Preliminary Cultural Resources Evaluation of the 2nd and Gilman Street Project, City of Berkeley, Alameda County, California

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**Specific site location descriptions have been removed. Archaeological site numbers have been replaced with general and/or common names.

Executive Summary

The proposed 2nd and Gilman Street Project entails redevelopment of approximately 10.5 acres of land located just inland from the San Francisco Bay shoreline in the West Berkeley neighborhood of Berkeley, California. The Project lies in an area that is generally deemed culturally sensitive due to proximity to significant Native American shellmound sites. Many of those deposits have been found to contain human remains.

This preliminary cultural resources evaluation includes an interpretation of the historical, environmental, ethnographic, and archival data relevant to an understanding of the cultural sensitivity of the proposed Project Site. A program of archaeological monitoring of limited geotechnical investigations was also completed.

The archival literature review found no known archaeological resources within the Project Site itself, which had never been subject to a formal archaeological study. However, one prehistoric-period shell midden site, whose name and precise location have been redacted, has been identified in very close proximity to the proposed Project site.

Archaeological monitoring of direct push geotechnical borings was conducted with the goal of identifying potential archaeological resources in advance of Project design and planning. Though no clear evidence of prehistoric-period shell midden was identified in the cores, soil strata generally consistent with a nearby site were observed. Given the Project's extremely close proximity to a prehistoric midden site it is possible, even likely, that important prehistoric resources exist within the Project boundaries.

The Project is currently in its very preliminary stages. As such, formal mitigation measures have not yet been issued. A program of pre-construction subsurface archaeological testing is advised for the entire Project site, with a focus on the area closest to the known site. The program, which would also include archaeological monitoring of existing building foundation demolition prior to testing, would aim to identify cultural resources and characterize their nature and extent such that avoidance of the resource—or, if the resource cannot be avoided, data recovery (full documentation)—can be incorporated into Project plans as mitigation.

In addition to pre-construction testing and demolition monitoring, a qualified archaeologist should monitor all soils-disturbing activities (e.g., topsoil removal, mass excavation, subsurface utility installation, and grading). This is especially important in the most sensitive area of the site, nearest to a known, adjacent precontact-period site. Based on comprehensive fieldwork findings, construction monitoring may be reduced to spot checks in some portions of the Project site at the discretion of the archeological consultant.

If potentially significant cultural resources are identified, and cannot be avoided, a customized and targeted data recovery program that would evaluate and fully document all recovered cultural resources, should be implemented. It must be emphasized that due to the close proximity of known cultural resources, archaeological monitoring (and, if necessary, concomitant data recovery) is warranted during construction excavation regardless of the results of testing.

Table of Contents

Figures

Tables

Introduction

This report describes the results of a Preliminary Cultural Resources Evaluation for the 2nd and Gilman Street Project (2nd and Gilman Project or Project), located in the West Berkeley neighborhood of the City of Berkeley, Alameda County, California. The parcels comprising the proposed site are bounded to the north by Gilman Street, to the south by Page Street, to the west by the Eastshore Highway, and to the east by the Union Pacific Railroad tracks (Figure 1).

This document has been prepared for Rhodes Planning Group as a preliminary study for the purposes of evaluating the archaeological sensitivity of the proposed Project parcel. The evaluation is a result of a systematic review of relevant archival and historical documents, including maps, newspaper articles, historic photographs, and records on file at the Northwest Information Center at Sonoma State University in Rohnert Park, as well as archaeological monitoring of 13 geotechnical borings.

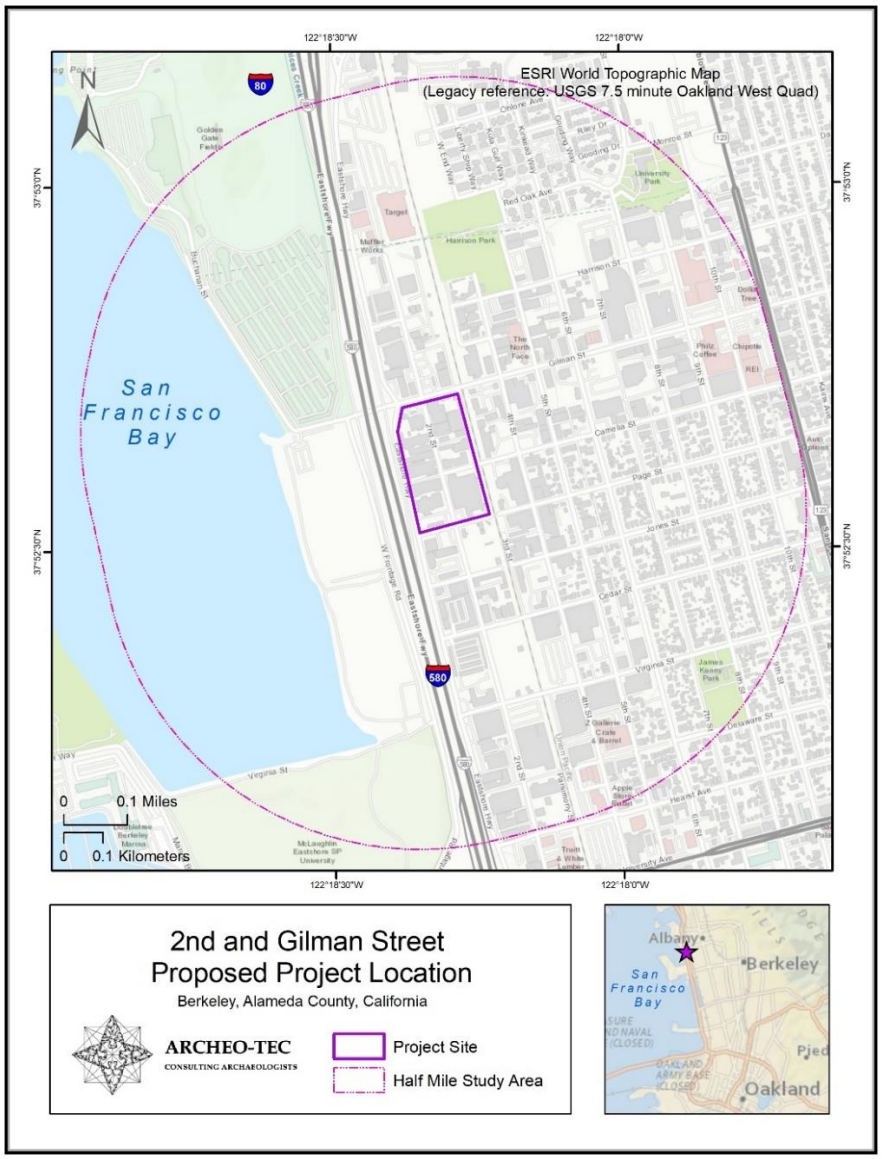

Figure 1: Project Location Map

Project Site

The subject property consists of 10.5 acres of land composed of 18 individual parcels (Table 1) and currently houses structures comprising the former Pacific Steel Casting Company, Berkeley Steel Construction Company, and the Berkeley Forge & Tool facilities.

The proposed Project would result in the demolition of all the currently existing buildings and the construction of several four-story buildings (totaling approximately 900,000 gross square feet) as well as a number of parking garages. At present, detailed design and prospective construction specifications have not been completed, so the cultural resources assessment herein consists of a general overview of the history of the subject property with an emphasis on an analysis of the prospects of encountering historically significant prehistoric or historic period cultural resources at one or more locations therein.

Table 1: Parcels Comprising the Proposed Project Site

Address	Parcel Number (APN)
1331 Eastshore Highway	59-2344-1-2
1433 Eastshore Highway	59-2341-3-2
1401 Eastshore Highway	59-2344-7
1421 2nd Street	59-2341-4
1420 2nd Street	59-2340-8-2
1330 2nd Street	59-2341-5
1320 2nd Street	59-2344-5-1
1314 2nd Street	59-2344-4-1
1333 2nd Street	59-2345-9
1337 2nd Street	59-2345-8-1
1310 3rd Street	59-2345-2-2
1314 2nd Street	59-2344-3-1
1306 3rd Street	59-2345-2-1
631 Camelia Street	59-2345-7
635 Camelia Street	59-2345-6-1
643 Camelia Street	59-2345-4
600 Gilman Street	59-2344-2-1
640 Gilman Street	59-2345-1

Regulatory Context

CEQA requires that the CEQA Lead Agency consider the effects of a project on significant archaeological resources (termed "historical resources" under CEQA) and Tribal Cultural Resources (resources of cultural value to local Native American groups) as part of the environmental review process. The City of Berkeley serves as Lead Agency for this Project. The purpose of the investigations described herein was to determine, through subsurface investigations and construction monitoring, whether historic properties are present within the Project footprint and if so, if they would be affected by Project development. Principal Investigator Allen Pastron, Ph.D., who supervised all work, meets the Secretary of the Interior's Professional Qualification Standards.

An archaeological resource is considered a historical resource under CEQA if it meets the following eligibility requirements of the California Register of Historical Resources (CRHR):

1. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
2. Is associated with the lives of persons significant in our past;
3. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
4. Has yielded, or may be likely to yield, information important to prehistory or history [Public Resource Code SS5424.1, Title 14 CCR, Section 4852].

Archaeological sites are most commonly eligible under Criterion 4 of the CRHR. Because of the rarity of this resource type in Berkeley, prehistoric archaeological deposits in Berkeley are assumed by the City of Berkeley to qualify as historical resources, even if integrity appears impacted (for example, if the cultural materials have been disturbed or re-deposited), unless determined through archaeological assessment and analysis not to meet California Register criteria. Comprehensive archaeological evaluation is generally needed to assess data potential and thus determine significance of such deposits.

The existence and significance of Tribal Cultural Resources is determined through consultation with the Native American Heritage Commission (NAHC) and local Native American groups. In Berkeley, based on the results of Native American consultation conducted under AB 52, all archaeological resources of Native American origin are presumed to be potential Tribal Cultural Resources. For these resources, preservation in place is the preferred option. If this is not feasible, then public interpretation of the resource and associated archaeological findings, with Native American participation, is required.

Native American Consultation

Native American consultation is an important component of any project with the potential for ancient sites. Even if prehistoric cultural resources are not found during testing or monitoring, this consultation will nonetheless be important and should be initiated as soon as possible.

Discovery of Human Remains

Per California Health and Safety Code §7050.5 and California Public Resources Code §5097.98, the following procedures will be followed in the event that human remains and associated cemetery/grave items are encountered. Associated cemetery/grave items are any items (e.g. clothing, funerary gifts, etc.) that are buried with the individual, as well as any cemetery furniture, architecture, fencing, or other features associated with the cemetery itself. This definition applies to both prehistoric and historic period cemeteries. The term "grave" also extends to cremation pits containing (non-intact) human remains.

