

KLUTZ BIOLOGICAL CONSULTING

Joshua Volen
530 B Street Suite 2050,
San Diego, Ca 92101

June 11, 2018

**Subject: Biological Letter Survey Report for APN 532-420-07, San Diego
California (Volen - L64A-003B).**

Dear Mr. Volen:

Klutz Biological Consulting (KBC) is pleased to provide this general biological survey and letter report for APN 532-420-07, San Diego, California (Figure 1). It is understood the subject property (parcel 532-420-07) is being considered for development and currently supports a remnant foundation and concrete staircase from a previously demolished structure. The proposed project would include construction of a single-family home northwest of the terminus of Tavera Place. This letter summarizes the biological resources present within the study area and the potential for the proposed project to impact sensitive biological resources.

Survey Methods and Limitations

The study area is comprised of the subject property (APN 532-420-07) and a 100-foot buffer, which includes adjacent homes, hardscape, and ornamental landscaping. A general survey of the study area was conducted by Lindsay Willrick on May 29, 2018 between 8:15a.m. and 10:30a.m. Weather conditions during the survey consisted of temperatures between 62 and 66 degrees Fahrenheit, 100 percent cloud cover due to a thick marine layer, and winds between 1 to 3 mph. The survey was conducted by slowly walking meandering transects within, and around the study area where feasible, while recording all plant and wildlife species observed.

Prior to the survey a desktop analysis of the California Natural Diversity Database (CNDDB; CDFG 2018) Point Loma Quadrangle was also conducted to identify sensitive species known to occur in the general vicinity of the study area. Although the study area was surveyed, it should be noted that some sensitive resources may not have been detected due to the duration and season of the survey event. Rare annual plants may not have been apparent, and any wildlife species that are not active during the day (e.g. strictly nocturnal), are secretive in their habits, or use the study area only periodically may not have been detected during the survey. The entirety of the 100-foot buffer was surveyed directly on foot where possible and indirectly with binoculars as to avoid trespass on adjacent private properties.

Survey Results

Physical Characteristics

The approximately 0.29-acre parcel is located immediately west of the residential property at 459 Tavera Place in the Community of Point Loma (Figure 2). Elevation on the parcel ranges from 310 feet above mean sea level (amsl) at the northwestern corner to approximately 250 feet amsl at the southeastern corner. The property is steeply sloped from northwest to southeast with a southeast facing aspect. The property supports a relic foundation and broken concrete staircase from a previously demolished structure, non-native and ornamental vegetation, several

large tree stumps and boulders, and sparse native vegetation (Appendix A). The property is bound by residential properties on all sides, with access provided from the gated driveway at the northern terminus of Tavera Place.

Soils within the study area are limited to Gaviota fine sandy loam (GaE; 9 to 30% slopes) and Marina loamy course sand (MIC; 2 to 9% slopes) (Bowman 1973 and Soil Survey Staff 2018; Figure 3). Soils from the Gaviota series are formed by weathered material from hard sandstone or meta-sandstone and are classified as shallow and well drained. Marina soil series formed in relic sand dunes in coastal areas and are classified as excessively drained grayish brown to brown or occasionally pink substrate and are slightly to moderately acidic. Survey results determined that the property contains compacted/disturbed sandy loam soils.

Vegetation Communities

The study area contains two distinct landcover types including disturbed habitat and urban/developed lands (Figure 4). Each of the landcover types are discussed in more detail below and a complete list of botanical resources observed is provided in Appendix B.

Disturbed Habitat - Disturbed habitat is any land on which the native vegetation has been significantly altered by agriculture, construction, or other land-clearing activities, and the species composition and site conditions are not characteristic of the disturbed phase of a plant association. The portion of the study area that is considered disturbed habitat is limited to the parcel and slightly extends into the northern portion of the 100-foot buffer. This area is dominated by non-native and ornamental plant species, bare ground, and very few scattered native plant species across the parcel. The percent cover for native vegetation across the parcel is less than five percent, with the individual plants being spread apart and ultimately surrounded by ornamental shrubs and trees. For each native plant species listed in Appendix B, less than two individuals exist per species across the entire parcel. Dominant plant species found within the parcel included crystalline iceplant (*Mesembryanthemum crystallinum*), Brazilian pepper tree (*Schinus terebinthifolius*), Australian saltbush (*Atriplex semibaccata*), cheeseweed (*Malva parviflora*), slender myoporum (*Myoporum parvifolium*), Sydney golden wattle (*Acacia longifolia*), Bermuda buttercup (*Oxalis pes-caprae*), giant reed (*Arundo donax*), garden nasturtium (*Tropaeolum majus*), and ripgut grass (*Bromus diandrus*) (Appendix A; Photo 3). Approximately 0.09-acre of disturbed habitat occurs within the subject property.

Urban/Developed Lands— Urban/developed lands refer to any built areas that are maintained and are not vegetated. Within the study area urban/developed lands include neighboring homes and hardscape features. Within this landcover type, there were large areas of irrigated ornamental vegetation occurring throughout the study area, and a small portion occurring on the southern boundary of the parcel. Dominant species within the ornamental landcover type include, Chinese elm (*Ulmus parvifolia*), common asparagus fern (*Asparagus setaceus*), silver dollar gum (*Eucalyptus polyanthemos*), Cape honeysuckle (*Tecoma capensis*), common oleander (*Nerium oleander*), and bougainvillea (*Bougainvillea* sp.) (Appendix A: Photo 4). Approximately 0.20-acre of urban/developed land and ornamental vegetation occurs within the subject property.

General Wildlife Observations

Wildlife species observed during the survey was limited to three invertebrate species, twenty-two bird species, and one butterfly. All species observed are common in developed areas and a full compendium of species observed can be found in Appendix C.

Sensitive Plant and Wildlife Species

Sensitive biological resources are those defined as follows: (1) species that have been given special recognition by federal, state, or local conservation agencies and organizations due to limited, declining, or threatened population sizes; (2) species and habitat types recognized by local and regional resource agencies as sensitive; (3) habitat areas or plant communities that are unique, are of relatively limited distribution, or are of particular value to wildlife; (4) wildlife corridors and habitat linkages; and (5) those species covered under the City's Multiple Species Conservation Program (MSCP) plan.

Twenty sensitive plants were identified by the CNDDDB search as potentially occurring within the project vicinity. Sensitive plants species detected by the literature search included Nuttall's acmispon (*Acmispon prostratus*), Shaw's agave (*Agave shawii* var. *shawii*), aphanisma (*Aphanisma blitoides*), Coulter's saltbush (*Atriplex coulteri*), golden-spined cereus (*Bergerocactus emoryi*), wart-stemmed ceanothus (*Ceanothus verrucosus*), Orcutt's pincushion (*Chaenactis glabriuscula* var. *orcuttiana*), Orcutt's spineflower (*Chorizanthe orcuttiana*), long-spined spineflower (*Chorizanthe polygonoides* var. *longispina*), San Diego sand aster (*Corethrogyne filaginifolia* var. *incana*), snake cholla (*Cylindropuntia californica* var. *californica*), cliff spurge (*Euphorbia misera*), San Diego barrel cactus (*Ferocactus viridescens*), decumbent goldenbush (*Isocoma menziesii* var. *decumbens*), Robinson's pepper-grass (*Lepidium virginicum* var. *robinsonii*), sea dahlia (*Leptosyne maritima*), coast woolly-heads (*Nemacaulis denudata* var. *denudata*), short-lobed broomrape (*Orobanche parishii* ssp. *brachyloba*), Brand's star phacelia (*Phacelia stellaris*), and Nuttall's scrub oak (*Quercus dumosa*). No sensitive plant species were observed during the survey effort. The survey period was conducted during a period when diminutive annuals would have been observed if present. No threatened or endangered plant species were detected on the subject property. There is a low potential for sensitive species including threatened or endangered plant species to occur on-site.

Fifteen sensitive wildlife species were also identified by the CNDDDB search as potentially occurring within the project vicinity. These species include Western tidal-flat tiger beetle (*Cicindela gabbii*), Western beach tiger beetle (*Cicindela latesignata latesignata*), wandering skipper (*Panoquina errans*), orangethroat whiptail (*Aspisdoscelis hyperythra beldingi*), California brown pelican (*Pelecanus occidentalis californicus*), osprey (*Pandion haliaetus*), American peregrine falcon (*Falco peregrinus anatum*), California horned lark (*Eremophila alpestris actis*), coastal California gnatcatcher (*Poliophtila californica californica*), western red bat (*Lasiurus blossevillei*), big free-tailed bat (*Nyctinomops macrotis*), Western mastiff bat (*Eumops perotis*), San Diego black-tailed jackrabbit (*Lepus californicus bennettii*), Northwestern San Diego pocket mouse (*Chaetodipus fallax fallax*), and San Diego Desert woodrat (*Neotoma lepida intermedia*). None of the wildlife species were detected during the survey or are expected to occur due to lack of appropriate habitat. No threatened or endangered wildlife species were detected on the subject property. There is a low potential for sensitive species including threatened or endangered wildlife species to occur on-site.

Critical Habitat

The study area does not contain any designated critical habitat.

Jurisdictional Waters and Wetlands

Jurisdictional wetlands or waters do not occur within the study area as observed in the field. It should be noted the property edge is not staked so the surveyor was only able to use the existing fence line as a reference point. Immediately east of the parcel boundary a City of San Diego sewer access point was observed (Appendix A, Photos 5 and 6). Unrelated to the sewer access point, immediately east of the parcel boundary a shallow concrete swale was observed draining urban runoff from neighboring properties. Water was observed trickling from an

underground culvert outlet, across the driveway at 459 Tavera Place, and continuing to sheet flow across the middle of Tavera Place where it dries on the street (Appendix A, Photos 7 and 8). Both features are outside of the parcel boundary, but within the 100-foot buffer. It is unclear if these features are jurisdictional resources regulated by the USACE, CDFW or the RWQCB. If off-site impacts are anticipated to these features a formal wetland delineation is recommended.

Multiple Species Conservation Program (MSCP)

The Multi-Habitat Planning Area (MHPA) is land that has been included within the City's Multiple Species Conservation Program's (MSCP) Subarea Plan for habitat conservation (City 1997). These areas have been determined to provide the necessary habitat quantity, quality and connectivity to support the future viability of San Diego's unique biodiversity and thus are considered to be a sensitive biological resource. Vegetation communities occurring within the MSCP study area have been divided into four tiers of sensitivity based on rarity and ecological importance. Tier I habitats, being the most sensitive, include southern foredunes, Torrey pine forest, coastal bluff scrub, maritime succulent scrub, maritime chaparral, native grasslands, and oak woodlands. Tier II includes coastal sage scrub and coastal sage scrub/chaparral. Tier IIIA includes mixed chaparral and chamise chaparral. Tier IIIB includes non-native grassland. Tier IV, the least sensitive classification, includes disturbed land, agriculture, and ornamental vegetation. In general, wetlands are considered highly sensitive habitats. Mitigation ratios are provided in the City Biological Guidelines (City 2010) for impacts to biological resources or vegetation communities and vary depending on the resource sensitivity (i.e., tier classification), and whether impacted resources are located within or outside of the MHPA.

The property contains only Tier IV landcover types that are outside of the City's MHPA. Impacts to Tier IV landcover types do not require mitigation.

Coastal Zone Element

As part of the City's general plan a coastal overlay zone was defined. The coastal overlay zone is divided into different categories that require different permitting. The property is located inside the coastal overlay zone identified as non-appealable (N-APP-1). Please refer to the City's municipal code (Section 126.0705) regarding permitting within N-APP-1.

Project Impact Analysis

Vegetation Communities

The proposed development of a new residence at APN 532-420-07 would impact disturbed habitat and urban/developed lands (Figure 5). Table 1 below details the project impacts to landcover types within the parcel.

Table 1. Project Impacts

Vegetation Community	Acres within the Study Area	Acres Impacted
Disturbed Habitat (Tier IV)	0.09	0.09
Urban/Developed Lands (including Ornamental Vegetation) (Tier IV)	0.20	0.20

Sensitive Species

None of the sensitive species that have been recorded in the general vicinity of the project site have the potential to occur within the study area. Furthermore, the survey was conducted in spring when diminutive annual plants would have been detectable, no sensitive plant species were observed. No threatened or endangered species exist on the subject property. The project will not impact any federally threatened or endangered wildlife species.

Sensitive Habitats

Sensitive habitat types do not occur on site.

Jurisdictional Waters (Wetlands)

Direct impacts to waters jurisdictional to USACE are not anticipated.

Mitigation

As discussed previously, impacts to Tier IV habitats do not require mitigation. The proposed project will not directly impact wetlands and waters jurisdictional to the state and federal agencies.

Conclusion and Recommendations

The project as currently proposed would not significantly impact any sensitive biological resources and would not require mitigation for direct impacts. Furthermore, the project will not impact any federally threatened or endangered species and designated critical habitat does not occur within the study area.

If you have questions regarding the analysis or conclusions presented herein, please contact me at (760) 492-3342.



Korey Klutz
Principal Biologist

Attachments

Figure 1 – Regional Location
Figure 2 – Project Location
Figure 3 – Soils
Figure 4 – Biological and Jurisdictional Resources
Figure 5 – Project Impacts
Appendix A – Photographs
Appendix B – Botanical Resources Observed
Appendix C – Zoological Resources Observed
Klutz Resume

References

Bowman, R. (1973). *Soil Survey of the San Diego Area, California, Part 1*. Accessed May 2018:
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City (2018). San Diego Municipal Code. Article 6: Development Permits Division 7: Coastal Development Permit Procedures. Accessed May 2018 <https://www.sandiego.gov/city-clerk/officialdocs/legisdocs/muni>

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https://www.nrcs.usda.gov/wps/portal/nrcs/detailfull/soils/survey/class/data/?cid=nrcs142p2_053587

Appendix A: Photographs



Photo 1: Parcel overview, facing northwest.

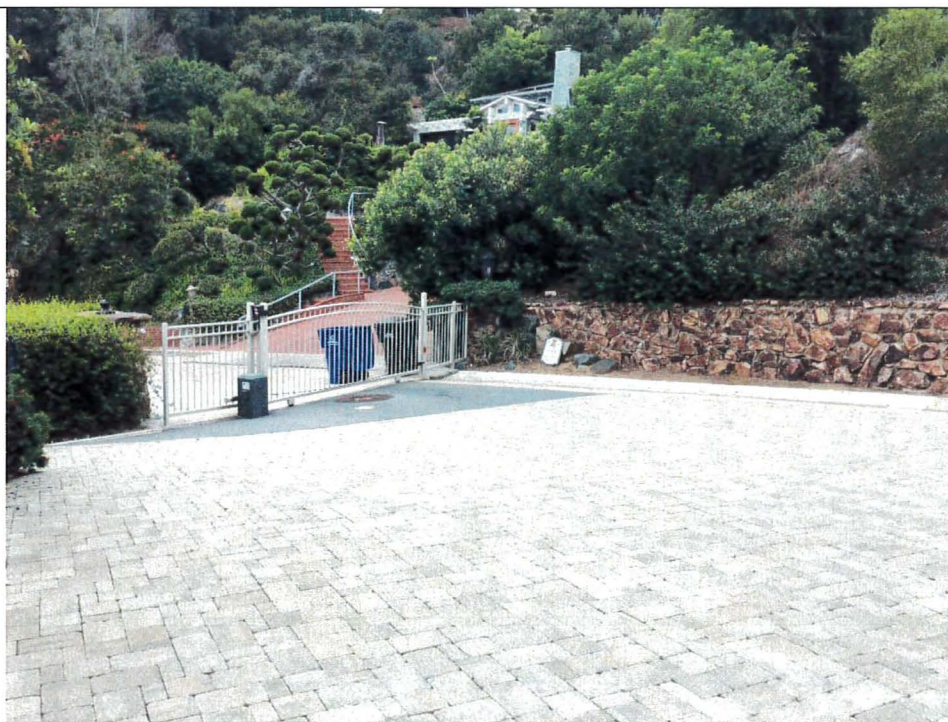


Photo 2: Gated access to parcel, facing southwest.

Appendix A: Photographs



Photo 3: Disturbed habitat vegetation community, facing northwest.



Photo 4: Urban/Developed landcover type showing ornamental vegetation, facing west.

Appendix A: Photographs



Photo 5, City of San Diego sewer cover.



Photo 6: City of San Diego sewer on adjacent property, facing east.

Appendix A: Photographs

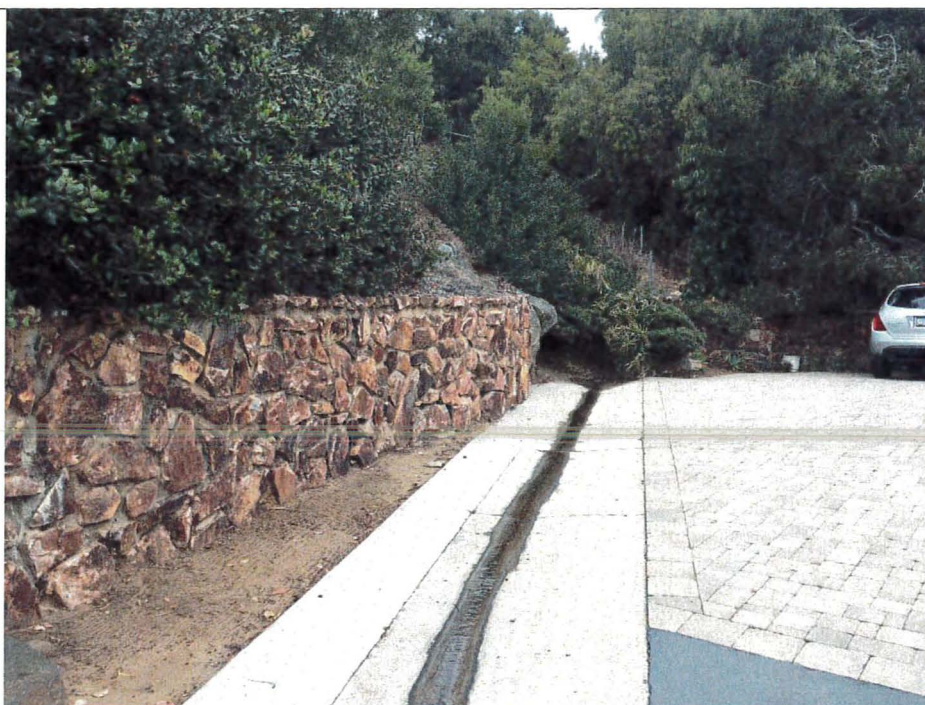


Photo 7: Culvert outlet and shallow concrete swale on adjacent property, facing north.

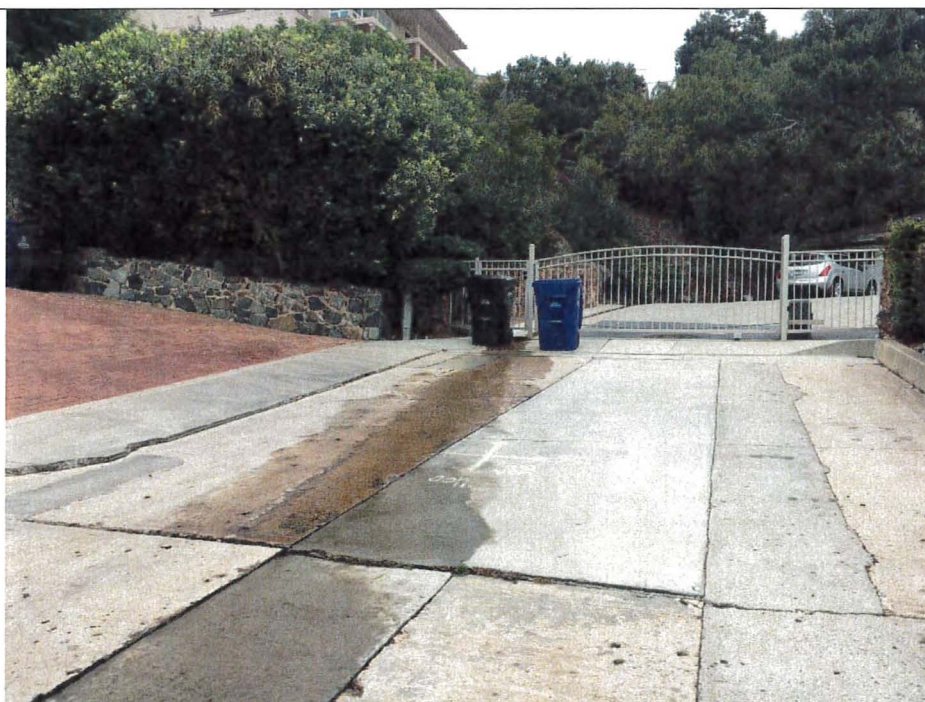


Photo 8: Continuation of urban runoff onto Tavera Place, facing north.

Appendix B: Zoological Resources

Scientific Name	Common Name	Special Status	Habitat Observed
EUDICOTS			
Aizoaceae - Fig-marigold family			
<i>*Carpobrotus edulis</i>	Hottentot-fig	None	DH, U/D
<i>*Mesembryanthemum crystallinum</i>	Crystalline iceplant	None	DH, U/D
<i>*Tetragonia tetragonioides</i>	New Zealand spinach	None	DH
Anacardiaceae - Sumac Or Cashew family			
<i>Rhus integrifolia</i>	Lemonade berry	None	DH
<i>*Schinus molle</i>	Peruvian pepper tree	None	DH, U/D
<i>*Schinus terebinthifolius</i>	Brazilian pepper tree	None	DH, U/D
Apocynaceae - Dogbane family			
<i>*Nerium oleander</i>	Common oleander	None	U/D
Araliaceae - Ginseng family			
<i>*Hedera helix</i>	English ivy	None	U/D
Asteraceae - Sunflower family			
<i>Encelia californica</i>	California brittlebush	None	DH
Bignoniaceae - Bignonia family			
<i>*Tecoma capensis</i>	Cape honeysuckle	None	DH, U/D
Chenopodiaceae - Goosefoot family			
<i>*Atriplex semibaccata</i>	Australian saltbush	None	DH
Crassulaceae - Stonecrop family			
<i>*Crassula ovata</i>	Jade plant	None	DH, U/D
Cucurbitaceae - Gourd family			
<i>Marah macrocarpa</i>	Wild-cucumber	None	U/D
Fabaceae - Legume family			
<i>*Acacia cyclops</i>	Western coastal wattle	None	DH, U/D
<i>*Acacia longifolia</i>	Sydney golden wattle	None	DH, U/D
<i>Acmispon glaber</i>	Deerweed, California broom	None	DH, U/D
Malvaceae - Mallow family			
<i>*Malva parviflora</i>	Cheeseweed	None	DH
Myrtaceae - Myrtle family			
<i>*Eucalyptus cladocalyx</i>	Sugar gum	None	DH
<i>*Eucalyptus polyanthemos</i>	Silver dollar gum	None	DH, U/D
Nyctaginaceae - Four O'clock family			
<i>*Bougainvillea sp.</i>	Bougainvillea	None	DH
Oxalidaceae - Oxalis family			
<i>*Oxalis pes-caprae</i>	Bermuda buttercup	None	DH
Rosaceae - Rose family			
<i>Heteromeles arbutifolia</i>	Toyon	None	DH
<i>Prunus ilicifolia</i>	Hollyleaf cherry	None	DH
Scrophulariaceae - Figwort family			
<i>*Myoporum parvifolium</i>	Slender myoporum	None	DH
Solanaceae - Nightshade family			
<i>Solanum americanum</i>	American black nightshade	None	DH, U/D

Appendix B: Zoological Resources

Tropaeolaceae - Nasturtium family

**Tropaeolum majus* Garden nasturtium None DH, U/D

Ulmaceae - Elm family

**Ulmus parvifolia* Chinese elm, lacebark elm None DH, U/D

MONOCOTS

Arecaceae - Palm family

**Phoenix canariensis* Canary Island palm None U/D

Asparagaceae - Asparagus family

**Agave attenuata* Fox tail agave None U/D

**Asparagus asparagoides* African asparagus fern None DH

**Asparagus setaceus* Common asparagus fern None DH

Cyperaceae - Sedge family

**Cyperus involucratus* African umbrella plant None U/D

Iridaceae - Iris Family

**Dietes vegeta* African iris None DH, U/D

Poaceae - Grass family

**Arundo donax* Giant reed None DH

**Avena barbata* Slender wild oat None DH

**Bromus diandrus* Ripgut grass None DH

**Hordeum murinum* Wall barley None DH

Melica imperfecta Little California melica None DH

Disturbed Habitat = DH

Urban/Developed = U/D

Appendix C: Zoological Resources Observed

Scientific Name	Common Name	Special Status and Detection Methodology	Habitat Observed
INVERTEBRATES			
Insects			
<i>Brachynemurus / Myrmeleon sp.</i>	Ant Lion	None, Visual	DH
<i>*Apis mellifera</i>	Honey Bee	None, Visual	DH
Moths, Skippers and Butterflies			
<i>Leptotes marina</i>	Marine Blue	None, Visual	DH
VERTEBRATES			
Birds			
<i>Anas platyrhynchos</i>	Mallard	None, Visual	Flyover
<i>Larus occidentalis</i>	Western Gull	None, Visual	Flyover
<i>Zenaida macroura</i>	Mourning Dove	None, Visual	Flyover
<i>*Amazona finschi</i>	Lilac-crowned Parrot	None, Visual	Flyover
<i>Calypte anna</i>	Anna's Hummingbird	None, Visual	U/D
<i>Selasphorus sasin</i>	Allen's Hummingbird	None, Visual	U/D
<i>Picoides nuttallii</i>	Nuttall's Woodpecker	None, Aural	U/D
<i>Contopus sordidulus</i>	Western Wood-Pewee	None, Visual	DH, U/D
<i>Sayornis nigricans</i>	Black Phoebe	None, Visual	DH, U/D
<i>Tyrannus vociferans</i>	Cassin's Kingbird	None, Aural	U/D
<i>Aphelocoma californica</i>	California Scrub-Jay	None, Visual	U/D
<i>Corvus brachyrhynchos</i>	American Crow	None, Visual	U/D
<i>Corvus corax</i>	Common Raven	None, Visual	Flyover
<i>Psaltiriparus minimus</i>	Bushtit	None, Aural	U/D
<i>Mimus polyglottos</i>	Northern Mockingbird	None, Aural	U/D
<i>Vermivora celata</i>	Orange-crowned Warbler	None, Aural	U/D
<i>Melospiza melodia</i>	Song Sparrow	None, Aural	DH
<i>Junco hyemalis</i>	Dark-eyed Junco	None, Aural	U/D
<i>Pheucticus melanocephalus</i>	Black-headed Grosbeak	None, Aural	U/D
<i>Icterus cucullatus</i>	Hooded Oriole	None, Aural	U/D
<i>Carpodacus mexicanus</i>	House Finch	None, Visual	U/D
<i>Carduelis psaltria</i>	Lesser Goldfinch	None, Visual	Flyover
Mammals			
<i>Procyon lotor</i>	Northern Raccoon	None, Scat	DH

Disturbed Habitat = DH

Urban/Developed = U/D



APN 532-420-07

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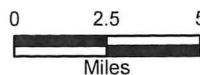
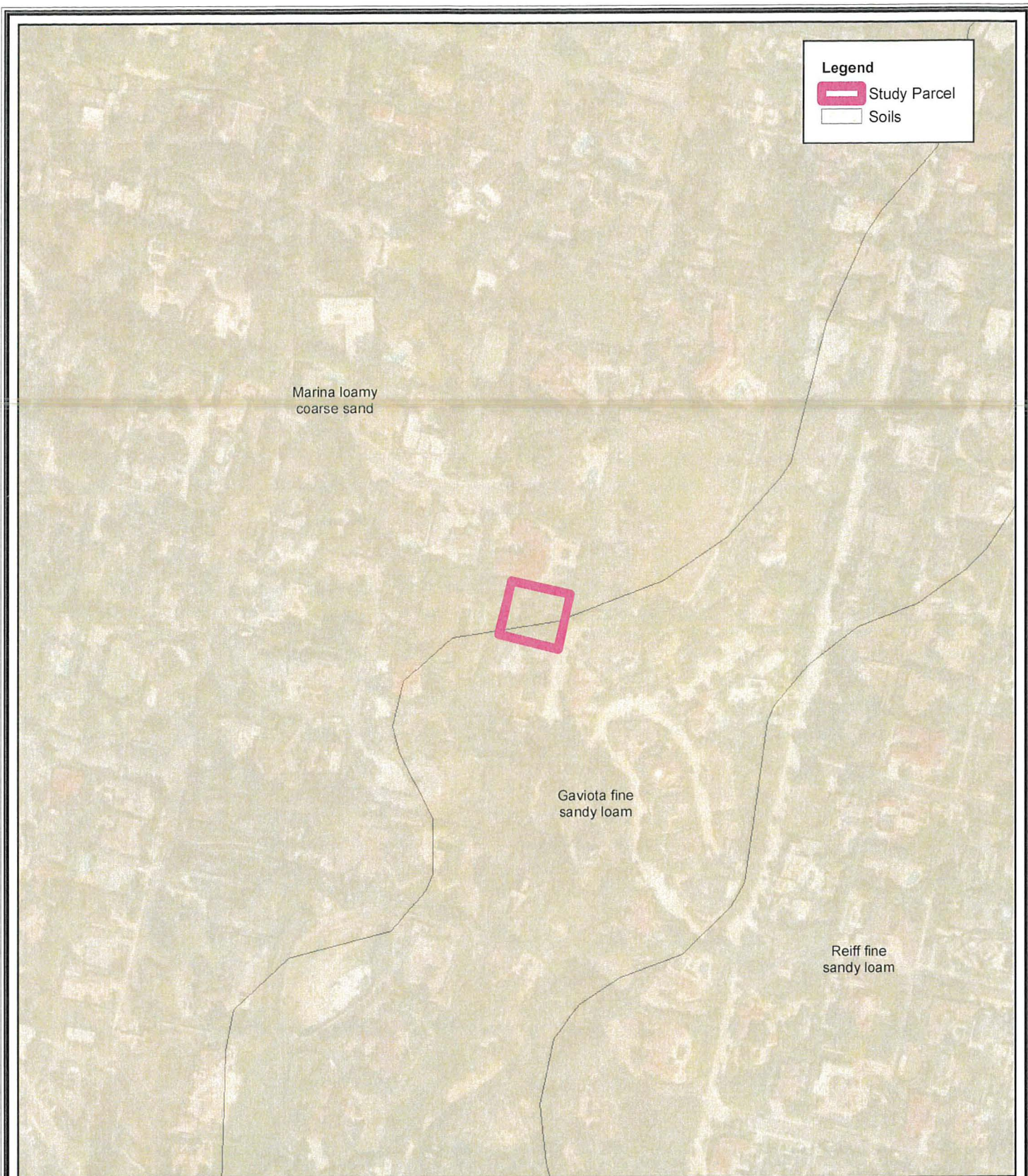


Figure 1
Regional Location



APN 532-420-07

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0 150 300
Feet

Figure 3
Soils



APN 532-420-07

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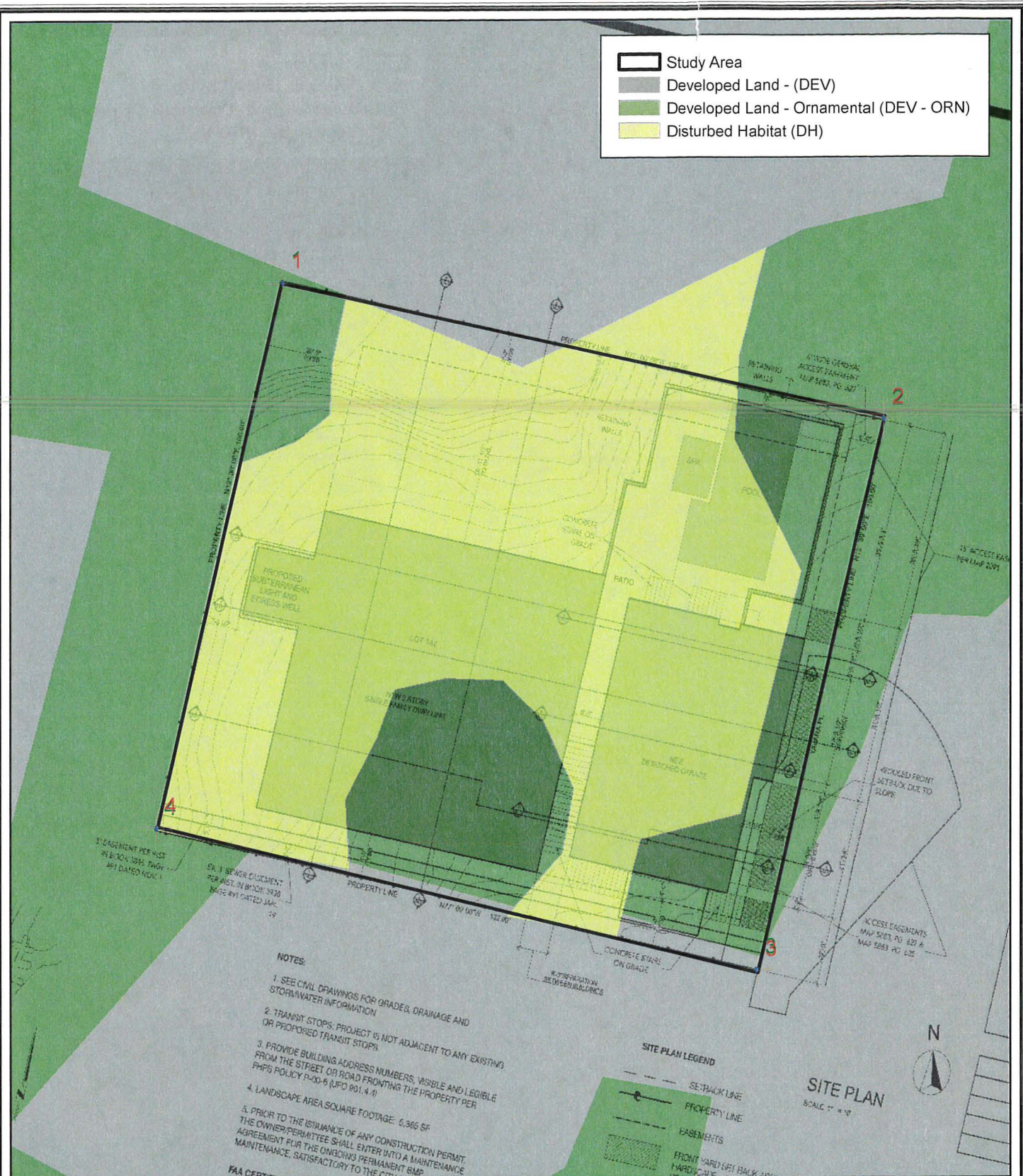
Author: Korey Klutz

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Feet

Figure 4
Biological &
Jurisdictional Resources



APN 532-420-07

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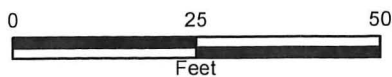


Figure 5
Project Impacts

Korey Klutz – Principal Biologist, Restoration Planner

Korey Klutz is a biologist and project manager with more than 20 years of experience managing and conducting biological services within the City and County of San Diego. Project management and research experience includes conservation biology, rare plant surveys, sensitive wildlife surveys, and habitat restoration planning. Korey also has considerable experience managing and conducting construction monitoring on mass grading sites, linear pipelines, residential developments, and school construction sites. He also has extensive experience in preparing biological technical reports for California Environmental Quality Act (CEQA), National Environmental Policy Act (NEPA), Federal Endangered Species Act (FESA), California Endangered Species Act (CESA) and local jurisdictional agency compliance.

