APPENDIX C

Cultural and Paleontological Resources Identification Memorandum

June 4, 2026

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RE: CULTURAL AND PALEONTOLOGICAL RESOURCES IDENTIFICATION MEMORANDUM FOR THE GROUND MOUNT SOLAR AND BATTERY PROJECT, CALIFORNIA STATE UNIVERSITY, BAKERSFIELD, CALIFORNIA

Dear Ms. De Young:

California State University, Bakersfield (CSUB), proposes to install ground-mounted solar panels and a battery on the east side of campus (project). The project requires discretionary permitting and so triggers the California Environmental Quality Act (CEQA). In support of the project, Michael Baker International, Inc. (Michael Baker) completed a Southern San Joaquin Valley Information Center (SSJVIC) records search and consultation; a Native American Heritage Commission (NAHC) Sacred Lands File search; a paleontological records search at the Natural History Museum of Los Angeles County (NHMLAC); a literature, aerial photograph, geologic map, paleontology database, and historical map review; an archaeological survey; and archaeological and paleontological sensitivity assessments, and a California Register of Historical Resources (California Register) evaluation of the James Canal to determine whether the project could result in adverse impacts to paleontological resources, historical resources, or tribal historical resources. The study found that no resources are documented within the project area, but that the project has the potential to impact unknown buried resources. Methods, results, and recommendations are summarized below.

PROJECT DESCRIPTION

CSUB proposes to install ground-mounted solar panels on the east side of campus. A battery will also be constructed.

PROJECT LOCATION

The proposed project is located within the City of Bakersfield, in the eastern portion of the CSUB campus, south of Kroll Way and west of the Arvin-Edison Canal. The project site is located within Section 5 of Township 30 South, Range 27 East, as depicted on the Gosford, California, 1:24,000 scale US Geological Survey (USGS) topographic map. **Attachment 1: Map Figure 1** shows the location of the proposed project in a regional context and **Attachment 1: Map Figure 2 and Map Figure 3** show the proposed project site.

REGULATORY CONTEXT

Cultural resources in California are protected by a number of federal, state, and local regulations, statutes, and ordinances. Cultural resources are defined as buildings, sites, structures, or objects, each of which may have historical, architectural, archaeological, cultural, and/or scientific importance. State

and federal laws use different terms for cultural resources. California state law discusses significant cultural resources as "historical resources," whereas federal law uses the terms "historic properties" and "historic resources." In all instances where the term "resource" or "resources" is used, it is intended to convey the sense of both state and federal law.

Paleontological resources in California are protected by several federal, state, and local regulations, statutes, and ordinances. Paleontological resources are defined as any fossilized remains, traces, or imprints of organisms of paleontological interest preserved in the geologic record that provide information about the history of life on Earth (excluding cultural and archaeological resources). These resources include bones, teeth, soft tissues, shells, plant material, microscopic organisms, footprints, trackways, and burrows. Fossils record the natural history of life on Earth. Despite the frequency of sedimentary rock in the geologic record and the number of organisms that have lived throughout the planet's history, only a minimal number of remains have been preserved in the fossil record. Numerous laws and regulations require federal, state, and local agencies to consider the effects a project may have on paleontological resources. These laws and regulations stipulate a process for compliance, define the responsibilities of the various agencies proposing the action, and prescribe relationships among other involved agencies.

National Register of Historic Places

Although the project does not trigger federal law, the California Register of Historical Resources is largely modeled on the National Register of Historic Places (NRHP), and state law references the NRHP. The National Historic Preservation Act establishes the NRHP, which is "an authoritative guide to be used by federal, state, and local governments, private groups and citizens to identify the nation's cultural resources and to indicate what properties should be considered for protection from destruction or impairment" (36 Code of Federal Regulations 60.2). To be eligible for listing in the NRHP, a property must be at least 50 years old (or have reached 50 years old by the project completion date) and possess significance in American history and culture, architecture, or archaeology to meet one or more of four established criteria (36 Code of Federal Regulations 60.4):

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

Historic resources eligible for listing in the NRHP are considered "historic properties," and may include buildings, sites, structures, objects and historic districts. A potential historic property less than 50 years of age may be eligible under NRHP Criteria Consideration G (Properties that have Achieved Significance within the Past 50 Years) if it can be demonstrated that sufficient time has passed to understand its historic importance (National Park Service 1995: 43). To be eligible for listing in the NRHP, a property must also have integrity, which is defined as "the ability of a property to convey its significance." Within the concept of integrity, the NRHP recognizes seven aspects or qualities that, in various combinations, define integrity: feeling, association, workmanship, location, design, setting and materials (National Park Service 1995: 44-45).

CALIFORNIA ENVIRONMENTAL QUALITY ACT

CEQA applies to all discretionary projects undertaken or subject to approval by the state's public agencies (California Code of Regulations [CCR] Title 14[3] Section 15002[i]). CEQA conditions state that it is the policy of the state of California to "take all action necessary to provide the people of this state with historic environmental qualities and preserve for future generations examples of the major periods of California history" (Public Resources Code [PRC] Section 21001[b], [c]). Under the provisions of CEQA, "a project with an effect that may cause a substantial adverse change in the significance of a historical resource is a project that may have a significant effect on the environment" (CCR Title 14[3] Section 15064.5[b]).

CEQA Guidelines Section 15064.5(a) defines a "historical resource" as a resource that meets one or more of the following criteria:

- Listed in, or eligible for listing in, the California Register.
- Listed in a local register of historical resources (as defined in PRC Section 5020.1[k]).
- Identified as significant in a historical resource survey meeting PRC Section 5024.1(g) requirements.
- Determined to be a historical resource by a project's lead agency (CCR Title 14[3] Section 15064.5[a]).

A historical resource consists of "any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California. … Generally, a resource shall be considered by the lead agency to be 'historically significant' if the resource meets the criteria for listing in the California Register of Historical Resources" (CCR Title 14[3] Section 15064.5[a][3]).

The CEQA planning process requires considering historical resources and unique archaeological resources (CCR Title 14[3] Section 15064.5; PRC Section 21083.2). If feasible, adverse effects to the significance of historical resources must be avoided or mitigated (CCR Title 14[3] Section 15064.5[b][4]). The significance of a historical resource is impaired when a project demolishes or materially alters adversely those physical characteristics of a historical resource that convey its historical significance and justify its eligibility for the California Register. If there is a substantial adverse change in the significance of a historical resource, the preparation of an environmental impact report may be required (CCR Title 14[3] Section 15065[a]).

If the cultural resource in question is an archaeological site, CEQA (CCR Title 14[3] Section 15064.5[c][1]) requires that the lead agency first determine if the site is a historical resource as defined in CCR Title 14(3) Section 15064.5(a). If the site qualifies as a historical resource, potential adverse impacts must be considered in the same manner as a historical resource (OHP 2001a). If the archaeological site does not qualify as a historical resource but does qualify as a unique archaeological site, then the archaeological site is treated in accordance with PRC Section 21083.2 (CCR Title 14[3] Section 15069.5[c][3]). In practice, most archaeological sites that meet the definition of a unique archaeological resource will also meet the definition of a historical resource. CEQA defines a "unique archaeological resource" as an archaeological artifact, object, or site about which it can be demonstrated that, without merely adding

to the current body of knowledge, there is a high probability that it meets one or more of the following criteria:

- Contains information needed to answer important scientific research questions and there is a demonstrable public interest in that information.
- Has a special and particular quality, such as being the oldest of its type or the best available example of its type.
- Is directly associated with a scientifically recognized important prehistoric or historic event or person (PRC Section 21083.2[g]).

If an impact to a historical or archaeological resource is significant, CEQA requires feasible mitigation measures to minimize the impact (CCR Title 14[3] Section 15126.4[a][1]). Mitigation must lessen or eliminate the physical impact that the project will have on the resource. Generally, drawings, photographs, and/or displays do not mitigate the physical impact on the environment caused by the demolition or the destruction of a historical resource. However, CEQA (PRC Section 21002.1[b]) requires that all feasible mitigation be undertaken even if it does not mitigate impacts to a less than significant level (OHP 2001a:9).

CEQA requires public agencies and private interests to identify potential environmental consequences and/or adverse impacts of their proposed projects to any object or site important to the scientific annals of California (Division I, PRC 5020.1 [b]). Guidelines for the Implementation of CEQA (PRC Sections 15000 et seq.) define procedures, types of activities, persons, and public agencies required to comply with CEQA. Appendix G in Section 15023 provides an Environmental Checklist of questions that a lead agency should address if relevant to a project's environmental impacts. One of the questions to be answered in the Environmental Checklist Form (Section 15023, Appendix G, Section VII, part f) is the following: "Would the project directly or indirectly destroy a unique paleontological resource or site or unique geological feature?"

California Register of Historical Resources

The California Register is a guide to cultural resources that must be considered when a government agency undertakes a discretionary action subject to CEQA. The California Register helps government agencies identify and evaluate California's historical resources (OHP 2001b:1) and indicates which properties are to be protected, to the extent prudent and feasible, from substantial adverse change (PRC Section 5024.1[a]). Any resource listed in, or eligible for listing in, the California Register is to be considered during the CEQA process (OHP 2001a:7).

A cultural resource is evaluated under four criteria to determine its historical significance. A resource must be significant in accordance with one or more of the following criteria:

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

Age

In addition to meeting one or more of the above criteria, the California Register requires that sufficient time must have passed to allow a "scholarly perspective on the events or individuals associated with the resource." Fifty years is used as a general estimate of the time needed to understand the historical importance of a resource (OHP 2006: 3). The California Office of Historic Preservation (OHP) recommends documenting, and taking into consideration in the planning process, any cultural resource that is 45 years or older (OHP 1995: 2).

Period of Significance

The period of significance for a property is "the length of time when a property was associated with important events, activities, persons, or attained the characteristics which qualify it for National Register listing" (National Park Service 1995: 42). The period of significance begins with the date of the earliest important land use or activity that is reflected by historic characteristics tangible today. The period closes with the date when events having historical importance ended. The period of significance for an archaeological property is "the broad span of time about which the site or district is likely to provide information" (National Park Service 1995: 42). Archaeological properties may have more than one period of significance.

Integrity

The California Register also requires a resource to possess integrity, which is defined as "the authenticity of a historical resource's physical identity evidenced by the survival of characteristics that existed during the resource's period of significance. Integrity is evaluated with regard to the retention of location, design, setting, materials, workmanship, feeling, and association" (OHP 2006: 2).

Archaeologists use the term "integrity" to describe the level of preservation or quality of information contained within a district, site, or excavated assemblage. Integrity is relative to the specific significance that the resource conveys. Although it is possible to correlate the seven aspects of integrity with standard archaeological site characteristics, those aspects are often unclear for evaluating the ability of an archaeological resource to convey significance under Criterion 4. The integrity of archaeological resources is judged according to the site's ability to yield scientific and cultural information that can be used to address important research questions (National Park Service 1995: 44–49).

California Public Resources Code Section 5097.5

PRC Section 5097.5 prohibits excavation or removal of any "vertebrate paleontological site … or any other archaeological, paleontological or historical feature, situated on public lands, except with express permission of the public agency having jurisdiction over such lands." Public lands are defined to include lands owned by or under the jurisdiction of the state or any city, county, district, authority, or public corporation, or any agency thereof. Section 5097.5 states that any unauthorized disturbance or removal of archaeological, historical, or paleontological materials or sites located on public lands is a misdemeanor.

California Health and Safety Code Section 7050.5

California Health and Safety Code Section 7050.5 states that in the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the coroner of the county in which the remains are discovered has determined whether

or not the remains are subject to the coroner's authority. If the human remains are of Native American origin, the coroner must notify the NAHC within 24 hours of this identification. The NAHC will identify a Native American most likely descendant to inspect the site and provide recommendations for the proper treatment of the remains and associated grave goods.

Tribal Cultural Resources

Tribal cultural resources are defined in PRC Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

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

Paleontological Resources Preservation Act (PRPA)

The Paleontological Resources Preservation, Omnibus Public Lands Act (Public Law 111-011, Title VI, Subtitle D) of 2009 directs the Secretaries of the U.S. Department of the Interior and U.S. Department of Agriculture to manage and protect paleontological resources on federal land controlled or administered by these departments using "scientific principles and expertise." PRPA codifies existing policies of the Bureau of Land Management, National Park Service, U.S. Forest Service, Bureau of Reclamation, and U.S. Fish and Wildlife Service, and provides the following:

- definitions of "paleontological resources" and "casual collecting".
- criteria for the issuance of resource-use permits.
- requirements for the collection of paleontological resources and their curation in approved repositories.
- penalties (criminal and civil) for the illegal removal, sale, purchase, transport, theft and/or vandalism of fossils from federal lands.

National Environmental Policy Act

The National Environmental Policy Act (42 USC 4321) of 1969 directs federal agencies to use all practicable means to "preserve important historic, cultural, and natural aspects of our national heritage" (Section 101[b][4]). Consideration of paleontological resources may be required under the National Environmental Policy Act when a project is proposed for development on federal land, or land under federal jurisdiction.

Kern County General Plan 1.10.3 Archaeological, Paleontological, Cultural and Historic Preservation Policy

As stated in Policy 25 of the Land Use/Conservation/Open Space Element, "The County will promote the preservation of cultural and historic resources which provide ties with the past and constitute a heritage value to residents and visitors" (Kern Planning Group 2026). This is implemented by the following measures and applies to all types of discretionary projects:

K. Coordinate with the California State University, Bakersfield's Archaeology Inventory Center.
L. The County shall address archaeological and historical resources for discretionary projects in accordance with the California Environmental Quality Act (CEQA).
M. In areas of known paleontological resources, the County should address the preservation of these resources where feasible.
N. The County shall develop a list of Native American organizations and individuals who desire to be notified of proposed discretionary projects. This notification will be accomplished through the established procedures for discretionary projects and CEQA documents.
O. On a project specific basis, the County Planning Department shall evaluate the necessity for the involvement of a qualified Native American monitor for grading or other construction activities on discretionary projects that are subject to a CEQA document.

California State University, Bakersfield, Master Plan Environmental Impact Report

In 2007, CSUB certified an Environmental Impact Report (EIR) to accompany a new CSUB Master Plan. The Master Plan EIR found that no significant resources are known on campus, but that resources are anticipated to exist within the campus or its vicinity.

The Master Plan EIR includes two Mitigation Measures (MM) designed to reduce impacts to cultural resources, which at the time of the preparation of the EIR included paleontological resources:

3.5-1a: Prior to any proposed activity that will result in the excavation of sub-surface sediment within the Project site, the Center for Archaeological Research at California State University, Bakersfield, and the Kern County Native American contacts as listed in the Native American Heritage Commission's comment letter on the Initial Study/Notice of Preparation for this Project (Appendix A) shall be notified prior to the commencement of ground disturbing activities.

3.5-1b: If any as-yet undetected (i.e. buried) cultural resources are encountered during any future excavation of subsurface sediment within the Project site, work shall cease within a 50-foot area of the find, and a qualified archaeologist shall be contacted to evaluate any such discoveries. Also, an archaeological monitor shall to be present during construction. In the event that an artifact is discovered, the monitor shall note and photograph the discovery. These measures will mitigate any potentially significant impact to a less than significant level.

The Ground Mount Solar and Battery Project was not specifically identified in the 2007 Master Plan EIR; however, as a project proposed within the CSUB campus, it is subject to the policies and mitigation framework established by the Master Plan EIR.

