantha Renta).** 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, Malibu, Los Angeles County, CA (with Samantha Renta).** 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, Woodland Hills, Los Angeles County, CA (with Samantha Renta).** Principal and Project Manager for this monitoring project. (August 2019 – January 2020).
- **Phase I Survey of the Riverwalk II Mixed-Use Project, Santa Clarita, CA.** 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, Malibu, Los Angeles County, CA (with Samantha Renta).** 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, San Diego, San Diego County, CA (with Samantha Whittington).** 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, Malibu, Los Angeles County, CA (with Samantha Whittington).** 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, Malibu, Los Angeles County, CA (with Samantha Whittington).** 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, Malibu, Los Angeles County, CA (with Samantha Whittington).** 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, Woodland Hills, Los Angeles County, CA (with Samantha Whittington).** 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, Canoga Park, Los Angeles County, CA.** 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, Los Angeles County, CA (with Samantha Whittington).** 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 (with Samantha Whittington).** 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, Los Angeles County, CA (with Samantha Whittington).** 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, City of Somis, Ventura County, CA (with Samantha Whittington).** 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, Los Angeles County, CA (with Samantha Whittington).** 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 Hills, Ventura County, CA (with Samantha Whittington).** 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, Los Angeles County, CA (with Samantha Whittington).** 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, Los Angeles County, CA (with Samantha Whittington).** 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, Los Angeles County, CA (with Samantha Whittington).** 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 located in Calabasas, CA.** 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, Ventura County, CA.** 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, Riverside County, CA.** 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, Santa Clarita, CA.** 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, Calabasas, CA.** 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, Los Angeles County, CA.** 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, Los Angeles County, CA.** 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 Los Angeles, Los Angeles County, CA.** 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, Porter Ranch, Los Angeles County, CA.** 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. (November 2018 – March 2019).
- **Phase I Survey of the Sherwood Development Corporation, Tract 4409, Ventura County, CA.** 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), Los Angeles County, CA.** 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, Los Angeles County, CA.** 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, Los Angeles County, CA.** 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, Ventura County, CA.** 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, in Ventura County near west Simi Valley, California.** 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, Valencia, Los Angeles County, CA.** 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, Calabasas, Los Angeles County, CA.** 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. 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, Simi Valley, CA.** 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 in Sherman Oaks, Los Angeles County, CA.** 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, Inglewood, Los Angeles County, CA (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 Ventura, Ventura County, CA.** 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, Los Angeles County, CA (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, Thousand Oaks, California, Los Angeles County, CA.** 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, Agoura Hills, CA.** 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, Los Angeles County, CA.** 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, Simi Valley, Ventura County, CA (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, Sylmar, Los Angeles County, CA (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, Sylmar, Los Angeles County, CA (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.** 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.** 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.** 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.** 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.** 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.** 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.** 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.** Project Manager for this project, with Chattel, Inc., being the historic preservation consultant. (February 2018 – April 2018)
