Attachment 4

Archaeological Resources Report



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August 7, 2020

Ms. Linda Scroggs Murraysmith 3400 Douglas Boulevard, Suite 190 Roseville, CA 95661

Subject: Archaeological Assessment for the Arana Gulch Trunk Line Replacement, Santa Cruz County, California

Dear Ms Scroggs:

Dudek has completed an archaeological assessment for the Arana Gulch Trunk Line Replacement (Project), an undertaking by the Santa Cruz County Sanitation District (SCCSD).

The project consists of replacement of an approximate 2,400-linear foot segment of an existing 10-inch asbestos cement gravity sanitary sewer trunk line to replace the existing aging, deteriorated line and manholes with new 10-inch and 14-inch HDPE pipelines. The Project will also include replacement of approximately 325 linear feet of an existing 6-inch sewer line that collects and transmits flows from Salisbury Drive to the Arana sewer trunk line, as well as, replacement of approximately 225 linear feet of an existing 6-inch sewer line in Eleanor Way. Existing manholes would be replaced or rehabilitated with the addition of some new manholes. The project location is shown on Figure 1 appended

The assessment included a cultural resources records search and a pedestrian survey of the Area of Potential Effect (APE). The assessment complies with guidelines outlined in Section 106 of the National Historic Preservation Act of 1966 (36 CFR 800), as the Project may require permits from both federal (U.S. Army Corps of Engineers) and state agencies. The assessment also complies with the California Environmental Quality Act (CEQA) Section 15064.5, PRC 5024, and applicable local regulations. The Project's APE is approximately 1.5 acres of land as shown on Figure 2 appended.

The records search at the Northwest Information Center (NWIC) of the California Historical Resources Information System indicated that eight cultural resources reports include some portion of the APE. There are no recorded cultural resources that are within the APE. The pedestrian survey was uniformly negative for cultural resources potentially eligible for the National Register of Historic Places (NRHP) within the APE. The level of effort and our findings described in this report meet Section 106 requirements for this undertaking. Dudek recommends a finding of *No Historic Properties Affected* for the Project. Under CEQA, no historic resources will be impacted.

1 Description of the Project and Its Area of Potential Effects (36 CFR § 800.11(d)(1))

The APE includes approximately 1.5 acres of land, as shown on Figure 2 (Area of Potential Effect) and is described in the project improvement plans (Attachment 4 by reference). The APE includes the area where ground disturbance

is required to install the improvements noted above. The majority of the pipeline would be installed using trenchless methods that would involve limited ground disturbance. The APE also includes temporary access and staging areas. Other staging areas in developed areas near the project may also be used which are not included in the APE. The maximum depth of the APE is eight feet below the surface within an approximate 10- to 15-wide construction corridor for the two segments in which the pipeline would be installed using conventional open cut trench methods.

2 Description of the Steps Taken to Identify Historic Properties (36 CFR § 800.11(e)(2))

2.1 Regulatory Context

2.1.1 Federal Regulations

The NRHP is the United States' official list of districts, sites, buildings, structures, and objects worthy of preservation. Overseen by the National Park Service (NPS) under the U.S. Department of the Interior, the NRHP was authorized under the National Historic Preservation Act (NHPA), as amended. Its listings encompass all National Historic Landmarks and historic areas administered by the NPS.

NRHP guidelines for the evaluation of historic significance were developed to be flexible and to recognize the accomplishments of all who have made significant contributions to the nation's history and heritage. Its criteria is designed to guide state and local governments, federal agencies, and others in evaluating potential entries in the NRHP. For a property to be listed in or determined eligible for listing, it must be demonstrated to possess integrity, and meet at least one of the following criteria:

The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:

- A. That are associated with events that have made a significant contribution to the broad patterns of our history; or
- B. That are associated with the lives of persons significant in our past; or
- C. That embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- D. That have yielded, or may be likely to yield, information important in prehistory or history.

Integrity is defined in NRHP guidance, *How to Apply the National Register Criteria*, as "the ability of a property to convey its significance. To be listed in the NRHP, a property must not only be shown to be significant under the NRHP criteria, but it also must have integrity" (NPS 1990). NRHP guidance further asserts that properties be completed at least 50 years ago to be considered for eligibility. Properties completed fewer than 50 years before evaluation must be proven to be "exceptionally important" (criteria consideration G) to be considered for listing.

A historic property is defined as "any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the NRHP maintained by the Secretary of the Interior. This term includes artifacts, records, and remains that are related to and located within such properties. The term includes properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization, and that meet the NRHP criteria" (36 Code of Federal Regulations (CFR) Sections 800.16(i)(1)).

Effects on historic properties under Section 106 of the National Historic Preservation Act are defined in the assessment of adverse effects in 36 CFR Sections 800.5(a)(1).

An adverse effect is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. Consideration shall be given to all qualifying characteristics of a historic property, including those that may have been identified subsequent to the original evaluation of the property's eligibility for the National Register. Adverse effects may include reasonably foreseeable effects caused by the undertaking that may occur later in time, be farther removed in distance, or be cumulative.

Adverse effects on historic properties are clearly defined and include, but are not limited to:

- (i) Physical destruction of or damage to all or part of the property;
- (ii) Alteration of a property, including restoration, rehabilitation, repair, maintenance, stabilization, hazardous material remediation and provision of handicapped access, that is not consistent with the Secretary's Standards for the Treatment of Historic Properties (36 CFR Part 68) and applicable guidelines;
- (iii) Removal of the property from its historic location;
- (iv) Change of the character of the property's use or of physical features within the property's setting that contributes to its historic significance;
- (v) Introduction of visual, atmospheric or audible elements that diminish the integrity of the property's significant historic features;
- (vi) Neglect of a property which causes its deterioration, except where such neglect and deterioration are recognized qualities of a property of religious and cultural significance to an Indian tribe or Native Hawaiian organization; and
- (vii) Transfer, lease, or sale of property out of federal ownership or control without adequate and legally enforceable restrictions or conditions to ensure long-term preservation of the property's historic significance (36 CFR 800.5 (2)).

To comply with Section 106, the criteria of adverse effect are applied to historic properties, if any exist in the Project's Area of Potential Effect (APE), pursuant to 36 CFR Sections 800.5(a)(1). If no historic properties are identified in the APE, a finding of "no historic properties affected" will be made for the proposed Project. If there are historic properties in the APE, application of the criteria of adverse effect will result in Project-related findings of either "no adverse effect" or of "adverse effect," as described above. A finding of no adverse effect may be

appropriate when the undertaking's effects do not meet the thresholds in criteria of adverse effect 36 CFR Sections 800.5(a)(1), in certain cases when the undertaking is modified to avoid or lessen effects, or if conditions were imposed to ensure review of rehabilitation plans for conformance with the Secretary of the Interior's Standards for the Treatment of Historic Properties (codified in 36 CFR Part 68).

If adverse effects findings were expected to result from the proposed Project, mitigation would be required, as feasible, and resolution of those adverse effects by consultation may occur to avoid, minimize, or mitigate adverse effects on historic properties pursuant to 36 CFR Part 800.6(a).

2.1.2 State of California

2.1.2.1 The California Register of Historical Resources

In California, the term "historical resource" includes "any object, building, structure, site, area, place, record, or manuscript which is historically or archaeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California" (Public Resources Code (PRC) Section 5020.1(j)). In 1992, the California legislature established the California Register of Historical Resources (CRHR) "to be used by state and local agencies, private groups, and citizens to identify the state's historical resources and to indicate what properties are to be protected, to the extent prudent and feasible, from substantial adverse change" (PRC Section 5024.1(a)). The criteria for listing resources on the CRHR, enumerated in the following text, were developed to be in accordance with previously established criteria developed for listing in the NRHP. According to PRC Section 5024.1(c)(1-4), a resource is considered historically significant if it (i) retains "substantial integrity," and (ii) meets at least one of the following criteria:

- (1) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage
- (2) Is associated with the lives of persons important in our past
- (3) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values
- (4) Has yielded, or may be likely to yield, information important in prehistory or history

To understand the historic importance of a resource, sufficient time must have passed to obtain a scholarly perspective on the events or individuals associated with the resource. A resource less than 50 years old may be considered for listing in the CRHR if it can be demonstrated that sufficient time has passed to understand its historical importance (see 14 CCR 4852(d)(2)).

The CRHR protects cultural resources by requiring evaluations of the significance of prehistoric and historic resources. The criteria for the CRHR are nearly identical to those for the NRHP, and properties listed or formally designated as eligible for listing in the NRHP are automatically listed in the CRHR, as are state landmarks and points of interest. The CRHR also includes properties designated under local ordinances or identified through local historical resource surveys.

2.1.2.2 California Environmental Quality Act

As described further in the following text, the following CEQA statutes and CEQA Guidelines are of relevance to the analysis of archaeological, historic, and tribal cultural resources:

PRC Section 21083.2(g) defines "unique archaeological resource."

PRC Section 21084.1 and CEQA Guidelines Section 15064.5(a) define "historical resources." In addition, CEQA Guidelines Section 15064.5(b) defines the phrase "substantial adverse change in the significance of an historical resource." It also defines the circumstances when a project would materially impair the significance of a historical resource.

PRC Section 21074(a) defines "tribal cultural resources."

PRC Section 5097.98 and CEQA Guidelines Section 15064.5(e) set forth standards and steps to be employed following the accidental discovery of human remains in any location other than a dedicated ceremony.

PRC Sections 21083.2(b)–(c) and CEQA Guidelines Section 15126.4 provide information regarding the mitigation framework for archaeological and historic resources, including examples of preservation-in-place mitigation measures; preservation-in-place is the preferred manner of mitigating impacts to significant archaeological sites because it maintains the relationship between artifacts and the archaeological context, and may also help avoid conflict with religious or cultural values of groups associated with the archaeological site(s).

Under CEQA, a project may have a significant effect on the environment if it may cause "a substantial adverse change in the significance of an historical resource" (PRC Section 21084.1; CEQA Guidelines Section 15064.5(b)). If a site is either listed or eligible for listing in the CRHR, or if it is included in a local register of historic resources, or identified as significant in a historical resources survey (meeting the requirements of PRC Section 5024.1(q)), it is a "historical resource" and is presumed to be historically or culturally significant for purposes of CEQA (PRC Section 21084.1; CEQA Guidelines Section 15064.5(a)). The lead agency is not precluded from determining that a resource is a historical resource, even if it does not fall within this presumption (PRC Section 21084.1; CEQA Guidelines Section 15064.5(a)).