PALEONTOLOGICAL RESOURCES IDENTIFICATION

The paleontological resources identification efforts included a consultation of documented paleontological localities held by the NHMLAC. At Michael Baker's request, NHMLAC staff searched its holdings for information regarding documented paleontological resources. Michael Baker staff supplemented the information from the NHMLAC with data from museum holdings documented in relevant online databases and a review of the scientific literature.

Geological Context

Eleven geomorphic provinces divide California, each defined by unique geologic and geomorphic characteristics (CGS 2002). The project is located in the Great Valley geomorphic region, which is designated by its large alluvial plain about 50 miles wide and 400 miles long in the central part of California. The whole valley is a trough in which sediments have been deposited almost continuously since the Jurassic (about 160 million years ago). The project area is located in the southern part of this valley, within what is known as the San Joaquin Valley. This region is drained by the San Joaquin River and great oil fields are found along its southernmost edges and anticlinal uplifts.

The project area is located in the Central California Valley and sits within the South Valley Alluvium Ecoregion (7T), which occurs on nearly level alluvial fans along the southwestern edge of the San Joaquin Valley. Soils at the project site fall into two units. The northern part of the project site, consisting of approximately 43.8 percent of the project site, is composed of Kimberlina fine sandy loam, 0 to 2 percent slopes. The remainder of the project site is composed of Wasco sandy loam (NRCS 2026). The soil temperature regime is thermic and soil moisture is aridic. Vegetation includes perennial bunchgrasses and annual grasslands, allscale scrub, mesquite dunelands, and some iodinebush. Basin ponding occurs seasonally. The land is often used for cropland, pasture, and grassland, and numerous natural oil fields occur here (Griffith et al. 2016).

Geologic maps of the region, including Bedrossian et al. (2012) and Hanna et al. (1974), describe the underlying geology of the project area as alluvial fan deposits from the Late Holocene (4,200 years ago to present). Alluvial fan deposits consist of unconsolidated boulders, cobbles, gravel, sand and silt recently deposited by river and streams travelling through a confined valley or canyon. These sediments are typically deposited in a fan-shaped cone and the region is generally dominated by larger gravel-sized particles. Deposits are derived from the detritus of the Sierra Nevada Mountains, and the dissected uplands to the north and east, and were carried into the valley by the Kern River and related streams that have existed in the region during the past 1.6 million years (Dale et al. 1966). This unit varies in character depending on distance from its eastern margin, but in general is predominantly gravel with silt and sand which lessens in grainsize to the west. These alluvial fan deposits have been found to be up to 150 feet deep in areas (Wood and Dale 1964). Although Late Holocene-aged sediments are generally too young to produce fossils, there is potential for the underlying sediments to be old enough to contain fossils if these sediments are 5,000 years or older (SVP 2010). Because of this, the alluvial fan deposits are considered to have low potential for paleontology sensitivity at the surface, and a moderate sensitivity at depth (SVP 2025). The depth of this transition is unknown unless a geotechnical study is conducted but may be as shallow as 5 feet when comparing sedimentary deposition rates with similar Southern California and Central Valley units and known fossil localities (UCMP 2026).

Natural History Museum of Los Angeles County Records Search

On February 15, 2026, Michael Baker International staff requested the NHMLAC search its holdings for documented paleontological resources within and near the CSUB campus. The NHMLAC responded in a letter dated February 16, 2025 (**Attachment 2**). The records search showed no previously identified fossil localities within the campus or the project site. However, three fossil localities from similar Pleistocene deposits to those found within the project site were listed (Table 1). No other localities were identified by the NHMLAC. These localities are from units that are Pleistocene in age, and although the underlying units at the project site are listed as Holocene in age, it is possible that Pleistocene-aged sediments similar to those at the listed localities may be impacted at depth.

TABLE 1: NATURAL HISTORY MUSEUM OF LOS ANGELES COUNTY LOCALITIES NEAR THE PROJECT SITE

Locality Number	Taxa	Formation	Chronological Unit	Location/Depth
LACM VP 5777	Unidentified mammal	Walker Formation	Pleistocene	40 miles east at surface
LACM VP 7844-7845	Deer (Cervidae cf. *Odocoileus*); and microvertebrate assemblage including lizards (Lacertilia), snakes (Serpentes), rodents (Rodentia), and rabbits/hares/pikas (Lagomorpha)	Unknown formation (Pleistocene; discontinuous light grey silty sandstone)	Pleistocene	65 miles west unknown depth

ONLINE MUSEUM DATABASES RECORDS SEARCH

Michael Baker International conducted supplemental paleontological records searches within 10 miles of the CSUB project site using the following websites:

- University of California Museum of Paleontology Locality Search (UCMP 2026)
- The Paleobiology Database (PBDB 2026)

The fossil locality search in the UCMP online database found one locality within Kern County from Pleistocene sediments. The exact location of this locality was unknown but it included 7 specimens of fossil plant material from pine and magnolia species. No Holocene-aged localities were found within this search.

The PBDB locality search listed one locality within Pleistocene-aged sediments approximately 2 miles south of the project area, which contained an assemblage of vertebrate fossils including treefrogs (*Hyla* sp.), Lizards (Lancertilia indet.), a canid (Canidae indet), rabbit (Leporidae indet.) and rodents (*Thomomys* sp., *Microtus* sp., *Neotoma* sp., *Dipodomys* sp.). No other localities were listed from Pleistocene or Holocene aged sediments within 10 miles of the project area.

PALEONTOLOGICAL SENSITIVITY ANALYSIS

Per the guidelines set forth by the Society of Vertebrate Paleontology (SVP 2025) and based on the fossil sensitivity of the formations present within the project area (alluvial fan deposits of Holocene age), there is low potential at the surface and moderate potential at depth to disturb paleontological resources within undisturbed geologic contexts (i.e., undisturbed bedrock or subsurface geologic deposits in previously undisturbed areas) in the project area. No paleontological resources are documented within the project area and similarly Holocene and Pleistocene aged resources occur, but are rare within a reasonable distance of the project area.

ARCHAEOLOGICAL, ETHNOGRAPHIC, AND HISTORIC CONTEXT

Precontact Context

Within Central California specifically, including the San Joaquin Valley, the pre-contact period is divided into the Paleoindian period, the Lower, Middle, and Upper Archaic periods, and the Emergent period. Each of these periods is poorly known, and there is nowhere in the San Joaquin Valley that the entire sequence of precontact archaeological remains has been uncovered. This is due largely to the area's history of disturbance, but even more the deep sedimentation in the central valley (Arnold and Walsh 2010: 92). The chronology presented here remains tentative.

Paleoindian Period (ca. 13,000–10,000 BP)

The Paleoindian period in California as a whole is typically dated to approximately 10,000–6000 BC. Archaeological evidence of Paleoindian sites indicated hunting adaptation characterized by large, fluted projectile points and hunting of megafauna and other faunal resources for inland sites. Fluted projectile points throughout California indicated that Paleoindians at least traveled through the region, but few stratified sites of this culture have been found (Chartkoff and Chartkoff 1984). Due to climate change during the Holocene, periods of erosion and deposition have altered large segments of the Pleistocene landscape, particularly in areas of heavy sediment accumulation (Rosenthal et al. 2004). In the Central Valley, the Paleoindian period is best represented at Tulare Lake (Arnold and Walsh 2010: 93).

Lower Archaic Period (10,000–7500 BP) The Lower Archaic period is marked by the presence of chipped crescents and stemmed projectile points. The artifacts are consistent with a mobile hunting and gathering economy. Mobile foragers appeared to have resided in camps situated along marshes and on grasslands and took advantage of a wide array of resources, including freshwater mussels (Arnold and Walsh 2010: 92-93). The ubiquity of artifact styles through space indicates a high degree of generalization compared to the more specialized assemblages of those practicing low residential mobility seen in latter periods (King et al. 2016).

Middle Archaic Period (7500–2500 BP) As in the preceding period, mobile foragers in the resided in camps situated along marshes and on grasslands. The Middle Archaic period was also marked by new groundstone technology and increased trade, evidenced by cut marine shell (*Olivella* sp.) beads. Formalized exchange relationships appeared to have been established in the flake stone industry as well. Mortars and pestles first appeared in sites dating to this period, which is thought to signal an increased dietary reliance on acorns rather than hard seeds and an associated increase in sedentism.

Upper Archaic Period (2500-850 BP) The Upper Archaic period coincided with the Medieval Climatic Anomaly and was characterized by cooler conditions and increased precipitation in central California, which resulted in increased sedentism. These sites are characterized by utilitarian objects, numerous mortars, and pestles, implying greater reliance on acorns and a highly developed bone tool industry. In the San Joaquin Valley, a robust trade in obsidian developed. The specialized nature of these artifact assemblages seems to indicate a high degree of sedentism (King et al. 2016).

Emergent Period (850 BP-AD 1769) The Emergent period coincided with the end of the Medieval Climatic Anomaly and is associated with a new level of sedentism, status ascription, ceremonial integration, and regional trade, as indicated by the presence of finished artifacts and food remains that could not be obtained locally. The period coincides with the Augustine pattern in the San Francisco Bay

area and Sacramento Valley. New ornament forms and technologies emerged, such as the bow and arrow, toggle harpoon, hopper mortar, clamshell disk beads, and steatite and magnesite beads and tubes (Fredrickson 1974: 563). This period was marked by wide-ranging changes in *Olivella* bead forms and their distribution patterns. The *Olivella* saucer bead trade network appears to have collapsed suddenly between AD 430 and 1050, and the *Olivella* saucer bead industry was replaced by more regionally integrated shell bead forms, such as *Olivella* wall beads and clamshell disk beads, possibly indicating the increased importance of communicating cultural affiliation within an increasingly populated region (Bennyhoff 1994).

Ethnographic Context

At the time of Spanish intrusion into California, California's Central Valley was home to approximately one-third of the state's indigenous inhabitants. Most of these were in the northern part of the Central Valley, which was drained by the Sacramento River and its tributaries. The southern part of the Central Valley, the San Joaquin Valley, was drier and warmer but well-watered by rivers such as the Kern and San Joaquin Rivers and held many lakes and marshes.

The southern San Joaquin Valley was occupied by the Southern Valley Yokuts, whose territory stretched throughout the valley from the lower Kings River to the Tehachapi Mountains (Kroeber 1925). Rather than a united political entity, the Yokuts consisted of self-governing groups—sometimes called tribes or tribelets by anthropologists—averaging about 350 members. Approximately 40 to 50 different but related languages made up the Yokutsan language family, which encompassed the Northern Valley Yokuts and Foothill Yokuts in addition to the Southern Valley Yokuts. The Yokutsan languages were all part of the Penutian stock, which also includes the Winutan, Maiduan, and Utian language families (Shipley 1978: 82-85).

The Yokuts made extensive use of the tule (bullrush; *Schoenoplectus acutus*) endemic to the Central Valley marshes. The Spanish referred to the Yokuts and other natives with similar lifeways as *Tulareños*. Tule watercraft were used for transportation, hunting, and fishing. The Yokuts were adept basket makers, and baskets were used for a variety of purposes including food storage and preparation. Dwellings were made of wood frames covered with tule mats, and ranged in size from single-family homes to long communal residences that held up to ten families (Wallace 1978).

The Yokuts food and food gathering were well adapted to their environment. Tule roots were processed in mortars and made into mush. Other plant foods were also eaten raw and cooked. When available, acorns were processed in a similar way. A number of plant seeds were ground, or roasted by placing and tossing them alongside live coals in basketry trays. Mammals, reptiles, and birds were hunted among the tules using snares and bows and arrows, generally with stone or bone arrowheads, and nets were used for both trapping and fishing. Freshwater mussels were collected in large quantities (Wallace 1978).

These tribes or tribelets generally included several sedentary settlements, led by one dominant settlement, within a specific geographic area. These settlements were spread along the shores of the southern valley's major lakes—Tulare Lake, Buena Vista Lake, and Kern Lake—and along the major rivers such as the Kings River, the Kaweah River, and the Kern River (Wallace 1978).

The project site lies within the territory of the Yowlumne tribe of the Yokuts. The Yowlumne possessed two villages within what is now Bakersfield, Woilo, on a high knoll overlooking the Kern River, and

another village across the river to the west. Both villages are believed to have been in the area of historic downtown Bakersfield (Latta 1977: 278-279).

Historic Context Post-Contact

Spanish explorers first visited the coast of Southern California in 1542. However, European settlement did not begin in the area until 1769, when Gaspar de Portolá led an exploratory mission intended to open up Alta California to settlement. The first documented Spaniard to enter the San Joaquin Valley was the intrepid missionary Fray Francisco Garcés, who visited the valley and camped beside the Kern River in 1776 (Brewer 2001). However, while the indigenous inhabitants of the San Joaquin Valley interacted with both the Spanish and missionized Native Americans who grazed livestock and traveled in the valley, they retained much of their autonomy.

In 1821, Mexico won its independence from Spain. The new state was secular in nature and moved increasingly towards secularization of the missions and dispersal of the mission properties among politically connected elites. In 1834, the missions were secularized and their lands divided up into large grants known as ranchos, continuing a practice that had been introduced by the Spanish. A few of these grants lay within the San Joaquin Valley. The closest land grant to the project area was Rancho El Tejón, approximately 19 miles east, which Governor Manuel Micheltorena granted José Antonio Aguirre and Ygnacio del Valle in 1843. Native Americans continued to serve as the primary source of labor for the ranchos. But the increasing numbers of Mexicans in California came to see the Central Valley as a place where fugitive natives and bandits found refuge, and punitive expeditions were often launched into the valley (Brewer 2001).

The Mexican-American War (1846–1848) ended with American victory. In the Treaty of Guadalupe Hidalgo, Mexico ceded lands, including California, to the United States. The treaty required landowners to comply with a lengthy and expensive legal process to prove their land rights. Those who successfully did so entered an economic system unsuited to their traditional way of life. Gold discovered in 1848 led to a massive influx of Americans, many of whom began purchasing the lands of the old Californios.

The project site was never a part of a Spanish or Mexican land grant, and so was claimed by the federal government. In 1854, the project vicinity was surveyed by United States Deputy Surveyor Brice M. Henry. Henry mapped the Kern River flowing north-south approximately 2.5 miles east of the project site. A trail segment is shown in the northeast quarter of Township 30 South, Range 27 East, Section 5, which may have entered the project site, but no other development is visible (Henry 1855).

In the 1850s, settlers moved into the southern San Joaquin Valley, turning the area into farmland. Because of the shifting nature of the Kern River, the area of what became Bakersfield was known as Kern Island. In the early 1860s, Thomas Baker moved into the area, settling on the Los Angeles to Stockton Road in what would become Bakersfield. Settlers built canals to tame the land for farming, beginning with Baker's Kern Island Canal (Brewer 2001).

The project site is located west of the historic core of Bakersfield, but it saw a similar agricultural development. By the early twentieth century, the Kern River followed its current course. The 1910 and 1912 Buena Vista Lake 1:125,000 topographic maps show the James Canal cutting through what would become the CSUB campus, including the project site. The Stockdale Highway follows its current route north of today's campus, and two buildings, probably farmhouses, stand just to the east of what would become the campus (USGS 1910, 1912). No development is seen in the project area itself.

By the time of the 1932 Gosford 1:31,680 topographic map, what would become the CSUB campus is a network of levees, canals, and berms (USGS 1932). The 1950 Gosford 1:24,000 map shows much the same (USGS 1950). But by 1954, many of the canals and berms disappear, either no longer depicted in maps or actually leveled (USGS 1954).