- **Marinette Road Residential Development, Pacific Palisades, Los Angeles County, CA.** 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, Malibu, California, Los Angeles County, CA (with Samantha Whittington).** 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 Santa Monica Mountains, Los Angeles County, CA.** 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, Malibu, California, Los Angeles County, CA (with Samantha Whittington).** 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 in Sylmar, California, Los Angeles County, CA.** 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, Ventura County, CA.** 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, Los Angeles County, CA.** 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).** 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. We were the official on-call cultural/paleo resources team for the Rams Stadium project, being called in to deal with modern faunal and ancient fossil remains found during excavation. We worked closely with the construction team to get an expert on site within 24-hours of the discovery or quicker, 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, Calabasas, California, Los Angeles County, CA.** 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, Malibu, California, Los Angeles County, CA.** 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 in Topanga Canyon, California, Los Angeles County, CA.** 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 Monterrey Road Condominium Project, a small residential development near South Pasadena, California, Los Angeles County, CA.** P 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 in the City of Agoura Hills, Los Angeles County, CA.** 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, Malibu, California.** 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, Newbury Park, CA.** 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, Los Angeles County, CA.** 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)
- **City of Pomona Environmental On-Call (Including Cultural Resources), Los Angeles County, CA.** 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, Los Angeles County, CA.** Principal and Project Manager for the completion of NAHC record search, and a Phase Ia site survey. The Phase Ia survey identified two 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.** 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 County Cultural, Historic Architecture, and Paleontology On-Call, 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 in Moorpark, Ventura County, CA.** 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, Santa Clarita, Los Angeles County, CA.** Principal and Project Manager for this paleontological record search, site survey, and report. (August – September 2017)
- **North Canyon Ranch 170-acre Residential Subdivision in Simi Valley, Ventura County, CA.** 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 in El Monte, Los Angeles, CA.** 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 in El Monte, Los Angeles, CA.** 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 in Arcadia, Los Angeles, CA.** 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 in Los Angeles, Los Angeles County, CA.** 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 near Santa Clarita, California, Los Angeles County, CA.** 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 in South Pasadena, Los Angeles County, CA.** 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, Lobo Canyon, Los Angeles County.** 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 in Somis, Ventura County, CA.** 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 in Ojai, California, Ventura County, CA.** 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.** 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.** 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, City of Reseda, Los Angeles County, CA.** 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, Riverside County, CA.** 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, Lobo Canyon, Los Angeles County, CA.** 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 in the City of Northridge at the corner of Nordoff and Darby Streets, Los Angeles County, CA.** 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, Los Angeles County, CA.** 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, Porter Ranch, Los Angeles, CA.** 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 in North Hollywood, Los Angeles County, CA.** 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 in Woodland Hills, CA.** 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, Newbury Park, CA.** 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, Los Angeles, CA.** 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.** 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, Agoura Hills, Los Angeles County, CA.** 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 PCH Phase I Cultural Resource Survey, Santa Monica, CA.** 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, Agoura Hills, Los Angeles County, CA.** 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, Sylmar, Los Angeles County, CA.** 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, North Hollywood, Los Angeles County, CA.** 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, North Hollywood, CA.** 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, Agoura Hills, Los Angeles County, CA.** 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 2015)
- **Blessed Theresa Church Construction, City of Winchester, Riverside County, CA.** Cultural consultation including cultural/paleo monitoring issues. (April 2014 – July 2014)
- **Village at Los Carneros, City of Goleta, Santa Barbara County, CA.** 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, Los Angeles County, CA.** 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)