Korey brings valuable insight and knowledge of the biological resources that occur within the southwest. During this work he has acquired an intimate familiarity with local rare plants, threatened and endangered species, and native vegetation communities.

Education

BS, Plant Evolution and Systematics, San Diego State University, 1999

Work Experience

- Klutz Biological Consulting (2011 – Current)
- Jones & Stokes/ICF International (2001 – 2011)
- Tierra Environmental Services (1999 – 2001)
- San Diego State Foundation (1997-2000)

Licenses/Certifications

- County of San Diego PDS approved consultant for Biology
- County of San Diego PDS approved consultant for Restoration Planning
- USFWS Permit QCB (TE-036065-2)

Areas of Expertise

- Conservation Biology
- Restoration Planning
- Program and Project Management
- Mitigation Analysis, Planning and Management
- CEQA/NEPA, Environmental Compliance
- Special Status Species Surveys (Botany & Wildlife)
- Construction and Restoration Monitoring
- Habitat Assessment and Vegetation Mapping
- GIS Analysis and Mapping

Relevant Project Experience

County of San Diego Advanced Planning MSCP (2009-present)

Lead conservation biologist working collaboratively with the CDFW, USFWS, and County staff on multiple County projects including the North County Multiple Species Conservation Program (MSCP), and the Draft Quino Amendment to the South County MSCP.

SDG&E Access Road Grading (2007-2010)

Mr. Klutz served as the Project Manager and led a team of biologist who were responsible for creating a GIS database to document water crossings features that occurred along a network of SDG&E access roads. Work included sampling over 600 miles of dirt access roads and recording more than 1,600 water or erosion features. Biologist duties also included close coordination with SDG&E access road graders to ensure seasonal maintenance did not impact any jurisdictional features.

SDG&E Sunrise Powerlink (2006-2012)

Duties included a variety of roles including general biological surveys for the proposed northern alignment and the approved southern alignment. Work performed included focused surveys for arroyo toad, rare plants, and QCB. Provided additional support on the project as needed including preparing PSR's for geo-technical testing, and eventually performed construction monitoring services related to the installation of the Preferred Alignment.

Otay Water District San Miguel Habitat Management Area (2002-2009)

Lead Biologist and Habitat Restoration Specialist responsible for the long-term maintenance and management of the Otay Water District's 230-acre habitat preserve and associated on-site and off-site revegetation projects.

Wetland Mitigation GIS Database—City of San Diego Transportation Department, San Diego, California (2006)

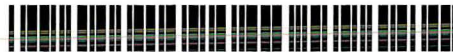
Prepared a GIS database to present the results of a series of biological surveys conducted with the intent of defining mitigation opportunities for the City's Transportation Department. The project included the use of handheld computers and a GPS to create the backbone of the GIS database within the field.

Lake Hodges Pump Station—City of San Diego Metropolitan MWW, San Diego, California (2001)

Conducted general biological surveys, technical report preparation, and construction monitoring for a linear pipeline maintenance project located within the San Dieguito River Park, San Diego, California.

Package Copy

**Biology - Consultant Submittals
Version 2
LDR-Environmental**



4792384

Project



594706

Volen House CDP

PM: Bucey, Karen

446-5049

Review Cycle

Cycle 9

Submitted (Multi-Discipline)



THE CITY OF SAN DIEGO
Development Services Department
1222 First Avenue San Diego, CA 92101-4154

PHASE I CULTURAL RESOURCE SURVEY FOR THE VOLEN HOUSE PROJECT

**450 TAVARA PLACE
SAN DIEGO, CALIFORNIA 92106**

Project No. 594706

Submitted to:

**City of San Diego
Development Services Department
1222 First Avenue, MS 501
San Diego, California 92101**

Prepared for:

**Joshua Volen
530 B Street, Suite 2050
San Diego, California 92101**

Prepared by:

**Brian F. Smith and Associates, Inc.
14010 Poway Road, Suite A
Poway, California 92064**



June 21, 2018

Archaeological Database Information

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Report Date: June 21, 2018

Report Title: Phase I Cultural Resource Survey for the Volen House Project,
450 Tavera Place, San Diego, California 92106 (Project No.
594706)

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Submitted to: City of San Diego
Development Services Department
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USGS Quadrangle: Point Loma, California (7.5 minute)

Study Area: 0.3 acre

Key Words: Phase I survey; negative; City of San Diego; monitoring not recommended.

I. PROJECT DESCRIPTION AND LOCATION

Brian F. Smith and Associates, Inc. (BFSA) conducted an archaeological survey of a vacant lot located at Assessor's Parcel Number [APN] 532-420-07 in the Point Loma Community Planning Area of the city of San Diego, California as part of the environmental review process for a pending development application. The Volen House Project is located at 450 Tavera Place, north of Cabrillo National Monument, east of Catalina Boulevard, and west of Shelter Island. The project can be found within the unsectioned former Pueblo Lands of San Diego Land Grant (Township 17 South, Range 4 West, projected) of the *Point Loma* USGS 7.5-minute quadrangle. The archaeological survey was undertaken in order to determine if cultural resources exist within the property and to assess the possible effects of the development of the property on any cultural resources present within the project. Maps of the property location and a development plan have been included in Attachment B (Figures 1 through 4). BFSA conducted the archaeological survey on June 1, 2018 accompanied by a Native American monitor from Red Tail Monitoring & Research, Inc. (Red Tail). No cultural resources were observed during the survey.

II. SETTING

The 0.3-acre project Area of Potential Effect (APE) is a vacant lot near the terminus of Tavera Place located on the east-facing slope of a coastal bluff. The APE is situated within the southern section of the La Playa portion of the Point Loma Community Planning Area. The APE mainly consists of a steep east facing slope; however, a small flat terrace has been cut into the lower eastern third of the property (Plate 1).

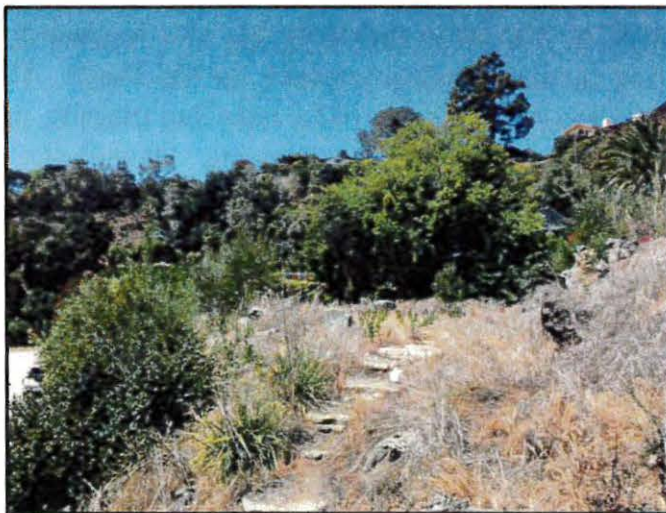


Plate 1: Overview of the project, facing south.

[MIC]), and Gaviota fine sandy loam (nine to 30 percent slopes [GaE]) (University of California at Davis 2018).

The biological setting of the project is dominated by non-native vegetation as a result of

the surrounding development. Although small pockets of scrub and chaparral communities are intermixed within the APE, the vegetation on the property mainly consists of non-native weeds and grasses, as well as eucalyptus and palm trees, and is classified as “non-native vegetation, developed areas, or unvegetated habitat” (Data Basin 1995). Prehistorically, the area would have been comprised mostly of scrub and chaparral communities. These communities are dependent upon the amount of precipitation that the area receives. The amount of seasonal precipitation is related to the major landforms that exist throughout San Diego County. These environments tend to support a wide variety of wildlife, particularly birds and small mammals (Beauchamp 1986).

Cultural Setting

Archaeological investigations in San Diego County have documented a diverse and rich record of human occupation spanning the past 10,000 years. The first generally accepted culture chronology for San Diego County was developed by geographer Malcolm Rogers (1939, 1945), who initiated the recordation of sites in the area during the 1920s and 1930s, using his field notes to construct the first cultural sequences based upon artifact assemblages and stratigraphy (Rogers 1966). Subsequent scholars expanded the information gathered by Rogers and offered more academic interpretations of the prehistoric record. Moriarty (1966, 1967, 1969), Warren (1964, 1966), and True (1958, 1966) all produced seminal works that critically defined the various prehistoric cultural phenomena present in this region (Moratto 1984). Additional studies have sought to refine these earlier works to a greater extent (Cardenas 1986; Moratto 1984; Moriarty 1966, 1967; True 1970, 1980, 1986; True and Beemer 1982; True and Pankey 1985; Waugh 1986). In sharp contrast, the current trend in San Diego prehistory has also resulted in a revisionist group that rejects the established cultural historical sequence for San Diego. This revisionist group (Warren et al. 1998) has replaced the concepts of La Jolla, San Dieguito, and all of their other manifestations with an extensive, all-encompassing, chronologically undifferentiated cultural unit that ranges from the initial occupation of southern California to around A.D. 1000 (Bull 1983, 1987; Ezell 1983, 1987; Gallegos 1987; Kyle et al. 1990; Stropes 2007). For the present study, the prehistory of the region is divided into four major periods: Early Man, Paleo Indian, Early Archaic, and Late Prehistoric.

Early Man Period (Prior to 8500 B.C.)

At the present time, there has been no concrete archaeological evidence to support the occupation of San Diego County prior to 10,500 years ago. Some archaeologists, such as Carter (1957, 1980) and Minshall (1976), have been proponents of Native American occupation of the region as early as 100,000 years ago. However, their evidence for such claims is sparse and they have lost much support over the years as more precise dating techniques have become available for skeletal remains thought to represent early man in San Diego. In addition, many of the “artifacts” initially identified as products of early man in the region have since been rejected as

natural products of geologic activity. Some of the local proposed Early Man Period sites include Texas Street, Mission Valley (San Diego River Valley), Del Mar, La Jolla, Buchanan Canyon, and Brown (Bada et al. 1974; Carter 1957, 1980; Minshall 1976, 1989; Moriarty and Minshall 1972; Reeves 1985; Reeves et al. 1986).

Paleo Indian Period (8500 to 6000 B.C.)

For the region, it is generally accepted that the earliest identifiable culture in the archaeological record is represented by the material remains of the Paleo Indian Period San Dieguito Complex. The San Dieguito Complex was thought to represent the remains of a group of people who occupied sites in this region between 10,500 and 8,000 years before the present (YBP), and who were related to or contemporaneous with groups in the Great Basin. As of yet, no absolute dates have been forthcoming to support the great age attributed to this cultural phenomenon. The artifacts recovered from San Dieguito Complex sites duplicate the typology attributed to the Western Pluvial Lakes Tradition (Moratto 1984; Davis et al. 1969). These artifacts generally include scrapers, choppers, large bifaces, and large projectile points, with few milling tools. Tools recovered from San Dieguito Complex sites, along with the general pattern of their site locations, led early researchers to believe that the people of the San Dieguito Complex were a wandering hunter/gatherer society (Moriarty 1969; Rogers 1966).

The San Dieguito Complex is the least understood of the cultures that have inhabited the San Diego County region. This is due to an overall lack of stratigraphic information and/or datable materials recovered from sites identified as San Dieguito Complex. Currently, controversy exists among researchers regarding the relationship of the San Dieguito Complex and the subsequent cultural manifestation in the area, the La Jolla Complex. Although, firm evidence has not been recovered to indicate whether the San Dieguito Complex “evolved” into the La Jolla Complex, the people of the La Jolla Complex moved into the area and assimilated with the people of the San Dieguito Complex, or the people of the San Dieguito Complex retreated from the area due to environmental or cultural pressures.

Early Archaic Period (6000 B.C. to A.D. 0)

Based upon evidence suggesting climatic shifts and archaeologically observable changes in subsistence strategies, a new cultural pattern is believed to have emerged in the San Diego region around 6000 B.C. Archaeologists believe that this Archaic Period pattern evolved from or replaced the San Dieguito Complex culture, resulting in a pattern referred to as the Encinitas Tradition. In San Diego, the Encinitas Tradition is thought to be represented by the coastal La Jolla Complex and its inland manifestation, the Pauma Complex. The La Jolla Complex is best recognized for its pattern of shell middens and grinding tools closely associated with marine resources and flexed burials (Shumway et al. 1961; Smith and Moriarty 1985). Increasing numbers of inland sites have been identified as dating to the Archaic Period, focusing upon terrestrial subsistence (Cardenas 1986; Smith 1996; Raven-Jennings and Smith 1999a, 1999b).

The tool typology of the La Jolla Complex displays a wide range of sophistication in lithic manufacturing techniques used to create the tools found at their sites. Scrapers, the dominant flaked tool type, were created by either splitting cobbles or by finely flaking quarried material. Evidence suggests that after about 8,200 YBP, milling tools began to appear in La Jolla Complex sites. Inland sites of the Encinitas Tradition (Pauma Complex) exhibit a reduced quantity of marine-related food refuse and contain large quantities of milling tools and food bone. The lithic tool assemblage shifts slightly to encompass the procurement and processing of terrestrial resources, suggesting seasonal migration from the coast to the inland valleys (Smith 1996). At the present time, the transition from the Archaic Period to the Late Prehistoric Period is not well understood. Many questions remain concerning cultural transformation between periods, possibilities of ethnic replacement, and/or a possible hiatus from the western portion of the county.

Late Prehistoric Period (A.D. 0 to 1769)

The transition into the Late Prehistoric Period in the project area is primarily represented by a marked change in archaeological patterning known as the Yuman Tradition. This tradition is primarily represented by the Cuyamaca Complex, which is believed to be derived from the mountains of southern San Diego County. The people of the Cuyamaca Complex are considered ancestral to the ethnohistoric Kumeyaay (Diegueño). Although several archaeologists consider the local Native American tribes to be latecomers, the traditional stories and histories passed down through oral tradition by the local Native American groups speak both presently and ethnographically to tribal presence in the region since the time of creation.

The Kumeyaay Native Americans were a seasonal hunting and gathering people with cultural elements that were very distinct from the people of the La Jolla Complex. Noted variations in material culture included cremation, the use of the bow and arrow, and adaptation to the use of the acorn as a main food staple (Moratto 1984). Along the coast, the Kumeyaay made use of marine resources by fishing and collecting shellfish for food. Seasonally available game and plant food resources (including acorns) were sources of nourishment for the Kumeyaay. The most important food resource for these people was the acorn. The acorn represented a storable surplus, which in turn allowed for seasonal sedentism and its attendant expansion of social phenomena.

Firm evidence has not been recovered to indicate whether the people of the La Jolla Complex were present when the Kumeyaay Native Americans migrated into the coastal zone. However, stratigraphic information recovered from Site SDI-4609 in Sorrento Valley suggests a possible hiatus of 650 ± 100 years between the occupation of the coastal area by the La Jolla Complex ($1,730 \pm 75$ YBP is the youngest date for the La Jolla Complex inhabitants at SDI-4609) and Late Prehistoric cultures (Smith and Moriarty 1983). More recently, a reevaluation of two prone burials at the Spindrift Site excavated by Moriarty (1965) and radiocarbon dates of a pre-ceramic phase of Yuman occupation near Santee suggest a commingling of the latest La Jolla

Complex inhabitants and the earliest Yuman inhabitants about 2,000 years ago (Kyle and Gallegos 1993).

History

Exploration Period (1530 to 1769)

The historic period around San Diego Bay began with the landing of Juan Rodriguez Cabrillo and his men in 1542 (Chapman 1925). Sixty years after the Cabrillo expeditions (1602 to 1603), an expedition under Sebastian Vizcaíno made an extensive and thorough exploration of the Pacific coast. Although his voyage did not extend beyond the northern limits of the Cabrillo track, Vizcaíno had the most lasting effect on the nomenclature of the coast. Many of the names Vizcaíno gave to various locations throughout the region have survived to the present time, whereas nearly all of Cabrillo's have faded from use. For example, Cabrillo gave the name "San Miguel" to the first port at which he stopped in what is now the United States; 60 years later, Vizcaíno changed the port name to "San Diego" (Rolle 1969).

Spanish Colonial Period (1769 to 1821)

The Spanish occupation of the claimed territory of Alta California took place during the reign of King Carlos III of Spain (Engelhardt 1920). Jose de Gálvez, a powerful representative of the king in Mexico, conceived the plan to colonize Alta California and thereby secure the area for the Spanish Crown (Rolle 1969). The effort involved both a military and religious contingent, where the overall intent of establishing forts and missions was to gain control of the land and the native inhabitants through conversion. Actual colonization of the San Diego area began on July 16, 1769 when the first Spanish exploring party, commanded by Gaspar de Portolá (with Father Junípero Serra in charge of religious conversion of the native populations), arrived by the overland route to San Diego to secure California for the Spanish Crown (Palou 1926). The natural attraction of the harbor at San Diego and the establishment of a military presence in the area solidified the importance of San Diego to the Spanish colonization of the region and the growth of the civilian population. Missions were constructed from San Diego to the area as far north as San Francisco. The mission locations were based upon a number of important territorial, military, and religious considerations. Grants of land were made to persons who applied, but many tracts reverted back to the government due to lack of use. As an extension of territorial control by the Spanish Empire, each mission was placed so as to command as much territory and as large a population as possible. While primary access to California during the Spanish Period was by sea, the route of El Camino Real served as the land route for transportation, commercial, and military activities within the colony. This route was considered to be the most direct path between the missions (Rolle 1969; Caughey 1970). As increasing numbers of Spanish and Mexican peoples settled in the area, as well as the later Americans during the Gold Rush, the Native American populations diminished as they were displaced or decimated by disease (Carrico and Taylor 1983).

Mexican Period (1821 to 1846)

On September 16, 1810, the priest Father Miguel Hidalgo y Costilla started a revolt against Spanish rule. He and his untrained Native American followers fought against the Spanish, but Father Hidalgo's revolt was unsuccessful and he was executed. After this setback, Father José Morales led the revolutionaries, but he too failed and was executed. These two men are still symbols of Mexican liberty and patriotism. After the Mexican-born Spanish and the Catholic Church joined the revolution, Spain was finally defeated in 1821. Mexican Independence Day is celebrated on September 16 of each year, signifying the anniversary of the start of Father Hidalgo's revolt. The revolution had repercussions in the northern territories, and by 1834, all of the mission lands had been removed from the control of the Franciscan Order under the Acts of Secularization. Without proper maintenance, the missions quickly began to disintegrate, and after 1836, missionaries ceased to make regular visits inland to minister the needs of the Native Americans (Engelhardt 1920). Large tracts of land continued to be granted to those who applied or who had gained favor with the Mexican government. Grants of land were also made to settle government debts and the Mexican government was called upon to reaffirm some older Spanish land grants shortly before the Mexican-American War of 1846 (Moyer 1969).

Anglo-American Period (1846 to Present)

California was invaded by United States troops during the Mexican-American War from 1846 to 1848. The acquisition of strategic Pacific ports and California land was one of the principal objectives of the war (Price 1967). At the time, the inhabitants of California were practically defenseless, and they quickly surrendered to the United States Navy in July of 1847 (Bancroft 1886).

The cattle ranchers of the "counties" of southern California prospered during the cattle boom of the early 1850s. They were able to "reap windfall profit ... pay taxes and lawyer's bills ... and generally live according to custom" (Pitt 1966). However, cattle ranching soon declined, contributing to the expansion of agriculture. With the passage of the "No Fence Act," San Diego's economy shifted from raising cattle to farming (Robinson 1948). The act allowed for the expansion of unfenced farms, which was crucial in an area where fencing material was practically unavailable. Five years after its passage, most of the arable lands in San Diego County had been patented as either ranchos or homesteads, and growing grain crops replaced raising cattle in many of the county's inland valleys (Blick 1976; Elliott 1883 [1965]).

By 1870, farmers had learned to dry farm and were coping with some of the peculiarities of San Diego County's climate (*San Diego Union*, February 6, 1868; Van Dyke 1886). Between 1869 and 1871, the amount of cultivated acreage in the county rose from less than 5,000, to more than 20,000 acres (*San Diego Union*, January 2, 1872). Of course, droughts continued to hinder the development of agriculture (Crouch 1915; *San Diego Union*, November 10, 1870; Shipek 1977). Large-scale farming in San Diego County was limited by a lack of water and the small

size of arable valleys. The small urban population and poor roads also restricted commercial crop growing. Meanwhile, cattle continued to be grazed in parts of inland San Diego County. In the Otay Mesa area, for example, the "No Fence Act" had little effect on cattle farmers because ranches were spaced far apart and natural ridges kept the cattle out of nearby growing crops (Gordinier 1966).

During the first two decades of the twentieth century, the population of San Diego County continued to grow. The population of the inland county declined during the 1890s, but between 1900 and 1910, it rose by about 70 percent. The pioneering efforts were over, the railroads had broken the relative isolation of southern California, and life in San Diego County had become similar to other communities throughout the west. After World War I, the history of San Diego County was primarily determined by the growth of San Diego Bay. In 1919, the United States Navy decided to make the bay the home base for the Pacific Fleet (Pourade 1967), as did the aircraft industry during the 1920s (Heiges 1976). The establishment of these industries led to the growth of the county as a whole; however, most of the civilian population growth occurred in the north county coastal areas, where the population almost tripled between 1920 and 1930. During this time period, the history of inland San Diego County was subsidiary to that of the city of San Diego, which had become a Navy center and an industrial city (Heiges 1976). In inland San Diego County, agriculture became specialized and recreational areas were established in the mountain and desert areas. Just before World War II, urbanization began to spread to the inland parts of the county.

III. AREA OF POTENTIAL EFFECT

This archaeological review encompasses a total of 0.3 acre (APN 532-420-07) in the Point Loma community of San Diego. The APE can be characterized as vacant land with an east-facing sloped terrace near the terminus of Tavera Place, surrounded by single-family residences. The APE is currently covered mainly by non-native vegetation. The property has been disturbed through vegetation clearing and the creation of a small terrace. Concrete steps and a retaining wall have been constructed on the property to maintain and provide access to the terrace from the adjacent property. The project is located at 450 Tavera Place, north of Cabrillo National Monument, east of Catalina Boulevard, and west of shelter island (Figures 1 through 3: Attachment B). The project design indicates excavations into the hillside are expected to disturb 1,660 cubic yards of soil. The proposed project includes the infill residential development of the parcel for a 6,589 square-foot three-story single-family residence with a detached garage, a pool/spa, and associated improvements (Figure 4: Attachment B).

IV. STUDY METHODS

The archaeological assessment included a reconnaissance of the property and an

institutional records search review of previous studies in the area. The archaeological reconnaissance was monitored by a Native American monitor (Kaci Brown) from Red Tail. BFSa reviewed in-house records obtained from the South Coastal Information Center (SCIC) at SDSU for the project to determine the presence of any previously recorded cultural resources (Attachment C).

The results of the records search indicated that 20 previous investigations have been conducted within one half-mile of the project, none of which included the current APE. The records search did not indicate the presence of any previously recorded archaeological sites within the APE; however, a total of 13 recorded resources (one prehistoric and 12 historic) are located within one half-mile of the project. The prehistoric site is characterized as a lithic and shell scatter, while the historic sites consist of 10 historic single-family residences, an isolate and trash deposit both recorded under one site number, and the location of the Old La Playa Hide Park site. In addition to the recorded resources, 25 historic addresses have been recorded within one half-mile of the APE.

A Sacred Lands File (SLF) search was requested by BFSa from the Native American Heritage Commission (NAHC). The NAHC SLF search did not indicate the presence of any sacred sites or locations of religious or ceremonial importance within the search radius. A list of Native American contacts was provided by the NAHC, and in accordance with their recommendations, BFSa contacted all Native American consultants listed, informing the tribes about the nature of the project. BFSa received a response from the Viejas Band of Kumeyaay Indians who expressed interest in the project (Attachment D).

V. RESULTS OF THE STUDY

Background Research

The Point Loma Community Planning Area is considered low to moderately sensitive for cultural resources based on the number of recorded resources within the vicinity. Few archaeological sites have been recorded in the area, as most documented resources are historic structures. However, known site distribution and development has likely impacted or masked resources prior to protective legislation. Further, the city of San Diego and surrounding areas have yielded substantial evidence of human presence since the terminal Pleistocene/Early Holocene. The coastal mesas and wetland areas were important hunting and gathering areas for local human inhabitants in prehistoric times. The San Diego area experienced an arid climate for at least the last 9,000 years, and sources of fresh water attracted plants and animals, as well as humans who depended upon plants, animals, and fresh water for survival. The presence of fresh water in the San Diego River and its tributaries, as well as plant foods, a variety of edible animals, and a supply of tool stone material in the form of nodules were important resources in the surrounding area. The proximity to nearby marine resources in San Diego and Mission bays is an additional reason the region was attractive to prehistoric human populations on a seasonal

and/or year-round basis.

The records search and literature review suggest that both historic and prehistoric resources may be encountered within the APE. Although most of the resources recorded in the vicinity are historic, this could be due to the historic development of the region before environmental protections necessitated cultural resource studies. Nevertheless, the closest prehistoric site, SDI-12,808, is just over 0.3 mile from the project. The nearest recorded resource to the APE that is not classified as a historic residence is the historic isolate and trash deposit (SDI-19,472) that was discovered during archaeological monitoring of grading for the construction of a single-family residence (Clowery-Moreno 2008). Similar buried deposits are unlikely to be encountered within the current APE, as the property is situated on a steep slope. However, since the APE has remained vacant while other surrounding properties have been developed, there is a possibility for historic trash scatters as episodes of historic dumping could be present on the property. The potential for prehistoric sites within the subject property is lower given the slope of the parcel and the absence of bedrock or other landforms that are typically associated with prehistoric use areas.

Field Reconnaissance

On June 1, 2018, BFSa Project Archaeologist Andrew Garrison conducted the field survey under the direction of BFSa Principal Investigator Brian Smith. Kaci Brown, a Native American monitor from Red Tail, actively participated in the survey. The survey was conducted by walking transects in five-meter intervals across the property. Survey conditions were generally good, with low to moderate visibility across the APE. Visibility was hindered at times due to vegetation and the property's steep slope. The property appeared to be completely disturbed through erosion and terracing. A terrace has been cut into the eastern third of the property with an associated retaining wall and concrete steps, and it appears that the area was used by residents of neighboring properties as a sitting area. The western portion of the APE consists of a steep slope that has been eroded by water run-off from neighboring residences located at high elevations to the west. During the survey, particular attention was paid to areas with exposed ground surfaces, such as rodent burrows, areas around the base of vegetation, and the excavation areas surrounding where trees had been removed. No cultural materials were identified on any of the exposed ground surfaces within the property.

Evaluation

Based upon the results of the survey, no cultural resources have been identified on the subject property. The property has been extensively disturbed and neighboring developments along with the topography of the parcel make it unlikely that any subsurface archaeological sites exist within the APE. Therefore, no further archaeological study is necessary to assess the potential for cultural resources.

VI. RECOMMENDATIONS

The City of San Diego typically requires two tasks for an archaeological study of this nature: assessment of the potential for cultural resources on the property and a visual inspection for the presence of cultural resources. As noted previously, no evidence of any prehistoric cultural resources was identified within the property during the survey. The property topography is not consistent with locations of prehistoric Native American occupation, as the slopes are too steep for any Native American use. Further, the property has been disturbed in the past through terracing and erosion. Therefore, given the results of the SCIC records search, the fact that no archaeological sites, features, or artifacts were identified during the field reconnaissance, and the nature of the infill development, no potential impacts to cultural resources are associated with the proposed development of the project and monitoring of grading will not be recommended.

VII. SOURCES CONSULTED DATE

National Register of Historic Places	Month and Year: June 2018
California Register of Historical Resources	Month and Year: June 2018
City of San Diego Historical Resources Register	Month and Year: June 2018
Archaeological/Historical Site Records: South Coastal Information Center	Month and Year: June 2018
Other Sources Consulted: NAHC Sacred Lands File Search (Attachment D) References (Attachment A)	

VIII. CERTIFICATION

I hereby certify that the statements furnished above and in the attached exhibits present the data and information required for this archaeological report, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief, and have been compiled in accordance with the California Environmental Quality Act (CEQA) criteria as defined in Section 15064.5 and City of San Diego Historical Resources Guidelines.



Brian F. Smith
Principal Investigator

June 21, 2018

Date

IX. ATTACHMENT A

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- 1945 An Outline of Yuman Prehistory. Albuquerque: *Southwestern Journal of Anthropology* 1(2):167-198.

- 1966 *Ancient Hunters of the Far West*. Edited with contributions by H.M. Worthington, E.L. Davis, and Clark W. Brott. Union Tribune Publishing Company, San Diego.

Rolle, Andrew F.

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- 1961 Scripps Estate Site, San Diego, California: A La Jolla Site Dated 5,460-7,370 Years Before the Present. *Annals of the New York Academy of Sciences* 93(3).

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- 1996 The Results of a Cultural Resource Study at the 4S Ranch. Unpublished report on file at the South Coastal Information Center at San Diego State University, San Diego, California.

Smith, Brian F. and James R. Moriarty

- 1983 An Archaeological Evaluation of a Drainage Channel Project at the South Sorrento Business Park. Environmental Impact Report on file at the City of San Diego.
- 1985 The Archaeological Excavations at Site W-20, Sierra Del Mar. Unpublished report on file at the South Coastal Information Center at San Diego State University, San Diego, California.

Smith, Brian F. and S. Clowrey-Moreno

- 2009 A Mitigation Monitoring Report for the Allen Residence Project. Brian F. Smith and Associates, Inc. Poway, California.

Stropes, Tracy A.

- 2007 *Nodule Industries of North Coastal San Diego: Understanding Change and Stasis in 10,000 Years of Lithic Technology*. Submitted to San Diego State University. Thesis/Dissertation on file at the South Coastal Information Center at San Diego State University, San Diego, California.

True, Delbert L.

- 1958 An Early Complex in San Diego County, California. *American Antiquity* 23(3).
- 1966 *Archaeological Differentiation of the Shoshonean and Yuman Speaking Groups in Southern California*. Unpublished doctoral dissertation, University of California at Los Angeles.
- 1970 Investigations of a Late Prehistoric Complex in Cuyamaca Rancho State Park, San Diego County, California. *Archaeological Survey Monograph*. University of California, Los Angeles.
- 1980 The Pauma Complex in Northern San Diego County: 1978. *Journal of New World Archaeology* 3(4):1-39.
- 1986 Molpa, a Late Prehistoric Site in Northern San Diego County: The San Luis Rey Complex, 1983. In *Symposium: A New Look at Some Old Sites*, edited by Gary S. Breschini and Trudy Haversat, pp. 29-36. Coyote Press, Salinas.

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- 1998 Paleoindian and Early Archaic Periods. In *Prehistoric and Historic Archaeology of Metropolitan San Diego: A Historical Properties Background Study (draft)*. Prepared for and on file, ASM Affiliates, Inc., San Diego, California.

Waugh, Georgie

1986 *Intensification and Land-use: Archaeological Indication of Transition and Transformation in a Late Prehistoric Complex in Southern California*. Unpublished Ph.D. dissertation, Department of Anthropology, University of California, Davis.

Andrew J. Garrison, M.A., RPA

Senior Project Archaeologist

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Education

Master of Arts, Public History, University of California, Riverside	2009
Bachelor of Science, Anthropology, University of California, Riverside	2005
Bachelor of Arts, History, University of California, Riverside	2005

Professional Memberships

Register of Professional Archaeologists	Society of Primitive Technology
Society for California Archaeology	Lithic Studies Society
Society for American Archaeology	California Preservation Foundation
California Council for the Promotion of History	Pacific Coast Archaeological Society

Experience

Senior Project Archaeologist Brian F. Smith and Associates, Inc.

June 2017–Present
Poway, California

Project management of all phases of archaeological investigations for local, state, and federal agencies including National Register of Historic Places (NRHP) and California Environmental Quality Act (CEQA) level projects interacting with clients, sub-consultants, and lead agencies. Supervise and perform fieldwork including archaeological survey, monitoring, site testing, comprehensive site records checks, and historic building assessments. Perform and oversee technological analysis of prehistoric lithic assemblages. Author or co-author cultural resource management reports submitted to private clients and lead agencies.

Senior Archaeologist and GIS Specialist Scientific Resource Surveys, Inc.

2009–2017
Orange, California

Served as Project Archaeologist or Principal Investigator on multiple projects, including archaeological monitoring, cultural resource surveys, test excavations, and historic building assessments. Directed projects from start to finish, including budget and personnel hours proposals, field and laboratory direction, report writing, technical editing, Native American consultation, and final report submittal. Oversaw all GIS projects including data collection, spatial analysis, and map creation.

Preservation Researcher City of Riverside Modernism Survey

2009
Riverside, California

Completed DPR Primary, District, and Building, Structure and Object Forms for five sites for a grant-funded project to survey designated modern architectural resources within the City of Riverside.

Information Officer
Eastern Information Center (EIC), University of California, Riverside

2005, 2008–2009
Riverside, California

Processed and catalogued restricted and unrestricted archaeological and historical site record forms. Conducted research projects and records searches for government agencies and private cultural resource firms.