In the middle 1960s, what would become the CSUB campus was a beet field when it was acquired for the new Kern State College. "Imagine 375 acres of sugar beets with one dying cottonwood tree ... That was the campus when I first saw it in 1967," Ken Secor, the new Vice President for Administrative Services, remembered decades later. Secor designed many of the campus's original buildings, which were quickly constructed so the college could begin classes on October 1, 1970. But much of the campus remained undeveloped (CSUB, n.d.). Notably, the 1978 Gosford 1:24000 map—actually an aerial photograph—shows the project site still under cultivation (USGS 1978).

The indigenous population persists despite severe impacts caused by non-indigenous intrusion into the valley. The Yokuts and their indigenous neighbors have formed several tribes which continue to steward the land and their cultural resources. The only federally recognized tribe with lands in Kern County is the Tejon Indian Tribe, which consists of Yokuts, Chumash, Tataviam, Tubatulabal, and Paiute peoples. The tribe was first recognized by the United States government in 1851 in one of eighteen treaties entered into with indigenous Californians but not ratified by the United States Senate. Their status was subsequently reaffirmed by the Bureau of Indian Affairs in 2012 (American Indian Alaska Native Tourism Association 2025; Tejon Indian Tribe, n.d.).

Kern River Hydrology

The Kern River is the southernmost major Sierra Nevada River entering the San Joaquin Valley and was a foundational driver of agricultural settlement and irrigation development in the Bakersfield region during the mid- to late nineteenth century. Emerging from a steep granite canyon approximately ten miles east of Bakersfield, the river spreads across a broad alluvial plain, depositing sand and gravel and forming an extensive, shifting delta system characterized by multiple channels and sloughs. This deltaic environment—commonly referred to as **Kern Island**—was historically unstable, with river channels frequently changing course due to seasonal floods and major freshet events, notably those of 1861–62 and 1867–68 (Grunsky 1898:37-38).

Hydrologically, the Kern River is dominated by **snowmelt-driven flows** from its 2,345-square-mile Sierra Nevada watershed. Peak discharges typically occurred between April and July, while late summer and fall flows were comparatively low. Average annual discharge during the late nineteenth century was estimated at approximately 1,100 cubic feet per second, though year-to-year variability was substantial. These fluctuations necessitated the construction of diversion works, weirs, and canals to stabilize water supply for irrigation (Grunsky 1898:37-38)

By the 1870s–1890s, human intervention had significantly altered the river's natural hydrology. Levees, headgates, and canals increasingly confined high flows to selected channels, redirected water away from historic lakebeds, and converted Buena Vista Lake into a managed reservoir. Collectively, these actions transformed the Kern River from a dynamic, multi-channel river into a highly engineered irrigation source supporting large-scale agricultural production, particularly alfalfa and grain cultivation (Grunsky 1898:37-38).

James Canal

The James Canal, constructed beginning in 1871, was an early irrigation canal developed to serve agricultural lands, specifically the odd-numbered land sections west of Old Kern River. Its construction reflects the transition from small, informal water diversions to more substantial, capitalized irrigation infrastructure during the post–Gold Rush agricultural expansion of Kern County (Grunsky 1898:49-50).

Water for the James Canal was diverted from the Kern River just below the head of Buena Vista Slough, using a low timber-and-flashboard river weir. This same structure also served the adjacent Buena Vista Canal. The upper portion of the James Canal was built with unusually large dimensions for its time—up to 100 feet wide near its head—reflecting both the high sediment loads of the river and the need to convey substantial volumes of water across permeable delta soils (Grunsky 1898:49-50).

The main canal originally extended approximately 18 miles, though its lower reaches were later abandoned after irrigation attempts on strongly alkaline lands near Kern Lake proved unsuccessful. By the late 1870s, total expenditures for the James Canal were estimated at roughly $16,000, a significant investment indicative of the economic importance placed on irrigation development (Grunsky 1898:49-50).

Historically, the James Canal functioned as part of a broader network of Kern River canals that collectively reshaped the delta landscape. It was one of the many water conveyance and control features that contributed to stabilizing water delivery while simultaneously reducing overbank flooding and natural wetland conditions (Grunsky 1898:49-50).

James Canal Development History

The James Canal was constructed in 1871 (Grunsky 1898:50). The canal is first visible on 1912 USGS map (**Figure 1**) (USGS 1910, rev. 1912). Archival records and maps show the canal was originally approximately 18 miles long and had widths ranging from 100 feet wide at north end at the Kern River, and 30-40 feet wide along most of the rest of its length, with a depth of 3 feet average. In 1898, a USGS report commented the southern portion of the canal was already in disuse due to the abandonment of Lake Ranch as a source of irrigation due to alkalinity (Grunsky 1898:49-50; USGS 1910, rev. 1912). By 1932, the canal started in the north at an unnamed canal that flowed west from the Buena Vista Canal (USGS 1932). A 1954 USGS map shows the name of this origin canal as Gates Canal and the James Canal appears to have a similar path (USGS 1954). By 1976, the James Canal crosses the new north-south Arvin-Edison Canal and terminates in a new unnamed canal that runs south from the Gates Canal to the west, along Old River Road, and connects to the Buena Vista Canal (**Figure 2**) (USGS 1954, rev. 1976). By 1981, an aerial-type USGS map shows the James Canal appears to have been disrupted by development and only segments remain in place, including the portion documented in this recording at the Arvin-Edison Canal (**Figure 3**) (USGS 1981).

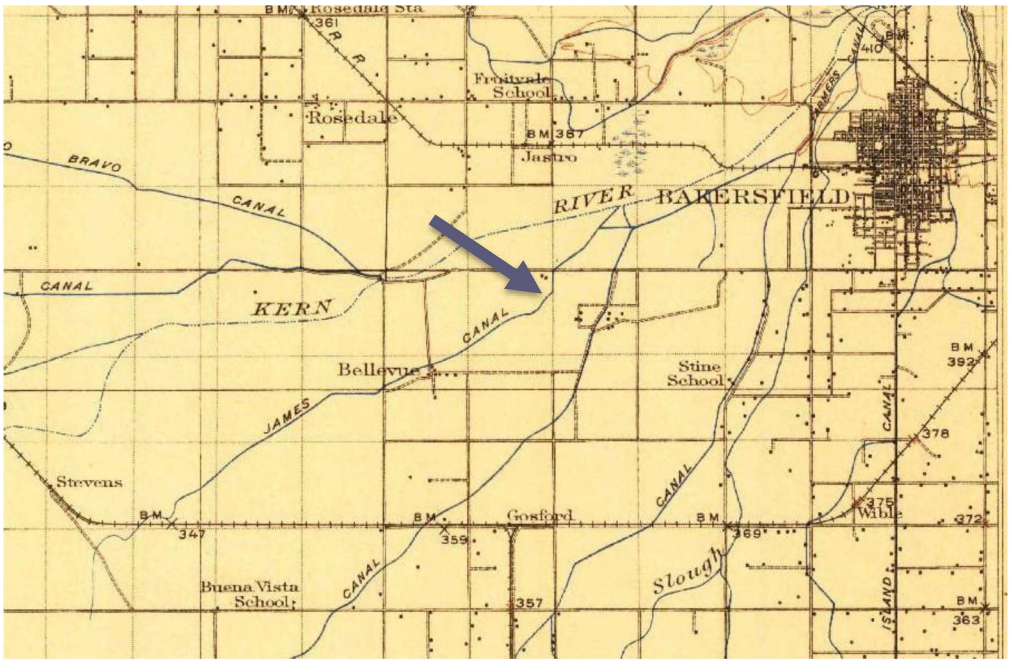


FIGURE 1: THE JAMES CANAL PORTRAYED ON THE 1912 USGS MAP. A BLUE AROW POINTS TO THE EXTANT SEGMENT RECORDED AS PART OF THIS STUDY (USGS 1910, REV. 1912).

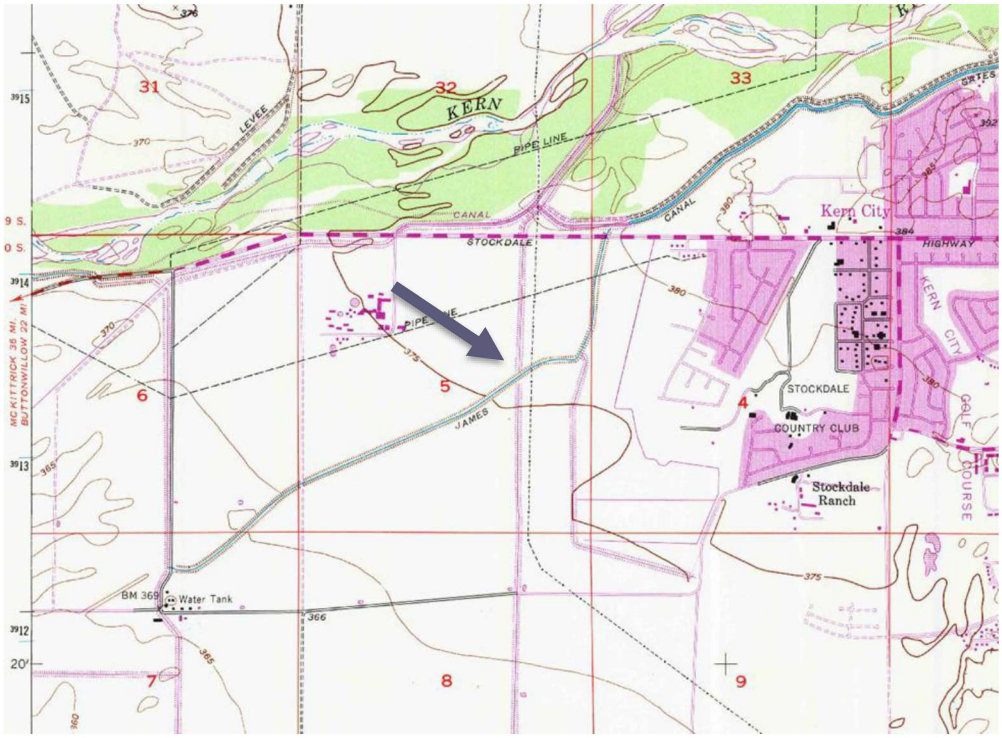


FIGURE 2: THE JAMES CANAL PORTRAYED ON THE 1976 USGS MAP. THE CANAL ORIGINATED AT THE GATES CANAL TO THE NORTH, CROSSES THE NEW ALVA-EDISON CANAL, AND TERMINATES TO THE SOUTH AT AN UNNAMED CANAL THAT RUNS ALONG OLD RIVER ROAD AND FLOWS INTO THE BUENA VISTA CANAL. A BLUE AROW POINTS TO THE EXTANT SEGMENT RECORDED AS PART OF THIS STUDY WHERE IT CROSSED THE ALVA-EDISON CANAL (USGS 1954, REV. 1976).

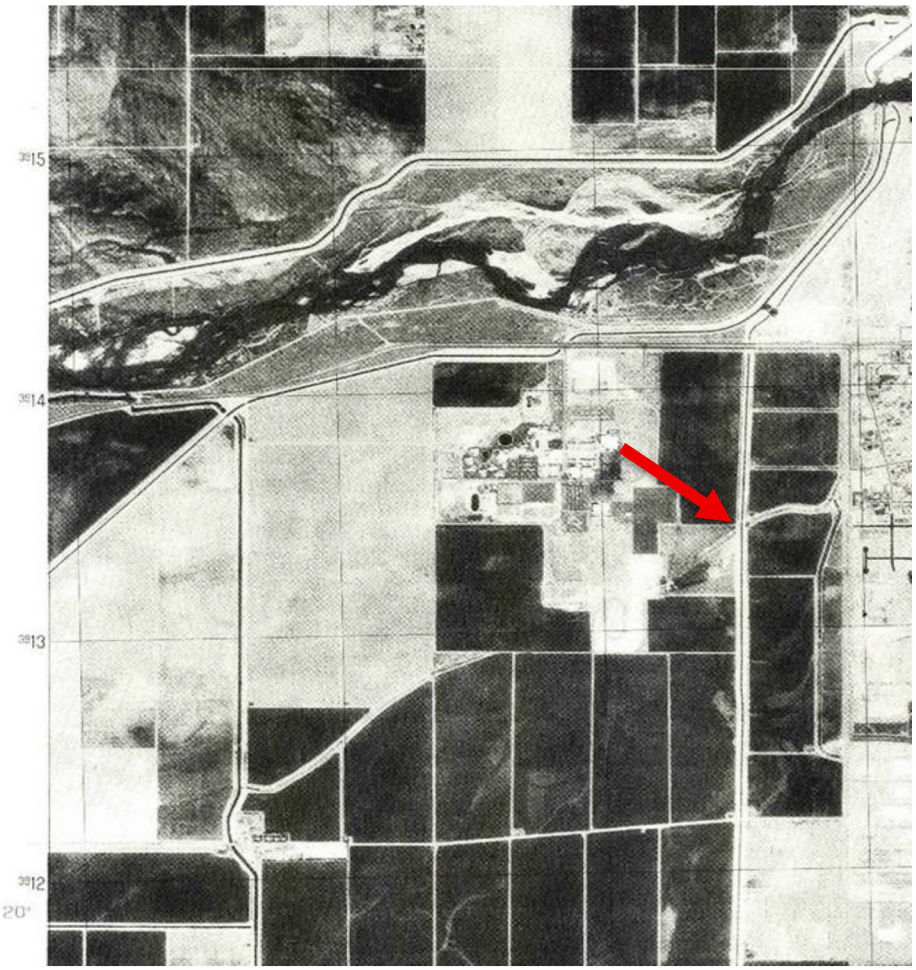


FIGURE 3: THE JAMES CANAL PORTRAYED ON THE 1981 USGS AERIAL MAP. PORTIONS OF THE CANAL, INCLUDING THE SEGMENT DOCUMENTED IN THIS RECORDING, HAVE BEEN ORPHANED BY SURROUNDING DEVELOPMENT. A RED AROW POINTS TO THE EXTANT SEGMENT RECORDED AS PART OF THIS STUDY (USGS 1978, REV. 1981).

Water Conveyance and Control

In 2000, the California Department of Transportation (Caltrans) published a report that provides a statewide thematic approach to surveying and evaluating the ditches and canals commonly found throughout California. This report, *Water Conveyance Systems in California: Historic Context Development and Evaluation Procedures,* asserts that "there is an increased awareness canals and other water conveyance facilities can be historically significant, and that when projects do have the potential to affect them, they need to be studied systematically" (Caltrans and JRP Historical Consulting Services 2000: 1). Caltrans notes that some level of research is required to determine the potential for historical significance of these resources, and that certain types of features are more likely than others to have potential significance, including "prehistoric or mission era irrigation systems; gold rush-era mining ditches; early or major irrigation, reclamation, or hydroelectric systems, major multi-purpose systems, flumes; tunnels, or ditches that may possess engineering, construction, or design distinction; properties associated with important events, such as critical or precedent setting litigation; and any early or prototype facilities" (1). The report also delineates resources that typically would not require evaluation, including roadside drainage ditches; municipal water, sewer, and storm drain systems; most ordinary irrigation ditches; modified natural waterways; modern pipelines; isolated or unidentified ditch

segments; and canals less than 50 years old (1-2). Caltrans outlines the types of actions that could result in an effect on a water conveyance resource, including but not limited to modifying a critical element of a significant system; concrete line or pipe an important earthen ditch; introducing visual instructions that alter a canal's historic setting; rerouting a critical component of an early system; obliterating a small mining ditch; or causing other changes to an important property's essential physical features (2). Ultimately, Caltrans cautions that, due to the ubiquitous nature of this type of resource, an understanding of the potential historical significance of a water conveyance resource is key to determining the level of documentation and evaluation necessary (1-2). For the James Canal, while an early feature of the Kern River water conveyance and control infrastructure, it was only one minor canal in a large system that facilitated the agricultural success of the region.