Cultural Division Director, Chambers Group, Inc., Santa Ana, CA
October, 2011 – October 2013

As Cultural Director, I oversaw all existing cultural, paleontological, ethnographic, and built environment projects for Chambers Group. Projects were staged out of seven regional offices located within California and Nevada. I oversaw a permanent staff of 20 individuals and a temporary staff of up to 40 people. I also was responsible for business development and coordination of projects with multi-disciplinary teams, including Biology, Air Quality, SWPPP, and Planning professionals. I reviewed and authored cultural sections of EA, EIR, and EIS documents. I also wrote proposals, oversaw quality control, provided cultural compliance sections of technical reports, developed agency relationships, wrote technical reports, managed and developed budgets, and oversaw all cultural staff. I performed QA/QC on all documents and ensured that management and mitigation measures were clearly defined and legally-defendable. Yearly Division budget was up to 3-million dollars annually.

Energy Projects:

- **Beacon Solar, Hecate Energy and LADWP, Kern County, CA.** Business Developer for the archaeology and biological monitoring, pre-construction surveys, and desert tortoise fence monitoring for this large, 2000-acre solar project for the Los Angeles Department of Water and Power. (July – October 2013).
- **Q-Cells Solar Survey, Palm Springs, Riverside County, CA.** Principal and Project Manager for a cultural survey and record search of 36-acres north of Palm Springs for solar development. (October 2013 – October 2013)
- **Pacific Gas and Electric NERC Support Monitoring, sub to URS, Northern and Central California.** Principal and Project Manager for this 4-year project in support of the national NERC power pole reliability project for PG&E. Involves cultural, biological, and paleontological monitoring and field surveys. (October 2013 – October 2013)
- **Gold Bar Transmission Line Survey, McEwen Mining, Eureka County, NV.** Principal and Project Manager for this 2,577-acre cultural survey for the development of a 33-mile transmission line to service the Gold Bar Mine in Nevada. Bureau of Land Management was the principal Federal agency. (April 2013 – October 2013).
- **East Kern Wind Resource Area (EKWRA) Power Pole Replacement Project, Environmental Intelligence / Southern California Edison, Kern County, CA.** Principal and Project Manager. This two-year project included cultural resource surveys, the evaluation of numerous cultural sites, and cultural and paleontological monitoring for the construction of over 130-miles of new power poles and fiber optics lines to service Tehachapi Mountain wind farms. (January 2013 – October 2013)
- **Pure Source Power, Victorville, San Bernardino, CA.** Principal and Project Manager for a cultural survey and record search of 140-acres north of Palm Springs for solar development. (September 2013 – October 2013)
- **Dry Ranch Solar Project, Silverado Power, Los Angeles County, CA.** Principal. Dr. Bischoff managed this 64-acre solar project near Lancaster, which included a SCCIC/NAHC record search, field survey, and cultural report to meet CEQA compliance. This project included coordination with Southern California Edison for a gen-tie line and telecom attachments. (March - April 2013)
- **Plainview Solar Project, Silverado Power, Los Angeles County, CA.** Principal. Dr. Bischoff managed this 114-acre solar project near Lancaster, which included a SCCIC/NAHC record search, field survey, and cultural report to meet CEQA compliance. (April - May 2013)
- **Silverleaf Solar Project, Cultural and Paleontological Survey, Agile Energy, Imperial County, CA.** Principal and Project Manager. Dr. Bischoff provided general review and quality control for a large solar project south of San Diego. This project involved an over 2,000-acre survey of proposed solar fields and 5-miles of electrical transmission gen-tie lines. The bureau of Land Management was the principal Federal agency. (November 2011 - July 2012)
- **Desert Harvest Solar Project, Cultural Resources Survey, eneXco Energy, Riverside County, CA.** Project Manager. Dr. Bischoff was the project manager for the built environment survey of 1,600-acre solar field and 12-miles of electrical transmission gen-tie lines. (November 2011 - June 2012)
- **Silverleaf Solar Project, Built Environment Survey, Agile Energy, Imperial County, CA.** Project Manager. Project Manager. Dr. Bischoff was the project manager for the built environment survey of 2,000-acre solar field and 5-miles of electrical transmission gen-tie lines. This included the production of a separate technical report for the Bureau of Land Management that included a historic structure inventory, assessment of significance, and an indirect effects analysis. (November 2011 - July 2012)

- **IVSC2 Solar Project, County of Imperial, Imperial County, CA.** Principal and Project Manager. Dr. Bischoff provided oversight of the 140-acre solar project east of the Salton Sea. This project was notable for the quick response time required to field a survey crew and complete a draft report for the County (Sept-Oct 2012)
- **Desert Harvest Solar Project, Cultural and Paleontological Resource Survey, eneXco Energy, Riverside County, CA.** Principal and Project Manager. Dr. Bischoff provided general review and quality control for a large solar project northeast of Blythe, CA. This project involved an over 1,600-acre survey of proposed solar fields and 12-miles of electrical transmission gen-tie lines. Bureau of Land Management was the principal Federal agency. (November 2011 - July 2012)
- **Desert Harvest Solar Project, Build Environment Survey, eneXco Energy, Riverside County, CA.** Project Manager. Dr. Bischoff was the project manager for the built environment survey of 1,600-acre solar field and 12-miles of electrical transmission gen-tie lines. This included the production of a separate technical report for the Bureau of Land Management that included a historic structure inventory, assessment of significance, and an indirect effects analysis. (November 2011 - June 2012)

