

APPENDIX F

CULTURAL RESOURCES INVENTORY REPORT

HISTORIC RESOURCE EVALUATION

**Cultural Resources Inventory Report
for the
Drew Solar Project, Imperial County, California**

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**FEBRUARY 2018
REVISED MAY 2018
REVISED JULY 2018**

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NATIONAL ARCHAEOLOGICAL DATABASE (NADB) INFORMATION

Authors: Angela Pham, MA; Micah J. Hale, PhD, RPA

Firm: Dudek

Project Proponent: Drew Solar, LLC

Report Date: February 2018, Revised May 2018, Revised July 2018

Report Title: Cultural Resources Inventory Report for the Drew Solar Project, Imperial County, California

Type of Study: Cultural Resources Inventory

Resources: DS-I-1, DS-I-2, DS-I-3, DS-I-4, DS-I-5, DS-I-6, DS-I-7, DS-I-8, DS-I-9

USGS Quads: Mount Signal (1976), Township 17S, Range 13E; Sections 7 and 8 of

Acreage: Approximately 859.3 gross acres (762.8 net acres)

Permit Numbers: N/A

Keywords: Irrigation system; intensive pedestrian survey; El Centro,

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MANAGEMENT SUMMARY

Dudek conducted a cultural resources study for the Drew Solar Project (Project), located approximately 6.5 miles southwest of the City of El Centro, Imperial County, California. This study included a records search and literature review, Native American consultation, an intensive-level cultural resources pedestrian survey, and preparation of this cultural resources technical report.

This study was completed under the provisions of local regulations as well as the California Environmental Quality Act (CEQA). Public Resources Code (PRC) Section 5024.1, Title 14 California Code of Regulations (CCR) Section 15064.5 of the CEQA Guidelines, and PRC Sections 21083.2 and 21084.1 were also used as basic guidelines for this cultural resources study (Governor's Office of Planning and Research 1998). PRC Section 5024.1 requires the identification and evaluation of cultural resources to determine their eligibility for the California Register of Historical Resources (CRHR).

Nine newly identified cultural resources, consisting of historic irrigation canals temporarily designated as: DS-I-1, DS-I-2, DS-I-3 (Wormwood Lat 1 segment), DS-I-4, DS-I-5 (Woodbine canal segment), DS-I-6 (Mt. Signal Drain Segment), DS-I-7 (Woodbine Lat 7), DS-I-8, and DS-I-9 (Mt. Signal Drain 1-B) were found within the Project APE during the intensive-level pedestrian survey. No additional cultural resources were documented within the Project APE.

Dudek's Phase I inventory of the Project APE suggests that there is a low potential for the inadvertent discovery of historical resources during Project implementation. Based on available information and in consideration of the topography, there is a low potential for the inadvertent discovery of intact cultural deposits during earth moving activities that will occur within the agricultural fields. The fields have been extensively disturbed by decades of agricultural activities. However, there is a moderate potential for the inadvertent discovery of intact cultural deposits during earth moving activities related to the construction of the Project's generation interconnection (gen-tie). The gen-tie transmission lines are located outside of the agricultural fields and have not been subject to extensive agricultural disturbances. The gen-ties alignment will extend approximately 400 feet south of the southerly limits of the net farmable area of the Project APE. The gen-ties will consist of transmission structures that will require drilling, to a maximum depth of 10 feet, for pole foundations. Following the setting of structures, conductor will be installed via use of pullers and from bucket trucks. Dudek recommends full time archaeological monitoring during drilling activities for the gen-ties. If only disturbed sediments (e.g., fill) or other sediments and formations are identified during construction monitoring that do not have the potential to contain archaeological resources, then monitoring may be reduced or terminated.

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Nine newly identified historic age cultural resources were recorded during the intensive pedestrian survey. These new resources consist of irrigation canals and drainages. Based on historic aerials and available date stamps, the canals are historic in age (circa 1950s). The canals are built environment resources and will be addressed in a separate study and included as an addendum to this cultural resources inventory report (Corder and Murray 2018).

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1 INTRODUCTION

Dudek conducted a cultural resources study for the Drew Solar Project (Project), located approximately 6.5 miles southwest of the City of El Centro, Imperial County, California. This study included a records search and literature review, Native American consultation, an intensive-level cultural resources survey, and preparation of this cultural resources technical report. The Project site consists of six included parcels (APNs 052-170-031, 052-170-032, 052-170-037, 052-170-039, 052-170-056, and 052-170-067) that total approximately 859.3 gross acres of land, the majority of which has been previously used for agriculture. The entire 859.3 acres consists of the Area of Potential Effects (APE). The APE encompasses all lands where the proposed Project could potentially impact cultural resources.

This study was completed under the provisions of local regulations as well as the California Environmental Quality Act (CEQA). Public Resources Code (PRC) Section 5024.1, Title 14 California Code of Regulations (CCR) Section 15064.5 of the CEQA Guidelines, and PRC Sections 21083.2 and 21084.1 were also used as basic guidelines for this cultural resources study (Governor's Office of Planning and Research 1998). PRC Section 5024.1 requires the identification and evaluation of cultural resources to determine their eligibility for the California Register of Historical Resources (CRHR).

Nine newly identified cultural resources, consisting of historic irrigation canals temporarily designated as: DS-I-1, DS-I-2, DS-I-3 (Wormwood Lat 1 segment), DS-I-4, DS-I-5 (Woodbine canal segment), DS-I-6 (Mt. Signal Drain Segment), DS-I-7 (Woodbine Lat 7), DS-I-8, and DS-I-9 (Mt. Signal Drain 1-B) were found within the Project APE during the intensive-level pedestrian survey. The canals are historic in age and will be addressed in a separate study and included as an addendum to this cultural resources inventory report. No additional cultural resources were documented within the Project APE.

Dudek Archaeological Principal Investigator Micah Hale, M.A., and Registered Professional Archaeologist (RPA) managed the Project and co-authored this report with Dudek archaeologist Angela Pham, M.A., RPA. Dudek archaeologists Angela Pham, Jessica Colston, Patrick Hadel, Javier Hernandez, and William Blodgett conducted the intensive-level pedestrian survey for the Project.

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2 PROJECT DESCRIPTION AND LOCATION

The Drew Solar Project is located in Imperial County, California (Figure 1), approximately 6.5 miles southwest of the city of El Centro, California, and 7.5 miles directly west of Calexico, California. The Project site is generally located south of Kubler Road, east of Westside Main Canal, north of State Route 98, and west of Pulliam Road. The U.S./Mexico border is approximately 1.85 miles south of the Project area. The Project is located on agricultural land owned by Imperial Irrigation District (IID). Specifically, the Project is located in Township 17 South, Range 13 East, Sections 7 and 8 of the Mount Signal, California USGS 7.5 Minute Series Quadrangles (Figure 1).

The Project site covers approximately 859.3 gross acres or 762.8 net farmable acres of land, the majority of which has been previously used for agriculture. The Project site is located on Assessor Parcel Numbers (APNs) 052-170-031, 052-170-032, 052-170-037, 052-170-039, 052-170-056, and 052-170-067.

The Project will use solar photovoltaic (PV) technology to convert sunlight directly into direct current (DC) electricity. The Project may include only one PV technology or a combination of various PV technologies, including but not limited to crystalline silicon-based systems, thin-film systems, and perovskites, and may include energy storage. The Project would also construct generation interconnection (gen-tie) transmission lines from the south end of the Project site running south across Drew Road and State Route 98 into the existing Drew Switchyard located on APN 052-190-039. The gen-ties alignment will extend approximately 400 feet south of the southerly limits of the net farmable area of the Project APE. The gen-ties will consist of transmission structures that will require drilling, to a maximum depth of 10 feet, for pole foundations and a work area being established around the perimeter of the structure. Following the setting of structures, conductor will be installed via use of pullers and from bucket trucks. The Project also includes a utility scale energy storage system.

Site preparation would be planned and designed to minimize the amount of earth movement required for the Project to the extent feasible. The hydrology design would be given first priority in order to protect the Project's facilities and adjacent facilities including any IID/County facilities from large storm events. It is the intent of the Project to support the panels on driven piles. Additional compaction of the soil in order to support the building and traffic loads as well as the PV module supports may be required and is dependent on final project engineering design.

The on-site drainage patterns would be maintained to the greatest extent possible. It will be necessary to remove, relocate and/or fill in portions of some of the existing private drainage ditches or delivery canals to accommodate the final panel layout for the Project. As for IID facilities, the drain and canal connections will be modified based on the final engineering design for these facilities in accordance with IID and County standards.

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During construction, temporary facilities would be developed on site to facilitate the construction process. These facilities may include construction trailers, a temporary septic system or holding tank, parking areas, material receiving / storage areas, water storage ponds, construction power service, recycling / waste handling areas, and others. These facilities would be located at the construction areas designated on the final site plan(s).

2.1 Regulatory Context

This project is subject to state and local regulations regarding cultural resources. The following section provides a summary of the applicable regulations, policies, and guidelines relating to the proper management of cultural resources for this project.

2.1.1 State Level Regulations

The California Register of Historic Resources (Public Resources Code section 5020 et seq.)

In California, the term “historical resource” includes but is not limited to “any object, building, structure, site, area, place, record, or manuscript which is historically or archaeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California” (California Public Resources Code section 5020.1(j)). In 1992, the California legislature established CRHR “to be used by state and local agencies, private groups, and citizens to identify the state’s historical resources and to indicate what properties are to be protected, to the extent prudent and feasible, from substantial adverse change” (California Public Resources Code section 5024.1(a)). A resource is eligible for listing in the CRHR if the State Historical Resources Commission determines that it is a significant resource and that it meets any of the following National Register of Historic Places (NRHP) criteria:

- Associated with events that have made a significant contribution to the broad patterns of California’s history and cultural heritage.
- Associated with the lives of persons important in our past.
- 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.
- Has yielded, or may be likely to yield, information important in prehistory or history.

(California Public Resources Code section 5024.1(c).) Resources less than 50 years old are not considered for listing in the CRHR, but may be considered if it can be demonstrated that sufficient time has passed to understand the historical importance of the resource (see 14 CCR, section 4852(d)(2)).

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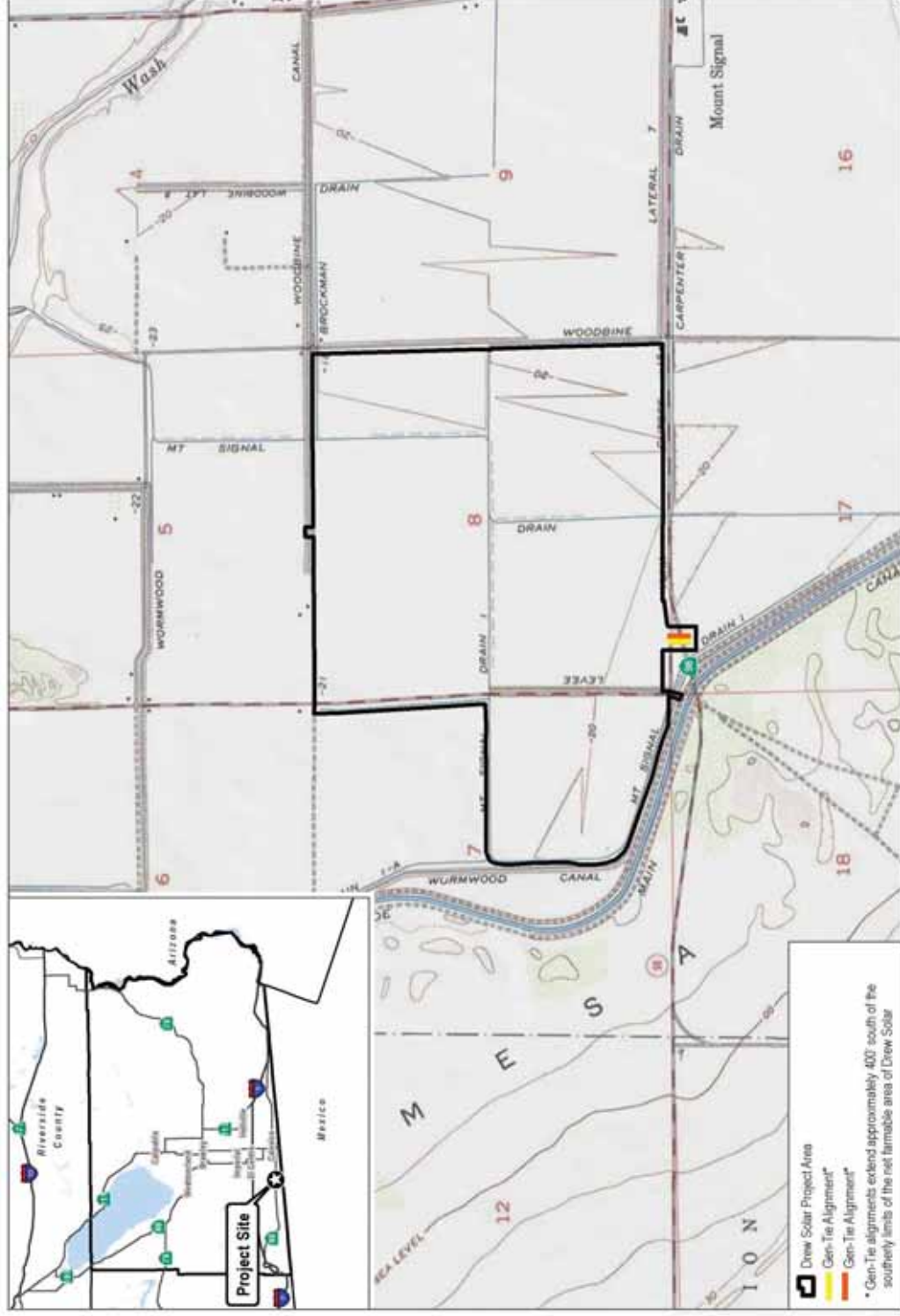


FIGURE 1
Project Location
Cultural Resources Report for the Drew Solar Project

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

2.1.2 Native American Historic Cultural Sites (California Public Resources Code section 5097 et seq.)

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

2.1.3 California Native American Graves Protection and Repatriation Act

The California Native American Graves Protection and Repatriation Act (California Repatriation Act), enacted in 2001, required all state agencies and museums that receive state funding and that have possession or control over collections of human remains or cultural items, as defined, to complete an inventory and summary of these remains and items on or before January 1, 2003, with certain exceptions. The California Repatriation Act also provides a process for the identification and repatriation of these items to the appropriate tribes.

2.1.4 California Environmental Quality Act

As described further below, the following CEQA statutes and CEQA Guidelines are of relevance to the analysis of archaeological and historic resources:

1. California Public Resources Code section 21083.2(g): Defines “unique archaeological resource.”
2. California Public Resources Code section 21084.1 and CEQA Guidelines section 15064.5(a): Define historical resources. In addition, CEQA Guidelines section 15064.5(b) defines the phrase “substantial adverse change in the significance of an historical resource;” it also defines the circumstances when a project would materially impair the significance of a historical resource.

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3. California Public Resources Code section 5097.98 and CEQA Guidelines section 15064.5(e): Set forth standards and steps to be employed following the accidental discovery of human remains in any location other than a dedicated cemetery.
4. California Public Resources Code sections 21083.2(b)-(c) and CEQA Guidelines section 15126.4: Provide information regarding the mitigation framework for archaeological and historic resources, including options of preservation-in-place mitigation measures; preservation-in-place is the preferred manner of mitigating impacts to significant archaeological sites because it maintains the relationship between artifacts and the archaeological context, and may also help avoid conflict with religious or cultural values of groups associated with the archaeological site(s).

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

A “substantial adverse change in the significance of an historical resource” reflecting a significant effect under CEQA means “physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired” (CEQA Guidelines section 15064.5(b)(1); California Public Resources Code section 5020.1(q)). In turn, the significance of a historical resource is materially impaired when a project:

1. Demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the California Register; or
2. Demolishes or materially alters in an adverse manner those physical characteristics that account for its inclusion in a local register of historical resources pursuant to section 5020.1(k) of the Public Resources Code or its identification in an historical resources survey meeting the requirements of section 5024.1(g) of the Public Resources Code, unless the public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically or culturally significant; or

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

2.1.5 California Health and Safety Code section 7050.5

California law protects Native American burials, skeletal remains, and associated grave goods, regardless of their antiquity, and provides for the sensitive treatment and disposition of those remains. Health and Safety Code section 7050.5 requires that if human remains are discovered in any place other than a dedicated cemetery, no further disturbance or excavation of the site or nearby area reasonably suspected to contain human remains shall occur until the County coroner has examined the remains (section 7050.5b). If the coroner determines or has reason to believe the remains are those of a Native American, the coroner must contact the NAHC within 24 hours (section 7050.5c). The NAHC will notify the Most Likely Descendant. With the permission of the landowner, the Most Likely Descendant may inspect the site of discovery. The inspection must be completed within 24 hours of notification of the Most Likely Descendant by the NAHC. The Most Likely Descendant may recommend means of treating or disposing of, with appropriate dignity, the human remains and items associated with Native Americans.

2.1.6 Senate Bill 18

California Senate Bill 18 (SB 18), which took effect on March 1, 2005, requires local (city and county) governments to consult with California Native American tribes identified by the Native American Heritage Commission (NAHC) for the purpose of protecting, and/or mitigating impacts to cultural places in creating or amending general plans, including specific plans (Government Code section 65352.3).

2.1.7 Assembly Bill 52

California Assembly Bill 52 (AB 52), which took effect July 1, 2015, establishes a consultation process between California Native American Tribes and lead agencies in order to address tribal concerns regarding project impacts and mitigation to “tribal cultural resources” (TCR). Public Resources Code section 21074(a) defines TCRs and states that a project that has the potential to cause a substantial adverse change to a TCR is a project that may have an adverse effect on the environment. A TCR is defined as a site, feature, place, cultural landscape, sacred place, and object with cultural value to a California Native American tribe that is either:

1. listed or eligible for listing in the CRHR or a local register of historical resources, or
2. determined by a lead agency to be a TCR.

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2.1.8 Traditional Cultural Properties

Native American Heritage Values

Federal and state laws mandate that consideration be given to the concerns of contemporary Native Americans with regard to potentially ancestral human remains, associated funerary objects, and items of cultural patrimony. Consequently, an important element in assessing the significance of the study site has been to evaluate the likelihood that these classes of items are present in areas that would be affected by the proposed project.

Also potentially relevant to prehistoric archaeological sites is the category termed Traditional Cultural Properties in discussions of cultural resource management (CRM) performed under federal auspices. According to Patricia L. Parker and Thomas F. King (1998), “Traditional” in this context refers to those beliefs, customs, and practices of a living community of people that have been passed down through the generations, usually orally or through practice. The traditional cultural significance of a historic property, then, is significance derived from the role the property plays in a community’s historically rooted beliefs, customs, and practices. Examples of properties possessing such significance include:

1. A location associated with the traditional beliefs of a Native American group about its origins, its cultural history, or the nature of the world;
2. A rural community whose organization, buildings and structures, or patterns of land use reflect the cultural traditions valued by its long-term residents;
3. An urban neighborhood that is the traditional home of a particular cultural group, and that reflects its beliefs and practices;
4. A location where Native American religious practitioners have historically gone, and are known or thought to go today, to perform ceremonial activities in accordance with traditional cultural rules of practice; and
5. A location where a community has traditionally carried out economic, artistic, or other cultural practices important in maintaining its historic identity.

A Traditional Cultural Property, then, can be defined generally as one that is eligible for inclusion in the National Register because of its association with cultural practices or beliefs of a living community that (a) are rooted in that community’s history, and (b) are important in maintaining the continuing cultural identity of the community.

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2.1.9 County of Imperial

Section III(B) of the Imperial County Conservation and Open Space Element describes the cultural resources, goals and objectives to protect such resources (County of Imperial 2016). The planning goals and objectives are described below.

Goal 3 of the goals and objectives section of the Imperial County Conservation and Open Space Element addresses the preservation of cultural resources. Goal 3 states that the County will “preserve the spiritual and cultural heritage of the diverse communities of Imperial County.” (County of Imperial 2016). Three objectives are enumerated to assist in implementation of the goal:

- **Objective 3.1:** Project and preserve sites of archaeological, ecological, historical, and scientific value, and/or cultural significance.
- **Objective 3.2:** Develop management strategies to preserve the memory of important historic periods, including Spanish, Mexican, and early American settlements of Imperial County.
- **Objective 3.3:** Engage all local Native American Tribes in the protection of tribal cultural resources, including prehistoric trails and burials sites.

2.2 Project Personnel

Micah Hale, PhD, RPA, served as project manager and Principal Investigator, and co-authored the technical report. Angela Pham, MA, served as field director and co-authored the technical report. Archaeologists Jessica Colston, Patrick Hadel, Javier Hernandez, and William Blodgett acted as field crew members.

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3 SETTING

3.1 Natural Setting

The Drew Solar Project is located in the Colorado Desert. The Project APE is bordered by the Westside Main Canal to the west; Greeson Drain to the east, Kubler road to the north, and the U.S. - Mexico international border to the south. It is mostly comprised of agricultural land and open space considered part of the Imperial Valley.

For detailed discussion relating to the environmental context of this area, please consult the biological, geological, and other technical studies prepared for Drew Solar Project.

3.2 Cultural Setting

The general cultural sequence for the Colorado Desert can be viewed in terms of three or more time periods based on the evolutionary stages proposed by Willey and Phillips (1958). Among contemporary archaeologists and cultural resource managers, the Paleoindian and Archaic evolutionary stages of Willey and Phillips (1958) have evolved into time periods and, in southern California, their Formative stage became the Late Prehistoric time period. For this report, actual geological time periods and the evolutionary stage labels intended by Willey and Phillips will be employed. Within the time periods, various archaeological complexes occur on a regional basis. Various labels such as horizon, pattern and culture have been used, but the more universal term “complex” is preferred for this effort.

3.2.1 Late Pleistocene

Several researchers posit a Pre-Projectile Point Period that occurred in the late Pleistocene prior to the much better documented Clovis, San Dieguito, Lake Mojave complexes (e.g., Begole 1974; Childers 1980; Hayden 1976). Archaeological material from the Greater Southwest dating to this posited Pre-Projectile Point Period is often called the Malpais Complex. Malpais is a term that was adapted from the early work of Malcolm Rogers, who used it to refer to what is now the first portion of the San Dieguito Lake Mojave Complex. The term was resurrected by Hayden (1976) to refer to a tool assemblage including choppers, scrapers, and other crude, core-based tools typically found on old desert pavements in the Sonoran Desert and in the Sierra Pinacate. These materials generally are heavily weathered, very darkly patinated and found deeply embedded in desert pavements. Lacking subsurface deposits, Hayden depended to a large degree upon the amount of patination and relative dates of geological formations to obtain relative dates. He argued that most of the Malpais Complex dates to some time prior to an altithermal that occurred about 20,000 years ago. At a shell scatter on a sand dune near Adair Bay on the Gulf of California, he was able to obtain, through radiocarbon dating, two subsurface dates on shell that were greater than 37,000 years before present (B.P.). He also obtained a surface date there of

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approximately 33,950 B.P. (corrected) (Hayden 1976). These very early dates are rather troubling to traditional “Clovis First” archaeologists and many are skeptical of the existence of this period (e.g., Schaefer 1994). Obtaining corroborating radiocarbon dates to support or refute this very early age for the Malpais continues to prove elusive.