People

Targeted research failed to identify any direct association with the James Canal and the lives of significant persons in the past (Ancestry.com n.d.; Newpapers.com n.d.; Google.com n.d.). The James Canal was part of the early Kern River water infrastructure system, and the water infrastructure features in this system have been used by numerous private and public entities and municipal personnel over the years. While water infrastructure system features and complexes often have associations with multiple people, and although these individuals may have contributed to aspects of local and regional history, there is insufficient evidence to establish a substantive connection between their specific contributions and this canal.

Architect and Builder

Targeted research failed to identify any specific architect or builder associated with the design of the James Canal (Ancestry.com n.d.; Newpapers.com n.d.; Google.com n.d.).

CULTURAL RESOURCES IDENTIFICATION METHODS

The results of the SSJVIC records search and correspondence, Native American Heritage Commission Sacred Lands File search, archaeological survey, and archaeological site sensitivity analysis are presented below.

SOUTHERN SAN JOAQUIN VALLEY INFORMATION CENTER

On February 11, 2026, Michael Baker International requested a priority records search from the SSJVIC located at CSUB. The SSJVIC is part of the California Historical Resources Information System (CHRIS), an affiliate of the California Office of Historic Preservation (OHP) and the State Historic Resources Commission, and is the official state repository of cultural resources records and reports for Kern County. The records search request included the entirety of the CSUB main campus and a quarter-mile radius. The SSJVIC fulfilled the records search request on February 11, 2026, and gave clarifying information in series of emails on February 18, 2026.

Michael Baker International supplemented this search with available online databases maintained by federal and state repositories. As part of the records search, the following federal and California inventories were reviewed:

- NRHP (National Park Service 2020)
- California Inventory of Historic Resources (OHP 1976)
- California Points of Historical Interest (OHP 2026b)

- California Historical Landmarks (OHP 2026b)
- Built Environment Resources Directory for Kern County (OHP 2026a). The directory includes resources reviewed for eligibility for the NRHP and the California Historical Landmarks programs through federal and state environmental compliance laws, and resources nominated under federal and state registration programs, including the NRHP, California Register, California Historical Landmarks, and California Points of Historical Interest.

Previous Studies

The records search revealed that 15 studies have taken place within the CSUB campus or a 0.25-mile records search radius (Table 2). Of the 15 studies, only one (KE-02280) took place on campus. None of the project site, and less than 1 percent of the main CSUB campus, has been subjected to previous formal archaeological study.

TABLE 2: PREVIOUS STUDIES WITHIN 0.25 MILES OF THE CSUB MAIN CAMPUS.

Author	Report No.	Date	Title/Description	Overlaps the Project Site?
Napton, L. Kyle and Greathouse, E.A.	KE-00707	1988	Cultural Resource Investigation of the Proposed Kern River Parkway Project, City of Bakersfield, Kern County, California	No
Schiffman, Robert A.	KE-01211	1986	Archaeological Investigation of Sand Creek Golf Course, Kern County, California	No
Sutton, Mark Q. and Pruett, Catherine Lewis	KE-01601	1989	An Archaeological Survey of Sections 6 and 7, T.30S, R.27E for Oceanic, Inc.	No
Duke, Curt	KE-02280	1999	Cultural Resource Assessment for Pacific Bell Mobile Services Facility CV 011-01, Kern County, CA	No
Billat, Lorna	KE-02727	2000	Nextel Communications Wireless Telecommunications Service Facility - Fresno, Kern, and Tulare Counties	No
Herbert, Rand F.	KE-02807	1993	Historic Resource Evaluation Report: Tier 1, Route Adoption on Route 58 Between I-5 and State Route 99	No
Price, Barry A.	KE-03715	1978	Cultural Resources Survey for the Kern Delta Water District Cross River Pipeline, Kern County, California	No
Flint, Sandra S., McDougall, Dennis P., Jernigan, Kathleen, and Anderson, Lisa	KE-03726	1979	Cultural Resources Surveys for the Kern Delta Water District Water Banking and In-Lieu Water Supply Project, Kern County, California	No

Author	Report No.	Date	Title/Description	Overlaps the Project Site?
Hudlow, Scott M.	KE-04345	1979	A Phase I Cultural Resource Survey For Stockdale Highway / Coffee Road Property, City of Bakersfield, California	No
Loftus, Shanonn	KE-04551	1980	Cultural Resource Records Search and Site Survey AT&T Site BKLC40 (8017) Ming & Gosford 8201 Camino Media Bakersfield, Kern County, California 93311	No
Loftus, Shannon	KE-04551A	1980	Historic Architectural Resource Inventory and Assessment AT&T Site BKCL40 (8027) Ming & Gosford, 8201 Camino Media, Bakersfield, Kern County, California 93311	No
McCarthy-Reid, Amy	KE-05038	1980	06-KER-SR58 Centennial Corridor Project Re-validation #5 Proposed Park-and-Ride Facility and Retention Basin	No
McCarth-Reid, Amy	KE-05038A	1980	06-KER-58 Re-validation #8 Abandonment of E&B Oil Facility and Retention Basin Redesign	No
Kay, Michael	KE-05038B	1977	Kit Fox Sump Habitat Project	No
Whitley, David S., Carey, Peter A., and Azpitarte, Robert	KE-05452	1984	Class III Inventory/Phase I Survey, Kern River Channel Maintenance Project, Kern County, California	No

Previously Recorded Resources

The records search revealed seven resources located within the CSUB main campus or a 0.25-mile radius (Table 3). Of these, five resources are located on campus, and of those five, only two are formally recorded. The five resources on campus are described more fully below. None of these resources overlaps the project site.

TABLE 3: RESOURCES LOCATED WITHIN 0.25 MILES OF THE CSUB MAIN CAMPUS.

Primary Number	Trinomial	Name/ Description	Evaluation / OHP Status Code	On Campus/ Within Project Site?
None	None	Sparse lithics	Unevaluated: not formally recorded.	Yes/No
None	None	Sparse lithics	Unevaluated: not formally recorded.	Yes/No
None	None	Expended core	Unevaluated: not formally recorded.	Yes/No
P-15-003850	CA-KER-003850	Fenenga Site – teaching site constructed 1992-1993 consisting of fire affected rock, pottery, ground stone, obsidian flakes, rhyolite core and flakes, and large faunal bones	6Z: Found ineligible for NR, CR or local designation through survey evaluation.	Yes/No

Primary Number	Trinomial	Name/ Description	Evaluation / OHP Status Code	On Campus/ Within Project Site?
P-15-007994	None	Arvin-Edison Canal; Arvin-Edison Water Storage District North Canal	6Y: Determined ineligible for NR by consensus through Section 106 process – Not evaluated for CR or local listing.	No
P-15-008010	None	Carrier Canal/Gates	6Y: Determined ineligible for NR by consensus through Section 106 process – Not evaluated for CR or local listing.	Yes/No
P-15-017768	None	Pacific Gas & Electric Path 15 Transmission Tower (BKCL40)	6Y: Determined ineligible for NR by consensus through Section 106 process – Not evaluated for CR or local listing.	No

P-15-008010 – Carrier Canal/Gates

This resource consists of three gates associated with the Carrier Canal. The canal was first constructed in 1872, but was rebuilt and enlarged in the 1960s (JRP Historical Consulting Services 1993). The three gates were documented in association with improvements to State Highway 58 and determined ineligible for the NRHP through the Section 106 process (OHP 2026a).

P-15-003850 – CA-KER-003850 – Fenenga Site

This resource is a mock archaeological site constructed in the 1990s as a teaching site. According to its New Deposit/Redeposit Record, it was "Made by CSUB field classes in 1992 and 1993." It consists of fire affected rock, pottery, ground stone, obsidian flakes, large mammal bones, and a rhyolite core and flakes. A rock fire ring was also created at the site. Prior to the creation of the site, the site location and a 20-meter buffer was surveyed to ensure that no genuine archaeological sites would be contaminated by the deposit. However, the form does not document whether the artifacts used to create the site were genuine aboriginal artifacts or replicas (Woods 1993). It is named the Fenenga Site, presumably after Gerrit Fenenga, an archaeologist who served on the faculty of CSUB for nine years in the 1990s (Foster and Betts 2004: 110).

Informal Resources

In addition to the formally recorded resources, there are 3 "informal" resources identified on campus. Two of these resources are sparse lithic scatters, and the third is an isolated core. All three were identified by SSJVIC Assistant Coordinator Jeremy E. David and entered into the CHRIS spatial database, but none were formally recorded.

According to an email from Mr. David:

> I believe 2 of these informal resources are likely related to KER-3850, the 'Fenenga Site'. There is a large dispersed lithic scatter of rhyolite, calcedony, chert, and obsidian to the west and SW of the site. Further, there are back dirt piles here that could contain cultural materials, as I've found fist sized obsidian nodules next to them. It should be noted that

> since I first discovered these nodules, wild grasses have grown in and kit fox surveyors have been active in the field and I have not been able to relocate them since. [...] I found an isolated expended chert core to the SE of KER-3850, also next to a back dirt pile.

If these resources are associated with CA-KER-003850, then they were most likely deposited in the 1990s at the same time that the teaching site was created, in which case, while they may be either reproductions or genuine aboriginal artifacts, they do not represent an aboriginal archaeological site. However, these resources are located well outside the mapped boundary both of CA-KER-003850 and the 20-meter buffer the CA-KER-003850 site form notes was surveyed to ensure no archaeological sites would be impacted by the creation of the teaching site.

The third informal resource is also a sparse lithic scatter. Mr. David continues:

> Just south of the new humanities building and north of the pond is a dirt lot where I have found another sparce scatter of a few flakes and a projectile frag. It is difficult to be certain if this scatter is a secondary deposition from gravel fill (located approximately 200' to the west), or if it represents a primary deposit, but given the proximity to the river and other similar sites, it isn't a big stretch. [...] I collected some of the flakes and point frag from the dirt lot, as well as the expended core, because of their locations in high traffic areas and fear that nothing would ever be done about these sites.

Finally, Mr. David reported a fourth resource, not included in the CHRIS database:

> There is a water retention basin on the corner of Student Way and Southwest Dr. where I have found obsidian flakes eroding out of the side wall about a foot down from the surface (the campus routinely scrapes the side walls and bottoms of the basins, which has been done since the discovery), which leads me to believe there may be a subsurface deposit.

The complete records search results, including correspondence with Mr. David, are included as confidential Attachment 3.

Native American Heritage Commission

The California Native American Heritage Commission maintains a confidential Sacred Lands File documenting burial sites and other locations of concern to California Native American tribes. On February 19, 2026, Michael Baker requested the Sacred Lands File be searched for the project site.

The NAHC responded to the request in a letter dated March 26, 2026, indicating that results of the Sacred Lands File search were negative. The NAHC provided a list of recommended tribal contacts who might have knowledge of resources in the project site (Attachment 4).

Field Survey Methods and Results

On February 13, 2026, Michael Baker archaeologist Marc Beherec, PhD, RPA, conducted a field survey of the project site.

The entire project site was walked over in transects spaced 15 meters apart.

The project site is partially occupied by a practice soccer field (**Photograph 1**). Access roads lead to that practice field. South of the practice field is a fenced-in area. The site is otherwise undeveloped.

At the time of the survey, all parts of the project site were densely covered with vegetation (**Photograph 2 and Photograph 3**). Visibility of the ground surface within all parts of the project site was generally less than 5 percent. Soil was primarily visible in the access roads, the cut banks of a remnant of the James Canal, and back dirt from animal dens. Careful attention was paid to the visible soil in all these locations. In some cases, the back dirt from animal burrows was spread out with a trowel to look for artifacts, ecofacts, and archaeological features.

Visible disturbances to the site include grading and preparation of the practice soccer field; in-ground irrigation systems; remnants of the James Canal; and, in the northern part of the project area, a manhole labeled "BKFD SEWER." An access road bladed along the east side of the project site likely impacted the project site. The project site is also heavily bioturbaded by ground squirrels and possibly other burrowing animal activity.

Small quantities of recent trash and construction debris consisting of broken concrete and asphalt littered the project site, particularly in the environmentally sensitive area south of the practice field.



PHOTOGRAPH 1: THE PRACTICE SOCCER FIELD WITHIN THE PROJECT SITE, VIEW SOUTH.



PHOTOGRAPH 2: THE NORTHERN PART OF THE PROJECT SITE, OUTSIDE THE PRACTICE FIELD, VIEW NORTHEAST.



PHOTOGRAPH 3: THE FENCED-IN PART OF THE PROJECT SITE SOUTH OF THE PRACTICE FIELD, VIEW NORTHWEST.

James Canal

Approximately 70 feet of the historic James Canal alignment was located within the project site, which flowed from the northeast to the southwest in this location.

Just outside the east end of the project site, the James Canal was completely destroyed by the construction of the Arvin-Edison Canal and its associated access road.

At the far eastern end of the project site, the James Canal is backfilled and was barely discernable among the dense vegetation then covering the project site. Just inside the project site, the canal is visible as a slight depression. Inside the project site, the canal has been heavily impacted by deliberate backfilling, collapse and backfilling due to lack of maintenance, vegetation growth, and extensive ground squirrel activity. However, the canal continues beyond the project site to the southwest, where the alignment was more easily discernable because the portion of the inactive canal outside the project site is less backfilled and therefore more visible in the landscape (Photograph 4).

The most open parts of the canal, southwest of the project site, reveal it to consist of a U-shaped unlined earthen ditch with sheer side walls. The maximum depth of the canal is approximately 5 feet. The maximum width of the canal measures approximately 20 feet wide.

No features of the canal other than the unlined ditch were visible at the time of the survey.

The James Canal was documented on a DPR 523 series record available in Attachment 5.



PHOTOGRAPH 4: JAMES CANAL SEGMENT OVERVIEW, VIEW SOUTHWEST.

BURIED ARCHAEOLOGICAL SITE SENSITIVITY ANALYSIS

The project site has a low sensitivity for buried archaeological resources at the surface, increasing to moderate with depth.

The project site is located in the southern San Joaquin Valley, approximately 2.5 miles west of the Old Kern River, and slightly over 0.5 miles south of the current bed of the Kern River. Before it was tamed in

the late nineteenth and early twentieth centuries, the Kern River would have frequently shifted its bed through this area, which would have been occupied by knolls and marshes. The Yowlumne tribe of the Southern Valley Yokuts are documented to have occupied the village of Woilo in what is today Bakersfield. Because of the area's rich resources, it might be expected to have been intensively used in precontact and early post contact times. Soils maps and geologic maps indicate that Holocene alluvium overlies the entire project area. This alluvium, which can reach considerable depths, has the potential to bury archaeological resources. While there are no formally documented precontact resources on the CSUB campus or within the 0.25-mile buffer, this is most likely due to the lack of archaeological study so far given to the region. There are "informal" resources on campus, some of which may be deposits associated with the university's past as an archaeological teaching campus, or which may be archaeological sites requiring additional study. However, the project site's history of human disturbance reduces its sensitivity at shallow depths.