Telecommunication Projects:

- **AT&T Fiber-optics Renewal Project, Evaluations, Mitigations, and Monitoring, AT&T, San Bernardino County, CA.** Cultural Principal and Project Manager. Dr. Bischoff will provide project management, technical writing, and quality control for the cultural and paleontological evaluations, data recoveries, and monitoring efforts for the AT&T fiber renewal project. This project involved the survey of over 90 miles of proposed new fiber-optic line between Barstow and Las Vegas, NV, and the management of over 100-cultural sites. Bureau of Land Management and Mojave National Preserve were the principal Federal agencies. (July 2013 – October)
- **Fiber Node Evaluations, Freedom Communications, Orange County, CA.** Cultural Principal. Dr. Bischoff provided general project management and quality control for the cultural background record searches and surveys for dozens of telecommunication sites throughout the City of Irvine as part of the Freedom Communications site development project. Dozens more sites are expected to be tested in the coming year. (April 2012 – October 2013)
- **San Diego Churches and Public Building Historic Structure Evaluations, DePratti Inc., City of San Diego, CA.** Principal Investigator. Dr. Bischoff acted as Principal and QA/QC manager for this project, which involved the evaluation of dozens of historic structures as part of the DePratti Communication telecommunication attachment project in the City of San Diego. (November 2011 – October 2013)
- **The Plunge Evaluation, DePratti Inc., City of San Diego, San Diego County, CA.** Principal for this historic architecture project involving the structural evaluation and National Register documentation for The Plunge historic salt-water bath house in San Diego. (September 2013 – September 2013)
- **AT&T Fiber-optics Renewal Project, Surveys, Literature Searches, and Technical Studies, AT&T, San Bernardino County, CA.** Cultural Principal and Project Manager. Dr. Bischoff provided general project management and quality control for the cultural, paleontological, and ethnographic surveys, literature searches, and technical studies. This project involved the survey of over 90 miles of proposed new fiber-optic line between Barstow and Las Vegas, NV, and the management of over 100-cultural sites. Bureau of Land Management and Mojave National Preserve were the principal Federal agencies. (April 2012 – July 2013)

- **Digital West Fiber Line Feasibility Study, San Luis Obispo to Los Angeles, Counties of San Luis Obispo, Santa Barbara, Ventura, and Los Angeles, CA.** Project Manager for this large feasibility study for placing a new fiber line down the US 101 freeway corridor. Biological, cultural, paleontological, and permitting constraints were all examined. (April 2012 – July 2013)
- **Digital 395 Broadband Stimulus Project, Praxis and California Broadband Corporation, California and Nevada.** Cultural Director. Dr. Bischoff acted as the California report manager of the cultural division, directed fieldwork, and authored management documents and reports. This project involved the new installation of over 650 miles of fiber-optic line across California and Nevada. The programmatic agreement of this complex project included 10 federal, state, and tribal agencies, with another seven acting as interested parties, and the management, evaluation, and monitoring of over 170 cultural sites. NTIAA was the Principal Federal Agency, but also involved twelve other California and Nevada State and Federal agencies and Tribal Groups (November 2011 – April 2012)

Defense Projects:

- **Fort Irwin Cell Tower Geotech Boring Monitoring, Northrop-Grumman and Fort Irwin Army Post, San Bernardino County, CA.** Principal. This project involves the cultural and paleo monitoring of sensitive areas as part of the construction of over 24 new cell tower locations. (October 2013 – October 2013)
- **Edwards Airforce Base Telecommunication Cultural Monitoring, Team Fischel Company, Edwards AFB, Kern County, CA.** Project Manager and Principal for the cultural monitoring of 40-miles of telecommunication trenching on Edwards AFB, including pre-construction meetings and a final monitoring report. (May 2013 – Sept. 2013)
- **Fort Irwin Cell Tower Surveys and Monitoring, Northrop-Grumman and Fort Irwin Army Post, San Bernardino County, CA.** Principal. This project involves the cultural and paleo survey of over 24 new cell tower locations and associated access roads on Fort Irwin, as well as construction phase monitoring. (April 2013 – October 2013)
- **Marine Corps Base, Camp Pendleton, Cultural Resources Consultation, Marine Corps Base, Pendleton, San Diego County, CA.** On-Call Senior Cultural Resources Consultant. Dr. Bischoff provided senior-level cultural resource consultation related to Camp Pendleton's Basewide Utilities Infrastructure Improvements project. He provided consulting on cultural resource management for several waste treatment and utility line systems as part of the Camp's "Grow the Force" initiative. (2011 – October 2013)

Water Projects:

- **Pacoima Spreading Grounds Improvement Project, LACDPW, Los Angeles County, CA.** Cultural Principal. Dr. Bischoff managed the cultural resources record search and CEQA cultural section mitigation measures of an EIR for the improvement of the Pacoima spreading grounds and related canal resources. (April 2013 – October 2013)
- **Devil's Gate Reservoir Sediment Removal and Management Project, LACDPW, Los Angeles County, CA.** Principal of Cultural Resources. This project involved removal of sediment within the Devil's Gate Reservoir area, which required a preliminary cultural survey and record search under CEQA, as well as an EIR. Dr. Bischoff served as the cultural principal for the project and provided a recommended plan for dealing with sedimentary soils vs. native soils, monitoring criteria, and potential discovery situations. Dr. Bischoff helped write Environmental Impact Report sections, and worked with the Gabrieleno Tribal Group in the protection of archaeological and tribal cultural resources. (2011 – October 2013)

- **Peck Road Spreading Basin Improvement Project, LACDPW, Los Angeles County, CA.** Cultural Principal. Dr. Bischoff managed the cultural resources record searches, field survey, paleontological survey, and CEQA cultural section mitigation measures of an MND for the improvement of the Peck Road Spreading Basin, including a related new water discharge pipe. (June 2013 – September 2013)
- **Marina Del Rey Waterline Replacement Project Cultural Monitoring, LACDPW, Los Angeles County, CA.** Cultural Principal. This project with the Los Angeles Department of Public Works involved the cultural monitoring for the Marina Del Rey 18-inch Waterline Replacement. Chambers Group also provided a qualified archaeological monitor at the project site during excavation activities during construction. (March - May 2013)
- **Dieguto Wetlands Restoration Monitoring, Southern California Edison, Del Mar, San Diego County, CA.** Principal Investigator and Project Manager. This project involved the extensive rehabilitation of Southern California Edison property as part of the Dieguto Wetlands Restoration project. (April 2012 - January 2013)
- **Live Oaks Spreading Grounds Project, LACDPW, Los Angeles County, CA.** Cultural Principal. Dr. Bischoff managed the cultural resources record search and site visit for this public works project. (April 2013 – October 2013)
- **Los Penasquitos Wetlands Monitoring, AMEC, Del Mar, San Diego County, CA.** Principal Investigator. Dr. Bischoff managed the monitoring tasks, budgets, and professional standards for this project near the City of Del Mar as part of the Torrey Pines State Nature Reserve restoration. (October - December 2012)
- **San Gorgonio Creek Water Recharge Basin Construction Monitoring, Beaumont Cherry Valley Water District, Cherry Valley, Riverside County, CA.** Principal and Project Manager. This project involved paleontological and archaeological construction monitoring during construction, including emergency evaluation and monitoring when early 19Th Century structures and materials were unexpectedly encountered during earth moving. (February 2012 – April 2012)
- **Penmar Golf Course Water Quality Improvement Project, Pacific Hydrotech and City of Santa Monica, Santa Monica, CA.** Principal Investigator. Dr. Bischoff managed QA/QC review, budgets, and professional standards for the project in the City of Venice. Penmar was a multi-year waterline and tank improvement project in which evidence of ethnic Japanese barrios and fossil Pleistocene animal bones were discovered. (November 2011 - November 2012)
- **Oxford Retention Basin Flood Protection Project, LACDPW, Los Angeles County, CA.** Principal and Project Manager. The Oxford Basin in Marina Del Rey was receiving enhancement, and Dr. Bischoff managed the completion of the cultural survey, literature review, and construction monitoring for the project. (2011 - 2012)