Reports/Papers

- 2017 A Phase I Cultural Resources Assessment for the Marbella Villa Project, City of Desert Hot Springs, Riverside County, California. Brian F. Smith and Associates, Inc.
- 2017 Phase I Cultural Resources Survey for TTM 37109, City of Jurupa Valley, County of Riverside. Brian F. Smith and Associates, Inc.
- 2017 A Phase I Cultural Resources Survey for the Jefferson & Ivy Project, City of Murrieta, California. Brian F. Smith and Associates, Inc.
- 2017 A Phase I Cultural Resources Assessment for the Nuevo Dollar General Store Project, Riverside County, California. Brian F. Smith and Associates, Inc.
- 2017 A Phase I Cultural Resource Study for the Westmont Project, Encinitas, California. Brian F. Smith and Associates, Inc.
- 2017 A Phase I Cultural Resources Assessment for the Winchester Dollar General Store Project, Riverside County, California. Brian F. Smith and Associates, Inc.
- 2017 Phase I Cultural Resource Assessment for TTM 31810 (42.42 acres) Predico Properties Olive Grove Project. Scientific Resource Surveys, Inc.
- 2016 John Wayne Airport Jet Fuel Pipeline and Tank Farm Archaeological Monitoring Plan. Scientific Resource Surveys, Inc. On file at the County of Orange, California.
- 2016 Phase I Cultural Resources Assessment: All Star Super Storage City of Menifee Project, 2015-156. Scientific Resource Surveys, Inc. On file at the Eastern Information Center, University of California, Riverside.
- 2016 Historic Resource Assessment for 220 South Batavia Street, Orange, CA 92868 Assessor's Parcel Number 041-064-4. Scientific Resource Surveys, Inc. Submitted to the City of Orange as part of Mills Act application.
- 2015 Historic Resource Report: 807-813 Harvard Boulevard, Los Angeles. Scientific Resource Surveys, Inc. On file at the South Central Coastal Information Center, California State University, Fullerton.
- 2015 Exploring a Traditional Rock Cairn: Test Excavation at CA-SDI-13/RBLI-26: The Rincon Indian Reservation, San Diego County, California. Scientific Resource Surveys, Inc.
- 2015 Class III Scientific Resource Surveys, Inc. Survey for The Lynx Cat Granite Quarry and Water Valley Road Widening Project County of San Bernardino, California, Near the Community of Hinkley. Scientific Resource Surveys, Inc. On file at the South Central Coastal Information Center, California State University, Fullerton.

- 2014 Archaeological Phase I: Cultural Resource Survey of the South West Quadrant of Fairview Park, Costa Mesa. Scientific Resource Surveys, Inc. On file at the South Central Coastal Information Center, California State University, Fullerton.
- 2014 Archaeological Monitoring Results: The New Los Angeles Federal Courthouse. Scientific Resource Surveys, Inc. On file at the South Central Coastal Information Center, California State University, Fullerton.
- 2012 Bolsa Chica Archaeological Project Volume 7, Technological Analysis of Stone Tools, Lithic Technology at Bolsa Chica: Reduction Maintenance and Experimentation. Scientific Resource Surveys, Inc.
- 2010 Phase II Cultural Resources Report Site CA=RIV-2160 PM No. 35164. Scientific Resource Surveys, Inc. On file at the Eastern Information Center, University of California, Riverside.
- 2009 Riverside Modernism Context Survey, contributing author. Available online at the City of Riverside.

Presentations

- 2017 "Repair and Replace: Lithic Production Behavior as Indicated by the Debitage Assemblage from CA-MRP-283 the Hackney Site." Presented at the Society for California Archaeology Annual Meeting, Fish Camp, California.
- 2016 "Bones, Stones, and Shell at Bolsa Chica: A Ceremonial Relationship?" Presented at the Society for California Archaeology Annual Meeting, Ontario, California.
- 2016 "Markers of Time: Exploring Transitions in the Bolsa Chica Assemblage." Presented at the Society for California Archaeology Annual Meeting, Ontario, California.
- 2016 "Dating Duress: Understanding Prehistoric Climate Change at Bolsa Chica." Presented at the Society for California Archaeology Annual Meeting, Ontario, California.
- 2015 "Successive Cultural Phasing Of Prehistoric Northern Orange County, California." Presented at the Society for California Archaeology Annual Meeting, Redding, California.
- 2015 "Southern California Cogged Stone Replication: Experimentation and Results." Presented at the Society for California Archaeology Annual Meeting, Redding, California.
- 2015 "Prehistoric House Keeping: Lithic Analysis of an Intermediate Horizon House Pit." Presented at the Society for California Archaeology Annual Meeting, Redding, California.
- 2015 "Pits and Privies: The Use and Disposal of Artifacts from Historic Los Angeles." Presented at the Society for California Archaeology Annual Meeting, Redding, California.
- 2015 "Grooving in the Past: A Demonstration of the Manufacturing of OGR beads and a look at Past SRS, Inc. Replicative Studies." Demonstration of experimental manufacturing techniques at the January meeting of The Pacific Coast Archaeological Society, Irvine, California.

- 2014 "From Artifact to Replication: Examining *Olivella* Grooved Bead Manufacturing." Presented at the Society for California Archaeology Annual Meeting, Visalia, California.
- 2014 "New Discoveries from an Old Collection: Comparing Recently Identified OGR Beads to Those Previously Analyzed from the Encino Village Site." Presented at the Society for California Archaeology Annual Meeting, Visalia, California.
- 2012 Bolsa Chica Archaeology: Part Seven: Culture and Chronology. Lithic demonstration of experimental manufacturing techniques at the April meeting of The Pacific Coast Archaeological Society, Irvine, California.
- 2012 "Expedient Flaked Tools from Bolsa Chica: Exploring the Lithic Technological Organization." Presented at the Society for California Archaeology Annual Meeting, San Diego, California.
- 2012 "Utilitarian and Ceremonial Ground Stone Production at Bolsa Chica Identified Through Production Tools." Presented at the Society for California Archaeology Annual Meeting, San Diego, California.
- 2012 "Connecting Production Industries at Bolsa Chica: Lithic Reduction and Bead Manufacturing." Presented at the Society for California Archaeology Annual Meeting, San Diego, California.
- 2011 Bolsa Chica Archaeology: Part Four: Mesa Production Industries. Co-presenter at the April meeting of The Pacific Coast Archaeological Society, Irvine, California.
- 2011 "Hammerstones from Bolsa Chica and Their Relationship towards Site Interpretation." Presented at the Society for California Archaeology Annual Meeting, Rohnert Park, California.
- 2011 "Exploring Bipolar Reduction at Bolsa Chica: Debitage Analysis and Replication." Presented at the Society for California Archaeology Annual Meeting, Rohnert Park, California.

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Education

Master of Arts, History, University of San Diego, California

1982

Bachelor of Arts, History, and Anthropology, University of San Diego, California

1975

Professional Memberships

Society for California Archaeology

Experience

Principal Investigator

Brian F. Smith and Associates, Inc.

1977–Present

Poway, California

Brian F. Smith is the owner and principal historical and archaeological consultant for Brian F. Smith and Associates. Over the past 32 years, he has conducted over 2,500 cultural resource studies in California, Arizona, Nevada, Montana, and Texas. These studies include every possible aspect of archaeology from literature searches and large-scale surveys to intensive data recovery excavations. Reports prepared by Mr. Smith have been submitted to all facets of local, state, and federal review agencies, including the US Army Corps of Engineers, the Bureau of Land Management, the Bureau of Reclamation, the Department of Defense, and the Department of Homeland Security. In addition, Mr. Smith has conducted studies for utility companies (Sempra Energy) and state highway departments (CalTrans).

Professional Accomplishments

These selected major professional accomplishments represent research efforts that have added significantly to the body of knowledge concerning the prehistoric life ways of cultures once present in the Southern California area and historic settlement since the late 18th century. Mr. Smith has been principal investigator on the following select projects, except where noted.

Downtown San Diego Mitigation and Monitoring Reporting Programs: Large numbers of downtown San Diego mitigation and monitoring projects submitted to the Centre City Development Corporation, some of which included Strata (2008), Hotel Indigo (2008), Lofts at 707 10th Avenue Project (2007), Breeza (2007), Bayside at the Embarcadero (2007), Aria (2007), Icon (2007), Vantage Pointe (2007), Aperture (2007), Sapphire Tower (2007), Lofts at 655 Sixth Avenue (2007), Metrowork (2007), The Legend (2006), The Mark (2006), Smart Corner (2006), Lofts at 677 7th Avenue (2005), Aloft on Cortez Hill (2005), Front and

Beech Apartments (2003), Bella Via Condominiums (2003), Acqua Vista Residential Tower (2003), Northblock Lofts (2003), Westin Park Place Hotel (2001), Parkliff Apartment Complex (2001), Renaissance Park (2001), and Laurel Bay Apartments (2001).

Archaeology at the Padres Ballpark: Involved the analysis of historic resources within a seven-block area of the "East Village" area of San Diego, where occupation spanned a period from the 1870s to the 1940s. Over a period of two years, BFSa recovered over 200,000 artifacts and hundreds of pounds of metal, construction debris, unidentified broken glass, and wood. Collectively, the Ballpark Project and the other downtown mitigation and monitoring projects represent the largest historical archaeological program anywhere in the country in the past decade (2000-2007).

4S Ranch Archaeological and Historical Cultural Resources Study: Data recovery program consisted of the excavation of over 2,000 square meters of archaeological deposits that produced over one million artifacts, containing primarily prehistoric materials. The archaeological program at 4S Ranch is the largest archaeological study ever undertaken in the San Diego County area and has produced data that has exceeded expectations regarding the resolution of long-standing research questions and regional prehistoric settlement patterns.

Charles H. Brown Site: Attracted international attention to the discovery of evidence of the antiquity of man in North America. Site located in Mission Valley, in the city of San Diego.

Del Mar Man Site: Study of the now famous Early Man Site in Del Mar, California, for the San Diego Science Foundation and the San Diego Museum of Man, under the direction of Dr. Spencer Rogers and Dr. James R. Moriarty.

Old Town State Park Projects: Consulting Historical Archaeologist. Projects completed in the Old Town State Park involved development of individual lots for commercial enterprises. The projects completed in Old Town include Archaeological and Historical Site Assessment for the Great Wall Cafe (1992), Archaeological Study for the Old Town Commercial Project (1991), and Cultural Resources Site Survey at the Old San Diego Inn (1988).

Site W-20, Del Mar, California: A two-year-long investigation of a major prehistoric site in the Del Mar area of the city of San Diego. This research effort documented the earliest practice of religious/ceremonial activities in San Diego County (circa 6,000 years ago), facilitated the projection of major non-material aspects of the La Jolla Complex, and revealed the pattern of civilization at this site over a continuous period of 5,000 years. The report for the investigation included over 600 pages, with nearly 500,000 words of text, illustrations, maps, and photographs documenting this major study.

City of San Diego Reclaimed Water Distribution System: A cultural resource study of nearly 400 miles of pipeline in the city and county of San Diego.

Master Environmental Assessment Project, City of Poway: Conducted for the City of Poway to produce a complete inventory of all recorded historic and prehistoric properties within the city. The information was used in conjunction with the City's General Plan Update to produce a map matrix of the city showing areas of high, moderate, and low potential for the presence of cultural resources. The effort also included the development of the City's Cultural Resource Guidelines, which were adopted as City policy.

Draft of the City of Carlsbad Historical and Archaeological Guidelines: Contracted by the City of Carlsbad to produce the draft of the City's historical and archaeological guidelines for use by the Planning Department of the City.

The Mid-Bayfront Project for the City of Chula Vista: Involved a large expanse of undeveloped agricultural land situated between the railroad and San Diego Bay in the northwestern portion of the city. The study included the analysis of some potentially historic features and numerous prehistoric sites.

Cultural Resources Survey and Test of Sites Within the Proposed Development of the Audie Murphy Ranch, Riverside County, California: Project manager/director of the investigation of 1,113.4 acres and 43 sites, both prehistoric and historic—including project coordination; direction of field crews; evaluation of sites for significance based on County of Riverside and CEQA guidelines; assessment of cupule, pictograph, and rock shelter sites, co-authoring of cultural resources project report. February-September 2002.

Cultural Resources Evaluation of Sites Within the Proposed Development of the Otay Ranch Village 13 Project, San Diego County, California: Project manager/director of the investigation of 1,947 acres and 76 sites, both prehistoric and historic—including project coordination and budgeting; direction of field crews; assessment of sites for significance based on County of San Diego and CEQA guidelines; co-authoring of cultural resources project report. May-November 2002.

Cultural Resources Survey for the Remote Video Surveillance Project, El Centro Sector, Imperial County: Project manager/director for a survey of 29 individual sites near the U.S./Mexico Border for proposed video surveillance camera locations associated with the San Diego Border barrier Project—project coordination and budgeting; direction of field crews; site identification and recordation; assessment of potential impacts to cultural resources; meeting and coordinating with U.S. Army Corps of Engineers, U.S. Border Patrol, and other government agencies involved; co-authoring of cultural resources project report. January, February, and July 2002.

Cultural Resources Survey and Test of Sites Within the Proposed Development of the Menifee West GPA, Riverside County, California: Project manager/director of the investigation of nine sites, both prehistoric and historic—including project coordination and budgeting; direction of field crews; assessment of sites for significance based on County of Riverside and CEQA guidelines; historic research; co-authoring of cultural resources project report. January-March 2002.

Mitigation of An Archaic Cultural Resource for the Eastlake III Woods Project for the City of Chula Vista, California: Project archaeologist/ director—including direction of field crews; development and completion of data recovery program including collection of material for specialized faunal and botanical analyses; assessment of sites for significance based on CEQA guidelines; management of artifact collections cataloging and curation; data synthesis; co-authoring of cultural resources project report, in prep. September 2001-March 2002.

Cultural Resources Survey and Test of Sites Within the Proposed French Valley Specific Plan/EIR, Riverside County, California: Project manager/director of the investigation of two prehistoric and three historic sites—including project coordination and budgeting; survey of project area; Native American consultation; direction of field crews; assessment of sites for significance based on CEQA guidelines; cultural resources project report in prep. July-August 2000.

Cultural Resources Survey and Test of Sites Within the Proposed Lawson Valley Project, San Diego County, California: Project manager/director of the investigation of 28 prehistoric and two historic sites—including project coordination; direction of field crews; assessment of sites for significance based on CEQA guidelines; cultural resources project report in prep. July-August 2000.

Cultural Resource Survey and Geotechnical Monitoring for the Mohyi Residence Project, La Jolla, California: Project manager/director of the investigation of a single-dwelling parcel—including project coordination; field survey; assessment of parcel for potentially buried cultural deposits; monitoring of geotechnical borings; authoring of cultural resources project report. Brian F. Smith and Associates, San Diego, California. June 2000.

Enhanced Cultural Resource Survey and Evaluation for the Prewitt/Schmucker/Cavadias Project, La Jolla, California: Project manager/director of the investigation of a single-dwelling parcel—including project coordination; direction of field crews; assessment of parcel for potentially buried cultural deposits; authoring of cultural resources project report. June 2000.

Cultural Resources Survey and Test of Sites Within the Proposed Development of the Meniffee Ranch, Riverside County, California: Project manager/director of the investigation of one prehistoric and five historic sites—including project coordination and budgeting; direction of field crews; feature recordation; historic structure assessments; assessment of sites for significance based on CEQA guidelines; historic research; co-authoring of cultural resources project report. February-June 2000.

Salvage Mitigation of a Portion of the San Diego Presidio Identified During Water Pipe Construction for the City of San Diego, California: Project archaeologist/director—including direction of field crews; development and completion of data recovery program; management of artifact collections cataloging and curation; data synthesis and authoring of cultural resources project report in prep. April 2000.

Enhanced Cultural Resource Survey and Evaluation for the Tyrian 3 Project, La Jolla, California: Project manager/director of the investigation of a single-dwelling parcel—including project coordination; assessment of parcel for potentially buried cultural deposits; authoring of cultural resources project report. April 2000.

Enhanced Cultural Resource Survey and Evaluation for the Lamont 5 Project, Pacific Beach, California: Project manager/director of the investigation of a single-dwelling parcel—including project coordination; assessment of parcel for potentially buried cultural deposits; authoring of cultural resources project report. April 2000.

Enhanced Cultural Resource Survey and Evaluation for the Reiss Residence Project, La Jolla, California: Project manager/director of the investigation of a single-dwelling parcel—including project coordination; assessment of parcel for potentially buried cultural deposits; authoring of cultural resources project report. March-April 2000.

Salvage Mitigation of a Portion of Site SDM-W-95 (CA-SDI-211) for the Poinsettia Shores Santalina Development Project and Caltrans, Carlsbad, California: Project archaeologist/ director—including direction of field crews; development and completion of data recovery program; management of artifact collections cataloging and curation; data synthesis and authoring of cultural resources project report in prep. December 1999-January 2000.

Survey and Testing of Two Prehistoric Cultural Resources for the Airway Truck Parking Project, Otay Mesa, California: Project archaeologist/director—including direction of field crews; development and completion of testing recovery program; assessment of site for significance based on CEQA guidelines; authoring of cultural resources project report, in prep. December 1999-January 2000.

Cultural Resources Phase I and II Investigations for the Tin Can Hill Segment of the Immigration and Naturalization Services Triple Fence Project Along the International Border, San Diego County, California: Project manager/director for a survey and testing of a prehistoric quarry site along the border—NRHP eligibility assessment; project coordination and budgeting; direction of field crews; feature recordation; meeting and coordinating with U.S. Army Corps of Engineers; co-authoring of cultural resources project report. December 1999-January 2000.

Mitigation of a Prehistoric Cultural Resource for the Westview High School Project for the City of San Diego, California: Project archaeologist/ director—including direction of field crews; development and completion of data recovery program including collection of material for specialized faunal and botanical analyses; assessment of sites for significance based on CEQA guidelines; management of artifact collections cataloging and curation; data synthesis; co-authoring of cultural resources project report, in prep. October 1999-January 2000.

Mitigation of a Prehistoric Cultural Resource for the Otay Ranch SPA-One West Project for the City of Chula Vista, California: Project archaeologist/director—including direction of field crews; development of data recovery program; management of artifact collections cataloging and curation; assessment of

site for significance based on CEQA guidelines; data synthesis; authoring of cultural resources project report, in prep. September 1999-January 2000.

Monitoring of Grading for the Herschel Place Project, La Jolla, California: Project archaeologist/monitor—included monitoring of grading activities associated with the development of a single-dwelling parcel. September 1999.

Survey and Testing of a Historic Resource for the Osterkamp Development Project, Valley Center, California: Project archaeologist/ director—included direction of field crews; development and completion of data recovery program; budget development; assessment of site for significance based on CEQA guidelines; management of artifact collections cataloging and curation; data synthesis; authoring of cultural resources project report. July-August 1999.

Survey and Testing of a Prehistoric Cultural Resource for the Proposed College Boulevard Alignment Project, Carlsbad, California: Project manager/director —included direction of field crews; development and completion of testing recovery program; assessment of site for significance based on CEQA guidelines; management of artifact collections cataloging and curation; data synthesis; authoring of cultural resources project report, in prep. July-August 1999.

Survey and Evaluation of Cultural Resources for the Palomar Christian Conference Center Project, Palomar Mountain, California: Project archaeologist—included direction of field crews; assessment of sites for significance based on CEQA guidelines; management of artifact collections cataloging and curation; data synthesis; authoring of cultural resources project report. July-August 1999.

Survey and Evaluation of Cultural Resources at the Village 2 High School Site, Otay Ranch, City of Chula Vista, California: Project manager/director —management of artifact collections cataloging and curation; assessment of site for significance based on CEQA guidelines; data synthesis; authoring of cultural resources project report. July 1999.

Cultural Resources Phase I, II, and III Investigations for the Immigration and Naturalization Services Triple Fence Project Along the International Border, San Diego County, California: Project manager/director for the survey, testing, and mitigation of sites along border—supervision of multiple field crews, NRHP eligibility assessments, Native American consultation, contribution to Environmental Assessment document, lithic and marine shell analysis, authoring of cultural resources project report. August 1997-January 2000.

Phase I, II, and III Investigations for the Scripps Poway Parkway East Project, Poway California: Project archaeologist/project director—included recordation and assessment of multicomponent prehistoric and historic sites; direction of Phase II and III investigations; direction of laboratory analyses including prehistoric and historic collections; curation of collections; data synthesis; coauthorship of final cultural resources report. February 1994; March-September 1994; September-December 1995.

Archaeological Evaluation of Cultural Resources Within the Proposed Corridor for the San Elijo Water Reclamation System Project, San Elijo, California: Project manager/director —test excavations; direction of artifact identification and analysis; graphics production; coauthorship of final cultural resources report. December 1994-July 1995.

Evaluation of Cultural Resources for the Environmental Impact Report for the Rose Canyon Trunk Sewer Project, San Diego, California: Project manager/Director —direction of test excavations; identification and analysis of prehistoric and historic artifact collections; data synthesis; co-authorship of final cultural resources report, San Diego, California. June 1991-March 1992.

Reports/Papers

Author, coauthor, or contributor to over 2,500 cultural resources management publications, a selection of which are presented below.

- 2015 An Archaeological/Historical Study for the Safari Highlands Ranch Project, City of Escondido, County of San Diego.
- 2015 A Phase I and II Cultural Resources Assessment for the Decker Parcels II Project, Planning Case No. 36962, Riverside County, California.
- 2015 A Phase I and II Cultural Resources Assessment for the Decker Parcels I Project, Planning Case No. 36950, Riverside County, California.
- 2015 Cultural Resource Data Recovery and Mitigation Monitoring Program for Site SDI-10,237 Locus F, Everly Subdivision Project, El Cajon, California.
- 2015 Phase I Cultural Resource Survey for the Woodward Street Senior Housing Project, City of San Marcos, California (APN 218-120-31).
- 2015 An Updated Cultural Resource Survey for the Box Springs Project (TR 33410), APNs 255-230-010, 255-240-005, 255-240-006, and Portions of 257-180-004, 257-180-005, and 257-180-006.
- 2015 A Phase I and II Cultural Resource Report for the Lake Ranch Project, TR 36730, Riverside County, California.
- 2015 A Phase II Cultural Resource Assessment for the Munro Valley Solar Project, Inyo County, California.
- 2014 Cultural Resources Monitoring Report for the Diamond Valley Solar Project, Community of Winchester, County of Riverside.
- 2014 National Historic Preservation Act Section 106 Compliance for the Proposed Saddleback Estates Project, Riverside County, California.
- 2014 A Phase II Cultural Resource Evaluation Report for RIV-8137 at the Toscana Project, TR 36593, Riverside County, California.
- 2014 Cultural Resources Study for the Estates at Del Mar Project, City of Del Mar, San Diego, California (TTM 14-001).
- 2014 Cultural Resources Study for the Aliso Canyon Major Subdivision Project, Rancho Santa Fe, San Diego County, California.
- 2014 Cultural Resources Due Diligence Assessment of the Ocean Colony Project, City of Encinitas.
- 2014 A Phase I and Phase II Cultural Resource Assessment for the Citrus Heights II Project, TTM 36475, Riverside County, California.
- 2013 A Phase I Cultural Resource Assessment for the Modular Logistics Center, Moreno Valley, Riverside County, California.

- 2013 A Phase I Cultural Resources Survey of the Ivey Ranch Project, Thousand Palms, Riverside County, California.
- 2013 Cultural Resources Report for the Emerald Acres Project, Riverside County, California.
- 2013 A Cultural Resources Records Search and Review for the Pala Del Norte Conservation Bank Project, San Diego County, California.
- 2013 An Updated Phase I Cultural Resources Assessment for Tentative Tract Maps 36484 and 36485, Audie Murphy Ranch, City of Menifee, County of Riverside.
- 2013 El Centro Town Center Industrial Development Project (EDA Grant No. 07-01-06386); Result of Cultural Resource Monitoring.
- 2013 Cultural Resources Survey Report for the Renda Residence Project, 9521 La Jolla Farms Road, La Jolla, California.
- 2013 A Phase I Cultural Resource Study for the Ballpark Village Project, San Diego, California.
- 2013 Archaeological Monitoring and Mitigation Program, San Clemente Senior Housing Project, 2350 South El Camino Real, City of San Clemente, Orange County, California (CUP No. 06-065; APN-060-032-04).
- 2012 Mitigation Monitoring Report for the Los Peñasquitos Recycled Water Pipeline.
- 2012 Cultural Resources Report for Menifee Heights (Tract 32277).
- 2012 A Phase I Cultural Resource Study for the Altman Residence at 9696 La Jolla Farms Road, La Jolla, California 92037.
- 2012 Mission Ranch Project (TM 5290-1/MUP P87-036W3): Results of Cultural Resources Monitoring During Mass Grading.
- 2012 A Phase I Cultural Resource Study for the Payan Property Project, San Diego, California.
- 2012 Phase I Archaeological Survey of the Rieger Residence, 13707 Durango Drive, Del Mar, California 92014, APN 300-369-49.
- 2011 Mission Ranch Project (TM 5290-1/MUP P87-036W3): Results of Cultural Resources Monitoring During Mass Grading.
- 2011 Mitigation Monitoring Report for the 1887 Viking Way Project, La Jolla, California.
- 2011 Cultural Resource Monitoring Report for the Sewer Group 714 Project.
- 2011 Results of Archaeological Monitoring at the 10th Avenue Parking Lot Project, City of San Diego, California (APNs 534-194-02 and 03).
- 2011 Archaeological Survey of the Pelberg Residence for a Bulletin 560 Permit Application; 8335 Camino Del Oro; La Jolla, California 92037 APN 346-162-01-00 .
- 2011 A Cultural Resources Survey Update and Evaluation for the Robertson Ranch West Project and an Evaluation of National Register Eligibility of Archaeological sites for Sites for Section 106 Review (NHPA).
- 2011 Mitigation Monitoring Report for the 43rd and Logan Project.

- 2011 Mitigation Monitoring Report for the Sewer Group 682 M Project, City of San Diego Project #174116.
- 2011 A Phase I Cultural Resource Study for the Nooren Residence Project, 8001 Calle de la Plata, La Jolla, California, Project No. 226965.
- 2011 A Phase I Cultural Resource Study for the Keating Residence Project, 9633 La Jolla Farms Road, La Jolla, California 92037.
- 2010 Mitigation Monitoring Report for the 15th & Island Project, City of San Diego; APNs 535-365-01, 535-365-02 and 535-392-05 through 535-392-07.
- 2010 Archaeological Resource Report Form: Mitigation Monitoring of the Sewer and Water Group 772 Project, San Diego, California, W.O. Nos. 187861 and 178351.
- 2010 Pottery Canyon Site Archaeological Evaluation Project, City of San Diego, California, Contract No. H105126.
- 2010 Archaeological Resource Report Form: Mitigation Monitoring of the Racetrack View Drive Project, San Diego, California; Project No. 163216.
- 2010 A Historical Evaluation of Structures on the Butterfield Trails Property.
- 2010 Historic Archaeological Significance Evaluation of 1761 Haydn Drive, Encinitas, California (APN 260-276-07-00).
- 2010 Results of Archaeological Monitoring of the Heller/Nguyen Project, TPM 06-01, Poway, California.
- 2010 Cultural Resource Survey and Evaluation Program for the Sunday Drive Parcel Project, San Diego County, California, APN 189-281-14.
- 2010 Archaeological Resource Report Form: Mitigation Monitoring of the Emergency Garnet Avenue Storm Drain Replacement Project, San Diego, California, Project No. B10062
- 2010 An Archaeological Study for the 1912 Spindrift Drive Project
- 2009 Cultural Resource Assessment of the North Ocean Beach Gateway Project City of San Diego #64A-003A; Project #154116.
- 2009 Archaeological Constraints Study of the Morgan Valley Wind Assessment Project, Lake County, California.
- 2008 Results of an Archaeological Review of the Helen Park Lane 3.1-acre Property (APN 314-561-31), Poway, California.
- 2008 Archaeological Letter Report for a Phase I Archaeological Assessment of the Valley Park Condominium Project, Ramona, California; APN 282-262-75-00.
- 2007 Archaeology at the Ballpark. Brian F. Smith and Associates, San Diego, California. Submitted to the Centre City Development Corporation.
- 2007 Result of an Archaeological Survey for the Villages at Promenade Project (APNs 115-180-007-3, 115-180-049-1, 115-180-042-4, 115-180-047-9) in the City of Corona, Riverside County.
- 2007 Monitoring Results for the Capping of Site CA-SDI-6038/SDM-W-5517 within the Katzer Jamul Center Project; P00-017.
- 2006 Archaeological Assessment for The Johnson Project (APN 322-011-10), Poway, California.

- 2005 Results of Archaeological Monitoring at the El Camino Del Teatro Accelerated Sewer Replacement Project (Bid No. K041364; WO # 177741; CIP # 46-610.6.
- 2005 Results of Archaeological Monitoring at the Baltazar Draper Avenue Project (Project No. 15857; APN: 351-040-09).
- 2004 TM 5325 ER #03-14-043 Cultural Resources.
- 2004 An Archaeological Survey and an Evaluation of Cultural Resources at the Salt Creek Project. Report on file at Brian F. Smith and Associates.
- 2003 An Archaeological Assessment for the Hidden Meadows Project, San Diego County, TM 5174, Log No. 99-08-033. Report on file at Brian F. Smith and Associates.
- 2003 ~~An Archaeological Survey for the Manchester Estates Project, Coastal Development Permit #02-009, Encinitas, California. Report on file at Brian F. Smith and Associates.~~
- 2003 Archaeological Investigations at the Manchester Estates Project, Coastal Development Permit #02-009, Encinitas, California. Report on file at Brian F. Smith and Associates.
- 2003 Archaeological Monitoring of Geological Testing Cores at the Pacific Beach Christian Church Project. Report on file at Brian F. Smith and Associates.
- 2003 San Juan Creek Drilling Archaeological Monitoring. Report on file at Brian F. Smith and Associates.
- 2003 Evaluation of Archaeological Resources Within the Spring Canyon Biological Mitigation Area, Otay Mesa, San Diego County, California. Brian F. Smith and Associates, San Diego, California.
- 2002 An Archaeological/Historical Study for the Otay Ranch Village 13 Project (et al.). Brian F. Smith and Associates, San Diego, California.
- 2002 An Archaeological/Historical Study for the Audie Murphy Ranch Project (et al.). Brian F. Smith and Associates, San Diego, California.
- 2002 Results of an Archaeological Survey for the Remote Video Surveillance Project, El Centro Sector, Imperial County, California. Brian F. Smith and Associates, San Diego, California.
- 2002 A Cultural Resources Survey and Evaluation for the Proposed Robertson Ranch Project, City of Carlsbad. Brian F. Smith and Associates, San Diego, California.
- 2002 Archaeological Mitigation of Impacts to Prehistoric Site SDI-7976 for the Eastlake III Woods Project, Chula Vista, California. Brian F. Smith and Associates, San Diego, California.
- 2002 An Archaeological/Historical Study for Tract No. 29777, Meniffee West GPA Project, Perris Valley, Riverside County. Brian F. Smith and Associates, San Diego, California.
- 2002 An Archaeological/Historical Study for Tract No. 29835, Meniffee West GPA Project, Perris Valley, Riverside County. Brian F. Smith and Associates, San Diego, California.
- 2001 An Archaeological Survey and Evaluation of a Cultural Resource for the Moore Property, Poway. Brian F. Smith and Associates, San Diego, California.
- 2001 An Archaeological Report for the Mitigation, Monitoring, and Reporting Program at the Water and Sewer Group Job 530A, Old Town San Diego. Brian F. Smith and Associates, San Diego, California.

- 2001 A Cultural Resources Impact Survey for the High Desert Water District Recharge Site 6 Project, Yucca Valley. Brian F. Smith and Associates, San Diego, California.
- 2001 Archaeological Mitigation of Impacts to Prehistoric Site SDI-13,864 at the Otay Ranch SPA-One West Project. Brian F. Smith and Associates, San Diego, California.
- 2001 A Cultural Resources Survey and Site Evaluations at the Stewart Subdivision Project, Moreno Valley, County of San Diego. Brian F. Smith and Associates, San Diego, California.
- 2000 An Archaeological/Historical Study for the French Valley Specific Plan/EIR, French Valley, County of Riverside. Brian F. Smith and Associates, San Diego, California.
- 2000 Results of an Archaeological Survey and the Evaluation of Cultural Resources at The TPM#24003-Lawson Valley Project. Brian F. Smith and Associates, San Diego, California.
- 2000 Archaeological Mitigation of Impacts to Prehistoric Site SDI-5326 at the Westview High School Project for the Poway Unified School District. Brian F. Smith and Associates, San Diego, California.
- 2000 An Archaeological/Historical Study for the Menifee Ranch Project. Brian F. Smith and Associates, San Diego, California.
- 2000 An Archaeological Survey and Evaluation of Cultural Resources for the Bernardo Mountain Project, Escondido, California. Brian F. Smith and Associates, San Diego, California.
- 2000 A Cultural Resources Impact Survey for the Nextel Black Mountain Road Project, San Diego, California. Brian F. Smith and Associates, San Diego, California.
- 2000 A Cultural Resources Impact Survey for the Rancho Vista Project, 740 Hilltop Drive, Chula Vista, California. Brian F. Smith and Associates, San Diego, California.
- 2000 A Cultural Resources Impact Survey for the Poway Creek Project, Poway, California. Brian F. Smith and Associates, San Diego, California.
- 2000 Cultural Resource Survey and Geotechnical Monitoring for the Mohyi Residence Project. Brian F. Smith and Associates, San Diego, California.
- 2000 Enhanced Cultural Resource Survey and Evaluation for the Prewitt/Schmucker/ Cavadias Project. Brian F. Smith and Associates, San Diego, California.
- 2000 Enhanced Cultural Resource Survey and Evaluation for the Lamont 5 Project. Brian F. Smith and Associates, San Diego, California.
- 2000 Salvage Excavations at Site SDM-W-95 (CA-SDI-211) for the Poinsettia Shores Santalina Development Project, Carlsbad, California. Brian F. Smith and Associates, San Diego, California.
- 2000 Enhanced Cultural Resource Survey and Evaluation for the Reiss Residence Project, La Jolla, California. Brian F. Smith and Associates, San Diego, California.
- 2000 Enhanced Cultural Resource Survey and Evaluation for the Tyrian 3 Project, La Jolla, California. Brian F. Smith and Associates, San Diego, California.
- 2000 A Report for an Archaeological Evaluation of Cultural Resources at the Otay Ranch Village Two SPA, Chula Vista, California. Brian F. Smith and Associates, San Diego, California.
- 2000 An Archaeological Evaluation of Cultural Resources for the Airway Truck Parking Project, Otay Mesa, County of San Diego. Brian F. Smith and Associates, San Diego, California.