The area has a history of intensive disturbance. The Bakersfield area was drained of its marshes beginning in the nineteenth century in order to prepare it for agriculture. An active canal and access road borders the project site to the east, and remnants of the James Canal cut across the south end of the project site. Historical maps show the CSUB campus covered by a network of canals, levees, and berms, most of which are no longer visible today. The earth-moving required to excavate the canals and build up the berms would have required substantial ground disturbance. Further, the project site was actively farmed at least into the 1970s, and part of the project site was later leveled and planted for the playing field. These activities would have disturbed the project site to unknown depths near surface. The excavations and grading needed for reclamation and farming can reasonably be assumed to have destroyed any archaeological deposits that may have existed within the project site at shallow depths.

Based on the results of the archival research and past surveys, there is low potential that unknown archaeological resources will be encountered at shallow depths during ground-disturbing activities for the project due to past ground disturbance. However, deeper excavations may extend into undisturbed alluvial deposits. These deposits have a moderate potential to hide intact significant archaeological sites.

EVALUATION

The following includes an evaluation of the James Canal for its eligibility for the California Register of Historical Resources.

California Register Criterion 1 – Research did demonstrate that the James Canal was associated with the growth and expansion of agriculture in the Bakersfield area. The canal was constructed in 1871 as part of the response to agricultural expansion south of the Kern River. While the construction of the canal was important to expanding access to and control of water southwest of the Kern River, the canal was not the first to be constructed in the area. It was just a small part of an expanding system of water infrastructure and was not directly significantly associated with the increased development of the area, nor directly or significantly associated with general agricultural development at the state or national level. The James Canal is not known to have made a significant contribution to other broad patterns of local, regional, state, or national culture and history. The James Drain Canal is a remnant of an ubiquitous unlined canal found throughout the region since the late nineteenth century. As such, the James Canal does not meet the significance threshold for listing in the California Register under Criterion 1.

California Register Criterion 2 – To be eligible under Criterion 2, a property must be directly associated with a person's productive life during the period in which they achieved their significance. Additionally, if multiple properties are linked to the productive life of a significant person, those properties must be compared to determine which best represents the historical contributions of that individual. The James Canal is part of a water infrastructure system established, managed, and utilized by numerous public and private citizens; although these individuals may have contributed to aspects of local and regional history, there is insufficient evidence to establish a substantive connection between their specific contributions and this canal, or that this canal would be the best physical representation of those contributions. Therefore, the James Canal does not meet the significance threshold for listing in the California Register under Criterion 2.

California Register Criterion 3 – The James Canal is an unlined canal and is indistinguishable from other examples of this resource type. It was not the first of its type, nor the most distinguished example of a unlined canal in the region, state, or nation. Its design and construction do not represent a departure from standard construction practices or design for this resource type. The James Canal is not the representative work of a master, nor does it possess high artistic value. Therefore, the James Canal does not meet the significance threshold for listing in the California Register under Criterion 3.

California Register Criterion 4 – The built environment of the subject property is not likely to yield valuable information which will contribute to our understanding of human history because the property is not and never was the principal source of important information pertaining to significant events, people, or engineering. Therefore, the James Canal does not meet the significance threshold for listing in the California Register under Criterion 4.

Conclusion – Lacking significance, the James Canal is recommended as ineligible for listing in the California Register. It is not a historical resource as defined by CEQA Section 15064.5(a).

Integrity – The James Canal is recommended as ineligible under all four California Register criteria. Therefore, an analysis of integrity is not required.

SUMMARY OF FINDINGS AND RECOMMENDATIONS

PALEONTOLOGY

The project area consists of Holocene-aged alluvial fan deposits, which have a low potential for containing significant paleontological resources at the surface and a moderate potential at depth. Given the findings from the records search and geological context, there is little indication that the project will result in direct or indirect impacts on significant paleontological resources. According to the Society of Vertebrate Paleontology (SVP 2025) guidelines, the project's impact on paleontological resources is considered low but not negligible. While this risk appears low, inadvertent discoveries remain a possibility. As such, Michael Baker presents the following recommendations and best management practices for consideration.

Based on the results of this investigation, no further paleontological resources work is recommended prior to project implementation. However, as required by standard paleontological resource management practices and regulatory compliance, inadvertent discovery protocols should be in place to address any unanticipated finds. The following best management practices should be implemented to ensure compliance with state and federal regulations regarding paleontological resources:

a. An SVP Qualified Paleontologist shall be retained for the duration of the project and will be on call during grading and other significant ground-disturbing activities.

- Paleontological Principal Investigator (SVP Qualified Paleontologist). Someone with an advanced degree (Master's or Ph.D.) with an emphasis in paleontology plus a minimum of two years (or 50 completed mitigation projects) of demonstrated professional experience and competency with paleontological resource mitigation projects at the level of field supervisor, under the direct supervision of a principal investigator. This experience should include project initiation, fossil discovery and collection, laboratory preparation, fossil inventory, specimen identification, and repository curation. The principal investigator must be able to manage field paleontologists and fossil recoveries, communicate with project personnel, evaluate the scientific significance of fossils, and make decisions regarding impact mitigation. The principal investigator must also be able to ensure field notes and other observations are complete, study area stratigraphy is documented, and fossil localities are accurately indicated on measured stratigraphic sections. Additionally, the principal investigator must have a working knowledge of how fossils and their associated data are used in conducting and publishing professional paleontological research (such as demonstrated by having a record of peer-reviewed paleontological publications) and should participate in professional scientific organizations. The principal investigator must have experience evaluating the significance of unearthed fossils, obtaining necessary permits, and preparing and submitting required progress and final mitigation reports. The principal investigator must have project management experience and knowledge of legal requirements that apply to all aspects of mitigation paleontology. The principal investigator must also be able to evaluate the qualifications of field supervisors and field paleontologists and make responsible project staffing decisions.

- Field Paleontologist (Monitor). Someone with academic training (college or university degree) with an emphasis in paleontology or demonstrated equivalent experience. Academic training as defined herein must include completed basic coursework in paleontology, geology, and biology. Equivalent experience is defined as a minimum of two years of cumulative professional or non-professional work in laboratory preparation, curation, and/or fieldwork related to paleontology, as well as documented knowledge of the discipline of paleontology. The field paleontologist must be able to safely find, recover, and identify, to a basic level, fossils discovered in undisturbed settings as well as in active excavations at construction sites. The field paleontologist must also be able to identify and describe sedimentary rocks and stratigraphic relationships and be able to effectively communicate information about fossil discoveries, using photographs and written descriptions, to the paleontological principal investigator and/or field supervisor. Individuals who lack sufficient experience to be qualified as field paleontologists can gain the necessary experience by working alongside field paleontologists, field supervisors, or principal investigators.

b. Should any paleontological resources be discovered during construction or the course of any ground-disturbance activities, all such activities within 100 feet of the find shall halt immediately. At this time, CSU Bakersfield shall consult with the SVP Qualified

Paleontologist to assess the significance of the find. The assessment will follow SVP (2025) standards. If any find is determined to be significant, appropriate avoidance measures must be followed unless avoidance is determined to be unnecessary or infeasible by CSU Bakersfield. If avoidance is unnecessary or infeasible, other appropriate measures (e.g., data recovery, excavation) shall be instituted.

c. If the fossils are determined to be significant, then the SVP-qualified paleontologist shall prepare and implement a data recovery plan. The plan shall include, but not be limited to, the following measures:

I. The SVP Qualified Paleontologist shall ensure that all significant fossils collected are cleaned, identified, catalogued, and permanently curated with an appropriate institution with a research interest in the materials as required by the SVP guidelines.

II. The SVP Qualified Paleontologist shall ensure that specialty studies are completed, as appropriate, for any significant fossil collected.

III. All fossil discoveries will be thoroughly documented, including the documentation of stratigraphic data. The aerial extent and thickness of fossil-bearing deposits will be documented and mapped, and stratigraphic relationships, depositional contacts, structural deformation, and other details will be described and a report of findings created, and

IV. The SVP Qualified Paleontologist shall ensure that curation of fossils is completed in consultation with CSU Bakersfield. A letter of acceptance from the curation institution shall be submitted to CSU Bakersfield upon curation.

d. Recovered fossils will be processed in accordance with accepted professional methods outlined in the *Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources* (SVP 2025). Preparation of fossil specimens will include removal of extraneous matrix using mechanical methods. Weak or porous specimens and broken or damaged specimens may be consolidated or repaired using reversible means. Bulk samples will be washed and sieved. Following preparation, individual fossils will be isolated, identified to the lowest possible taxonomic level and catalogued. Catalogued specimens will be assigned locality and specimen numbers. Formal fossil locality records, including geographic, geologic, taphonomic, and collecting data, will be prepared.

e. If a significant unanticipated discovery is made, the SVP Qualified Paleontologist may make a recommendation based on the find and future project plans to determine if part-time or full-time paleontological monitoring of future ground disturbance activities is necessary. Ground disturbance refers to activities that would impact subsurface geologic deposits, such as grading, excavation, and boring. Activities taking place in current topsoil or within previously disturbed fill sediments (e.g., clearing, grubbing, pavement rehabilitation) do not require paleontological monitoring. If monitoring is deemed necessary, it shall only be conducted by a SVP Qualified Paleontologist or Monitor as described in the 2025 SVP guidelines. Monitoring may be

then reduced or suspended completely as deemed appropriate by the SVP Qualified Paleontologist, depending on observations made during monitoring.

f. If monitoring is conducted, then the Qualified Paleontologist will prepare a final Paleontological Mitigation Report (PMR). This report will be filed, at a minimum, with the County and the curational facility. This report will include, at a minimum, the following:

- Cover letter
- Title page
- Summary of findings
- Table of contents
- Acknowledgements
- Introduction
- Resource context
- Field and laboratory methods
- Results
- Bibliography
- Geological cross-sections depicting fossil localities and excavated units
- Maps
- Illustrations
- Appendices
- Curation details

ARCHAEOLOGY

The SSJVIC records search, literature and map review, and archaeological survey failed to identify any resources within or overlapping the project site. However, a buried archaeological sensitivity assessment indicates low sensitivity for buried precontact archaeological resources at shallow depths within the project site, transitioning to moderate with depth, due to its history of relatively recent human disturbances.

Prior to any excavations deeper than approximately 12 inches, it is recommended that CSUB retain a qualified professional archaeologist who meets the Secretary of the Interior's professional qualifications for archaeology. The qualified professional archaeologist shall oversee archaeological monitoring by a qualified archaeological monitor of the necessary ground disturbance within the project site. The archaeological monitor shall observe ground-disturbing activities in all areas with potential to contain significant cultural deposits. If, in the course of monitoring, the qualified professional archaeologist finds that excavations are within disturbed soil, or the sensitivity for buried resources is otherwise low, then archaeological monitoring may be reduced or suspended at the discretion of the qualified professional archaeologist with the approval of CSUB.

If any subsurface cultural resources are encountered during earth-moving activities, regardless of whether work is actively being monitored, it is recommended that all work be halted in the vicinity of the discovery until the qualified professional archaeologist can evaluate the findings and make recommendations. The archaeologist should evaluate the find in accordance with federal, state, and local guidelines, including California PRC Section 21083.2, to assess the significance of the find and identify avoidance or treatment measures as appropriate. Additionally, Health and Safety Code Section 7050.5, CEQA Guidelines Section 15064.5(e), and PRC Section 5097.98 mandate the process to be

followed in the unlikely event of an accidental discovery of human remains in a location other than a dedicated cemetery.

If a resource is found to be potentially significant and cannot be avoided, then a plan of treatment shall be developed and implemented by the qualified archaeologist in consultation with interested tribes. The site will not be released for work until treatment has been completed to the satisfaction of CSUB.

BUILT ENVIRONMENT

An extant portion of the James Canal was identified during the pedestrian survey. The James Canal was evaluated for the California Register and was found to lack historical significance under all four criteria. As a result, the James Canal is recommended ineligible for the California Register and is not a historical resource, as defined by CEQA Section 15064.5(a). No other built environment resources were identified in the project area.

PREPARER QUALIFICATIONS

This memorandum was prepared by Michael Baker International Senior Archaeologist Marc Beherec, PhD, RPA, Paleontologist Tara Kloess, Senior Paleontologist Peter Kloess, PhD, and Senior Architectural Historian Susan Wood, PhD, and reviewed for quality control by Senior Archaeologist Paige Kohler.

Marc A. Beherec, PhD, RPA, Principal Investigator/Senior Archaeologist, has more than 20 years of experience in prehistoric and historical archaeology and cultural resources management. His experience includes writing technical reports, including the National Environmental Policy Act, National Historic Preservation Act, and CEQA compliance documents. He has supervised and managed all phases of archaeological fieldwork, including survey, Phase II testing and evaluations and Phase III data recovery, and monitoring at sites throughout Southern California. Dr. Beherec meets the Secretary of the Interior's Professional Qualification Standards for prehistory and historical archaeology.

Tara Kloess, BA, Associate Paleontologist, is an experienced professional paleontologist and geologist with over 15 years of experience in the field of paleontology. With multiple years of field, technical, and laboratory experience, she has accrued extensive knowledge managing, fielding, and reporting for paleontology mitigation projects and conducting paleontological research, fossil salvage, and documentation in accordance with state and federal regulations on fossil preservation and mitigation. Her major interests in the field include California Pliocene and Pleistocene megafauna, whale evolution, and environmental reconstruction through sediment stratigraphy. Her strengths include mammalian bone identification, geologic unit identification and fossil collection and preservation methods including fossil jacketing and transport. She has worked on dozens of consulting projects within both the public and private sectors including housing development, Caltrans, PG&E, Southern California Edison, East Bay Municipal Utility District, and other local, state and federal contractors. She has experience recovering a diversity of fossils from project sites across California. She meets the SVP Standards for a Paleontology Monitor and Field Supervisor.

Peter Kloess, PhD, Principal Paleontologist, meets the SVP standards for a Qualified Paleontologist. He has over 20 years of experience in paleontology. His experience includes public and private consultation, field monitoring, excavation, and laboratory research on projects across the western United States, predominantly in California. He has consulting experience with a range of projects, including utility, transmission, construction, transportation, monitoring, and surveys. Additionally, he has recovered a diversity of fossils from project sites, such as invertebrates, small mammals and birds,

large mammals, and dinosaurs. Dr. Kloess also has extensive experience in paleontological museum collections and lab settings, including in roles such as assistant curator, co-leader and participant in excavations across California, Utah, New Mexico, and Montana, and specimen preparator. Dr. Kloess has researched, written, and published research articles in scientific journals.

Susan Wood, PhD, is a senior architectural historian experienced in historic preservation and cultural resource management in California. She meets the Secretary of the Interior's Professional Qualification Standards for architectural history, history, and archaeology. Ms. Wood's professional activities include resource evaluations, integrity assessments, effects analysis, mitigation documentation, design review, archival and historical research, architectural and archaeological field surveys, technical report preparation in accordance with Sections 106 and 110 of the National Historic Preservation Act (NHPA) and CEQA, peer review of cultural resource and cultural landscape reports, and project management. As a historic preservation planner consultant, Ms. Wood has experience in reviewing evaluations of local, state, and national historical significance; reviewing permit applications and design projects for adherence to the Secretary of the Interior's Standards for the Treatment of Historic Properties; reviewing Certificate of Appropriateness applications; and presenting at public hearings.