3.2.2 Terminal Pleistocene-Very Early Holocene

The earliest well-documented sites in the southern Alta California desert region belong to the San Dieguito Complex, which is thought to date from approximately 11,000 to 9,300 B.P. to perhaps as late as 7,500 B.P. (Justice 2002; Warren et al. 1998). Beginning in 1924, Malcolm Rogers, of the San Diego Museum of Man, conducted surveys in the Colorado Desert during which he noted what became known as the San Dieguito Complex. Eventually, Rogers documented San Dieguito materials in the Mojave Desert, in Arizona, and as far south as San Quintin, in Baja California. The Project area is within Roger’s Central Aspect for the San Dieguito (Rogers 1966).

Closely related to the San Dieguito are materials that have been identified in the Mojave Desert and in the Great Basin called the Lake Mojave Complex (Warren and Crabtree 1986; Warren et al. 1998). No San Dieguito radiocarbon dates have been published for the Colorado Desert, although many surface sites have been reported (Schaefer 1994).

Elsewhere, materials associated with human bone excavated on Santa Rosa Island were dated to 11,500 years B.P. (Johnson et al. 1999). Materials at Daisy Cave on San Miguel Island were also radiocarbon dated from approximately 11,600 to 11,000 B.P. (Erlandson 2007). Radiocarbon dated cultural deposits going back to approximately 15,000 B.P. have just been reported from the Debra L. Friedkin Site in Texas by Michael Waters (Ehrenberg 2011). While these scholars have substantiated the notion of terminal Pleistocene occupations in the American West, the relationships among these early sites and the San Dieguito Lake Mojave complex in the Colorado Desert are not yet understood.

The San Dieguito assemblage is typically dominated by finely flaked scrapers, planes, choppers and leaf-shaped projectile points made of slate-green felsite of the Santiago Peak Formation or fine-grained basalt. Evidence of seed grinding technology (manos and metates) is scarce or absent. Desert assemblages often contain Lake Mojave and Silver Lake projectile points that are rare along the coast. These points appear in the California deserts from about 11,000 to about 7,000 B.P. (Justice 2002:91; Warren and Crabtree 1986:184). San Dieguito sites in the deserts are typically found around dry Pleistocene playas and above ancient stream channels, not modern water sources. Rogers and many others have found numerous trails and cleared circles that they attribute to the San Dieguito in the Colorado Desert. The cleared circles are typically somewhat circular, but ovals and rectangles are also noted. These are also known as sleeping circles.

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Despite the problem with geometry, the terms cleared circles and sleeping circles are very well established in the archaeological literature. They are commonly interpreted as house or windbreak remains or just a smooth place to sleep. The desert site locations and assemblages suggest a subsistence emphasis on lacustrine resources, but the coastal San Dieguito sites seem to reflect a more generalized hunting and gathering economy with a special emphasis on marine resources, especially shellfish (Erlandson and Colten 1991; Warren et al. 1998).

3.2.3 Mid-Holocene

During the early and mid-Holocene, a generalized hunting and gathering economy, based to a large degree on collecting and grinding grasses and other hard seeds, appeared in the California deserts and along the coast. Beginning at approximately 8,500 years ago in southern Alta California, the assemblage is dominated by portable basin metates, manos, and crudely-fashioned core-based scrapers, choppers, and hammerstones. In the California deserts, Pinto series projectile points appear at about 8,000 B.P. and continue to about 4,000 B.P. (Justice 2002:135). Gypsum series points begin to appear in desert sites at approximately 4,000 B.P. with the Elko series appearing shortly thereafter (Justice 2002: 294, 304). This assemblage suggests the mid-Holocene economy was more diversified and focused on gathering hard seeds and grasses, and hunting small and big game. Near the Project area, McDonald (1992) found mid-Holocene cultural deposits in her excavation of Indian Hill rock shelter. Located in the Jacumba Mountains northwest of the current Project area, this is the only published excavation of a mid-Holocene archaeological site in the Colorado Desert. McDonald posits that the site was first occupied at about 5,000 B.P. She recovered 21 Elko dart points, one Gypsum Cave point, and four dart points that she was unable to type. She suggests that Indian Hill rock shelter functioned as a hunting camp for the mid-Holocene occupants (McDonald 1992).

3.2.4 Late Holocene

Around 2,000 B.P., patterns begin to emerge that suggest cultural links to the peoples found in the Colorado Desert at the time of the Spanish explorers (e.g., Alarcón and Diaz, in 1540 A.D.). This Late Holocene period is often referred to as the Late Prehistoric. The archaeological complex at this time in the Colorado Desert is referred to as the Yuman or Patayan Complex. It is recognized archaeologically by the presence of smaller projectile points, signaling the advent of the bow and arrow, the replacement of flexed inhumations with cremations, the introduction of ceramics, and an emphasis on plant food collection and processing, especially acorns and mesquite (Kroeber 1925; Schaefer 1994; Schaefer and Laylander 2007). Semi-sedentary rancherías were established along the Colorado River and around springs. These rancherías were not compact villages, but were loose collections of residences and agricultural plots. Surrounding desert and mountain areas were seasonally occupied to exploit mesquite, acorns, and pinyon nuts. Mortars for mesquite and acorn

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processing become common for the first time in the area and bedrock milling features (slicks, basins, and mortars) first appear (Schaefer and Laylander 2007).

The most numerous archaeological resources in the Imperial Valley date to the Late Holocene. Most sites are small processing loci, associated with the grinding of plant resources. Larger habitation sites were less common, but displayed a wider range of activities and longer periods of occupation (Jefferson 1974; Schaefer and Laylander 2007). The typical Late Prehistoric assemblage includes Desert Side-Notched series and Cottonwood Triangular arrow points and Lower Colorado Buffware and Tizon Brownware ceramics. In the vicinity of the Project area, Salton Brownware ceramics are also found (Schaefer and Laylander 2007). Lithic artifacts are typically made from chert, volcanics, metavolcanics, or quartz materials (Jefferson 1974). The economy along the Colorado River and its sloughs, the Alamo River and New River, was based on mesquite collecting and flood plain horticulture. Corn, beans, and squash were the primary crops, but mesquite was the mainstay of the Kamia diet, even in years of good horticultural production (Castetter and Bell 1951; Gifford 1931).

During the Late Holocene, there were four or more events when Lake Cahuilla filled the Salton Sink up to the 40-foot elevation. As noted previously, Lake Cahuilla occurred periodically when the Colorado River filled up its river bed with silt in the area south of Pilot Knob. At these times the river changed course out of its silt-elevated channel and, instead of flowing into the Upper Gulf of California, flowed west down the Alamo River and New River, then north into the Salton Sink (Schaefer 1994; Singer 2011).

When Lake Cahuilla was full or filling, the entire flow of the Colorado River was probably diverted and the area from Pilot Knob south to the Gulf was dry. Since Alarcón estimated (or overestimated) about 20,000 people living south of Pilot Knob in 1540, it was presumably densely populated during the Late Prehistoric as well (Forbes 1965). These people had to migrate when the Colorado River flowed into Lake Cahuilla, and they may have been the people who left the huge number of archaeological sites around the southern shore of Lake Cahuilla (Schaefer and Laylander 2007; Underwood 2007, 2008). The southwestern shoreline of Lake Cahuilla lies approximately 12 miles east of Ocotillo. Although the shoreline of this huge freshwater lake was outside the Project area, the lake would have had a profound influence on prehistoric Indians within the Project area.

3.2.5 Ethnohistoric Period

According to early ethnographers (e.g., Gifford 1931, Kroeber 1925) the Project area was in the traditional territory of the Kamia or Desert Kumeyaay. Their neighbors to the north are the Cahuilla whose territory extended to meet the Kamia at the San Felipe or Scissors Crossing area (where CR-S2 meets State Route 78). To the east of the Project area are the Quechan who live

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along the Colorado River just west of Yuma (Forde 1931). The traditional territory of the Cocopah, their neighbors to the southeast, lies at the head of the Gulf of California (Gifford 1931, Kelly 1977); to the west are the Kumeyaay proper.

It is important to understand that the Kamia did not occupy all of their traditional territory at one time. They tended to occupy a few farming rancherias or camping places within their territory at any given time, based largely on the availability of water. The Kamia were quite friendly with the Quechan, who lived in the vicinity of Yuma, and some bands occasionally lived with them on the Colorado. They also were very closely related to the Kumeyaay and shared clans or lineages with them (Gifford 1931). The Kumeyaay rancheria of Jacum, near the town of Jacumba today, was perhaps the easternmost Kumeyaay settlement. Jacumba is about 19 miles southwest of Ocotillo. Ethnographic sources indicate that the cold season was a favorite time for the Kumeyaay who lived in the mountains bordering the desert to visit the Kamia (Gifford 1931:17). Kroeber noted that Diegueno (Kumeyaay) clans spent winter “in mixed groups in the eastern foothills, at the desert’s edge” (Kroeber 1925:720). Also, the Indians who lived in the Mount Laguna area wintered in the desert around Vallecitos, Agua Caliente, and Mason Valley (Cline 1979).

The Kamia lived primarily along the Alamo River and New River and along other sloughs of the Colorado River in what is now Mexico as far south as Volcano Lake. The nearest documented Kamia rancheria was Xachupai. This was a loose collection of farmsteads scattered along the north-south trending New River for several miles. Xachupai extended both north and south of where I-8 intersects the river today (Gifford 1931; Forbes 1965; Kroeber 1925; Shipek 1982).

3.2.6 Historic Period

The first Spanish exploration of what is now Imperial County occurred in 1540, when Hernando de Alarcón ascended the Colorado River probably up to where Yuma and Winterhaven are today. Juan Cabrillo was the first Spanish explorer to visit coastal southern Alta California, when he anchored in what would become known as San Diego Bay in 1542. Both explorers claimed Alta California for the king of Spain, thus initiating the Spanish Period in Alta California. Spanish explorers visited what was to become Imperial Valley on a sporadic basis from that time on. Travel in the vicinity of the Project area began when Juan Bautista de Anza of the Spanish Army and Francisco Garcés of the Franciscan Order established what became known as the Anza Trail in 1774 during the first Anza Expedition. Their guide was Sebastian Taraval, an Indian from Baja California who also served as translator. Captain Juan Bautista de Anza was the commanding officer of the presidio at Tubac, south of Tucson. The Anza Trail passed east of the Project area from Yuha Wells onward to San Francisco. The Yuha Wells were used by Anza, who called them Santa Rosa de las Lajas (Flat Rocks) (Bolton 1930). They are on the southwest side of Dunaway Road about 12 miles east of Ocotillo. Anza’s observations establish the fact that prehistoric wells

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were dug by the Kamia, at least in the Yuha Desert. This suggests that other wells may also have been dug in washes to support prehistoric Indian camps in the Project area.

In 1770, Pedro Fages was appointed military governor of California Nueva, which later became known as Alta California. In 1772, he discovered an Indian trail in the mountains of eastern San Diego County near Cuyamaca State Park. It passed down Oriflamme Canyon and then connected with a north trending trail. This trail went north through the Warner's Springs area. Fages continued on to Mission San Gabriel de Arcangel, founded in 1771 in what is now San Gabriel Valley. Later, a trail was discovered that split from the Anza Trail in the vicinity of Yuha Wells and passed north through Vallecito and Agua Caliente. This linked up with the Fages Trail at the foot of Oriflamme Canyon, southeast of where the town of Julian is today. This combined Fages and Anza Trail became the principal route linking Sonora and Alta California in the late 18th and early 19th centuries. This route, followed today by CR-S2, became known as the Sonora Trail (Guerrero 2006).

In addition to the well-known Franciscan missions along the coast of Alta California, missions were also founded at Concepción, in the vicinity of present-day Yuma and San Pablo near Pilot Knob in 1780. A number of Spanish settlers accompanied the Franciscans and a small number of Spanish Army personnel; however, no presidio was established. Friction between the Spanish and the Quechan rapidly developed. The missions and settlements were destroyed in the successful Quechan Revolt of 1781. Padre Garcés and some 50 Spanish settlers were killed in that revolt. The dead included Fernando Rivera y Moncada, who led the first overland party of the Portolá Expedition to reach San Diego in 1769 and had been the military governor of Alta California in 1777 (Forbes 1965:185-202).

The Mexican people chafed under Spanish rule in the late 1700s and early 1800s. After a long struggle, the Spanish were expelled from Mexico in 1821. The Mexican Republic retained many Spanish institutions and laws, but they were very concerned about the abuses of the Catholic Church. Several reforms were passed, including the secularization of the mission system in 1834. Large tracts of former church land were granted to individuals and families and the Alta California rancho system flourished. Cattle ranching dominated the economy. The hide and tallow trade with Yankee ships increased during the 1830s. The Pueblo of Los Angeles, established in 1781, began to grow rapidly during this period and Native American influence and control greatly declined (Starr 2007).

The Mexican Republic had encouraged Americans to settle in Texas in the 1820s and by the 1830s, the Americans greatly outnumbered the Mexicans. Friction developed between the two cultures and in 1835, Texas fought and won its independence. Disputes continued over the placement of the border and Mexico never recognized the legitimacy of the new Texas Republic. The US Congress admitted Texas to the Union in 1845 and provoked Mexico into a disastrous

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war. Many Americans, including Abraham Lincoln and John Quincy Adams, denounced the rush to war as a Southern ploy to expand slavery.

Early in the war, Colonel Stephen Watts Kearney was dispatched to take charge of what became known as the Army of the West. After taking Santa Fe without a shot, Kearney headed west at the head of a column of dragoons. Captain Philip St. George Cook took charge of the Mormon Battalion, whose task was to follow behind Kearney's column and build a wagon road from Santa Fe to San Diego (Starr 2007; Guerrero 2006).

The dragoons under Kearney and the Mormon Battalion under Cook both used the Old Sonora Trail in 1846. The war ended with the Treaty of Guadalupe Hidalgo on February 2, 1848 and as part of the treaty, Mexico ceded Alta California to the US. At that time, the Mexican territory of Alta California also included southern Nevada, southern Utah, and most of Arizona. By the time Alta California was admitted to the Union in 1850 as the State of California, it was only a small fraction of its former self. Gold had been discovered in what is now known as the Mother Lode of California prior to the end of the war. However, it was not made public until March 1848, when the Americans were firmly in control. The sudden influx of American and Europeans quickly drowned out much of the old Californio culture of the Spanish-speaking Catholics born in California prior to 1848.

Tens of thousands of gold seekers (“49ers”) flooded into California over the Old Sonora Trail and through passes in the Sierra Nevada to the north. The Old Sonora Trail became known as the Southern Emigrant Trail during this period. This influx of gold-seekers and adventurers hastened the decline of the Indians, particularly in the Mother Lode area (Phillips 1996). In southern California, the rancho system prospered for several years by supplying beef to the tens of thousands of “49ers” flooding the Mother Lode (Starr 2007:111). These little known California cattle drives preceded the better known Texas drives by about 15 years.

In the 1850s, communication and trade between California and the other states remained expensive, time-consuming, and difficult. In 1857, congress authorized the first transcontinental mail, known as the San Antonio and San Diego Mail. Today, it is sometimes called the Birch Overland Mail after its founder James E. Birch (Lake 1957; Van Wormer et al. 2007). The Birch Overland Mail used the Southern Emigrant Trail (formerly the western reach of the Santa Fe Trail) through the Project area along what is now CR-S2. It branched off of the Southern Emigrant Trail at Oriflamme Canyon and headed west to San Diego. In the next year, a bigger mail contract was awarded to the Butterfield Overland Mail. This bypassed San Diego and continued north through Los Angeles and on to San Francisco. These historic mail and stage lines used the same route in this area passing through the Ocotillo vicinity (Van Wormer et al. 2007).

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As mentioned previously, Yuha Wells were first noted by Anza, who called them Santa Rosa de las Lajas. These wells are sometimes confused with Coyote Wells, southeast of Ocotillo. Coyote Wells were “discovered” by James E. Mason of the Birch Overland Mail in 1857 (Lake 1957; Van Wormer et al. 2007). It is highly likely that these wells were originally dug by the Kumeyaay. Coyote Wells is not listed as a stage stop and presumably was used as an auxiliary water source by the mail lines and packers.

During the American Period, the homestead system rapidly increased American settlement beyond the coastal plain, which subsequently accelerated the decline of the California Indians (Philips 1996). Under Mexican rule, full property and civil rights were provided for women and people of color including Indians. The Treaty of Guadalupe Hidalgo preserved these rights, although the American and California state governments ignored these provisions completely in the case of the Indians and forced the Californio land holders to abandon their vast landholdings through lengthy, expensive, and complicated legal proceedings. In less than 20 years, very few ranchos in Alta California remained intact (Starr 2007:104-105). However, Spanish remained one of the two official languages of California until 1879 (Starr 2007: 93).

The Colorado Desert area remained largely unaffected by the transition to American control until after 1904, when the Imperial Canal brought water to the Imperial Valley. A small boom in farming and homesteading began, but in 1905, the Colorado River breached the head gate of the Imperial Canal and began to fill the Salton Sink. This created the Salton Sea and threatened to fill the entire valley, re-creating Lake Cahuilla. The river was brought under control in 1907 after a heroic effort led by the Southern Pacific Railroad. In 1935, Hoover Dam was completed finally ending the dramatic floods, and containing the Colorado River which paved the way for other dams and more dependable canal systems.

U.S. Route 80 (US-80) linked El Centro and San Diego in 1915, and the portion of the San Diego Eastern and Arizona Railroad between these towns was completed in 1919. US-80 and the railroad facilitated the transport of farm products from Imperial Valley and were a benefit to the local economy.

No factor contributed more to the development of the Imperial Valley than irrigation. The following historical information is summarized from IID: The First 40 Years (Dowd 1956). This manuscript presents the history of the Imperial Irrigation District and the subsequent development of the Imperial Valley from early development to the 1940's, and identified important periods, events, and patterns of development for Imperial Valley.

It was on one of the railroad corridor expeditions in 1853, led by Lieutenant R. S. Williamson of the U.S. Topographical Engineers, that geologist Dr. W. P. Blake discovered the possibility of irrigating Imperial Valley from the Colorado River. Blake observed a region of fertile soil

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capable of sustaining agriculture but lacking in water. He measured the dry bed of the Salton Sea at below sea level, a fact that made feasible the cutting of a canal from the Colorado River to the interior of the desert which would bring with it a constant supply of water. Dr. Oliver Wozencraft, a proponent of irrigating Imperial Valley, lobbied support from the California legislature, who, in turn, asked Congress to convey six million acres to Wozencraft. He endeavored to secure action by Congress on his plan to bring potable water to the desert for over thirty years without success. Despite Wozencraft's failed attempts at reclamation, by his death in 1887, settlers and developers alike were eager to bring water to Imperial Valley.

Preliminary investigations into the feasibility of irrigating the Colorado Desert began in 1893 with the Colorado River Irrigation Company, but inability to procure financing quickly led to the company's demise. In 1896, the California Development Company was organized, under the direction of Charles Rockwood and George Chaffey, to take hold of the project. The proposed canal route would run from the diversion point at the Colorado River through lower California, Mexico, and back into the United States in order to reach Imperial Valley. To gain title to the Mexican lands, the California Development Company organized a Mexican subsidiary company in 1898 known as La Sociedad de Yrrigacion y Terrenos de la Baja California, S. A. With plans to colonize the region, the California Development Company divided Imperial Valley into districts of varying size, each with its own mutual water company.

By August 1900, construction of the first diversion canal and irrigation system was underway. The canal was excavated from the point of diversion from the Colorado River south about 4 miles into Mexico where it swung west and connected for forty miles within the Alamo River channel until it reached Sharp's Heading and turned north to the Salton Sea. A series of main canals was constructed to divert from Sharp's Heading into various stretches of Imperial Valley: Central Main, Boundary, West Side Main, and East Side Main. The Central Main Canal continued from the international boundary line and traveled north through the present cities of Brawley and Imperial; the Boundary Canal diverted west towards Calexico; the West Side Main Canal traveled west towards Calexico then north; and the East Side Main Canal traveled east then north to the eastern Salton Sea. Water delivery reached Calexico through the Boundary Canal less than one year after the start of construction. That same year, nearly 1,500 acres of land was put under crops.

Few natural resources existed for potable water prior to the construction of the irrigation system. Domestic use water had to be hauled to the Valley via the Southern Pacific Railroad. Once considered a barren wasteland, Imperial Valley was making good progress with colonization by the early 1900's. The Imperial Land Company, under the direction of the California Development Company, began laying out townsites in Imperial Valley based primarily on the density of purchased water stock. The town of Imperial was the first to be laid out with settlement commencing in 1901. Over a period of ten years from 1901 to 1911, irrigable land in

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Imperial Valley jumped from 1,500 acres to 220,000 acres. As the water flowed into the Valley, so did the people. In 1902, a year after the first water reached Calexico, nearly 2,000 settlers came to Imperial Valley. The population grew to seven times that amount within four years. To accommodate the growing population, the Southern Pacific Railroad constructed the Niland to Calexico branch rail. At the same time, the newly developed Imperial Valley broke apart from San Diego County to form its own government as Imperial County, with El Centro being designated as the County Seat.

The rapid colonization of Imperial Valley in the early 1900's strained the relationship between settlers and the California Development Company. Initial land and soil surveys were inaccurate leading to discrepancies with land titles, and water rights held by the California Development Company were called into question. The Reclamation Act was proposed in 1902 to take the Imperial Valley project from the California Development Company and organize it under Government control. Further dissatisfaction with California Development Company arose after hurried and negligible attempts to correct the heavily silt laden waters of the Colorado River ultimately led to grave damage to Imperial Valley following the massive flooding events of 1905 and 1906. The River break destroyed nearly 12,000 acres of cultivated land and over 30,000 acres of irrigable land, caused immense damage to Southern Pacific Company railroad lines; and severed the ties between settlers and the California Development Company. The River break took two years to repair, during which time the Salton Sea filled and expanded to a length of 50 miles and a width of 10 to 15 miles.