Upon discovery, the Coroner Division of the Alameda County Sheriff's Office will be contacted for identification of human remains. The Coroner shall have two working days to examine the remains after being notified.

If the remains are Native American, the Coroner must notify the Native American Heritage Commission (NAHC) of the discovery within 24 hours. The NAHC will then identify and contact a Most Likely Descendant (MLD). The MLD may make recommendations to the owner, or representative, for the treatment or disposition, with proper dignity, of the remains and grave goods. Once proper consultation

has occurred, a procedure that may include the preservation, excavation, analysis, and curation of artifacts and/or reburial of those remains and associated artifacts will be formulated and implemented.

If the remains are not Native American, the Coroner will consult with the archaeological research team and the lead agency to develop a procedure for the proper study, documentation, and ultimate disposition of the remains. If a determination can be made as to the likely identity—either as an individual or as a member of a group—of the remains, an attempt should be made to identify and contact any living descendants or representatives of the descendant community. As interested parties, these descendants may make recommendations to the owner, or representative, for the treatment or disposition, with proper dignity, of the remains and grave goods.

Geological and Environmental Context

In order to adequately assess the archaeological potential of a landscape, it is important to understand the processes of landscape evolution—especially deposition, erosion, and slope stability. These processes ultimately control the spatial patterning of human landscape use, and are the main factors that preserve, erase, or modify the archaeological record (Beeton 2007).

The 2nd and Gilman Project site sits upon a low-lying plain that is underlain by Quaternary (primarily Holocene) alluvial fan and levee deposits. Dore et al. (2004) have argued (based on extensive coring work done in 2001) that the West Berkeley area is a zone of bajada development that began during the Pleistocene. This adds to the work of Graymer (2000), who mapped large alluvial fan deposits from that time period west of the Hayward fault, but only Holocene age deposits (11,700 years ago to present) west of approximately San Pablo Avenue. Thus, it seems that at depth, west of San Pablo Avenue and extending to the Bay shoreline, creeks and sloughs have deposited levee and overbank sediments since at least the Pleistocene. This is confirmed by the work of Meyer (2011), who analyzed cores taken west of the Eastshore Highway along University Avenue.

The source material for this bajada and levee development was the stratigraphic sequence of the Berkeley Hills, from which the headwaters of Schoolhouse and Strawberry creeks originate. The stratigraphic sequence of the Berkeley Hills is largely confined to middle and upper Miocene age units (ca. 16-8.2 Ma) that are clearly distinct. From oldest to youngest, these include the Sobrante Formation, the Claremont Chert, the Orinda Formation, the Moraga Formation, the Siesta Valley Formation, and the Bald Peak Basalt. In addition to this Miocene package, creeks cuts through fragments of Jurassic to Late Cretaceous age rocks of the Franciscan and Great Valley Complexes.

Also important to the formation of the area underlying 2nd and Gilman Project Site are the dynamic ecological and environmental factors since the end of the last glacial maximum. Approximately 15,000 years ago, the Pacific was nearly 25 kilometers to the west of its current location (Moratto 1984). During this time, the San Francisco Bay, or rather the Franciscan Valley, was a low-lying plain cut by the now-vanished California River. The valley supported riparian forests and oak savannahs and was home to tule elk, deer, pronghorn antelope, and other megafauna that are now wholly or locally extinct (Rosenthal and Meyer 2004). When glaciers began to recede, near the end of the Pleistocene, sea levels rose worldwide such that by 8,000 years ago, waters began to inundate the Franciscan Valley, creating San Francisco Bay. These events submerged old shorelines, created marshlands, and led to extensive bay mud accumulations.

The rate of sea level rise in San Francisco Bay increased dramatically between 8,000 and 6,000 years ago (Atwater 1979; Atwater et al. 1977; Stanley and Warne 1994; Wells 1995; Wells and Gorman 1994) and by 5,000 years ago was within approximately 8 meters of its current level (Naidu 1982). A relatively warm and dry Altithermal Period began about 6,000 years ago and lasted for several millennia. This caused increased glacial melting and sea level rise (Zachos et al. 2001). Cool and moist conditions then predominated until about 1,500 years ago, when warm and dry conditions returned (Moratto et al. 1978). The drainage known as Schoolhouse Creek lay just south of the Project site; that small waterway would have played an important role in sedimentation and soil formation in the area as it drained the Berkeley Hills into the marsh and slough west of the Project site.

Fluctuating sea levels, bay tides, and winds, in combination with ever-meandering stream drainages and marshes thus made for a constantly changing bayshore environment. As sea level rose, much of what had once been land was inundated or eroded. Amidst all this change, only stable alluvial landforms would have been acceptable for habitation. In the Bay Area, such intact deposits of buried alluvium especially those near the shoreline, are generally interpreted as sensitive for prehistoric cultural resources. Geologically, this stratigraphic layer corresponds to the time of the occupation of the West Berkeley Shellmound Complex (as early as about 2000 BC).

A geomorphological study, based on cores recovered from near the Project Site, determined that the Project vicinity exbibits “extensive horizontal variability of soils” with “tidal beach sands and estuarine marsh deposits with pockets of discrete stable landforms” (Ryan and Newland 2016:3). Small portions of an intact, prehistoric site identified in that study were located superior to just one such stable landform “island”. The dynamism of the geomorphological processes and soils means that predicting where remnants of stable alluvial deposits, and therefore possible remnants of prehistoric cultural resources, may lie beneath the current ground surface of the Project Site is extremely difficult.

Finally, it is important to consider historic-era and modern ground modifications to the Project site. Although now situated approximately three hundred meters inland, almost half of the of the Project site was once an estuarine marsh of San Francisco Bay. In the early 20th century, the marsh and its slough appear to have been choked and partially filled to the effect that the Project site lay almost directly along the San Francisco Bay shoreline.

In the late 1930s, construction of the Eastshore Highway entailed extensive infilling of the bay shallows west of the Project site. The result is that the shoreline was artificially shifted to the west. Therefore, all ground surfaces between the current shoreline and the western portions of the Project site are composed of imported, artificial fill overlying geologically recent shoreline sands and marshy clays.

Ethnographic Context

Humans have been continuously occupying California and the San Francisco Bay region for at least 12,000 years (Bartelink 2009; Erlandson et al. 2007). The earliest sites are in Lake, Sonoma, and Santa Cruz counties. In the San Francisco Bay Area, a human burial dating to 5490 cal BC was recovered from the Los Vaqueros Reservoir (Milliken et al. 2007:114), but sites dating to the Early Holocene/Lower Archaic (cal 8000-3500 BC) are extremely rare. During that time, people were high mobile foragers, who used large leaf-shaped projectile points and handheld milling stones.

The Early Period/Middle Archaic (3500-500 BC) saw a general trend towards increased stone technologies, trade, and sedentism. This period is characterized by further niche specialization, a refinement of various technologies, specialized exploitation of plant and animal species, and increased sedentism. Many of the sites dating to this period in the San Francisco Bay region are shellmounds, which are midden sites containing large quantities of mollusk shells. This site type in the San Francisco Bay Area includes the West Berkeley Shellmound, which was occupied as early as 4000 BP (2000 BC) The West Berkeley shellmound yielded artifacts such as stone net sinkers; an abundance of mortars, pestles, and bone implements; rectangular shell beads; weapon tips and knives, and bipointed bone objects (Wallace 1978:34). Shellmounds were used for both habitation and the interment of human burials. In the early 20th century, archaeologist N.C. Nelson recorded over four hundred shellmounds around the edge of the San Francisco Bay (Nelson 1909).

The Middle Period/Upper Archaic (500 BC-1050 AD) is marked by major changes in artifacts styles (especially beads) around 500 BC. In 430 AD, a “dramatic cultural disruption” resulted in changes to both artifact styles and burial practices (Milliken et al. 2007:115–116). What caused these changes is unclear but two general hypotheses have been posited: population pressure and migration.

The 2nd and Gilman Project is situated in what was, prior to the arrival of the first Europeans in the closing decades of the 18th century, the approximate geographical center of the extensive territory occupied by the Ohlone people. Originally called “Costanoans” after the Spanish derivative for "coastal people" (Levy 1978), the terms Ohlone/Costanoan imply a close linguistic affiliation encompassing six (Golla 2011) or seven (Kroeber 1925) distinct dialect clusters.

The Costanoan languages derive from Penutian Stock (Callaghan 1967; Pitkin and Shipley 1958), a theoretical linguistic construct which appears to have its origins in the northwestern Great Basin (Hattori 1982). Penutian-speaking peoples presumably slowly migrated into Central California, perhaps as early as around 2500 BC (Moratto 1984). The proto-Utian migration (one of an estimated three major Penutian migrations) appears to have entered California from the Great Basin and settled the Sacramento/San Joaquin Basin. This may have been the origins of the Windmiller Pattern, which began around 4,400 years ago and is associated with the great shellmounds of the San Francisco Bay Area (Golla 2007:76). As proto-Utian peoples continued to spread west after 2000 BC, they would have come in contact with existing Hokan populations. This fusion of Hokan and Utian may have become the Miwok and Ohlone cultures (Moratto 1984:553). By 300-500 AD, proto-Ohlone speakers of Penutian stock were firmly ensconced in the San Francisco Bay region.

The 2nd and Gilman Project is located within what was, at the time of contact, part of the tribal territory of the Huchiun Ohlone, who spoke the Chochenyo Ohlone dialect. Although the Ohlone, as an identifiable language and cultural group, often used bayshore shellmounds for their major village centers, they were not the original builders of the most ancient Bay Area mounds. The earliest shellmound components date to approximately 2,000 years before the arrival of the proto-Ohlone to the region. The cultural identity of the earliest shellmounds inhabitants remains unclear even today.

The Ohlone were semi-sedentary collectors and hunters of fish and game. Of major importance to the diet, as documented both ethnographically and archaeologically, were acorns, which were pounded by stone mortar and pestle to create flour or mush. Other key food resources included fish, mollusks, crustaceans, waterfowl, land and sea mammals, and plant seeds. Native people used vegetal material for making nets, cords, and baskets; animal remains and shells for tools and ornamentation; pelts and

feathers for clothing and bedding; and local rock and mineral resources for tools and trade. Exotic materials, such as steatite and particularly obsidian, could be obtained in trade, using for barter such locally available commodities as red ochre and shell. Other valuable resources used to obtain exotic materials in trade with non-coastal peoples included salt and marine food resources.