Sincerely,

Marc Beherec, PhD, RPA
Senior Archaeologist

Peter Kloess, PhD
Senior Paleontologist

Tara Kloess, BA
Paleontologist

Susan Wood, PhD
Senior Architectural Historian

Attachments:

Attachment 1 – Map Figures

Attachment 2 – Natural History Museum of Los Angeles County Paleontological Records Search Results (Confidential)

Attachment 3 – Cultural Resources Records Search Results (Confidential)

Attachment 4 – DPR 523 Series Forms

Attachment 4 – NAHC Sacred Lands File Search Result

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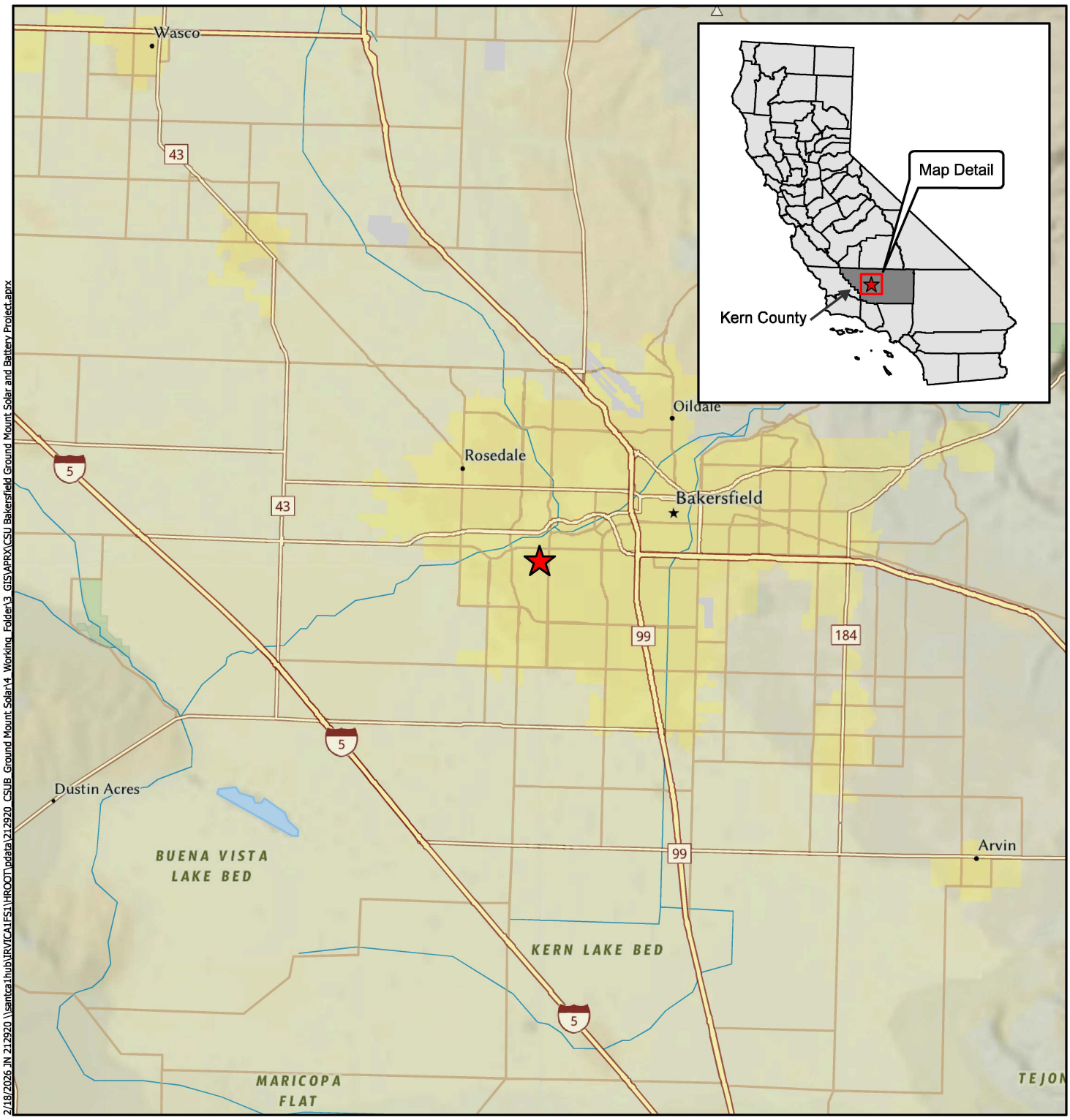
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Attachment 1
Figures



2/18/2026 JN 212920 \\santca1hub\IRVICA1FS1\HROOT\data\212920_CSUB_Ground Mount Solar\4_Working_Folder\3_GIS\APRX\CSU Bakersfield Ground Mount Solar and Battery Project.aprx

Legend

★ Project Location

Michael Baker INTERNATIONAL

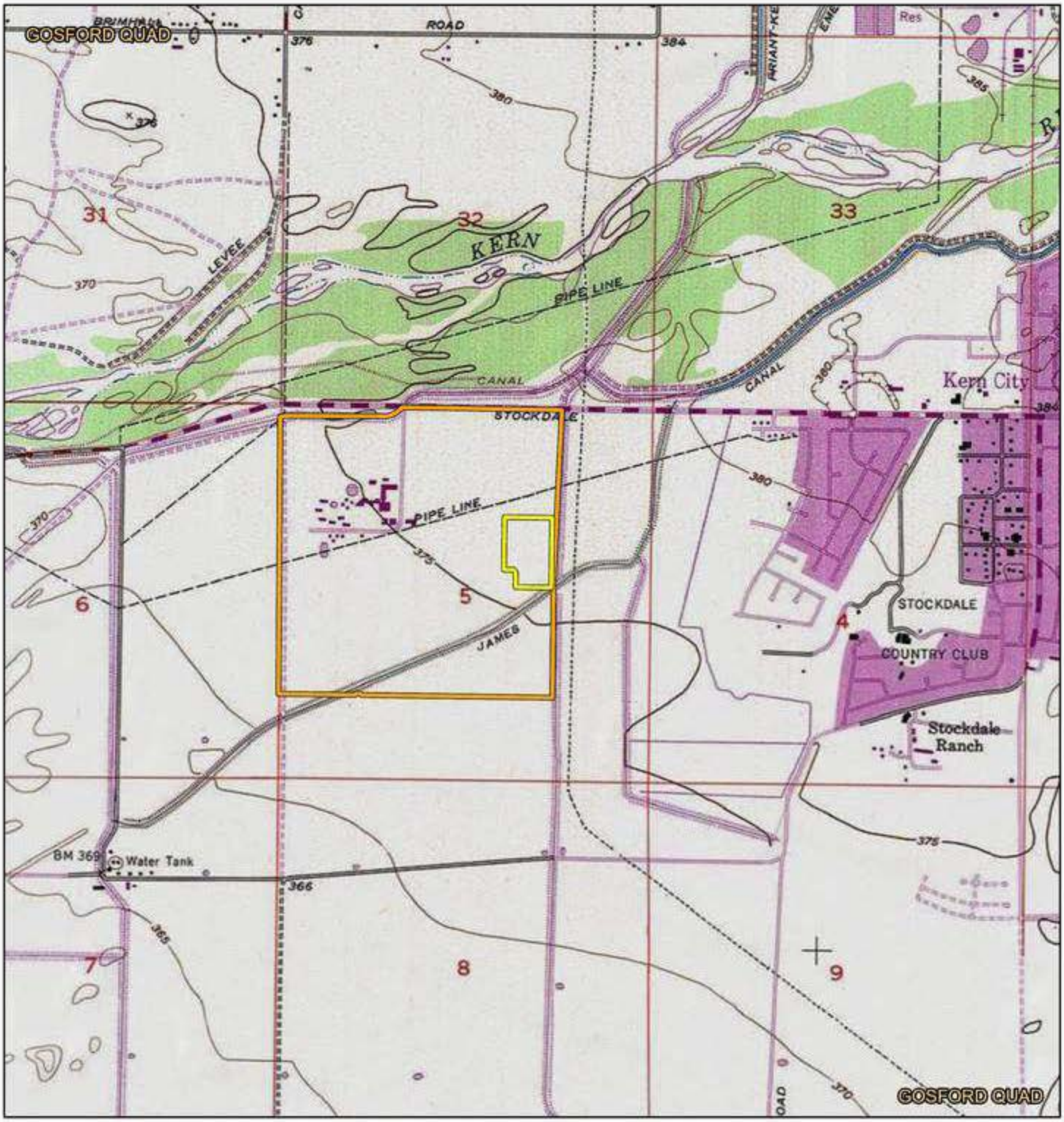
0 2.5 5 Miles

Source: Esri, ArcGIS Online, USGS, Kern County

CALIFORNIA STATE UNIVERSITY, BAKERSFIELD
GROUND MOUNT SOLAR AND BATTERY PROJECT

Regional Location Map

Figure 1



Legend

- Project Site
- CSU Bakersfield Boundary

Michael Baker INTERNATIONAL

0 1,000 2,000 US Feet

Source: Esri, ArcGIS Online, Gosford USGS 7.5-Minute topographic quadrangle maps: Bakersfield, California

CALIFORNIA STATE UNIVERSITY, BAKERSFIELD
GROUND MOUNT SOLAR AND BATTERY PROJECT

Project Location Map

Figure 2



Legend

Project Site

CALIFORNIA STATE UNIVERSITY, BAKERSFIELD
GROUND MOUNT SOLAR AND BATTERY PROJECT

Project Site

Michael Baker INTERNATIONAL

0 125 250 Feet

Source: Esri, ArcGIS Online, California State University Bakersfield, Kern County, 2026 Nearmap Imagery

Figure 3

Attachment 2

Natural History Museum of Los Angeles County Paleontological Records Search Results

(Confidential)

Attachment 3

Cultural Resources Records Search Results

(Confidential)

Attachment 4

NAHC Sacred Lands File

Search Results

Native American Heritage Commission
Native American Contact List
Kern County
2/26/2026

County	Tribe Name	Fed (F) Non-Fed (N)	Contact Person	Contact Address	Phone #	Fax #	Email Address	Cultural Affiliation	Counties	Last Updated
Kern	Kitanemuk & Yowlumne Tejon Indians	N	Delia Dominguez, Chairperson	115 Radio Street Bakersfield, CA, 93305	(626) 339-6785		2deedominguez@gmail.com	Kitanemuk Southern Valley Yokut	Fresno,Kern,Kings,Los Angeles,Madera,Monterey,San Benito,San Luis Obispo,Tulare	
	Northern Chumash Tribal Council	N	Violet Walker, Chairperson	P.O. Box 6533 Los Osos, CA, 93412	(760) 549-3532		violetsagewalker@gmail.com	Chumash	Kern,Los Angeles,San Luis Obispo,Santa Barbara,Ventura	6/5/2023
	Table Mountain Rancheria	F	Michelle Heredia-Cordova, Chairperson	P.O. Box 410 Friant, CA, 93626	(559) 822-2587	(559) 822-2693	mhcordova@tmr.org	Yokut	Fresno,Kern,Kings,Madera,Monterey,San Benito,San Luis Obispo,Tulare	12/21/2023
	Tejon Indian Tribe	F	Curtis Alcantar, Cultural and Natural Resource Manager	4941 David Road Bakersfield, CA, 93307	(661) 699-5138		calcantar@tejonindiantribe-nsn.gov	Kitanemuk	Kern	3/4/2025
	Tejon Indian Tribe	F	Candice Garza, CRM Scheduler	4941 David Road Bakersfield, CA, 93307	(661) 345-0632		cgarza@tejonindiantribe-nsn.gov	Kitanemuk	Kern	3/4/2025
	Tule River Indian Tribe	F	Kerri Vera, Environmental Department	340 North Reservation Road Porterville, CA, 93257	(559) 781-4271		kerri.vera@tulerivertribe-nsn.gov	Yokut	Alameda,Amador,Calaveras,Contra Costa,Fresno,Inyo,Kern,Kings,Madera,Mariposa,Merced,Monterey,Sacramento,San	8/12/2025
	Tule River Indian Tribe	F	Felix Christman, THPO	340 North Reservation Road Porterville, CA, 93257	(559) 719-0420		felix.christman@tulerivertribe-nsn.gov	Yokut	Alameda,Amador,Calaveras,Contra Costa,Fresno,Inyo,Kern,Kings,Madera,Mariposa,Merced,Monterey,Sacramento,San	8/12/2025

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

This list is only applicable for consultation with Native American tribes under Public Resources Code Sections 21080.3.1 for the proposed Ground Mount Solar and Battery Project, Kern County.

Record: PROJ-2026-001018
Report Type: AB52 GIS
Counties: Kern
NAHC Group: All

Attachment 5

DPR 523 Series Forms

State of California - The Resources Agency **Primary #**
DEPARTMENT OF PARKS AND RECREATION **HRI #**

PRIMARY RECORD

Trinomial
NRHP Status Code

Other Listings
Review Code Reviewer Date

 ***Resource Name or #: James** Canal

P1. Other Identifier: None

***P2. Location:** ☒ **Unrestricted**

- ***a. County** Imperial **and**
- ***b. USGS 7.5' Quad** *Gosford, Calif.* **Date** 1954 (rev. 1976) **T** 30S; **R** 27E; Sec. 5 **S.B.B.M**
- **c. Address:** N/A **Zip:** N/A
- **d. UTM:** NAD 83, Zone 11S, 309443mE/3913566mN (eastern terminus at Arvin-Edison Canal)
  NAD 83, Zone 11S, 308618mE/3913170mN (western terminus at Scarlet Oak Boulevard)
- **e. Other Locational Data:** Eastern portion of the CSU Bakersfield campus, south of Knoll Way and west of the Arvin-Edison Canal

***P3a. Description:**

The James Canal, constructed circa 1871, has an overall northeast/southwest alignment. The approximately .58-mile extant remnant of the original 18-mile-long canal lies entirely within the CSU Bakersfield campus. Portions of the extant canal are still visible, and the canal appears as a U-shaped unlined ditch with sheer side walls, with an approximate maximum depth of 5 feet and a maximum width of 20 feet. In places, discrete soil dumps are visible, where it appears that dump truck loads of soil were dumped into the canal. The canal has been heavily impacted by deliberate backfilling, collapse and backfilling due to lack of maintenance, vegetation growth, and extensive ground squirrel activity. No associated canal features were observed.

(**Photograph 1** through **Photograph 3)** (See Continuation Sheets). ***P3b. Resource Attributes:** HP20. Canal/ Aqueduct

***P4. Resources Present:** ☒ Structure

P5a. Photo or Drawing (Photo required for buildings, structures, and objects.)



Photograph 1: See P5b for the caption.

P5b. Description of Photo:
Photograph 1 Overview of an extant remnant of the James Canal. View southwest, February 13, 2026.

P6. Date Constructed/Age and Source:
☒ Historic
1871 (Grunsky 1898: 49)

***P7. Owner and Address:**
CSU Bakersfield
Public Works Department
155 South 11th Street
El Centro, CA 92243

***P8. Recorded by:**
Marc Beherec
Michael Baker International
801 S. Grand Avenue, Suite 250
Los Angeles, CA 90017

***P9. Date Recorded:**
February 13, 2026

***P10. Survey Type:** Intensive Pedestrian

***P11. Report Citation:**

Beherec, Mar, Peter Kloess, and Susan Wood. 2026. "Cultural and Paleontological Resources Identification Memorandum for the Ground Mount Solar and Battery Project, California State University, Bakersfield, California." Los Angeles, CA: Michael Baker International.