Preceding litigation brought to the California Development Company following the flood ultimately resulted in bankruptcy. In 1911, a petition for formation of an irrigation district was presented to the Imperial County Board of Supervisors. The IID was formed to acquire properties of the bankrupt California Development Company and its Mexican subsidiary. Over the span of a decade, IID completed improvements and repairs to the canal and distribution system, rebuilt the entire Westside Main Canal, received deeds to all of the properties of the California Development Corporation, and acquired 13 mutual water companies. Within a few years of acquiring the mutual companies, IID was delivering water to nearly 550,000 acres of Imperial Valley. Over a century later, IID is still servicing communities of the Imperial Valley. IID is the largest irrigation district in the nation and Imperial County ranks among the top ten agricultural counties in the nation. Ninety-eight percent of the water IID transports is used for agriculture and the remaining two percent is treated potable and delivered to the nine Imperial Valley cities (IID 2015).

4 METHODS

4.1 South Coastal Information Center Records Search

An examination of existing maps, records, and reports was conducted by Dudek to determine if the Drew Solar LLC could potentially impact previously recorded cultural resources. Dudek conducted a records search in November 2017 at the South Coastal Information Center (SCIC) at San Diego State University. The search encompassed the APE and a 1-mile buffer around the APE. The purpose of the records search is to identify any previously recorded resources that may be located in or adjacent to the project area and to identify previous studies in the project vicinity. In addition to a review of previously prepared site records and reports, the records search also reviewed historical maps of the project area, ethnographies, the NRHP, the CRHR, the California Historic Property Data File, and the lists of California State Historical Landmarks, California Points of Historical Interest, and Archaeological Determinations of Eligibility.

4.2 NAHC Sacred Lands File Search

On November 16, 2017, Dudek requested a search of the Sacred Lands Files from the Native American Heritage Commission (NAHC). A response letter was received via email from the NAHC on November 17, 2017, stating that the results of the Sacred Lands File search failed to indicate the presence of Native American cultural resources in the Project APE. The NAHC also provided a list of Native American groups and individuals who may have knowledge of cultural resources in the Project area. Letters were sent to each of the representatives November 28, 2017 for any knowledge of resources in the Project APE (Appendix B). A response letter, dated December 20, 2017, has been received from the Viejas Band of Kumeyaay Indians. The Tribe states that the Project area may contain sacred sites to the Kumeyaay people and requests that the sites, if inadvertently discovered, be avoided with adequate buffer zones and treated accordingly. No additional responses have been received to date. If responses are received, they will be forwarded to the lead agency. The coordination conducted here does not constitute formal AB 52 or SB 18 consultation.

Under CEQA, the lead agency is required to perform formal government-to-government consultation with Native American Tribes under AB 52 and SB 18.

4.3 Survey

Dudek archaeologists conducted an intensive-level pedestrian survey of the Project APE from November 20 to November 22, 2017 using standard archaeological procedures and techniques (Figure 2). All field practices met the Secretary of Interior's standards and guidelines for a cultural resources inventory (NPS 2018). The intensive-level survey methods consisted of a pedestrian survey conducted in parallel transects spaced no more than 15 meters apart over the

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entire Project APE. The proposed gen-tie line was surveyed within a 100-foot corridor (two transects) measured from the center line. Within each transect, the ground surface was examined for prehistoric artifacts (e.g., flaked stone tools, tool-making debris, stone milling tools, ceramics, fire-affected rock), soil discoloration that might indicate the presence of a cultural midden, soil depressions, features indicative of the current or former presence of structures or buildings (e.g., standing exterior walls, post holes, foundations), and historic artifacts (e.g., metal, glass, ceramics, building materials). Ground disturbances such as burrows, cut banks, and drainages were also visually inspected for exposed subsurface materials. No artifacts were collected during the surveys. Nine newly identified cultural resources, consisting of historic age irrigation canals and drainages, were identified within the Project APE (Figure 3 provided in Confidential Appendix C). The resources are temporarily designated as: DS-I-1, DS-I-2, DS-I-3 (Wormwood Lat 1 segment), DS-I-4, DS-I-5 (Woodbine canal segment), DS-I-6 (Mt. Signal Drain Segment), DS-I-7 (Woodbine Lat 7 segment), DS-I-8, and DS-I-9 (Mt. Signal Drain 1-B). The resources were recorded on DPR 523 series forms.

All fieldwork was documented using field notes and iPad technology with close-scale field maps, and aerial photographs. Location-specific photographs were taken using an Apple 3rd Generation iPad equipped with eight (8) mega-pixel (MP) resolution and georeferenced PDF maps of the Project site. Accuracy of this device ranged between 3 and 10 meters. All field notes, photographs, and records related to the current study are on file at Dudek's Encinitas, California office.

Documentation of DS-I-1, DS-I-2, DS-I-3, DS-I-4, DS-I-5, DS-I-6, DS-I-7, DS-I-8, and DS-I-9 (Mt. Signal Drain 1-B) complied with the Office of Historic Preservation (OHP) and Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation (48 FR 44716-44740) and the California Office of Historic Preservation Planning Bulletin Number 4(a). The DPR Form will be submitted to the SCIC and is included in Confidential Appendix C.

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5 RESULTS

5.1 South Coastal Information Center Records Search

On November 15, 2017, Dudek conducted a search of the California Historical Resources Information System (CHRIS) at the South Coastal Information Center (SCIC), located on the campus of San Diego State University, California. The search included any previously recorded cultural resources and investigations within a one-mile radius of the Project APE. The CHRIS search also included a review of the NRHP, the CRHR, the California Points of Historical Interest list, the California Historical Landmarks list, the Archaeological Determinations of Eligibility list, and the California State Historic Resources Inventory list. Confidential Appendix A provides the records search results maps and a complete bibliography of all prior cultural resources studies occurring within one mile of the Project APE.

5.1.1 Previously Conducted Cultural Resources Studies

Thirteen (13) cultural resources studies have been previously conducted within one mile of the Project area. None of these are located within the Project APE. All 13 studies were conducted between 1975 and 2012. Two studies (IM-01442 and IM-01515) that were conducted adjacent to the Drew Solar Project are detailed in Table 1 and are discussed in the section below.

Table 1
Previous Cultural Resources Studies within the Project APE

Year	Author	SCIC Report ID	Report Title
<i>Outside of the Project APE</i>			
1979	Gallegos, Dennis	IM-00203	Class II Cultural Resource Inventory East Mesa and West Mesa Regions Imperial Valley, California, Volume I
1980	Davis, Emma Lou	IM-00207	Class II Cultural Resource Inventory East Mesa and West Mesa Regions Imperial Valley, California
1980	Von Werlhof, Jay and Karen McNitt	IM-00210	Archaeological Examinations of the Republic Geothermal Field, East Mesa, Imperial County
1999	Hupp, Jill	IM-00698	Historical Architectural Survey Report Pavement Rehabilitation and Shoulder, Bridge, Culvert Widening Project, Imperial County, California
1999	Schaeffer, Jerry, Drew Pallette, Collin O'Neill, and Jim Eighmey	IM-00766	Extended Phase I Study of Eight Archaeological Sites (Ca-Imp-1427, -3969, -6914, -6915, -6916, -6918, -6920, -6923) On State Route 98, Imperial County, California
1990	Pignuolo, Andrew, Roxanna Phillips, and Dennis Gallegos	IM-1057	Cultural Resource Study of the Mount Signal and Dixie Ranch Imperial County Prison Alternatives Imperial County, California
1975	Ritter, Eric W.	IM-01275	An Analysis of Culture Resources Along the Proposed Yuha Desert Orv Courses

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Table 1
Previous Cultural Resources Studies within the Project APE

Year	Author	SCIC Report ID	Report Title
2011	Mitchell, Patricia T.	IM-01464	Inventory Report of The Cultural Resources Within the Centinela Solar Energy Gen-Tie Line, Imperial County, California
2011	Pignuolo Andrew, Carol Serr, Jose Aguilar, and Frank Dittmer	IM-01442	Cultural Resource Survey For A Portion of the Centinela Solar Energy, LLC Project Area Imperial County, California
2012	Mitchell, Patricia	IM-01490	Evaluation Letter Report for the Centinela Solar Energy Gen-Tie Line Project, Imperial County, California
2011	Glenny, Wayne	IM-01498	Draft Archaeological Survey Investigation For The San Diego County Water Authority Fish Pond Imperial County, California
2011	Davis, Shannon, Jennifer Krintz, Shelby Gunderman, and Sinead Ni Ghabhlain	IM-01515	Inventory, Evaluation, and Analysis of Effects On Historic Resources Within The Area of Potential Effect of the Centinela Solar Energy, LLC Imperial County, California
2011	Davis, Shannon	IM-01516	Final Inventory, Evaluation and Analysis of Effects On Historic Built Environment Properties Within The Area of Potential Effect of The Imperial Solar Energy Center South Imperial County, California

IM-01442

Laguna Mountain Environmental conducted an archaeological survey of approximately 2,165 acres of agricultural land as part of the Centinela Solar Energy (CSE) Project, Imperial County, in 2011. The CSE project is located directly east of the proposed Drew Solar project. The study addressed the CSE project portions that are located on private lands. The archaeological investigation included a records search of the project area and a one-mile buffer around the project, at the SCIC, literature review, historic maps, and an intensive pedestrian survey.

The records search indicated that nine cultural resources have been identified within a one-mile radius of the project area; two of which are located within the project (CA-IMP-6641, a lithic and ceramic scatter associated with the past shoreline of Lake Cahuilla, and P-13-008983, a segment of a historic age agricultural irrigation canal). The field survey identified 13 previously unrecorded historic-age cultural resources within the project area. The resources include segments of the Woodbine Canal and Laterals (P-13-013073,-013074,-013075,-013076,-013077), portions of the Brockman Drain (P-13-013078), portions of the Mt. Signal Drain (P-13-013079 and P-13-013080), the Carpenter Drain (P-13-013081), the Wells Drain (P-13-013082), two historic residential structures (P-13-013083 and P-13-013084), and a historic isolate (P-13-

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13085). The archaeological crew relocated one (P-13-008983) of the two previously recorded cultural resources during the field survey.

Archaeological monitoring was recommended during all ground disturbing activities due to the presence of CA-IMP-6631 within the project area. No formal evaluations of the various irrigation canals or the residential structures were conducted by Laguna Mountain Environmental. Laguna Mountain Environmental recommended that impacts to the irrigation structures be avoided during CSE Project implementation and that the resources should be incorporated into open space easements. If the structures could not be avoided during the CSE Project implementation, additional documentation and recording was recommended to evaluate and mitigate impacts to the resources.

IM-01515

ASM Affiliates Inc. conducted a survey and evaluation for historic resources for the Centinela Solar Energy, (CSE) LLC Project, Imperial County, California, in 2011. The CSE project is located directly east of the proposed Drew Solar project. The study identified and evaluated historic resources within the project area for eligibility for inclusion in the National Register of Historic Places (NRHP) and the California Register of Historical Resources (CRHR).

The study identified sixteen (16) historic resources that are more than 45 years old located within the Project APE: the Westside Main Canal, Wormwood (P-13-8983) and Woodbine (P-13-13073) Canals, the town of Mount Signal, three (3) farm complexes, an agricultural building, and eight (8) residential buildings,. One NRHP eligible historic resource was identified, the Westside Main Canal (CA-IMP-7834). ASM's evaluation determined that the CSE Project would have no direct or indirect (e.g., visual) impacts the Westside Main Canal during project implementation. The other fifteen (15) historic resources were determined ineligible for listing in the NRHP and the CRHR.

5.1.2 Previously Recorded Cultural Resources

The SCIC records indicate that no previously recorded cultural resources are located within the Project APE. The records also indicate that an additional sixteen (16) cultural resources have been recorded within the one-mile search buffer of the proposed Project (Table 2). Three of the previously recorded resources (P-13-8983, P-13-13073, and P-13-13079) and are located directly adjacent to the current Project. These three resources are discussed below in the next section. Of the sixteen cultural resources, three (P-13-8334, P-13-8983, and P-13-13073) have been evaluated and have been determined not eligible for listing on the CRHR and the NRHP.

Cultural Resources Inventory Report for the Drew Solar Project

Table 2
Previously Recorded Cultural Resources Within One-Mile of the Project APE

Primary Number	Trinomial	Resource Type	Description	Recorded By/Date	NRHP/CRHR Status
P-13-115	CA-IMP-115	Prehistoric	Habitation Site	Malcom Rogers, 1920s; Judy Berryman, 2001	No Formal Recommendation
P-13-913	CA-IMP-913	Prehistoric	Lithic Isolate	H.E. Pretchett, 1976	No Formal Recommendation
P-13-4499	CA-IMP-4499	Prehistoric	Small Ceramic Scatter	R. Nagel, 1981	No Formal Recommendation
P-13-4500	CA-IMP-4500	Prehistoric	Lithic Isolate	P. Ainsworth, 1981	No Formal Recommendation
P-13-6641	CA-IMP-6641	Prehistoric	Sparse Lithic and Ceramic Scatter	Archaeological Survey Association, 1956	No Formal Recommendation
P-13-8334	CA-IMP-8334	Historic	Westside Main Canal	AECOM, 2011	Not Eligible
P-13-8983	-	Historic	Wormwood Canal, Lateral-7	Jill Hupp, 1999; Frank Dittmaer and Alette van den Hazelkamp, 2010; Jennifer Krintz, 2011	Not Eligible
P-13-13073	-	Historic	Woodbine Canal and Laterals 2,4,7,8	Andrew Pignuolo, 2010; Jennifer Krintz, 2011	Not Eligible
P-13-13074	-	Historic	Woodbine Lateral 7	Andrew Pignuolo, 2010	No Formal Recommendation
P-13-13075	-	Historic	Woodbine Lateral 7A	Pepe Aguilar, 2010	No Formal Recommendation
P-13-13078	-	Historic	Brockman Drain	Pepe Aguilar, 2010	No Formal Recommendation
P-13-13079	-	Historic	Mount Signal Drain	Andrew Pignuolo, 2010	No Formal Recommendation
P-13-13081	-	Historic	Carpenter Drain	Frank Dittmer, 2010	No Formal Recommendation
P-13-13083	-	Historic	Single Family Residence	Pepe Aguilar, 2010	No Formal Recommendation
P-13-13084	-	Historic	Single Family Residence	Pepe Aguilar, 2010	No Formal Recommendation
P-13-13837	CA-IMP-11784	Historic	Historic Refuse Scatter	M. Bray, 2011	No Formal Recommendation
P-13-13843	CA-IMP-11788	Prehistoric	Sparse Lithic Scatter	Patricia Mitchell, Heather Thomson, Erica Maier, 2012	No Formal Recommendation

Cultural Resources Inventory Report for the Drew Solar Project

P-13-8983 (Wormwood Canal, Lateral 7 and Drain)

This irrigation canal was originally recorded by Jill Hupps of Caltrans in 1999. This section of the Wormwood Canal, which was first built in 1911, was evaluated and recommended not eligible for listing in the NRHP because it was realigned and lined with concrete, replacing its original earthen lining, thereby affecting the resource's integrity. ASM Affiliates Inc. revisited and evaluated the canal in 2011 for the Centinela Solar Energy Project. ASM concurred with Caltrans findings and recommended that the Wormwood Canal and Drain are not eligible for listing in the NRHP and the CRHR.

P-13-13073 (Woodbine Canal)

Andrew Pigniolo of Laguna Mountain Environmental recorded this segment of the Woodbine Canal in 2010. According to Pigniolo, the canal was one of the earliest irrigation canals in the Imperial Valley as it is shown on the 1915 El Centro 15- minute USGS topographic quad map. ASM Affiliates Inc. revisited and evaluated the canal in 2011 for the Centinela Solar Energy Project. ASM determine that the canal was not significant because it was lined with concrete in the 1950s and 1960s. The integrity of the original 1915 craftsmanship was not retained, therefore the canal was not recommended eligible for the NRHP or the CRHR.

P-13-13079 (Mt. Signal Drain)

Andrew Pigniolo of Laguna Mountain Environmental recorded this segment of the Mt. Signal Drain in 2010. Pigniolo noted that no historic age features were observed associated with the drain and that the drain is part of a larger historic age agricultural system. No formal evaluation was conducted for the resource.

5.1.3 Historic Archival Research

Historic aerial photographs (years available: 1953, 1996, 2002, 2005, 2009, 2010, and 2012) reveal that the Project APE has been utilized for agricultural development since 1953. The irrigation canals located within the Project site date to at least 1953. The photographs reveal that the canal locations have not changed since 1953. No other historic age structures are located within the Project APE in the photos.

5.2 Survey Results

The majority of the Project APE is located within agricultural fields. The Project's gen-ties are proposed from the south end of the Project APE running south across Drew Road and State Route 98 into the existing Drew Switchyard. Ground surface visibility was poor (0–20) within areas with dense vegetation present (non-native grasses and alfalfa fields) and within paved roads.

Cultural Resources Inventory Report for the Drew Solar Project

Visibility was excellent (80–100 %) in areas with no vegetation and within dirt access roads. Vegetation was not present in the southwestern field (APN 052-170-067) of the Project. Transects spaced approximately 15 meters apart were utilized to ensure adequate coverage of the entire APE. Archaeologists observed that the APE has been heavily disturbed by years of agricultural activities as evidenced by plow scars, irrigation canals and drainages, and the presence of non-native grass and alfalfa fields.

During the field survey, nine historic age irrigation canal/drainage segments were identified (Figure 3 provided in Confidential Appendix C). These irrigation canals have not been previously recorded or evaluated. The canals were recorded and documented on DPR 523 series forms during the survey (Confidential Appendix C). No additional cultural resources or materials were identified during the pedestrian survey.

5.2.1 Newly Identified Resources

Nine newly identified historic age cultural resources were recorded during the current survey. These new resources consist of irrigation canals and drainages. Based on historic aerials and available date stamps, the canals are historic in age. The canals are built environment resources and will be addressed in a separate study and included as an addendum to this cultural resources inventory report (Corder and Murray 2018).

DS-I-1

This newly discovered resource was identified during the intensive pedestrian survey and consists of a historic age irrigation canal. The canal is earthen and runs east to west. The canal is approximately ten feet wide and five feet in depth. The entire canal is approximately half-mile long. A crossing with a concrete pipe, measuring approximately two feet in diameter and twelve feet in length, is located in the center of the canal. Discarded terra cotta bricks and concrete fragments are present at the pipe location. No visible date stamp is available for the canal or the pipe.

DS-I-2

This newly discovered resource was identified during the intensive pedestrian survey and consists of a historic age irrigation canal. The canal is earthen and runs east to west. The canal is approximately ten feet wide and five feet in depth. The entire canal is approximately half-mile long. A crossing with a concrete pipe, measuring two feet in diameter and ten feet in length, is located in the center of the canal. No visible date stamp is available for the canal or the pipe.

Cultural Resources Inventory Report for the Drew Solar Project

DS-I-3

This newly discovered resource was identified during the intensive pedestrian survey and consists of a segment of the Wormwood Lateral 1 irrigation canal. The canal is concrete lined and runs north to south. The southern portion of the canal extends under County Highway S29 (S29) and continues south. The canal is approximately ten feet wide and six feet in depth. The entire canal is approximately half-mile long. A concrete wall with the text stamp “Wormwood LAT 1” and two concrete and wood gates (gates lat-1 and 11) are located at the southern end of the canal. A third concrete and wood gate (gate 13) is located just south of S29. The southern gates have a date stamp of 1957. Two additional concrete and wood gates (gates 11A and 12) are located within the center on the canal. These gates have a date stamp of 1953.

DS-I-4

This newly discovered resource was identified during the intensive pedestrian survey and consists of a historic age irrigation canal. The canal is concrete lined and runs east to west. The canal is approximately eight feet wide and four feet in depth. The entire canal is approximately half-mile long, and connects to DS-I-7 (Woodbine Lat 7 Canal) to the east at gate 42. Small metal gates, measuring approximately 12 inches, are located along the northern portion of the canal in fifty foot intervals. These gates appear to feed water to the field located to the north of the canal. No visible date stamp is available for the canal.

DS-I-5

This newly discovered resource was identified during the intensive pedestrian survey and consists of a historic age irrigation canal. The canal is concrete lined and runs east to west. The canal is approximately ten feet wide and five feet in depth. The entire canal is approximately half-mile long. A concrete gate (gate 57) is located at the east end of the canal. The gate has a date stamp of 1959. This canal segment connects to the Woodbine Canal at gate 57 to the north.

DS-I-6

This newly discovered resource was identified during the intensive pedestrian survey and consists of a segment of the Mount Signal Drain and Mount Signal Drain 1. Mount Signal Drain is earthen and runs north to south. Mount Signal Drain 1 runs east to west from the Mount Signal Drain. The drainage is approximately eight feet wide and ten feet in depth. The length of the drain is approximately two miles. No visible date stamp is available for the drain.

DS-I-7

This newly discovered resource was identified during the intensive pedestrian survey and consists of a segment of the Woodbine Lateral 7 irrigation canal. The canal is concrete lined and

Cultural Resources Inventory Report for the Drew Solar Project

runs north to south. The canal is approximately ten feet wide and five feet in depth. The entire canal is approximately one-mile long. DS-I-4 connects to this canal at gate 42. No visible date stamp is available for this segment of the canal.

DS-I-8

This newly discovered resource was identified during the intensive pedestrian survey and consists of a historic age irrigation drainage. The drainage is earthen and runs east to west. The canal is approximately ten feet wide and five feet in depth. The entire canal is approximately 0.25-miles long. No visible date stamp is available for the canal.

DS-I-9

This newly discovered resource was identified during the intensive pedestrian survey and consists of a historic age irrigation drainage. The canal is earthen and runs east to west; with the western end curving and continuing towards the south. The canal is approximately ten feet wide and five feet in depth. The canal is approximately ten feet wide and five feet in depth. The entire canal is approximately 0.70-miles long. No visible date stamp is available for the canal.

6 RESOURCE MANAGEMENT RECOMMENDATIONS

Dudek's Phase I cultural resources inventory of the Project APE suggests that there is a very low potential for the inadvertent discovery of intact cultural deposits during earth moving activities that will occur within agricultural fields. The fields have been extensively disturbed by decades of agricultural activities. Any archaeology that was present would have been disturbed by continuous agricultural activities and would no longer remain intact. However, there is a moderate potential for the inadvertent discovery of intact cultural deposits during earth moving activities related to the construction of the Project's generation interconnections (gen-tie). The gen-tie transmission lines are located outside of the agricultural fields and have not been subject to the same extensive agricultural disturbances. The gen-ties will be located at the south end of the Project site running south across Drew Road and State Route 98 into the existing Drew Switchyard located on APN 052-190-039. The gen-ties alignment will extend approximately 400 feet south of the southerly limits of the net farmable area of the Project APE. The gen-ties will consist of transmission structures that will require drilling to a maximum depth of 10 feet for pole foundations. Dudek recommends full time archaeological monitoring during drilling activities for the gen-tie. During archaeological monitoring for the gen-ties, if only disturbed sediments (e.g., fill) or other sediments and formations are identified that do not have the potential to contain archaeological resources, then monitoring may be reduced or terminated.