A "substantial adverse change in the significance of an historical resource" reflecting a significant effect under CEQA means "physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired" (CEQA Guidelines Section 15064.5(b)(1); PRC Section 5020.1(q)). In turn, the significance of a historical resource is materially impaired when a project does any of the following:

- (1) Demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the California Register; or
- (2) Demolishes or materially alters in an adverse manner those physical characteristics that account for its inclusion in a local register of historical resources pursuant to Section 5020.1(k) of the PRC or its identification in an historical resources survey meeting the requirements of Section 5024.1(g) of the PRC,

unless the public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically or culturally significant; or

(3) Demolishes or materially alters in an adverse manner those physical characteristics of a historical resource that convey its historical significance and that justify its eligibility for inclusion in the California Register as determined by a lead agency for purposes of CEQA [CEQA Guidelines Section 15064.5(b)(2)].

Pursuant to these sections, the CEQA inquiry begins with evaluating whether a project site contains any "historical resources," then evaluates whether that project will cause a substantial adverse change in the significance of a historical resource such that the resource's historical significance is materially impaired.

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

Section 21083.2(g) defines a unique archaeological resource as an archaeological artifact, object, or site about which it can be clearly demonstrated that without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

- (1) Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information
- (2) Has a special and particular quality such as being the oldest of its type or the best available example of its type
- (3) Is directly associated with a scientifically recognized important prehistoric or historic event or person

Impacts to non-unique archaeological resources are generally not considered a significant environmental impact (PRC Section 21083.2(a); CEQA Guidelines Section 15064.5(c)(4)). However, if a non-unique archaeological resource qualifies as tribal cultural resource (PRC 21074(c); 21083.2(h)), further consideration of significant impacts is required.

CEQA Guidelines Section 15064.5 assigns special importance to human remains and specifies procedures to be used when Native American remains are discovered. As described in the following text, these procedures are detailed in PRC Section 5097.98.

2.1.2.3 California State Assembly Bill 52

AB 52 of 2014 amended PRC Section 5097.94 and added PRC Sections 21073, 21074, 21080.3.1, 21080.3.2, 21082.3, 21083.09, 21084.2, and 21084.3. AB 52 established that TCRs must be considered under CEQA and also provided for additional Native American consultation requirements for the lead agency. Section 21074 describes a TCR as a site, feature, place, cultural landscape, sacred place, or object that is considered of cultural value to a California Native American Tribe and that is either:



- On or determined to be eligible for the California Register of Historical Resources or a local historic register;
 or
- A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Section 5024.1.

AB 52 formalizes the lead agency-tribal consultation process, requiring the lead agency to initiate consultation with California Native American groups that are traditionally and culturally affiliated with the project site, including tribes that may not be federally recognized. Lead agencies are required to begin consultation prior to the release of a negative declaration, mitigated negative declaration, or environmental impact report.

Section 1 (a)(9) of AB 52 establishes that "a substantial adverse change to a tribal cultural resource has a significant effect on the environment." Effects on TCRs should be considered under CEQA. Section 6 of AB 52 adds Section 21080.3.2 to the PRC, which states that parties may propose mitigation measures "capable of avoiding or substantially lessening potential significant impacts to a tribal cultural resource or alternatives that would avoid significant impacts to a tribal cultural resource." Further, if a California Native American tribe requests consultation regarding project alternatives, mitigation measures, or significant effects to tribal cultural resources, the consultation shall include those topics (PRC Section 21080.3.2[a]). The environmental document and the mitigation monitoring and reporting program (where applicable) shall include any mitigation measures that are adopted (PRC Section 21082.3[a]).

2.1.2.4 Native American Historic Cultural Sites

State law (PRC Section 5097 et seq.) addresses the disposition of Native American burials in archaeological sites and protects such remains from disturbance, vandalism, or inadvertent destruction; establishes procedures to be implemented if Native American skeletal remains are discovered during construction of a project; and established the Native American Heritage Commission (NAHC) to resolve disputes regarding the disposition of such remains. In addition, the Native American Historic Resource Protection Act makes it a misdemeanor punishable by up to 1 year in jail to deface or destroy an Indian historic or cultural site that is listed or may be eligible for listing in the CRHR.

2.1.2.5 California Health and Safety Code section 7050.5

In the event that Native American human remains or related cultural material are encountered, Section 15064.5(e) of the CEQA Guidelines (as incorporated from PRC Section 5097.98) and California Health and Safety Code Section 7050.5 define the subsequent protocol. If human remains are encountered, excavation or other disturbances shall be suspended of the site or any nearby area reasonably suspected to overlie adjacent human remains or related material. Protocol requires that a county-approved coroner be contacted in order to determine if the remains are of Native American origin. Should the coroner determine the remains to be Native American, the coroner must contact the NAHC within 24 hours. The most likely descendent may make recommendations to the landowner or the person responsible for the excavation work, for means of treating, with appropriate dignity, the human remains and any associated grave goods as provided in PRC Section 5097.98 (14 CCR 15064.5(e)).

2.1.3 Local Regulations

Santa Cruz County Code Chapters 16.40 (Native American Cultural Sites) and 16.44 (Paleontological Resource Protection) provide requirements and regulations for the identification and treatment of cultural and paleontological resources within the County.

2.2 Environmental Context

The APE lies at about 40 feet above sea level within upper Arana Gulch, a perennial drainage that traverses the broad coastal terrace from the foothills the Santa Cruz Mountains south to Monterey Bay. The APE is approximately 1.5 miles north of Monterey Bay and approximately 7.5 miles east of the Pacific Ocean. Geology for the Project Area is characterized as Quaternary alluvium and marine deposits of the Pleistocene to Holocene eras, which includes alluvial, terrace, and bed deposits (USGS 2019). Soils in the APE are characterized north of Highway 1 as Soquel Loam-Holocene, 2 to 9 percent slope, and south of Highway 1 as Elkhorn Sandy Loam 15 to 30 percent slope (USDA NRCS 2019). The climate is Mediterranean, with cool wet winters and warm dry summers. The dominant vegetation type for the APE is mixed hardwood forest (Küchler 1977).

2.3 Cultural Context

2.3.1 Prehistory

The prehistory of indigenous groups living within Santa Cruz County follows general patterns identified within the archaeological record of the greater Central Coast area of California. These patterns represent adaptive shifts in settlement, subsistence strategies and technological innovation demonstrated by prehistoric people throughout the Holocene and earlier. The California Central Coast Chronology (Jones et al. 2007) presents an overview of prehistoric life ranging upwards of 10,000 years. Six temporal periods describe changes in prehistoric settlement patterns, subsistence practices, and technological advances (Table 1).

Table 1. California Central Coast Chronology

Temporal Period	Date (BC-AD)	Date (BP)	Artifact Assemblage	Example Sites
Paleo-Indian (highly-mobile)	pre-8000 BC	10,000 BP or older	Isolated fluted points, sparse lithic scatters	Possibly SCL-178 and SCR- 177
Millingstone/ Early Archaic (highly mobile)	8000 - 3500 BC	5,500 – 10,000 BP	Millingstones/handstones, core-cobble tools, lanceolate or large side-notched projectile points, eccentric crescents, Olivella beads: thick rectangular (L-series)	SCL-65, SCL-178, SCL-237, SCR-7, SCR-60/130, SMA-134, MNT-229
Early (sites in more varied contexts)	3500 - 600 BC	2,600 – 5500 BP	Mortar and pestle introduced, formalized flaked stone tools (Rossi Square-stemmed and Año Nuevo long-stem points), Olivella beads: Spire- lopped (A), End-ground (B2b and B2c), Cap (B4), and Rectangular (L-series)	SCL-33, SCL-178, SCL-163, SCR-7, SCR-38/123, MNT-108, MNT-238, MNT-391, MNT-1918
Middle (more long-term residences)	600 BC to AD 1000	950 – 2,600 BP	Mortars and pestles (but still some millingstone/handstones), contracting-stemmed projectile points, greater variety of Olivella shell beads, Haliotis ornaments, circular shell fishhooks, bone tools, grooved stone net sinkers	SCL-178, SCL-163, SCL-613, SCR-9, SMA-77, SMA-218, MNT-101, MNT-229, MNT-234, MNT-282

Temporal Period	Date (BC-AD)	Date (BP)	Artifact Assemblage	Example Sites
Middle-Late Transition (social reorganization)	AD 1000- 1250	700 – 950 BP	Mortars and pestles (but still some millingstone/handstones), bow/arrow technology introduced, Olivella shell bead types: B2, B3, G1, G2, G6, and K1, notched net sinkers, hopper	SCL-690, MNT-1233, MNT-281, MNT-1754, MNT-745
Late (more permanent residential sites with additional seasonal sites)	AD 1250- 1769	181 – 700 BP	mortars, and circular shell fishhooks Mortars and pestles (but still some millingstone/handstones), Cottonwood (or Canaliño) and Desert Side-notched arrow points, flaked stone drills, steatite and clamshell disc beads, Haliotis disc beads, Olivella bead types: E1, E2, B2, B3, G1, G6, K1 types	SCL-119/SBN-24/H, SCL-272, SCL-828, SCL-341, SCR-177, MNT-879, MNT-1765, MNT- 1485/H MNT-1486/H

2.3.1.1 Paleo-Indian (10,000 BP or older)

The Paleo-Indian era represents people's initial occupation of the region. These were highly mobile hunters who focused subsistence efforts on large mammals. Multiple migrations into the region may have occurred both terrestrially and by sea (Erlandson et al. 2007). Although no coastal Paleo-Indian sites in the Central California Coast region have been discovered, they may have been inundated as a result of rising ocean levels throughout the Holocene (Jones and Jones 1992).

Evidence of this era is generally found through isolated artifacts or sparse lithic scatters (Bertrando 2004). In the San Luis Obispo area, fluted points characterizing this era are documented near the town of Nipomo (Mills et al. 2005) and Santa Margarita (Gibson 1996), but so far, no fluted points have been found in the Central Coast north of the Santa Barbara area. Possible evidence for Paleo-Indian occupation is reported in buried contexts in CA-SCL-178 in the Santa Clara Valley and at CA-SCR-177 in Scotts Valley (Cartier 1993). The early radiocarbon dates from charcoal, however, pose questions of validity (Jones et al. 2007).