***Attachments:** ☐Building, Structure, and Object Record ☒Location Map ☒Sketch Map ☒Continuation Sheet ☒Linear Feature Record

B1. Historic Name: James Canal
B2. Common Name: James Canal
B3. Original Use: Water conveyance **B4. Present Use:** Not in use – only remnant remains
***B5. Architectural Style:** N/A
***B6. Construction History:**

The James Canal was constructed in 1871 (Grunsky 1898:50). The canal is first visible on 1912 USGS map (USGS 1910, rev. 1912). Archival records and maps show the canal was originally approximately 18 miles long and had widths ranging from 100 feet wide at north end at the Kern River, and 30-40 feet wide along most of the rest of its length, with a depth of 3 feet average. In 1898, a USGS report commented the southern portion of the canal was already in disuse due to the abandonment of Lake Ranch as a source of irrigation due to alkalinity (Grunsky 1898:49-50; USGS 1910, rev. 1912). By 1932, the canal started in the north at an unnamed canal that flowed west from the Buena Vista Canal (USGS 1932). A 1954 USGS map shows the name of this origin canal as Gates Canal and the James Canal appears to have a similar path (USGS 1954). By 1976, the James Canal crosses the new north-south Arvin-Edison Canal and terminates in a new unnamed canal that runs south from the Gates Canal to the west, along Old River Road, and connects to the Buena Vista Canal (USGS 1954, rev. 1976). By 1981, an aerial-type USGS map shows the James Canal appears to have been disrupted by development and only segments remain in place, including the portion documented in this recording at the Arvin-Edison Canal (USGS 1981).

***B7. Moved?** ☒**No** **Date:** N/A **Original Location:** N/A
***B8. Related Features:** N/A

B9a. Architect: Unknown **b. Builder:** Unknown
***B10. Significance: Theme:** Regional development; Water conveyance **Area:** San Joaquin County, California
Period of Significance: N/A **Property Type:** Canal **Applicable Criteria:** N/A

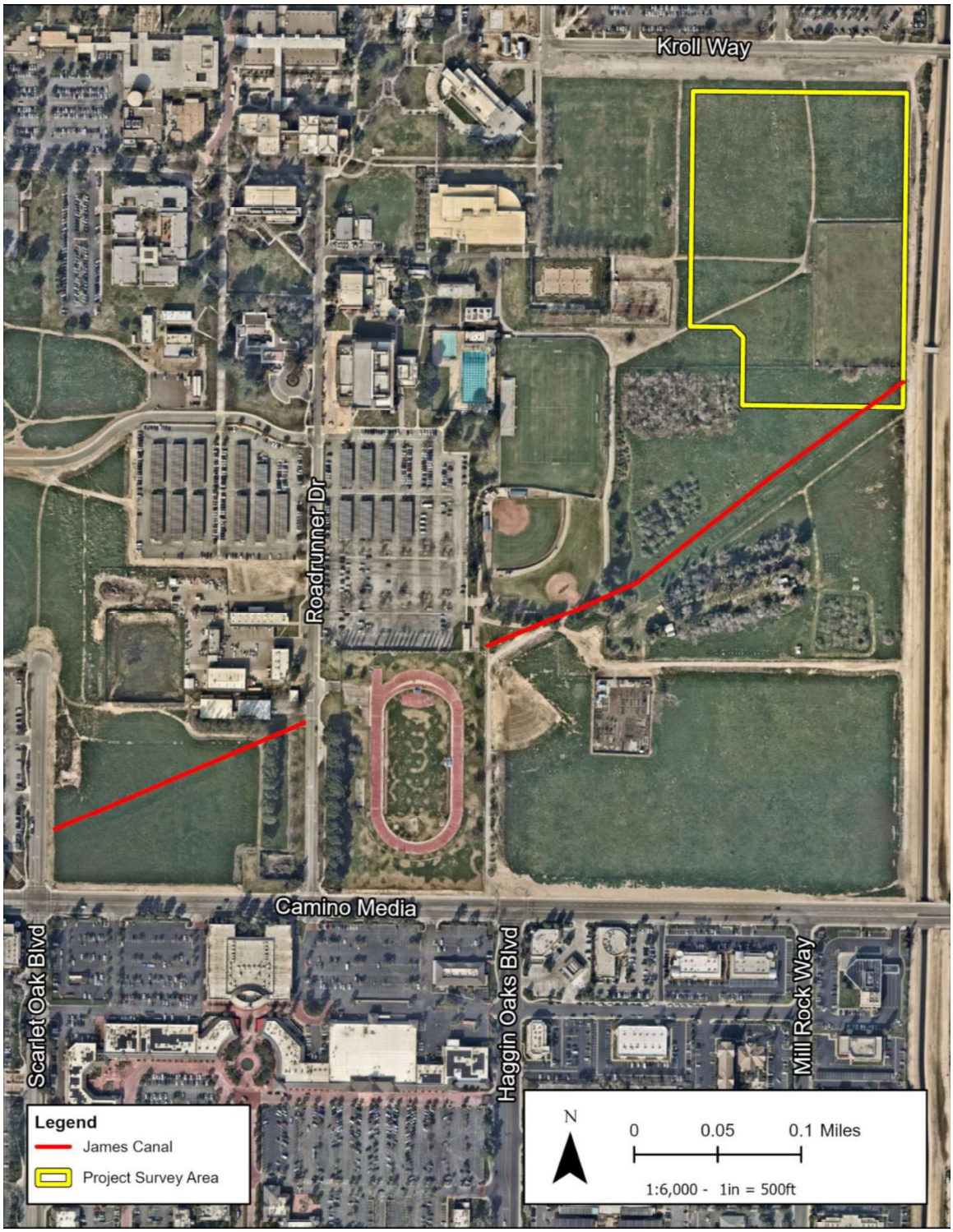
Regional History
Spanish explorers first visited the coast of Southern California in 1542. However, European settlement did not begin in the area until 1769, when Gaspar de Portolá led an exploratory mission intended to open up Alta California to settlement. The first documented Spaniard to enter the San Joaquin Valley was the intrepid missionary Fray Francisco Garcés, who visited the valley and camped beside the Kern River in 1776 (Brewer 2001). However, while the indigenous inhabitants of the San Joaquin Valley interacted with both the Spanish and missionized Native Americans who grazed livestock and traveled in the valley, they retained much of their autonomy.
(See Continuation Sheets).

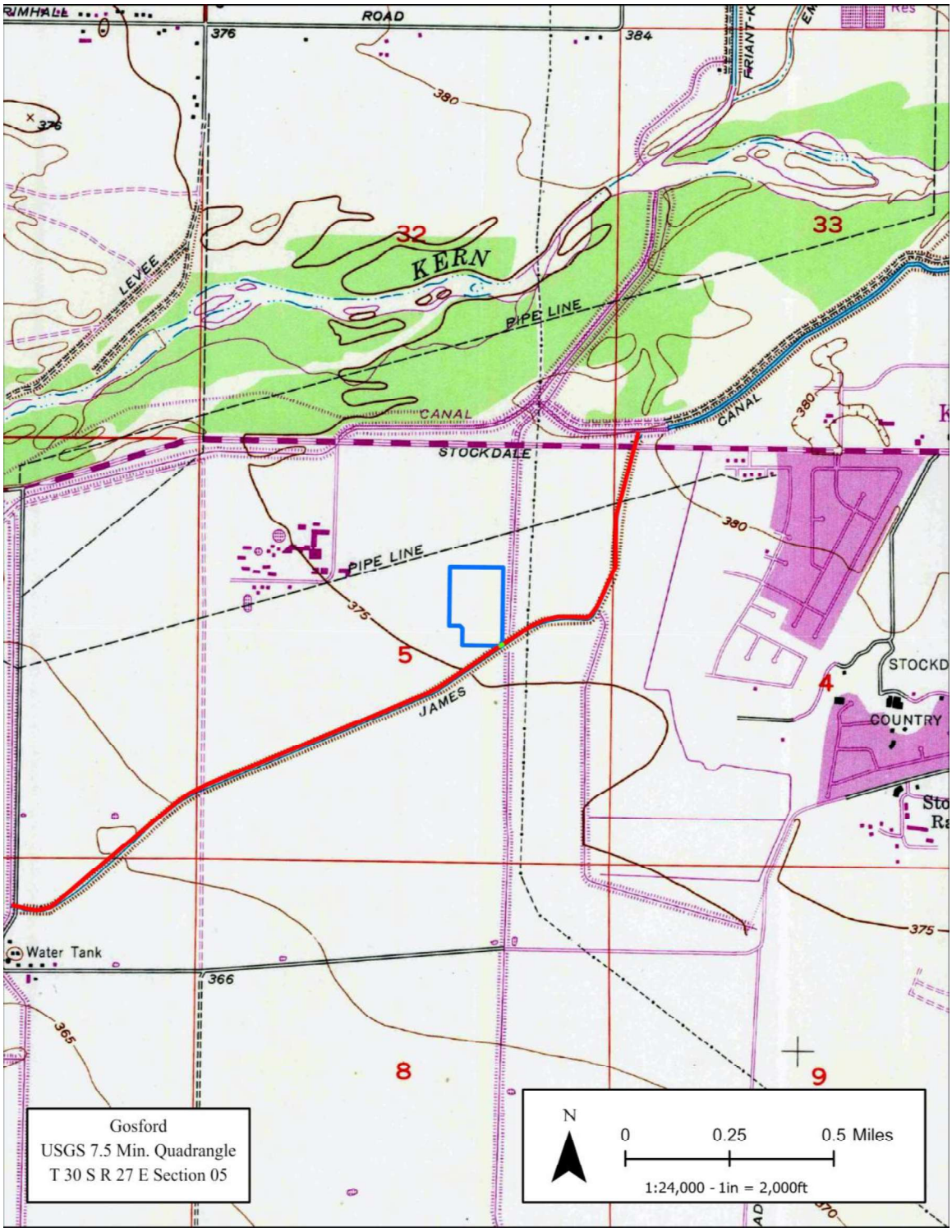
B11. Additional Resource Attributes: N/A
***B12. References:** See Continuation Sheets.
B13. Remarks: N/A

***B14. Evaluator:**
Susan Wood, Senior Architectural Historian
Michael Baker International

***Date of Evaluation:** March 2026

(This space reserved for official comments.)


Kroll Way
Roadrunner Dr
Camino Media
Scarlet Oak Blvd
Haggin Oaks Blvd
Mill Rock Way
Legend
James Canal
Project Survey Area
N
0
0.05
0.1 Miles
1:6,000 - 1in = 500ft


ROAD
376
384
380
32
KERN
33
LEVEE
PIPE LINE
CANAL
CANAL
STOCKDALE
380
390
PIPE LINE
375
5
JAMES
4
STOCKD
COUNTRY
Water Tank
366
365
375
8
9
Gosford
USGS 7.5 Min. Quadrangle
T 30 S R 27 E Section 05
N
0
0.25
0.5 Miles
1:24,000 - 1in = 2,000ft

P3a. Description (continued):



Photograph 2: Overview of a cut bank taken from within a relatively open portion of the James Canal. View southwest, February 13, 2026.



Photograph 3: Overview of James Canal remnant segment. View southwest, February 13, 2026.

***B10. Significance (continued):**

In 1821, Mexico won its independence from Spain. The new state was secular in nature and moved increasingly towards secularization of the missions and dispersal of the mission properties among politically connected elites. In 1834, the missions were secularized and their lands divided up into large grants known as ranchos, continuing a practice that had been introduced by the Spanish. A few of these grants lay within the San Joaquin Valley. The closest land grant to the project area was Rancho El Tejón , approximately 19 miles east, which Governor Manuel Micheltorena granted José Antonio Aguirre and Ygnacio del Valle in 1843. Native Americans continued to serve as the primary source of labor for the ranchos. But the increasing numbers of Mexicans in California came to see the Central Valley as a place where fugitive natives and bandits found refuge, and punitive expeditions were often launched into the valley (Brewer 2001).

The Mexican-American War (1846–1848) ended with American victory. In the Treaty of Guadalupe Hidalgo, Mexico ceded lands, including California, to the United States. The treaty required landowners to comply with a lengthy and expensive legal process to prove their land rights. Those who successfully did so entered an economic system unsuited to their traditional way of life. Gold discovered in 1848 led to a massive influx of Americans, many of whom began purchasing the lands of the old Californios.

The area that became Bakersfield was never a part of a Spanish or Mexican land grant, and so was claimed by the federal government. In 1854, the area was surveyed by United States Deputy Surveyor Brice M. Henry. Henry mapped the Kern River flowing north-south approximately 2.5 miles east of the project site. In the 1850s, settlers moved into the southern San Joaquin Valley, turning the area into farmland. Because of the shifting nature of the Kern River, the area was known as Kern Island. In the early 1860s, Thomas Baker moved into the area, settling on the Los Angeles to Stockton Road in what would become Bakersfield. Settlers built canals to tame the land for

farming, beginning with Baker's Kern Island Canal (Brewer 2001).

The area near James Canal is located west of the historic core of Bakersfield, but it saw a similar agricultural development. By the early twentieth century, the Kern River followed its current course. The 1910 and 1912 topographic maps show the James Canal cutting through what would become the CSUB campus. The Stockdale Highway follows its current route north of today's campus, and two buildings, probably farmhouses, stand just to the east of what would become the campus (USGS 1910, 1912).

By 1932, what would become the CSUB campus is a network of levees, canals, and berms (USGS 1932). By 1954, many of the canals and berms disappear, either no longer depicted in maps or actually leveled (USGS 1954). In the middle 1960s, what would become the CSUB campus was a beet field when it was acquired for the new Kern State College. "Imagine 375 acres of sugar beets with one dying cottonwood tree ... That was the campus when I first saw it in 1967," Ken Secor, the new Vice President for Administrative Services, remembered decades later. Secor designed many of the campus's original buildings, which were quickly constructed so the college could begin classes on October 1, 1970. But much of the campus remained undeveloped (CSUB, n.d.). Notably, the 1978 USGS aerial topographic map shows the project site still under cultivation (USGS 1978).

The indigenous population persists despite severe impacts caused by non-indigenous intrusion into the valley. The Yokuts and their indigenous neighbors have formed several tribes which continue to steward the land and their cultural resources. The only federally recognized tribe with lands in Kern County is the Tejon Indian Tribe, which consists of Yokuts, Chumash, Tataviam, Tubatulabal, and Paiute peoples. The tribe was first recognized by the United States government in 1851 in one of eighteen treaties entered into with indigenous Californians but not ratified by the United States Senate. Their status was subsequently reaffirmed by the Bureau of Indian Affairs in 2012 (American Indian Alaska Native Tourism Association 2025; Tejon Indian Tribe, n.d.).

Kern River Hydrology

The Kern River is the southernmost major Sierra Nevada River entering the San Joaquin Valley and was a foundational driver of agricultural settlement and irrigation development in the Bakersfield region during the mid- to late nineteenth century. Emerging from a steep granite canyon approximately ten miles east of Bakersfield, the river spreads across a broad alluvial plain, depositing sand and gravel and forming an extensive, shifting delta system characterized by multiple channels and sloughs. This deltaic environment—commonly referred to as **Kern Island**—was historically unstable, with river channels frequently changing course due to seasonal floods and major freshet events, notably those of 1861–62 and 1867–68 (Grunsky 1898:37-38).