- 2000 Results of an Archaeological Survey and Evaluation of a Resource for the Tin Can Hill Segment of the Immigration and Naturalization and Immigration Service Border Road, Fence, and Lighting Project, San Diego County, California. Brian F. Smith and Associates, San Diego, California.
- 1999 An Archaeological Survey of the Home Creek Village Project, 4600 Block of Home Avenue, San Diego, California. Brian F. Smith and Associates, San Diego, California.
- 1999 An Archaeological Survey for the Sgobassi Lot Split, San Diego County, California. Brian F. Smith and Associates, San Diego, California.
- 1999 An Evaluation of Cultural Resources at the Otay Ranch Village 11 Project. Brian F. Smith and Associates, San Diego, California.
- 1999 An Archaeological/Historical Survey and Evaluation of a Cultural Resource for The Osterkamp Development Project, Valley Center, California. Brian F. Smith and Associates, San Diego, California.
- 1999 An Archaeological Survey and Evaluation of Cultural Resources for the Palomar Christian Conference Center Project, Palomar Mountain, California. Brian F. Smith and Associates, San Diego, California.
- 1999 An Archaeological Survey and Evaluation of a Cultural Resource for the Proposed College Boulevard Alignment Project. Brian F. Smith and Associates, San Diego, California.
- 1999 Results of an Archaeological Evaluation for the Anthony's Pizza Acquisition Project in Ocean Beach, City of San Diego (with L. Pierson and B. Smith). Brian F. Smith and Associates, San Diego, California.
- 1996 An Archaeological Testing Program for the Scripps Poway Parkway East Project. Brian F. Smith and Associates, San Diego, California.
- 1995 Results of a Cultural Resources Study for the 4S Ranch. Brian F. Smith and Associates, San Diego, California.
- 1995 Results of an Archaeological Evaluation of Cultural Resources Within the Proposed Corridor for the San Elijo Water Reclamation System. Brian F. Smith and Associates, San Diego, California.
- 1994 Results of the Cultural Resources Mitigation Programs at Sites SDI-11,044/H and SDI-12,038 at the Salt Creek Ranch Project. Brian F. Smith and Associates, San Diego, California.
- 1993 Results of an Archaeological Survey and Evaluation of Cultural Resources at the Stallion Oaks Ranch Project. Brian F. Smith and Associates, San Diego, California.
- 1992 Results of an Archaeological Survey and the Evaluation of Cultural Resources at the Ely Lot Split Project. Brian F. Smith and Associates, San Diego, California.
- 1991 The Results of an Archaeological Study for the Walton Development Group Project. Brian F. Smith and Associates, San Diego, California.

X. ATTACHMENT B

Project Maps:

**General Location Map
USGS Project Location Map
City 800' Project Location Map
Project Development Map**

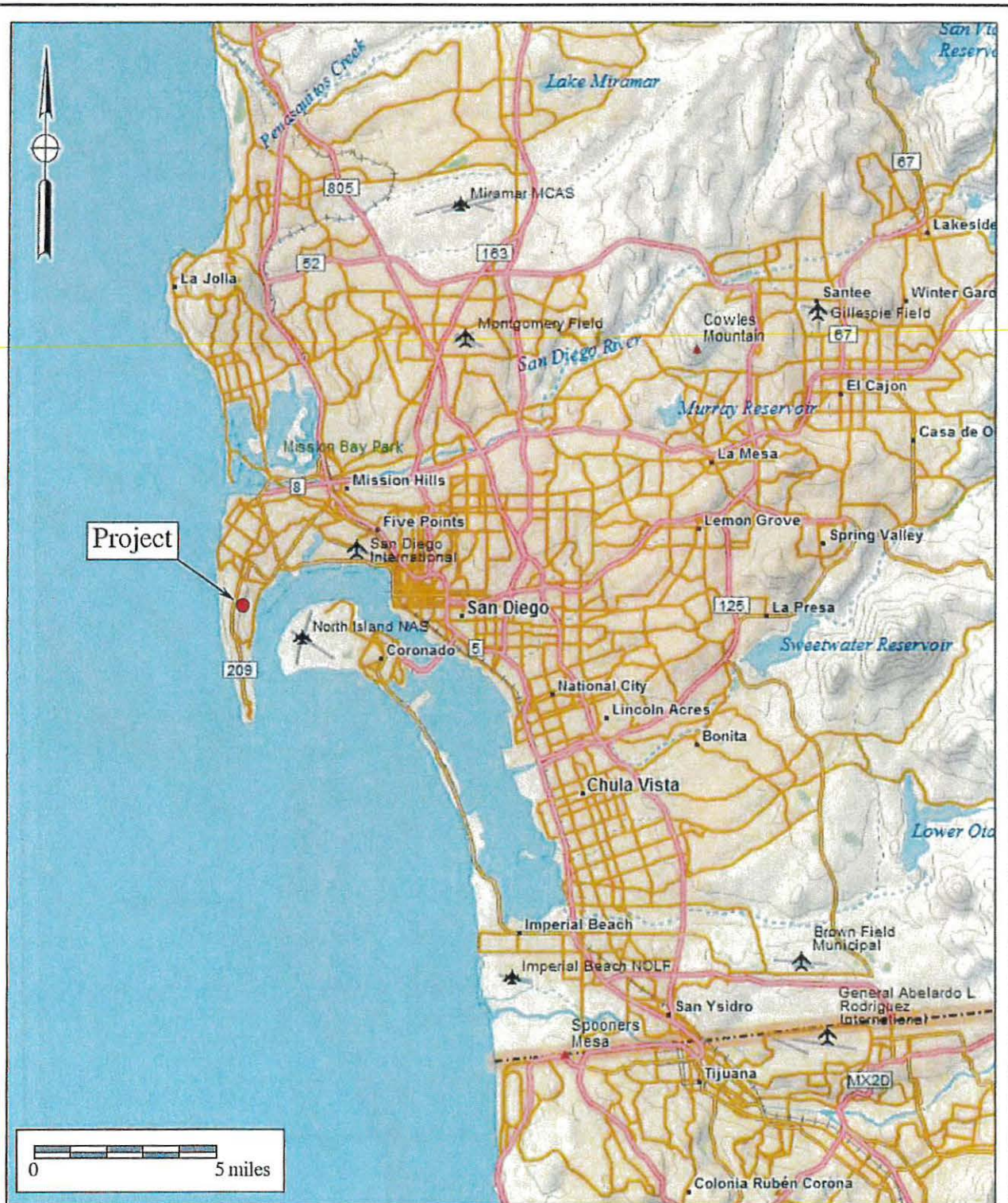


Figure 1
General Location Map
 The Volen House Project
 DeLorme (1:250,000)



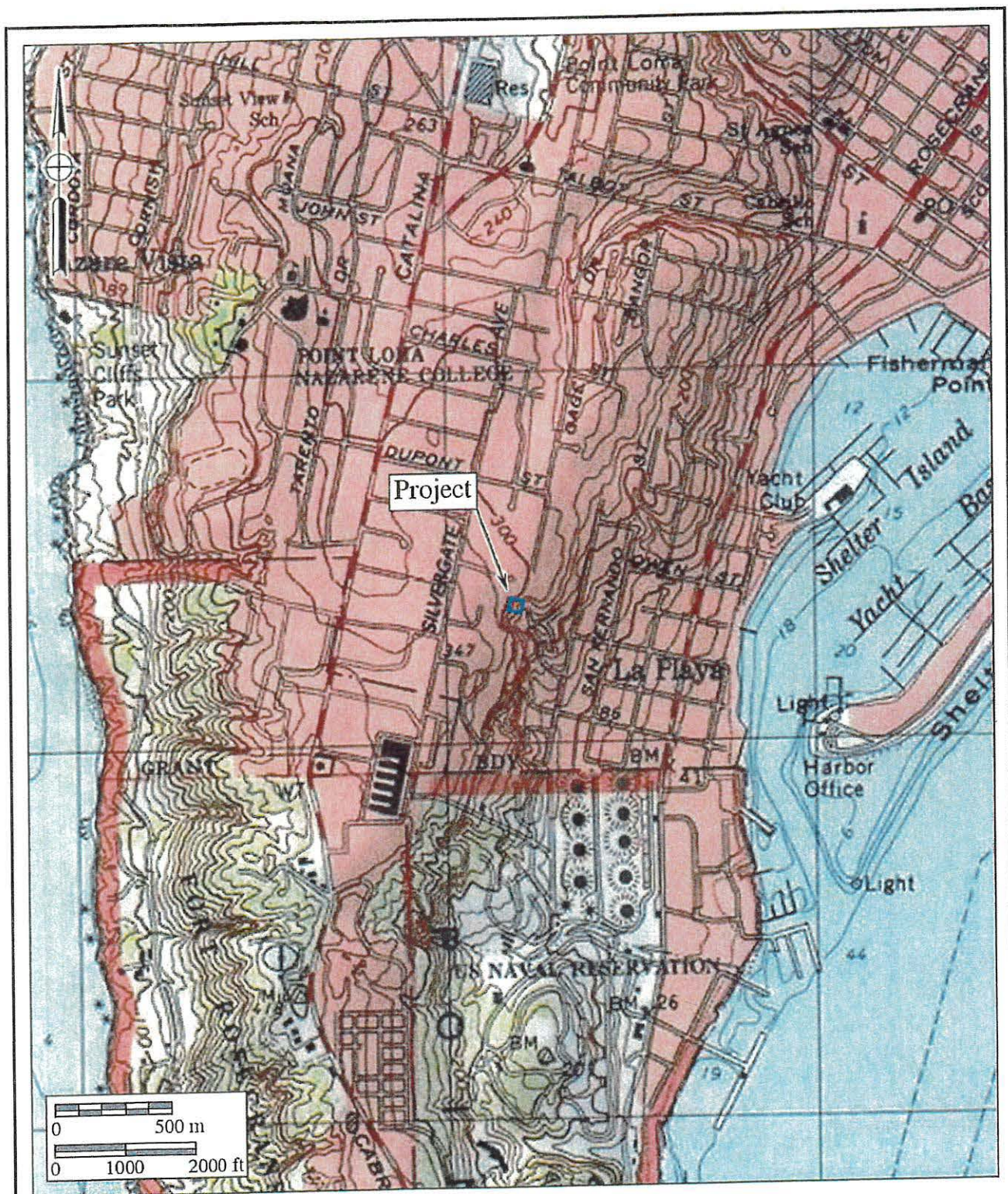


Figure 2
Project Location Map
 The Volen House Project

USGS Point Loma Quadrangle (7.5-minute series)



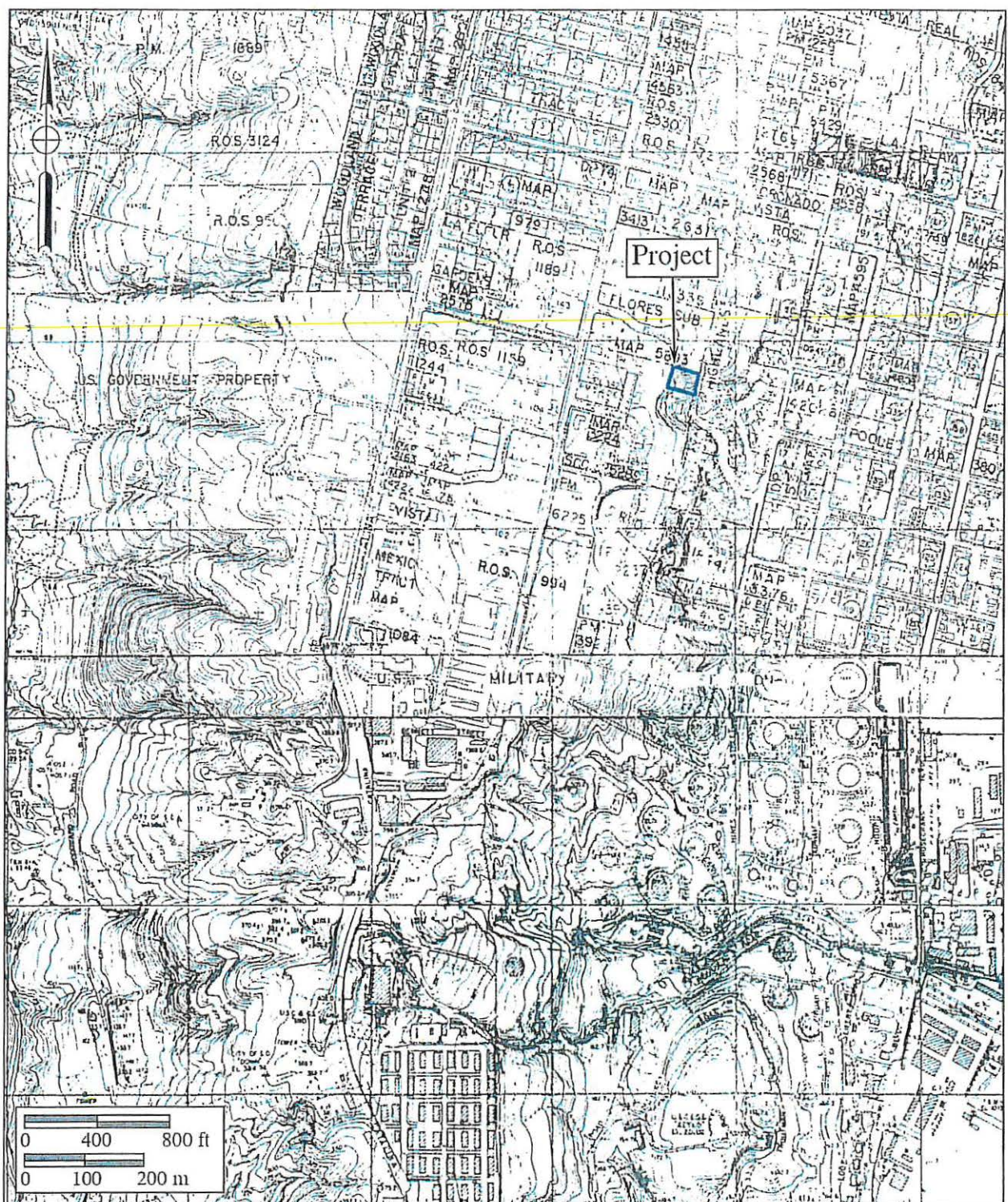


Figure 3
Project Location Map
 The Volen House Project

Shown on The City of San Diego 1" to 800' Scale Engineering Map





Legend
Project Boundary

EASEMENT PER INST.
BOOK 3846, PAGE
491 DATED NOV. 1

EX. 3" SEWER EASEMENT
PER INST. IN BOOK 3938
PAGE 491 DATED JAN.
19

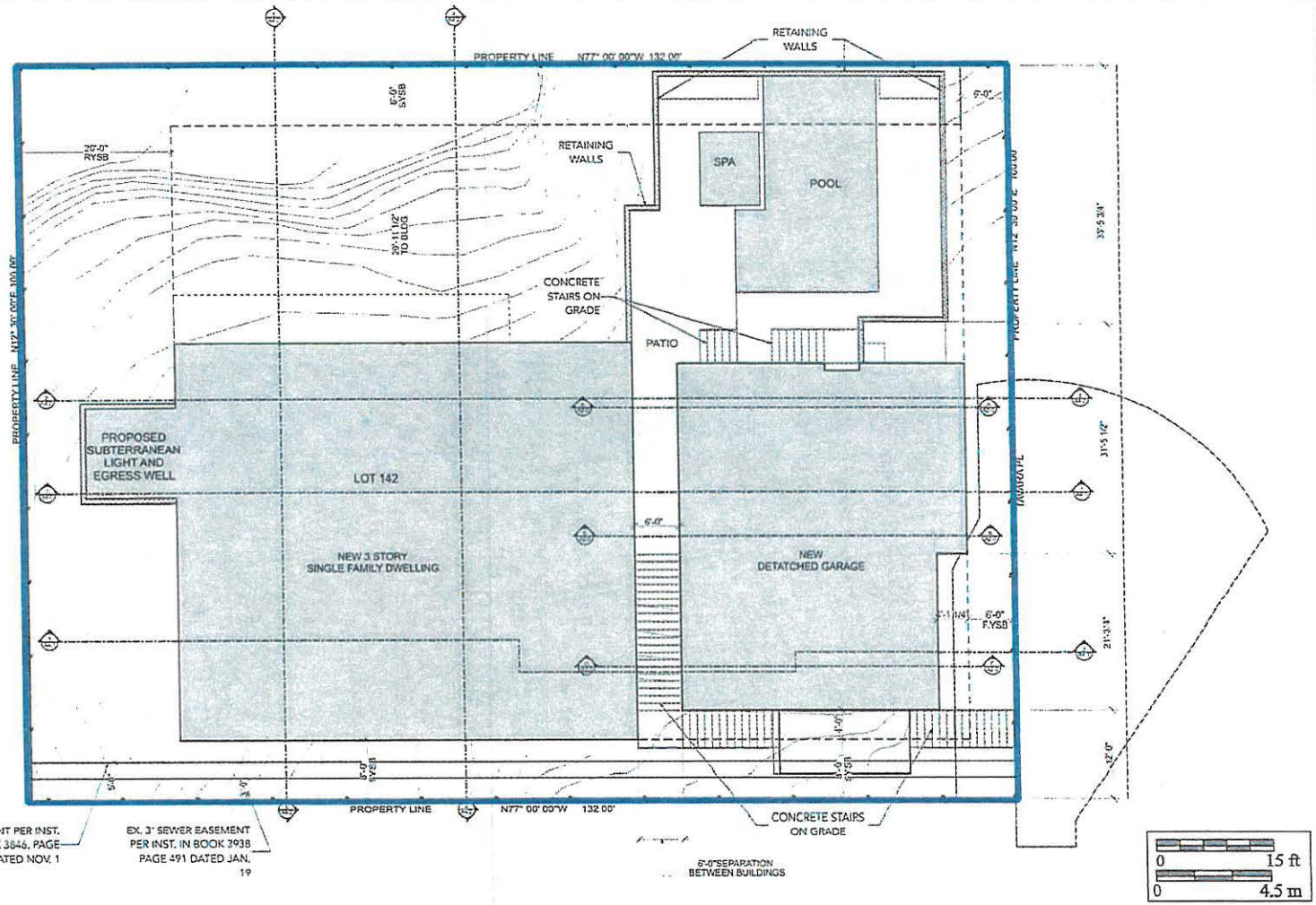


Figure 4
Site Plan
The Volen House Project

XI. ATTACHMENT C

Archaeological Records Search Results

BRIAN F. SMITH and ASSOCIATES

CALIFORNIA HISTORICAL RESOURCES INFORMATION SYSTEMS RECORDS SEARCH

Company: Brian F. Smith and Associates
Processed By: Andrew Garrison
Date Processed: 06-04-18
Project Identification: Volen
Information Center: South Coastal Information Center
Search Radius: Half-Mile

Historical Resources:

Trinomial and Primary site maps have been reviewed. All sites within the project boundaries and the specified radius of the project area have been plotted. Copies of the site record forms have been reviewed for all recorded sites.

There are 13 resources and 25 historic addresses located within a half-mile of the current project area. None intersect the current APE.

Previous Survey Report Boundaries:

Project boundary maps have been reviewed. National Archaeological Database (NADB) citations for reports within the project boundaries and within the specified radius of the project area have been reviewed.

There are 20 reports within a half-mile. None intersect the current APE.

XII. ATTACHMENT D

NAHC Sacred Lands File Search Results



Brian F. Smith and Associates, Inc.

Archaeology / Biology / History / Paleontology / Air Quality / Traffic / Acoustics

May 23, 2018

For: Native American Heritage Commission
915 Capitol Mall, Room 364
Sacramento, California 95814

From: Andrew Garrison M.A., RPA
Brian F. Smith and Associates Inc.
14010 Poway Rd. Suite A
Poway, CA 92064

Re: Request for Sacred Lands File and Native American Contact List for the Volen Project,
Escondido, San Diego County, California.

I would like to request a record search of the Sacred Lands File and a list of appropriate Native American contacts for the following project: The Volen Project (SD Project Nbr: 594706) (Project No. 18-124). The project is a Phase I archaeological assessment for a of an approximately .3-acre parcel (APN 53242007) located at the northern terminus of Tavera Place in San Diego, San Diego County, California. Specifically, the project is located in the former Pueblo Lands of San Diego land grant, Township 17 South, Range 4 West [Projected] on the USGS *Point Loma* Quadrangle. A copy of the project map showing the project area to be searched is included for the processing of this request.

Thank you for your time.

Sincerely,

Andrew Garrison M.A., RPA
Project Archaeologist
Billing: 14678 Ibex Court, San Diego, CA 92129
Phone: 858-484-0915
Email: Agarrison@bfsa-ca.com

Attachments:

USGS 7.5 *Point Loma*, California, topographic maps with project area delineated.
Sacred Lands File request form

Sacred Lands File & Native American Contacts List Request
NATIVE AMERICAN HERITAGE COMMISSION

915 Capitol Mall, RM 364 * Sacramento, CA 95814 * (916) 653-4082
(916) 657-5390 – Fax * nahc@pacbell.net

Information Below is Required for a Sacred Lands File Search

Project: The Volen Project (SD Project Nbr: 594706) (Project No. 18-124)

County: San Diego

USGS Quadrangle Name: *Point Loma*

Township: 17S Range: 04W

Company/Firm/Agency: Brian F. Smith & Associates Inc.

Contact Person: Andrew Garrison

Street Address: 14010 Poway Road, Suite A

City: Poway Zip: 92064

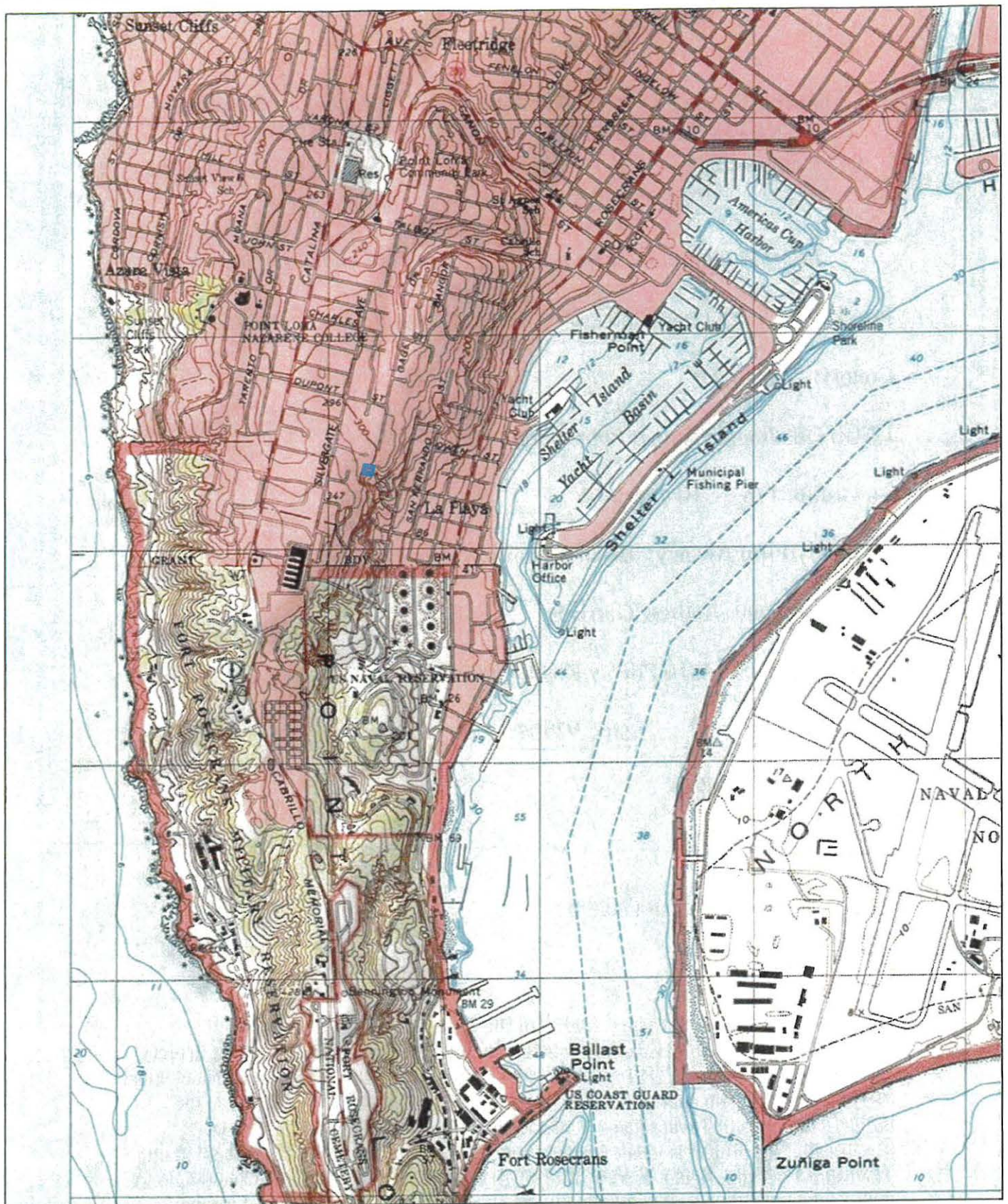
Phone: 858-484-0915

Fax: 858-679-9896

Email: Agarrison@bfsa-ca.com

Project Description:

I would like to request a record search of the Sacred Lands File and a list of appropriate Native American contacts for the following project: The Volen Project (SD Project Nbr: 594706) (Project No. 18-124). The project is a Phase I archaeological assessment for a of an approximately .3-acre parcel (APN 53242007) located at the northern terminus of Tavera Place in San Diego, San Diego County, California. Specifically, the project is located in the former Pueblo Lands of San Diego land grant, Township 17 South, Range 4 West [Projected] on the USGS *Point Loma* Quadrangle. A copy of the project map showing the project area to be searched is included for the processing of this request.



APE

Volan Project(18-128)
USGS *Point Loma* Quadrangle
(7.5-minute series)

AJG BFSa: 5/23/2018



1:24,000

NATIVE AMERICAN HERITAGE COMMISSION

Cultural and Environmental Department
1550 Harbor Blvd., Suite 100
West Sacramento, CA 95691
(916) 373-3710



May 24, 2018

Andrew Garrison
Brian F. Smith & Associates

Sent by E-mail: agarrison@bfsa-ca.com

RE: Proposed Volen (SD Project Nbr: 594796) (Project No. 18-124) Project, City of San Diego;
Point Loma USGS Quadrangle, San Diego County, California

Dear Mr. Garrison:

A record search of the Native American Heritage Commission (NAHC) *Sacred Lands File* was completed for the area of potential project effect (APE) referenced above with negative results. Please note that the absence of specific site information in the *Sacred Lands File* does not indicate the absence of Native American cultural resources in any APE.

Attached is a list of tribes culturally affiliated to the project area. I suggest you contact all of the listed Tribes. If they cannot supply information, they might recommend others with specific knowledge. The list should provide a starting place to locate areas of potential adverse impact within the APE. By contacting all those on the list, your organization will be better able to respond to claims of failure to consult. If a response has not been received within two weeks of notification, the NAHC requests that you follow-up with a telephone call to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from any of these individuals or groups, please notify me. With your assistance we are able to assure that our lists contain current information. If you have any questions or need additional information, please contact via email: gayle.totton@nahc.ca.gov.

Sincerely,

Gayle Totton

Gayle Totton, M.A., PhD.
Associate Governmental Program Analyst
(916) 373-3714

CONFIDENTIALITY NOTICE: This communication with its contents may contain confidential and/or legally privileged information. It is solely for the use of the intended recipient(s). Unauthorized interception, review, use or disclosure is prohibited and may violate applicable laws including the Electronic Communications Privacy Act. If you are not the intended recipient, please contact the sender and destroy all copies of the communication.

Native American Heritage Commission
Native American Contact List
San Diego County
5/24/2018

Barona Group of the Capitan Grande

Edwin Romero, Chairperson
1095 Barona Road
Lakeside, CA, 92040
Phone: (619) 443 - 6612
Fax: (619) 443-0681
cloyd@barona-nsn.gov

Kumeyaay

Campo Band of Mission Indians

Ralph Goff, Chairperson
36190 Church Road, Suite 1
Campo, CA, 91906
Phone: (619) 478 - 9046
Fax: (619) 478-5818
rgoff@campo-nsn.gov

Kumeyaay

Ewiiapaayp Tribal Office

Robert Pinto, Chairperson
4054 Willows Road
Alpine, CA, 91901
Phone: (619) 445 - 6315
Fax: (619) 445-9126
wmicklin@leaningrock.net

Kumeyaay

Ewiiapaayp Tribal Office

Michael Garcia, Vice Chairperson
4054 Willows Road
Alpine, CA, 91901
Phone: (619) 445 - 6315
Fax: (619) 445-9126
michaelg@leaningrock.net

Kumeyaay

Iipay Nation of Santa Ysabel

Virgil Perez, Chairperson
P.O. Box 130
Santa Ysabel, CA, 92070
Phone: (760) 765 - 0845
Fax: (760) 765-0320

Kumeyaay

Iipay Nation of Santa Ysabel

Clint Linton, Director of Cultural Resources
P.O. Box 507
Santa Ysabel, CA, 92070
Phone: (760) 803 - 5694
cjlinton73@aol.com

Kumeyaay

Inaja Band of Mission Indians

Rebecca Osuna, Chairperson
2005 S. Escondido Blvd.
Escondido, CA, 92025
Phone: (760) 737 - 7628
Fax: (760) 747-8568

Kumeyaay

Jamul Indian Village

Erica Pinto, Chairperson
P.O. Box 612
Jamul, CA, 91935
Phone: (619) 669 - 4785
Fax: (619) 669-4817
mohusky@jiv-nsn.gov

Kumeyaay

Kwaaymii Laguna Band of Mission Indians

Carmen Lucas,
P.O. Box 775
Pine Valley, CA, 91962
Phone: (619) 709 - 4207

Kumeyaay

La Posta Band of Mission Indians

Gwendolyn Parada, Chairperson
8 Crestwood Road
Boulevard, CA, 91905
Phone: (619) 478 - 2113
Fax: (619) 478-2125
LP13boots@aol.com

Kumeyaay

La Posta Band of Mission Indians

Javaughn Miller, Tribal Administrator
8 Crestwood Road
Boulevard, CA, 91905
Phone: (619) 478 - 2113
Fax: (619) 478-2125
jmiller@LPtribe.net

Kumeyaay

Manzanita Band of Kumeyaay Nation

Angela Elliott Santos, Chairperson
P.O. Box 1302
Boulevard, CA, 91905
Phone: (619) 766 - 4930
Fax: (619) 766-4957

Kumeyaay

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resource Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed Vollen Project, San Diego County.

Native American Heritage Commission
Native American Contact List
San Diego County
5/24/2018

**Mesa Grande Band of Mission
Indians**

Mario Morales, Cultural
Resources Representative
PMB 366 35008 Pala Temecula Rd. Kumeyaay
Pala, CA, 92059
Phone: (760) 622 - 1336

**Sycuan Band of the Kumeyaay
Nation**

Lisa Haws, Cultural Resources
Manager
1 Kwaaypaay Court Kumeyaay
El Cajon, CA, 92019
Phone: (619) 312 - 1935
lhaws@sycuan-nsn.gov

**Mesa Grande Band of Mission
Indians**

Virgil Oyos, Chairperson
P.O. Box 270 Kumeyaay
Santa Ysabel, CA, 92070
Phone: (760) 782 - 3818
Fax: (760) 782-9092
mesagrandeband@msn.com

**Viejas Band of Kumeyaay
Indians**

Robert Welch, Chairperson
1 Viejas Grade Road Kumeyaay
Alpine, CA, 91901
Phone: (619) 445 - 3810
Fax: (619) 445-5337
jhagen@viejas-nsn.gov

**San Pasqual Band of Mission
Indians**

John Flores, Environmental
Coordinator
P. O. Box 365 Kumeyaay
Valley Center, CA, 92082
Phone: (760) 749 - 3200
Fax: (760) 749-3876
johnf@sanpasqualtribe.org

**Viejas Band of Kumeyaay
Indians**

Julie Hagen,
1 Viejas Grade Road Kumeyaay
Alpine, CA, 91901
Phone: (619) 445 - 3810
Fax: (619) 445-5337
jhagen@viejas-nsn.gov

**San Pasqual Band of Mission
Indians**

Allen E. Lawson, Chairperson
P.O. Box 365 Kumeyaay
Valley Center, CA, 92082
Phone: (760) 749 - 3200
Fax: (760) 749-3876
allenl@sanpasqualtribe.org

**Sycuan Band of the Kumeyaay
Nation**

Cody J. Martinez, Chairperson
1 Kwaaypaay Court Kumeyaay
El Cajon, CA, 92019
Phone: (619) 445 - 2613
Fax: (619) 445-1927
ssilva@sycuan-nsn.gov

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resource Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed Volen Project, San Diego County.



Brian F. Smith and Associates, Inc.

Archaeology / Biology / History / Paleontology / Air Quality / Traffic / Acoustics

June 1, 2018

Alexis M. Vargas
Sycuan Tribal Government
Sycuan Band of the Kumeyaay Nation
1 Kwaaypaay Court
El Cajon, California 92019

Subject: Information regarding Native American cultural resources on or near the Volen Project, San Diego County, California

Dear Ms. Vargas:

This inquiry is requesting information you may have regarding the existence of Native American cultural resources on or near the Volen Project. The information you provide will be used to assess areas of potential adverse impact within the proposed project's Area of Potential Effect (APE). Any information you might provide will be kept confidential and will not be divulged to the public.

The project is in San Diego County, California, and includes the development of an approximately 0.3-acre parcel (Assessor's Parcel Number 532-420-07). The project area can be found at the northwestern terminus of Tavera Place in the neighborhood of Point Loma, San Diego, California. Specifically, this project is located in an unsectioned portion of the former Pueblo Lands of San Diego Land Grant of the USGS 7.5-minute *Point Loma, California* topographic quadrangle (Township 17 South, Range 4 West [Projected]). Please find enclosed sections of the USGS *Point Loma* Quadrangle map on which the project is delineated.