Nine newly identified historic age cultural resources were recorded during the intensive pedestrian survey. These new resources consist of irrigation canals and drainages. Based on historic aerials and available date stamps, the canals are historic in age (circa 1950s). The canals are built environment resources and will be addressed in a separate study and included as an addendum to the current cultural resources inventory report (Corder and Murray 2018).

Unanticipated Discovery of Archaeological Resources

In the event that archaeological resources (sites, features, or artifacts) are exposed during construction activities for the Project, all construction work occurring within 100 feet of the find shall immediately stop until a qualified archaeologist meeting the Secretary of the Interior's Professional Qualification Standards can evaluate the significance of the find and determine whether or not additional study is warranted. If the discovery is clearly not significant (e.g., and isolate) the archaeologist may simply record the find and allow work to continue. If the discovery proves potentially significant under CEQA, additional work such as preparation of an archaeological treatment plan, testing, or data recovery may be warranted.

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Unanticipated Discovery of Human Remains

In accordance with Section 7050.5 of the California Health and Safety Code, if human remains are found, the County Coroner shall be immediately notified of the discovery. No further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains shall occur until the County Coroner has determined, within 2 working days of notification of the discovery, the appropriate treatment and disposition of the human remains. If the County Coroner determines that the remains are, or are believed to be, Native American, he or she shall notify the NAHC in Sacramento within 24 hours. In accordance with California Public Resources Code Section 5097.98, the NAHC must immediately notify those persons it believes to be the MLD from the deceased Native American. The MLD shall complete inspection within 48 hours of being granted access to the site. The designated Native American representative would then determine, in consultation with the property owner, the disposition of the human remains.

Cultural Resources Inventory Report for the Drew Solar Project

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CONFIDENTIAL APPENDIX A
SCIC Records Search Results



South Coastal Information Center
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scic_gis@mail.sdsu.edu

CALIFORNIA HISTORICAL RESOURCES INFORMATION SYSTEM CLIENT IN-HOUSE RECORDS SEARCH

Company: Dudek
Company Representative: Angie Pham
Date: 11/15/2017
Project Identification: Drew Solar

Search Radius: 1 mile

Historical Resources:

SELF

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

Previous Survey Report Boundaries:

SELF

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

Historic Addresses:

SELF

A map and database of historic properties (formerly Geofinder) has been included.

Historic Maps:

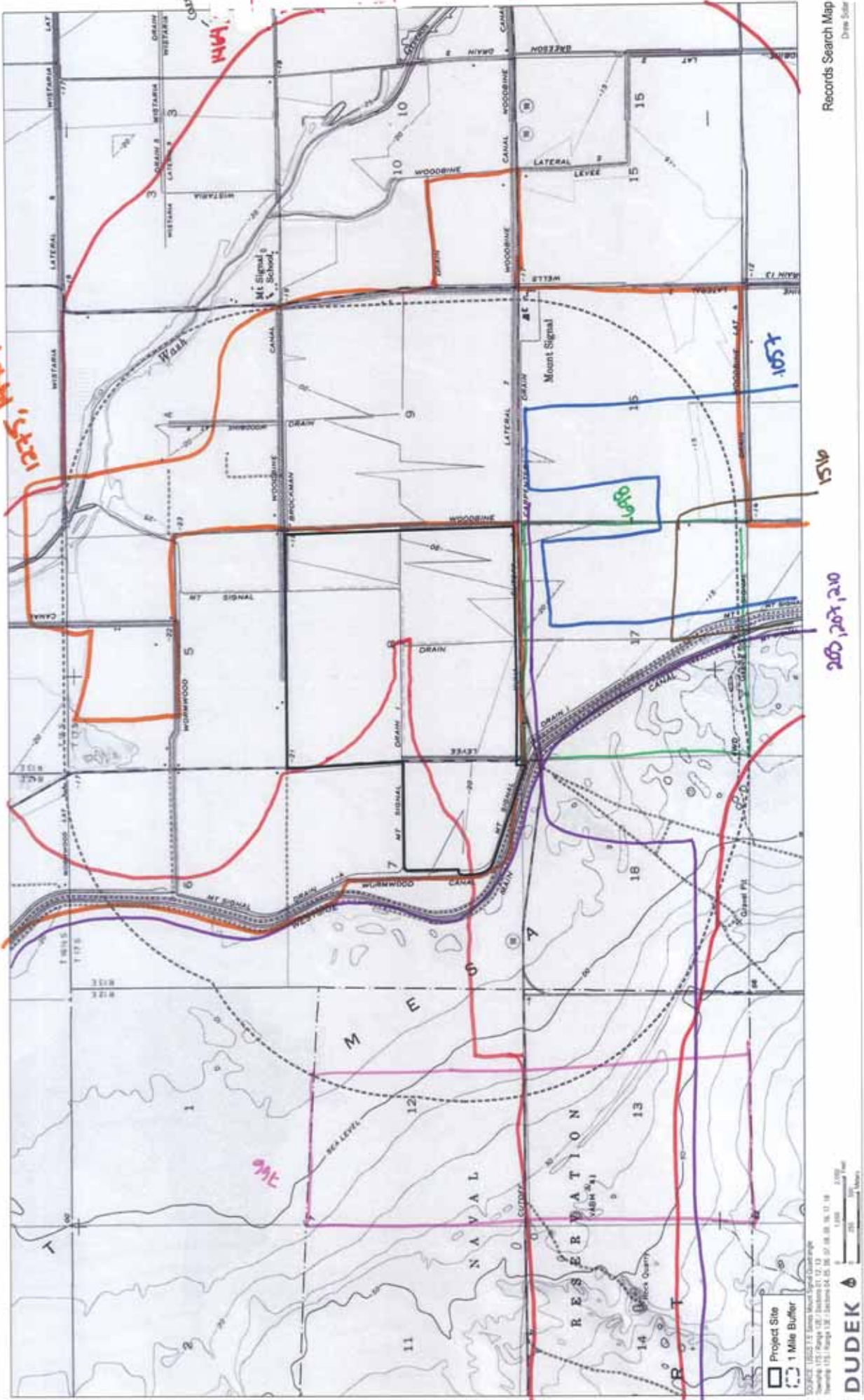
SELF

The historic maps on file at the South Coastal Information Center have been reviewed, and copies have been included.

Copies: 17

Hours: 1.5

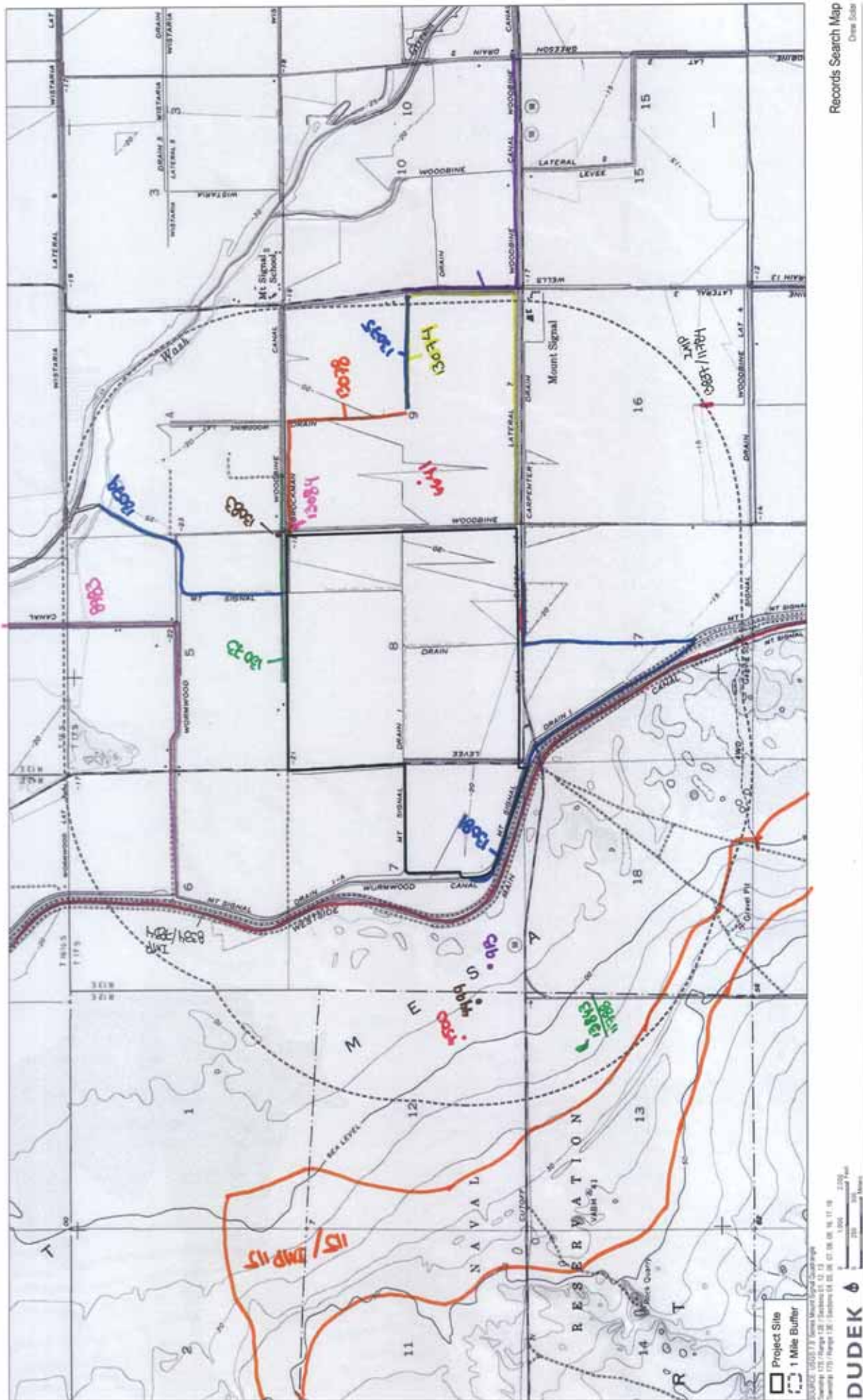
15/11/2021



Records Search Map
 Drive Solar

DUDEK

Proxies: 17, outside adjacent to project area



ReportNum	DocAddlCitLetter	IsVoided	IsMissing	IDs	Xrefs
IM-00203		No	No	NADB-R - 1100203; Voided - GALLED01	
IM-00207		No	No	NADB-R - 1100207; Voided - DAVISE03	
IM-00210		No	No	NADB-R - 1100210; Voided - VONWEJ114	
IM-00698		No	No	NADB-R - 1100698; Voided - HUPPJ01	
IM-00766		No	No	NADB-R - 1100766; Voided - SCHAEJ37	
IM-01057		No	No	NADB-R - 1101057; Voided - PIGNIA04	

IM-01275		No	No	NADB-R - 1101275; Voided - RITTEE04	
IM-01442		No	No	NADB-R - 1101442; Voided - PIGNIA10	
IM-01464		No	No	NADB-R - 1101464; Voided - MITCHPA01	
IM-01490		No	No	NADB-R - 1101490; Voided - MITCHPA06	
IM-01498		No	No	NADB-R - 1101498; Voided - GLENNYW01	

IM-01515		No	No	NADB-R - 1101515; Voided - DAVIS01	
IM-01516		No	No	NADB-R - 1101516; Voided - DAVIS02	

Authors	CitYear	CitMonth
GALLEGOS, DENNIS	1979	
DAVIS, EMMA LOU	1980	
VON WERLHOF, JAY and KAREN MCNITT	1980	
HUPP, JILL	1999	
SCHAEFER, JERRY, DREW PALLETTE, COLLIN O'NEILL, and JIM EIGHMEY	1999	
PIGNIOLO, ANDREW, ROXANNA PHILLIPS, and DENNIS GALLEGOS	1990	

RITTER, ERIC W.	1975	
PIGNIOLO, ANDREW R., CAROL SERR, JOSE "PEPE" AGUILAR, and FRANK DITTMER	2011	
MITCHELL, PATRICIA T.	2011	
MITCHELL, PATRICIA T.	2012	
GLENNY, WAYNE	2011	

DAVIS, SHANNON, JENNIFER KRINTZ, SHELBY GUNDERMAN, and SINEAD NI GHABHLAIN	2011	
DAVIS, SHANNON	2011	

CitTitle	CitPublisher
CLASS II CULTURAL RESOURCE INVENTORY EAST MESA AND WEST MESA REGIONS IMPERIAL VALLEY, CALIFORNIA, VOLUME I	WESTEC SERVICES, INC.
CLASS II CULTURAL RESOURCE INVENTORY EAST MESA AND WEST MESA REGIONS IMPERIAL VALLEY, CALIFORNIA	WESTEC SERVICES, INC.
ARCHAEOLOGICAL EXAMINATIONS OF THE REPUBLIC GEOTHERMAL FIELD, EAST MESA, IMPERIAL COUNTY	IMPERIAL VALLEY COLLEGE MUSEUM
HISTORICAL ARCHITECTURAL SURVEY REPORT PAVEMENT REHABILITATION AND SHOULDER, BRIDGE, CULVERT WIDENING PROJECT, IMPERIAL COUNTY, CALIFORNIA	CALIFORNIA DEPARTMENT OF TRANSPORTATION
EXTENDED PHASE I STUDY OF EIGHT ARCHAEOLOGICAL SITES (CA-IMP-1427, -3969, -6914, -6915, -6916, -6918, -6920, -6923) ON STATE ROUTE 98, IMPERIAL COUNTY, CALIFORNIA	ASM AFFILIATES
CULTURAL RESOURCE STUDY OF THE MOUNT SIGNAL AND DIXIE RANCH IMPERIAL COUNTY PRISON ALTERNATIVES IMPERIAL COUNTY, CALIFORNIA	ERC ENVIRONMENTAL AND ENERGY SERVICES COMPANY, INC

AN ANALYSIS OF CULTURE RESOURCES ALONG THE PROPOSED YUHA DESERT ORV COURSES	
CULTURAL RESOURCE SURVEY FOR A PORTION OF THE CENTINELA SOLAR ENERGY, LLC PROJECT AREA IMPERIAL COUNTY, CALIFORNIA	LAGUNA MOUNTAIN ENVIRONMENTAL, INC.
INVENTORY REPORT OF THE CULTURAL RESOURCES WITHIN THE CENTINELA SOLAR ENERGY GEN-TIE LINE, IMPERIAL COUNTY, CALIFORNIA	KP ENVIRONMENTAL, LLC
EVALUATION LETTER REPORT FOR THE CENTINELA SOLAR ENERGY GEN-TIE LINE PROJECT, IMPERIAL COUNTY, CALIFORNIA	KP ENVIRONMENTAL, LLC
DRAFT ARCHAEOLOGICAL SURVEY INVESTIGATION FOR THE SAN DIEGO COUNTY WATER AUTHORITY FISH POND IMPERIAL COUNTY, CALIFORNIA	AECOM

<p>INVENTORY, EVALUATION, AND ANALYSIS OF EFFECTS ON HISTORIC RESOURCES WITHIN THE AREA OF POTENTIAL EFFECT OF THE CENTINELA SOLAR ENERGY, LLC IMPERIAL COUNTY, CALIFORNIA</p>	<p>ASM AFFILIATES, INC.</p>
<p>FINAL INVENTORY, EVALUATION AND ANALYSIS OF EFFECTS ON HISTORIC BUILT ENVIRONMENT PROPERTIES WITHIN THE AREA OF POTENTIAL EFFECT OF THE IMPERIAL SOLAR ENERGY CENTER SOUTH IMPERIAL COUNTY, CALIFORNIA</p>	<p>ASM AFFILIATES, INC.</p>

[illegible]

Archaeological, Evaluation, Other research	
Archaeological, Evaluation, Other research	
Archaeological, Evaluation, Other research	267 ACRES
Archaeological, Evaluation, Other research	
Archaeological, Evaluation, Other research	

Archaeological, Evaluation, Other research	
Archaeological, Evaluation, Other research	

InventoryDisclosure	InventoryCollections	InventoryNotes	Resources	ResourceCount
		[NADB Keywords: DIGITAL REPORT, UNKNOWN FINDINGS]		0
		[NADB Keywords: UNKNOWN FINDINGS]		0
		[NADB Keywords: UNKNOWN FINDINGS]		0
		[NADB Keywords: UNKNOWN FINDINGS]		0
		[NADB Keywords: CHIPPING STATIONS, LITHIC SCATTERS, UNKNOWN FINDINGS]	13-001427, 13-003969, 13-006914, 13-006915, 13-006916, 13-006920, 13-006923	7
		[NADB Keywords: UNKNOWN FINDINGS]		0

		[NADB Keywords: UNKNOWN FINDINGS]		0
		[NADB Keywords: ANCIENT LAKE CAHUILLA, COLORADO DESERT, DIGITAL REPORT, HISTORIC IRRIGATION SYSTEM STRUCTURES, HISTORIC RESIDENTIAL STRUCTURES, UNKNOWN FINDINGS]		0
		[NADB Keywords: CAHUILLA, CERAMIC SCATTER, COCOPAH, DIGITAL REPORT, GLASS MEDICINE BOTTLE, HABITATION SITE, HISTORIC, ISOLATES, KAMAI/KUMEYAAY, LITHIC SCATTER, LITHICS, MILK CAN, PEDESTRIAN SURVEY, POTTERY, PREHISTORIC, QUECHAN, UNKNOWN FINDINGS]	13-001403, 13-003999, 13-004246, 13-006681, 13-008405, 13-013548, 13-013552, 13-013553, 13-013554, 13-013555, 13-013556, 13-013557, 13-013558, 13-013559, 13-013560	15
		[NADB Keywords: CHERT DEBITAGE, DIGITAL REPORT, NEGATIVE FINDINGS, QUARTZ FLAKE, VOLCANIC FLAKE]	13-003999, 13-013842	2
		[NADB Keywords: DIGITAL REPORT, NEGATIVE SURVEY, SURVEY]		0

		[NADB Keywords: ATMOSPHERIC EFFECTS, DIGITAL REPORT, HISTORIC, POSITIVE FINDINGS, PREHISTORIC, STRUCTURES, SURVEY]		0
		[NADB Keywords: ALL- AMERICAN CANAL, BUILT-ENVIRONMENT INVENTORY, DIGITAL REPORT, SURVEY, UNKNOWN FINDINGS, WESTSIDE MAIN CANAL]		0

HasInformals	Counties	Maps	Addresses	PLSS
No	Imperial	Acolita, Amos, Bonds Corner, Cactus, Coyote Wells, Glamis NW, Glamis SE, Glamis SW, Grays Well, Holtville East, Holtville NE, Midway Well, Midway Well NW, Mount Signal, Painted Gorge, Plaster City, Yuha Basin		
No	Imperial	Acolita, Amos, Bonds Corner, Cactus, Coyote Wells, Glamis NW, Glamis SE, Glamis SW, Grays Well, Holtville East, Holtville NE, Midway Well, Midway Well NW, Mount Signal, Painted Gorge, Plaster City, Yuha Basin		
No	Imperial	Acolita, Amos, Bonds Corner, Cactus, Coyote Wells, Glamis NW, Glamis SE, Glamis SW, Grays Well, Holtville East, Holtville NE, Midway Well, Midway Well NW, Mount Signal, Painted Gorge, Plaster City, Yuha Basin		
No	Imperial	Heber, Holtville East, Mount Signal, Nine Mile Wash		
No	Imperial	Coyote Wells, Durmid, In-Ko-Pah Gorge, Iris Pass, Mount Signal, Nine Mile Wash		
No	Imperial	Mount Signal, Plaster City		

No	Imperial	Coyote Wells, Durmid, Mount Signal, Nine Mile Wash, Painted Gorge, Palo Verde, Plaster City, Plaster City NW, Yuha Basin		
No	Imperial	Mount Signal		
No	Imperial	Mount Signal		
No	Imperial	Mount Signal		
No	Imperial	Mount Signal		
No	Imperial	Wister		

No	Imperial	Heber, Mount Signal		
No	Imperial	Mount Signal, Plaster City, Seeley, Yuha Basin		

CONTINUATION SHEET

Trinomial 4-IMP-115 UPDATE

Page 1 of 1

*Resource Name or #: (Assigned by recorder) (C-180)

*Recorded By Judy Berryman/RECON

*Date 4-23-01

☐ Continuation

☒ Update

Site 4-IMP-115 (C-180) was recorded by Malcolm Rogers in the 1920's and described as Yuman II occupation along the 40' contour of the upper Blake Sea (Cahuilla Lake). The generalized site form noted scatter occupation along the edge of the extinct lake, with some evidence of depressed house floors, fire-affected sandstone, and lithic and ceramic scatters. Many of the sites recorded by later researchers can be included within the generalized C-180 location.

C-180

22:6

4 IMP 115
722

LOCATION: R-13-E-T-17-S
R-13-E-T-17-S
Southwestern Imperial Co.

CULTURES: Yuman II

NAME: Signal Mt. Region

WATER CONDITIONS: Permanent lake.

AREA: Four mile strip from Signal
Mt. to the International wash.

ARCHITECTURE: Some evidence of
Depressed house floors and a few
sandstone flag hearths.

TYPE: Blake Sea terrace of sand.

BURIALS: none found

PETROGRAPHY: none

INTRUSIVES:

HISTORY: First occupation is on the upper Blake Sea beach level. Lower level poorly preserved, and the occupation on them is of an indefinite nature. The flooded level gives some indication in the way of travertine covered hearth stones and one metate.

REMARKS: Occupation is very scattered, but continuous without concentration. Sandstone metates and manos prevelant, and one pestle found. Stucco ware is scarce, as is stone flaking. Many concretations found around the house site. Relic hunters have looted this area thoroughly before we worked it.