Usually composed of about fifteen individuals, the family household was the basic social unit. Small tribal groups, or groups of interrelated villages, consisted of around 200 people served as the autonomous political unit: presumably for enforcing equal access to resources for its members and for protection from hostile neighbors. Following the common Central Californian practice, the Ohlone were divided into moieties – the Bear and the Deer.

In 1770, it is estimated that the Ohlone numbered at most around 10,000 (Levy 1978), perhaps fewer (Kroeber 1925). Forty years later, by about 1810, much of the native population and much of their traditional culture and languages had been subjected to the disastrous effects of European encroachment—primarily, the disease and displacement brought by the California mission system and its devastating impacts (Cook 1943; Golla 2011; Hurtado 1989; Milliken 1995). Native peoples remain an important part of the social fabric of the modern Bay Area, but there is no indication that they or their ancestors had a material impact on the Project site after colonization.

Historical Context

Spanish and Mexican Period (1769-1848)

The first Spanish explorer to arrive to San Francisco Bay was Gaspar de Portola and his party in 1769; by 1770, the Fages Expedition had reached the East Bay. Fages made it as far north as Oakland or Emeryville, opposite the Golden Gate, before turning around and heading back south (Fages 1911). The East Bay was again explored in 1772 during the Fages–Crespí Expedition. The Huchiun living in the vicinity of present-day Berkeley in 1772 were said to have "received the alien visitors with great joy" (Milliken 1995).

However, with new contacts came new conflicts and new diseases. By 1832, it is estimated that the San Francisco Bay Area Native American population had declined by 80 percent. Native villages were abandoned, and the people relocated, either voluntarily or by compulsion, to the various Franciscan missions that had been established throughout the region.

Because the Spanish government was having difficulty supplying food and other provisions for the missions and presidios they had founded in Alta California, Governor Felipe de Neve selected several locations for the placement of agricultural settlements (Kyle et al. 1990). Beginning in the first decade of the nineteenth century and continuing until 1822, the lands encompassing the 2nd and Gilman Project Site were part of the extensive East Bay ranch holdings of Mission Dolores in present-day San Francisco and later Mission San Jose in what is now Fremont. As with all mission activities, most of this ranch work depended upon the labor of "Indian neophytes", from local villages as well as those kidnapped from raided communities throughout Northern and Central California.

Upon Mexico's independence from Spain in 1822, the missions and former mission lands were supposed to be granted to the Native American residents. Instead, Mexican authorities offered generous land grants to encourage selected families, often those of military officers, to develop large cattle and horse ranchos. The Castro and Peralta families, whose heads were ranking members of the Spanish military, had already requested title to some of these lands in compensation for their past services. By the end of 1823, these

private landholders had taken control of the entire eastern bay shore north of San Leandro Creek (Milliken 1997; Hendry and Bowman 1940).

Peralta's large grant (43,000 acres) was called Rancho San Antonio and included all of present-day Albany, Berkeley, Emeryville, Oakland, Piedmont, and Alameda, as well as part of San Leandro. The primary economic activities of this rancho during the mid-nineteenth century were cattle ranching and lumbering (Hendry and Bowman 1940). The rancho system continued to use Native labor, building upon the exploitative labor practices of the mission system. In 1842, Don Peralta subdivided his immense ranch between his four sons. The present subject property fell within the portion of Rancho San Antonio, which was given to his fourth son, José Domingo Peralta.

In 1841, the first known structure in the area—José Domingo Peralta's residence—was constructed in the vicinity of what today is the intersection of Hopkins Street and Albina Avenue in Berkeley (Hendry and Bowman 1940:592). That location lies just over one mile east of the current Project site. It is unlikely that the Peralta family utilized the present Project area for any purpose except, possibly, cattle grazing. At that time, the route of present-day San Pablo Avenue, which is only eight narrow blocks east of the Project site, was a trail that connected the various ranches scattered throughout the East Bay region. San Pablo Avenue is sufficiently far enough away from the Project area that scattered, isolated items, lost or casually discarded over the years, are very unlikely to have had any lasting impression on the archaeological record of the Project site.

American Period (1849-present)

The discovery of gold in 1848 in the Sierra foothills brought settlers to the area in considerable numbers, and during the 1850s, with California newly annexed to the United States, newcomers associated with the Gold Rush began to settle in the East Bay region in large numbers. During that time, various members of the Peralta family retained formal ownership of virtually all the lands that constitute modern-day Oakland, Berkeley, and Albany. Nevertheless, by the close of the California Gold Rush era, an increasing number of squatters had settled with impunity upon the lands of Rancho San Antonio, claiming ownership of most of the land that had originally been granted to the Peralta family by the Spanish government during the first quarter of the 19th century.

The first intensive settlement of the East Bay region during the historical era occurred in what is today downtown Oakland. The City of Oakland was formally named and incorporated in 1852. Alameda County was created in 1853. The earliest known historic-period settlement in the Project vicinity dates to the 1850s, when Captain James Jacobs first anchored his ship at the mouth of Strawberry Creek (Wollenberg 2008). This unincorporated town, now the West Berkeley neighborhood of the City of Berkeley, was originally called Ocean View (or Oceanview) until it was absorbed into the newly incorporated City of Berkeley in 1878.

Despite the settlement of nearby areas, the Project site and its immediate surroundings remained in an undeveloped state throughout the 1850s (Figure 2). At that time, the Project site lay along a marshy shoreline estuary/slough where Schoolhouse Creek approached San Francisco Bay. The first documented topographic modification of the present Project site's immediate environs occurred during the 1860s, when tracks for the Central Pacific Railroad were laid along the eastern edge of the subject property (Figure 3).

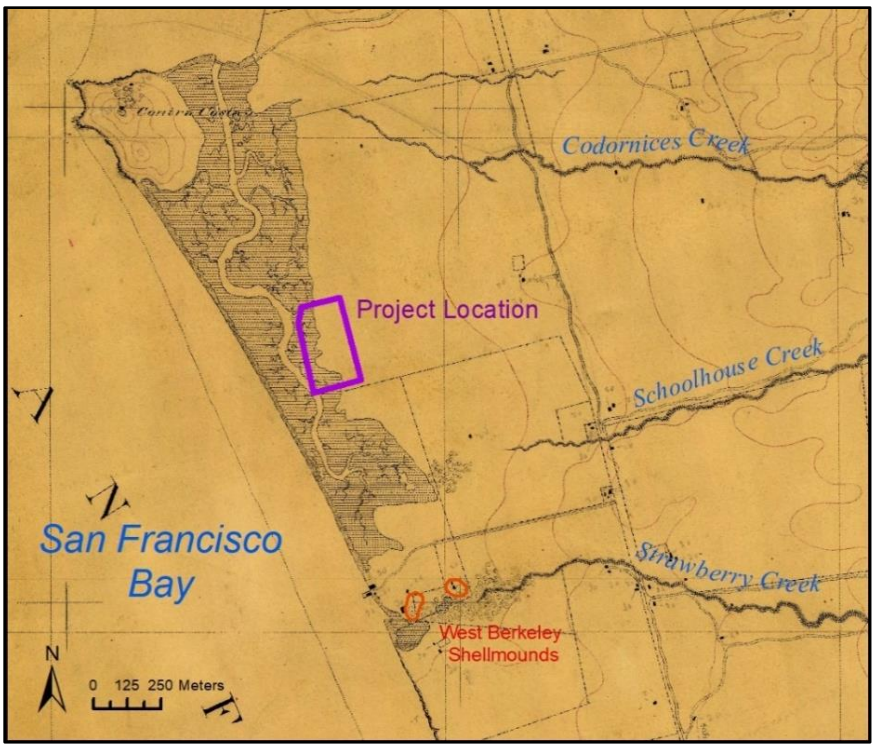

Figure 2: 1860 Coast Survey Map. At that time, the Project location lay along a marshy margin of Schoolhouse Creek Slough. The slough drained northward to an outlet at what is now called the Albany Mudflats (U.S. Coast Survey 1860).

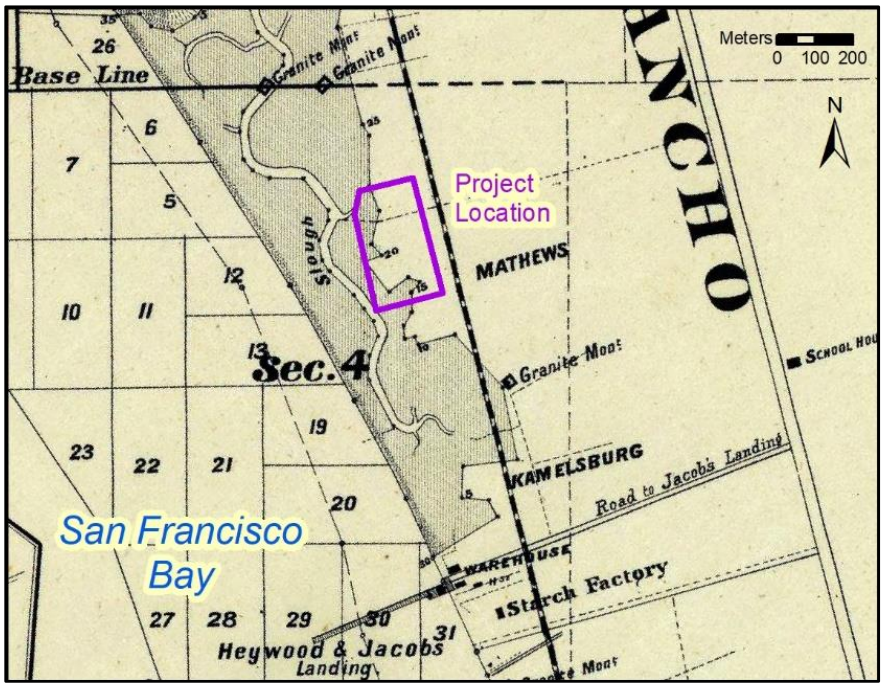

Figure 3: 1872 Map. The Project location lay along a marshy slough; more inland areas were owned by a Mr. Mathews (Allardt and California Board of Tide Land Commissioner 1872).

An 1872 map shows that what would eventually become the Berkeley Marina started as a small commercial wharf at the foot of the future Delaware Street (Allardt and California Board of Tide Land Commissioner 1872). The marina was owned by Captain James Jacobs and his business partner Samuel Heywood. It appears that the lands occupied by the current Project site were owned at that time by an individual named Mathews.