Although a records search of the Sacred Lands File has failed to indicate the presence of Native American cultural resources in the immediate Volen Project area, the Native American Heritage Commission requested that we consult with you directly regarding the potential for the presence of Native American cultural resources that may be impacted by this project. If you do have information to provide regarding any resources on or near the project, please contact Brian Smith or myself at (858) 484-0915, or contact the City of San Diego directly. We would like to extend our thanks for your response regarding this issue.

Sincerely,

Tracy A. Stropes, M.A., RPA
Senior Project Archaeologist
tstropes@bfsa-ca.com

Attachment:

USGS 7.5-minute *Point Loma, California* topographic map with project area delineated



Brian F. Smith and Associates, Inc.

Archaeology / Biology / History / Paleontology / Air Quality / Traffic / Acoustics

June 1, 2018

Allen E. Lawson
Chairperson
San Pasqual Band of Mission Indians
P.O. Box 365
Valley Center, California 92082

Subject: Information regarding Native American cultural resources on or near the Volen Project, San Diego County, California

Dear Mr. Lawson:

This inquiry is requesting information you may have regarding the existence of Native American cultural resources on or near the Volen Project. The information you provide will be used to assess areas of potential adverse impact within the proposed project's Area of Potential Effect (APE). Any information you might provide will be kept confidential and will not be divulged to the public.

The project is in San Diego County, California, and includes the development of an approximately 0.3-acre parcel (Assessor's Parcel Number 532-420-07). The project area can be found at the northwestern terminus of Tavera Place in the neighborhood of Point Loma, San Diego, California. Specifically, this project is located in an unsectioned portion of the former Pueblo Lands of San Diego Land Grant of the USGS 7.5-minute *Point Loma, California* topographic quadrangle (Township 17 South, Range 4 West [Projected]). Please find enclosed sections of the USGS *Point Loma* Quadrangle map on which the project is delineated.

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Sincerely,

Tracy A. Stropes, M.A., RPA
Senior Project Archaeologist
tstropes@bfsa-ca.com

Attachment:

USGS 7.5-minute *Point Loma, California* topographic map with project area delineated



Brian F. Smith and Associates, Inc.

Archaeology / Biology / History / Paleontology / Air Quality / Traffic / Acoustics

June 1, 2018

Angela Elliott Santos
Chairperson
Manzanita Band of the Kumeyaay Nation
P.O. Box 1302
Boulevard, California 91905

Subject: Information regarding Native American cultural resources on or near the Volen Project, San Diego County, California

Dear Ms. Santos:

This inquiry is requesting information you may have regarding the existence of Native American cultural resources on or near the Volen Project. The information you provide will be used to assess areas of potential adverse impact within the proposed project's Area of Potential Effect (APE). Any information you might provide will be kept confidential and will not be divulged to the public.

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tstropes@bfsa-ca.com

Attachment:

USGS 7.5-minute *Point Loma, California* topographic map with project area delineated



Brian F. Smith and Associates, Inc.

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June 1, 2018

Carmen Lucas
Kwaaymii Laguna Band of Mission Indians
P.O. Box 775
Pine Valley, California 91962

Subject: Information regarding Native American cultural resources on or near the Volen Project, San Diego County, California

Dear Ms. Lucas:

This inquiry is requesting information you may have regarding the existence of Native American cultural resources on or near the Volen Project. The information you provide will be used to assess areas of potential adverse impact within the proposed project's Area of Potential Effect (APE). Any information you might provide will be kept confidential and will not be divulged to the public.

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tstropes@bfsa-ca.com

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Brian F. Smith and Associates, Inc.

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June 1, 2018

Clint Linton
Director of Cultural Resources
Iipay Nation of Santa Ysabel
P.O. Box 507
Santa Ysabel, California 92070

Subject: Information regarding Native American cultural resources on or near the Volen Project, San Diego County, California

Dear Mr. Linton:

This inquiry is requesting information you may have regarding the existence of Native American cultural resources on or near the Volen Project. The information you provide will be used to assess areas of potential adverse impact within the proposed project's Area of Potential Effect (APE). Any information you might provide will be kept confidential and will not be divulged to the public.

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tstropes@bfsa-ca.com

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USGS 7.5-minute *Point Loma, California* topographic map with project area delineated



Brian F. Smith and Associates, Inc.

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June 1, 2018

Cody J. Martinez
Chairperson
Sycuan Band of the Kumeyaay Nation
1 Kwaaypaay Court
El Cajon, California 92019

Subject: Information regarding Native American cultural resources on or near the Volen Project, San Diego County, California

Dear Mr. Martinez:

This inquiry is requesting information you may have regarding the existence of Native American cultural resources on or near the Volen Project. The information you provide will be used to assess areas of potential adverse impact within the proposed project's Area of Potential Effect (APE). Any information you might provide will be kept confidential and will not be divulged to the public.

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tstropes@bfsa-ca.com

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USGS 7.5-minute *Point Loma, California* topographic map with project area delineated



Brian F. Smith and Associates, Inc.

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June 1, 2018

Edwin Romero
Chairperson
Barona Group of the Capitan Grande
1095 Barona Road
Lakeside, California 92040

Subject: Information regarding Native American cultural resources on or near the Volen Project, San Diego County, California

Dear Mr. Romero:

This inquiry is requesting information you may have regarding the existence of Native American cultural resources on or near the Volen Project. The information you provide will be used to assess areas of potential adverse impact within the proposed project's Area of Potential Effect (APE). Any information you might provide will be kept confidential and will not be divulged to the public.

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tstropes@bfsa-ca.com

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USGS 7.5-minute *Point Loma, California* topographic map with project area delineated



Brian F. Smith and Associates, Inc.

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June 1, 2018

Erica Pinto
Chairperson
Jamul Indian Village
P.O. Box 612
Jamul, California 91935

Subject: Information regarding Native American cultural resources on or near the Volen Project, San Diego County, California

Dear Ms. Pinto:

This inquiry is requesting information you may have regarding the existence of Native American cultural resources on or near the Volen Project. The information you provide will be used to assess areas of potential adverse impact within the proposed project's Area of Potential Effect (APE). Any information you might provide will be kept confidential and will not be divulged to the public.

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tstropes@bfsa-ca.com

Attachment:

USGS 7.5-minute *Point Loma, California* topographic map with project area delineated



Brian F. Smith and Associates, Inc.

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June 1, 2018

Ernest Pingleton
Viejas Band of Kumeyaay Indians
1 Viejas Grade Road
Alpine, California 91901

Subject: Information regarding Native American cultural resources on or near the Volen Project, San Diego County, California

Dear Mr. Pingleton:

This inquiry is requesting information you may have regarding the existence of Native American cultural resources on or near the Volen Project. The information you provide will be used to assess areas of potential adverse impact within the proposed project's Area of Potential Effect (APE). Any information you might provide will be kept confidential and will not be divulged to the public.

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tstropes@bfsa-ca.com

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USGS 7.5-minute *Point Loma, California* topographic map with project area delineated



Brian F. Smith and Associates, Inc.

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June 1, 2018

Gwendolyn Parada
Chairperson
La Posta Band of Mission Indians
8 Crestwood Road
Boulevard, California 91905

Subject: Information regarding Native American cultural resources on or near the Volen Project, San Diego County, California

Dear Ms. Parada:

This inquiry is requesting information you may have regarding the existence of Native American cultural resources on or near the Volen Project. The information you provide will be used to assess areas of potential adverse impact within the proposed project's Area of Potential Effect (APE). Any information you might provide will be kept confidential and will not be divulged to the public.

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tstropes@bfsa-ca.com

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USGS 7.5-minute *Point Loma, California* topographic map with project area delineated



Brian F. Smith and Associates, Inc.

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June 1, 2018

Javaughn Miller
Tribal Administrator
La Posta Band of Mission Indians
8 Crestwood Road
Boulevard, California 91905

Subject: Information regarding Native American cultural resources on or near the Volen Project, San Diego County, California

Dear Mr. Miller:

This inquiry is requesting information you may have regarding the existence of Native American cultural resources on or near the Volen Project. The information you provide will be used to assess areas of potential adverse impact within the proposed project's Area of Potential Effect (APE). Any information you might provide will be kept confidential and will not be divulged to the public.

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Senior Project Archaeologist
tstropes@bfsa-ca.com

Attachment:

USGS 7.5-minute *Point Loma, California* topographic map with project area delineated



Brian F. Smith and Associates, Inc.

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June 1, 2018

Jim McPherson
Manager
San Pasqual Economic Development Agency
28000 Via Viso Road, P.O. Box 10
Valley Center, California 92082

Subject: Information regarding Native American cultural resources on or near the Volen Project, San Diego County, California

Dear Mr. McPherson:

This inquiry is requesting information you may have regarding the existence of Native American cultural resources on or near the Volen Project. The information you provide will be used to assess areas of potential adverse impact within the proposed project's Area of Potential Effect (APE). Any information you might provide will be kept confidential and will not be divulged to the public.

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Brian F. Smith and Associates, Inc.

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June 1, 2018

John Flores
Environmental Coordinator
San Pasqual Band of Mission Indians
P.O. Box 365
Valley Center, California 92082

Subject: Information regarding Native American cultural resources on or near the Volen Project, San Diego County, California

Dear Mr. Flores:

This inquiry is requesting information you may have regarding the existence of Native American cultural resources on or near the Volen Project. The information you provide will be used to assess areas of potential adverse impact within the proposed project's Area of Potential Effect (APE). Any information you might provide will be kept confidential and will not be divulged to the public.

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Brian F. Smith and Associates, Inc.

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June 1, 2018

Julie Hagen
Viejas Band of Kumeyaay Indians
1 Viejas Grade Road
Alpine, California 91901

Subject: Information regarding Native American cultural resources on or near the Volen Project, San Diego County, California

Dear Ms. Hagen:

This inquiry is requesting information you may have regarding the existence of Native American cultural resources on or near the Volen Project. The information you provide will be used to assess areas of potential adverse impact within the proposed project's Area of Potential Effect (APE). Any information you might provide will be kept confidential and will not be divulged to the public.

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Brian F. Smith and Associates, Inc.

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June 1, 2018

Lisa Haws
Cultural Resources Manager
Sycuan Band of the Kumeyaay Nation
1 Kwaaypaay Court
El Cajon, California 92019

Subject: Information regarding Native American cultural resources on or near the Volen Project, San Diego County, California

Dear Ms. Haws:

This inquiry is requesting information you may have regarding the existence of Native American cultural resources on or near the Volen Project. The information you provide will be used to assess areas of potential adverse impact within the proposed project's Area of Potential Effect (APE). Any information you might provide will be kept confidential and will not be divulged to the public.

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Brian F. Smith and Associates, Inc.

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June 1, 2018

Lisa K. Cumper
Cultural Resource Manager/Tribal Liaison
Jamul Indian Village
P.O. Box 612
Jamul, California 91935

Subject: Information regarding Native American cultural resources on or near the Volen Project, San Diego County, California

Dear Ms. Cumper:

This inquiry is requesting information you may have regarding the existence of Native American cultural resources on or near the Volen Project. The information you provide will be used to assess areas of potential adverse impact within the proposed project's Area of Potential Effect (APE). Any information you might provide will be kept confidential and will not be divulged to the public.

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Brian F. Smith and Associates, Inc.

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June 1, 2018

Mariah Banares
Administrative Assistant
San Pasqual Band of Mission Indians
P.O. Box 365
Valley Center, California 92082

Subject: Information regarding Native American cultural resources on or near the Volen Project, San Diego County, California

Dear Ms. Banares:

This inquiry is requesting information you may have regarding the existence of Native American cultural resources on or near the Volen Project. The information you provide will be used to assess areas of potential adverse impact within the proposed project's Area of Potential Effect (APE). Any information you might provide will be kept confidential and will not be divulged to the public.

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Brian F. Smith and Associates, Inc.

Archaeology / Biology / History / Paleontology / Air Quality / Traffic / Acoustics

June 1, 2018

Mario Morales
Cultural Resources Representative
Mesa Grande Band of Mission Indians
PMB 366, 35008 Pala Temecula Road
Pala, California 92059

Subject: Information regarding Native American cultural resources on or near the Volen Project, San Diego County, California

Dear Mr. Morales:

This inquiry is requesting information you may have regarding the existence of Native American cultural resources on or near the Volen Project. The information you provide will be used to assess areas of potential adverse impact within the proposed project's Area of Potential Effect (APE). Any information you might provide will be kept confidential and will not be divulged to the public.

The project is in San Diego County, California, and includes the development of an approximately 0.3-acre parcel (Assessor's Parcel Number 532-420-07). The project area can be found at the northwestern terminus of Tavera Place in the neighborhood of Point Loma, San Diego, California. Specifically, this project is located in an unsectioned portion of the former Pueblo Lands of San Diego Land Grant of the USGS 7.5-minute *Point Loma, California* topographic quadrangle (Township 17 South, Range 4 West [Projected]). Please find enclosed sections of the USGS *Point Loma* Quadrangle map on which the project is delineated.

Although a records search of the Sacred Lands File has failed to indicate the presence of Native American cultural resources in the immediate Volen Project area, the Native American Heritage Commission requested that we consult with you directly regarding the potential for the presence of Native American cultural resources that may be impacted by this project. If you do have information to provide regarding any resources on or near the project, please contact Brian Smith or myself at (858) 484-0915, or contact the City of San Diego directly. We would like to extend our thanks for your response regarding this issue.

Sincerely,

Tracy A. Stropes, M.A., RPA
Senior Project Archaeologist
tstropes@bfsa-ca.com

Attachment:

USGS 7.5-minute *Point Loma, California* topographic map with project area delineated



Brian F. Smith and Associates, Inc.

Archaeology / Biology / History / Paleontology / Air Quality / Traffic / Acoustics

June 1, 2018

Michael Garcia
Vice Chairperson
Ewiiapaayp Tribal Office
4054 Willows Road
Alpine, California 91901

Subject: Information regarding Native American cultural resources on or near the Volen Project, San Diego County, California

Dear Mr. Garcia:

This inquiry is requesting information you may have regarding the existence of Native American cultural resources on or near the Volen Project. The information you provide will be used to assess areas of potential adverse impact within the proposed project's Area of Potential Effect (APE). Any information you might provide will be kept confidential and will not be divulged to the public.

The project is in San Diego County, California, and includes the development of an approximately 0.3-acre parcel (Assessor's Parcel Number 532-420-07). The project area can be found at the northwestern terminus of Tavera Place in the neighborhood of Point Loma, San Diego, California. Specifically, this project is located in an unsectioned portion of the former Pueblo Lands of San Diego Land Grant of the USGS 7.5-minute *Point Loma, California* topographic quadrangle (Township 17 South, Range 4 West [Projected]). Please find enclosed sections of the USGS *Point Loma* Quadrangle map on which the project is delineated.

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Senior Project Archaeologist
tstropes@bfsa-ca.com

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Brian F. Smith and Associates, Inc.

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June 1, 2018

Ralph Goff
Chairperson
Campo Band of Mission Indians
36190 Church Road, Suite 1
Campo, California 91906

Subject: Information regarding Native American cultural resources on or near the Volen Project, San Diego County, California

Dear Mr. Goff:

This inquiry is requesting information you may have regarding the existence of Native American cultural resources on or near the Volen Project. The information you provide will be used to assess areas of potential adverse impact within the proposed project's Area of Potential Effect (APE). Any information you might provide will be kept confidential and will not be divulged to the public.

The project is in San Diego County, California, and includes the development of a an approximately 0.3-acre parcel (Assessor's Parcel Number 532-420-07). The project area can be found at the northwestern terminus of Tavera Place in the neighborhood of Point Loma, San Diego, California. Specifically, this project is located in an unsectioned portion of the former Pueblo Lands of San Diego Land Grant of the USGS 7.5-minute *Point Loma, California* topographic quadrangle (Township 17 South, Range 4 West [Projected]). Please find enclosed sections of the USGS *Point Loma* Quadrangle map on which the project is delineated.

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Senior Project Archaeologist
tstropes@bfsa-ca.com

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Brian F. Smith and Associates, Inc.

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June 1, 2018

Ray Teran
Grant Writer/Administrator
Viejas Band of Kumeyaay Indians
1 Viejas Grade Road
Alpine, California 91901

Subject: Information regarding Native American cultural resources on or near the Volen Project, San Diego County, California

Dear Mr. Teran:

This inquiry is requesting information you may have regarding the existence of Native American cultural resources on or near the Volen Project. The information you provide will be used to assess areas of potential adverse impact within the proposed project's Area of Potential Effect (APE). Any information you might provide will be kept confidential and will not be divulged to the public.

The project is in San Diego County, California, and includes the development of an approximately 0.3-acre parcel (Assessor's Parcel Number 532-420-07). The project area can be found at the northwestern terminus of Tavera Place in the neighborhood of Point Loma, San Diego, California. Specifically, this project is located in an unsectioned portion of the former Pueblo Lands of San Diego Land Grant of the USGS 7.5-minute *Point Loma, California* topographic quadrangle (Township 17 South, Range 4 West [Projected]). Please find enclosed sections of the USGS *Point Loma* Quadrangle map on which the project is delineated.

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Sincerely,

Tracy A. Stropes, M.A., RPA
Senior Project Archaeologist
tstropes@bfsa-ca.com

Attachment:

USGS 7.5-minute *Point Loma, California* topographic map with project area delineated



Brian F. Smith and Associates, Inc.

Archaeology / Biology / History / Paleontology / Air Quality / Traffic / Acoustics

June 1, 2018

Rebecca Osuna
Chairperson
Inaja Band of Mission Indians
2005 South Escondido Boulevard
Escondido, California 92025

Subject: Information regarding Native American cultural resources on or near the Volen Project, San Diego County, California

Dear Ms. Osuna:

This inquiry is requesting information you may have regarding the existence of Native American cultural resources on or near the Volen Project. The information you provide will be used to assess areas of potential adverse impact within the proposed project's Area of Potential Effect (APE). Any information you might provide will be kept confidential and will not be divulged to the public.

The project is in San Diego County, California, and includes the development of a an approximately 0.3-acre parcel (Assessor's Parcel Number 532-420-07). The project area can be found at the northwestern terminus of Tavera Place in the neighborhood of Point Loma, San Diego, California. Specifically, this project is located in an unsectioned portion of the former Pueblo Lands of San Diego Land Grant of the USGS 7.5-minute *Point Loma, California* topographic quadrangle (Township 17 South, Range 4 West [Projected]). Please find enclosed sections of the USGS *Point Loma* Quadrangle map on which the project is delineated.

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Sincerely,

Tracy A. Stropes, M.A., RPA
Senior Project Archaeologist
tstropes@bfsa-ca.com

Attachment:

USGS 7.5-minute *Point Loma, California* topographic map with project area delineated



Brian F. Smith and Associates, Inc.

Archaeology / Biology / History / Paleontology / Air Quality / Traffic / Acoustics

June 1, 2018

Robert Pinto
Chairperson
Ewiiapaayp Tribal Office
4054 Willows Road
Alpine, California 91901

Subject: Information regarding Native American cultural resources on or near the Volen Project, San Diego County, California

Dear Mr. Pinto:

This inquiry is requesting information you may have regarding the existence of Native American cultural resources on or near the Volen Project. The information you provide will be used to assess areas of potential adverse impact within the proposed project's Area of Potential Effect (APE). Any information you might provide will be kept confidential and will not be divulged to the public.

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Senior Project Archaeologist
tstropes@bfsa-ca.com

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Brian F. Smith and Associates, Inc.

Archaeology / Biology / History / Paleontology / Air Quality / Traffic / Acoustics

June 1, 2018

Robert Welch
Chairperson
Viejas Band of Kumeyaay Indians
1 Viejas Grade Road
Alpine, California 91901

Subject: Information regarding Native American cultural resources on or near the Volen Project, San Diego County, California

Dear Mr. Welch:

This inquiry is requesting information you may have regarding the existence of Native American cultural resources on or near the Volen Project. The information you provide will be used to assess areas of potential adverse impact within the proposed project's Area of Potential Effect (APE). Any information you might provide will be kept confidential and will not be divulged to the public.

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Sincerely,

Tracy A. Stropes, M.A., RPA
Senior Project Archaeologist
tstropes@bfsa-ca.com

Attachment:

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Brian F. Smith and Associates, Inc.

Archaeology / Biology / History / Paleontology / Air Quality / Traffic / Acoustics

June 1, 2018

Virgil Oyos
Chairperson
Mesa Grande Band of Mission Indians
P.O. Box 270
Santa Ysabel, California 92070

Subject: Information regarding Native American cultural resources on or near the Volen Project, San Diego County, California

Dear Mr. Oyos:

This inquiry is requesting information you may have regarding the existence of Native American cultural resources on or near the Volen Project. The information you provide will be used to assess areas of potential adverse impact within the proposed project's Area of Potential Effect (APE). Any information you might provide will be kept confidential and will not be divulged to the public.

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Senior Project Archaeologist
tstropes@bfsa-ca.com

Attachment:

USGS 7.5-minute *Point Loma, California* topographic map with project area delineated



Brian F. Smith and Associates, Inc.

Archaeology / Biology / History / Paleontology / Air Quality / Traffic / Acoustics

June 1, 2018

Virgil Perez
Chairperson
Iipay Nation of Santa Ysabel
P.O. Box 130
Santa Ysabel, California 92070

Subject: Information regarding Native American cultural resources on or near the Volen Project, San Diego County, California

Dear Mr. Perez:

This inquiry is requesting information you may have regarding the existence of Native American cultural resources on or near the Volen Project. The information you provide will be used to assess areas of potential adverse impact within the proposed project's Area of Potential Effect (APE). Any information you might provide will be kept confidential and will not be divulged to the public.

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Although a records search of the Sacred Lands File has failed to indicate the presence of Native American cultural resources in the immediate Volen Project area, the Native American Heritage Commission requested that we consult with you directly regarding the potential for the presence of Native American cultural resources that may be impacted by this project. If you do have information to provide regarding any resources on or near the project, please contact Brian Smith or myself at (858) 484-0915, or contact the City of San Diego directly. We would like to extend our thanks for your response regarding this issue.

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Senior Project Archaeologist
tstropes@bfsa-ca.com

Attachment:

USGS 7.5-minute *Point Loma, California* topographic map with project area delineated

VIEJAS

TRIBAL GOVERNMENT

P.O. Box 908
Alpine, CA 91903
#1 Viejas Grade Road
Alpine, CA 91901

Phone: 6194453810
Fax: 6194455337
viejas.com

June 4, 2018

Tracy A. Stropes
Senior Project Archaeologist
Brian F. Smith and Associates, Inc.
14010 Poway Road, Suite A
Poway, CA 92064

RE: Volen Project

Dear Mr. Stropes,

The Viejas Band of Kumeyaay Indians ("Viejas") has reviewed the proposed project and at this time we have determined that the project site has cultural significance or ties to Viejas.

Viejas Band request that a Kumeyaay Cultural Monitor be on site for ground disturbing activities to inform us of any new developments such as inadvertent discovery of cultural artifacts, cremation sites, or human remains.

Please call me at 619-659-2312 or Ernest Pingleton at 619-659-2314 or email, rteran@viejas-nsn.gov or epingleton@viejas-nsn.gov, for scheduling. Thank you.

Sincerely,



Ray Teran, Resource Management
VIEJAS BAND OF KUMEYAAY INDIANS



CHRISTIAN WHEELER
ENGINEERING

REPORT OF PRELIMINARY GEOTECHNICAL INVESTIGATION

PROPOSED VOLEN RESIDENCE
450 TAVARA PLACE
SAN DIEGO, CALIFORNIA

PREPARED FOR

JOSHUA VOLEN
530 B STREET, SUITE 92101
SAN DIEGO, CALIFORNIA 92130

PREPARED BY

CHRISTIAN WHEELER ENGINEERING
3980 HOME AVENUE
SAN DIEGO, CALIFORNIA 92105

November 2, 2017

Joshua Volen
530 B Street, Suite 2050
San Diego, California 92101

CWE 2170296.01

Subject: Report of Preliminary Geotechnical Investigation
Proposed Single-Family Residence, 450 Tavera Place, San Diego, California

Dear Mr. Volen:

In accordance with your request and our proposal dated May 25, 2017, we have completed a geotechnical investigation for the subject project. We are presenting herewith a report of our findings and recommendations.

It is our professional opinion and judgment that no geotechnical conditions exist on the subject property that would preclude the construction of the proposed residence provided the recommendations presented herein are implemented.

If you have questions after reviewing this report, please do not hesitate to contact our office. This opportunity to be of professional service is sincerely appreciated.

Respectfully submitted,
CHRISTIAN WHEELER ENGINEERING



Daniel B. Adler, RCE # 36037

cc: jvolen@cireequity.com
markitect@silvastudios.com



David R. Russell, C.E.G. #2215

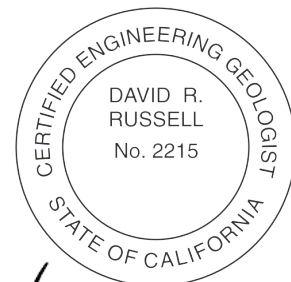


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PLATES

Plate 1	Site Plan & Geotechnical Map
Plate 2-4	Geologic Cross Section
Plate 5	Typical Cantilever Retaining Wall Drainage Systems

APPENDICES

Appendix A	Subsurface Explorations
Appendix B	Laboratory Test Results
Appendix C	References
Appendix D	Recommended Grading Specifications-General Provisions
Appendix E	Global Stability Analysis
Appendix F	Surficial Stability Analysis



PRELIMINARY GEOTECHNICAL INVESTIGATION

PROPOSED VOLEN RESIDENCE

450 TAVARA PLACE

SAN DIEGO, CALIFORNIA

INTRODUCTION AND PROJECT DESCRIPTION

This report presents the results of a preliminary geotechnical investigation performed for proposed residential structure to be located at 450 Tavera Place, San Diego, California. The following Figure No. 1 presents a vicinity map showing the location of the property.

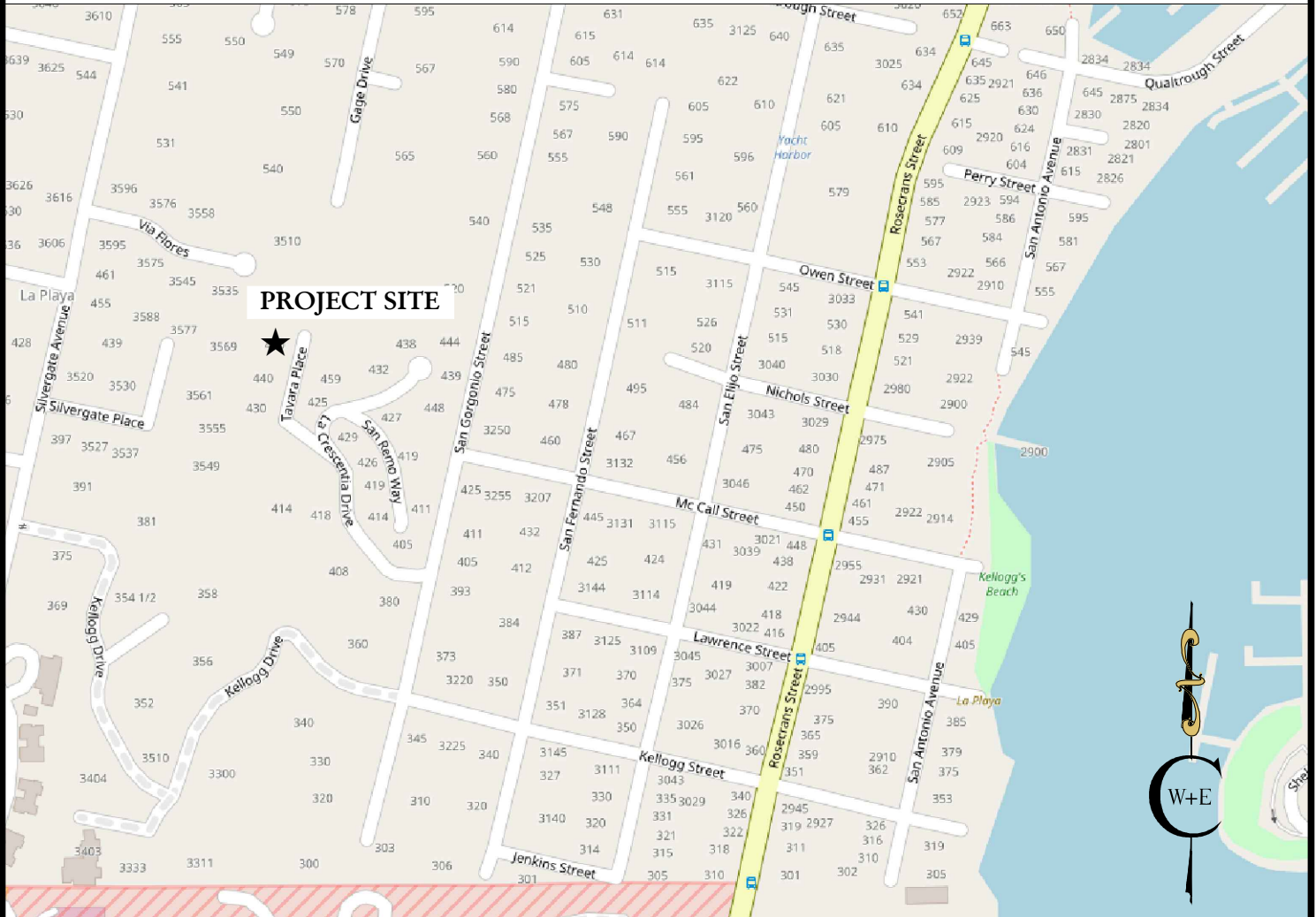
We understand that a new one to three-story, single-family residence with a detached garage, pool, and spa will be constructed within the lower portions of the lot. The above-grade portions of the home are anticipated to be of conventional, wood-frame construction with possibly some steel moment frames. The below-grade portions of the structure is anticipated to be of concrete/masonry construction and to incorporate on-grade, concrete floor slabs. Retaining walls of up to about 10 feet in height are anticipated for the below grade portions of the structure. A site retaining wall of up to about 12 feet in height is proposed along the eastern portion of the site's northern perimeter. The proposed improvements are anticipated to be supported by conventional shallow foundations. Grading to accommodate the proposed improvements is expected to consist of cuts and fills of up to approximately 12 feet from existing grades.

To assist in the preparation of this report, we were provided with a set of architectural plans prepared by 505 architecture, dated October 3, 2017, and a preliminary topography plat prepared by Victor Rodriguez-Fernandez, dated February 28, 2013. A copy of the architectural site plan was used as a base map for our Site Plan and Geologic Map, and is included herein as Plate No. 1.

This report has been prepared for the exclusive use of Joshua Volen, and his design consultants, for specific application to the project described herein. Should the project be modified, the conclusions and recommendations presented in this report should be reviewed by Christian Wheeler Engineering

SITE VICINITY

© OpenStreetMap contributors



VOLEN RESIDENCE
450 TAVARA PLACE
SAN DIEGO, CALIFORNIA



CHRISTIAN WHEELER
ENGINEERING

DATE: NOVEMBER 2017

JOB NO.: 2170296.01

BY: SRD

FIGURE NO.: 1

for conformance with our recommendations and to determine whether any additional subsurface investigation, laboratory testing and/or recommendations are necessary. Our professional services have been performed, our findings obtained and our recommendations prepared in accordance with generally accepted engineering principles and practices. This warranty is in lieu of all other warranties, expressed or implied.

SCOPE OF SERVICES

Our preliminary geotechnical investigation consisted of surface reconnaissance, subsurface exploration, obtaining representative soil samples, laboratory testing, analysis of the field and laboratory data, and review of relevant geologic literature. Our scope of service did not include assessment of hazardous substance contamination, recommendations to prevent floor slab moisture intrusion or the formation of mold within the structures, evaluation or design of storm water infiltration facilities, or any other services not specifically described in the scope of services presented below.

More specifically, the intent of our proposed investigation was to:

- Excavate six hand-dug test pits to explore the existing soil conditions.
- Backfill the test pits with the removed soil. It should be noted that the soil was not compacted and will have to be removed and replaced as compacted fill during the future site grading.
- Evaluate, by laboratory tests and our past experience with similar soil types, the engineering properties of the various soil strata that may influence the proposed construction, including bearing capacities, expansive characteristics and settlement potential.
- Describe the general geology at the site, including possible geologic hazards that could have an effect on the proposed construction, and provide the seismic design parameters as required by the 2016 edition of the California Building Code.
- Address previous site disturbance due to past grading activities at the site.
- Discuss potential construction difficulties that may be encountered due to soil conditions, groundwater or geologic hazards, and provide geotechnical recommendations to mitigate identified construction difficulties.
- Quantitatively address the global and surficial stabilities of the proposed site configuration.
- Provide site preparation and grading recommendations for the anticipated work.

- Provide foundation recommendations for the type of construction anticipated and develop soil engineering design criteria for the recommended foundation designs.
- Provide recommendations for temporary cut slopes and shoring design.
- Provide design parameters for restrained and unrestrained retaining walls.
- Provide a preliminary geotechnical report that presents the results of our investigation which includes a plot plan showing the location of our subsurface explorations, excavation logs, laboratory test results, and our conclusions and recommendations for the proposed project.

Although a test for the presence of soluble sulfates within the soils that may be in contact with reinforced concrete was performed as part of the scope of our services, it should be understood Christian Wheeler Engineering does not practice corrosion engineering. If a corrosivity analysis is considered necessary, we recommend that the client retain an engineering firm that specializes in this field to consult with them on this matter. The results of our sulfate testing should only be used as a guideline to determine if additional testing and analysis is necessary.

FINDINGS

SITE DESCRIPTION

The subject site is a residential lot, identified as Assessor's Parcel Number 532-420-07, located adjacent to and northwest of the northern terminus of Tavera Place in the Point Loma area of San Diego, California. Existing improvements on site include four site retaining walls that are within the northwest, central, and eastern portions of the site and a series of concrete steps that lead from Tavera Place up to a relatively level, graded area within the central portion of the site. An existing sewer and public utility easement parallels the southerly perimeter of the site and a general utility and access easement runs along the easterly margin of the site. A series of apparently abandoned irrigation lines also traverse most of the site. A gazebo structure previously existed within the south-central portion of the site. It is our understanding that the gazebo and graded and formerly irrigated areas of the site were used as a private park for the residents of the adjacent, developed residential lots. On-site elevations range from approximately 248 feet along the southeast corner of the site, to approximately 300 feet in the northwest corner of the lot.