C-180

Site Number 4-Imp-115

IMPERIAL VALLEY COLLEGE MUSEUM

Date issued _____ by _____
 Date typed 12-8-80 by Renee Taylor
 T & R Book by _____
 Site Classification Card by _____
 Mapped by L.C.
 Encoded by L.C.
 Copy to SHPO _____

52/37

ARCHAEOLOGICAL SITE SURVEY RECORD

1. Map Mt. Signal 7.5 Year 57 2. County Imperial
3. T. 17S R. 13E : 1/4 of 1/4 of NE 1/4 of SE 1/4 of 1/4 of Section 18
4. Location Four mile strip from Signal Mt. to the International wash UTM Grid
5. Previous designation C 180, 4TMP 122 6. Temporary field number _____
7. UTM: Zone 11, North 3615⁵⁶⁰, East 6243¹⁰ 8. Elevation ~~22~~ - 8'
9. Owner BLM Address 333 S. Waterman
- City El Centro State Calif Zip 92243 Phone 352-5842
10. Present tenant _____
11. Type of site and description Occupational site on the Upper Black Sea beach level
some evidence of Depressed house floors and a few sandstone flag hearths
12. Dimensions: N-S 5 m, E-W 4 m 13. Depth _____
14. Height _____ m 15. Flora _____
16. Fauna _____
17. Hydrology resource Permanent Lake
18. Soil of site Sand
19. Surrounding soil type Sand
20. Previous excavation _____ 21. Cultivation _____
22. Buildings, roads, etc. _____
23. Erosion _____

Site Number 4-IP-115

24. Integrity of site: L , M , H Explain:

25. Possibility of destruction Pelic hunters have looted this area thoroughly before we worked it

26. Cleared circles

27. Other features

28. Burial or cremation evidence None

29. Artifacts travertine covered hearth stones and one metate manos and one

nestle found Stucco ware is scarce as is Stone flaking

30. Remarks

31. Published reference

32. IVCN Accession No. _____ 33. Sketch map _____

34. Photos _____ by _____	35. Photo Call # _____
---------------------------	------------------------

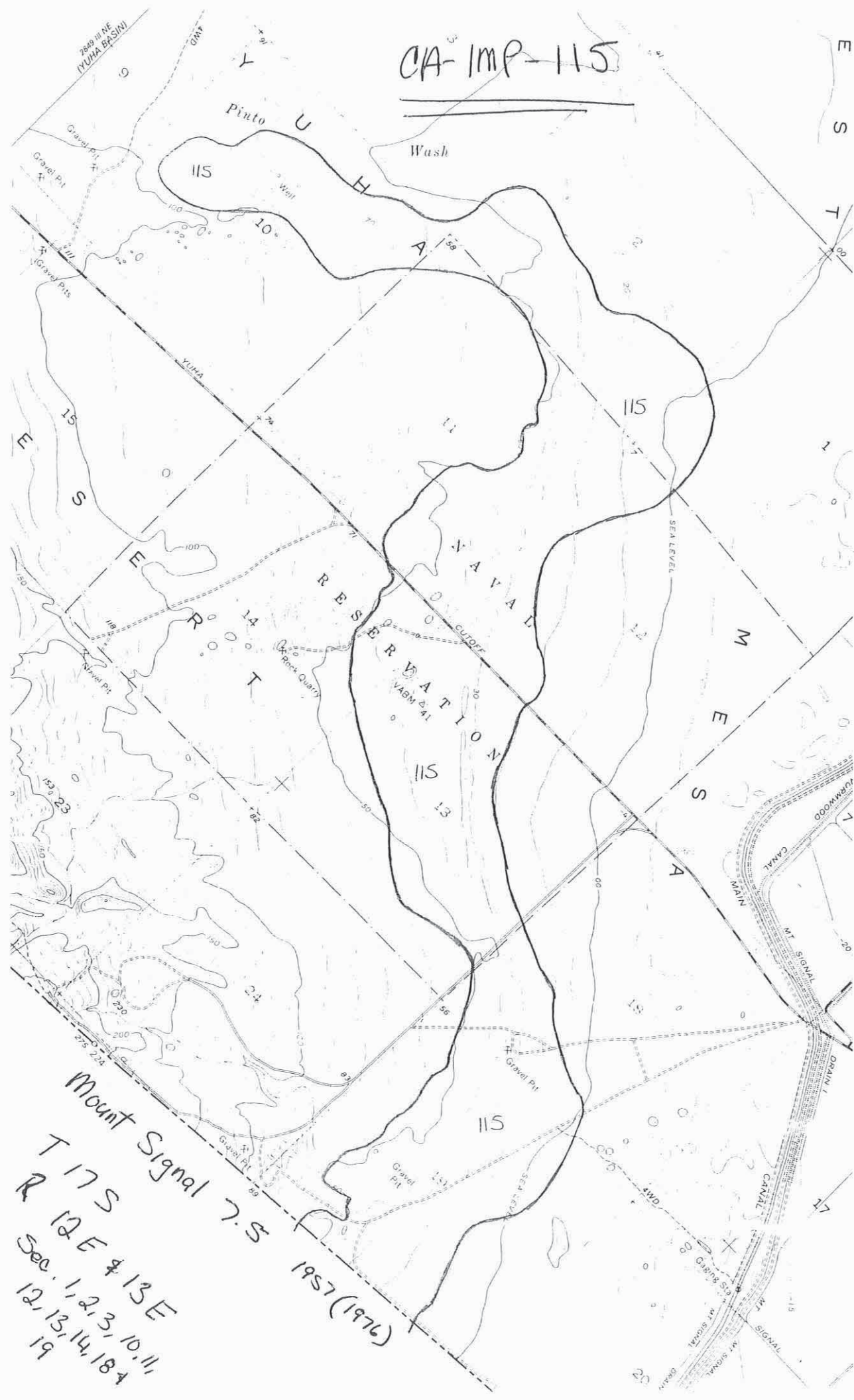
36. Date recorded _____ 37. Recorded by *Malcolm Rogers*

38. Address	Phone
-------------	-------

39. Survey crew

40. Site record update by _____

CA-IMP-115



MAPDCB

copy - Blm - ✓

913 - ✓

Imperial Valley College Museum

Site No. 4-Imp-1136

527.557

ARCHAEOLOGICAL SITE SURVEY RECORD

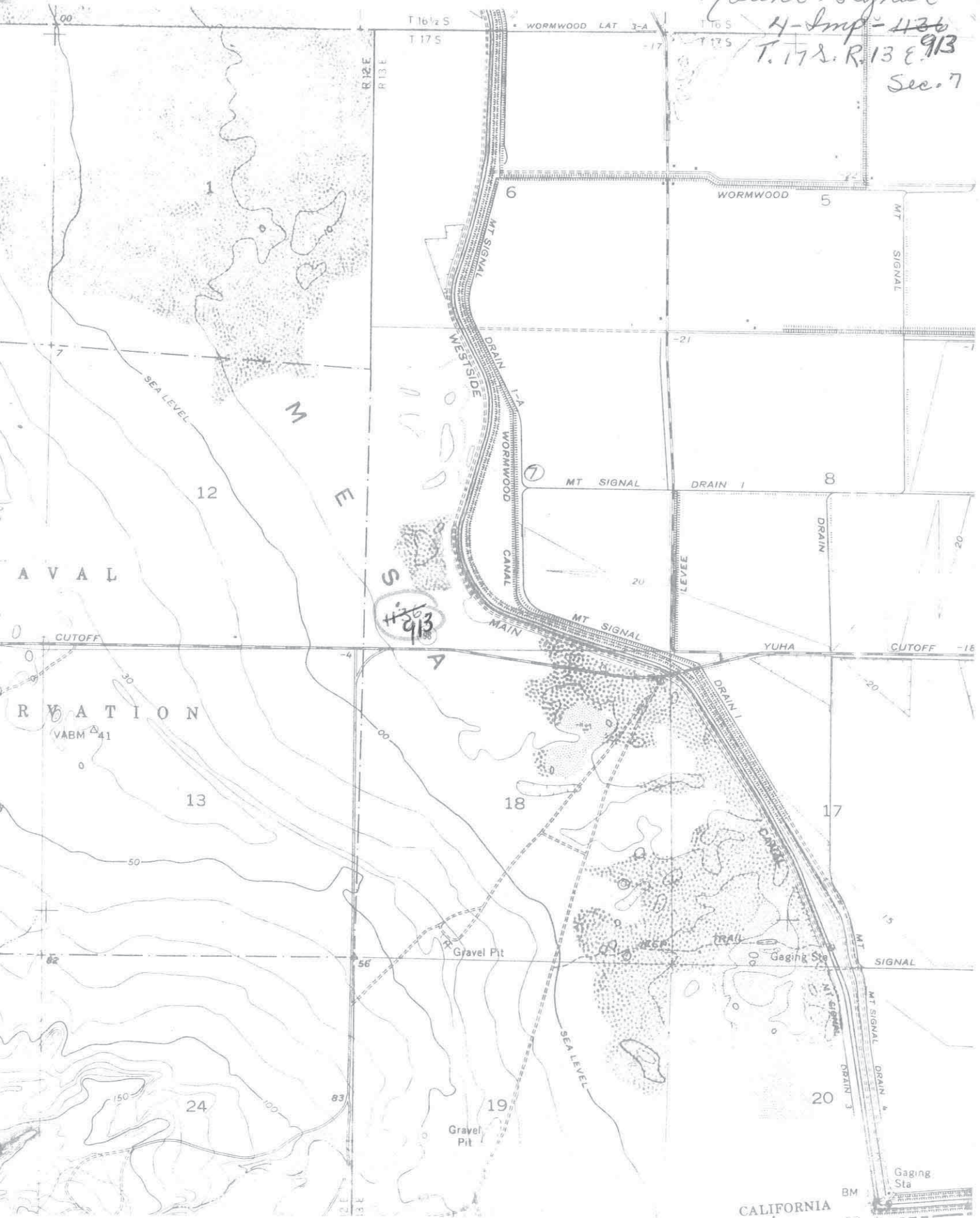
1. Map Mount Signal 2849B57 2. County Imperial
3. Twp. 17 S Range 13 E : 1/4 of 1/4 of SW 1/4 of SW 1/4 of Sec. 7
4. Location 200m north of Highway 98 approx. 3/4mi west of West side Main Canal.
UTM 3616600N, 622980E
5. On contour elevation 10 feet
6. Previous designations for site HP-12/20/76-#1 4-IMP-1136
7. Owner not available 8. Address not available
- City N/A Zip N/A 10. Phone N/A
11. Present tenant not available
12. Description and type of site single tool at mesquite hummock.
Isolate
- 141 meters
13. Area Not available 14. Depth Not available 15. Height Not available
16. Vegetation mesquite creosote
- 16a. Animal Life rodents, rabbits
17. Nearest water Yuha Well
18. Soil of site sand
19. Surrounding soil type sand
20. Previous excavation none
21. Cultivation none 22. Erosion wind, rain
23. Buildings, roads, etc. Hiway 98
24. Possibility of destruction Pothunters
25. House pits none

913

Site No 4-IMP-1136

26. Other features None
27. Burial or cremation evidence none
28. Artifacts finger knife
29. Remarks None
30. Published references none
31. IVCN Accession No. none 32. Sketch Map no 33. Photos no
34. Date 12-20-76 35. Recorded by H.E. Pritchett
36. Address El Centro CA 37. Phone 352-3692

Mount Signal
4-imp-436
T. 17 S. R. 13 E. 913
Sec. 7



Site Number _____

Date issued 8-6-81 by E.C.

Date typed _____ by _____

T & R Book by Michael Stevenson

Site Classification Card by _____

Mapped by E.C. 8-10-81Encoded by E. CollinsCopy to SHPO 1-10-82

IMPERIAL VALLEY COLLEGE MUSEUM

ARCHAEOLOGICAL SITE SURVEY RECORD

1. Map Mount Signal, Calif. 7.5' Year PI 1972 2. County Imperial
3. T. 17S R. 12E: 1/4 of 1/4 of SE 1/4 of NE 1/4 of SE 1/4 of Section 12
4. Location Aprox. 580 meters West of Westside Main Canal and 400 meters North of Highway 98.
5. Previous designation None 6. Temporary field number R11-1
7. UTM: Zone 11, North 3616700, East 622720 8. Elevation -10 AMSL
9. Owner BLM Address 333 Waterman Avenue
City El Centro State CA Zip 92243 Phone 714-352-5842
10. Present tenant None
11. Type of site and description 16, ~~16~~ 4 pot sherds.
12. Dimensions: N-S 1 m, E-W 3 m 13. Depth Unknown/surface
14. Height N/A m 15. Flora Creosote bursage plant community.
16. Fauna --
17. Hydrology resource Receding Lake Cahuilla shoreline.
18. Soil of site Lacustrine sands.
19. Surrounding soil type Same
20. Previous excavation None 21. Cultivation None
22. Buildings, roads, etc. ORV activity
23. Erosion Sheet wash.

Site Number 4-IMP-4499

24. Integrity of site: L , M X, H Explain: Sheet wash has probably moved
this pot drop.

25. Possibility of destruction Slight orv activity.

26. Cleared circles None evident.

27. Other features None evident.

28. Burial or cremation evidence None observed.

29. Artifacts 4 Colorado Buff sherds.

30. Remarks

31. Published reference Report on file at CSRI

32. IVCM Accession No.

33. Sketch map None

34. Photos No by

35. Photo Call #

36. Date recorded 3 June 1981

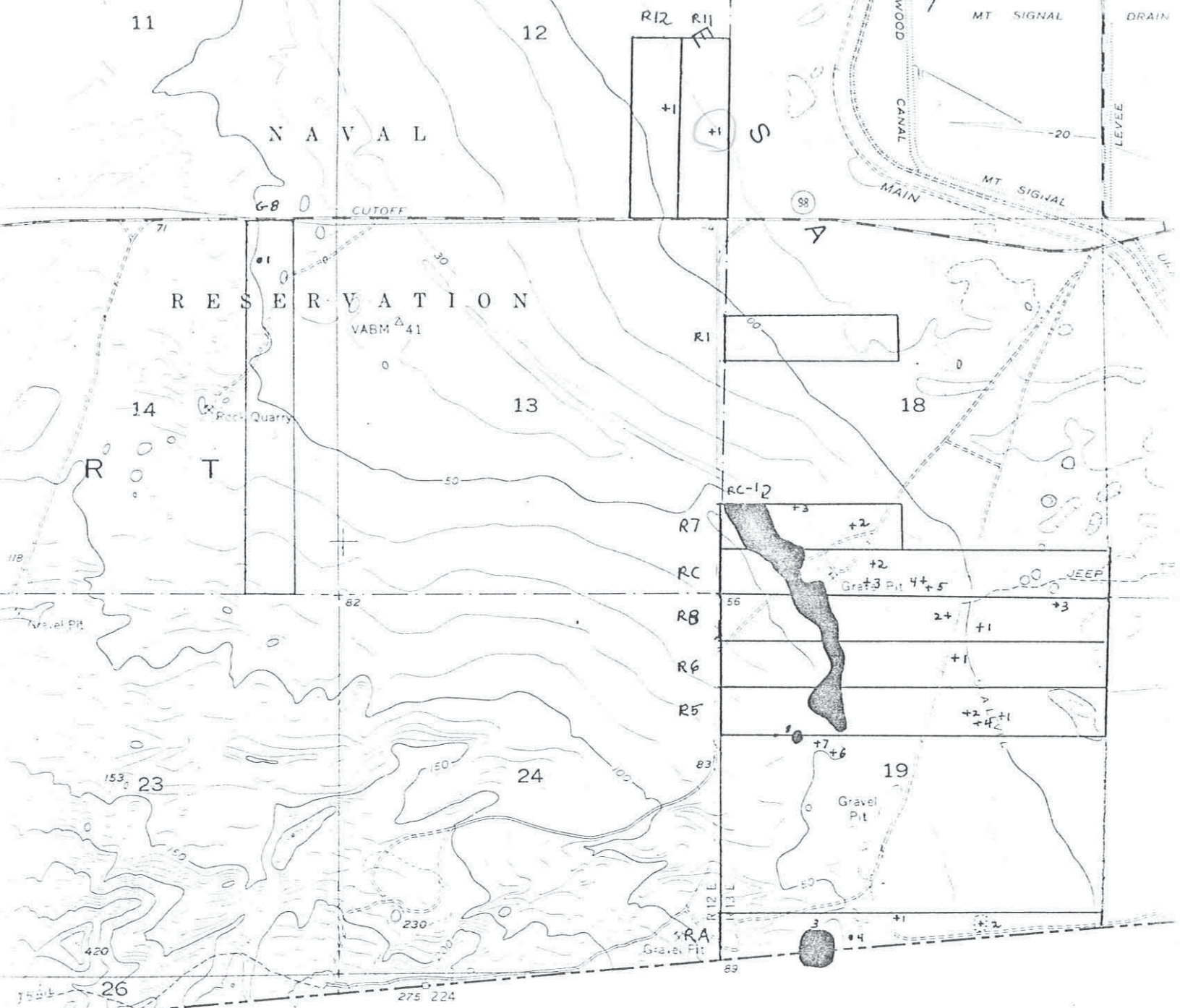
37. Recorded by R. Nagle

38. Address CSRI, 8148 H Ronson Rd., San Diego, CA 92111

Phone 565-6332

39. Survey crew R. Nagle, L. Kline, K. Palmer, C. Lucas

40. Site record update by



4-IMP-4496

MOUNT SIGNAL QUADRANGLE
 CALIFORNIA-IMPERIAL CO.
 7.5 MINUTE SERIES (TOPOGRAPHIC)
 NW/4 HEBER 15 QUADRANGLE

Site Number 4-IMP-4500

Date issued 8-6-81 by E.C.

Date typed _____ by _____

T & R Book by Michael Stevenson

Site Classification Card by _____

Mapped by E.C. 8-10-81

Encoded by E. Collins

Copy to SHPO 1-10-82

IMPERIAL VALLEY COLLEGE MUSEUM

ARCHAEOLOGICAL SITE SURVEY RECORD

1. Map Mount Signal, Calif. 7.5' Year PI 1976 2. County Imperial
3. T. 17S R. 12E : 1/4 of 1/4 of SE 1/4 of NE 1/4 of SE 1/4 of Section 12
4. Location Aprox. 780 meters West of Westside Main Canal and 500 meters North of Highway 98.
5. Previous designation None 6. Temporary field number R12-1
7. UTM: Zone 11, North 3616800, East 622500 8. Elevation -8 AMSL
9. Owner BLM Address 333 Waterman Avenue
City El Centro State CA Zip 92243 Phone 714-352-5842
10. Present tenant _____
11. Type of site and description 16, Isolate: Flake

12. Dimensions: N-S NA m, E-W NA m 13. Depth None evidenced
14. Height NA m 15. Flora Creosote bursage community.

16. Fauna --
17. Hydrology resource Relic receding Lake Cahuilla shoreline
18. Soil of site Natural sink to North (see remarks)
Sands and silts of lacustrine origin.
19. Surrounding soil type Same
20. Previous excavation None 21. Cultivation None
22. Buildings, roads, etc. Recent historic trash in vicinity on orv activity.

23. Erosion Sheet wash.

Site Number 4-IMP-44500

" Integrity of site: L____, M____, H X Explain: No observable impacts.

25. Possibility of destruction Slight

26. Cleared circles _____ None observed

27. Other features _____ None observed

28. Burial or cremation evidence None observed

29. Artifacts 1 Felsite Flake primary decordal, slightly wind blasted,
no patination, no varnish.

30. Remarks A series of very shallow sinks has formed behind a line of dunes that run
along the zero contour. These sand dunes (Creosote anchored and Mormon tea) may reflect a
recessional shore stand of Lake Cahuilla.

31. Published reference Report on file at CSRI

32. IVCM Accession No. _____ 33. Sketch map No. _____

34. Photos Yes by D. Lavlander - Roll 2/26-2F

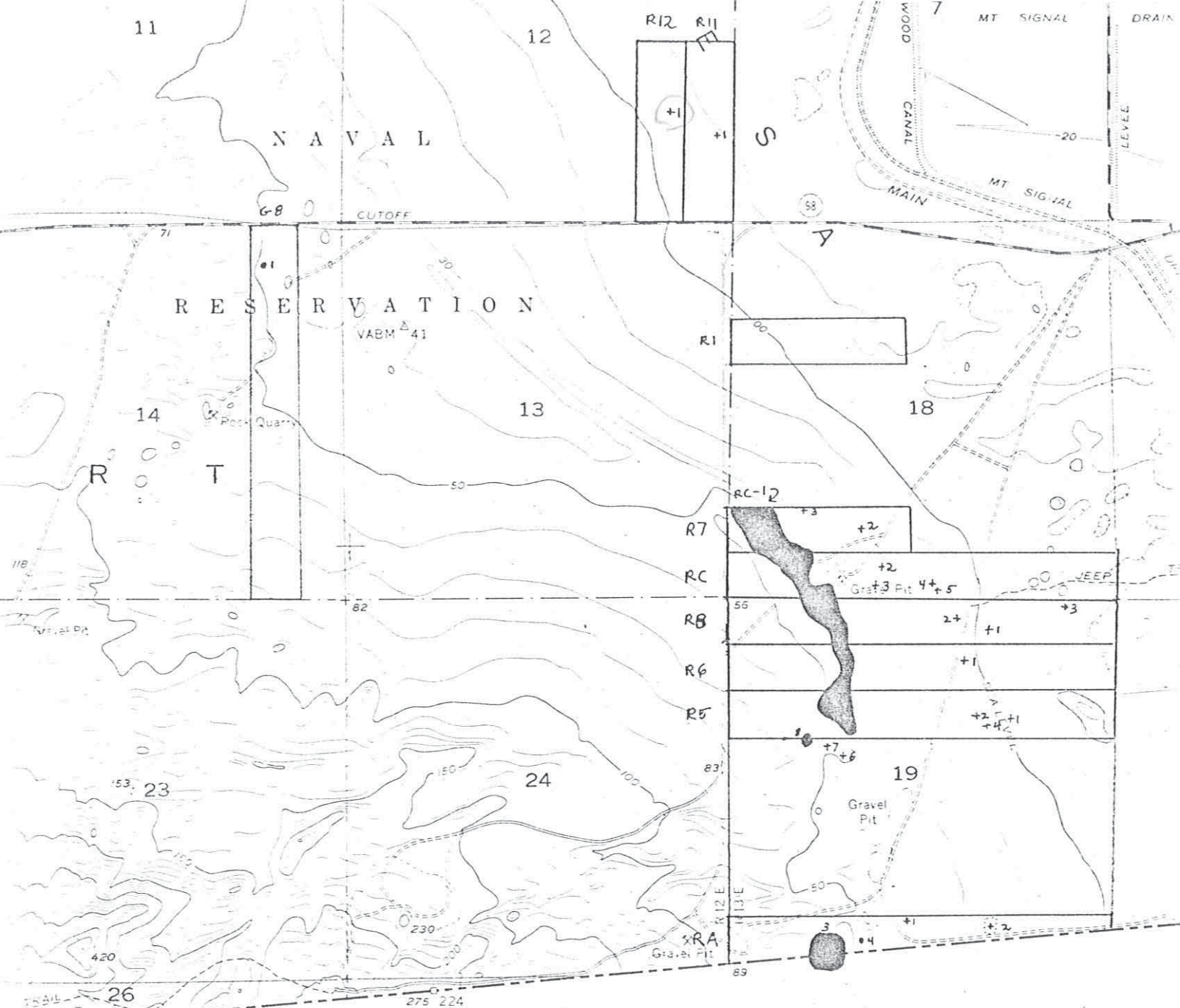
35. Photo Call #

36. Date recorded 3 June 1981 37. Recorded by P. Ainsworth

38 Address CSRI, Ronson Rd., San Diego, CA 92111 Phone 565-6332

39. Survey crew P. Ainsworth, B. Hill, D. Laylander, F. Nelson

40. Site record update_____ by _____



4-IMP-4500

MOUNT SIGNAL QUADRANGLE
 CALIFORNIA-IMPERIAL CO.
 7.5 MINUTE SERIES (TOPOGRAPHIC)
 NW/4 HEBER 15' QUADRANGLE

ARCHEOLOGICAL SITE RECORD

Other Designations: ASA - 101

Page 1 of 3

1. County: Imperial
2. USGS Quad: Mt. Signal (7.5') 57 (15') 76 Photorevised
3. UTM Coordinates: Zone 11 6 2 6 3 6 0 m Easting 3 6 1 7 1 6 0 m Northing ()
4. Township 17S Range 13E SE SE % of NW % of SW % of Section 9 Base Mer. SBM ()
5. Map Coordinates: 297 mmS 381 mmE (from NW corner of map) 6. Elevation 18 feet BMSL ()
7. Location: 9.6 miles west of Calixico, California on Highway 98; .4 mile north.