Public Works Projects:

- **Veterans Administration, VISN 21 On-Call, Western States, Teamed with KAL Architects.** This project will provide cultural and biological technical services for Veterans Administration projects from October 2013 to October 2018. (October 2013 – October 2013)
- **Historic Structure Evaluations for Statewide Weatherization Efforts, sub to ICF for the State of California, All Counties, CA.** Project Manager and Principal. This project involves meeting NEPA compliance for low-income subsidized weatherization efforts throughout the State of California. Hundreds of structures will be evaluated as part of this project by a Chambers Architectural Historian using a abbreviated format. (November 2011 to October 2013)
- **CEQA Services for Improvements to Polytechnic and Wilson High Schools, LBUSD, City of Long Beach, CA.** Cultural Principal. Dr. Bischoff provided oversight and incorporation of the historic architecture technical reports into the project CEQA documents. (June 2013 – August 2013)

- **Mill Creek Crew Room Cultural Monitoring, Angeles National Forest (ANF), Los Angeles County, CA.** The County of Los Angeles Department of Public Works proposed to replace the crew room building within the Angeles Forest Mill Creek Summit Maintenance Yard facility. This CEQA/NHPA project involved the preparation of a treatment and discovery plan document, ARPA permitting, constant consultation with the ANF, construction monitoring, and a final monitoring report. (April – July 2013)
- **Review of Technical Report and CEQA Documents Relating to the Proposed Demolition of Santa Ana Public Building #16, City of Santa Ana, Santa Ana, CA.** Principal. This project involved the review of technical documents, mitigation measures, and CEQA documents relating to the demolition of a 1950s public building in the City of Santa Ana. (May 2013 – July 2013)
- **Roosevelt School, LBUSD, City of Long Beach, CA.** Cultural Principal. Dr. Bischoff provided oversight, authorship, and counsel on the EIR for the demolition of the Roosevelt Elementary School in Long Beach. This proved to be a complex project, involving an historic built environment resource evaluation and mitigation plan, legal investigation, and extensive responses to public comments. This process resulted in a HABS/HAER mitigation project. (November 2011 - June 2012)

Transportation Projects:

- **Foothill Toll Road Cultural and Paleontological Monitoring, Ghiradelli and Associates, Orange County, CA.** Principal and Project Manager for cultural monitoring related to the upgrade of all toll road payment stations in Orange County. (October 2013 – October 2013)
- **9th Street Extension Historic Structure Inventory and Evaluation, City of Holtville, Imperial County, CA.** Principal and Project Manager. Dr. Bischoff managed and provided QA/QC for this project involving a Caltrans inventory of project APE historic built environment resources, and the historic evaluation of a canal feature. Final deliverables included a Historic Resources Evaluation Report and a Historic Property Survey Report to CALTRANS standards. (June 2013 – August 2013)
- **Francisquito Bridges Replacement (3-Total), LADWP/CALTRANS, Los Angeles County, CA.** Principal. Dr. Bischoff managed and oversaw the completion of this project in the Angeles Forest. This project involved the replacement of three existing bridges on San Francisquito Canyon Road over San Francisquito Canyon Creek. The proposed improvement project involved widening the two lane bridges, improvement of approachment roadway, and the placement and installation of retaining walls, concrete barriers with tubular-steel handrails, and metal beam guardrails. (2011 – September 2013)
- **Murrieta Whitewood Road Extension, City of Murrieta, Riverside County, CA.** Principal and Project Manager. This road extension project involved a cultural resource survey and records search, a paleontological field study, and native American Consultation due to the historic use of the nearby Murrieta Hot Springs by local Native Americans. (April – June 2012)
- **Nuevo Road/ I-215 Interchange Improvement in the City of Perris, CALTRANS, Riverside County, CA.** Principal. Dr. Bischoff managed and provided QA/QC for this project involving street widening and additional improvements at the Nuevo Road/ I-215 interchange. Final deliverables included a SCCIC/NAHC record search and a survey report to CALTRANS standards. (2011 – 2012)
- **Soledad Canyon Road Bridge Replacement Project, LACDPW, Los Angeles County, CA.** Principal. LADPW intends to replace a bridge on Soledad Canyon Road. Chambers Group completed a SCCIC/NAHC record search and NAHC records review for potential archaeological resources. This project is on-going and may in the future involve further work, including cultural and historic structure surveys and evaluation. (2011 – 2012)