2.3.1.2 Millingstone (5,500 – 10,000 BP)

Settlement in the Central Coast appears with more frequency in the Millingstone Period. Sites of this era have been discovered in Big Sur (Jones 1993; Jones 2003; Fitzgerald and Jones 1999), Moss Landing (Dietz et al. 1988; Jones and Jones 1992; Milliken et al. 1999), Watsonville (Culleton et al. 2005) and in the Coyote Creek area of Santa Clara (Hildebrandt and Mikkelsen 1993). Similar to the Paleo-Indian era, people living during the Millingstone era were likely highly mobile. Assemblages are characterized by abundant millingstones and handstones, cores and core-cobble tools, thick rectangular (L-series) *Olivella* beads, and a low incidence of projectile points, which are generally lanceolate or large side-notched varieties (Jones et al. 2007). Eccentric crescents are also found in Millingstone components. Sites are often associated with shellfish remains and small mammal bone, which suggest a collecting-focused economy. Stable isotope studies on human bone, from a coastal Millingstone component at CA-SCR-60/130, indicate a diet composed of 70%–84% marine resources (Newsome et al. 2004). Contrary to these findings, deer remains are abundant at other Millingstone sites (cf. Jones et al. 2008), which suggests a flexible subsistence focus.

2.3.1.3 Early (2,600 – 5500 BP)

The Early Period corresponds with the earliest era the "Hunting Culture" which continues through the Middle-Late Transition (Rogers 1929). The Early Period is marked by a greater emphasis on formalized flaked stone tools, such as projectile points and bifaces, and the initial use of mortar and pestle technology. Early Period sites are located

in more varied environmental contexts than millingstone sites, suggesting more intensive use of the landscape than practiced previously (Jones and Waugh 1997).

Early Period artifact assemblages are characterized by Large Side-notched points, Rossi Square-stemmed points, Spire-lopped (A), End-ground (B2b and B2c), Cap (B4), and Rectangular (L-series) *Olivella* beads. Other artifacts include less temporally diagnostic Contracting-stemmed and Año Nuevo long-stemmed points, and bone gorges. Ground stone artifacts are less common relative to flaked stone tools when compared with Millingstone-era sites.

Early Period sites are common and often found in estuary settings along the coast or along river terraces inland. Coastal sites dating to this period include CA-MNT-108 (Breschini and Haversat 1992a), CA-SCR-7 (Jones and Hildebrandt 1990), and CA-SCR-38/123 (Bryne 2002, Jones and Hildebrandt 1994). Inland sites include CA-SCL-33, CA-SCL-178 and CA-SCL-163 (Hildebrandt and Mikkelsen 1993).

Archaeologists have long debated whether the shift in site locations and artifact assemblages during this time represent either population intrusion as a result of mid-Holocene warming trends, or an in-situ adaptive shift (cf. Mikkelsen et al. 2000). The initial use of mortars and pestles during this time appears to reflect a more labor intensive economy associated with the adoption of acorn processing (cf. Basgall 1987).

2.3.1.4 Middle (950 – 2,600 BP)

The trend toward greater labor investment is apparent in the Middle Period. During this time, there is increased use of plant resources, more long-term occupation at habitation sites, and a greater variety of smaller "use-specific" localities. Artifacts common to this era include Contracting-stemmed projectile points, a greater variety of *Olivella* shell beads and *Haliotis* ornaments that include discs and rings (Jones 2003). Bone tools and ornaments are also common, especially in the richer coastal contexts (Jones and Ferneau 2002a; Jones and Waugh 1995), and circular shell fishhooks are present for the first time. Grooved stone net sinkers are also found in coastal sites. Mortars and pestles become more common than millingstones and handstones at some sites (Jones et al. 2007). Important Middle Period sites include CA-MNT-282 at Willow Creek (Jones 2003; Pohorecky 1976), CA-SCR-9 in the Santa Cruz Mountains (Hylkema 1991), CA-SMA 218 at Año Nuevo (Hylkema 1991), CA-SCL-613 at San Francisquito Creek, and a continued presence at SCL-178, SCL-163 (Rosenthal and Meyer 2004).

The Middle Period is a continuation of the "Hunting Culture" because of the greater emphasis on labor-intensive technologies that include projectile and plant processing (Jones et al. 2007; Rogers 1929). Additionally, faunal evidence highlights a shift toward prey species that are more labor intensive to capture, either by search and processing time or technological needs. These labor-intensive species include small schooling fishes, sea otters, rabbits, and plants such as acorn. Early and Middle Period sites are difficult to distinguish without shell beads due to the similarity of artifact assemblages (Jones and Haney 2005).

2.3.1.5 Middle-Late Transition (700 – 950 BP)

The Middle-Late Transition corresponds with the end of the "Hunting Culture" (Rogers 1929). It also corresponds with social reorganization across the region due to a period of rapid climatic change known as the Medieval Climatic Anomaly (cf. Stine 1994). The Medieval Climatic Anomaly is characterized by drastic fluctuations between cool-wet and warm-dry climatic conditions (Jones et al. 1999). Archaeological sites are rarer during this period, which may reflect a decline in regional population (Jones and Ferneau 2002b). Artifacts associated with the Middle-Late Transition include contracting-stemmed, double side-notched, and small leaf-shaped projectile points. The latter

are thought to represent the introduction of bow and arrow technology to the region. A variety of *Olivella* shell bead types are found in these deposits and include B2, B3, G1, G2, G6, and K1 varieties, notched line sinkers, hopper mortars, and circular shell fishhooks (Jones 1995; Jones et al. 2007). Sites that correspond with this time are CA-MNT-1233 and CA-MNT-281 at Willow Creek (Pohorecky 1976), CA-MNT-1754, and CA-MNT-745 in Priest Valley (Hildebrandt 2006) and CA-SCL-690 in San Jose (Hylkema 2007).

2.3.1.6 Late (181 – 700 BP)

Late Period sites are found in a variety of environmental conditions and include newly occupied task sites and encampments, as well as previously occupied localities. Artifacts associated with this era include Cottonwood (or Canaliño) and Desert Side-notched arrow points, flaked stone drills, steatite and clamshell disc beads, *Haliotis* disc beads, *Olivella* bead types E1 and E2, and earlier used B2, B3, G1, G6, and K1 types. Millingstones, handstones, mortars, pestles, and circular shell fishhooks also continue to be used (Jones et al. 2007). Sites dating to this era are found in coastal and interior contexts. Coastal sites dating to the Late Period tend to be resource acquisition or processing sites, while evidence for residential occupation is more common inland (Jones et al. 2007). Late Period sites include CA-MNT-143 at Asilomar State Beach (Brady et al. 2009), CA-MNT-1765 at Moro Cojo Slough (Fitzgerald et al. 1995), CA-MNT-1485/H and -1486/H at Rancho San Carlos (Breschini and Haversat 1992b), and CA-SCR-177 at Davenport Landing (Fitzgerald and Ruby 1997).

2.3.2 Ethnohistory

The Project Area lies within the territory occupied by people called "Costanoan" by the Europeans at the time of contact. Many modern descendants prefer to be called "Ohlone," and are referred to as such hereafter. The Ohlone spoke eight separate Penutian dialects and lived between the vicinities of what is now Richmond in the north to Big Sur in the south. They were organized under approximately fifty autonomous polities or tribelets (Levy 1978). At the time of European contact, the Awaswas Ohlone dialects was reportedly spoken within the portion of Santa Cruz County where the Project lies. Ethnographic accounts of Ohlone at the time of contact described them as living in permanent villages, but also spending time in smaller camps to collect or process seasonal resources such as acorn or shellfish (Levy 1978).

2.3.3 History

2.3.3.1 Spanish Period (1770-1822)

The first European to explore the Central Coast was Sebastián Vizcaíno, who, in 1602, was sent by the Spanish government to map the Californian coastline (Holm et al. 2013). It was Vizcaíno who named the area "Puerto de Monterey" after the viceroy of New Spain. The Gaspar de Portolá expedition traveled through the region in 1769 and returned again in 1770 to establish the Monterey Presidio, Spain's first military base in Alta California. Mission Santa Cruz was established in 1791 as the twelfth mission to be established in California. Villa Branciforte was also established at that time on the eastern part of Santa Cruz as one of three Spanish civil settlements in California. The Spanish missions drastically altered the lifeways of the Native Americans. Spanish missionaries conscripted members of local Native American communities to move to the Mission, where they were indoctrinated as Catholic neophytes.

2.3.3.2 Mexican Period (1822-1846)

Mexico gained independence from Spain in 1821 and in 1834, the Mexican government secularized the mission lands releasing the Native Americans from control of the mission-system. The Mexican government encouraged settlement by granting large tracts of former mission lands to private citizens. Most land grant land was used for raising cattle and sheep.

2.3.3.3 American Period (1848-Present)

The United States of America acquired Alta California in 1848 after the Mexican-American War. California became a state in 1850 and Santa Cruz was designated as one of the 27 original counties of California on February 18, 1850. The new state of California recognized the ownership of lands in the state distributed under the Mexican Land Grants of the previous several decades (Waugh 2003; Koch 1973).

As the Gold Rush was picking up steam in 1849, a massive influx of people seeking gold steadily flooded the rural counties of California. Insightful entrepreneurs in Santa Cruz also saw the arrival of opportunity-seeking laborers as a means to harvest the abundant natural resources found throughout the area. The lumber, fishing, lime, cement, and leisure industries formed the economic foundation of Santa Cruz County. Later economic grown was found in agriculture derived from the fertile acreage of the central and south portions of the County (Clark 2008).

2.4 NWIC Records Search

In order to identify historic properties located within the APE that might be affected by the proposed undertaking, Dudek defined a study area that includes the APE and a 0.25-mile buffer for previously recorded resources and cultural reports. On December 2, 2019, Dudek archaeologist, Sarah Brewer, B.A., conducted the records search at the Northwest Information Center (NWIC) of the California Historical Resources Information System (CHRIS) at Sonoma State University (NWIC File No. 19-0932). The CHRIS search also included a review of the NRHP, CRHR, California Inventory of Historic Resources, historical maps, and local inventories.

2.5 Surface Reconnaissance of the APE

On December 19, 2019, Dudek archaeologists John Schlagheck, MA, RPA, and Kolin Taylor, BA, conducted an intensive survey of the entire APE. Mr. Schlagheck meets the Secretary of the Interior's Professional Qualifications Standards for Archeology (48 Federal Register 44738–44739). The focus of the survey was to identify whether archaeological resources were present within or immediately adjacent to the APE. The intensive pedestrian survey was completed using less than five-meter transects in order to identify potential surface archaeological deposits.