Based on our investigation, which included visual observations of the existing site conditions, excavating and logging of six test pits on-site, logging of the expressed geologic conditions by a certified engineering geologist, and our review of readily available, pertinent geotechnical literature, aerial photographs and topographic maps, it is our professional opinion that significant portions of the subject site have been disturbed by previous grading activities. We have delineated those portions of the subject site that have been altered by past grading activities on the Site Plan and Geotechnical Map included as Plate No. 1 of this report. As described above, the areas delineated on this map include both areas where undocumented fill soils have been placed and where the original topography of the site was cut down to the existing site grades. It appears that most of the disturbance in the northwest corner is associated with the residence located to the northwest of the site. The disturbance along the western, central, and southern portions of the site appears to be related to the past park-like usage of the lot and the construction of the northern terminus of Tavera Place.

GENERAL GEOLOGY AND SUBSURFACE CONDITIONS

GEOLOGIC SETTING AND SOIL DESCRIPTION: The subject site is located in the Coastal Plains Physiographic Province of San Diego County. Based upon the findings of our subsurface explorations and review of readily available, pertinent geologic and geotechnical literature, it was determined that the site is generally underlain by artificial fill and very old paralic deposits. These materials are described below:

ARTIFICIAL FILL (Qaf): Artificial fill was encountered underlying portions of the property (see Plates No. 1 through 4). As encountered in the test pits, the artificial fill extended to depths of about 4½ feet (test pit P-1) from existing site grades. Deeper fill soils exist in areas of the site not investigated. The fill materials consisted of brown and to orangish-brown, dry and damp, loose and medium dense, silty sand (SM). The artificial fill was judged to have a low expansion potential (EI between 21 and 50).

VERY OLD PARALIC DEPOSITS (Qvop): Quaternary-age very old paralic deposits were encountered underlying the artificial fill and at grade throughout the site. The very old paralic deposits generally consisted of orangish-brown, damp to moist, dense to very dense, silty sand

(SM). The very old paralic deposits were judged to have a low expansion potential (EI between 21 and 50).

GEOLOGIC STRUCTURE: The Quaternary-age very old paralic deposits underlying the site were observed in our exploratory test pits to be massive. Typically, such very old paralic deposits within the vicinity of the site are generally massive with very faint bedding that dips gently ($< 3^\circ$) towards the east-southeast.

GROUNDWATER: No groundwater or seepage was encountered in our subsurface explorations. We do not expect any significant groundwater related conditions during or after the proposed construction. However, it should be recognized that minor groundwater seepage problems might occur after construction and landscaping are completed, even at a site where none were present before construction. These are usually minor phenomena and are often the result of an alteration in drainage patterns and/or an increase in irrigation water. Based on the anticipated construction and the permeability of the on-site soils, it is our opinion that any seepage problems that may occur will be minor in extent. It is further our opinion that these problems can be most effectively corrected on an individual basis if and when they occur.

TECTONIC SETTING: It should be noted that much of Southern California, including the San Diego County area, is characterized by a series of Quaternary-age fault zones that consist of several individual, en echelon faults that generally strike in a northerly to northwesterly direction. Some of these fault zones (and the individual faults within the zone) are classified as active while others are classified as only potentially active according to the criteria of the California Division of Mines and Geology. Active fault zones are those which have shown conclusive evidence of faulting during the Holocene Epoch (the most recent 11,000 years) while potentially active fault zones have demonstrated movement during the Pleistocene Epoch (11,000 to 1.6 million years before the present) but no movement during Holocene time. Inactive faults are those faults that can be demonstrated to have no movement in the past 1.6 million years.

It should be recognized that the active Newport Inglewood-Rose Canyon Fault Zone is located approximately 3 miles east of the site. Other active fault zones in the region that could possibly affect the site include the Coronado Bank, San Diego Trough, and San Clemente Fault Zones to the west;

the Palos Verdes Fault Zone to the northwest; and the Elsinore, San Jacinto and San Andreas Fault Zones to the northeast.

GENERAL GEOLOGIC HAZARDS

GENERAL: The site is located in an area where the risks due to significant geologic hazards are relatively low. No geologic hazards of sufficient magnitude to preclude the construction of the subject project are known to exist. In our professional opinion and to the best of our knowledge, the site is suitable for the proposed improvements.

CITY OF SAN DIEGO SEISMIC SAFETY STUDY: As part of our services, we have reviewed the City of San Diego Seismic Safety Study. This study is the result of a comprehensive investigation of the City that rates areas according to geological risk potential (nominal, low, moderate, and high) and identifies potential geotechnical hazards and/or describes geomorphic conditions.

According to the San Diego Seismic Safety Map No. 16, the majority of site is located within Geologic Hazard Category 53. Hazard Category 53 is assigned to areas of level to sloping terrain with unfavorable geologic structure, where the potential risks are classified as “low to moderate.”

The northwest corner of the site is located within Geologic hazard Category 51, which is assigned to level mesa areas underlain by bedrock or terrace deposits (old paralic deposits) where the level of geologic risk is generally considered to be “low.”

SURFACE RUPTURE: There are no known *active* faults that traverse the subject site; therefore, the risk for surface rupture at the subject site is considered low.

SLOPE STABILITY: As part of this investigation we reviewed the publication, “Landslide Hazards in the Southern Part of the San Diego Metropolitan Area” by Tan, 1995. This reference is a comprehensive study that classifies San Diego County into areas of relative landslide susceptibility. The subject site is located in Area 3-1, which is considered to be “generally susceptible” to slope failures. Based on our findings and the proposed construction, it is our opinion that the likelihood of slope stability related problems at the site is low.

GLOBAL STABILITY ANALYSES: In consideration of the existing sloping topography of the subject site, we have performed a quantitative slope stability analysis to determine the minimum factor-of-safety against deep-seated slope failure for the existing slope located in the northern portion of the site. It is our professional opinion that the cross section modeled in our stability analyses, oriented perpendicular to the slope, represents the worst case scenario with regards to gross slope stability at the subject site. We have also performed a surficial stability analysis to determine the minimum factor-of-safety against surficial failure of the steepest on-site slope areas. Descriptions of our stability analyses are presented in the following “Gross Stability Analyses” and “Surficial Stability Analyses” sections of this report.

GROSS STABILITY ANALYSES: As presented on our Site Plan and Geotechnical Map, included herein as Plate No. 1, we have created geologic cross section C-C’ to depict the existing and proposed topography and subsurface conditions at the subject site. The geologic cross section is included on Plate No. 4 of this report. The location of the geologic cross section was chosen to be oriented perpendicular to the topography of the existing slope.

To analyze the stability of the subject site we have performed a quantitative slope stability analysis incorporating the topography and geologic conditions presented on our geologic cross section C-C’. The on-site earth materials incorporated in our stability analyses are described above in the “Geologic Setting and Soil Description” section of this report. Based on the configuration of the site and the composition of the underlying very old paralic deposits, circular- type failure mechanisms were modeled in our analyses. The results of our quantitative slope stability analysis are presented below in the results of Stability Analyses Section of this report.

STRENGTH PARAMETERS: The strength parameters for the earth materials underlying the subject site were estimated by the direct shear test method and our experience and judgment with similar soil types. The results of our direct shear testing are presented at the rear of this report. The unit weights of the earth materials that underlie the subject site and adjacent areas utilized in our stability analyses were chosen based on the results of our laboratory testing and our experience with similar materials in the vicinity of the subject site.

It is our professional opinion that the strength parameters and unit weights presented below and utilized in our stability analyses provide for conservative slope stability analyses.

Soil Type	Unit Weight, γ	Phi, ϕ	Cohesion, c
Artificial Fill (Qaf)	120 pcf	30°	150 psf
Very Old Paralic Deposits (Qvop)	115 pcf	34°	200 psf

METHOD OF ANALYSES: The analyses of the gross stability of the proposed site topography were performed using Version 2 of the GSTABL7© computer program developed by Garry H. Gregory, PE. The program analyzes circular, block, specified, and randomly shaped failure surfaces using the Modified Bishop, Janbu, or Spencer's Methods. The STEDwin© computer program, developed by Harald W. Van Aller, P. E., was used in conjunction with this program for data entry and graphics display. The proposed topography of the subject site along geologic cross section C-C' was analyzed for circular failures and each failure analysis was programmed to run at least 2,000 random failure surfaces. The most critical failure surfaces were then accumulated and sorted by value of the factor-of-safety. After the specified number of failure surfaces were successfully generated and analyzed, the ten most critical surfaces were plotted so that the pattern may be studied.

RESULTS OF GROSS STABILITY ANALYSES: Appendix E of this report presents the results of our gross stability analysis. As demonstrated on the printouts of this analysis (see Appendix E), the proposed site topography along our geologic cross section C-C' demonstrates a minimum factors-of-safety of 1.5, which is the minimum that is generally considered to be stable.

SURFICIAL SLOPE STABILITY: Appendix F of this report presents the results of our surficial slope stability analysis of the steepest portions of the natural slopes on-site. As demonstrated on the printout of this analysis, the existing slope demonstrates a minimum factor-of-safety greater than 1.5 against shallow, surficial failures, which is the minimum that are generally considered to be stable. It should, however, be recognized that activities of man, such as but not limited to, landscape planting, trenching, over irrigation, and other slope softening practices can adversely affect the surficial stability of the steep slopes on-site where very old paralic deposits crop out.

LIQUEFACTION: The earth materials underlying the site are not considered subject to liquefaction due to such factors as soil density, grain-size distribution, the absence of shallow groundwater conditions.

FLOODING: As delineated on the Flood Insurance Rate Map (FIRM) prepared by the Federal Emergency Management Agency, the site is not located within either the 100-year flood zone or the 500-year flood zone.

TSUNAMIS: Tsunamis are great sea waves produced by submarine earthquakes or volcanic eruptions. Due to the site's setback from the ocean and elevation, it will not be affected by a tsunami.

SEICHES: Seiches are periodic oscillations in large bodies of water such as lakes, harbors, bays or reservoirs. Due to the site's location, it will not be affected by seiches.

CONCLUSIONS

In general, it is our professional opinion and judgment that the subject property is suitable for the construction of the proposed structure provided the recommendations presented herein are implemented. The main geotechnical conditions affecting the proposed project consist of potentially compressible artificial fill, a cut/fill transition under the proposed structure, temporary cut slopes, and potentially corrosive soils. These conditions are discussed hereinafter.

Approximately half of the site is underlain by potentially compressible artificial fill (see Plates No. 1 through 4). As encountered in our subsurface explorations, these materials extend to a maximum depth of about 4½ feet from existing grade (test pit P-1). Deeper fill soils may exist in areas of the site not investigated. These soils are considered unsuitable, in their present condition, for the support of settlement sensitive improvements. The potentially compressible materials will require removal and replacement as compacted fill where underling proposed settlement sensitive improvements. It is anticipated that the majority of these materials will be removed as part of the proposed grading.

A cut/fill transition will occur under the proposed structure due to the recommended site preparation and proposed grading. Cut-fill transitions may result in differential settlements detrimental to the

propose structure. In order to mitigate this condition, special grading and foundation consideration is recommended hereinafter.

Temporary cut slopes up to about 13 feet in depth (including footing excavation) are anticipated for the proposed construction. Some temporary shoring may be necessary for proposed construction.

The existing steep slope within the northern portion of the site exposes very dense, very old paralic deposits and is considered in its present state to demonstrate an adequate factor-of-safety with regards to surficial slope failure. However, the owner and project consultants should recognize that activities of man, such as but not limited to, landscape planting, trenching, over irrigation, and other slope softening practices can adversely affect the surficial stability of such steep slope areas.

The existing fill soils at the site were found to have a soluble sulfate content of 0.117 percent. Concrete foundation elements bearing in soils with soluble sulfate content between 0.1 and 0.2 percent are considered to have a moderate exposure potential to sulfate containing solutions. This condition should be evaluated by a corrosion engineer.

The site is located in an area that is relatively free of geologic hazards that will have a significant effect on the proposed construction. The most likely geologic hazard that could affect the site is ground shaking due to seismic activity along one of the regional active faults. However, construction in accordance with the requirements of the most recent edition of the California Building Code and the local governmental agencies should provide a level of life-safety suitable for the type of development proposed.

RECOMMENDATIONS

GRADING AND EARTHWORK

GENERAL: All grading should conform to the guidelines presented in the current edition of the California Building Code, the minimum requirements of the City of San Diego, and the recommended Grading Specifications and Special Provisions attached hereto, except where specifically superseded in the text of this report.

PREGRADE MEETING: It is recommended that a pre-grade meeting including the grading contractor, the client, and a representative from Christian Wheeler Engineering be performed, to discuss the recommendations of this report and address any issues that may affect grading operations.

OBSERVATION OF GRADING: Continuous observation by the Geotechnical Consultant is essential during the grading operation to confirm conditions anticipated by our investigation, to allow adjustments in design criteria to reflect actual field conditions exposed, and to determine that the grading proceeds in general accordance with the recommendations contained herein.

CLEARING AND GRUBBING: Site preparation should begin with the removal of any existing vegetation from areas to receive proposed improvements or new fill soils.

SITE PREPARATION: It is recommended that all existing fill soils underlying the proposed structure, associated improvements, and new fills should be removed and replaced as compacted fill. Based on our findings, it is anticipated that the maximum removal depth will be about 4½ feet below existing grade. Deeper removals may be necessary in areas of the site not investigated or due to unforeseen conditions. Lateral removal limits should extend at least 5 feet from the perimeter of the structure, any settlement sensitive improvements, and new fills or equal to removal depth, whichever is more. No removals are recommended beyond property lines. All excavated areas should be approved by the geotechnical engineer or his representative prior to replacing any of the excavated soils. The excavated materials can be replaced as properly compacted fill in accordance with the recommendations presented in the “Compaction and Method of Filling” section of this report.

EXCAVATION CHARACTERISTICS: The very old paralic deposits underlying the site was found to be in a dense to very dense condition. It is anticipated that excavations in these materials may be performed with heavy duty conventional grading equipment. However, excavations with light trenching equipment may be difficult.

PROCESSING OF FILL AREAS: Prior to placing any new fill soils or constructing any new improvements in areas that have been cleaned out to receive fill, the exposed soils should be scarified to a depth of 12 inches, watered thoroughly, and compacted to at least 90 percent relative compaction.

This recommendation applies to the area of the site outside the perimeter of the proposed main residence.

COMPACTION AND METHOD OF FILLING: In general, all structural fill placed at the site should be compacted to a relative compaction of at least **90** percent of its maximum laboratory dry density as determined by ASTM Laboratory Test D1557. However, structural fill and retaining wall backfill underlying the proposed structure should be compacted to at least **95** percent. Fills should be placed at or slightly above optimum moisture content, in lifts six to eight inches thick, with each lift compacted by mechanical means. Fills should consist of approved earth material, free of trash or debris, roots, vegetation, or other materials determined to be unsuitable by the Geotechnical Consultant. Fill material should be free of rocks or lumps of soil in excess of 3 inches in maximum dimension.

Utility trench backfill within 5 feet of the proposed structure and beneath all concrete flatwork or pavements should be compacted to a minimum of 90 percent of its maximum dry density.

SURFACE DRAINAGE: The drainage around the proposed improvements should be designed to collect and direct surface water away from proposed improvements toward appropriate drainage facilities. Rain gutters with downspouts that discharge runoff away from the structure into controlled drainage devices are recommended.

The ground around the proposed improvements should be graded so that surface water flows rapidly away from the improvements without ponding. In general, we recommend that the ground adjacent to structure slope away at a gradient of at least 5 percent for a minimum distance of 10 feet. If the minimum distance of 10 feet cannot be achieved, an alternative method of drainage runoff away from the building at the termination of the 5 percent slope will need to be used. Swales and impervious surfaces that are located within 10 feet of the building should have a minimum slope of 2 percent. Pervious hardscape surfaces adjacent to structures should be similarly graded.

Drainage patterns provided at the time of construction should be maintained throughout the life of the proposed improvements. Site irrigation should be limited to the minimum necessary to sustain landscape growth. Over watering should be avoided. Should excessive irrigation, impaired drainage, or unusually high rainfall occur, zones of wet or saturated soil may develop.

TEMPORARY SLOPES: Temporary excavation slopes will be required for the construction of the subject project. The excavations required for footing construction are considered as part of the temporary slopes. It is anticipated that some of the temporary cut slopes will be shored. In general, temporary cuts exposing existing fill soils can be excavated at a 1½:1 (horizontal to vertical) or flatter inclination. Temporary cuts exposing very old paralic deposits can be excavated at a 1:1 (horizontal to vertical) or flatter inclination. The bottom 4 feet of temporary cut slopes exposing very old paralic deposits may be constructed vertically. We recommend that our firm be contacted to have an engineering geologist observe the temporary cut slopes during grading to ascertain that no unforeseen adverse conditions exist. If adverse conditions are identified, it may be necessary to flatten the slope inclination. No surcharge loads such as soil or equipment stockpiles, vehicles, etc. should be allowed within a distance from the top of temporary slopes equal to half the slope height.

The contractor is solely responsible for designing and constructing stable, temporary excavations and may need to shore, slope, or bench the sides of trench excavations as required to maintain the stability of the excavation sides where the friable sands are exposed. The contractor's "competent person", as defined in the OSHA Construction Standards for Excavations, 29 CFR, Part 1926, should evaluate the soil exposed in the excavations as part of the contractor's safety process. In no case should slope height, slope inclination, or excavation depth, including utility trench excavation depth, exceed those specified in local, state, and federal safety regulations. Christian Wheeler Engineering should be immediately notified if zones of potential instability, sloughing or raveling develop, and mitigation measures should be implemented prior to continuing work.

SHORING

GENERAL: Shoring may be necessary for the proposed construction. It is anticipated that the shoring system will utilize soldier beams with wooden lagging. The following design parameters may be assumed to calculate earth pressures on shoring.

Angle of friction	30°
Apparent cohesion	100 pounds per square foot
Soil unit weight	125 pounds per cubic foot (pcf)

Active pressures can be applied to shoring that is capable of rotating 0.002 radians. At-rest pressures should be applied to a shoring system that is unyielding and not able to rotate. These values do not include surcharge loads. Construction surcharge loads should be evaluated on a case-by-case basis. Vertical and lateral movements of the temporary shoring are expected to be small assuming an adequate lateral support system.

FOUNDATIONS

GENERAL: Based on our findings and engineering judgment, the proposed structure may be supported by conventional shallow continuous and isolated spread footings. The following recommendations are considered the minimum based on the anticipated soil conditions, and are not intended to be lieu of structural considerations. All foundations should be designed by a qualified engineer.

DIMENSIONS: Spread footings supporting the proposed structure should be embedded at least 18 inches below lowest adjacent finish pad grade and should be founded on very old paralic deposits. Spread footings supporting light miscellaneous exterior footings should be embedded at least 12 inches below lowest adjacent finish pad grade. Continuous and isolated footings should have a minimum width of 12 inches and 24 inches, respectively. Retaining wall footings should be at least 18 inches deep and 24 inches wide. Property line footings should also extend at least 6 inches into competent old paralic deposits.

BEARING CAPACITY: Spread footings supporting the proposed structure with a minimum depth of 18 inches and a minimum width of 12 inches and founded on very old paralic deposits may be designed for an allowable soil bearing pressure of 4,000 pounds per square foot (psf). This value may be increased by 700 pounds per square foot for each additional foot of embedment and 500 pounds per square foot for each additional foot of width up to a maximum of 8,000 pounds per square foot. Spread footings supporting the light miscellaneous exterior improvements with a minimum depth of 12 inches and a minimum width of 12 inches may be designed for an allowable soil bearing pressure of 2,000 pounds per square foot (psf). This value may be increased by 500 pounds per square foot for each additional foot of embedment and 300 pounds per square foot for each additional foot of width up to a maximum of 4,000

pounds per square foot. These values may be increased by one-third for combinations of temporary loads such as those due to wind or seismic loads.

FOOTING REINFORCING: Reinforcement requirements for foundations should be provided by a structural designer. However, based on the expected soil conditions, we recommend that the minimum reinforcing for continuous footings consist of at least 2 No. 5 bars positioned near the bottom of the footing and 2 No. 5 bars positioned near the top of the footing.

LATERAL LOAD RESISTANCE: Lateral loads against foundations may be resisted by friction between the bottom of the footing and the supporting soil, and by the passive pressure against the footing. The coefficient of friction between concrete and soil may be considered to be 0.30. The passive resistance may be considered to be equal to an equivalent fluid weight of 300 pounds per cubic foot. These values are based on the assumption that the footings are poured tight against undisturbed soil. If a combination of the passive pressure and friction is used, the friction value should be reduced by one-third.

PROPOSED SWIMMING POOL: It is recommended that the proposed swimming pool and Jacuzzi be founded entirely on very old paralic deposits.

FOUNDATION EXCAVATION OBSERVATION: All footing excavations should be observed by Christian Wheeler Engineering prior to placing of forms and reinforcing steel to determine whether the foundation recommendations presented herein are followed and that the foundation soils are as anticipated in the preparation of this report. All footing excavations should be excavated neat, level, and square. All loose or unsuitable material should be removed prior to the placement of concrete.

SETTLEMENT CHARACTERISTICS: The anticipated total and differential settlement is expected to be less than about 1 inch and 1 inch over 40 feet, respectively, provided the recommendations presented in this report are followed. It should be recognized that minor cracks normally occur in concrete slabs and foundations due to concrete shrinkage during curing or redistribution of stresses, therefore some cracks should be anticipated. Such cracks are not necessarily an indication of excessive vertical movements.

EXPANSIVE CHARACTERISTICS: The prevailing foundation soils are assumed to have a low expansive potential (EI between 21 and 50). The recommendations within this report reflect these conditions.

FOUNDATION PLAN REVIEW: The final foundation plan and accompanying details and notes should be submitted to this office for review. The intent of our review will be to verify that the plans used for construction reflect the minimum dimensioning and reinforcing criteria presented in this section and that no additional criteria are required due to changes in the foundation type or layout. It is not our intent to review structural plans, notes, details, or calculations to verify that the design engineer has correctly applied the geotechnical design values. It is the responsibility of the design engineer to properly design/specify the foundations and other structural elements based on the requirements of the structure and considering the information presented in this report.

SEISMIC DESIGN FACTORS

The seismic design factors applicable to the subject site are provided below. The seismic design factors were determined in accordance with the 2016 California Building Code. The site coefficients and adjusted maximum considered earthquake spectral response acceleration parameters are presented in the following Table I.

TABLE I: SEISMIC DESIGN FACTORS

Site Coordinates: Latitude	32.712°
Longitude	-117.243°
Site Class	D
Site Coefficient F_a	1.054
Site Coefficient F_v	1.579
Spectral Response Acceleration at Short Periods S_s	1.115 g
Spectral Response Acceleration at 1 Second Period S_1	0.421 g
$S_{MS} = F_a S_s$	1.175 g
$S_{M1} = F_v S_1$	0.665 g
$S_{DS} = 2/3 * S_{MS}$	0.783 g
$S_{D1} = 2/3 * S_{M1}$	0.443 g

Probable ground shaking levels at the site could range from slight to moderate, depending on such factors as the magnitude of the seismic event and the distance to the epicenter. It is likely that the site will experience the effects of at least one moderate to large earthquake during the life of the proposed improvements.

SOLUBLE SULFATES: The water soluble sulfate content of a selected soil sample obtained from the site was determined in accordance with California Test Method 417. The results of this test indicate that the soil sample had a soluble sulfate content of 0.117 percent. Concrete foundations bearing in soils with the soluble sulfate content between 0.1 and 0.2 percent are considered to have a moderate exposure potential to sulfate containing solutions. This condition should be evaluated by a corrosion engineer.

ON-GRADE SLABS

GENERAL: It is our understanding that the floor system of the proposed structure will consist of a concrete slab-on-grade. The following recommendations are considered the minimum slab requirements based on the soil conditions and are not intended in lieu of structural considerations. These recommendations assume that the site preparation recommendations contained in this report are implemented.

INTERIOR FLOOR SLABS: The minimum slab thickness should be 5 inches (actual) and the slab should be reinforced with at least No. 4 bars spaced at 18 inches on center each way. Slab reinforcement should be supported on chairs such that the reinforcing bars are positioned at mid-height in the floor slab. The slab reinforcement should extend down into the perimeter footings at least 6 inches.

UNDER-SLAB VAPOR RETARDERS: Steps should be taken to minimize the transmission of moisture vapor from the subsoil through the interior slabs where it can potentially damage the interior floor coverings. Local industry standards typically include the placement of a vapor retarder, such as plastic, in a layer of coarse sand placed directly beneath the concrete slab. Two inches of sand are typically used above and below the plastic. The vapor retarder should be at least 15-mil Stegowrap® or similar material with sealed seams and should extend at least 12 inches down the sides of the interior and perimeter footings. The sand should have a sand equivalent of at least 30, and contain less than 10% passing the Number 100 sieve and less than 5% passing the Number 200 sieve. The membrane should be placed in accordance with the recommendation and consideration of ACI 302, "Guide for Concrete Floor and Slab Construction" and ASTM E1643, "Standards Practice for Installation of Water Vapor Retarder Used in Contact with Earth or Granular Fill Under Concrete Slabs." It is the

flooring contractor's responsibility to place floor coverings in accordance with the flooring manufacturer specifications.

EARTH RETAINING WALLS

FOUNDATIONS: Foundations for any proposed retaining walls should be constructed in accordance with the foundation recommendations presented previously in this report.

PASSIVE PRESSURE: The passive pressure for the anticipated foundation soils may be considered to be 300 pounds per square foot per foot of depth. The upper foot of embedment should be neglected when calculating passive pressures, unless the foundation abuts a hard surface such as a concrete slab. The passive pressure may be increased by one-third for seismic loading. The coefficient of friction for concrete to soil may be assumed to be 0.30 for the resistance to lateral movement. When combining frictional and passive resistance, the friction should be reduced by one-third.

ACTIVE PRESSURE: The active soil pressure for the design of "unrestrained" and "restrained" earth retaining structures with level backfill may be assumed to be equivalent to the pressure of a fluid weighing 40 and 60 pounds per cubic foot, respectively. These pressures do not consider any other surcharge. If any are anticipated, this office should be contacted for the necessary increase in soil pressure. These values are based on a drained backfill condition.

Seismic lateral earth pressures may be assumed to equal an inverted triangle starting at the bottom of the wall with the maximum pressure equal to $9H$ pounds per square foot (where H = wall height in feet) occurring at the top of the wall.

WATERPROOFING AND WALL DRAINAGE SYSTEMS: The need for waterproofing should be evaluated by others. If required, the project architect should provide (or coordinate) waterproofing details for the retaining walls. The design values presented above are based on a drained backfill condition and do not consider hydrostatic pressures. The retaining wall designer should provide a detail for a wall drainage system. Typical retaining wall drain system details are presented as Plate No. 5 of this report for informational purposes. Additionally, outlets points for the retaining wall drain system should be coordinated with the project civil engineer.

BACKFILL: Retaining wall backfill soils should be compacted to at least **90** percent relative compaction. However, retaining wall backfill underlying the proposed structure should be compacted to at least **95** percent. Expansive or clayey soils should not be used for backfill material. The wall should not be backfilled until the masonry has reached an adequate strength.

LIMITATIONS

REVIEW, OBSERVATION AND TESTING

The recommendations presented in this report are contingent upon our review of final plans and specifications. Such plans and specifications should be made available to the geotechnical engineer and engineering geologist so that they may review and verify their compliance with this report and with the California Building Code.

It is recommended that Christian Wheeler Engineering be retained to provide continuous soil engineering services during the earthwork operations. This is to verify compliance with the design concepts, specifications or recommendations and to allow design changes in the event that subsurface conditions differ from those anticipated prior to start of construction.

UNIFORMITY OF CONDITIONS

The recommendations and opinions expressed in this report reflect our best estimate of the project requirements based on an evaluation of the subsurface soil conditions encountered at the subsurface exploration locations and on the assumption that the soil conditions do not deviate appreciably from those encountered. It should be recognized that the performance of the foundations and/or cut and fill slopes may be influenced by undisclosed or unforeseen variations in the soil conditions that may occur in the intermediate and unexplored areas. Any unusual conditions not covered in this report that may be encountered during site development should be brought to the attention of the geotechnical engineer so that he may make modifications if necessary.

CHANGE IN SCOPE

This office should be advised of any changes in the project scope or proposed site grading so that we may determine if the recommendations contained herein are appropriate. This should be verified in writing or modified by a written addendum.

TIME LIMITATIONS

The findings of this report are valid as of this date. Changes in the condition of a property can, however, occur with the passage of time, whether they be due to natural processes or the work of man on this or adjacent properties. In addition, changes in the Standards-of-Practice and/or Government Codes may occur. Due to such changes, the findings of this report may be invalidated wholly or in part by changes beyond our control. Therefore, this report should not be relied upon after a period of two years without a review by us verifying the suitability of the conclusions and recommendations.

PROFESSIONAL STANDARD

In the performance of our professional services, we comply with that level of care and skill ordinarily exercised by members of our profession currently practicing under similar conditions and in the same locality. The client recognizes that subsurface conditions may vary from those encountered at the locations where our borings, surveys, and explorations are made, and that our data, interpretations, and recommendations be based solely on the information obtained by us. We will be responsible for those data, interpretations, and recommendations, but shall not be responsible for the interpretations by others of the information developed. Our services consist of professional consultation and observation only, and no warranty of any kind whatsoever, express or implied, is made or intended in connection with the work performed or to be performed by us, or by our proposal for consulting or other services, or by our furnishing of oral or written reports or findings.

CLIENT'S RESPONSIBILITY

It is the responsibility of the Client, or his representatives, to ensure that the information and recommendations contained herein are brought to the attention of the structural engineer and

architect for the project and incorporated into the project's plans and specifications. It is further their responsibility to take the necessary measures to insure that the contractor and his subcontractors carry out such recommendations during construction.

FIELD EXPLORATIONS

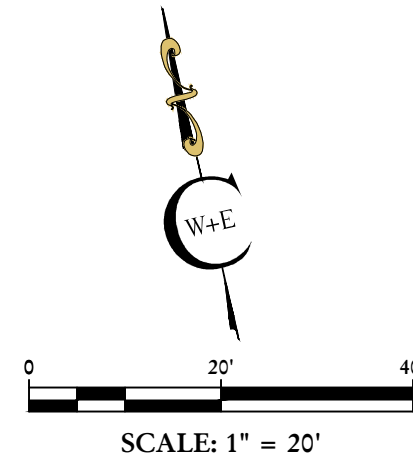
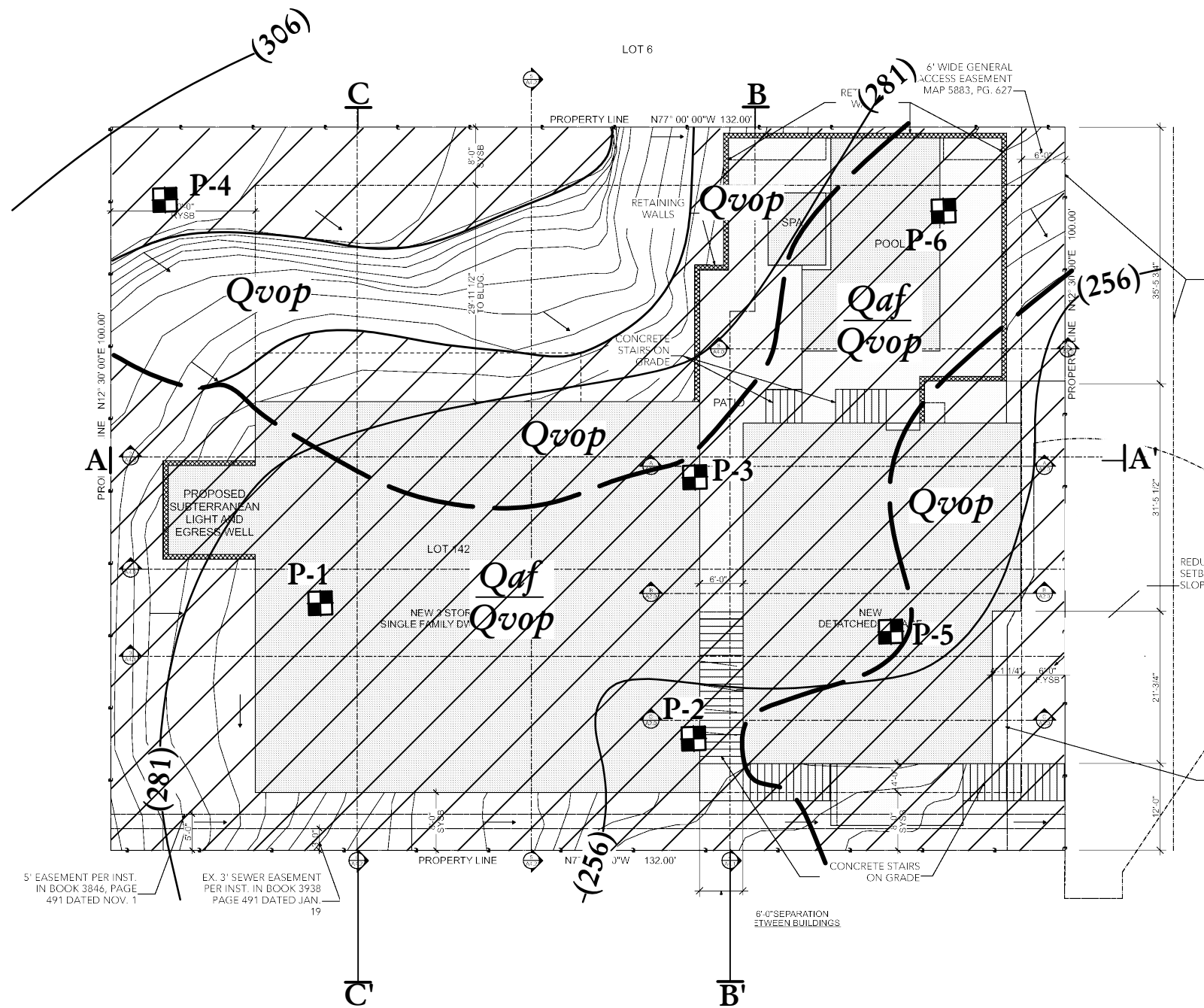
Six subsurface explorations were made on August 3, 2017 at the locations indicated on the Site Plan and Geotechnical Map included herewith as Plate No. 1. These explorations consisted of hand-dug test pits. The fieldwork was conducted under the observation and direction of our engineering geology personnel.