Development Projects:

- **Grove Lumber Facility Cultural and Paleontological Technical Studies, Thatcher Engineering, City of Perris, Riverside County, CA.** Principal for the cultural technical studies for this development project, including cultural and paleontological record searches, NAHC letters, and a cultural study (October 2013 – October 2013)
- **Newport Beach Yacht Club Evaluation, Community Development Department, City of Newport Beach, Orange County, CA.** Principal for this historic architecture project involving the built environment evaluation of the Newport Beach Yacht House. (October 2013 – October 2013)
- **Blossom Plaza Historic Structure Evaluation, China Town, City of Los Angeles, CA.** Principal for this historic architecture project involving the updating of technical reports and a standing structure evaluation. (July 2013 – September 2013)
- **Moreno Valley Residential Building Evaluation, City of Moreno Valley, Riverside, CA.** Principal for the architectural assessment of the J. Langdon Ranch located at 11761 Davis Street, in the city of Moreno Valley, Riverside County, California. (April 2013)
- **Indian Wells Tennis Court Development Project, Indian Wells, Riverside County, CA.** Principal Provided technical review of the planning documents cultural section, as well as oversaw Native American Heritage Commission communication for this project to enhance the Indian Wells Tennis Garden complex. (December 2012 – April 2013)
- **Scripps Hospital Paleontological and Archaeological Monitoring, Worley-Parsons, City of Encinitas, CA.** Principal Investigator. Dr. Bischoff managed QA/QC review, budgets, and professional standards for the cultural and paleontological monitoring of this large development project. (2011 - 2013)

Mining Projects:

- **Mining Projects, Quality Control and Management Support – Ormat, Enviroscientists, Newmont, McEwen, Midway, Reno, Nevada.** Dr. Bischoff was directly involved with the management of dozens of mining-related surveys, monitoring, and site evaluation projects conducted from the Chambers Group Reno, Nevada, office. Bureau of Land Management was the principal Federal agency. (2011 – October 2013)
- **Ruth Mine Reclamation Cultural Survey and Evaluation, ERRG and USACE, Inyo County, CA.** Principal. Dr. Bischoff oversaw the Intensive Phase I mapping of the Ruth Mine site, evaluation of several site features, and negotiations with the Army Corps of Engineers and the BLM. Extensive mapping of Mine features and structures were completed as part of this project. Bureau of Land Management was the principal Federal agency. (2011 - 2012)

Staff Archaeologist, Marine Corps Base Camp Pendleton, San Diego County, CA.
June 2011 – Oct. 2011

Dr. Bischoff was a staff cultural resources specialist at Camp Pendleton, and worked on NEPA, Section 106, and Section 110 compliance requirements for resource management and Base construction projects. Dr. Bischoff was responsible for writing, developing, and executing cultural sections of CATEXs, EAs, EISs, and organized/reviewed NHPA Section 106 and Section 110 reports. Types of projects included archaeological surveys and evaluations, historic research, and monitoring projects. He also performed historic structure surveys and evaluations, and wrote and prepared appropriate documentation to meet construction project cultural and environmental compliance requirements.