8. Prehistoric XX Historic _____ Protohistoric _____ 9. Site Description Low density lithic and ceramic scatter.

10. Area Unknown m() x Unknown m() Unknown m²

Method of Determination: Unknown ()

11. Depth: Unknown cm Method of Determination: Unknown ()

12. Features: Unknown ()

13. Artifacts: COLLECTED: 5 San Diego Brown I rim sherds; 4 Hakum Brown sherds; 1 unidentified buff drilled sherd; 35 unidentified sherds; 1 quartzite hammerstone; 1 fine grained volcanic core; 1 fine grained volcanic convex side scraper; 1 fine grained volcanic hammerstone; 2 chert flakes; 4 quartz flakes; 1 petrified wood flake; 3 fine grained volcanic flakes; 1 porphyry flake; 1 quartzite flake. ()

14. Non-Artifactual Constituents and Faunal Remains: Unknown ()

15. Date Recorded: 1956 16. Recorded By: Archaeological Survey Association ()

17. Affiliation and Address University of California Redlands ()

ARCHEOLOGICAL SITE RECORD

Other Designations: ASA - 101

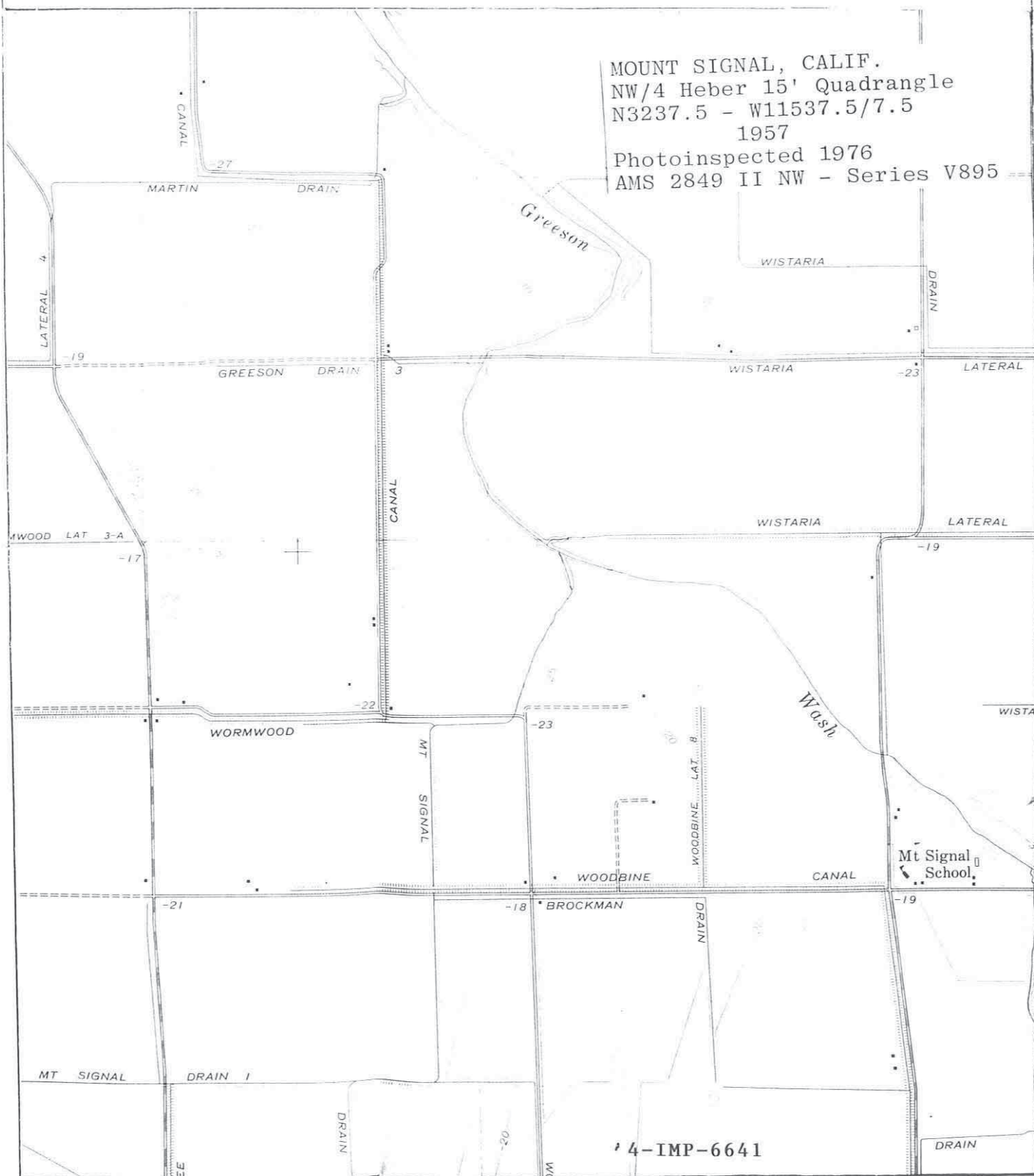
Page 2 of 3.

18. Human Remains: Unknown ()
19. Site Disturbances: Unknown ()
20. Nearest Water (type, distance and direction): Receding ancient Lake Cahuilla at site. ()
21. Vegetation Community (site vicinity): Lower Sonoran Desert Scrub Plant List ()
22. Vegetation (on site): Same as line 21. ()
23. Site Soil: Unknown ()
24. Surrounding Soil: Unknown ()
25. Geology: Unknown ()
26. Landform: Unknown ()
27. Slope: Unknown () 28. Exposure: Unknown ()
29. Landowner(s) (and/or tenants) and Address: Unknown ()
30. Remarks: ()
31. References: ()
32. Name of Project: ASA Lake Cahuilla Shoreline Survey Project ()
33. Type of Investigation: Unknown ()
34. Site Accession Number: 1991-135 Curated At: IVC Museum ()
35. Photos: Unknown ()

ARCHEOLOGICAL SITE LOCATION MAP

Temporary Number: ASA - 101

Agency Designation: _____

Page 3 of 3 .

State of California - The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

MASTER FILE

ARCHEOLOGICAL DATA ENCODING SHEET

1. Site No.: CA - IMP - 6641
2. Previous Designations: ASA - 101
3. USGS Quad Map No. 52 Scale 7.5 Yr. 76
4. Base Meridian: 1)MDM 2)HBM ☒ 3)SBM
5. T 17S R 13E $\frac{1}{4}$ Sec NW $\frac{1}{4}$ Sec SW Sec 9
6. Latitude: ° ' "
Longitude: ° ' "
7. UTM Zone Easting Northing
A
B
C
D
Center 11 626360 3617160
8. Elevation: 18 ft. m. Est.
16. Dimensions: N-S m E-W m
17. Area: acres hectares
18. Depth: m
19. Site Attributes (Prehistoric):
 1)unknown 9)burials
☒ 2)lithic scatter 10)caches
☒ 3)ceramic scatter 11)hearths/pits
 4)BRM/mill. feat. 12)quarry
 5)petroglyphs 13)lineal features
 6)pictographs 14)rock shelter/cave
 7)architec. feat. 15)habitation debris
 8)stone features 16)other
20. Site Attributes (Historic):
 1)unknown 9)mines
 2)foundations 10)machinery
 3)landscaping 11)walls/fences
 4)privy pits/dumps 12)graves/cemetery
 5)wells/cisterns 13)wharfs
 6)water conveyance 14)ships/barges
 7)roads/R/R beds 15)standing structures
 8)dams 16)other

For State Use Only

9. NR Class Category: 1)district
 2)site
 3)building
 4)structure
 5)object
10. NR Status: 1)listed Yr. Mo.
 2)eligible Yr. Mo.
 3)meets criteria
 4)undetermined
 5)ineligible
11. Other Registration:
 1)HABS 6)CHL
 2)HAER 7)CPHI
 3)NHL 8)Local Listing
 4)SHP 9)County/Region. Pk.
 5)SCP 10)other
12. Type of Ownership: 4)private
☒ 1)unknown 5)county
 2)federal 6)city
 3)state 7)special district
13. Date Site Recorded: 56 Yr. Mo.
Recorder: ASA
RO IVCM
14. Site Record Update: Yr. Mo.
Recorder:
RO
15. Ref. in Documented Survey Yr. Mo.
Author:
21. Historic Site
Date: - (range)
22. Prehistoric Site
Date: - (range)
23. Ethnic Association:
 1)unknown 5)Afro-American
☒ 2)Native American 6)Hispanic
 3)Asian-American 7)Euro-American
 4)Russian 8)other
24. Era:
 1)unknown
 2)ethnographic
 3)historic
☒ 4)prehistoric
25. Current Information Base: 4)subsurface testing
 1)unknown 5)excavation
☒ 2)surface survey 6)analysis
☒ 3)surface collection 7)other
26. Condition of Site: 5)buried
☒ 1)unknown 6)destroyed
 2)part. vandalized 7)part. disturbed
 3)inundated 8)no impact
 4)part. eroded 9)other
27. Easement: ☒ 1)unknown 2)yes 3)no

State of California – The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary # P-13-008334 Update

HRI # _____

Trinomial _____

NRHP Status Code _____

Other Listings _____

Review Code _____

Reviewer _____

Date _____

Page 1 of 3

*Resource Name or # Westside Main Canal

P1. Other Identifier: Westside Main Canal

*P2. Location: ☐ Not for Publication ☒ Unrestricted
and (P2b and P2c or P2d. Attach a Location Map as necessary.)

*a. County Imperial County

*b. USGS 7.5' Plaster City Quad Date 1979 T R; ¼ of Sec 7; SB B.M.

c. Address City Zip

d. UTM: Zone 11S; 613474.85 mE/ 3628580.65 mN (Northern terminus within the APE)

Zone 11S; 615427.74 mE/ 3628580.65 mN (Southern terminus within the APE)

e. Other Locational Data:

***P3a. Description:**

This site form updates a 7 mile segment of the forty mile Westside Main Canal alignment. The Westside Main Canal is an irrigation canal that runs through agricultural land in the Imperial Valley section of Imperial County. The northern terminus of the recorded segment is located .25 miles east of Centinela State Prison in Imperial, CA (UTMs Zone 11S; 613474.85_mE/ 3628580.65_mN). After the canal passes under Interstate 8 the route orients to the southeast. The remainder of the route curves and the southern terminus of the recorded segment ends .25 miles east of the intersection at Mandrapa and Liebert in Imperial, CA (UTMs Zone 11S; 615427.74_mE/ 3628580.65 mN). The canal is approximately 75 feet wide. It is banked by earthen levees of vegetation and is unlined. Dirt access roads run along the levees on both sides of the canal for maintenance and dredging access.

*P3b. Resource Attributes: HP, 20 Canal/Aqueduct

*P4. Resources Present: ☐ Building ☒ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other (Isolates, etc.)

P5b. Description of Photo:

Camera facing south; 07/20/2011;
DSCN_9772

*P6. Date Constructed/Age and Sources:

☒ Historic ☐ Prehistoric ☐ Both
c. 1906/IMP-98 HASR, 1999.

*P7. Owner and Address:

Imperial Irrigation District
333 E. Barioni Blvd
Imperial, CA 92251

*P8. Recorded by:

AECOM
1420 Kettner Blvd., Suite 500
San Diego, CA 92101

*P9. Date Recorded: 07/20/2011

*P10. Survey Type: (Describe) Intensive



*P11. Report Citation: BUILT ENVIRONMENT SURVEY REPORT ADDENDUM TO THE CULTURAL RESOURCES INVESTIGATIONS CLASS III REPORT FOR THE IID DIXIELAND 230 kV TRANSMISSION LINE AND SUBSTATION EXPANSION PROJECT, IMPERIAL COUNTIES, CALIFORNIA, AECOM 2012

*Attachments: NONE ☒ Location Map ☐ Sketch Map ☐ Continuation Sheet ☐ Building, Structure, and Object Record ☐ Archaeological Record
☐ District Record ☒ Linear Feature Record ☐ Milling Station Record ☐ Rock Art Record ☐ Artifact Record ☐ Photograph Record

☐ Other (list) _____

DPR 523A (1/95)

*Required Information

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
LINEAR FEATURE RECORD

Primary # P-13-008334 Update

HRI #

Trinomial

Page 2 of 3

Resource Name or #: Westside Main Canal

L1. Historic and/or Common Name: Westside Main Canal

L2a. Portion Described: ☐ Entire Resource ☒ Segment ☐ Point Observation **Designation:**

b. Location of point or segment:

The northern terminus of the recorded segment can be reached from El Centro by taking Interstate 8 west for 7 miles and exit towards Seeley traveling on Drew Road for one mile. Turn left on Drew Road and go west for 4 miles. The northern terminus of the recorded segment begins .25 miles east of Centila State Prison at UTM's Zone 11S; 613474.85_mE/ 3628580.65_mN.

L3. Description:

This site form updates a 7 mile segment of the forty mile Westside Main Canal alignment. The Westside Main Canal is an irrigation canal that runs though agricultural land in the Imperial Valley section of Imperial County. The northern terminus of the recorded segment enters the Area of Potential Effects (APE) .25 miles east of Centinela State Prison in Imperial, CA (UTMs Zone 11S; 613474.85_mE/ 3628580.65_mN). After the canal passes under Interstate 8 the route orients to southeast. The remainder of the route curves and the southern terminus of the recorded segment ends .25 miles east of the intersection at Mandrapa and Liebert in Imperial, CA (UTMs Zone 11S; 615427.74_mE/ 3628580.65_mN). The canal is approximately 75 feet wide running perpendicular to Hwy 80. It is banked by earthen levees of vegetation and is unlined. Dirt access roads run along the levees on both sides of the canal for maintenance and dredging access.

L4e. Sketch of Cross-Section (include scale) Facing:

L4. Dimensions:

a. Top Width 75 feet

b. Bottom Width unknown

c. Height or Depth 10 feet

d. Length of Segment 7 miles

L5. Associated Resources:

The Fox Glove Canal runs parallel to the Westside Main Canal.

L6. Setting:

Located in between Plaster City and Seeley, the canal is surrounded by primarily irrigated agricultural land. A variety of crops grow along this segment, as well as rural vegetation along its banks. Dirt access roads run parallel to the canal along its berms.

L7. Integrity Considerations:

The canal is currently in use and is regularly maintained to keep the banks properly groomed and the quantity of silt minimal.

L8b. Description of Photo, Map, or

Drawing: Camera facing south;

07/20/2011; DSCN 8771

L9. Remarks:

L10. Form Prepared by:

AECOM

1420 Kettner Blvd., Suite 500

San Diego, CA 92101

L11. Date:

07/20/2011



CONTINUATION SHEET

Primary # P-13-008334 Update

HRI # _____

Trinomial _____

Page 3 of 3

*Resource Name or # Westside Main Canal

*Recorded by AECOM

*Date 07/20/2011

☐ Continuation ☒ Update

This site form updates the 7-mile recorded segment of the larger 40 mile Westside Main Canal. P-13-008334 was recorded by Jill Hupp in 1999. During the current survey effort, the portion of the canal within the project area is earthen lined and is still in use today. While the canal has been recommended eligible for the National Register of Historic Places (NRHP), the portion of the canal within the proposed project area was examined in 1997 and 1998 and was recommended not eligible for the NRHP due to lack of integrity (Hupp 1999). Caltrans also evaluated a portion of the canal as it crosses under I-8. Caltrans determined that, under California Environmental Quality Act (CEQA), the portion of the canal under I-8 is not a historic resource and therefore is not eligible for the NRHP (Hupp 1999).

Bowden-Renna, Cheryl

2010 *Cultural Resources Investigations Class III Report for the IID Dixieland 230 kV Transmission Line and Substation Expansion Project, Imperial County, California*. Prepared by AECOM

Hupp, Jill

1999 P-13-008334 Site Form. Form on file at the South Coastal Information Center.

State of California – The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

CONTINUATION SHEET

Primary #: P-13-008334

HRI# _____

Trinomial CA-IMP-7834

Page 1 of 1

*Resource Name or #: (Assigned by recorder)

*Recorded by: C. Bowden-Renna

*Date: 1/2010

☐ Continuation ☒ Update

Site P-13-008334 was recorded by Jill Hupp in 1999. This site is the Westside Main Canal, which was built about 1906 as a part of the Imperial Irrigation District canal system within Imperial Valley. During the current survey effort, the portion of the canal within the project area is earthen lined and is still in use today. While the canal has been recommended eligible for the National Register of Historic Places (NRHP), the portion of the canal within the proposed project area was examined in 1997 and 1998 and was recommended not eligible for the NRHP due to lack of integrity (Hupp 1999). Caltrans also evaluated a portion of the canal as it crosses under I-8. Caltrans determined that, under California Environmental Quality Act (CEQA), the portion of the canal under I-8 is not a historic resource and therefore is not eligible for the NRHP (Hupp 1999).

Bowden-Renna, Cheryl

2010 *Cultural Resources Investigations Class III Report for the IID Dixieland 230 kV Transmission Line and Substation Expansion Project, Imperial County, California.* Prepared by AECOM.

Hupp, Jill

1999 P-13-008334 Site Form. Form on file at the South Coastal Information Center.

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary # P-13-008334 Update
HRI #
Trinomial CA-IMP-7834 Update
NRHP Status Code

Other Listings
Review Code

Reviewer

Date

Page 1 of 6

*Resource Name or #: Westside Main Canal

P1. Other Identifier: Westside Main Canal

*P2. Location: ☐ Not for Publication ☒ Unrestricted

*a. County: Imperial

*b. USGS 7.5' Quad: Mount Signal Date: 2010 T 17S;R 12E/13E; of Sec 3, 2, 11, 12, 13, 24, 19, 20, 17, 21, ;S.B.B.M.

c. Address: N/A

City: N/A

Zip: N/A

d. UTM: Zone: 11N; North end:620445mE/ 625496mN; South end: 625496mE/3613610mN (G.P.S.) NAD 83

e. Other Locational Data:

Elevation: -7 m below sea level

Approximately seven miles west of El Centro along Hwy 8 is the intersection of Drew Road. When traveling west on Hwy 8 towards this intersection, take exit 107 for Drew Road toward Seeley. Merge onto Drew Road heading south bound. Continue along Drew Road for 2.3 miles to reach W Wixom Road. Turn west onto W Wixom Road and continue on this road for 1.4 miles to reach Liebert Road. Turn south onto Liebert Road and continue for 0.6 miles to reach Mandrapa Road. Turn west on Mandrapa Road; the Westside Main Canal flows adjacent to Mandrapa Road.

*P3a. Description: Constructed in 1907, Site 13-8334 the Westside Main Canal, is part of the earliest irrigation system in the Imperial Valley, and was later integrated into the All-American Canal during the late 1930s. The All-American canal runs in an east-west direction just north of the international border with the U.S. and Mexico. The portion of the Westside Main canal as it passes through the APE is approximately 8 feet deep and 40 feet wide and is earthen lined. The portion of the Westside Main Canal that was surveyed includes a segment along the south side of Mandrapa Rd., between North Hyde Rd. to the west and Drew Rd. to the east. The Westside Main Canal was updated by Jennifer Krintz of ASM Affiliates in April 2011. The condition of the canal has not changed since its update by ASm Affiliates in April 2011.

*P3b. Resource Attributes: HP20 Canal/Aqueduct

*P4. Resources Present: ☐ Building ☐ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☒ Other (Isolates, etc.)

P5a. Photo



P5b. Description of Photo:
Westside Main Canal Facing east

*P6. Date Constructed/Age and Sources: ☒ Historic
☐ Prehistoric ☐ Both

*P7. Owner and Address:
Imperial Irrigation District
333 E. Barioni Boulevard
Imperial, CA 92251

*P8. Recorded by:
C.Bodmer, B. Bartram, B. Johnson
T. Murphy, S. Wintergerst
Chambers Group Inc.,
5 Hutton Centre Drive, Ste. 750,
Santa Ana, CA 92707

*P9. Date Recorded: 11/19/2011

*P10. Survey Type: Pedestrian
survey(15 meter transect intervals)

*P11. Report Citation: A Class III Cultural Resources Inventory For The Agile Energy, Inc. Silverleaf Photovoltaic Solar Project Near The City Of El Centro, Imperial County, California

*Attachments: ☐ NONE ☒ Location Map ☐ Sketch Map ☐ Continuation Sheet ☐ Building, Structure, and Object Record
☐ Archaeological Record ☐ District Record ☐ Linear Feature Record ☐ Milling Station Record ☐ Rock Art Record
☐ Artifact Record ☐ Photograph Record ☐ Other (List):

BUILDING, STRUCTURE, AND OBJECT RECORD

Page 2 of 6

*NRHP Status Code

*Resource Name or # (Assigned by recorder) Westside Main Canal

B1. Historic Name: Westside Main Canal
B2. Common Name: Westside Main Canal
B3. Original Use: Irrigation Ditch

B4. Present Use: Irrigation Ditch

*B5. Architectural Style: N/A

*B6. Construction History: The Westside Main Canal was constructed in 1908 as an earthen canal, banked by earthen levees, approximately 25 feet wide and 10 feet deep. Throughout the early twentieth century, the general alignment of this portion of the Westside Main Canal was not significantly altered. Based on the 1915 El Centro 15-minute USGS quadrangle maps, Albert G. Thurston's Imperial Valley Tract Map (1914), Blackburn's Map of Imperial County, California (1919, 1929, 1936, 1943, 1955 editions), the 1949 and 1976 USDA Aerial Collection, the 1957 Painted Gorge 7.5-Minute USGS quadrangle map, and the 1964 Western Portion of Blackburn's Map of Imperial County, the general course of the canal has remained consistent for most of its history.