The Basis for Determining that No Historic Properties Are Present or AFFECTED (36 CFR § 800.11(d)(3))

3.1 Results of NWIC Records Search

3.1.1 Previous Cultural Resources Studies

There are eight studies that include coverage within the APE. Fourteen additional studies have been conducted within the quarter-mile buffer (Table 2). The studies within the APE are summarized following Table 2. Details of the records search and results are included in Attachment 2 of this report.

Table 2. Previous Technical Studies within the Records Search Area

NWIC #	Sub Cat	Authors	Date	Report Title	Publisher
		•		Reports within the APE	•
S-003956		Sonia Tamez	1977	An Archaeological Survey of Portions of Route 04-SCr-1 in Santa Cruz County, P.M. 10.2/15.8 04211-380331	Caltrans, District 4
S-003982		Mara Melandry and Sonia Tamez	1979	An Archaeological Survey of Portions of Route 04-Scr-1, P.M. 14.9 04226 -397951, Proposed Alterations to the Soquel Drive/Route 1 Interchange, City of Soquel, Santa Cruz County	Caltrans, District 4
S-003982	а	Margaret Buss	1979	Archaeological Test Excavation of CA-SCR-200 Phase II Investigations 04-Scr-1, P.M. 14.9 04226 -397951, Proposed Alterations to the Soquel Drive/Route 1 Interchange, City of Soquel, Santa Cruz County	Caltrans, District 4
S-003995		Mara Melandry	1979	Archaeological Survey Report, 04-SCr-1, P.M.10.2/15.8, 04223 - 380331, Landscaping Project in Santa Cruz County	Caltrans, District 4
S-004886		John W. Snyder	1979	Historic Architectural Survey Report, 04-SCr-1 P.M. 14.9, Soquel Drive, 04217- 397951; Appendix F	California Department of Transportation
S-024733		Robert Cartier	2001	Cultural Resources Evaluation of the Harbor High School Campus Modernization Project in the City of Santa Cruz	Archaeological Resource Management
S-036298		Deborah Jones and Patricia Mikkelsen	2008	Historic Property Survey Report for the Highway 1 Soquel to Morrissey Auxiliary Lanes Project, Santa Cruz, California, 05-SCR-1-PM, 14.96 to 15.94 (KP 24.08 to 25.65), EA 05-0F6500 Public Document	Far Western Anthropological Research Group, Inc.
S-036298	а	Deborah Jones, Patricia Mikkelsen	2008	Archaeological Survey Report for the Highway 1 Soquel to Morrissey Auxiliary Lanes Project, Santa Cruz, California Public Document	Far Western Anthropological Research Group, Inc.
S-036298	b	Rebecca Meta Bunse	2008	Historical Resources Evaluation Report, Highway 1 Soquel to Morrissey Auxiliary Lanes Project: 05-SCR-1-PM 14.96 to 15.94 (KP 24.08/25.65) EA 05-0F6500	JRP Historical Consulting, LLC
S-043542		Matthew R. Clark and John P. Schlagheck	2013	Archaeological Reconnaissance of the Harbor High School Baseball Field Renovation Project Area in the City of Santa Cruz, Santa Cruz County, California	Holman and Associates Archaeological Consultants
S-047397		Patricia Mikkelsen, Julia Costello, Jerome King, Charlene Duval, Edna Kimbro, and John Berg	2005	Archaeological Survey Report for the Highway 1 High Occupancy Vehicle Lane Widening Project, Santa Cruz, California, SCR-1 PM R7.6/16.8 (KP R12.22/27.02), EA 05-0C7300	Far Western Anthropological Research Group, Inc.; Foothill Resources, Ltd.
S-047397	а	Patricia Mikkelsen	2010	First Supplemental Archaeological Survey Report for the Highway 1 High Occupancy Vehicle Lane Widening Project, Santa Cruz, California, 05-SCR-1 PM R7.24/16.13 (KP R11.67/25.96), EA 05-0C7300	Far Western Anthropological Research Group, Inc.

S-004011		Gary S. Breschini	1979	Reports within 0.25-mile Buffer of APE A presence/absence survey for archaeological resources at the location	Archaeological Consulting
3-004011		Gary S. Breschill	1979	of the Oakwood Cemetery on Paul Sweet Road, Soquel, Santa Cruz County, California (letter report)	Archaeological Consulting
S-004090		Robert Cartier	1980	Archeological Evaluation for a Parcel of Land Off Capitola Ave., Santa Cruz, CA	Archeological Resource Management
S-013216		Thomas L. Jackson	1991	Archaeological reconnaissance APN 09-291-51, Santa Cruz, CA (letter report)	BioSystems Analysis, Inc.
S-017870		Mara Melandry	1996	Historic Property Survey Report and Finding of No Effect, 04-SCR-1, PM 9.2/16.6, 04229-135331, Proposed Pavement Overlay and Other Minor Improvements on Portions of Highway 1 in the Cities of Aptos, Soquel, Capitola and Santa Cruz in Santa Cruz County	Caltrans District 04
S-017870	а	Mara Melandry	1996	Archaeological Survey Report for a Proposed Pavement Overlay and Drainage Improvements on Portions of Highway 1 in the Cities of Aptos, Soquel, Capitola and Santa Cruz in Santa Cruz County, 04-Scr-01 PM 9.2/16.6 04229-135331	Caltrans
S-022987		John W. Snyder	2000	Historic Property Survey Report, Capitola Road Improvement Project between Santa Cruz and Capitola, California	P.S. Preservation Services
S-022987	а	John A. Nadolski	2000	Negative Archaeological Survey Report for the Capitola Road Improvement Project, Soquel Avenue to Thirtieth Avenue.	Pacific Legacy, Inc.
S-022987	b	John W. Snyder	2000	Historical Architectural Survey Report, Capitola Road Improvement Project between Santa Cruz and Capitola, California.	P. S. Preservation Services
S-024723		Robert Cartier	2001	Archival Research Report of the Harbor High School Property at 300 La Fonda Avenue in the City of Santa Cruz	Archaeological Resource Management
S-027266		Mary Doane and Trudy Haversat	2003	Preliminary Archaeological Reconnaissance of Assessor's Parcel 009- 411-09, Santa Cruz, Santa Cruz County, California	Archaeological Consulting
S-031331		Mary Doane and Trudy Haversat	2006	Preliminary Archaeological Reconnaissance of Assessor's Parcel 009- 112-21, Santa Cruz, Santa Cruz County, California	Archaeological Consulting
S-033977		Kelly Larsen	2007	Results of an Archaeological Records Search and Survey at 107 Fairland Way, Santa Cruz, Santa Cruz County (letter report)	Pacific Legacy, Inc.
S-036372		Thomas Wheeler	2009	Archaeological Survey Report, Santa Cruz Guardrail Project, Santa Cruz County, California, on State Route 1, 05-SCR-1, PM 9.00/17.62, EA 05-0R9100	California Department of Transportation
S-045855		Mary Doane and Gary S. Breschini	2014	Phase I Archaeological Survey for the St. Stephens Senior Apartment Complex on APN 026-021-22 in Santa Cruz, Santa Cruz County, California	Archaeological Consulting
S-045855	а	Carol Roland-Nawi	2015	HUD 2014_1216_001: Senior Apartments Development Project Located 2500 Soquel Avenue, Live Oak	Office of Historic Preservation
S-048262		Carrie D. Wills and Kathleen Crawford	2016	FCC Form 621 Collocation Submission Packet, SF05738A (Dominican Santa Cruz Hospital), 1555 Soquel Drive, Santa Cruz, CA 95065	Environmental Assessmant Specialist, Inc.
S-048262	а	Cher L. Peterson, Carrie D. Wills, and Kathleen A. Crawford	2016	Cultural Resoures Records Search and Site Visit Results for T-Mobile West, LLC Candidate SF05738A (Dominican Santa Cruz Hospital) 1555 Soquel Drive, Santa Cruz, Santa Cruz County, California	Environmental Assessment Specialists, inc
S-048262	b	Julianne Polanco	2016	FCC_2016_0325_008;SF05738A (Dominican Santa Cruz Hospital) 1555 Soquel Drive, Santa Cruz, Collocation	Office of Historic Preservation
S-048755		Patricia Paramoure	2015	Preliminary Archaeological Reconnaissance of Parcel (APN 009-392-73) 508 Park Way, Santa Cruz, CA 95062	Patricia Paramoure Archaeological Consulting
S-049275		Stella D'Oro	2017	Cultural Resources Assessment of Proposed Construction at 23 Acacia Way, Santa Cruz, California	Albion Environmental, Inc.

S-3956

This report is from a survey of the Highway 1 right-of-way for a highway landscaping project (Tamez 1977). Two cultural resources near the APE were noted and described, including CA-SCR-215H, a historical period refuse deposit on the west bank of Arana Creek just north of Highway 1, and CA-SCR-200, a sparse prehistoric shell scatter on both banks of Arana Creek also just north of Highway 1.

S-3982 and S-3982a

S-3982 reports the findings from a survey for proposed alterations to the Soquel Drive/Route 1 Interchange. The report also briefly describes CA-SCR-200, a prehistoric site identified in the survey on both sides of Arana Gulch just north of Highway 1 (Melandry and Tamez 1979). The report recommended archaeological testing of CA-SCR-200 to clarify the horizontal and vertical extend of the deposit.

S-3982a is the Phase II report recommended for CA-SCR-200 by Melandry and Tamez (1979). The Phase II testing included four test units located were surface indicator were present. Results of the testing concluded that CA-SCR-200 does not have a subsurface component and that the surface indicators were likely the result of imported fill material (Buss 1979). As a result of the testing the Buss recommended the site as not eligible for listing on the National Register of Historic Places with State Historic Preservation Officer concurrence. CA-SCR-215H was also found not eligible from the testing.

S-3995

This document reports results from another Highway 1 landscaping project (Melandry 1979). CA-SCR-200 is noted as having been found during the records search but not relocated in the field. As a precaution, the site was avoided by redesigning the project.

S-4886

S-4886 is a report from a survey of built environment resources associated with a project to upgrade the Highway 1 on and off ramps at the Soquel Avenue interchange (Snyder 1979). None of the 11 structures described in the report are within the present APE.

S-24733

Cartier (2001) conducted a preliminary archaeological assessment of the entire Harbor High School campus. The survey coverage indicated in the report included all the APE south of Highway 1. No resources were reported.