Principle Investigator and Project Manager, **Pacific Legacy, Inc**., **Lancaster, CA.**
Sept. 2009 – June 2011

While at Pacific Legacy, I acted as the cultural resource principal and project manager for various Pacific Legacy clients, including the San Jose Water District, Aera Energy, Berry Petroleum, Quad Knopf, AT&T, and **Southern California Edison**. My primary responsibility was the oversight of subcontracted services to Southern California Edison's Tehachapi Renewable Transmission Project (TRTP). The TRTP is one of the largest green-energy projects in the U.S. and involves the wreck-out and new construction of hundreds of transmission lines and power facilities to carry electricity from wind and solar generation sites to the greater Los Angeles area. During this time, I built the Lancaster office from a staff of two, to a fully-functioning regional office with a permanent staff of eight people and temporary staff of several dozen.

Major Projects:

- **Tehachapi Renewable Transmission Project (TRTP), Southern California Edison, Kern, Los Angeles, and San Bernardino Counties, CA.** Principal and Project Manager. Dr. Bischoff was responsible for all office and field operations that ensured the successful inventory and management of cultural resources related to this 300-mile transmission line project, including the management of standing historical structures and paleontological resources. He managed an annual budget in excess of $4 million, a staff of up to 40 persons, wrote compliance documents (Programmatic Agreement Appendices, ARPA permits, Project Agency Yearly Reports, and Management Plans), and managed hazmat situations. Dr. Bischoff completed over 150 individual projects in southern California including survey, evaluation, mitigation, and resource monitoring. He wrote individual budgets for project-specific tasks, as well as construction-related administrative tasks, each with different scopes of work and budget amounts. He reconciled all budgets on a monthly basis and coordinated them with the master construction schedule. Dr. Bischoff managed field compliance with NEPA, with TRTP-specific environmental agency agreements, and with the cultural section of the project EIR/EIS and Programmatic Agreement. He also met legal and agency guidelines for Section 106 of NHPA, CEQA, NAGPRA, and TRTP Cultural Resource Management Plan. The Angeles National Forest was the lead Federal Agency, but the CPUC and other Federal and California State Agencies were also involved. (November 2009 - June 2011)
- **East Kern Wind Resource Area (EKWRA) Power Pole Replacement Project, Southern California Edison, Kern County, CA.** Principal and Project Manager. Dr. Bischoff managed original technical studies for a project designed to replace hundreds of power poles in the Tehachapi Mountains area in support of new wind farm construction. He conducted large area surveys, some on BLM properties, and developed a management plan for dozens of archaeological sites. Bureau of Land Management was the principal Federal agency. (February 2010 - June 2011)
- **San Jose Salt Barge HAER Documentation Project, USACE and Santa Clara Valley Water District, City of San Jose, CA.** Principal. Dr. Bischoff consulted on the excavation and evaluation of a shallow-water shipwreck discovered during a wetlands rehabilitation project. This project involved USACE, San Francisco District as lead agency and the Water District as client. (January – February 2011)
- **Operations and Maintenance Contract, Southern California Edison. Southern California.** I acted as the Principal for all work orders issued to our office under the O/M contract. A major task under this contract was the response to the Crown Fire in 2010. I worked directly with SCE during and immediately after the fire to evaluate and protect cultural resources. (Jan 2010 - June 2011)

- **Crown Fire Survey and Cultural Site Update, Southern California Edison, Los Angeles County, CA.** Project Manager. Dr. Bischoff led the cultural response to the Crown Fire, which included surveying and updating known cultural sites as part of the SCE post-fire power pole and access road inspection. (August – Sept. 2010)