By 1874, the Project site was part of the Berkeley L.T.I. Association's holdings (Berkeley L.T.I. Association 1874). During the 1870s and 1880s, as lots were sold and developed, West Berkeley became a mix of industrial, commercial, and residential interests (Figure 4).

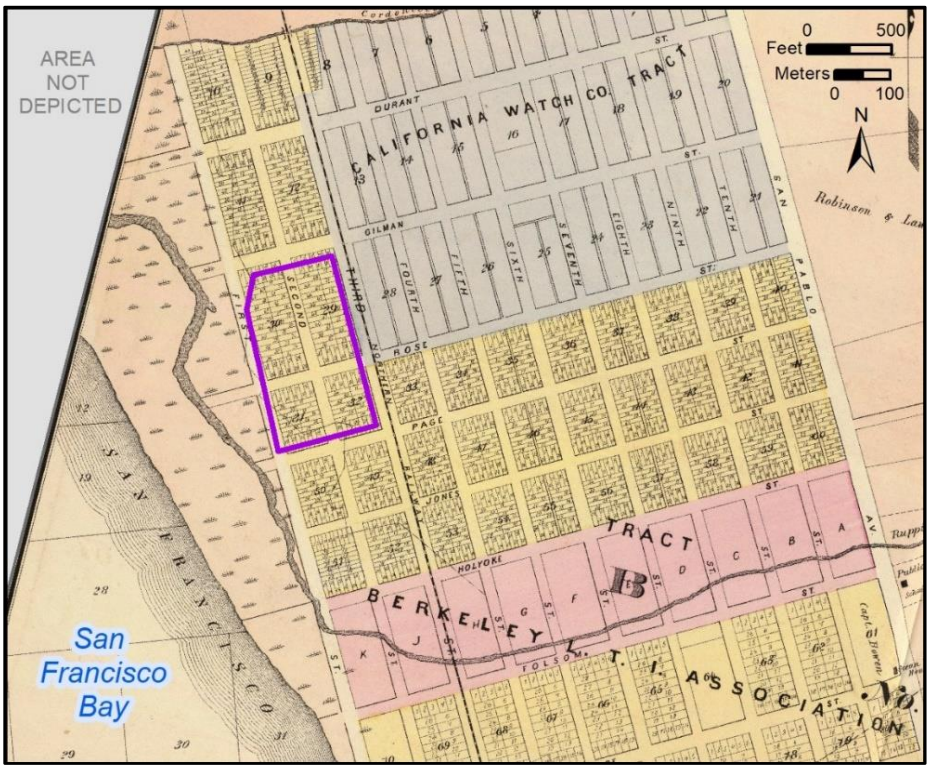

Figure 4: 1878 Map. The Project Site lay between the Schoolhouse Creek Slough and the Northern Railway/3rd Street (Thompson & West 1878:116–117, Map 17).

By 1903, the Project site was mixed residential and commercial. The 1903 Sanborn Map (Figure 5) only depicts areas east of Second Street; lands to the west were presumably too marshy for development at that time. A spur rail track had been laid along 2nd Street and the parcels north of Camelia Street (formerly Rose Street) and between the railroad tracks were all residential. Ten separate, single-story dwellings, many of them with outbuildings, had been constructed on 20 parcels of land of varying shapes and sizes. Three residences (1320 and 1324 3rd Street, an 639-641 Camelia Street) had elevated water tanks. South of Camelia Street were six residences as well as vacant buildings associated with a tannery, a bark shed, and an organ factory.

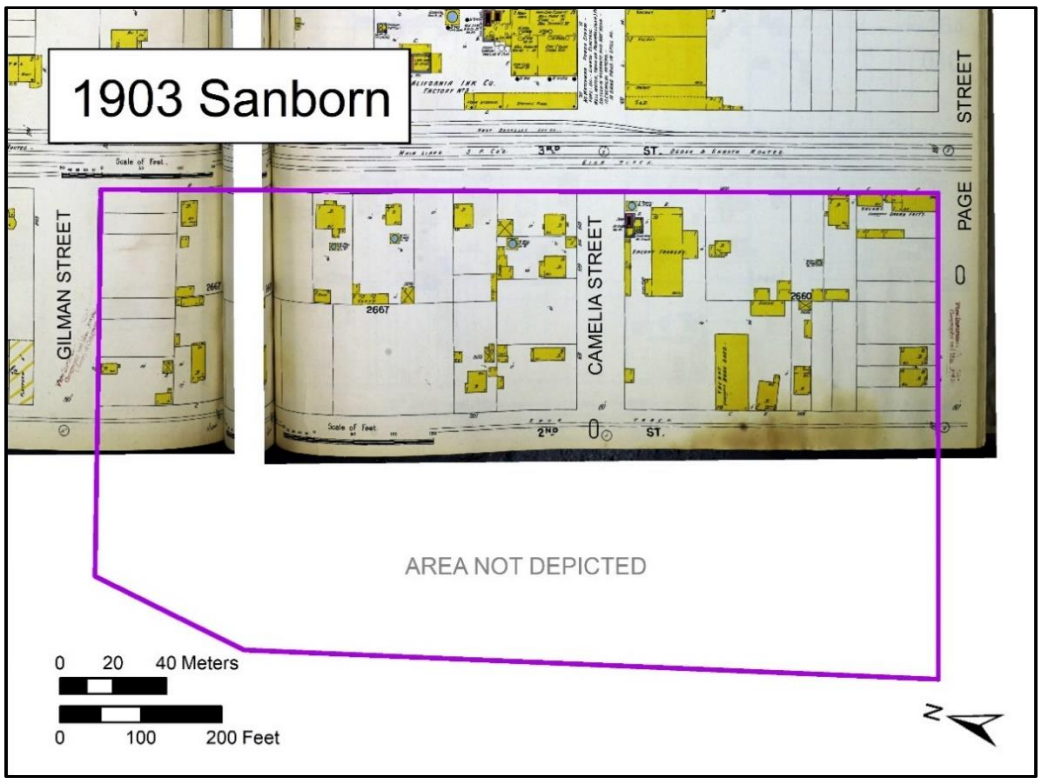

Figure 5: 1903 Sanborn Map. The Project Site included residential and abandoned commercial/light industrial interests (Sanborn Map Company 1903:Sheets 359-360).

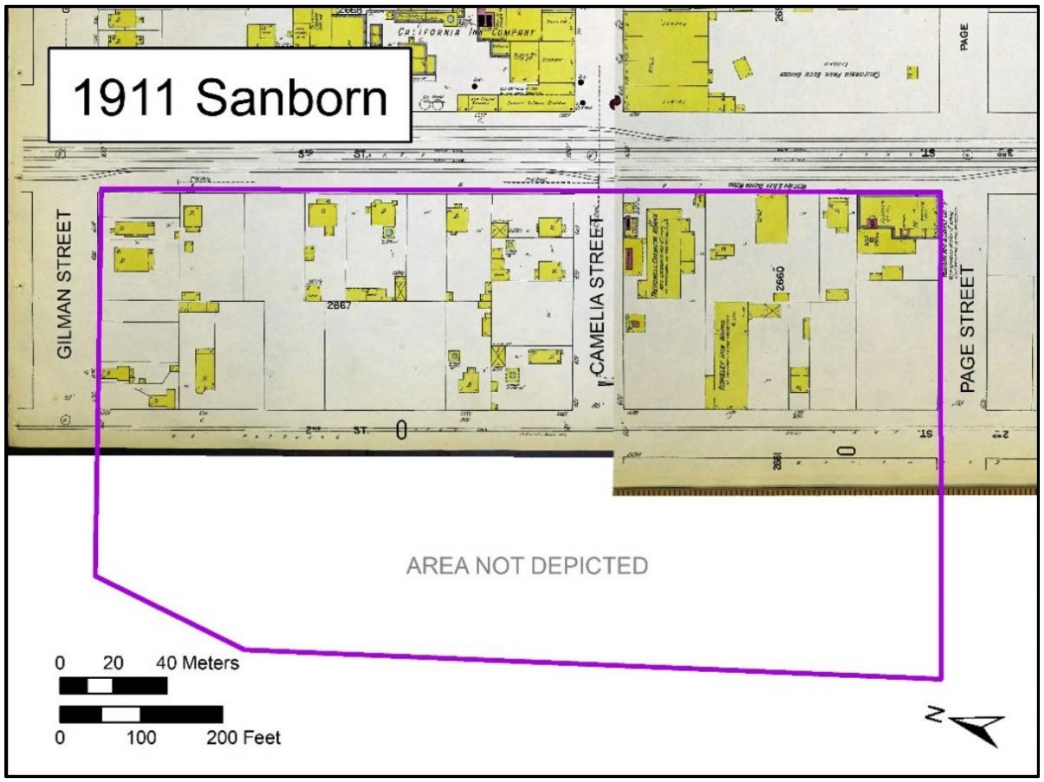

Figure 6: 1911 Sanborn Map (Sanborn Map Company 1911:Sheets 12-13).

By 1911, there were 13 houses north of Camelia Street. Landuse south of Camelia Street was mostly commercial and industrial (Figure 6). Notable infrastructure included furnaces, an oven, and water tanks. This period marks the birth of the iron and steel industry in the West Berkeley area, an industry that would be of great economic importance to the area until the early 21st century. Specific businesses included the Berkeley Iron Works at 1411 2nd Street, the "West Afr & Elev. Anchor Works" at 1408-1410 3rd Street, the non-operational Western Manufacturing & Supply Company at 647A Page Street, and the shuttered Treadwell Chemical Works at 3rd Street. Situated between the heavy industrial operations, only three small single-story residential dwellings remained south of Camelia Street.

The middle decades of the 20th century brought major changes to the West Berkeley area, as land use continued to shift toward commercial/industrial interests and houses were replaced by warehouses and foundries. Aerial imagery from 1931 (Figure 7) shows several large buildings and few residences within the Project Site. The San Francisco Bay shoreline lay just to the west and the railroad spur along 2nd Street does not to appear have been in active use. The zone between the shoreline and 2nd Street within the Project site was occupied by several large, warehouse-style buildings, which had not been depicted on previous maps.

One of those buildings had a rooftop sign installed for aviation navigation (Figure 7) as part of the air marker program, which was founded in 1935 by aviation pioneer Phoebe Jane Fairgrove Omlie. Ms. Omlie was a stunt pilot, parachutist, the first woman transport pilot in the Unites States, "special advisor for Air Intelligence to the National Advisory Committee for Aeronautics" (which would later become NASA), and later a "Senior Private Flying Specialist of the Civil Aeronautics Authority". The air marker program was a great success in helping pilots orient themselves in an era before radio, radar, and GPS. The program was discontinued by civil defense officials during WWII: all signs were destroyed to avoid the possibility that they might assist potential invaders.