S-36298, S-36298a, and S-36298b

These three reports are associated with the historical resources compliance for the Highway 1 widening project between Soquel Avenue and Morrissey Boulevard (Jones and Mikkelsen 2008a and 2008b; Meta Bunse 2008). CA-SCR-200 is discussed as a previously evaluated, non-eligible resource.

S-43542

Holman & Associates conducted a surface reconnaissance for cultural resources for the renovation of the Harbor High School baseball field and its immediate surroundings (Clark and Schlagheck 2013). Survey coverage reported from the reconnaissance overlaps a small linear portion of the APE just northwest of the intersection of La Fonda Drive and Soquel Avenue. The reconnaissance was uniformly negative.

S-47397 and S-47397a

These two reports are associated with the historical resources compliance for the Highway 1 widening project between Highway 17 and Aptos including supplemental archaeological surveys for later expansion of the project area (Mikkelsen et al. 2005; Mikkelsen 2010). Only two of the 13 resources discussed in the reports are near the current APE. The two sites, CA-SCR-200 and CA-SCR-215H, are noted as previously evaluated, non-eligible resources.

3.1.2 Previously Recorded Resources

There are no previously recorded cultural resource within APE. There are seven cultural resource outside the APE but within the quarter-mile buffer of the Project APE. The closest recorded resource is CA-SCR-215H, a historical period refuse deposit located on the opposite side of Arana Gulch approximately 75 feet west of the APE. The resources in the study area are listed in Table 3 below.

Table 3. Recorded Cultural Resources within the Records Search Area

Primary	Trinomial	Resource Name	Resource Type	Age	Attributes	Recording Events
			Re	sources withi	n the APE	
				None		
			Resources	within 0.25-r	nile Buffer of APE	
P-44- 000201	CA-SCR- 000199H	Cactus Gardens	Site	Historic	AH03 (Landscaping/orchard); AH04 (Privies/dumps/trash scatters); AH15 (Standing structures)	1977 (David Gardner, Sonia Tamez, Caltrans); 2004 (J. King, J. Costello, FWARG)
P-44- 000202	CA-SCR- 000200	[none]	Site	Prehistoric	AH04 (Privies/dumps/trash scatters); AP02 (Lithic scatter); AP15 (Habitation debris)	1977 (S. Tamez, D. Gardner, Caltrans); 1978 (Tamez, Gardner, Caltrans); 2004 (J. King, FWARG)
P-44- 000217	CA-SCR- 000215H	Field #1	Site	Historic	AH04 (Privies/dumps/trash scatters)	1979 (Melandry, Gardner, California Department of Transportation); 2004 (J. King, J. Costello, Far Western)
P-44- 000406	CA-SCR- 000334H	Highway 1 (Santa Cruz County)	Site	Historic	AH07 (Roads/trails/railroad grades)	1999 (L. Leach-Palm, J. Berg, S. Mikesell)
P-44- 000561	CA-SCR- 000352H	CE-3	Site	Historic	AH04 (Privies/dumps/trash scatters)	2004 (J. King, J. Costello, FWARG)
P-44- 000654	CA-SCR- 000376H	Old Holy Cross Cemetery	Object, Site	Historic	AH12 (Graves/cemetery); HP40 (Cemetery)	2009 (C. MacDonald, P. Juelke Carr, Caltrans District 5)
P-44- 000740	[none]	Dominican Hospital	Building	Historic	HP41 (Hospital)	2013 (Dana E. Supernowicz, Historic Resource Associates)

3.2 Survey Results

Dudek archaeologists completed an intensive pedestrian survey of the APE on December 19, 2019. At the time of the reconnaissance, Arana Creek had significant flow from recent rains. The ground cover was quite variable over the surface of the APE. In most areas without hard surfaces or water, the APE had a medium to dense cover of low brush and grasses, while other areas had a cover of low shrubs and mature trees. All areas had a thin layer of damp leaves and twigs. Overall soil visibility was adequate for the purposes of the field investigation (Attachment 3. Project photos). No significant cultural resources were identified.

Soil within the APE is light-to-medium gray alluvium that is heavily mixed with native rock and imported gravel at several locations. Modern debris (abandoned cars, glass, plastic and metal fragments) was noted over most of the APE. Two small fragments of abalone shell were found at the edge of the APE about 170 feet west of Salisbury Drive. The fragments were located on the ground adjacent to a private residential deck and likely represent modern domestic refuse.

Dudek found no indications of significant cultural resources. Specifically, the surveyors found no archaeological soil (midden) or material commonly used as raw materials for prehistoric tool manufacture. No other evidence for use of the property during prehistoric times (such as charred faunal remains, culturally modified rocks, or charcoal) was observed. No bedrock was found within the APE. Similarly, no historical period materials were noted in the APE.

4 Views Provided by Consulting Parties and the Public (36 CFR § 800.2(d))

4.1 Native American Consultation and Local Information Outreach

U.S. Army Corps of Engineers (USACE) is the Project's lead agency for compliance with Section 106 of the National Historic Preservation Act. Should a USACE permit be required for this undertaking, USACE would conduct a Sacred Lands File search and the required Native American consultation through the Native American Heritage Commission directly from the USACE District office in San Francisco. The regulatory contact for the Native American consultation is USACE, San Francisco, CA, (Phone: 415-503-6778).

5 Summary and Recommendations

Dudek has conducted a thorough assessment of the cultural resource sensitivity for the proposed Project. The records search indicated eight previous studies that included some portion of the APE and no recorded resources within the APE. Dudek's intensive survey of the APE retuned uniformly negative results. Dudek believes that our level of effort and findings fulfill the Section 106 requirements regarding cultural resources. We therefore recommend a finding of *No Historic Properties Affected* for the Project under 36 CFR 800.4(d)(1). Additionally, under CEQA, no historical resources will be impacted by the Project. The Project should proceed under a plan that accounts for the inadvertent discovery of archaeological resources during construction consistent with NHPA Section 106 regulations.

Should human remains be discovered at any time, work will halt in that area and procedures set forth in the California Public Resources Code (Section 5097.98) and State Health and Safety Code (Section 7050.5) will be

followed, beginning with notification to the Santa Cruz County Coroner. If Native American remains are present, the County Coroner will contact the Native American Heritage Commission to designate a Most Likely Descendent, who will authorized to make recommendations regarding the treatment of Native American human remains and associated materials. Further, federal regulations require that Native American human remains, funerary objects, and object of cultural patrimony are handled consistent with the requirements of the Native American Graves Protection and Repatriation Act (NAGPRA) for all discovery situations in accordance with 43 CFR 10.

Should you have any questions relating to this report and its findings please do not hesitate to contact me directly.

Sincerely,

John P. Schlagheck, MA, RPA

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Figure 1. Project Location Map

Figure 2. Area of Potential Effect/Archaeological Survey Coverage Map

Attachment 1. National Archaeological Database Information

Attachment 2. NWIC Records Search

Attachment 3. Project Photos

Attachment 4. Project Plans (by reference)

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Attachment 1

National Archaeological Database Information

NATIONAL ARCHAEOLOGICAL DATABASE (NADB) INFORMATION

Authors: John Schlagheck, MA, RPA

Firm: Dudek

Project Proponent: Santa Cruz County Sanitation District

Report Date: August 2020

Report Title: Archaeological Assessment for the Arana Gulch Trunk Line Replacement,

Santa Cruz County, California

Type of Study: Phase I Assessment (letter report)

Resource(s): None

USGS Quads: 7.5-minute *Soquel* Quad; T11S; R 1W; Section 8

Acreage: 1.5 acres

Permit Numbers: Permit Pending

Keywords: Arana Gulch, Santa Cruz County

Attachment 2

NWIC Records Search

California Historical Resources Information System

CHRIS Data Request Form

ACCESS AND USE AGREEMENT NO.: 10	IC FILE NO.:		
To: Northwest		Information Center	
Print Name: Sarah Brewer		Date: 12/02/19	
Dudek			
Address: 725 Front Street, Suite 400			
City: Santa Cruz	State: CA	Zip: <u>95060</u>	
Phone: (831) 227-6301 Fax:	Email: sbrewe	er@dudek.com	
Billing Address (if different than above): 605 Third Street, En			
Project Name / Reference: 11724: Arana Gulch Sewer L			
Project Street Address: Soquel Ave, Harbor High School			
County: Santa Cruz			
Township/Range/UTMs: Township 11S / Range 1W / Se	ections 8, 9, 17		
USGS 7.5' Quad(s): Soquel			
PRIORITY RESPONSE (Additional Fee): yes () no)		
TOTAL FEE NOT TO EXCEED: \$500.00			
Special Instructions:			
Sarah Brewer will perform the Records Search in-house	on 12/02/19.		
Information Center Use Only			
Date of CHRIS Data Provided for this Request:			
Confidential Data Included in Response: yes 🗘 no 🔾			
Notes:			

California Historical Resources Information System

CHRIS Data Request Form

Include the following information (mark as necessary) for the records search area(s) shown on the attached map(s) or included in the associated shapefiles. Shapefiles are the current CHRIS standard format for digital spatial data products.

NOTE: All digital data products are subject to availability - check with the appropriate Information Center.