*B7. Moved? ☒No ☐Yes ☐Unknown Date: N/A

Original Location: N/A

*B8. Related Features: None

B9a. Architect: N/A

b. Builder: Imperial Irrigation District

*B10. Significance: Theme: N/A

Area: West El Centro, Imperial County

Period of Significance: N/A

Property Type: Irrigation Ditch

Applicable Criteria: N/A

In 1849, Dr. Oliver M Wozencraft, on his way to the gold fields of San Bernardino from New Orleans, traveled through the Imperial Valley and noted the region's soil fertility and potential for arability. He was likely the first person to recognize the Imperial Valley's potential for agriculture. Wozencraft believed he could construct a gravity canal from the Colorado River to the Imperial Valley, because the river was at a higher elevation than the valley (Garnholz 1991). Wozencraft's opinion of the fertile valley was reaffirmed in 1853 when Jefferson Davis, U.S. Secretary of the War Department, ordered a scientific expedition along the Colorado River for the placement of fortifications. In this expedition, led by Lieutenant R. S. Williamson and Professor William Phipps Blake, the particular fertility of the alluvial soil at the southern end of the Salton Sink was noted. Blake prophetically noted, "it is indeed a serious question, whether a canal would not cause the overflow once more of a vast surface, and refill, to a certain extent, the dry valley of the ancient lake" (Garnholz 1991). Blake's expedition scientifically described how the Colorado River had meandered through the valley, delivered enough silt to block the mouth of the Gulf of California, and recognized that the banks of the current Colorado River course were much higher than that of Imperial Valley (Smith 1979). During the nineteenth century, the Colorado River historically flooded the valley several times, specifically in 1840, 1842, 1852, 1859, and 1867 (Garnholz 1991). SEE CONTINUATION SHEET 523L (PAGE 3 AND 4).

B11. Additional Resource Attributes: (List attributes and codes) N/A

*B12. References:

See Continuation Sheet 523L (Page 6)

B13. Remarks:

(Sketch Map with north arrow required.)

See Continuation Sheet 523L (Page 5)

*B14. Evaluator: Jeremy Hollins

*Date of Evaluation: 04/2011

(This space reserved for official comments.)

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
CONTINUATION SHEET

Primary #
HRI#
Trinomial

Page 3 of 6

*Resource Name or # (Assigned by recorder) Westside Main Canal

*Recorded by: URS Corporation

*Date: 05/2009

☒ Continuation

☐ Update

With the information gathered from the scientific expedition, Wozencraft pressed California into granting him approximately 1,600 square miles or roughly ten million square acres (which included present-day Imperial County and portions of present-day Riverside County). However, the federal government retained title to the land in this region of California and Wozencraft was unable to convince Congress, even with the results of the scientific analysis of the valley, to support his efforts. Wozencraft then approached George Chaffey to finance the project. Chaffey, who would successfully spearhead irrigation projects in San Bernardino County and Australia, was also unconvinced and noted that the "Imperial Valley was to [sic] hot for white men to prosper" (Garnholz 1991). Chaffey would later change his mind and near the end of the nineteenth century led the effort to irrigate the valley. Still undeterred, Wozencraft hired the Los Angeles County surveyor, Ebenezer Hadley, in 1860 to draw up a plan to irrigate the valley by diverting the Colorado River through the Alamo River (Garnholz 1991). Wozencraft eventually left California for Washington, D.C. to lobby Congress. He died several years later without ever convincing Congress and never seeing his dream fulfilled. While Wozencraft failed to create an irrigation network, his efforts during the mid-nineteenth century led the way for future development efforts.

In 1896, a group of investors formed the California Development Company (CDC) and followed Wozencraft's earlier attempts to irrigate the Imperial Valley. The group was led by Engineer Charles R. Rockwood and George Chaffey and they wanted to establish a canal, referred to as the "main channel," constructed from the Colorado River through the Imperial Valley using an ancient overflow channel of the Colorado known as the Alamo River (Sperry 1975). Chaffey, to avoid conflict with the Mexican government over land development since the canal was to be developed almost entirely on the south side of the border, established a subsidiary to the CDC known as the Sociedad de Irrigación y Terrenos de la Baja California (Smith 1979). By 1901, portions of the Imperial Valley were irrigated and attracted many new settlers and farmers from the Midwest.

One of the main problems throughout the entire canal venture project was constant silting, which needed consistent dredging of muck. The solution was to build a wooden, although supposedly temporary, structure referred to as the "Chaffey Gate" (Sperry 1975; Tout 1932). The year the gate was constructed (1904) was one of the wetter years on record and the gate was constructed too high on the riverbank. Arguments at the time seem to suggest that Chaffey had the gate constructed correctly, but that because the water level was high at the time, the engineer in charge of the project placed several removable flashboards in the bottom of the gate, which silted over rapidly (Sperry 1975). The next few years were very dry causing the canals' water level to drop precipitating the construction of more diversion and gates around the Chaffey gate. The year 1905, however, was extremely wet causing several flooding episodes with the fifth one completely destroying all remaining gates and dams along the canal network system. The Colorado River, originally flowing toward the Gulf of Californian, had changed its course and started flooding the Alamo River to the Salton Sink in Imperial Valley.

By 1905, over 80 miles of irrigation canals had been built, with more than 100,000 acres under cultivation. However, the design and construction of several poorly planned canals and ditches made water delivery service unreliable and inefficient. Large quantities of silt would block the canals' intakes and reduce the amount of water reaching Imperial Valley crops. A widespread flood in the winter of 1905-1906 caused extensive damage to railroad property, farmlands, and the newly constructed canal system. The CDC did not believe it was practical to reconstruct several of the canals, and as an alternative decided to enlarge the Westside Main Canal, which at the time was a wooden flume conveyance system located south in Mexico and known as the Encina Canal (Hupp 1999). The extension of the Westside Canal into the United States in approximately 1906 was intended to alleviate irrigation problems and spark development of the county west of the New River. By 1908, the Westside Main Canal extended into the Dixieland area of Imperial County. It was constructed as an earthen canal, banked by earthen levees, approximately 25 feet wide and 10 feet deep. Throughout the early twentieth century, the general alignment of the Westside Main Canal within the Dixieland area of Imperial County was not significantly altered. Based on the 1915 El Centro 15-minute USGS quadrangle maps, Albert G. Thurston's Imperial Valley Tract Map (1914), Blackburn's Map of Imperial County, California (1919, 1929, 1936, 1943, 1955 editions), the 1949 and 1976 USDA Aerial Collection, the 1957 Painted Gorge 7.5-Minute USGS quadrangle map, and the 1964 Western Portion of Blackburn's Map of Imperial County, the general course of the canal has remained consistent for most of its history.

By 1907, the Southern Pacific Railroad Company threatened a lawsuit against the CDC for flooding their railroad line along the Salton Sink. A year later, CDC reorganized and the board was taken over by Southern Pacific men, including Epes Randolph, who was the assistant to the president of the Southern Pacific (Sperry 1975). The task of returning the Colorado to its natural course heading toward the Gulf of California was such a daunting and expensive quest that the Southern Pacific eventually ended its association with the CDC. The Southern Pacific did, however, request over \$3 million from the U.S. government for expenses incurred in turning the Colorado back toward the Gulf; the government awarded them \$1 million 22 years later (Sperry 1975; Tout 1932). Only the construction of the Hoover Dam (then known as the Boulder Dam) in 1935 allowed for more effective control of the Colorado River for irrigation purposes.

The Imperial Irrigation District (IID) was organized in 1911 to acquire the land rights of the California Development Company (CDC), and its Mexican subsidiary Sociedad de Irrigación y Terrenos de la Baja California, from the Southern Pacific. By the mid-1920s, IID was delivering water to over 500,000 acres of arable land (Imperial Irrigation District 1998). The Boulder Canyon Act, passed in 1928, authorized the Bureau of Reclamation to construct the Boulder Dam, completed in 1935, along the Colorado River. The Imperial Valley and IID benefited greatly as the Act and the dam provided immediate hydroelectric power to the valley. The Act also provided for the construction of the All-American Canal. In 1932, the Secretary of the Interior and IID signed an agreement to allow IID the utilization of hydroelectric power from the canal system for repaying the costs of the canal construction. The All-American Canal was begun in 1934 and the first diesel-generating plant was constructed near Brawley in 1936 (Imperial Irrigation District 1998). Subsequent hydroelectric plants were constructed in 1941. The All-American Canal was completed in 1941, and the Westside Main Canal was incorporated into the All-American Canal System upon its completion. The portions of the Westside Main Canal within Mexico were removed from the IID system.

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
CONTINUATION SHEET

Primary #
HRI#
Trinomial

Page 4 of 6

*Resource Name or # (Assigned by recorder) Westside Main Canal

*Recorded by: URS Corporation

*Date: 03/2010

☒ Continuation ☐ Update

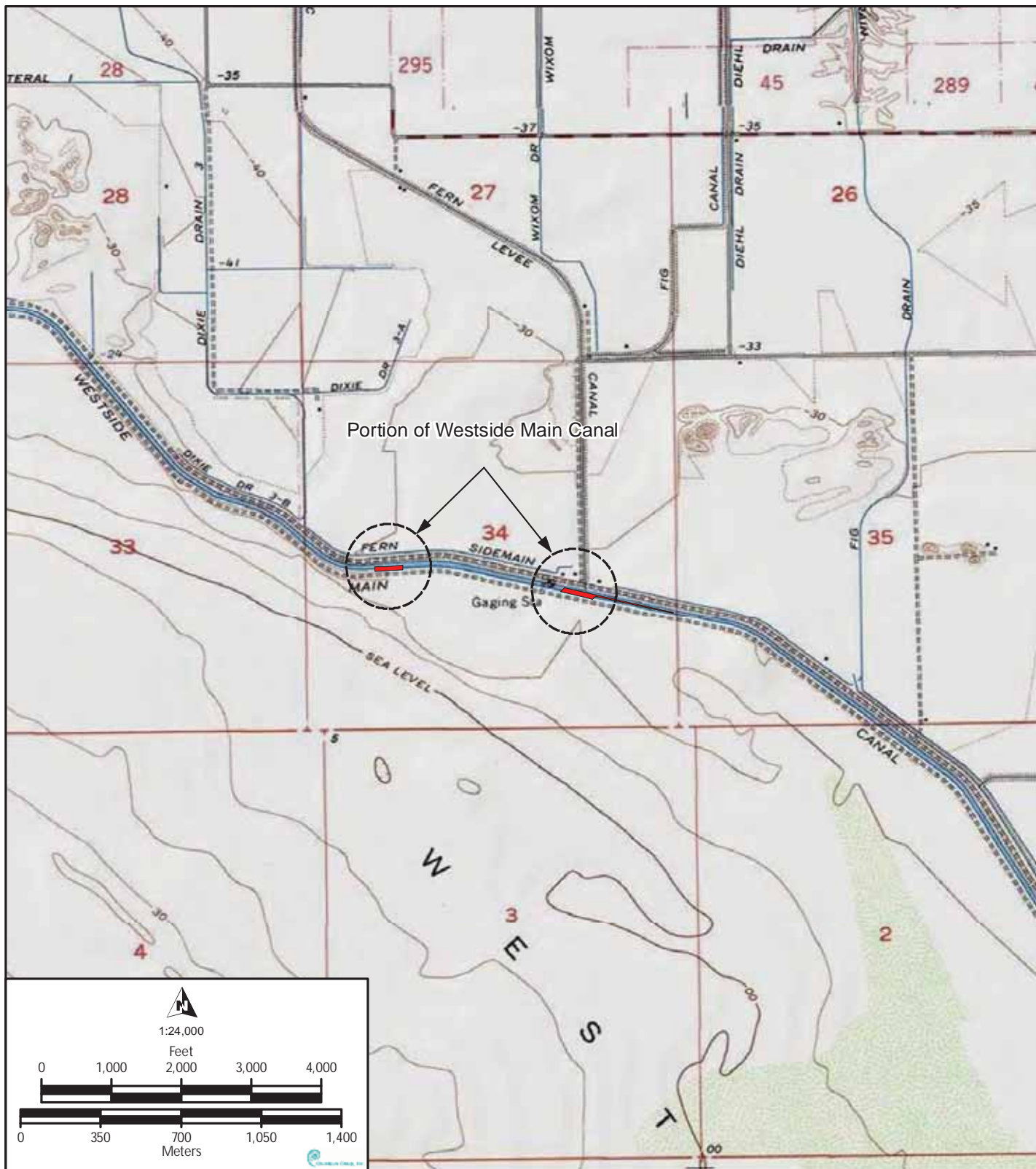
The Westside Main Canal system distributes irrigation water throughout Imperial County using a large network of smaller canals and drains. By the 1950s, regular dredging and widening of the canals were needed to alleviate problems from silt and other build-ups. This altered the structures' profiles, depth, and width, and improvements were also made to the canals' ceramic drain tiles and ditches. By the 1960s, IID had implemented a plan to start lining its earthen canals with concrete (Hupp 1999). Through the 1970s, due to IIDs ongoing preventive and reactive maintenance, many original construction materials and features were replaced. These alterations have impacted the canals' historic setting, but were necessary for the agriculture industry's expansion and success (Henderson 1968).

Based on Caltrans' earlier 1999 assessment, the Westside Main Canal, as a whole, reflects the development associated with the construction and operation of the All-American Canal between 1941 and 1950, which is primarily when the system was widened, shortened (portions in Mexico were removed from service), and modernized. The canal appears to be significant under Criterion A and C of the NRHP and Criterion 1 and 3 of the CRHR for its association with the development of irrigated commercial agriculture in the Imperial County west of the New River and as a good example of an early large-scale irrigation canal system. It does not appear to be associated with the lives of significant people or likely to yield important information in prehistory or history. Therefore, it does not appear to be significant under Criterion B and D of the NRHP and Criterion 2 and 4 of the CRHR. The canal was associated only for a short period with the CDC, from 1905 to 1911, nearly ten years after the company was established. Additionally, the canal was already in operation upon the forming of the IID, and does not reflect or convey the contributions of the IID to Imperial County.

Overall though, research conducted as part of Caltrans' 1999 assessment of the system found that the canal as a whole (while significant) does not retain a sufficient amount of its historic integrity to convey its significance due to regular dredging, grading, widening, and reconstruction that has occurred since the 1950s, though, an intensive survey of the entire canal has not occurred. The portion of the Westside Main Canal within the historic architecture APE also does not appear to possess sufficient integrity of workmanship, design, setting, feeling, and association (though it still retains sufficient historic integrity aspects of location and materials). Accordingly, it does not appear to be a contributing element or significant related feature/component to the larger linear Westside Main Canal system or individually eligible for listing to the NRHP, CRHR, or considered a historical resource for purposes of CEQA. While still earthen, extensive dredging and grading since the 1960s has changed the basic configuration of the canal, which has impacted its design, setting, and feeling. The canal currently has a U-shaped profile, whereas historically it was trapezoidal.

The addition of a non-historic period pipeline, and highway and railroad crossings over the canal in the historic architecture APE disrupt the property's integrity aspects of setting and feeling, since these elements are outside of the property's period of significance, 1941 to 1950. Accordingly, due to these alterations, the workmanship and association of the historic-period property in the APE has been lost, since there is little physical evidence of the crafts of a particular culture or people from the period of significance, and the property is not sufficiently intact to convey the direct link between significant events and the canal.

In summary, the portion of the Westside Main Canal within the historic architecture APE does not appear to be individually eligible for listing to the NRHP, CRHR, or considered a historical resource for purposes of CEQA, and does not appear to be a contributing element or significant related feature/component to the larger linear Westside Main Canal system (if it is determined that such a resource exists). Further, the addition of a proposed Solar Farm adjacent or perpendicular to the existing structure would not create a new adverse effect or significant impact.



State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
CONTINUATION SHEET

Primary #
HRI#
Trinomial

Page 6 of 6

*Resource Name or # (Assigned by recorder) Westside Main Canal

*Recorded by: URS Corporation

*Date: 05/2009

☒ Continuation ☐ Update

B12. References

A.G. Thurston. 1912. Irrigation District and Road Map – Imperial Valley.

Albert G. Thurston. 1914. Imperial Valley Tract Map.

O.V. Blackburn. 1919, 1929, 1936 & 1955 editions. Blackburn's Map of Imperial County, California.

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Hupp, Jill, 1999. CA-IMP-7834 Westside Main Canal. Sacramento: Caltrans Environmental Program.

Imperial Irrigation District, 2006. "General History." Located at <http://www.iid.com/Sub.php?pid=14>. Website last visited on April 2009.

Imperial Irrigation District. September 18, 1996. Southwest Division Map.

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Smith, Karen J., 1979. The Reclamation of the Imperial Valley, 1849-1916. Unpublished Masters Thesis, San Diego State University.

Sperry, Robert L., 1975. When the Imperial Valley Fought for its Life. The Journal of San Diego History, 21(1). Located at: <http://www.sandiegohistory.org/journal/75winter/imperial.htm>. Website last visited on 27 April 2007.

SWCA Environmental Consultants. 2007. CA-IMP-8821H Fox Glove Canal. South Pasadena, California.

Tout, Otis B., 1932. The First Thirty Years—1901-1931: History of Imperial Valley, Southern California, U.S.A. San Diego: Otis B. Tout.

USDA. 1949 & 1976. Aerial Survey of Imperial County. On file at UCSD Maps and Government Publications.

USGS. 1908. El Centro USGS Quadrangle Map.

USGS. 1915. El Centro 15-minute USGS Quadrangle Map.

USGS. 1943, 1957. Painted Gorge 7.5-minute USGS Quadrangle Maps.

USGS. 1940. Plaster City 15-Minute USGS Quadrangle Map.

USGS. 1943, 1944. Plaster City 1 to 62,500 Scale Map.

USGS. 1940. Brawley 15-minute USGS Quadrangle Map.

USGS. 1957. Brawley 7.5-minute USGS Quadrangle Map.

USGS. 1957, 1979. Seeley 7.5- minute USGS Quadrangle Map.

State of California —The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
CONTINUATION SHEET

Primary # P-13- 008334 UPDATE
HRI#
Trinomial CA-IMP-7834

Page 1 of 5

*Resource Name or # (Assigned by recorder) Westside Main Canal – Pump 6

*Recorded by: Trish Mitchell, Erica Maier, and Heather Thomson: kp environmental, LLC and Alan Hatcher: Native American Monitor, Cocopah *Date: 01/24/2012 ☒ Continuation ☒ Update

CA-IMP-7834 was first recorded in 1999 by Jill Hupp who conducted extensive background research documenting the history of the Westside Main Canal. This resource has been recorded, evaluated, re-recorded, updated and re-evaluated nine times since it was first recorded in 1999. Each time only the portion of the canal within the project right-of-way was documented and ultimately evaluated for significance. As of 2011 (Davis et al. 2011; Mitchell 2011) the segments of the Westside Main Canal within the Campo Verde Solar Facility APE is determined eligible for listing in the NRHP and CRHR under Criterion A/1 for its significance in the development of the Imperial Valley. In 2001 the Bureau of Reclamation and the California SHPO concurred that the All-American canal is eligible for the NRHP under Criterion A and by extension the Westside Main Canal is as well (Hunt 2008). Davis concurred with this determination for the Campo Verde Solar Facility APE (Davis et al. 2011; Mitchell 2011). The Pump 6 segment of the Westside Main Canal that is recorded in the current survey area was not a part of Davis' 2011 evaluation. Chambers Group (2011) relocated the Pump 6 portion of the site during their November 2011 survey as previously recorded. KPE updated the Pump 6 site location to include a segment on the western end of the canal where the canal turns northwest and extends for another 900 feet.

Mitchell, Patricia T. 2012. Inventory Report of the Cultural Resources Recorded within the Campo Verde Solar Project BLM Gen-Tie Option Alternatives, Imperial County, California.

Chambers Group, Inc. 2011. Draft - A Class III Cultural Resources Inventory for the Silverleaf Photovoltaic Solar Project Imperial County, California.

Davis, Shannon, Jennifer Krintz, Sarah Stringer-Bowsher, and Sinéad Ní Ghabhláin. 2011. Impacts on Historic Resources on Private Lands, Campo Verde Solar Project, Imperial County, California.

Hunt, Kevin. 2008. Cultural Resources Survey of Alternatives for the Sunrise Powerlink Project in Imperial, Orange, Riverside, and San Diego Counties, California. SWCA Environmental Consultants. Report submitted to Bureau of Land Management, California Desert District, Moreno Valley, California.

Mitchell, Patricia T. 2011. Inventory Report of the Cultural Resources Recorded within the Campo Verde Solar Project, Imperial County, California.

State of California —The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
CONTINUATION SHEET

Page 2 of 5

*Recorded by: T. Mitchell

Primary # P-13-008334 UPDATE
HRI#

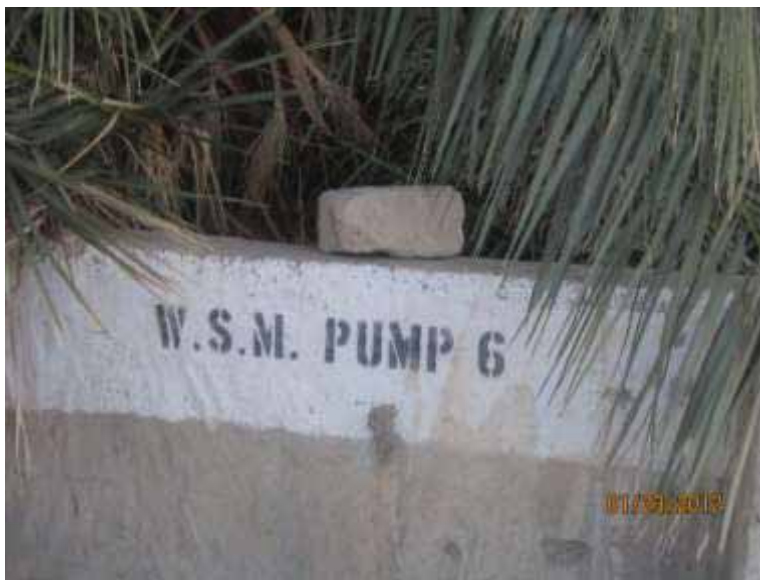
Trinomial CA-IMP-7834

*Resource Name or # (Assigned by recorder) Westside Main Canal

*Date: 1/24/2012 ☐ Continuation ☒ Update



IMG 3385: Canal corner where it turns NW for 900 feet, View to E.



IMG 3387: Westside Main Canal Pump 6, View down.