Hydrologically, the Kern River is dominated by **snowmelt-driven flows** from its 2,345-square-mile Sierra Nevada watershed. Peak discharges typically occurred between April and July, while late summer and fall flows were comparatively low. Average annual discharge during the late nineteenth century was estimated at approximately 1,100 cubic feet per second, though year-to-year variability was substantial. These fluctuations necessitated the construction of diversion works, weirs, and canals to stabilize water supply for irrigation (Grunsky 1898:37-38)

By the 1870s–1890s, human intervention had significantly altered the river's natural hydrology. Levees, headgates, and canals increasingly confined high flows to selected channels, redirected water away from historic lakebeds, and converted Buena Vista Lake into a managed reservoir. Collectively, these actions transformed the Kern River from a dynamic, multi-channel river into a highly engineered irrigation source supporting large-scale agricultural production, particularly alfalfa and grain cultivation (Grunsky 1898:37-38).

James Canal

The James canal, constructed beginning in 1871, was an early irrigation canal developed to serve agricultural lands, specifically the odd-numbered land sections west of Old Kern River. Its construction reflects the transition from small, informal water diversions to more substantial, capitalized irrigation infrastructure during the post–Gold Rush agricultural expansion of Kern County (Grunsky 1898:49-50).

Water for the James Canal was diverted from the Kern River just below the head of Buena Vista Slough, using a low timber-and-flashboard river weir. This same structure also served the adjacent Buena Vista Canal. The upper portion of the James Canal was built with unusually large dimensions for its time—up to 100 feet wide near its head—reflecting both the high sediment loads of the river and the need to convey substantial volumes of water across permeable delta soils (Grunsky 1898:49-50).

The main canal originally extended approximately 18miles, though its lower reaches were later abandoned after irrigation attempts on strongly alkaline lands near Kern Lake proved unsuccessful. By the late 1870s, total expenditures for the James Canal were estimated at roughly $16,000, a significant investment indicative of the economic importance placed on irrigation development (Grunsky 1898:49-50).

Historically, the James Canal functioned as part of a broader network of Kern River canals that collectively reshaped the delta landscape. It was one of the many water conveyance and control features that contributed to stabilizing water delivery while simultaneously

reducing overbank flooding and natural wetland conditions (Grunsky 1898:49-50).

James Canal Development History

The James Canal was constructed in 1871 (Grunsky 1898:50). The canal is first visible on 1912 USGS map (**Figure 1**) (USGS 1910, rev. 1912). Archival records and maps show the canal was originally approximately 18 miles long and had widths ranging from 100 feet wide at north end at the Kern River, and 30-40 feet wide along most of the rest of its length, with a depth of 3 feet average. In 1898, a USGS report commented the southern portion of the canal was already in disuse due to the abandonment of Lake Ranch as a source of irrigation due to alkalinity (Grunsky 1898:49-50; USGS 1910, rev. 1912). By 1932, the canal started in the north at an unnamed canal that flowed west from the Buena Vista Canal (USGS 1932). A 1954 USGS map shows the name of this origin canal as Gates Canal and the James Canal appears to have a similar path (USGS 1954). By 1976, the James Canal crosses the new north-south Arvin-Edison Canal and terminates in a new unnamed canal that runs south from the Gates Canal to the west, along Old River Road, and connects to the Buena Vista Canal (**Figure 2**) (USGS 1954, rev. 1976). By 1981, an aerial-type USGS map shows the James Canal appears to have been disrupted by development and only segments remain in place, including the portion documented in this recording at the Arvin-Edison Canal (**Figure 3**) (USGS 1981).

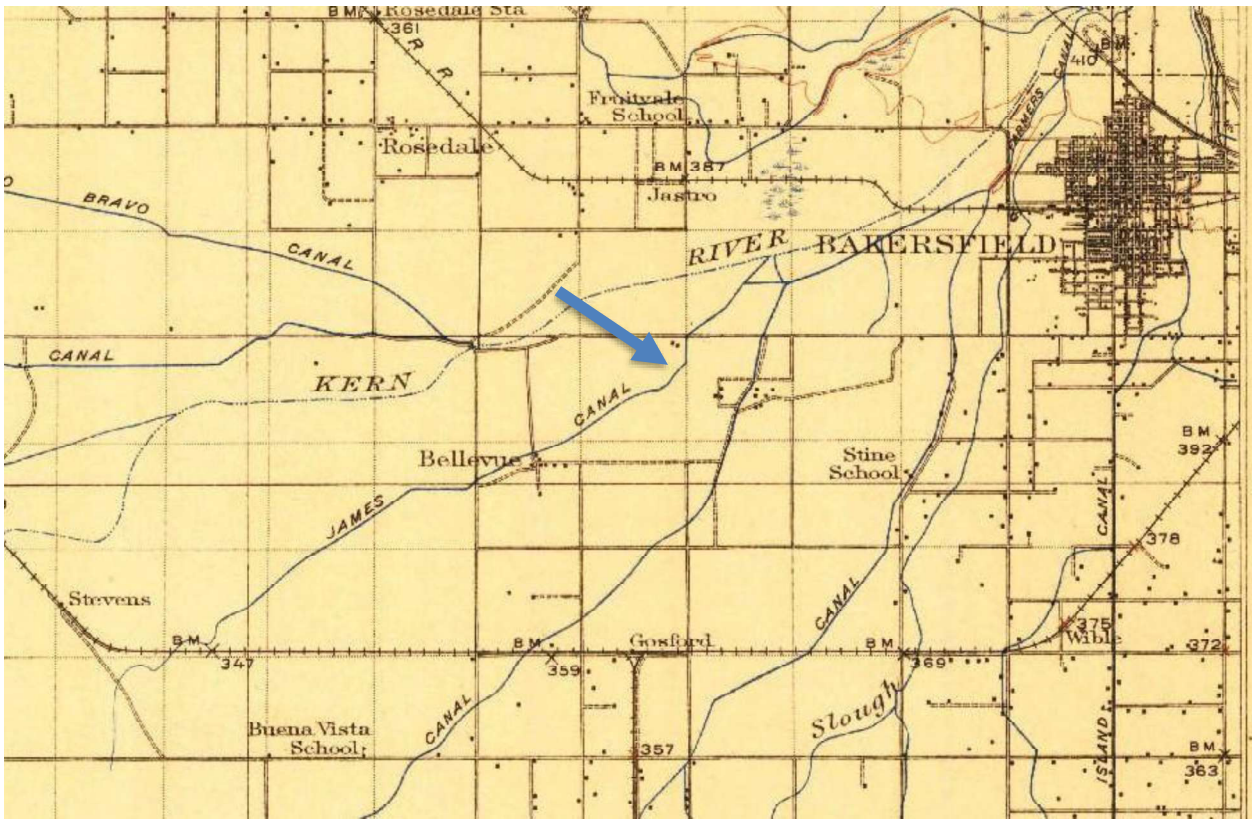


Figure 1: The James Canal portrayed on the 1912 USGS Map. A blue arow points to the extant segment recorded as part of this study (USGS 1910, rev. 1912).

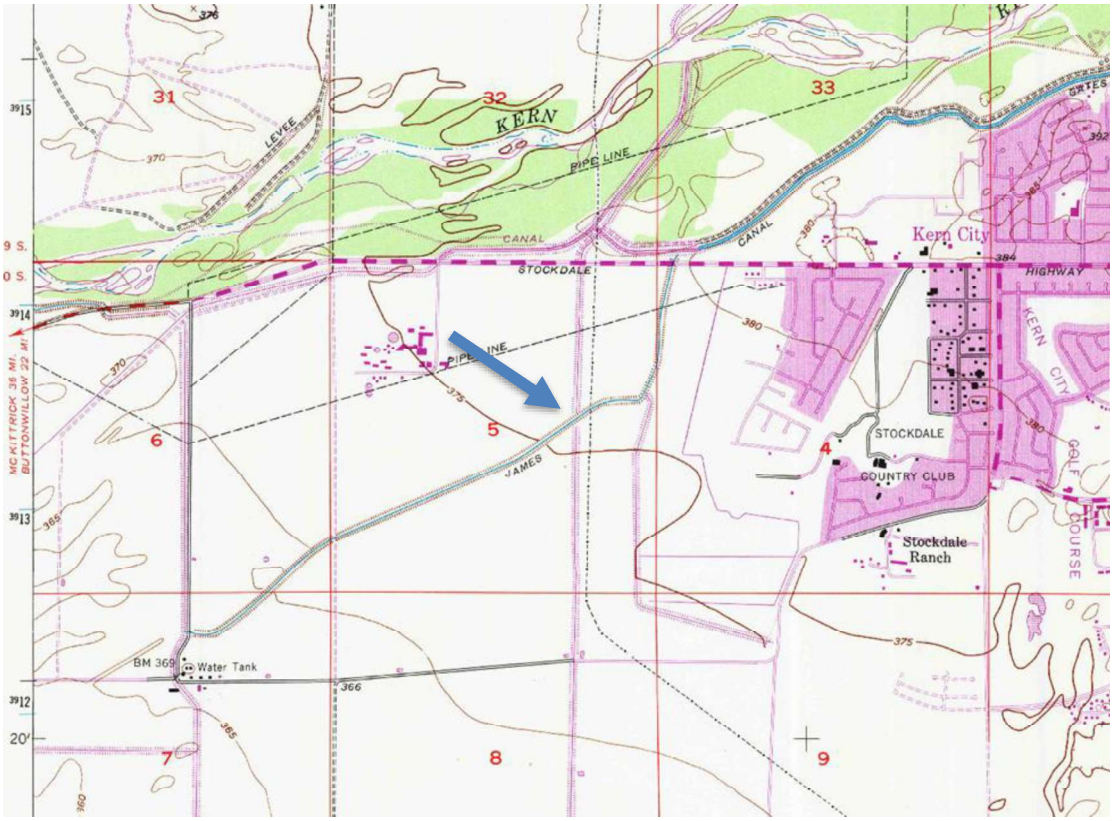


Figure 2: The James Canal portrayed on the 1976 USGS Map. The canal originated at the Gates Canal to the north, crosses the new Alva-Edison Canal, and terminates to the south at an unnamed canal that runs along Old River Road and flows into the Buena Vista Canal. A blue arow points to the extant segment recorded as part of this study where it crossed the Alva-Edison Canal (USGS 1954, rev. 1976).



Figure 3: The James Canal portrayed on the 1981 USGS aerial map. Portions of the canal, including the segment documented in this recording, have been orphaned by surrounding development A blue arow points to the extant segment recorded as part of this study (USGS 1978, rev. 1981).

Water Conveyance and Control

In 2000, the California Department of Transportation (Caltrans) published a report that provides a statewide thematic approach to surveying and evaluating the ditches and canals commonly found throughout California. This report, *Water Conveyance Systems in California: Historic Context Development and Evaluation Procedures,* asserts that "there is an increased awareness canals and other water conveyance facilities can be historically significant, and that when projects do have the potential to affect them, they need to be studied systematically" (Caltrans and JRP Historical Consulting Services 2000: 1). Caltrans notes that some level of research is required to determine the potential for historical significance of these resources, and that certain types of features are more likely than others to have potential significance, including "prehistoric or mission era irrigation systems; gold rush-era mining ditches; early or major irrigation, reclamation, or hydroelectric systems, major multi-purpose systems, flumes; tunnels, or ditches that may possess engineering, construction, or design distinction; properties associated with important events, such as critical or precedent setting litigation; and any early or prototype facilities" (1). The report also delineates resources that typically would not require evaluation, including roadside

drainage ditches; municipal water, sewer, and storm drain systems; most ordinary irrigation ditches; modified natural waterways; modern pipelines; isolated or unidentified ditch segments; and canals less than 50 years old (1-2). Caltrans outlines the types of actions that could result in an effect on a water conveyance resource, including but not limited to modifying a critical element of a significant system; concrete line or pipe an important earthen ditch; introducing visual instructions that alter a canal's historic setting; rerouting a critical component of an early system; obliterating a small mining ditch; or causing other changes to an important property's essential physical features (2). Ultimately, Caltrans cautions that, due to the ubiquitous nature of this type of resource, an understanding of the potential historical significance of a water conveyance resource is key to determining the level of documentation and evaluation necessary (1-2). For the James Canal, while an early feature of the Kern River water conveyance and control infrastructure, it was only one minor canal in a large system that facilitated the agricultural success of the region.

People

Targeted research failed to identify any direct association with the James Canal and the lives of significant persons in the past (Ancestry.com n.d.; Newpapers.com n.d.; Google.com n.d.). The James Canal was part of the early Kern River water infrastructure system, and the water infrastructure features in this system have been used by numerous private and public entities and municipal personnel over the years. While water infrastructure system features and complexes often have associations with multiple people, and although these individuals may have contributed to aspects of local and regional history, there is insufficient evidence to establish a substantive connection between their specific contributions and this canal.

Architect and Builder

Targeted research failed to identify any specific architect or builder associated with the design of the James Canal (Ancestry.com n/d; Newpapers.com n.d.; Google.com n.d.).

Evaluation
The following includes an evaluation of the James Canal for its eligibility for the California Register of Historical Resources.

California Register Criterion 1 – Research did demonstrate that the James Canal was associated with the growth and expansion of agriculture in the Bakersfield area. The canal was constructed in 1871 as part of the response to agricultural expansion south of the Kern River. While the construction of the canal was important to expanding access to and control of water southwest of the Kern River, the canal was not the first to be constructed in the area. It was just a small part of an expanding system of water infrastructure and was not directly significantly associated with the increased development of the area, nor directly or significantly associated with general agricultural development at the state or national level. The James Canal is not known to have made a significant contribution to other broad patterns of local, regional, state, or national culture and history. The James Drain Canal is a remnant of an ubiquitous unlined canal found throughout the region since the late nineteenth century. As such, the James Canal does not meet the significance threshold for listing in the California Register under Criterion 1.

California Register Criterion 2 – To be eligible under Criterion 2, a property must be directly associated with a person's productive life during the period in which they achieved their significance. Additionally, if multiple properties are linked to the productive life of a significant person, those properties must be compared to determine which best represents the historical contributions of that individual. The James Canal is part of a water infrastructure system established, managed, and utilized by numerous public and private citizens; although these individuals may have contributed to aspects of local and regional history, there is insufficient evidence to establish a substantive connection between their specific contributions and this canal, or that this canal would be the best physical representation of those contributions. Therefore, the James Canal does not meet the significance threshold for listing in the California Register under Criterion 2.

California Register Criterion 3 – The James Canal is an unlined canal and is indistinguishable from other examples of this resource type. It was not the first of its type, nor the most distinguished example of a unlined canal in the region, state, or nation. Its design and construction do not represent a departure from standard construction practices or design for this resource type. The James Canal is not the representative work of a master, nor does it possess high artistic value. Therefore, the James Canal does not meet the significance threshold for listing in the California Register under Criterion 3.

California Register Criterion 4 – The built environment of the subject property is not likely to yield valuable information which will contribute to our understanding of human history because the property is not and never was the principal source of important information pertaining to significant events, people, or engineering. Therefore, the James Canal does not meet the significance threshold for listing in the California Register under Criterion 4.

Conclusion – Lacking significance, the James Canal is recommended as ineligible for listing in the California Register. It is not a historical resource as defined by CEQA Section 15064.5(a).

Integrity – The James Canal is recommended as ineligible under all four California Register criteria. Therefore, an analysis of integrity is

not required.

B12. References:

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USGS (United States Geological Survey). 1954, rev. 1976. *Gosford, California.* 1:24,000. Electronic resource map. Accessed March 2026. https://ngmdb.usgs.gov/topoview/viewer/#.

USGS (United States Geological Survey). 1978, rev. 1981. *Gosford, California.* 1:24,000. Electronic resource map. Accessed March 2026. https://ngmdb.usgs.gov/topoview/viewer/#.