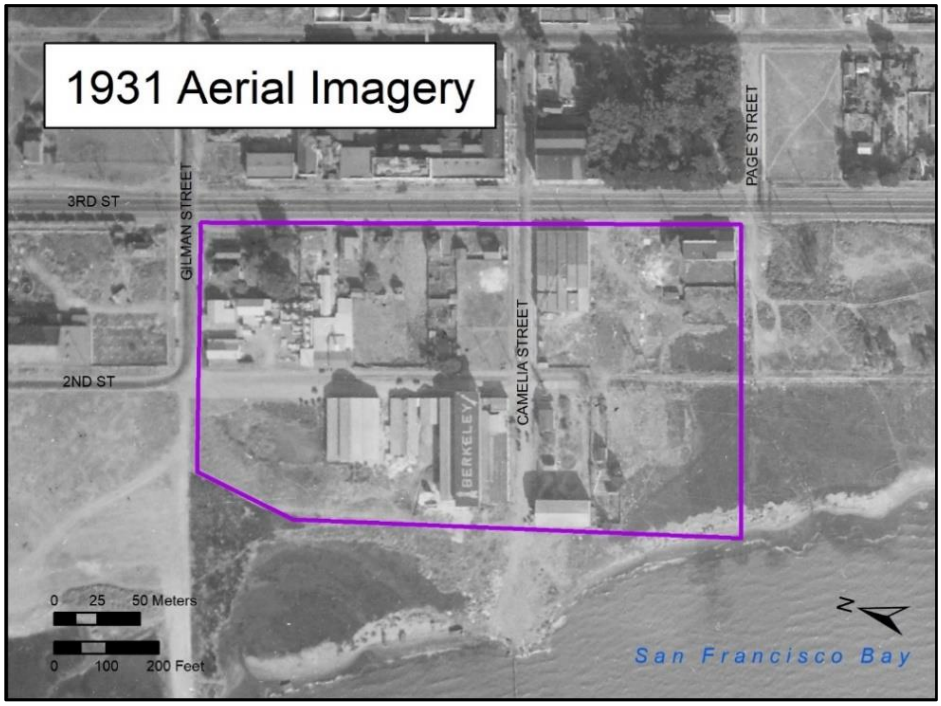

Figure 7: 1931 Aerial Imagery. The rooftop sign with arrows was a navigation marker to help pilots orient themselves in the days before radio and GPS navigation (Fairchild Aerial Services 1931:Frame 52; Mola 2006).

Beginning in the late 1930s, the Berkeley shoreline underwent significant changes brought about by the construction of the Eastshore Highway. The highway, which was built with funding by the New Deal, was designed to serve as a major artery for the San Francisco-Oakland Bay Bridge (then under construction). Rather than building on existing land, the roadbed was laid on artificial fill in the bay shallows and marshy margins—passing just west of the Project blocks. The West Berkeley segment of the highway, which boasted a median, stoplights and stop signs, was dedicated in 1937. Later, the principal roadway would be expanded to the west with the construction of the Eastshore Freeway/Interstate-80; the older Eastshore Highway then became a service road.

By the publication of the 1944 Sanborn Map updates (Figure 8), the Project area was decidedly industrial. In the block bounded by Gilman, Camelia, 2nd and 3rd streets—which had once been the setting for 13 homes and their associated outbuildings—stood the General Petroleum Corporation, offices and warehouses of Montgomery Ward, and the Flask Yard of the Pacific Steel Casting Company. Only two residences remained (1392 3rd Street and 643 Camelia Street). West of Second Street, which less than a century before had been marshlands of the Schoolhouse Creek Slough, was the drafting equipment factory A. Leitz Company, a restaurant, the main foundry and pattern shops of the Pacific Steel Casting Company, and the Berkeley Steel Construction Company. South of Camelia Street, Berkeley Steel operations extended halfway to Page Street, with the undeveloped areas remaining as marsh. On the east side of 2nd Street and south of Camelia Street was the A.F.A. Venetian Blind Wood Products Company. Aerial imagery from 1946 shows few changes from 1944- save the installation of new highway ramps for the Gilman Street exit (Figure 9).

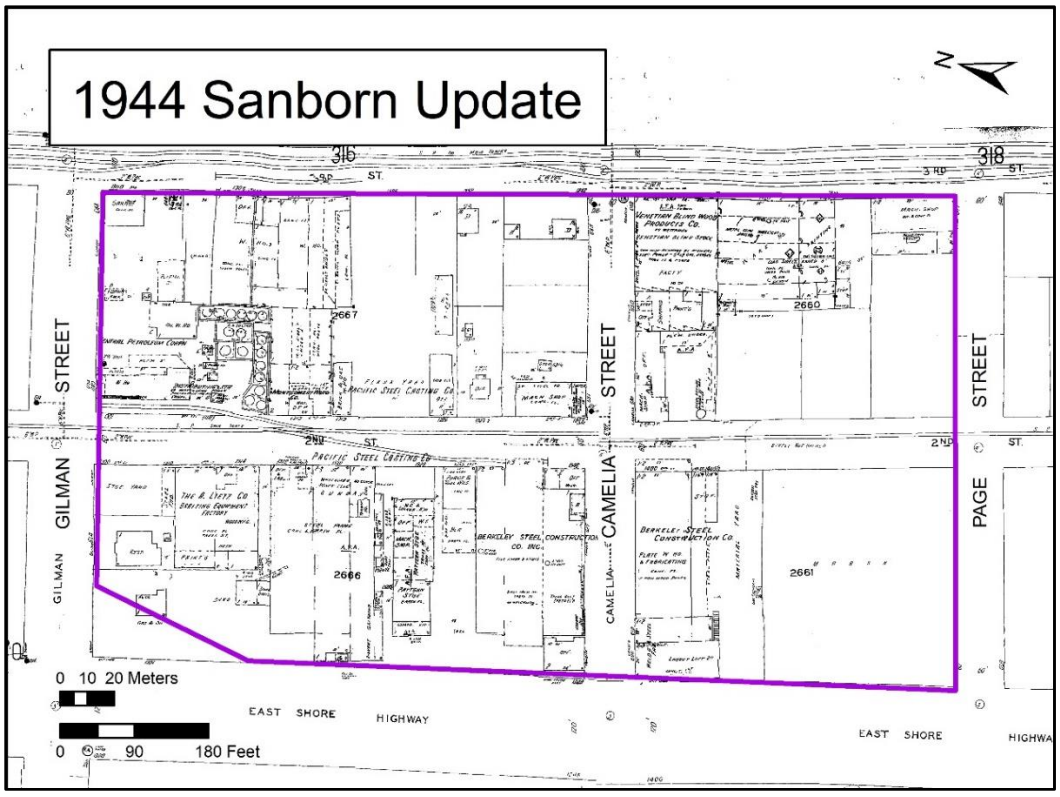

Figure 8: 1944 Sanborn. The project blocks were commercial and industrial areas east of the new Eastshore Highway (Sanborn Map Company 1929:Sheets 321-322).

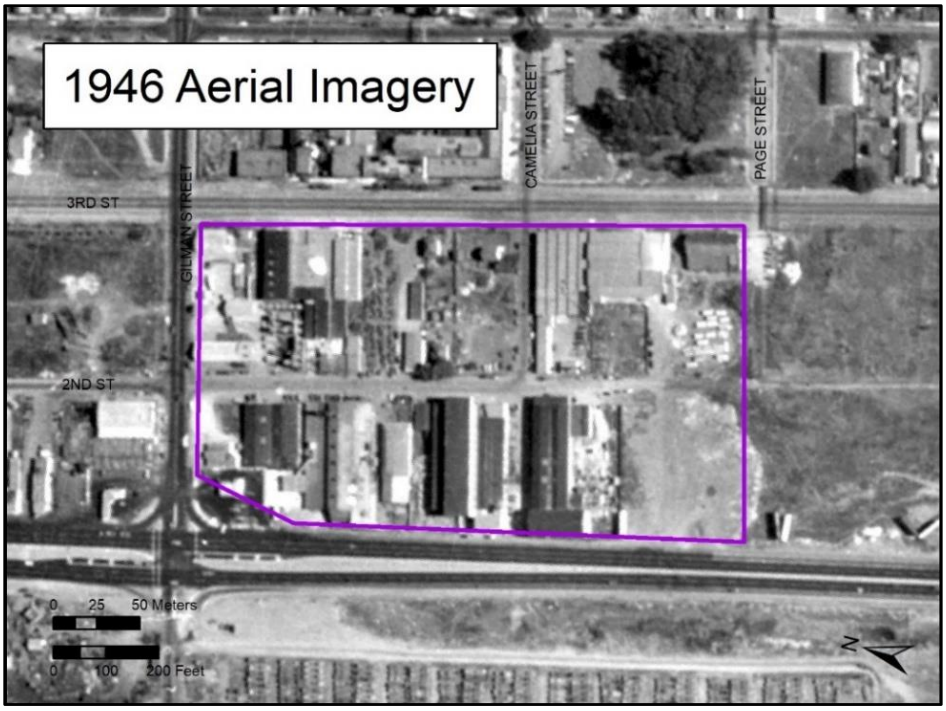

Figure 9: 1946 Aerial Imagery. The Gilman Street exit was one of the first East Shore Highways cross-streets to require ramp exits. Note that the rooftop air marker has been removed (Jack Ammann Photogrammetric Engineers 1947).

Berkeley Steel Construction Company and Pacific Steel Casting Company had thrived and expanded during World War II. When peace returned, operations slowly shifted away from wartime production, and specialized manufacturers such as Hawkins and Hawkins, the Berkeley Forge and Tool Company, and the Merit Tank and Body Company emerged to fill more domestic needs.

Pacific Steel Castings shut down in 2018 after 84 years of operation. Berkeley Forge and Tool remains in operation along with a handful of other specialty manufacturers, a car rental location, and an insurance office. The area is commercial and industrial and is currently zoned for manufacturing.

Shellmound History

In the years following the establishment of Ocean View (which was later annexed to the city of Berkeley), interest in the then-obvious shellmounds that dotted the landscape was rife. The largest in what is now Berkeley, commonly called the West Berkeley Shellmound, was then situated on the property of a local mill. Early maps indicate that there was also a secondary, smaller mound located adjacent to the primary mound (Thus, the resource would be more aptly termed the West Berkeley Shellmound Complex.)