The explorations were carefully logged when made. The test pit logs are presented in Appendix A. The soils are described in accordance with the Unified Soils Classification. In addition, a verbal textural description, the wet color, the apparent moisture, and the density or consistency is provided. The density of granular soils is given as very loose, loose, medium dense, dense or very dense. The consistency of silts or clays is given as either very soft, soft, medium stiff, stiff, very stiff, or hard.

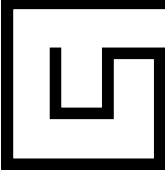
Relatively undisturbed chunk samples and bulk samples of the earth materials encountered were collected and transported to our laboratory for testing.

LABORATORY TESTING


Laboratory tests were performed in accordance with the generally accepted American Society for Testing and Materials (ASTM) test methods or suggested procedures. A brief description of the tests performed and the subsequent results are presented in Appendix B.



CWE LEGEND	
	P-6 APPROXIMATE TEST PIT LOCATION
	GEOLOGIC CONTACT
	ARTIFICIAL FILL OVER VERY OLD PARALIC DEPOSITS
	VERY OLD PARALIC DEPOSITS
	GEOLOGIC CROSS SECTION
	PRE-DISTURBED TOPOGRAPHY (1953)
	AREA OF PREVIOUS DISTURBANCE/GRADING



505architecture
4901 morena blvd suite 505
san diego california 92117
858.735.2375 or 661.979.2098



VOLEN HOUSE
SAN DIEGO, CA

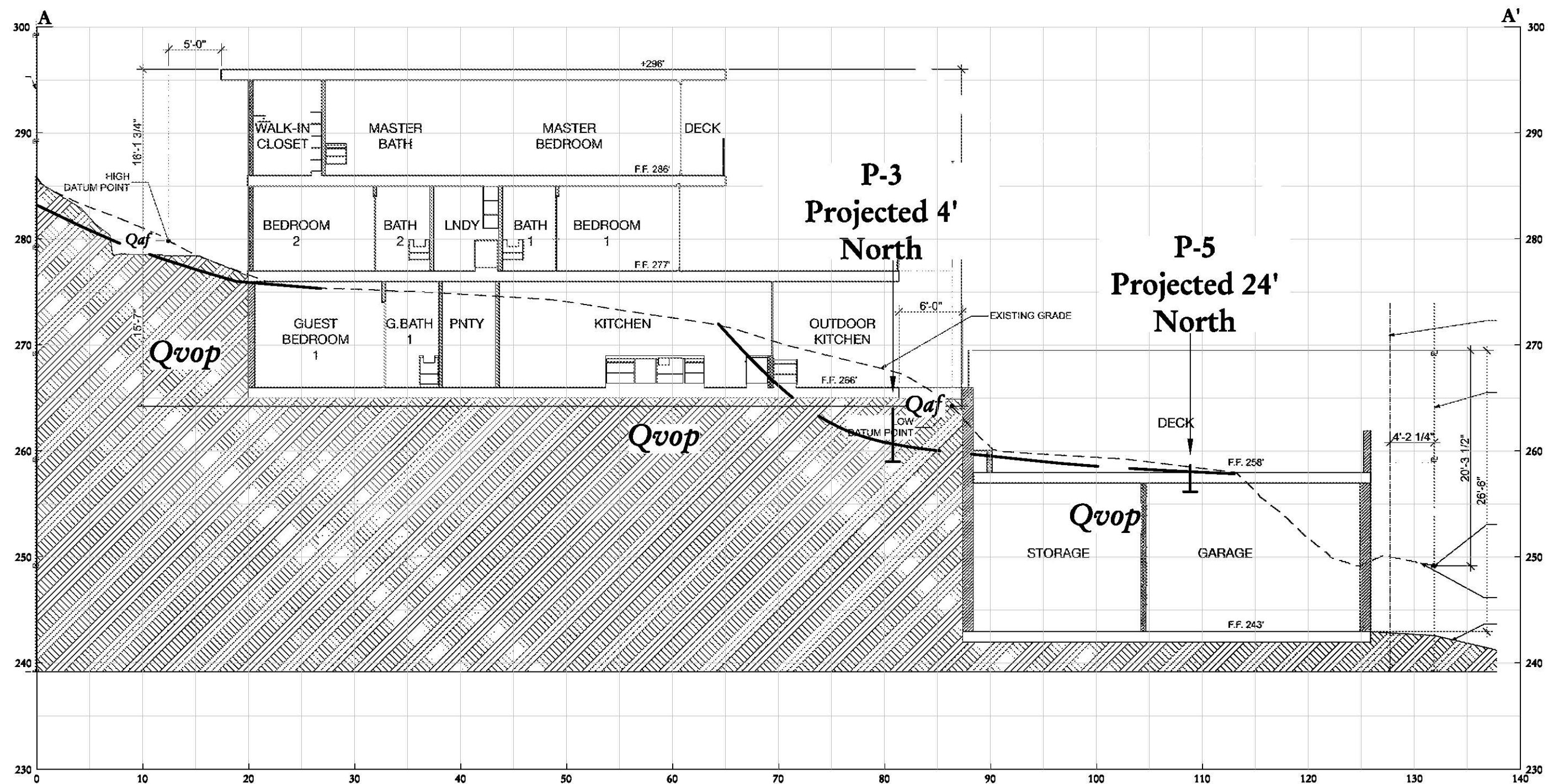
SITE PLAN

10/3/17
A1.1
SHEET 1 OF 1

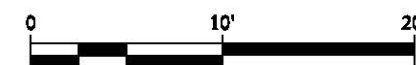
SITE PLAN AND GEOTECHNICAL MAP

VOLEN RESIDENCE 450 TAVARA PLACE SAN DIEGO, CALIFORNIA			
DATE:	NOVEMBER 2017	JOB NO.:	2170296.01
BY:	DRR/SD	PLATE NO.:	1





CWE LEGEND	
Qaf	ARTIFICIAL FILL
Qvop	VERY OLD PARALIC DEPOSITS
---	GEOLOGIC CONTACT (QUERIED WHERE INFERRED)



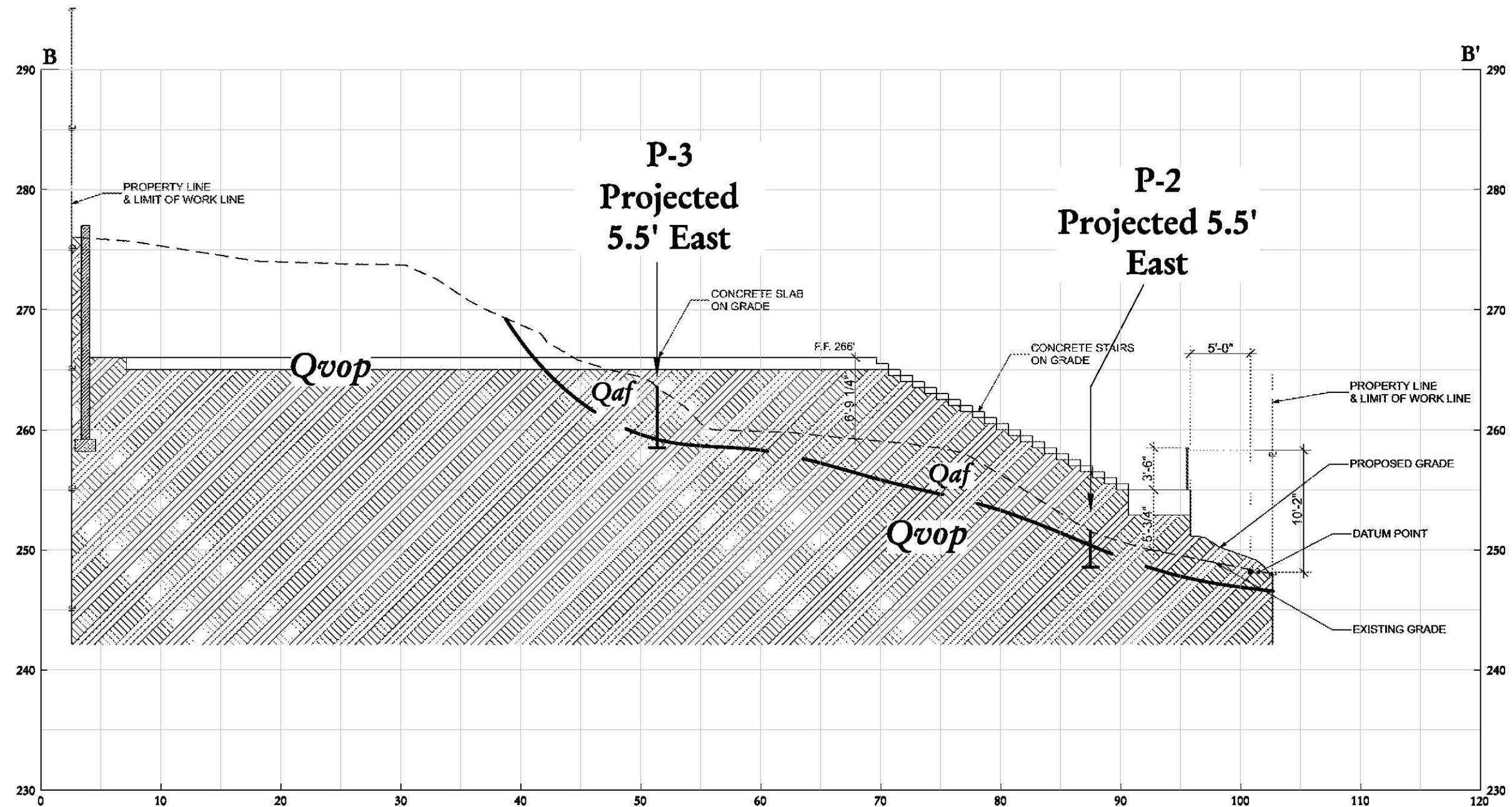
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GEOLOGIC CROSS SECTION A-A'

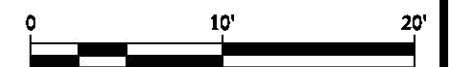
PROPOSED VOLEN RESIDENCE
450 TAVARA PLACE
SAN DIEGO, CALIFORNIA

DATE:	NOVEMBER 2017	JOB NO.:	2170296.01
BY:	SD	PLATE NO.:	2





CWE LEGEND	
<i>Qaf</i>	ARTIFICIAL FILL
<i>Qvop</i>	VERY OLD PARALIC DEPOSITS
— —	GEOLOGIC CONTACT (QUERIED WHERE INFERRED)



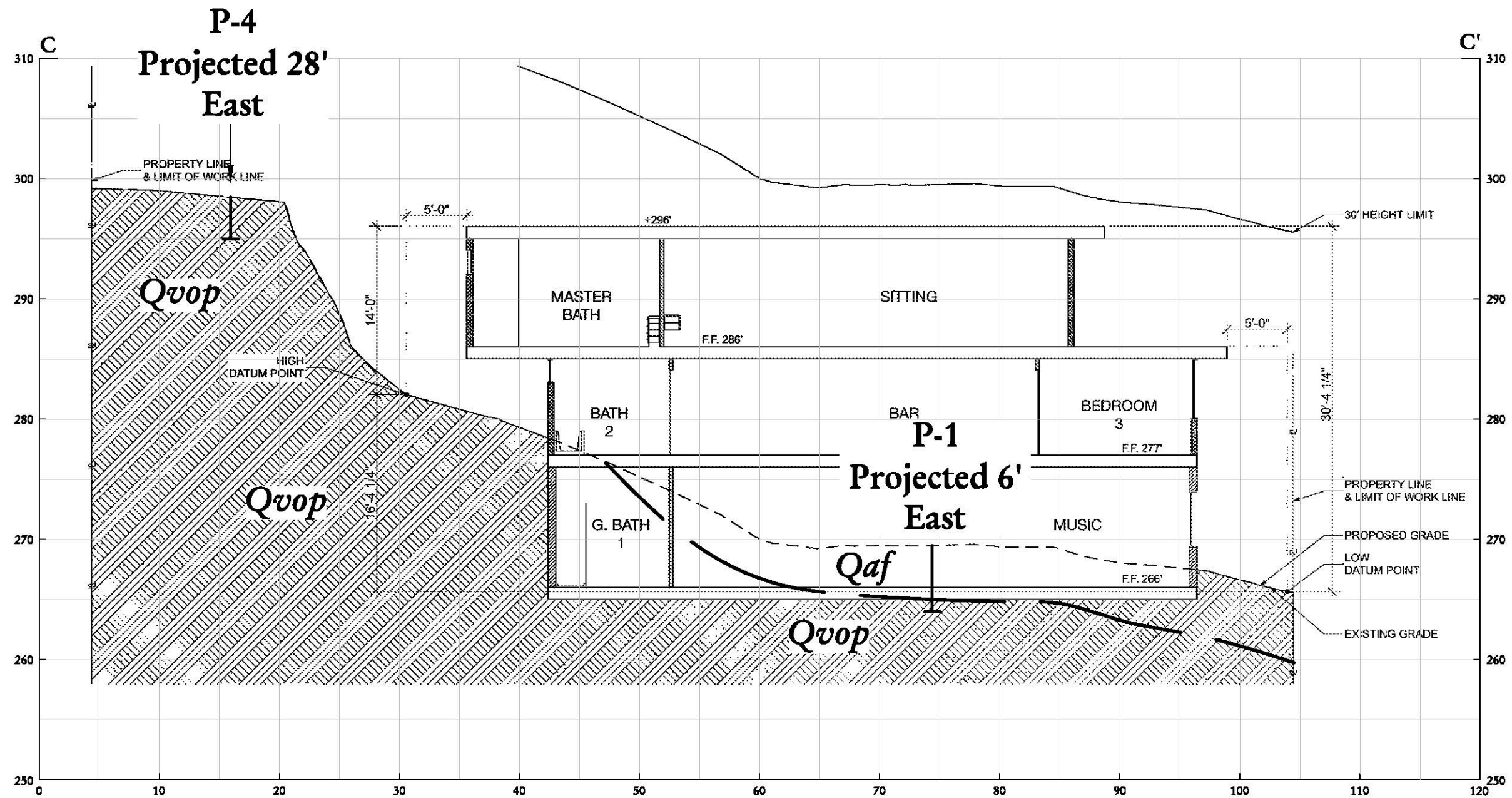
SCALE: 1" = 10'

GEOLOGIC CROSS SECTION B-B'

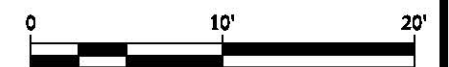
PROPOSED VOLEN RESIDENCE
450 TAVARA PLACE
SAN DIEGO, CALIFORNIA

DATE:	NOVEMBER 2017	JOB NO.:	2170296.01
BY:	SD	PLATE NO.:	3





CWE LEGEND	
<i>Qaf</i>	ARTIFICIAL FILL
<i>Qvop</i>	VERY OLD PARALIC DEPOSITS
— —	GEOLOGIC CONTACT (QUERIED WHERE INFERRED)



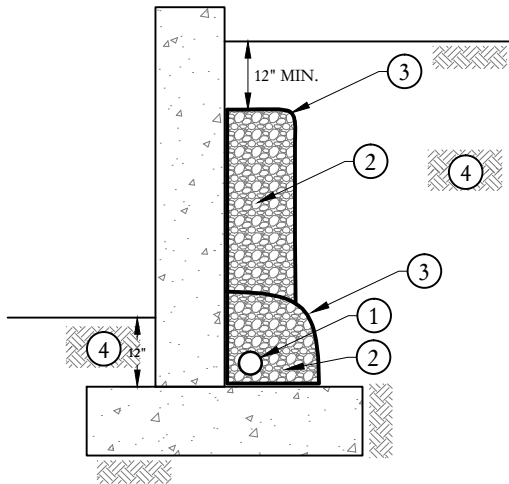
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GEOLOGIC CROSS SECTION C-C'

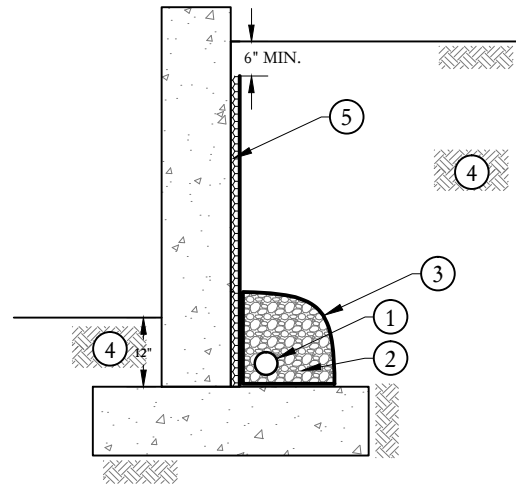
PROPOSED VOLEN RESIDENCE
450 TAVARA PLACE
SAN DIEGO, CALIFORNIA

DATE:	NOVEMBER 2017	JOB NO.:	2170296.01
BY:	SD	PLATE NO.:	4

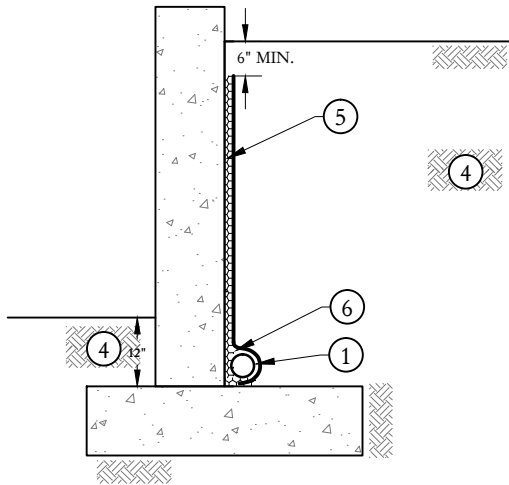




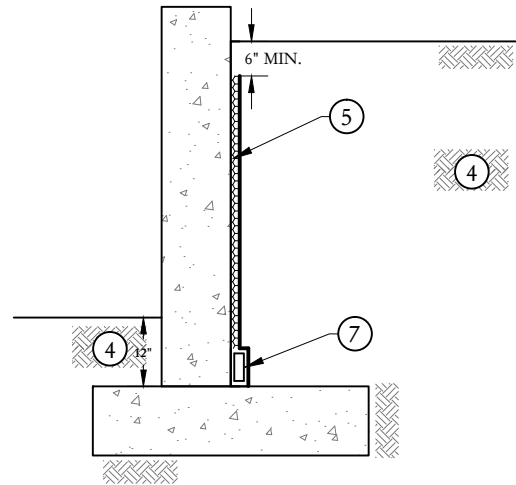
1 DETAIL



2 DETAIL



3 DETAIL



4 DETAIL

NOTES AND DETAILS

GENERAL NOTES:

- 1) THE NEED FOR WATERPROOFING SHOULD BE EVALUATED BY OTHERS.
- 2) WATERPROOFING TO BE DESIGNED BY OTHERS (CWE CAN PROVIDE A DESIGN IF REQUESTED).
- 3) EXTEND DRAIN TO SUITABLE DISCHARGE POINT PER CIVIL ENGINEER.
- 4) DO NOT CONNECT SURFACE DRAINS TO SUBDRAIN SYSTEM.

DETAILS:

- | | |
|--|--|
| <p>① 4-INCH PERFORATED PVC PIPE ON TOP OF FOOTING, HOLES POSITIONED DOWNWARD (SDR 35, SCHEDULE 40, OR EQUIVALENT).</p> <p>② ¾ INCH OPEN-GRADED CRUSHED AGGREGATE.</p> <p>③ GEOFABRIC WRAPPED COMPLETELY AROUND ROCK.</p> <p>④ PROPERLY COMPACTED BACKFILL SOIL.</p> <p>⑤ WALL DRAINAGE PANELS (MIRADRAIN OR EQUIVALENT) PLACED PER MANUFACTURER'S REC'S.</p> | <p>⑥ UNDERLAY SUBDRAIN WITH AND CUT FABRIC BACK FROM DRAINAGE PANELS AND WRAP FABRIC AROUND PIPE.</p> <p>⑦ COLLECTION DRAIN (TOTAL DRAIN OR EQUIVALENT) LOCATED AT BASE OF WALL DRAINAGE PANEL PER MANUFACTURER'S RECOMMENDATIONS.</p> |
|--|--|

CANTILEVER RETAINING WALL DRAINAGE SYSTEMS

PROPOSED VOLEN RESIDENCE
450 TAVARA PLACE
SAN DIEGO, CALIFORNIA

DATE: NOVEMBER 2017

JOB NO.: 2170296.01

BY: SRD

PLATE NO.: 5



CHRISTIAN WHEELER
ENGINEERING

Appendix A

Subsurface Explorations

LOG OF TEST PIT P-6

Sample Type and Laboratory Test Legend

Cal	Modified California Sampler	CK	Chunk
SPT	Standard Penetration Test	DR	Drive Ring
ST	Shelby Tube		
MD	Max Density	DS	Direct Shear
SO4	Soluble Sulfates	Con	Consolidation
SA	Sieve Analysis	EI	Expansion Index
HA	Hydrometer	R-Val	Resistance Value
SE	Sand Equivalent	Chl	Soluble Chlorides
PI	Plasticity Index	Res	pH & Resistivity
CP	Collapse Potential	SD	Sample Density

Date Logged: 8/3/17 Equipment: Hand tools
 Logged By: DRR Auger Type: N/A
 Existing Elevation: 262.0 feet Drive Type: N/A
 Finish Elevation: 265.0 feet Depth to Water: N/A

DEPTH (ft)	ELEVATION (ft)	GRAPHIC LOG	USCS SYMBOL	SUMMARY OF SUBSURFACE CONDITIONS (based on Unified Soil Classification System)	PENETRATION (blows per foot)	SAMPLE TYPE	BULK	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	RELATIVE COMPACTION (%)	LABORATORY TESTS
0			SM	<u>Artificial Fill (Qaf)</u> : Medium brown, damp, loose, fine- to medium-grained, SILTY SAND, trace gravels.							
0.5											
1						CK					
1.5											
2											
2.5						CK		2.2	93.3		
3											
3.5											
4			SM	<u>Very Old Paralic Deposits (Qvop)</u> : Light orangish-brown, moist, very dense, fine- to medium-grained, SILTY SAND.							HA
4.5											SO4
5						CK		1.3	108.8		DS
5.5											SO4
6				Test trench terminated at 5.5 feet. No groundwater or seepage encountered.							
6.5											
7											
7.5											

Notes:



Symbol Legend

Groundwater Level During Drilling



Groundwater Level After Drilling



Apparent Seepage



No Sample Recovery



Non-Representative Blow Count
(rocks present)

VOLEN RESIDENCE
450 TAVARA PLACE
SAN DIEGO, CALIFORNIA

DATE: NOVEMBER 2017

JOB NO.: 2170296.01

BY: SRD

FIGURE NO.: A-6



CHRISTIAN WHEELER
ENGINEERING

LOG OF TEST PIT P-1

Sample Type and Laboratory Test Legend

Cal	Modified California Sampler	CK	Chunk
SPT	Standard Penetration Test	DR	Drive Ring
ST	Shelby Tube		
MD	Max Density	DS	Direct Shear
SO4	Soluble Sulfates	Con	Consolidation
SA	Sieve Analysis	EI	Expansion Index
HA	Hydrometer	R-Val	Resistance Value
SE	Sand Equivalent	Chl	Soluble Chlorides
PI	Plasticity Index	Res	pH & Resistivity
CP	Collapse Potential	SD	Sample Density

Date Logged: 8/3/17 Equipment: Hand tools
 Logged By: DRR Auger Type: N/A
 Existing Elevation: 270.0 feet Drive Type: N/A
 Finish Elevation: 265.0 feet Depth to Water: N/A

DEPTH (ft)	ELEVATION (ft)	GRAPHIC LOG	USCS SYMBOL	SUMMARY OF SUBSURFACE CONDITIONS (based on Unified Soil Classification System)	PENETRATION (blows per foot)	SAMPLE TYPE	BULK	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	RELATIVE COMPACTION (%)	LABORATORY TESTS
0			SM	<u>Artificial Fill (Qaf)</u> : Medium brown to orangish-brown, dry, medium dense, fine- to medium-grained, SILTY SAND, trace organic debris.							
0.5											
1											
1.5											
2											
2.5						CK		1.3	94.5		
3											
3.5											
4				1" Metal utility pipe running east to west at 4 feet.							
4.5			SM	<u>Very Old Paralic Deposits (Qvop)</u> : Orangish-brown, damp, dense, fine- to medium-grained, SILTY SAND.		CK		3.2	119.1		
5											
5.5				Test trench terminated at 5.5 feet. No groundwater or seepage encountered.							
6											
6.5											
7											
7.5											

Notes:

Symbol Legend

▽	Groundwater Level During Drilling
▼	Groundwater Level After Drilling
??	Apparent Seepage
*	No Sample Recovery
**	Non-Representative Blow Count (rocks present)

VOLEN RESIDENCE
 450 TAVARA PLACE
 SAN DIEGO, CALIFORNIA

DATE:	NOVEMBER 2017	JOB NO.:	2170296.01
BY:	SRD	FIGURE NO.:	A-1



CHRISTIAN WHEELER
 ENGINEERING

LOG OF TEST PIT P-2

Sample Type and Laboratory Test Legend

Cal	Modified California Sampler	CK	Chunk
SPT	Standard Penetration Test	DR	Drive Ring
ST	Shelby Tube		
MD	Max Density	DS	Direct Shear
SO4	Soluble Sulfates	Con	Consolidation
SA	Sieve Analysis	EI	Expansion Index
HA	Hydrometer	R-Val	Resistance Value
SE	Sand Equivalent	Chl	Soluble Chlorides
PI	Plasticity Index	Res	pH & Resistivity
CP	Collapse Potential	SD	Sample Density

Date Logged: 8/3/17 Equipment: Hand tools
 Logged By: DRR Auger Type: N/A
 Existing Elevation: 252.0 feet Drive Type: N/A
 Finish Elevation: 265.0 feet Depth to Water: N/A

DEPTH (ft)	ELEVATION (ft)	GRAPHIC LOG	USCS SYMBOL	SUMMARY OF SUBSURFACE CONDITIONS (based on Unified Soil Classification System)	PENETRATION (blows per foot)	SAMPLE TYPE	BULK	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	RELATIVE COMPACTION (%)	LABORATORY TESTS
0			SM	<u>Artificial Fill (Qaf)</u> : Dark brown, dry, loose, fine- to medium-grained, SILTY SAND.							
0.5											
1			SM	<u>Very Old Paralic Deposits (Qvop)</u> : Grayish-brown, damp to moist, dense, fine- to medium-grained, SILTY SAND.							
1.5											
2						CK		4.0	114.8		
2.5											
3				Becomes very dense.							
3.5				Test trench terminated at 3 feet. No groundwater or seepage encountered.							
4											
4.5											
5											
5.5											
6											
6.5											
7											
7.5											

Notes:

Symbol Legend

▽	Groundwater Level During Drilling
▼	Groundwater Level After Drilling
??	Apparent Seepage
*	No Sample Recovery
**	Non-Representative Blow Count (rocks present)

VOLEN RESIDENCE
 450 TAVARA PLACE
 SAN DIEGO, CALIFORNIA

DATE:	NOVEMBER 2017	JOB NO.:	2170296.01
BY:	SRD	FIGURE NO.:	A-2



CHRISTIAN WHEELER
 ENGINEERING

LOG OF TEST PIT P-3

Date Logged:8/3/17

Logged By:DRR

Existing Elevation:264.0 feet

Finish Elevation:265.0 feet

Equipment:Hand tools

Auger Type:N/A

Drive Type:N/A

Depth to Water:N/A

Sample Type and Laboratory Test Legend

CalModified California Sampler

SPTStandard Penetration Test

STShelby Tube

MDMax Density

SO4Soluble Sulfates

SA Sieve Analysis

HA Hydrometer

SE Sand Equivalent

PI Plasticity Index

CP Collapse Potential

CKChunk Drive Ring

DS Direct Shear

Con Consolidation

EI Expansion Index

R-Val Resistance Value

Chl Soluble Chlorides

Res pH & Resistivity

SD Sample Density

DEPTH (ft)	ELEVATION (ft)	GRAPHIC LOG	USCS SYMBOL	SUMMARY OF SUBSURFACE CONDITIONS (based on Unified Soil Classification System)	PENETRATION (blows per foot)	SAMPLE TYPE	BULK	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	RELATIVE COMPACTION (%)	LABORATORY TESTS
0			SM	Artificial Fill (Qaf): Medium brown, dry to damp, loose, fine- to medium-grained, SILTY SAND.							
0.5											
1											
1.5							CK				
2											
2.5											
3											
3.5											
4			SM	Very Old Paralac Deposits (Qvop): Orangish-brown, damp to moist, dense to very dense, fine- to medium-grained, SILTY SAND.							
4.5						CK		3.1	105.9		
5				Test trench terminated at 5 feet. No groundwater or seepage encountered.							
5.5											
6											
6.5											
7											
7.5											

Notes:

Groundwater Level During Drilling

Groundwater Level After Drilling

Apparent Seepage

No Sample Recovery

Non-Representative Blow Count (rocks present)

VOLEN RESIDENCE

450 TAVARA PLACE

SAN DIEGO, CALIFORNIA

DATE: NOVEMBER 2017

JOB NO.: 2170296.01

BY: SRD

FIGURE NO.: A-3

CHRISTIAN WHEELER
ENGINEERING

LOG OF TEST PIT P-4

Sample Type and Laboratory Test Legend

Cal	Modified California Sampler	CK	Chunk
SPT	Standard Penetration Test	DR	Drive Ring
ST	Shelby Tube		
MD	Max Density	DS	Direct Shear
SO ₄	Soluble Sulfates	Con	Consolidation
SA	Sieve Analysis	EI	Expansion Index
HA	Hydrometer	R-Val	Resistance Value
SE	Sand Equivalent	Chl	Soluble Chlorides
PI	Plasticity Index	Res	pH & Resistivity
CP	Collapse Potential	SD	Sample Density

Date Logged: 8/3/17 Equipment: Hand tools
 Logged By: DRR Auger Type: N/A
 Existing Elevation: 298.0 feet Drive Type: N/A
 Finish Elevation: 298.0 feet Depth to Water: N/A

DEPTH (ft)	ELEVATION (ft)	GRAPHIC LOG	USCS SYMBOL	SUMMARY OF SUBSURFACE CONDITIONS (based on Unified Soil Classification System)	PENETRATION (blows per foot)	SAMPLE TYPE	BULK	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	RELATIVE COMPACTION (%)	LABORATORY TESTS
0			SM	<u>Very Old Paralic Deposits (Qvop)</u> : Orangish-brown, damp to moist, dense to very dense, fine- to medium-grained, SILTY SAND.							
0.5											
1											
1.5											
2											
2.5						CK					
3											
3.5											
4				Test trench terminated at 3.5 feet. No groundwater or seepage encountered.							
4.5											
5											
5.5											
6											
6.5											
7											
7.5											

Notes:

Symbol Legend

▽	Groundwater Level During Drilling
▼	Groundwater Level After Drilling
??	Apparent Seepage
*	No Sample Recovery
**	Non-Representative Blow Count (rocks present)

VOLEN RESIDENCE
 450 TAVARA PLACE
 SAN DIEGO, CALIFORNIA

DATE:	NOVEMBER 2017	JOB NO.:	2170296.01
BY:	SRD	FIGURE NO.:	A-4



CHRISTIAN WHEELER
 ENGINEERING

LOG OF TEST PIT P-5

Sample Type and Laboratory Test Legend

Cal	Modified California Sampler	CK	Chunk
SPT	Standard Penetration Test	DR	Drive Ring
ST	Shelby Tube		
MD	Max Density	DS	Direct Shear
SO4	Soluble Sulfates	Con	Consolidation
SA	Sieve Analysis	EI	Expansion Index
HA	Hydrometer	R-Val	Resistance Value
SE	Sand Equivalent	Chl	Soluble Chlorides
PI	Plasticity Index	Res	pH & Resistivity
CP	Collapse Potential	SD	Sample Density

Date Logged: 8/3/17 Equipment: Hand tools
 Logged By: DRR Auger Type: N/A
 Existing Elevation: 258.0 feet Drive Type: N/A
 Finish Elevation: 242.0 feet Depth to Water: N/A

DEPTH (ft)	ELEVATION (ft)	GRAPHIC LOG	USCS SYMBOL	SUMMARY OF SUBSURFACE CONDITIONS (based on Unified Soil Classification System)	PENETRATION (blows per foot)	SAMPLE TYPE	BULK	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	RELATIVE COMPACTION (%)	LABORATORY TESTS
0			SM	<u>Artificial Fill (Qaf)</u> : Medium brown to light orangish-brown, damp to moist, dense to very dense, SILTY SAND.							
0.5			SM	<u>Very Old Paralic Deposits (Qvop)</u> : Light orangish-brown, dry to damp, dense to very dense, very fine- to medium-grained, SILTY SAND.							
1						CK		0.8	102.0		
1.5											
2						CK		1.1	103.1		
2.5						CK		1.0	103.4		
2.5				Test trench terminated at 2.5 feet. No groundwater or seepage encountered.							
3											
3.5											
4											
4.5											
5											
5.5											
6											
6.5											
7											
7.5											

Notes:

Symbol Legend

▽	Groundwater Level During Drilling
▼	Groundwater Level After Drilling
??	Apparent Seepage
*	No Sample Recovery
**	Non-Representative Blow Count (rocks present)

VOLEN RESIDENCE
 450 TAVARA PLACE
 SAN DIEGO, CALIFORNIA

DATE:	NOVEMBER 2017	JOB NO.:	2170296.01
BY:	SRD	FIGURE NO.:	A-5




CHRISTIAN WHEELER
 ENGINEERING

Appendix B

Laboratory Test Results

Laboratory tests were performed in accordance with the generally accepted American Society for Testing and Materials (ASTM) test methods or suggested procedures. Brief descriptions of the tests performed are presented below:

- a) **CLASSIFICATION:** Field classifications were verified in the laboratory by visual examination. The final soil classifications are in accordance with the Unified Soil Classification System and are presented on the exploration logs in Appendix A.
- b) **MOISTURE-DENSITY:** In-place moisture contents and dry densities were determined for selected soil samples in accordance with ASTM D 2937. The results are summarized in the boring logs presented in Appendix A.
- c) **MAXIMUM DRY DENSITY AND OPTIMUM MOISTURE CONTENT TEST:** The maximum dry density and optimum moisture content of selected soil samples were determined in the laboratory in accordance with ASTM D 1557, Method A.
- d) **DIRECT SHEAR:** Direct shear tests were performed on selected samples of the on-site soils in accordance with ASTM D 3080.
- e) **GRAIN SIZE DISTRIBUTION:** The grain size distribution of selected samples was determined in accordance with ASTM C136 and/or ASTM D 422.
- f) **SOLUBLE SULFATES:** The soluble sulfate content of a selected soil sample was determined in accordance with California Test Method 417.