1. **Map Type Desired:** Digital map products will be provided only if they are available at the time of this request. *Regardless of what is requested*, only hard copy hand-drawn maps will be provided for any part of the requested search area for which digital map products are not available at the time of this request. *There is an additional charge for shapefiles, whether they are provided with or without Custom GIS Maps.*

Mark one map choice only

Custom GIS Maps and Shapefiles

Hard Copy Hand-Drawn Maps only

	· - · ·	
Any selection below	left unmarked will be considered a	ı "no. "
2a.	Within project area	Within 1/4mi radius
ARCHAEOLOGICAL Resource Locations* NON-ARCHAEOLOGICAL Resource Locat Report Locations* Resource Database Printout* (list) Resource Digital Database Records (spreaden) Report Database Printout* (list) Report Database Printout* (detail) Report Database Printout* (detail) Report Digital Database Records (spreaden) Report Digital Database Records (spreaden) ARCHAEOLOGICAL Resource Record Copper (Decompose) NON-ARCHAEOLOGICAL Resource Record Copper (Decompose) Report Copies**: PDF (Decompose) Hard Copy (Decompose)	yes 0/ no 0	yes O/ no O
OHP Historic Properties Directory** within project area within 1/4 mi radius OHP Archaeological Determinations of Eli within project area within 1/4 mi radius California Inventory of Historical Resource	yes ⊙ / no ○ yes ⊙ / no ○	Associated documentation yes / no yes / no yes / no yes / no yes / no
within project area within 1/4 mi radius	yes ⊙ / no ○ yes ⊙ / no ○	yes ⊙ / no ○ yes ⊙ / no ○

Custom GIS Maps Shapefiles Shapefiles

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

^{*} These documents may be supplied as PDF files, if available

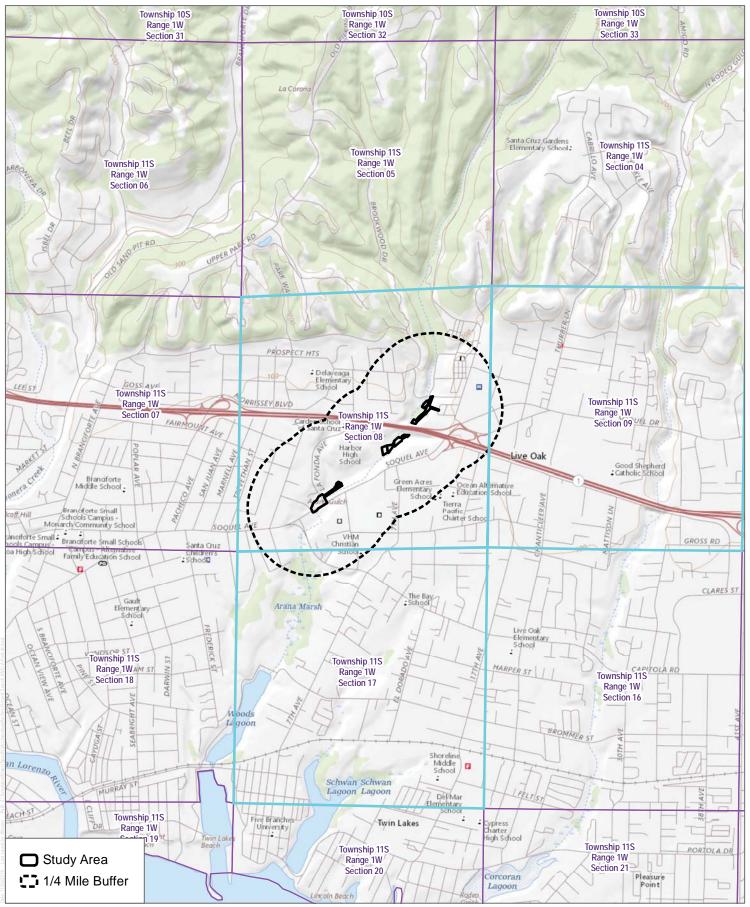
^{**} Includes, but is not limited to, information regarding National Register of Historica Places, California Register of Historical Resources, California State Historical Landmarks, California State Points of Historical Interest, and historic building surveys.

California Historical Resources Information System

CHRIS Data Request Form

2b. Listed below are sources of additional information that may be available at the Information Center. Indicate if a review and documentation of any of the following types of information is requested.

O⁄ no⊙
O/ no⊙
O⁄ no⊙
⊙ / no ○
⊙⁄ no ○
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O⁄ no⊙
O⁄ no⊙
(



SOURCE: USGS 7.5-Minute Series Soquel Quadrangle Township 11S; Range 1W; Sections 8, 9, 17



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	_	Feet
0	285	570
		Meters
	1.24 000	

12/6/2019

Records Search Summary

NWIC File 19-0932

On December 2, 2019, Dudek archaeologist, Sarah Brewer, performed an in-house records search for the Arana Gulch Sewer Line Project (Dudek Project No. 11724) at the Northwest Information Center of the California Historical Resources Information System in Rohnert Park, California. The project is located on the USGS 7.5' Soquel Quadrangle, T11S, R1W, Section 8, 9, 17. The results of the records search are as follows:

Resources within project area:	None
Resources within a 0.25-mile radius of project area:	44-201, 44-202, 44-217, 44-406, 44-561, 44-654, 44-740 (7)
Studies within project area:	S-3956, S-3982, S-3995, S-4886, S-24733, S-36298, S-43542, S-47397 (8)
Studies within a 0.25-mile radius of project area:	S-4011, S-4090, S-13216, S-17870, S-22987, S-24723, S-27266, S-31331, S-33977, S-36372, S-45855, S-48262, S-48755, S-49275 (14)

Archival research:	
Resource database table:	$oxed{\boxtimes}$ enclosed $oxed{\square}$ reviewed $oxed{\square}$ nothing listed $oxed{\square}$ not requested
Studies database table:	$oxed{\boxtimes}$ enclosed $oxed{\square}$ reviewed $oxed{\square}$ nothing listed $oxed{\square}$ not requested
Resource record copies:	$oxed{\boxtimes}$ enclosed $oxed{\square}$ reviewed $oxed{\square}$ nothing listed $oxed{\square}$ not requested
Studies record copies:	$oxed{\boxtimes}$ enclosed $oxed{\square}$ reviewed $oxed{\square}$ nothing listed $oxed{\square}$ not requested
OHP Historic Properties Directory:	\square enclosed \boxtimes reviewed \boxtimes nothing listed \square not requested
Archaeological Determinations of Eligibil	ity: \square enclosed \boxtimes reviewed \boxtimes nothing listed \square not requested
CA Inventory of Historic Resources (1976	6): □ enclosed ☒ reviewed ☒ nothing listed □ not requested
Caltrans Bridge Survey:	\square enclosed \square reviewed \square nothing listed \boxtimes not requested
Ethnographic Information:	\square enclosed \square reviewed \square nothing listed \boxtimes not requested
Historical Literature:	\square enclosed \square reviewed \square nothing listed \boxtimes not requested
Historical Maps:	oximes enclosed $oximes$ reviewed $oximes$ nothing listed $oximes$ not requested
Local Inventories:	oximes enclosed $oximes$ reviewed $oximes$ nothing listed $oximes$ not requested
Shipwreck Inventory:	☐ enclosed ☐ reviewed ☐ nothing listed ☒ not requested



Table 2. Previous Technical Studies within the Records Search Area

NWIC #	Sub Cat	Authors	Date	Report Title	Publisher
	Cat			Reports within the APE	
S-003956		Sonia Tamez	1977	An Archaeological Survey of Portions of Route 04-SCr-1 in Santa Cruz County, P.M. 10.2/15.8 04211-380331	Caltrans, District 4
S-003982		Mara Melandry and Sonia Tamez	1979	An Archaeological Survey of Portions of Route 04-Scr-1, P.M. 14.9 04226 -397951, Proposed Alterations to the Soquel Drive/Route 1 Interchange, City of Soquel, Santa Cruz County	Caltrans, District 4
S-003982	а	Margaret Buss	1979	Archaeological Test Excavation of CA-SCR-200 Phase II Investigations 04-Scr-1, P.M. 14.9 04226 -397951, Proposed Alterations to the Soquel Drive/Route 1 Interchange, City of Soquel, Santa Cruz County	Caltrans, District 4
S-003995		Mara Melandry	1979	Archaeological Survey Report, 04-SCr-1, P.M.10.2/15.8, 04223 - 380331, Landscaping Project in Santa Cruz County	Caltrans, District 4
S-004886		John W. Snyder	1979	Historic Architectural Survey Report, 04-SCr-1 P.M. 14.9, Soquel Drive, 04217- 397951; Appendix F	California Department of Transportation
S-024733		Robert Cartier	2001	Cultural Resources Evaluation of the Harbor High School Campus Modernization Project in the City of Santa Cruz	Archaeological Resource Management
S-036298		Deborah Jones and Patricia Mikkelsen	2008	Historic Property Survey Report for the Highway 1 Soquel to Morrissey Auxiliary Lanes Project, Santa Cruz, California, 05-SCR-1-PM, 14.96 to 15.94 (KP 24.08 to 25.65), EA 05-0F6500 Public Document	Far Western Anthropological Research Group, Inc.
S-036298	а	Deborah Jones, Patricia Mikkelsen	2008	Archaeological Survey Report for the Highway 1 Soquel to Morrissey Auxiliary Lanes Project, Santa Cruz, California Public Document	Far Western Anthropological Research Group, Inc.
S-036298	b	Rebecca Meta Bunse	2008	Historical Resources Evaluation Report, Highway 1 Soquel to Morrissey Auxiliary Lanes Project: 05-SCR-1-PM 14.96 to 15.94 (KP 24.08/25.65) EA 05-0F6500	JRP Historical Consulting, LLC
S-043542		Matthew R. Clark and John P. Schlagheck	2013	Archaeological Reconnaissance of the Harbor High School Baseball Field Renovation Project Area in the City of Santa Cruz, Santa Cruz County, California	Holman and Associates Archaeological Consultants
S-047397		Patricia Mikkelsen, Julia Costello, Jerome King, Charlene Duval, Edna Kimbro, and John Berg	2005	Archaeological Survey Report for the Highway 1 High Occupancy Vehicle Lane Widening Project, Santa Cruz, California, SCR-1 PM R7.6/16.8 (KP R12.22/27.02), EA 05-0C7300	Far Western Anthropological Research Group, Inc.; Foothill Resources, Ltd.
S-047397	а	Patricia Mikkelsen	2010	First Supplemental Archaeological Survey Report for the Highway 1 High Occupancy Vehicle Lane Widening Project, Santa Cruz, California, 05-SCR-1 PM R7.24/16.13 (KP R11.67/25.96), EA 05-0C7300	Far Western Anthropological Research Group, Inc.
				Reports within 0.25-mile Buffer of APE	
S-004011		Gary S. Breschini	1979	A presence/absence survey for archaeological resources at the location of the Oakwood Cemetery on Paul Sweet Road, Soquel, Santa Cruz County, California (letter report)	Archaeological Consulting
S-004090		Robert Cartier	1980	Archeological Evaluation for a Parcel of Land Off Capitola Ave., Santa Cruz, CA	Archeological Resource Management
S-013216		Thomas L. Jackson	1991	Archaeological reconnaissance APN 09-291-51, Santa Cruz, CA (letter report)	BioSystems Analysis, Inc.
S-017870		Mara Melandry	1996	Historic Property Survey Report and Finding of No Effect, 04-SCR-1, PM 9.2/16.6, 04229-135331, Proposed Pavement Overlay and Other Minor Improvements on Portions of Highway 1 in the Cities of Aptos, Soquel, Capitola and Santa Cruz in Santa Cruz County	Caltrans District 04
S-017870	а	Mara Melandry	1996	Archaeological Survey Report for a Proposed Pavement Overlay and Drainage Improvements on Portions of Highway 1 in the Cities of Aptos, Soquel, Capitola and Santa Cruz in Santa Cruz County, 04-Scr-01 PM 9.2/16.6 04229-135331	Caltrans
S-022987		John W. Snyder	2000	Historic Property Survey Report, Capitola Road Improvement Project between Santa Cruz and Capitola, California	P.S. Preservation Services
S-022987	а	John A. Nadolski	2000	Negative Archaeological Survey Report for the Capitola Road Improvement Project, Soquel Avenue to Thirtieth Avenue.	Pacific Legacy, Inc.