As is evident from newspaper reports of the time, as well as subsurface archaeological studies conducted in the area, Native American shellmounds were an attractive resource for road-building and agricultural soil enhancement. Shellmound material was used extensively for road building because it became nearly impenetrable after soaking. Horse teams were routinely used to cart away large portions of the shellmound, which were then laid down along the major streets in West Berkeley, including San Pablo and University Avenues. The Emeryville Shellmound, located south of Berkeley in present-day Emeryville, saw a similar pattern of wholesale destruction. In addition, because of the rich calcium, phosphorus, and

humus content of the shellmound material (which included large quantities of seashells, animal bones, human remains, and charred plant matter), it was sometimes spread over agricultural fields to fertilize crops and enrich the soil. Indeed, this practice continued until well into the 1940s. However, no historical evidence could be found to indicate that any significant amount of midden material was used as fill in the current Project site.

Adding to this destruction, the West Berkeley Shellmound, like nearly every other shellmound along the East Bay shoreline, was the target of amateur relic hunting and trophy taking. Many human bones and attendant grave goods were removed from the West Berkeley Shellmound without any thought to the cultural importance to the public, particularly to living descendants, or to the cultural and scientific knowledge lost with the removal of provenience and context. Thus, when the West Berkeley Shellmound was first encountered by scientists in the early 20th century, it was already so highly disturbed that it was but a remnant of what it had been not 50 years earlier.

Archaeological Context

An in-person records search of the California Historic Resources Information System (CHRIS) archives at the Northwest Information Center (NWIC) at Sonoma State University was conducted by staff archaeologist Juliana Quist on April 19, 2022 (Access Agreement 21-1753). The principal objective of the archival review was to determine whether any archaeological sites and/or associated cultural resources, dating to either the prehistoric or the historic period, were previously recorded within, or within a half mile of the proposed Project Site.

Precontact Resources

The records search identified no cultural resources dating to before European contact within the proposed Project footprint. However, it is important to emphasize that the Project site has never been subjected to archaeological study. Indeed, most of the development within the parcels occurred prior to modern regulatory oversight. Therefore, the lack of previously recorded resources does not indicate that no cultural resources exist, or ever existed, within the parcels. Furthermore, one precontact midden site has been identified immediately adjacent to the Project site and that resource very possibly extends into the subject property.

In addition to the adjacent site, two other highly significant, prehistoric resources—the Schoolhouse Creek Site and the West Berkeley Shellmound Complex—lie within the half-mile Study Area. This confirms that the San Francisco Bay shoreline area, in which the current Project site is situated, is a culturally sensitive area.

Midden Site near Project Location (Name Redacted)

During a 2016 program of geotechnical borings, both intact and displaced prehistoric-period buried midden soil deposits were identified in a location adjacent to the proposed Project site (Ryan and Newland 2016). Its formal designation, precise location, and other identifying characteristics have been redacted from this version of the report.

Intact midden deposits were identified at a depth of between 140 and 185 centimeters (4.6 to 6.1 feet) below surface in two borings and archaeological materials were identified within disturbed soil contexts in four borings. Cultural materials included burned and unburned wood, charcoal, flaked stone, marine shell fragments, faunal bone, and lignite coal pieces. Some of the lignite was recovered from intact midden

contexts and in association with burned shell and bone. The study authors therefore hypothesize that lignite coal (which has its geologic origins in the foothills of Mount Diablo) may have been intentionally mined and imported by the native site inhabitants as a fuel source— a characteristic not previously recorded in Bay Area archaeology.

Radiocarbon (C-14) testing of marine shell yielded a date of 3147 cal BP, a fact which would make the midden deposit contemporaneous with the early phases of occupation of the West Berkeley Shellmound Complex.

Testing indicates that the extent of the intact portions of the midden deposit may be quite small, discontinuous, and—based on an interpretation of soil cores— it has been hypothesized that the site directly overlies "a small island of a former landform in an otherwise unstable environment" (Ryan and Newland 2016:3). More specifically, the midden was identified as a 1.5-foot-thick stratigraphic layer situated between silty clay Bay Mud deposits overlying yellowish-brown, natural, sandy clay sediments. The Ap horizon (surface material) was composed of artificial and imported fill that included brick fragments to a depth of approximately 130 centimeters (4.3 feet).

Because of the very close proximity 2nd and Gilman Project site, it possible, and even likely, that intact and/or displaced portions of this known midden deposit extend into the current Project footprint.

The Schoolhouse Creek Site

In 2000, a prehistoric-period shell midden deposit was identified during archaeological monitoring of trench excavation for the installation of fiber optic cables. The site consisted of dark midden soils containing shell fragments were encountered at a depth of 45 to 113 centimeters below ground surface. No other artifacts were noted. Indeed, no samples were collected, and no testing or data collection was conducted. Instead, the fiber optic cable was installed below the resource via directional boring the site, which is known as the Schoolhouse Creek Site, was left in place.

Based on the proximity of the site to disturbances associated with the railroad line, combined with the established history of using shellmound deposits for surface leveling and fill during development of the area, it is possible that the Schoolhouse Creek Site was deposited as fill displaced from a nearby shellmound. However, no study of the site integrity (intact versus secondary/disturbed) was completed.

The West Berkeley Shellmound Complex

Standing as tall as 15 feet above the surrounding area, the primary West Berkeley Shellmound was a prominent feature of the landscape in the Study Area until well into the twentieth century. It was located only a short distance from the north bank of Strawberry Creek, in close proximity to the stream's entrance into San Francisco Bay. Immediately to the west of the site lay the broad tidal marsh that separated the shoreline of the Bay from the wide expanse of water beyond. As depicted on the 1860 Coast Survey Map, a smaller, secondary shellmound appears to have lain just to the east, but that resource element is not well attested in later documentation.

The first documented archaeological study of the West Berkeley Shellmound was conducted in 1902 by E.L. Furlong (the same year Max Uhle first excavated at the Emeryville Shellmound), working under the direction of John C. Merriam of the University of California, Berkeley. The limited and rather shallow excavation yielded 265 artifacts and a "good ma(n)y [sic] burials" (Dore and Garcia and Associates 2002). Unfortunately, Furlong's notes did not accompany the artifacts and catalog and, as a consequence, there

are substantial gaps in the existing state of knowledge about this initial phase of archaeological study of the West Berkeley Shellmound.

Two years later, in 1904, Joseph Peterson continued the archaeological study of the West Berkeley Shellmound. His excavations, though confined to the northeastern corner of the site, uncovered significant stone and bone artifacts and human remains from nine individuals, seven of whom had been children at time of death. When his field research and follow-up analysis were finished, Peterson prepared a written report of his findings and placed the document in the archives of the Lowie Museum of Anthropology at the University of California, Berkeley.

Near the end of the first decade of the 20th century, Nels C. Nelson completed a comprehensive mapping of the pre-contact shellmounds of the San Francisco Bay region. He recorded no less than 425 shellmounds of varying sizes, including the West Berkeley Shellmound (Nelson 1909). Unfortunately, by that time "not a single mound of any size [was] left in its absolutely pristine condition" (1909:12). Following the publication of Nelson's work, other representatives of the University of California continued to investigate the steadily diminishing remnants of the West Berkeley Shellmound throughout the first half of the 20th century. Unfortunately, a variety of amateur collectors also took artifacts from the shellmound. On occasion, local collectors and construction workers would present themselves at the Lowie Museum and donate the artifacts they had recovered from the West Berkeley Shellmound, the Emeryville Shellmound, and other pre-contact archaeological deposits in the area (Wallace and Lathrap 1975:3), but their finds were usually de-contextualized to such a degree that spatial and temporal information often did not accompany the artifacts.

The West Berkeley Shellmound was not officially recorded with the state clearinghouse until 1949 when Pilling, using data from Nelson's early 20th century survey, compiled the formal site documents. In the site forms, Pilling estimated that the primary West Berkeley Shellmound measured approximately 300 yards north-south by roughly 100 yards east-west.

The most extensive, systematic excavations at The West Berkeley Shellmound were conducted in the early 1950s by representatives of the University of California, Berkeley (Wallace and Lathrap 1975). By that time, the site had been severely disturbed, and impending industrial expansion threatened the remaining portions with total destruction. Only a small 45 foot by 100-foot section remained. Roughly 14,000 cubic feet were subject to archaeological examination (Wallace and Lathrap 1975:8). The research identified two distinct site strata indicative of two primary occupational periods. The younger, shallower deposit extended to about 6 feet below surface and contained Middle Horizon (Middle Period, approximately 500 BC-1100 BC) artifacts contemporary with those from the Emeryville and Ellis Landing shellmounds. By contrast, the older, deeper deposit within the West Berkeley mound contained Early Horizon (Early Period, 100 BC-3000 BC) forms, including Excelsior-type spear points and drilled charmstones, which are notably consistent with assemblages known from the lower Sacramento Valley. In addition to artifacts and dietary faunal remains, the excavation also recovered 95 complete or mostly complete skeletons of all ages and sexes. Overwhelmingly, the burials were loosely flexed, single interments with no burial orientation and few mortuary goods.

Numerous nearby archaeological investigations have identified cultural resources that have been associated with the West Berkeley Shellmound. In this edited and redacted version of the report, project names, addresses, and other details that could be used to identify location have been removed.

In 1988, archaeological monitoring for a Sanitary Sewer Rehabilitation Project encountered "heavy concentrations of midden soils" in the area (Chavez 1989). Three hundred and twenty-one (321) artifacts and ecofacts including flaked stone, groundstone, shell beads and pendants, bone artifacts, and fragmentary human remains were recovered. The deposits were determined to be secondary/displaced materials associated with the West Berkeley Shellmound.

Several iterations of archaeological testing within a large lot in proximity to the West Berkeley Shellmound have been undertaken by Archeo-Tec since 1999 (Archeo-Tec 2014; Pastron 1999; Pastron 2000). Investigations have yielded isolated pockets of displaced (secondary) midden material associated with the West Berkeley Shellmound. Specifically, borings revealed that the pre-historic cultural material was most likely located at a depth of 5 to 9 feet below surface and was within a grey, silty clay soil.

Additional boring programs have been undertaken in the vicinity of the West Berkeley Shellmound to test for the presence and determine the boundaries of remaining subsurface shellmound components. A program by Garcia & Associates and LaRamie Soils Service in 2001 placed 124 cores in the nearby streets. The testing suggested that the original mapping of the site depicted only the central core of the primary mound and that the perimeter of the shellmound most likely extended further than originally mapped (Dore et al. 2002).