 CHRISTIAN WHEELER ENGINEERING	PROPOSED VOLEN RESIDENCE 450 Tavera Place, San Diego, California		LAB SUMMARY	
	BY: DBA	DATE: November 2017	REPORT NO.:2170296.01	Appendix: B-1

LABORATORY TEST RESULTS

PROPOSED VOLEN RESIDENCE

450 TAVARA PLACE

SAN DIEGO, CALIFORNIA

MAXIMUM DRY DENSITY AND OPTIMUM MOISTURE CONTENT (ASTM D1557)

Sample Location	Test Pit P-3 @ 1'-5'	Test Pit P-6 @ 4'-5½'
Sample Description	Light Brown Silt Sand (SM)	Orangish-Brown Silt Sand (SM)
Maximum Density	116.3 pcf	121.0 pcf
Optimum Moisture	12.0 %	9.5 %

DIRECT SHEAR (ASTM D3080)

Sample Location	Test Pit P-3 @ 1'-5'	Test Pit P-6 @ 4'-5½'
Sample Type	Remolded to 90%	Remolded to 90%
Friction Angle	30°	30°
Cohesion	200 psf	150 psf

GRAIN SIZE DISTRIBUTION (ASTM D422)

Sample Location	Test Pit P-1 @ ½'-4½'	Test Pit P-6 @ 4'-5½'
<i>Sieve Size</i>	<i>Percent Passing</i>	<i>Percent Passing</i>
#4	100	100
#8	97	99
#16	95	97
#30	92	80
#50	70	41
#100	33	22
#200	22	16
0.05 mm	20	14
0.005 mm	12	10
0.001 mm	7	9

SOLUBLE SULFATES (CALIFORNIA TEST 417)

Sample Location	Test Pit P-6 @ 4'-5½'
Soluble Sulfate	0.117 % (SO ₄)

Appendix C

References

REFERENCES

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City of San Diego, 2008, Seismic Safety Study, Sheet 16.

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Victor Rodriguez-Fernandez, 2013, Preliminary Topography Plat For: 450 Tavera Place, San Diego, CA, scale 1' = 10', dated February 28, 2013.

TOPOGRAPHIC MAPS

City of San Diego, 1953, Topographic Map Sheet 198-1689; Scale: 1 inch = 200 feet

City of San Diego, 1978, Ortho-Topographic Map Sheet 198-1689; Scale: 1 inch = 200 feet

United States Geological Survey, 1953, Point Loma Quadrangle; Scale 1 inch = 2000 feet

United States Geological Survey, 1967, Point Loma Quadrangle; Scale 1 inch = 2000 feet

United States Geological Survey, 1975, Point Loma Quadrangle; Scale 1 inch = 2000 feet

PHOTOGRAPHS

San Diego County, 1928, Packet 66, Photograph E2; Scale: 1 inch = 1000 feet (approximate)

San Diego County, 1966, Flight 1, Photographs 72 and 73; Scale: 1 inch = 1500 feet (approximate)

San Diego County, 1970, Flight 5, Photographs 3 and 4; Scale: 1 inch = 1000 feet (approximate)

San Diego County, 1973, Flight 30, Photographs 5 and 6; Scale: 1 inch = 1000 feet (approximate)

San Diego County, 1978, Flight 18B, Photographs 58, 59 and 60; Scale: 1 inch = 2000 feet (approximate)

San Diego County, 1989, Photographs 1-157 and 1-195; Scale: 1 inch = 2000 feet (approximate)

United States Department of Agriculture, 1953, Flight AXN-4M, Photographs 95 and 96; Scale: 1 inch = 1000 feet (approximate)

United States Department of Agriculture, 1978, Flight 18B, Photographs 58 and 59; Scale: 1 inch = 1000 feet (approximate)

Appendix D

Recommended Grading Specifications – General Provisions

RECOMMENDED GRADING SPECIFICATIONS - GENERAL PROVISIONSPROPOSED VOLEN RESIDENCE450 TAVARA PLACESAN DIEGO, CALIFORNIA**GENERAL INTENT**

The intent of these specifications is to establish procedures for clearing, compacting natural ground, preparing areas to be filled, and placing and compacting fill soils to the lines and grades shown on the accepted plans. The recommendations contained in the preliminary geotechnical investigation report and/or the attached Special Provisions are a part of the Recommended Grading Specifications and shall supersede the provisions contained hereinafter in the case of conflict. These specifications shall only be used in conjunction with the geotechnical report for which they are a part. No deviation from these specifications will be allowed, except where specified in the geotechnical report or in other written communication signed by the Geotechnical Engineer.

OBSERVATION AND TESTING

Christian Wheeler Engineering shall be retained as the Geotechnical Engineer to observe and test the earthwork in accordance with these specifications. It will be necessary that the Geotechnical Engineer or his representative provide adequate observation so that he may provide his opinion as to whether or not the work was accomplished as specified. It shall be the responsibility of the contractor to assist the Geotechnical Engineer and to keep him apprised of work schedules, changes and new information and data so that he may provide these opinions. In the event that any unusual conditions not covered by the special provisions or preliminary geotechnical report are encountered during the grading operations, the Geotechnical Engineer shall be contacted for further recommendations.

If, in the opinion of the Geotechnical Engineer, substandard conditions are encountered, such as questionable or unsuitable soil, unacceptable moisture content, inadequate compaction, adverse weather, etc., construction should be stopped until the conditions are remedied or corrected or he shall recommend rejection of this work.

Tests used to determine the degree of compaction should be performed in accordance with the following American Society for Testing and Materials test methods:

Maximum Density & Optimum Moisture Content - ASTM D1557

Density of Soil In-Place - ASTM D1556 or ASTM D2922

All densities shall be expressed in terms of Relative Compaction as determined by the foregoing ASTM testing procedures.

PREPARATION OF AREAS TO RECEIVE FILL

All vegetation, brush and debris derived from clearing operations shall be removed, and legally disposed of. All areas disturbed by site grading should be left in a neat and finished appearance, free from unsightly debris.

After clearing or benching the natural ground, the areas to be filled shall be scarified to a depth of 6 inches, brought to the proper moisture content, compacted and tested for the specified minimum degree of compaction. All loose soils in excess of 6 inches thick should be removed to firm natural ground which is defined as natural soil which possesses an in-situ density of at least 90 percent of its maximum dry density.

When the slope of the natural ground receiving fill exceeds 20 percent (5 horizontal units to 1 vertical unit), the original ground shall be stepped or benched. Benches shall be cut to a firm competent formational soil. The lower bench shall be at least 10 feet wide or 1-1/2 times the equipment width, whichever is greater, and shall be sloped back into the hillside at a gradient of not less than two (2) percent. All other benches should be at least 6 feet wide. The horizontal portion of each bench shall be compacted prior to receiving fill as specified herein for compacted natural ground. Ground slopes flatter than 20 percent shall be benched when considered necessary by the Geotechnical Engineer.

Any abandoned buried structures encountered during grading operations must be totally removed. All underground utilities to be abandoned beneath any proposed structure should be removed from within 10 feet of the structure and properly capped off. The resulting depressions from the above

described procedure should be backfilled with acceptable soil that is compacted to the requirements of the Geotechnical Engineer. This includes, but is not limited to, septic tanks, fuel tanks, sewer lines or leach lines, storm drains and water lines. Any buried structures or utilities not to be abandoned should be brought to the attention of the Geotechnical Engineer so that he may determine if any special recommendation will be necessary.

All water wells which will be abandoned should be backfilled and capped in accordance to the requirements set forth by the Geotechnical Engineer. The top of the cap should be at least 4 feet below finish grade or 3 feet below the bottom of footing whichever is greater. The type of cap will depend on the diameter of the well and should be determined by the Geotechnical Engineer and/or a qualified Structural Engineer.

FILL MATERIAL

Materials to be placed in the fill shall be approved by the Geotechnical Engineer and shall be free of vegetable matter and other deleterious substances. Granular soil shall contain sufficient fine material to fill the voids. The definition and disposition of oversized rocks and expansive or detrimental soils are covered in the geotechnical report or Special Provisions. Expansive soils, soils of poor gradation, or soils with low strength characteristics may be thoroughly mixed with other soils to provide satisfactory fill material, but only with the explicit consent of the Geotechnical Engineer. Any import material shall be approved by the Geotechnical Engineer before being brought to the site.

PLACING AND COMPACTION OF FILL

Approved fill material shall be placed in areas prepared to receive fill in layers not to exceed 6 inches in compacted thickness. Each layer shall have a uniform moisture content in the range that will allow the compaction effort to be efficiently applied to achieve the specified degree of compaction. Each layer shall be uniformly compacted to the specified minimum degree of compaction with equipment of adequate size to economically compact the layer. Compaction equipment should either be specifically designed for soil compaction or of proven reliability. The minimum degree of compaction to be achieved is specified in either the Special Provisions or the recommendations contained in the preliminary geotechnical investigation report.

When the structural fill material includes rocks, no rocks will be allowed to nest and all voids must be carefully filled with soil such that the minimum degree of compaction recommended in the Special Provisions is achieved. The maximum size and spacing of rock permitted in structural fills and in non-structural fills is discussed in the geotechnical report, when applicable.

Field observation and compaction tests to estimate the degree of compaction of the fill will be taken by the Geotechnical Engineer or his representative. The location and frequency of the tests shall be at the Geotechnical Engineer's discretion. When the compaction test indicates that a particular layer is at less than the required degree of compaction, the layer shall be reworked to the satisfaction of the Geotechnical Engineer and until the desired relative compaction has been obtained.

Fill slopes shall be compacted by means of sheepfoot rollers or other suitable equipment. Compaction by sheepfoot roller shall be at vertical intervals of not greater than four feet. In addition, fill slopes at a ratio of two horizontal to one vertical or flatter, should be trackrolled. Steeper fill slopes shall be over-built and cut-back to finish contours after the slope has been constructed. Slope compaction operations shall result in all fill material six or more inches inward from the finished face of the slope having a relative compaction of at least 90 percent of maximum dry density or the degree of compaction specified in the Special Provisions section of this specification. The compaction operation on the slopes shall be continued until the Geotechnical Engineer is of the opinion that the slopes will be surficially stable.

Density tests in the slopes will be made by the Geotechnical Engineer during construction of the slopes to determine if the required compaction is being achieved. Where failing tests occur or other field problems arise, the Contractor will be notified that day of such conditions by written communication from the Geotechnical Engineer or his representative in the form of a daily field report.

If the method of achieving the required slope compaction selected by the Contractor fails to produce the necessary results, the Contractor shall rework or rebuild such slopes until the required degree of compaction is obtained, at no cost to the Owner or Geotechnical Engineer.

CUT SLOPES

The Engineering Geologist shall inspect cut slopes excavated in rock or lithified formational material during the grading operations at intervals determined at his discretion. If any conditions not anticipated in the preliminary report such as perched water, seepage, lenticular or confined strata of a potentially adverse nature, unfavorably inclined bedding, joints or fault planes are encountered during grading, these conditions shall be analyzed by the Engineering Geologist and Geotechnical Engineer to determine if mitigating measures are necessary.

Unless otherwise specified in the geotechnical report, no cut slopes shall be excavated higher or steeper than that allowed by the ordinances of the controlling governmental agency.

ENGINEERING OBSERVATION

Field observation by the Geotechnical Engineer or his representative shall be made during the filling and compaction operations so that he can express his opinion regarding the conformance of the grading with acceptable standards of practice. Neither the presence of the Geotechnical Engineer or his representative or the observation and testing shall release the Grading Contractor from his duty to compact all fill material to the specified degree of compaction.

SEASON LIMITS

Fill shall not be placed during unfavorable weather conditions. When work is interrupted by heavy rain, filling operations shall not be resumed until the proper moisture content and density of the fill materials can be achieved. Damaged site conditions resulting from weather or acts of God shall be repaired before acceptance of work.

RECOMMENDED GRADING SPECIFICATIONS - SPECIAL PROVISIONS

RELATIVE COMPACTION: The minimum degree of compaction to be obtained in compacted natural ground, compacted fill, and compacted backfill shall be at least 90 percent. For street and

parking lot subgrade, the upper six inches should be compacted to at least 95 percent relative compaction.

EXPANSIVE SOILS: Detrimentially expansive soil is defined as clayey soil which has an expansion index of 50 or greater when tested in accordance with the Uniform Building Code Standard 29-2.

OVERSIZED MATERIAL: Oversized fill material is generally defined herein as rocks or lumps of soil over 6 inches in diameter. Oversized materials should not be placed in fill unless recommendations of placement of such material are provided by the Geotechnical Engineer. At least 40 percent of the fill soils shall pass through a No. 4 U.S. Standard Sieve.

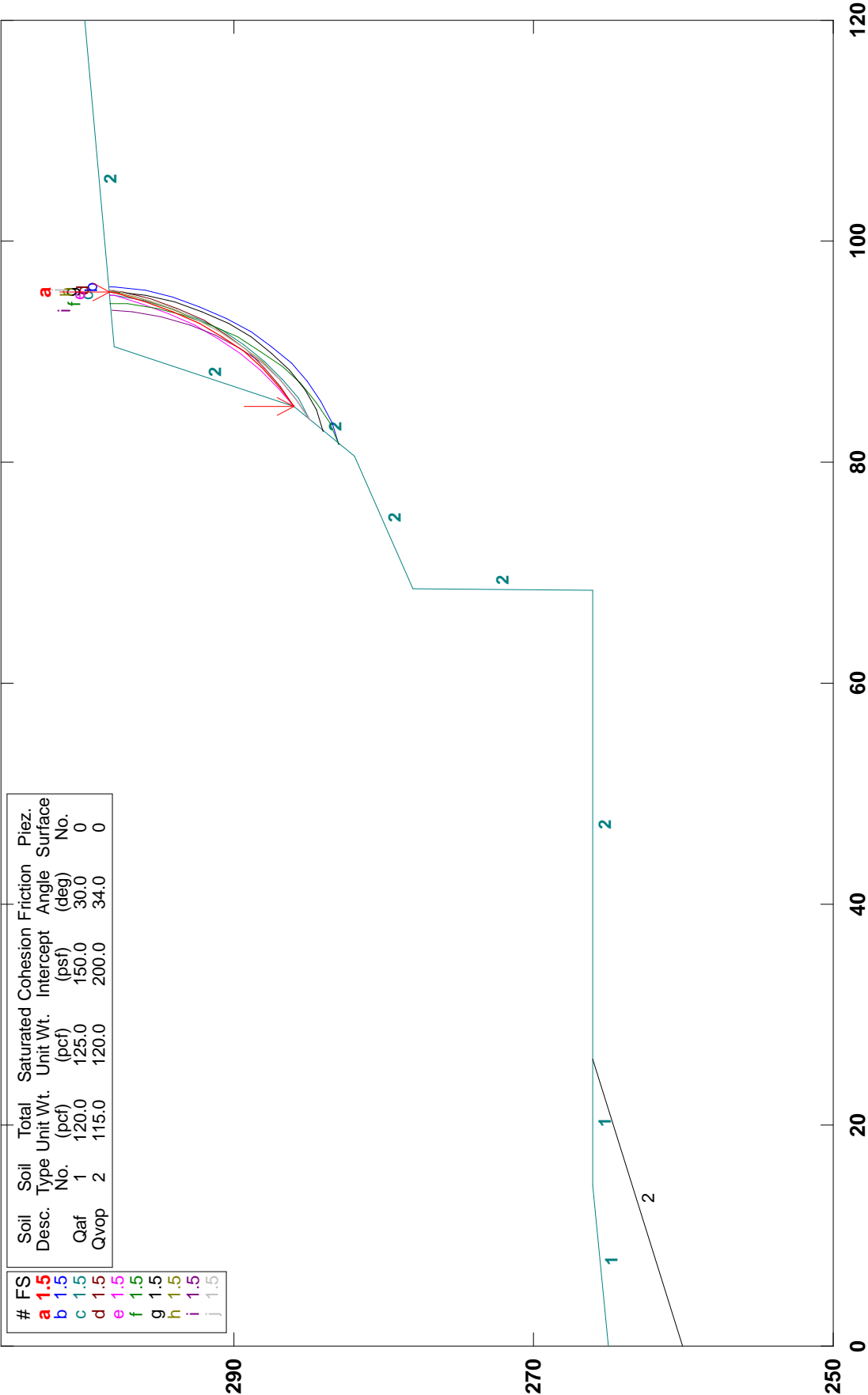
TRANSITION LOTS: Where transitions between cut and fill occur within the proposed building pad, the cut portion should be undercut a minimum of one foot below the base of the proposed footings and recompact as structural backfill. In certain cases that would be addressed in the geotechnical report, special footing reinforcement or a combination of special footing reinforcement and undercutting may be required.

APPENDIX D

GROSS SLOPE STABILITY

Volen Residence C-C'

w:\2017 jobs\2170296 - volen residence, taverna place, san diego, calreports\2170296.01- geo inv\global stability\c-c'.pl2 Run By: DRR 11/6/2017 02:38PM



GSTABL7 v.2 FSmin=1.5
Safety Factors Are Calculated By The Modified Bishop Method

*** GSTABL7 ***

** GSTABL7 by Garry H. Gregory, P.E. **

** Original Version 1.0, January 1996; Current Version 2.003, June 2002 **

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SLOPE STABILITY ANALYSIS SYSTEM

Modified Bishop, Simplified Janbu, or GLE Method of Slices.

(Includes Spencer & Morgenstern-Price Type Analysis)

Including Pier/Pile, Reinforcement, Soil Nail, Tieback,

Nonlinear Undrained Shear Strength, Curved Phi Envelope,

Anisotropic Soil, Fiber-Reinforced Soil, Boundary Loads, Water

Surfaces, Pseudo-Static & Newmark Earthquake, and Applied Forces.

Analysis Run Date: 11/6/2017

Time of Run: 02:38PM

Run By: DRR

Input Data Filename: W:\2017 Jobs\2170296 - Volen Residence, Tavera Place, San Diego, CA\Reports\2170296.01- Geo Inv\Global Stability\c-c'.in

Output Filename: W:\2017 Jobs\2170296 - Volen Residence, Tavera Place, San Diego, CA\Reports\2170296.01- Geo Inv\Global Stability\c-c'.OUT

Unit System: English

Plotted Output Filename: W:\2017 Jobs\2170296 - Volen Resce, Tavera Place, San Diego, CA\Reports\2170296.01- Geo Inv\Global Stability\c-c'.PLT

PROBLEM DESCRIPTION: Volen Residence

C-C'

BOUNDARY COORDINATES

8 Top Boundaries

9 Total Boundaries

Boundary No.	X-Left (ft)	Y-Left (ft)	X-Right (ft)	Y-Right (ft)	Soil Type Below Bnd
1	0.00	265.00	14.50	266.00	1
2	14.50	266.00	26.00	266.00	1
3	26.00	266.00	68.40	266.00	2
4	68.40	266.00	68.50	278.00	2
5	68.50	278.00	80.50	282.00	2
6	80.50	282.00	85.00	286.00	2
7	85.00	286.00	90.50	298.00	2
8	90.50	298.00	120.00	300.00	2
9	0.00	260.00	26.00	266.00	2

User Specified Y-Origin = 250.00(ft)

Default X-Plus Value = 0.00(ft)

Default Y-Plus Value = 0.00(ft)

ISOTROPIC SOIL PARAMETERS

2 Type(s) of Soil

Soil Type No.	Total Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Pore Pressure Param. (psf)	Pressure Constant (psf)	Piez. Surface No.
1	120.0	125.0	150.0	30.0	0.00	0.0	0
2	115.0	120.0	200.0	34.0	0.00	0.0	0

A Critical Failure Surface Searching Method, Using A Random

Technique For Generating Circular Surfaces, Has Been Specified.

2000 Trial Surfaces Have Been Generated.

200 Surface(s) Initiate(s) From Each Of 10 Points Equally Spaced Along The Ground Surface Between X = 75.00(ft)

and X = 85.00(ft)

Each Surface Terminates Between X = 91.00(ft)

and X = 120.00(ft)

Unless Further Limitations Were Imposed, The Minimum Elevation

At Which A Surface Extends Is Y = 0.00(ft)

2.00(ft) Line Segments Define Each Trial Failure Surface.

Following Are Displayed The Ten Most Critical Of The Trial

Failure Surfaces Evaluated. They Are

Ordered - Most Critical First.

* * Safety Factors Are Calculated By The Modified Bishop Method * *

Total Number of Trial Surfaces Evaluated = 2000

Statistical Data On All Valid FS Values:

FS Max = 6.254 FS Min = 1.503 FS Ave = 2.925

Standard Deviation = 0.972 Coefficient of Variation = 33.23 %

Failure Surface Specified By 10 Coordinate Points

Point X-Surf Y-Surf

No.	(ft)	(ft)
1	85.00	286.00
2	86.77	286.93
3	88.44	288.04
4	89.97	289.32
5	91.36	290.75
6	92.59	292.33
7	93.65	294.03
8	94.51	295.83
9	95.18	297.72
10	95.33	298.33

Circle Center At X = 77.30 ; Y = 302.94 ; and Radius = 18.60

Factor of Safety

*** 1.503 ***

Individual data on the 10 slices

Slice No.	Width (ft)	Weight (lbs)	Water Force		Tie Force Norm (lbs)	Tie Force Tan (lbs)	Earthquake Force		Surcharge Load (lbs)
			Top (lbs)	Bot (lbs)			Hor (lbs)	Ver (lbs)	
1	1.8	299.9	0.0	0.0	0.	0.	0.0	0.0	0.0
2	1.7	804.2	0.0	0.0	0.	0.	0.0	0.0	0.0
3	1.5	1147.9	0.0	0.0	0.	0.	0.0	0.0	0.0
4	0.5	475.1	0.0	0.0	0.	0.	0.0	0.0	0.0
5	0.9	766.7	0.0	0.0	0.	0.	0.0	0.0	0.0
6	1.2	927.0	0.0	0.0	0.	0.	0.0	0.0	0.0
7	1.1	605.6	0.0	0.0	0.	0.	0.0	0.0	0.0
8	0.9	329.9	0.0	0.0	0.	0.	0.0	0.0	0.0
9	0.7	116.9	0.0	0.0	0.	0.	0.0	0.0	0.0
10	0.1	5.0	0.0	0.0	0.	0.	0.0	0.0	0.0

Failure Surface Specified By 13 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	81.67	283.04
2	83.61	283.50
3	85.49	284.19
4	87.28	285.09
5	88.95	286.18
6	90.49	287.46
7	91.87	288.91
8	93.07	290.51
9	94.09	292.23
10	94.90	294.06
11	95.49	295.97
12	95.87	297.93
13	95.90	298.37

Circle Center At X = 78.58 ; Y = 300.20 ; and Radius = 17.44

Factor of Safety

*** 1.504 ***

Failure Surface Specified By 11 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	83.89	285.01
2	85.74	285.76
3	87.50	286.72
4	89.12	287.89
5	90.59	289.24
6	91.89	290.76
7	93.00	292.43
8	93.90	294.21
9	94.59	296.09
10	95.04	298.04
11	95.06	298.31

Circle Center At X = 78.61 ; Y = 300.82 ; and Radius = 16.66

Factor of Safety

*** 1.508 ***

Failure Surface Specified By 10 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	85.00	286.00
2	86.82	286.84

3	88.52	287.88
4	90.10	289.11
5	91.53	290.51
6	92.79	292.06
7	93.86	293.75
8	94.74	295.55
9	95.40	297.44
10	95.61	298.35

Circle Center At X = 78.62 ; Y = 302.21 ; and Radius = 17.42

Factor of Safety

*** 1.511 ***

Failure Surface Specified By 10 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	85.00	286.00
2	86.71	287.04
3	88.31	288.24
4	89.79	289.58
5	91.15	291.05
6	92.36	292.64
7	93.42	294.34
8	94.32	296.13
9	95.05	297.99
10	95.14	298.31

Circle Center At X = 74.62 ; Y = 304.89 ; and Radius = 21.56

Factor of Safety

*** 1.511 ***

Failure Surface Specified By 12 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	81.67	283.04
2	83.56	283.67
3	85.37	284.52
4	87.08	285.57
5	88.65	286.81
6	90.07	288.22
7	91.31	289.78
8	92.37	291.48
9	93.23	293.28
10	93.88	295.18
11	94.30	297.13
12	94.42	298.27

Circle Center At X = 77.13 ; Y = 299.79 ; and Radius = 17.36

Factor of Safety

*** 1.512 ***

Failure Surface Specified By 12 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	82.78	284.02
2	84.71	284.52
3	86.57	285.27
4	88.32	286.24
5	89.92	287.43
6	91.36	288.82
7	92.61	290.38
8	93.65	292.09
9	94.46	293.92
10	95.03	295.84
11	95.35	297.81
12	95.36	298.33

Circle Center At X = 79.92 ; Y = 299.22 ; and Radius = 15.47

Factor of Safety

*** 1.512 ***

Failure Surface Specified By 11 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	83.89	285.01
2	85.71	285.85
3	87.42	286.87
4	89.03	288.07

5	90.50	289.42
6	91.82	290.92
7	92.98	292.56
8	93.96	294.30
9	94.75	296.14
10	95.35	298.04
11	95.40	298.33

Circle Center At X = 76.80 ; Y = 302.80 ; and Radius = 19.14

Factor of Safety
*** 1.513 ***

Failure Surface Specified By 10 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	83.89	285.01
2	85.72	285.82
3	87.42	286.86
4	88.98	288.12
5	90.35	289.58
6	91.52	291.20
7	92.46	292.97
8	93.16	294.84
9	93.61	296.79
10	93.74	298.22

Circle Center At X = 78.77 ; Y = 299.11 ; and Radius = 15.00

Factor of Safety
*** 1.513 ***

Failure Surface Specified By 11 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	83.89	285.01
2	85.69	285.88
3	87.40	286.92
4	89.00	288.12
5	90.47	289.47
6	91.81	290.96
7	92.99	292.57
8	94.01	294.30
9	94.85	296.11
10	95.51	298.00
11	95.60	298.35

Circle Center At X = 75.98 ; Y = 303.79 ; and Radius = 20.37

Factor of Safety
*** 1.516 ***

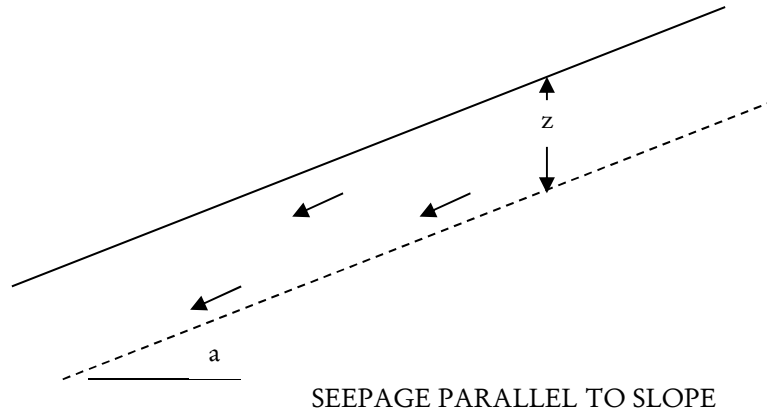
**** END OF GSTABL7 OUTPUT ****

APPENDIX E

SURFICIAL SLOPE STABILITY

SURFICIAL SLOPE STABILITY

Existing Qvop Slope 0.66:1 (H:V) Maximum



ASSUMED PARAMETERS

z	Depth of Saturation (ft)	2
a	Slope Angle (H:1)	0.66
γ_w	Unit Weight of Water (pcf)	62.4
γ_T	Saturated Unit Weight of Soil (pcf)	120
ϕ	Angle of Internal Friction Along Plane of Failure (°)	34
c	Cohesion Along Plane of Failure (psf)	200

FACTOR OF SAFETY

$$FS = \frac{c + T (\tan \phi)}{T} \longrightarrow FS = \frac{c + (\gamma_T - \gamma_w)(z)(\cos a)^2(\tan \phi)}{(\gamma_T)(z)(\sin a)(\cos a)}$$

$$FS = 2.0$$

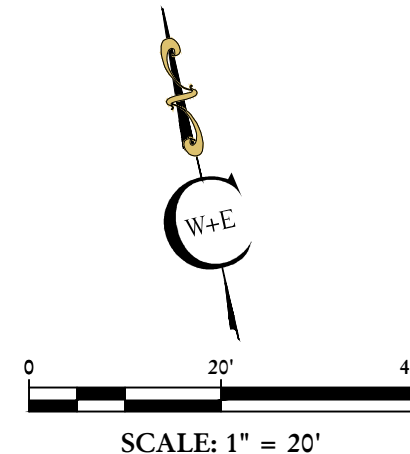
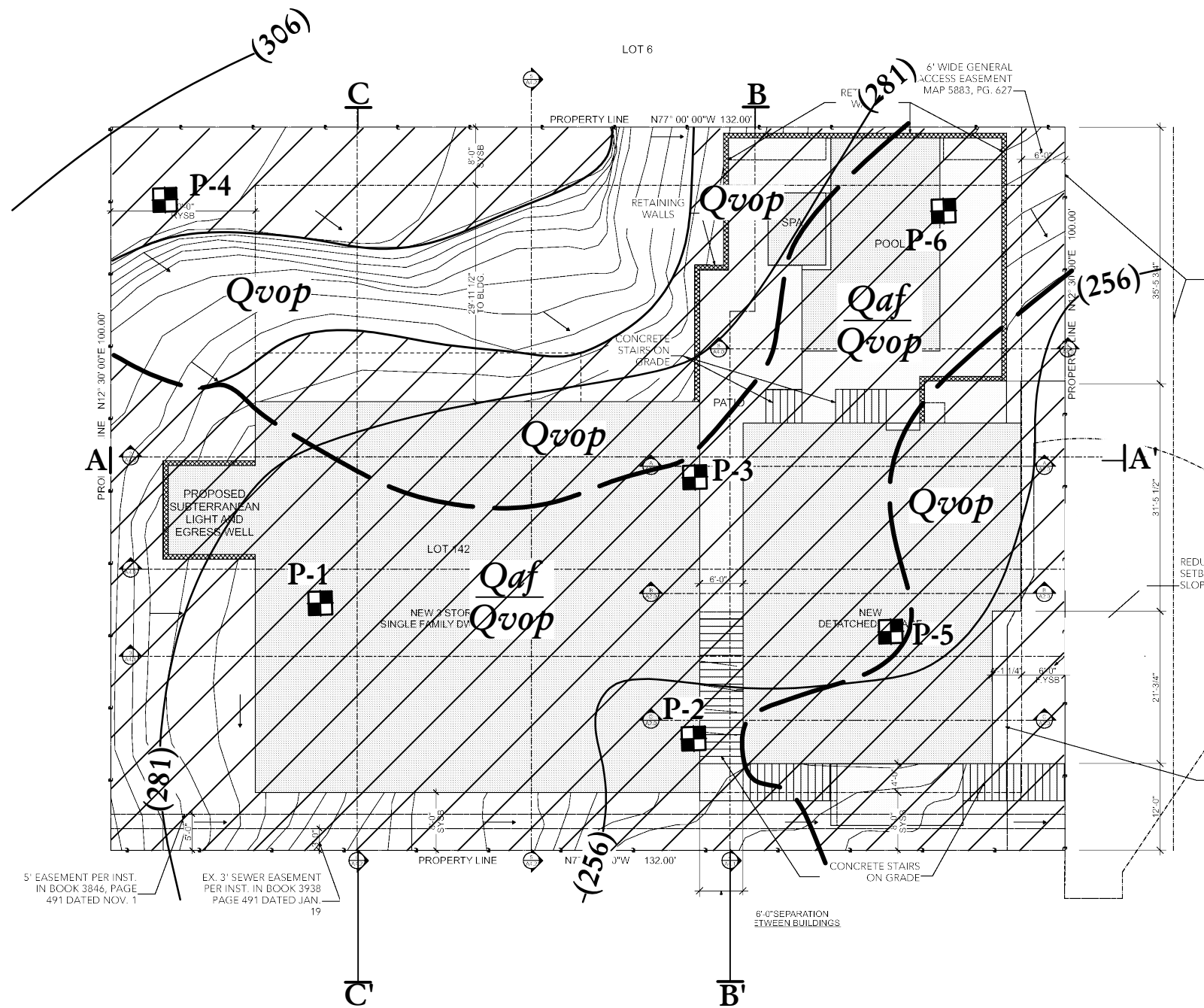


CHRISTIAN WHEELER
ENGINEERING

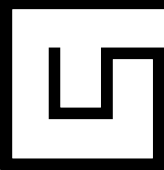
Volen Residence

450 Tavera Place
San Diego, California


DATE:	Nov-2017	JOB NO.:	2170296.01
BY:	DRR	APPENDIX:	F-1



CWE LEGEND	
	P-6 APPROXIMATE TEST PIT LOCATION
	GEOLOGIC CONTACT
	ARTIFICIAL FILL OVER VERY OLD PARALIC DEPOSITS
	VERY OLD PARALIC DEPOSITS
	GEOLOGIC CROSS SECTION
	PRE-DISTURBED TOPOGRAPHY (1953)
	AREA OF PREVIOUS DISTURBANCE/GRADING



505 architecture
4901 morena blvd suite 505
san diego california 92117
858.735.2375 or 661.979.2098



VOLEN HOUSE
SAN DIEGO, CA

SITE PLAN

10/3/17
A1.1
SHEET ___ OF ___

SITE PLAN AND GEOTECHNICAL MAP

VOLEN RESIDENCE 450 TAVARA PLACE SAN DIEGO, CALIFORNIA			
DATE:	NOVEMBER 2017	JOB NO.:	2170296.01
BY:	DRR/SD	PLATE NO.:	1