S-022987	b	John W. Snyder	2000	Historical Architectural Survey Report, Capitola Road Improvement Project between Santa Cruz and Capitola, California.	P. S. Preservation Services
S-024723		Robert Cartier	2001	Archival Research Report of the Harbor High School Property at 300 La Fonda Avenue in the City of Santa Cruz	Archaeological Resource Management
S-027266		Mary Doane and Trudy Haversat	2003	Preliminary Archaeological Reconnaissance of Assessor's Parcel 009- 411-09, Santa Cruz, Santa Cruz County, California	Archaeological Consulting
S-031331		Mary Doane and Trudy Haversat	2006	Preliminary Archaeological Reconnaissance of Assessor's Parcel 009- 112-21, Santa Cruz, Santa Cruz County, California	Archaeological Consulting
S-033977		Kelly Larsen	2007	Results of an Archaeological Records Search and Survey at 107 Fairland Way, Santa Cruz, Santa Cruz County (letter report)	Pacific Legacy, Inc.
S-036372		Thomas Wheeler	2009	Archaeological Survey Report, Santa Cruz Guardrail Project, Santa Cruz County, California, on State Route 1, 05-SCR-1, PM 9.00/17.62, EA 05-0R9100	California Department of Transportation
S-045855		Mary Doane and Gary S. Breschini	2014	Phase I Archaeological Survey for the St. Stephens Senior Apartment Complex on APN 026-021-22 in Santa Cruz, Santa Cruz County, California	Archaeological Consulting
S-045855	а	Carol Roland-Nawi	2015	HUD 2014_1216_001: Senior Apartments Development Project Located 2500 Soquel Avenue, Live Oak	Office of Historic Preservation
S-048262		Carrie D. Wills and Kathleen Crawford	2016	FCC Form 621 Collocation Submission Packet, SF05738A (Dominican Santa Cruz Hospital), 1555 Soquel Drive, Santa Cruz, CA 95065	Environmental Assessmant Specialist, Inc.
S-048262	а	Cher L. Peterson, Carrie D. Wills, and Kathleen A. Crawford	2016	Cultural Resoures Records Search and Site Visit Results for T-Mobile West, LLC Candidate SF05738A (Dominican Santa Cruz Hospital) 1555 Soquel Drive, Santa Cruz, Santa Cruz County, California	Environmental Assessment Specialists, inc
S-048262	b	Julianne Polanco	2016	FCC_2016_0325_008;SF05738A (Dominican Santa Cruz Hospital) 1555 Soquel Drive, Santa Cruz, Collocation	Office of Historic Preservation
S-048755		Patricia Paramoure	2015	Preliminary Archaeological Reconnaissance of Parcel (APN 009-392-73) 508 Park Way, Santa Cruz, CA 95062	Patricia Paramoure Archaeological Consulting
S-049275		Stella D'Oro	2017	Cultural Resources Assessment of Proposed Construction at 23 Acacia Way, Santa Cruz, California	Albion Environmental, Inc.

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Table 3. Recorded Cultural Resources within the Records Search Area

Primary	Trinomial	Resource Name	Resource Type	Age	Attributes	Recording Events
Resources within the APE						
None						
Resources within 0.25-mile Buffer of APE						
P-44- 000201	CA-SCR- 000199H	Cactus Gardens	Site	Historic	AH03 (Landscaping/orchard); AH04 (Privies/dumps/trash scatters); AH15 (Standing structures)	1977 (David Gardner, Sonia Tamez, Caltrans); 2004 (J. King, J. Costello, FWARG)
P-44- 000202	CA-SCR- 000200	[none]	Site	Prehistoric	AH04 (Privies/dumps/trash scatters); AP02 (Lithic scatter); AP15 (Habitation debris)	1977 (S. Tamez, D. Gardner, Caltrans); 1978 (Tamez, Gardner, Caltrans); 2004 (J. King, FWARG)
P-44- 000217	CA-SCR- 000215H	Field #1	Site	Historic	AH04 (Privies/dumps/trash scatters)	1979 (Melandry, Gardner, California Department of Transportation); 2004 (J. King, J. Costello, Far Western)
P-44- 000406	CA-SCR- 000334H	Highway 1 (Santa Cruz County)	Site	Historic	AH07 (Roads/trails/railroad grades)	1999 (L. Leach-Palm, J. Berg, S. Mikesell)
P-44- 000561	CA-SCR- 000352H	CE-3	Site	Historic	AH04 (Privies/dumps/trash scatters)	2004 (J. King, J. Costello, FWARG)
P-44- 000654	CA-SCR- 000376H	Old Holy Cross Cemetery	Object, Site	Historic	AH12 (Graves/cemetery); HP40 (Cemetery)	2009 (C. MacDonald, P. Juelke Carr, Caltrans District 5)
P-44- 000740	[none]	Dominican Hospital	Building	Historic	HP41 (Hospital)	2013 (Dana E. Supernowicz, Historic Resource Associates)

Attachment 3

Project Photos



Photo 1: Project Area (view north) west of Harbor High School



Photo 2: Project Area (view east) northwest of Harbor High School



Photo 3: Project Area (view north) south of La Fonda Drive



Photo 4: Project Area (view southwest) north of Highway 1

Attachment 4

Project Plans by Reference

December 7, 2020 11724.01

Linda Scroggs, Murraysmith Send via Email

Subject: REPORT ADDENDUM: Cultural Resources Assessment for the Arana Gulch Sewer Line Project

Dear Ms. Scroggs:

Dudek has obtained additional information from the Native American Heritage Commission (NAHC) and the Costanoan Ohlone Rumsen-Mutsun Tribe regarding the Arana Gulch Sewer Line Project, in Santa Cruz County. This additional information should be considered part of our letter report (*Archaeological Assessment for the Arana Gulch Trunk Line Replacement, Santa Cruz County, California*), dated August 7, 2020.

On November 24, 2020, Dudek sent a request to the NAHC for a search of the Sacred Lands File (SLF), a list of properties important to local Native American tribes, for the project area. On December 3, 2020, Dudek received a letter from the NAHC with positive findings from the SLF search with the Costanoan Ohlone Rumsen-Mutsun Tribe listed as the specific tribal contact in this case.

On December 4, 2020 Dudek contacted Patrick Orozco, Chairman of the Costanoan Ohlone Rumsen-Mutsun Tribe, by email and phone. Mr. Orozco responded stating "that area is sensitive and may have recorded sites. I recommend a monitor". A record of the SLF search and results are included in this addendum as Attachment 1.

Regarding Mr. Orozco's comments that the area may have recorded sites, as stated in our report there are no sites within or near the project area. Specifically, the records search found no recorded sites in the project vicinity and the project area survey was uniformly negative. Consequently, there is no evidence to suggest the presence of a cultural or tribal cultural resource of significance. Our recommendations remain as stated in our report; no additional effort regarding the presence of potentially significant cultural resources, including monitoring, is warranted. Please contact me or Stephanie Strelow with any questions.

Sincerely,

John P. Schlagheck, M.A., RPA

Archaeologist **DUDEK**

Direct: (831) 212-3886

Email: jschlagheck@dudek.com

John & Selleglack

Attachment 1. Native American Heritage Commission Sacred Lands File Search and Results

cc: Stephanie Strelow, Dudek

Ryan Brady, Dudek

Ashleigh Trujillo, Santa Cruz County Sanitation District Juliette Robinson, Santa Cruz County Planning Department

Attachment 1

Native American Outreach Addendum

Sacred Lands File & Native American Contacts List Request

Native American Heritage Commission

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

Information Below is Required for a Sacred Lands File Search

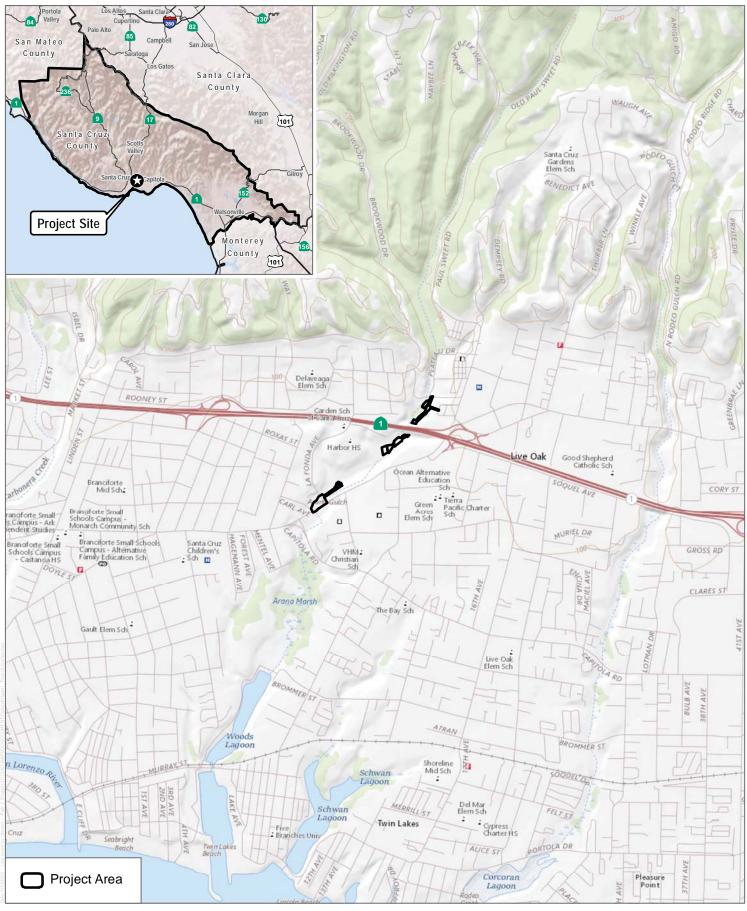
Project: Dudek Project 11724.01 Arana Gulch Sewer Line Project

County:					
USGS Quadrangle Name: Soquel					
Township: 118 Range: 1W Section(s): 8					
Company/Firm/Agency: Dudek					
Street Address: 725 Front Street, Suite 400					
City: Santa Cruz, CA	Zip: 95060				
Phone:	_				
Fax:					
Email:	_				

Project Description:

The project consists of replacement of an approximate 2,400-linear foot segment of an existing 10-inch sewer line and manholes. The Project will also include replacement of approximately 325 linear feet of an existing 6-inch sewer line from Salisbury Drive to the Arana sewer trunk line, as well as, replacement of approximately 225 linear feet of an existing 6-inch sewer line in Eleanor way with additional manhole replacements.