In April of 2005, Pacific Legacy recovered a fragment of a human tibia during archaeological monitoring in the area (Holson 2005). The location falls within the current CHRIS site delineation of the West Berkeley Shellmound.

2016 Monitoring for the EBMUD Pipeline replacement Project by GANDA found a single location of disturbed shell midden at an intersection, which fall just outside of the previously recorded boundary of the West Berkeley Shellmound (DeBaker and Siskin 2016).

In 2016, prehistoric-era human remains within midden soils were discovered during the construction of a mixed-use development project within the defined footprint of the West Berkeley Shellmound as defined by the state archives. Subsequent monitoring efforts identified the disarticulated and partial remains of at least six individuals in association with scattered pockets of displaced midden soils. The human remains yielded an AMS radiocarbon date of 2910 to 2985 cal BC—an age which corresponds to the Early Period (3000-500 BC) and is consistent with previously obtained dates describing the habitation and use of the West Berkeley Shellmound Complex. The cultural resources may correspond to the West Berkeley Shellmound complex. However, based on a soils assessment, the report for that project determined that "the majority of the midden observed within the Project Area does not represent an intact deposit or feature(s)" (Holson et al. 2018:74). Instead, the study hypothesizes that the midden, associated artifacts, and human remains most likely represent secondary deposits arising from historic period ground disturbance and/or soil redeposition arising from infilling/ground leveling.

Historic Resources

In addition to the three pre-contact era resources described above, the CHRIS archives also contained information on historic period resources both within the Project Site and the half mile Study Area.

Union Pacific Railroad

This resource includes the late 19th century railroad track alignments of the Northern Railway Company, a Central Pacific (Later Southern Pacific) Railroad subsidiary. Today, portions of the main Central Pacific

Rail line run along 3rd Street from Park Way to Gilman, while remnants of a Southern Pacific spur extend along 2nd Street from Gilman to Page streets. The 2nd Street line therefore bisects the proposed Project site.

The resource was assessed for inclusion in the National Register of Historic Places (NHRP) and the California Register of Historic Places (CRHR) in 2017 by InContext and found to be Not Eligible (Hill 2003).

Historic Trash Deposit

A historic-period trash deposit was identified in 2016 by Garcia and Associates during geocoring for the Proposed Interstate 80/Gilman Street Interchange Improvement Project (Newland et al. 2016). Curved (vessel) glass, metal fragments, fabric remnants, and organic food remains (floral and faunal) were encountered at depths between 4 and 16 feet below surface in six test borings over an almost 30,000 square foot area. The trash deposit lies immediately west of the Eastshore Freeway (I-80) and the proposed Project site, in an area that was tidal wetlands until well into the modern era. A review of the artifacts and history of landfill events indicates that the deposit dates to between 1942 and 1946 (Newland et al. 2016). The resource did not demonstrate enough potential historical importance to warrant a formal NHPA and CEQA significance evaluation.

Historic Infrastructure under Gilman Street

Two undated and unidentified subsurface resource features were identified by Far Western during construction monitoring (Ross 2015). They consist of a concrete slab section and a segment of creosote-impregnated wood conduit for telephone lines. The resources, which lie approximately seven blocks east of the currently proposed Project site, were left in place and no further action was taken.

Historic Standing Structure Resources

Seven built environment cultural resources were also identified during the record search. Four of these, P-01-10810: University Village District; P-01-10811 UC Berkeley Experiment Station District; P-01-12115: Golden Gate Fields; and P-01-12116: Berkeley Marina and Cesar Chavez Park were reviewed for historical context of the general Project area. Although important to an understanding of broader context, it was determined that these resources are not likely to have had any direct physical impact to or influence on the archaeological resources with the Project Site.

Three, previously identified, historic period standing structure resources lie within the boundaries of the proposed Project site (P-01-11811: Berkeley Steel; P-01-11813: General Petroleum; P-01-11816: Pacific Steel Casting). Although the structures themselves are not of archaeological relevance, an understanding of the commercial and industrial activities that took place within and around those building is necessary to inform the identification of potential subsurface features and artifacts that may be encountered during planned redevelopment.

The three historic period standing structure resources were assessed for inclusion in the National Register of Historic Places (NHRP) and the California Register of Historic Places (CRHR) in 2016 by Garcia and Associates (GANDA) and found to be Not Eligible. However, that assessment addressed the standing structures only; no subsurface testing was completed, and no artifacts were recovered. Demolition and construction-related ground disturbance in these areas has the potential to impact important historic period archaeological resources.

The central foundry structure of the Berkeley Steel Construction Company Complex (P-01-011811-Building C), which was built in 1924, is the structure depicted in the 1931 aerial imagery with the "Berkeley" historic air marker (Figure 7). It appears to have been the production site of the Neilson NC-1 Golden Bear cabin monoplane, which was manufactured in 1929 by Berkeley Steel founder and president Thomas S. Neilson. Indeed, aviation production was the motivation for major expansions of the Berkeley Steel facility in 1929 (Waldorf 1929). Though not anticipated in great numbers, any artifacts of sufficient preservation and context found to be related to early California aviation have the potential to qualify as significant under CEQA.

Precontact Period Cultural Sensitivity

The extensive documentation for the Native American cultural resources outlined above revealed detailed information about specific resource findings and their locations. Rather than using the general spatial assignments defined in the CHRIS records, each resource was identified, assessed, and manually located. This information was then added to a comprehensive resources map that includes both intact (in situ) and potentially displaced midden material. The physical position of the West Berkeley Shellmound used for this analysis was that defined by the San Francisco Bay map of 1860 (U.S. Coast Survey 1860); that delineation is supported by the excavations the 1950s archaeological excavations of Wallace and Lathrap (Wallace and Lathrap 1975) and it is almost completely encompassed by the current CHRIS archive record (which may be overly broad).

Next, a classified heatmap based on Euclidean distance from known resources was developed. The process involved a series of sensitivity buffers. Extreme (25m), High (50m) and Moderate (100m) distances were defined for intact (in situ) deposits. For disturbed deposits, the deposits themselves were classed as Extreme; only High (25m) and Moderate (50m) sensitivity areas were defined around resources that were defined as disturbed/displaced. The areal buffer datasets were then merged according to the sensitivity classifications and dissolved (to remove "internal" lines between areas of the same type). The result is a detailed heatmap of all precontact period cultural resources recovered to date in the ½-mile Study area (Figure 10 [Redacted]).

The most sensitive areas of the Project site are those in close proximity to known cultural resources found directly adjacent to one of its borders. Due to the confidentiality of site locations, this site's name and location relative to the site has been redacted from this version of the report; accordingly, the most sensitive zones of the Project site are also not included. It is very possible, and even quite probable, that elements of that prehistoric cultural resource extend into subsurface soils of the Project site. That site was identified in association with a stratigraphic layer representing an ancient, stable shoreline, which would have been appropriate for occupation without the likelihood of flooding. That shoreline dates to a time when sea level was much lower than today.

Figure 10: REDACTED Cultural sensitivity heatmap based on known cultural deposits. (Anthropological Studies Center 2002; Banks and Fredrickson 1977; Basin Research Associates 2005; Chavez 1988; DeBaker and Siskin 2016; Dore et al. 2002; Holson 2005; Holson et al. 2018; Lopez and McEneaney 2000; Pastron 1999; Pastron 2000; Russell 2013; U.S. Coast Survey 1860).

Historic Period Cultural Sensitivity

Beginning in the late 19th century, many areas of the Project site were occupied by single-family residences. The proposed Project therefore has the potential to impact any extant late Victorian-era archaeological resources of residential origin. Based on available maps and the fact that the residences were constructed prior to widespread implementation of indoor sewer lines, and before the area was served by City water, the most likely resource type of archaeological significance is a subsurface privy or a well. Privies, or outhouse pits, and wells, may contain stratified refuse deposits that may be deemed significant under Criterion 4 for their potential to provide significant historic information about life in the late 19th and/or early 20th centuries. The most likely location for such features would be in what would have been the rear yards of residences east of 2nd Street. The degree to which subsequent modern industrial development damaged or displaced potential pit features is unknown; intact elements, if they still exist, would be located below the dark upper soil layer (which based on the geotechnical results, varied in depth throughout the site but is an average of 5 feet in thickness).

Due to the history of land reclamation and highway construction, historic trash deposits of recent historic origin are expected to be rather common in the general Project area. More specifically, they are anticipated in areas of modern landfilling and modification within the Project site west of 2nd Street. However, because of their displaced and modern origins, such deposits are unlikely to qualify as potentially significant cultural resources.

Regarding the railroad lines that once bisected and still run adjacent to the Project site, though the tracks themselves have not been deemed significant, their presence may have resulted in additional archaeological deposits in the form of objects dropped or discarded from the trains. Such items might include metal railway parts as well as trash in the form of bottles and other miscellaneous items. If present, these items would be irregularly scattered in near-surface soil deposits.

Any historic-period object of significant antiquity which may be likely to yield information important to prehistory or history should be inspected and, if warranted, collected for further analysis and recordation.

Broadly speaking, because much of the Project site was dedicated to steel manufacturing, a large amount of slag waste (metal and glass) and fuel remnants (coal and petrochemicals) associated with industrial production is anticipated within near surface soil deposits.

Monitoring of Geotechnical Borings

On April 20 and April 21, 2022, staff archaeologists Abigail Fuchs and Elizabeth Tjoa accompanied a Langan field technician to monitor the excavation and recovery of thirteen (13) direct push geotechnical borings placed throughout the Project site (Figure 11). Three of the geotechnical borings—LAN-10, LAN-06, and LAN-09—were positioned within 200 feet of the location of the known archaeological site found adjacent to the Project site. This nearby site, whose name and location has been redacted, had previously been identified at approximately 5.5 feet below surface in a context of very dark brown silty clay.

Each core measured 2.5 inches in diameter and 5 feet in length. Nine borings were excavated to a terminal depth of 20 feet while four extended to 15 feet below existing ground surface. The borings were analyzed in the field and select soil samples were collected for further analysis in the Archeo-Tec laboratory.

Figure 11: -REDACTED- Geotechnical Borings relative to the known location of a midden deposit

Fieldwork

Following physical recovery, each boring liner was carefully opened longitudinally so that soils could be examined, photographed, and described on boring logs. For consistency with the geotechnical reporting results, the Imperial System of measurement (inches and feet) was used. Soil descriptions were recorded, and colors assigned using the Munsell system. All boring cores were manually inspected for cultural constituents. Soil samples were collected where cultural soils or artifacts were potentially indicated.