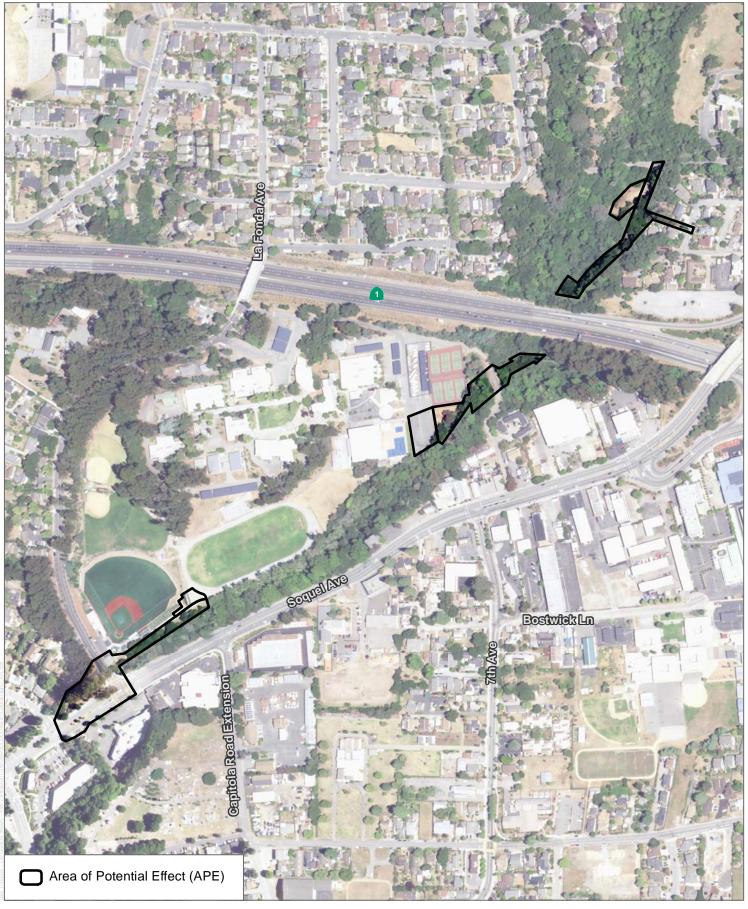
Dudek is requesting a NAHC search of the Sacred Lands Files or other Native American cultural resources that may fall within the proposed project location. Please provide a Contact List with all Native American tribal representatives that may have traditional interests in the project location or surrounding area.



SOURCE: USGS 7.5-Minute Series Soquel Quadrangle Township 11S / Range 1W / Section 8

DUDEK 6 0 1,000 2,000 Fee

FIGURE 1
Project Location



SOURCE: USDA (NAIP) 2016

Area of Potential Effect

Arana Gulch Sewer Line Project

FIGURE 2



NATIVE AMERICAN HERITAGE COMMISSION

December 3, 2020

CHAIRPERSON Laura Miranda Luiseño

VICE CHAIRPERSON Reginald Pagaling Chumash

SECRETARY Merri Lopez-Keifer Luiseño

Parliamentarian **Russell Attebery** Karuk

COMMISSIONER Marshall McKay Wintun

COMMISSIONER William Mungary Paiute/White Mountain Apache

COMMISSIONER Julie Tumamait-Stenslie Chumash

COMMISSIONER [Vacant]

COMMISSIONER [Vacant]

EXECUTIVE SECRETARY Christina Snider Pomo

NAHC HEADQUARTERS 1550 Harbor Boulevard Suite 100

California 95691

West Sacramento,

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

John Schlagheck, MP, RPA, Archaeologist Dudek

Via Email to: jschlagheck@dudek.com yanapvoic97@gmail.com Cc to:

Re: Arana Gulch Sewer Line (Dudek Project 11724.01) Project, Santa Cruz County

Dear Mr. Schlagheck:

A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information you have submitted for the above referenced project. The results were positive. Please contact the Costanoan Ohlone Rumsen-Mutsen Tribe on the attached list for more information. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Attached is a list of Native American tribes who may also have knowledge of cultural resources in the project area. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated; if they cannot supply information, they might recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call or email to ensure that the project information has been received.

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

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

Sincerely,

Sarah Fonseca

Cultural Resources Analyst

Attachment

Record of Email Correspondence

From: Patrick Orozco <yanapvoic97@gmail.com>

Sent: Friday, December 4, 2020 1:40 PM

To: John Schlagheck < jschlagheck@dudek.com>

Subject: Re: FW: Arana Gulch Sewer Line (Dudek Project 11724.01) Project

That area is sensitive and may have record sites. I recommend a monitor . Thank You Patrick

On Fri, Dec 4, 2020 at 10:23 AM John Schlagheck < jschlagheck@dudek.com> wrote:

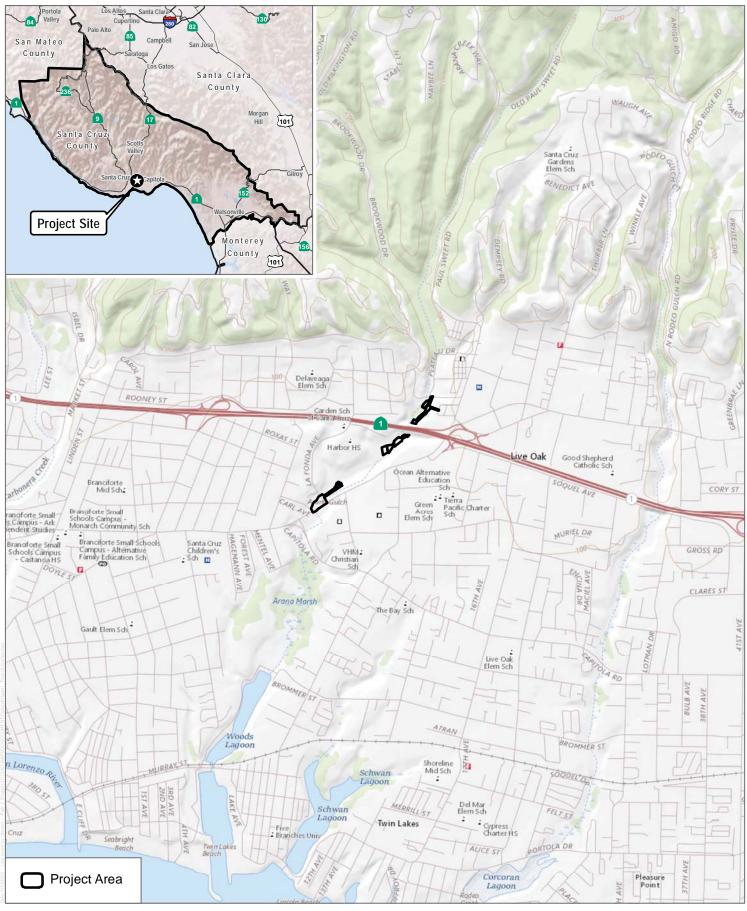
Hi Patrick, Please see the attached Sacred Lands File search letter from Native American Heritage Commission. They have indicated that the Costanoan Ohlone Rumsen-Mutsun Tribe is the contact for positive results for the Arana Gulch Sewer Line Project. I have also attached the project location maps for your convenience. I will follow up with a phone call to you or call me at the number below. We are seeking information on possible tribal cultural resources within the project area.

Kind Regards,

John Schlagheck

Dudek

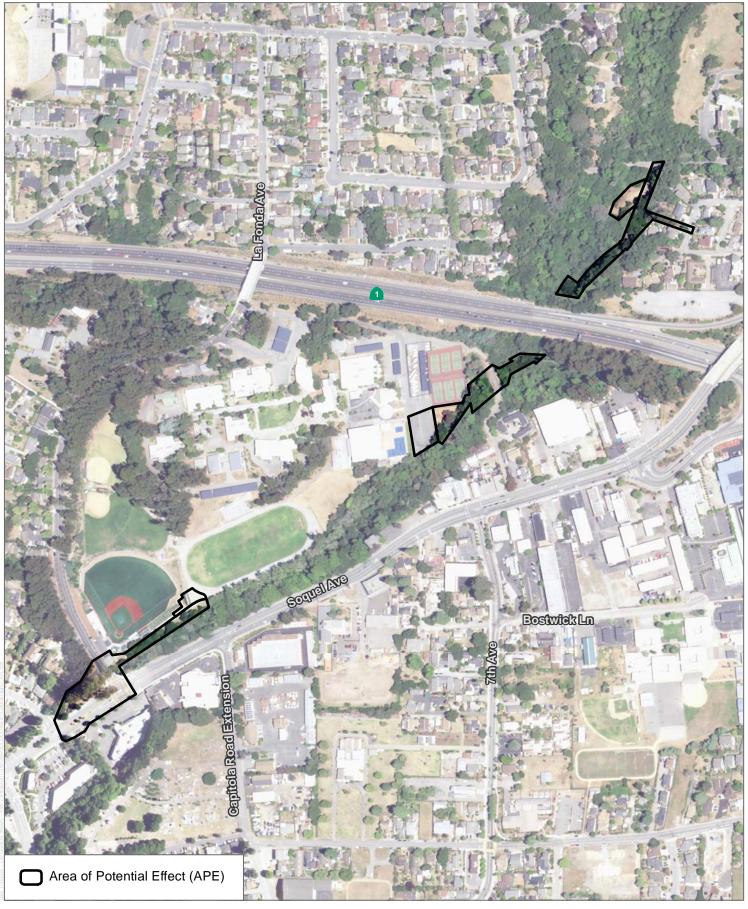
Direct: 831-212-3886



SOURCE: USGS 7.5-Minute Series Soquel Quadrangle Township 11S / Range 1W / Section 8

DUDEK 6 0 1,000 2,000 Fee

FIGURE 1
Project Location



SOURCE: USDA (NAIP) 2016

Area of Potential Effect

Arana Gulch Sewer Line Project

FIGURE 2