Few cultural constituents were noted during boring recovery and field analysis; most consisted of modern and historic material contained within the disturbed/artificial fill nearest the current ground surface. A single fragment of burned faunal bone was recovered from a black, loose, clay sand at approximately five feet below surface in boring LAN-01. The faunal bone is a vertebral fragment; at this time, no species identification has been made. However, it is of potential prehistoric-period archaeological interest.

Coal and charcoal, noted as a constituent of the midden deposits comprising the known archaeological site (name redacted) previously found adjacent to the Project site, were sampled from fill layers within the Project site; these are most likely historic, but the possibility that they represent displaced midden (also found at shallow depths in nearby borings) could not be ruled out entirely. The clay sand/sandy clay context in which the faunal bone was found extended from 4 to 8 feet below surface—becoming more silty and less sandy with depth. A representative soil sample (Sample 5) was collected at a depth of 7 to 7.5 feet below surface.

Laboratory

Selected soil samples were brought to Archeo-Tec's in-house laboratory in Oakland for further investigation. Five samples from LAN-1, LAN-06, LAN-10, and LAN-13, were wet screened before dry screening and visual analysis. Three samples were chosen due to the borings' proximity to a previously identified archaeological site, and two samples were chosen due to the presence of artifacts noted during fieldwork (burned faunal bone and glass).

Each soil sample was weighed and placed onto a sheet of muslin within a mesh container. Water was repeatedly poured over each sample during agitation to facilitate washing. After the process was complete, the sheet of muslin— which contained both the heavy and light fraction— was tied, labeled, and hung to dry.

Once dry, each muslin bag was then carefully opened, and the contents passed through a series of six dry sieves of decreasing mesh sizes (size 10 to size 230)[1]. The contents of each sieve were examined and recorded.

[1] The sieves were manufactured by the Hubbard Scientific Company.

Findings

Soil Stratigraphy

As expected for such a dynamic shoreline and estuarine environment, the subsurface stratigraphy varied throughout the large Project site. The most notable difference was the thickness and composition of grey estuarine silty clay sediments.

Despite the variability, the subsurface stratigraphy can be generally described by three primary stratigraphic layers. Historically imported/disturbed, artificial fill was observed from 0 to an average of about 5 feet below surface. This level contained concrete and brick fragments, colorless glass, melted glass, and wood and coal pieces in a dark but variable matrix that often appeared contaminated by petrochemical residues. Below the artificial fill was a grey or brownish grey, natural, estuarine clay (Bay Mud) of variable thickness, color and inclusions. At times, the silty clays were interbedded with sands and gravels. Inferior to the complex Bay Mud deposits was a sandy clay of a light reddish brown to yellowish brown color, which contained fluctuating amounts of sands and pea gravels.

Two borings, LAN-6 and LAN-10—both of which were placed close to the recorded location of the known archaeological site (name redacted) found adjacent to the Project site, displayed similar stratigraphic sequences to the boring examples from the nearby site in that they also had 1-foot-thick black inclusions at approximately 5-7 feet of depth. These dark, medium compact soils were visually inspected for cultural constituents, but none could be identified.

0-5 Feet

5-10 Feet

Figure 12: LAN-6 boring cores.

Cultural Materials

No trace of intact or disturbed midden, or any other conclusively prehistoric cultural materials, were identified during boring excavation or later soil examination.

Most recovered specimens appear to be structural or industrial in nature; minimal organic materials, such as small roots, were noted. A single, heavily rusted screw with an “X” on its head was retrieved from the Sample 2 (LAN-10 between 4.5 to 4 feet 10 inches below surface). Melted slag glass was recovered from Samples 4 & 5. Charcoal was identified in Samples 1, 3, 4 and 5. Coal was identified in Samples 2, 3, 4 and 5. Table 2 provides the results of screening and analysis of five selected soil samples.

Sample Number	Boring Number	Depth	Screen Size				
			5	10	35	60	230
1	LAN-10	4'-4.5'	Charcoal, asphalt, metal shavings	Gravel	Sand	Sand, increasing fine grain	Sand, increasing fine grain
2	LAN-10	4.5'-4'10"	rusted screw, coal, construction material	gravel, vegetation, other construction material	Sand	Sand, increasing fine grain	Sand, increasing fine grain
3	LAN-06	2'9"-3'3"	Small gravels, quartz, charcoal, coal, metal fragments.	Smaller gravels, asphalt.	Sand.	Sand, increasing fine grain.	Sand, increasing fine grain.
4	LAN-13	3'8"-4'4.5"	Concrete, gravels, coal, possible asbestos	glass, coal, charcoal, smaller gravels	sand, root fragment, smaller fragments of same white substance	Sand	Sand
5	LAN-01	7'-7.5'	Coal, gravel, structural materials, sandstone, glass, charcoal.	Charcoal, small plant materials (roots), coal.	Gravel, sands, smaller plant materials (roots), metal shavings	Metal shavings, sand	Metal shavings, sand

Table 2: Results of wet and dry screening of selected samples.

Conclusions

No conclusive prehistoric cultural resources were identified during boring monitoring or targeted soil analysis. (In the absence of any cultural context or association, the single burned faunal fragment cannot be interpreted as cultural.) However, this does not rule out the possibility of a prehistoric archaeological site being present within the proposed Project footprint. Based on the dynamic subsurface geomorphology along the San Francisco Bay shoreline, which is a zone of established, prehistoric-era, Native American land use, the entire area should be considered sensitive for buried prehistoric cultural resources.

Furthermore, given the unequivocal proximity to a previously recorded precontact period midden deposit (name and location redacted), some areas of the proposed Project should be considered extremely sensitive for intact and disturbed prehistoric resources, which may extend into untested soils within the Project Site. Indeed, the subsurface stratigraphic sequences identified in borings nearest the previously recorded site (LAN-6, LAN-9, and LAN-10) bear notable resemblance to those presented in the

archaeological record in the area, with the important difference that no midden was identified during the current testing.

It is also possible that small pockets of displaced midden material may be mixed within the modern fill stratum itself (secondary deposits). This is because, historically, shellmound (midden) deposits were used for surface leveling and fill. Such secondary midden deposits could be found at any level below surface and have been reported within the half-mile Study Area investigated for this project. Specifically, the adjacent, previously recorded archaeological site (name and location redacted) was partially identified from cultural materials within disturbed soil contexts. Therefore, there is a reasonable probability of encountering significant prehistoric cultural resources, if they exist, within artificial and disturbed fill soils throughout the proposed Project site. All midden deposits, whether primary or secondary, may contain human remains.

Historically, the Project Site has been used for both residential and industrial purposes. It does not appear that any of the early historic structures had basements; they thus did not likely intrude on any previously existing archaeological sites. Although it is unlikely that subsurface materials associated with any of the above-described historic-era development within the Project site, if encountered, will be deemed historically significant, the possibility cannot be ruled out completely. It is possible that residences from the late 19th or early 20th centuries left an important mark on the archaeological record. One example of a potentially significant archaeological resource would be in an intact privy deposit.

The historic period refuse/artifacts that were recovered during geotechnical testing are consistent with industrial activities within the Project site during the late 19th and 20th centuries. The most ubiquitous artifact class recovered is coal, which was found in 4 of the 5 tested boring samples. Fragments of lignite coal had previously been recovered from subsurface midden contexts identified in very close proximity to the Project site and in association with burned bone and shell. According to the researchers, this suggests that Native peoples may have burned coal for fuel. Such a site characteristic is unparalleled in Northern California annals.

By contrast, the coal samples recovered from borings for the current study had no prehistoric cultural associations. Rather than indicating prehistoric origin, the coal is most likely historic. The Project Site has been home to several historic-period forges/foundries and two railroad lines passed adjacent or through the blocks. Those machines would presumably have been fueled by coal, which prior to the widespread importation of higher quality materials from outside the region, would have been lignite coal sourced from nearby Black Diamond Mines. In keeping with the principle of parsimony, the most likely source of the coal identified during the 2nd and Gilman Project geotechnical boring program is coal used for rail power and industrial metalworking during the historic period. That said, based on the finding of coal in association with the known prehistoric midden site— located very close to the current Project site—the possibility that the coal and charcoal found is a disturbed component of prehistoric midden could not be ruled out completely.

Recommendations

Avoiding construction disturbances to potentially significant cultural resources is always the most desirable outcome. This can often be achieved through careful planning. However, if any ground disturbance at all is to take place, avoidance of a subsurface resource is only possible if the resource has been identified and its boundaries delineated. At this point, the only way to determine if the known

midden site, or any other as-yet-unidentified, subsurface cultural resources, extends into the current Project site is to carry out additional testing.

The parcel is currently occupied by buildings, concrete, and landscaping elements. As such, archaeological monitoring of building demolition followed by the implementation of a targeted pre-construction archaeological testing plan is advised. This is especially true for the highly culturally sensitive areas nearest to the previously recorded, adjacent archaeological site (name and location redacted) and in areas along the former shoreline. Demolition-related excavation such as basement slab removal, topsoil removal, mass excavation, and grading should be monitored by a qualified archaeologist. Following demolition, testing may include but is not limited to systematic surface reconnaissance, shovel test pits (STPs), exploratory excavation units, manual or mechanical borings, and mechanical trenching.

In addition to pre-construction testing, a qualified archaeologist should be available to monitor soils-disturbing activities once construction is underway. This is especially important nearest to the recorded location of the adjacent archaeological site. Based on comprehensive fieldwork findings, construction monitoring may be reduced to spot checks in some portions of the Project site at the discretion of the archeological consultant.

The above-described recommendations are based on typical mitigation measures required by the lead agency to ensure compliance with the California Environmental Quality Act (CEQA).

In conclusion, the initial archaeological monitoring program did not identify anything of prehistoric or historic significance. However, absence of evidence is not evidence of absence, particularly when the footprints of the areas tested—as in the very narrow core samples—are extremely small. Given that prehistoric shellmound deposits with intact remnants is present in the immediate vicinity of the Project, additional monitoring and testing is warranted.

At this point in the planning process, the following general mitigation guidelines are recommended. If mass excavation does not extend beyond 5 feet of the surface, potential impacts will be largely limited to fill deposits, and are less likely to impact intact soil deposits. Placing the structures with the least amount of subsurface ground disturbance (e.g. a surface parking lot) on the area closest to where a prehistoric midden deposit was previously identified may also allow avoidance of potential intact resources. Due to the potential for re-deposited cultural materials in fill deposits, it must be emphasized that even if these measures are put in place, archaeological monitoring of all mass excavation and other ground-disturbing work where spoils will be generated would still be necessary.

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