State of California—The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PHOTOGRAPH RECORD

Primary # P-13-008334 UPDATE
HRI#
Trinomial CA-IMP-7834

Page 3 of 5

Resource Name or #: Westside Main Canal – Pump 6

Year 2011

Camera Format: Digital – Canon Powershot SD1300 IS Digital ELPH 12.1 megapixel

Negatives Kept at: kp environmental, LLC. 2387 Montgomery Ave, Cardiff By The Sea, CA 92007

[illegible]

State of California —The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
SKETCH MAP

Primary # P-13-008334 UPDATE
HRI#
Trinomial CA-IMP-7834

Page 4 of 5 *Resource Name or # (Assigned by recorder) Westside Main Canal - Pump 6

*Drawn By: Trish Mitchell

*Date: 1/24/2012



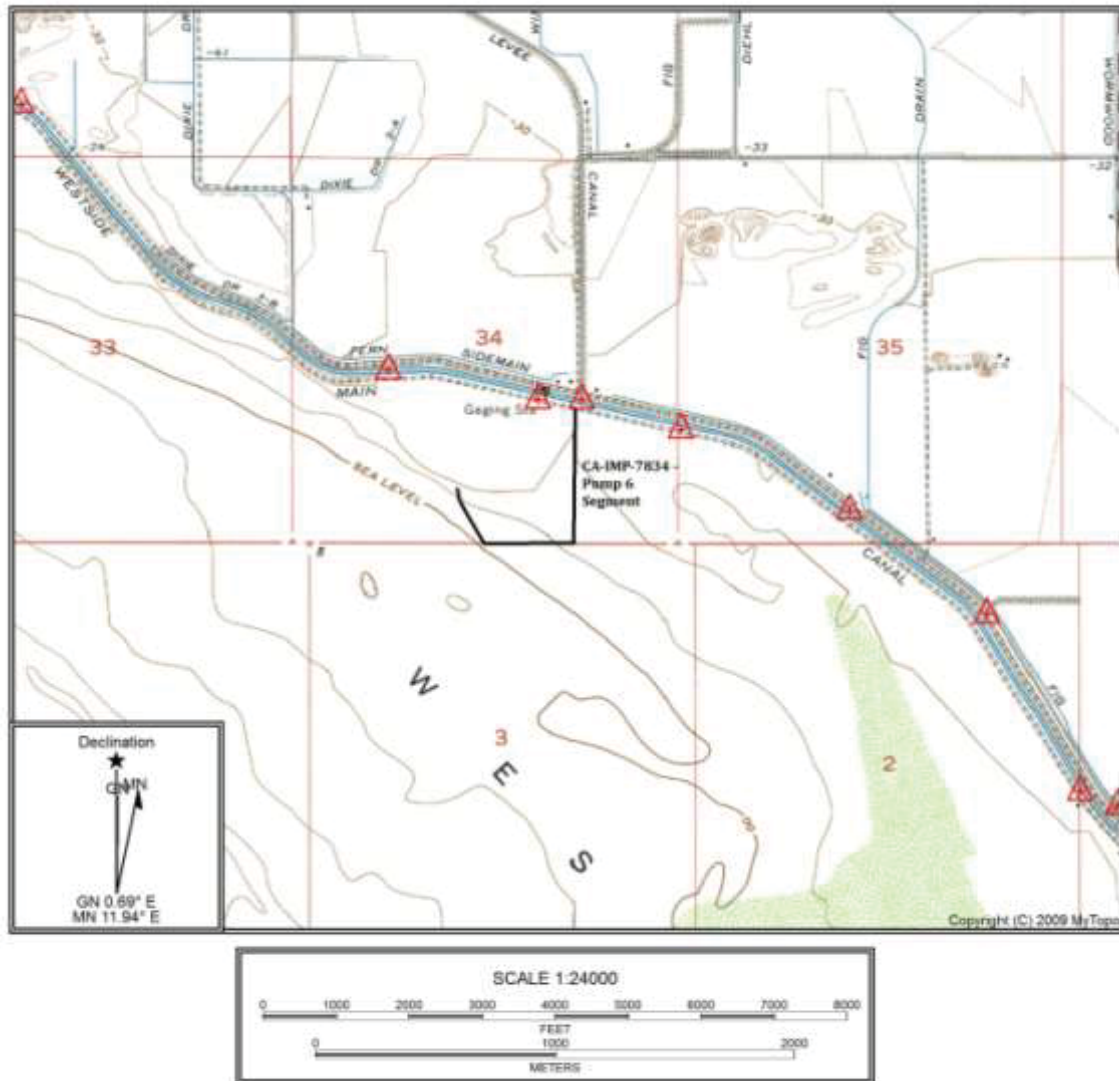
State of California —The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
LOCATION MAP

Primary # P-13-008334 UPDATE
HRI#
Trinomial CA-IMP-7834

*Map Name: Mount Signal, Calif.

*Scale: 1: 24,000

*Date of Map: 1957 (1976)



State of California —The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
CONTINUATION SHEET

Primary # P-13- 008334 UPDATE
HRI#
Trinomial CA-IMP-7834

Page 1 of 9

*Resource Name or # (Assigned by recorder) Westside Main Canal

*Recorded by: H. Thomson *Date: 11/03/2011 ☐ Continuation ☒ Update

P-13-08334 (CA-IMP-7834) is the West Side Main Canal, an irrigation feature. The canal was first recorded in 1999 by Jill Hupp who conducted extensive background research documenting the history of the Westside Main Canal. Later site updates have basically regurgitated this information, tailoring it to fit the project. As part of a historical context study focusing on Water Conveyance Systems in California, JRP and Caltrans nicely sums up the Imperial Valley canal history as follows:

".....The newly named Imperial Valley begins to develop widespread irrigated agriculture after 1898-1899, when C. R. Rockwood and George Chaffey took an interest in the area. Even Chaffey's efforts in the Imperial Valley did not succeed totally until the federal Reclamation Service became involved. Chaffey and Rockwood's California Development Company built a canal to serve the Imperial Valley in 1900-1902. Because of unstable sandy soil west of the Colorado River, part of the canal alignment had to be constructed south of the border, and it ran through Mexican land before turning north into the Imperial Valley. Farmers irrigated 25,000 acres the first season, and 100,000 acres by the next.

In an effort to avoid water rights issues raised by a hostile federal Reclamation Service, and to get around large accumulations of silt at the out-take on the Colorado River, on the American side of the border, the California Development Company cut a wide outlet with no head gate in the riverbank inside Mexico. Unusually high flood waters tore open this outlet in the winter of 1905, overwhelming the main canal.

On and off for the next two years, the Colorado River flowed through the main canal, flooding large areas of the Imperial Valley, destroying many farms and parts of some communities, and ultimately filling the Salton Sink, creating the Salton Sea.

As work developing the valley went ahead, the company organized smaller mutual water companies to build ditch systems drawing off the main canals. By 1906, over 130,000 acres were under irrigation, growing to 180,000 acres in 1910, but Chaffey and Rockwood's company had gone into receivership in 1909. As demand for an irrigation district grew among remaining settlers, the Imperial Irrigation District was created in 1911. It encompassed more than 600,000 acres, by far the largest in the state. The Southern Pacific railroad purchased the California Development Company's works in February 1916, and then sold them in turn to the Imperial Irrigation District in June. By 1919, total irrigated acreage in the valley reached 400,000 acres, dropping to 300,000 at the beginning of the Great Depression, and in 1960 climbed to 565,000 acres.

The massive works of the Imperial Irrigation District encompass an elaborate 75-gate heading on the Colorado River, a main canal running through to Calexico, and a web of over 2,400 miles of canals and laterals, with attendant gates, checks, drops, and miscellaneous structures. In the 1920s, the canals were unlined. Until most of the district's canals and laterals were straightened and lined with concrete beginning in the 1950s, they were plagued by silting problems. For example, in 1927, the district cleaned sand and silt from 3,274 miles of canals and surface drains.

Among the reasons for the USBR's involvement in irrigation development in the Imperial Valley was the constant danger of the canal system's being washed out during high water stages in the Colorado River. In addition, the canal alignment located partly in Mexico left the system vulnerable to international disputes. During the late 1930s the USBR headed the All-American Canal project to construct a new canal north of the border. When completed, the All-American Canal brought water to the Imperial Valley south of the Salton Sea, and a branch called the Coachella Canal irrigated the Coachella Valley north of the Salton Sea...."

State of California —The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
CONTINUATION SHEET

Primary # P-13- 008334 UPDATE
HRI#
Trinomial CA-IMP-7834

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*Resource Name or # (Assigned by recorder) Westside Main Canal

*Recorded by: H. Thomson

*Date: 11/03/2011 ☐ Continuation ☒ Update

Previous Site Records

This resource has been recorded, evaluated, re-recorded, updated and re-evaluated seven times since it was first recorded in 1999. Each time only the portion of the canal within the project right-of-way was documented and ultimately evaluated for significance. A summary of past recordation's follows.

May 24, 1999

Jill Hupp, Caltrans Environmental Program

The project APE was the area where State Route 98 crosses the Westside Canal. The site record shows a NRHP status code of 6. The significance statement is as follows:

...West side Main canal today, like the IID irrigation system overall, reflects the development that occurred as a result of the construction of the All American Canal in 1941, after which the system was considerably expanded and modernized. The Westside Main Canal appears to possess significance under criteria A and C for its association with the development of irrigated commercial agriculture in the Imperial Valley west of New River in the early 1900's and as a good example of an early large scale irrigation canal system. However, research to date appears to indicate that the canal as a whole, while significant, would not possess the requisite degree of integrity due to reconstruction and dredging activities since the 1950's, but no survey of the canal in its entirety has yet been undertaken. Caltrans architectural historian Frank Lortie, after an extensive study of the IID system in 1997, concluded that the elements in the IID that retain integrity for the period 1941-1950 could be contributors to a potentially eligible National Register historic district. The segment within the project vicinity does not appear to possess sufficient integrity of workmanship, design, setting, feeling, and association to represent the canals significance in itself or as a contributor to a larger property. While sill earthen, extensive dredging since the 1960's has changed the basic configuration of the canal, because modern dredging equipment created a different ditch profile, more U-shaped and with steeper sides. The canal was extended and widened over time as the IID attempted to keep up with its ever-expanding service area. Because of these alterations it reflects neither the period of significance outlined by Lortie (1941-1950) nor the earlier period of the canal systems history (1901-1907)...."

June 2000

N. Harris and Michael Oberndorff; HDR Engineering

The project APE was located approximately 1300' south of Dixieland at the ROW of the San Diego and Eastern Railroad. The site form states as follows:

"...As part of the All American Canal System, this canal is eligible for NRHP inclusion....The canal is part of the historic system of canals that make up the extensive hydraulic irrigation system in the Imperial Valley. These canals profoundly influenced the Euro-American land use, settlement patterns, economy, and the cultural landscape of southern California and continues to do so today."

February 28, 2007

Jeanette A. McKenna

McKenna updated the site record at this time stating that the canal was considered a significant resource and as part of the All American Canal System, was recommended eligible for inclusion on the National Register of Historic Places. She recommended that monitoring be required during construction of the proposed pipeline and that the project be designed to avoid impacts to the resource during construction as well as maintenance activities.

State of California —The Resources Agency
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CONTINUATION SHEET

Primary # P-13-008334 UPDATE
HRI#
Trinomial CA-IMP-7834

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*Resource Name or # (Assigned by recorder) Westside Main Canal

*Recorded by: H. Thomson

*Date: 11/03/2011 ☐ Continuation ☒ Update

April 19, 2007

SWCA Environmental Consultants

SWCA examined a 300-foot long segment of the canal during survey activities conducted for alternatives related to the Sunrise Powerlink Project. The SWCA update for this resource states as follows:

"The Westside Main Canal has not been altered or modified since its last update 1999 (Jill Hupp), when it was found not eligible for listing in the National Register (NHRP) as a separate property or as a contributor to a district. However in 2001 the Bureau of Reclamation and California State Historic Preservation Officer concurred that the All American Canal is ELIGIBLE for the NRHP; by extension the Westside Main Canal is now recommended ELIGIBLE for NRHP and California Register of Historic Resources (CRHR) under Criterion A/1 for its significance in association of the Imperial Valley".

In addition, resources associated with the Westmain Canal, the Fox Glove Canal and Dixie Drain were recommended eligible for inclusion as part of the NRHP-eligible All-American Canal System.

December 12, 2007

EPG

Robert A. Rowe evaluated a portion of the canal located within the APE of the Mount Signal Solar Hybrid Plant. Additionally, EPG identified and recorded several features related to the Westside Main canal system. A site record update for P-13-008334 includes: Fig Canal, Fern Canal, Wixom Drain, Diehl Drain, Fern Side Drain, Fig Drain, Dixie Drain 3, Dixie Drain 3A and Dixie Drain 3C. In addition, EPG includes other contributing elements such as concrete laterals and spiles. Regarding significance, EPG determined that the Westside Main canal is eligible under Criterion A, for its potential to provide information about the settlement and economic development in the area and thus the transition of desert lands into irrigated area, thus affecting the local economy and subsistence.

December 2009

URS Corporation

URS Corporation visited the canal during a Class III inventory related to a proposed solar project. Along with fieldwork, URS also examined and compared numerous historic maps of the area, including the 1915 EI Centro 15-minute USGS quadrangle maps, Albert G. Thurston's Imperial Valley Tract Map (1914), Blackburn's Map of Imperial County, California (1919, 1929, 1936, 1943, 1955 editions), the 1949 and 1976 USDA Aerial Collection, the 1957 Painted Gorge 7.5-Minute USGS quadrangle map, and the 1964 Western Portion of Blackburn's Map of Imperial County. It was determined that the general course of the canal has remained consistent for most of its history.

Jeremy Hollins of URS evaluated the resource as follows:

"...Based on Caltrans' earlier 1999 assessment, the Westside Main Canal, as a whole, reflects the development associated with the construction and operation of the All-American Canal between 1941 and 1950, which is primarily when the system was widened, shortened (portions in Mexico were removed from service), and modernized. The canal appears to be significant under Criterion A and C of the NRHP and Criterion 1 and 3 of the CRHR for its association with the development of irrigated commercial agriculture in the Imperial County west of the New River and as a good example of an early large-scale irrigation canal system. It does not appear to be associated with the lives of significant people or appears to be likely to yield important information in prehistory or history. Therefore, it does not appear to be significant under Criterion B and D of the NRHP and Criterion 2 and 4 of the CRHR. The canal was associated only for a short period with the CDC, from 1905 to 1911, nearly ten years after the company was established. Additionally, the canal was already in operation upon the forming of the IID, and does not reflect or convey the contributions of the IID to Imperial County.

State of California —The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
CONTINUATION SHEET

Primary # P-13-008334 UPDATE
HRI#
Trinomial CA-IMP-7834

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*Resource Name or # (Assigned by recorder) Westside Main Canal

*Recorded by: H. Thomson *Date: 11/03/2011 ☐ Continuation ☒ Update

Overall though, research conducted as part of Caltrans' 1999 assessment of the system found that the canal as a whole (while significant) does not retain a sufficient amount of its historic integrity to convey its significance due to regular dredging grading, widening, and reconstruction that has occurred since the 1950s, though, an intensive survey of the entire canal has not occurred. The portion of the Westside Main Canal within the historic architecture APE also does not appear to possess sufficient integrity of workmanship, design, setting, feeling, and association (though it still retains sufficient historic integrity aspects of location and materials). Accordingly, it does not appear to be a contributing element or significant related feature/component to the larger linear Westside Main Canal system or individually eligible for listing to the NRHP, CRHR, or considered a historical resource for purposes of CEQA. While still earthen, extensive dredging and grading since the 1960s has changed the basic configuration of the canal, which has impacted its design, setting, and feeling. The canal currently has a U-shaped profile, whereas historically it was trapezoidal. The addition of a non-historic period pipeline and highway and railroad crossings over the canal in the historic architecture APE disrupt the property's integrity aspects of setting and feeling, since these elements are outside of the property's period of significance, 1941 to 1950. Accordingly, due to these alterations, the workmanship and association of the historic-period property in the APE has been lost, since there is little physical evidence of the crafts of a particular culture or people from the period of significance, and the property is not sufficiently intact to convey the direct link between significant events and the canal..."

".....In summary, the portion of the Westside Main Canal within the historic architecture APE does not appear to be individually eligible for listing to the NRHP, CRHR, or considered a historical resource for purposes of CEQA, and does not appear to be a contributing element or significant related feature/component to the larger linear Westside Main Canal system (if it is determined that such a resource exists)."

The significance statement for each of these resources regurgitates the same information found on the form for the Westside Main, inserting the name of the currently discussed resource.
The statement is as follows:

*"...Overall, the _____ does not appear to retain a sufficient amount of its historic integrity to convey its significance due to improvements and reconstruction that may have occurred since the 1950s, though, an intensive survey of the entire _____ has not occurred. The portion of _____ also does not appear to possess sufficient integrity of workmanship, design, setting, feeling, and association (Though, it still retains sufficient historic integrity aspects of location and materials). Based upon historical documentation, regular dredging and widening of canals and drains were necessary and often performed to alleviate problems of silt and build-up. Due to these and other improvements over time, the workmanship and association of the historic-period property has been lost, since there is little physical evidence of the crafts of a particular culture or people from the period of significance. Accordingly, it does not appear to be a contributing element or significant related feature/component to the larger linear All-American Canal or Westside Main Canal system or individually eligible for listing to the NRHP, CRHR, or considered a historical resource for purposes of CEQA.
In summary, the portion of _____ does not appear to be individually eligible for listing to the NRHP, CRHR, or considered a historical resource for purposes of CEQA, and does not appear to be a contributing element or significant related feature/component to the larger linear All-American or Westside Main Canal system (if it is determined that such a resource exists). Further, the addition of a proposed water line adjacent or perpendicular to the existing _____ would not create a new adverse effect or significant impact to the portion of the historic-period property that bisects the Evan Hewes Highway".*

State of California —The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
CONTINUATION SHEET

Primary # P-13-008334 UPDATE
HRI#
Trinomial CA-IMP-7834

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*Resource Name or # (Assigned by recorder) Westside Main Canal

*Recorded by: H. Thomson

*Date: 11/03/2011 ☐ Continuation ☒ Update

January, 2010

C. Bowden-Renna

The canal was once again visited during a survey conducted by AECOM related to the IID Dixieland 230 kV Transmission Line and Substation Expansion Project. The resource was described as follows:

"...Site P-13-008334 was recorded by Jill Hupp in 1999. This site is the Westside Main Canal, which was built about 1906 as a part of the Imperial Irrigation District canal system within Imperial Valley. During the current survey effort, the portion of the canal within the project area is earthen lined and is still in use today. While the canal has been recommended eligible for the National Register of Historic Places (NRHP), the portion of the canal within the proposed project area was examined in 1997 and 1998 and was recommended not eligible for the NRHP due to lack of integrity (Hupp 1999). Caltrans also evaluated a portion of the canal as it crosses under I-8. Caltrans determined that, under California Environmental Quality Act (CEQA), the portion of the canal under I-8 is not a historic resource and therefore is not eligible for the NRHP (Hupp 1999)".

November 04, 2011

Heather Thomson

The canal was revisited again in November 2011 during a cultural resource survey related to the Campo Verde Solar Project. An approximately 341' section of the canal falls within the survey area. The section of canal inspected consists of an earthen, unlined canal. In addition, a turnout with concrete wing walls provides water to a large concrete block reservoir, which in turn flows into a lateral canal located west of the Westside Main. This lateral, the reservoir and the remains of an electrical panel and tin shed roof appear abandoned and no longer in use.

The Westside Main Canal joins the All-American Canal near the western edge of the Imperial Valley and serves the western part of the IID water service area. Water is released from the Westside Main canal into the heading of each lateral canal. From the lateral canals, zanjeros measure and divert the required amount of water from the lateral canal through individual customer delivery gates.

The All American Canal is eligible for State inclusion on the NRHP and by extension, the Westside Main Canal as well. The portion of Westside Main Canal inspected during the current survey found the resource appeared to retain sufficient historic integrity aspects of location and materials.

This resource has not been surveyed in its entirety; however, Shannon Davis (ASM Affiliates, Inc.) did evaluate the segments within the Campo Verde Solar Project APE and found that the Westside Main Canal "is eligible for listing in the NRHP and CRHR under Criterion A/1 for its significance in the development of the Imperial Valley. The earthen canal was integral to the development of irrigated commercial agriculture since its construction in the early 1900s. Under the themes of agriculture and economic development, ASM's professional, independent recommendation is that this section of the Westside Main Canal is eligible for the NRHP and CRHR on the local and state levels."

Davis, Shannon, Jennifer Krintz, Sarah Stringer-Bowsher, and Sinéad Ní Ghabhláin. 2011. Impacts on Historic Resources on Private Lands, Campo Verde Solar Project, Imperial County, California.

Mitchell, Patricia T. 2011. Inventory Report of the Cultural Resources Recorded within the Campo Verde Solar Project, Imperial County, California.

State of California —The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PHOTOGRAPH RECORD

Primary # P-13-008334 UPDATE
HRI#
Trinomial CA-IMP-7834

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Resource Name or #: Westside Main Canal

Year 2011

Camera Format: Digital – Canon Powershot SD1300 IS Digital ELPH 12.1 megapixel

Negatives Kept at: kp environmental, LLC. 2387 Montgomery Ave, Cardiff By The Sea, CA 92007

Mo.	Day	Frame	Subject/Description	View
11	04	2820	West bank of Westside drain	
11	04	2821	Isolated white glassware no point	D
11	04	2822	Dr. Pepper bottle in bank of Westside Drain	D/E
11	04	2823	East end of concrete irrigation canal runs e-w	
11	04	2824	Mushrooms for Erica	
11	04	2825	West end west side drain	E
11	04	2826	West end of concrete irrigation canal fed by gate 1 on Forget me not	W
11	04	2827	Forget me not gate 2 feeds east-west concrete irrigation ditch to eat	W
11	04	2827	Irrigation ditch west end	W
11	04	2828/2829	Square box culvert on SW corner of Hyde and Hardy	
11	04	2830/2831	West main east bank	S/W
11	04	2832-2834	West side of west main concrete block reservoir feeds east-west concrete irrigation canal to west. It is no longer in use. Old tin shed roof and electric panel no longer in use	W-S
11	04	2835	Gate on west bank of west main	

State of California —The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
CONTINUATION SHEET

Primary # P-13-008334 UPDATE
HRI#
Trinomial CA-IMP-7834

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*Resource Name or # (Assigned by recorder) Westside Main Canal

*Recorded by: H. Thomson *Date: 11/03/2011 ☐ Continuation ☒ Update



IMG_2830 view to south.
Westmain Canal taken from east bank.



IMG_2832 view to west.
Reservoir, shed roof and panel.

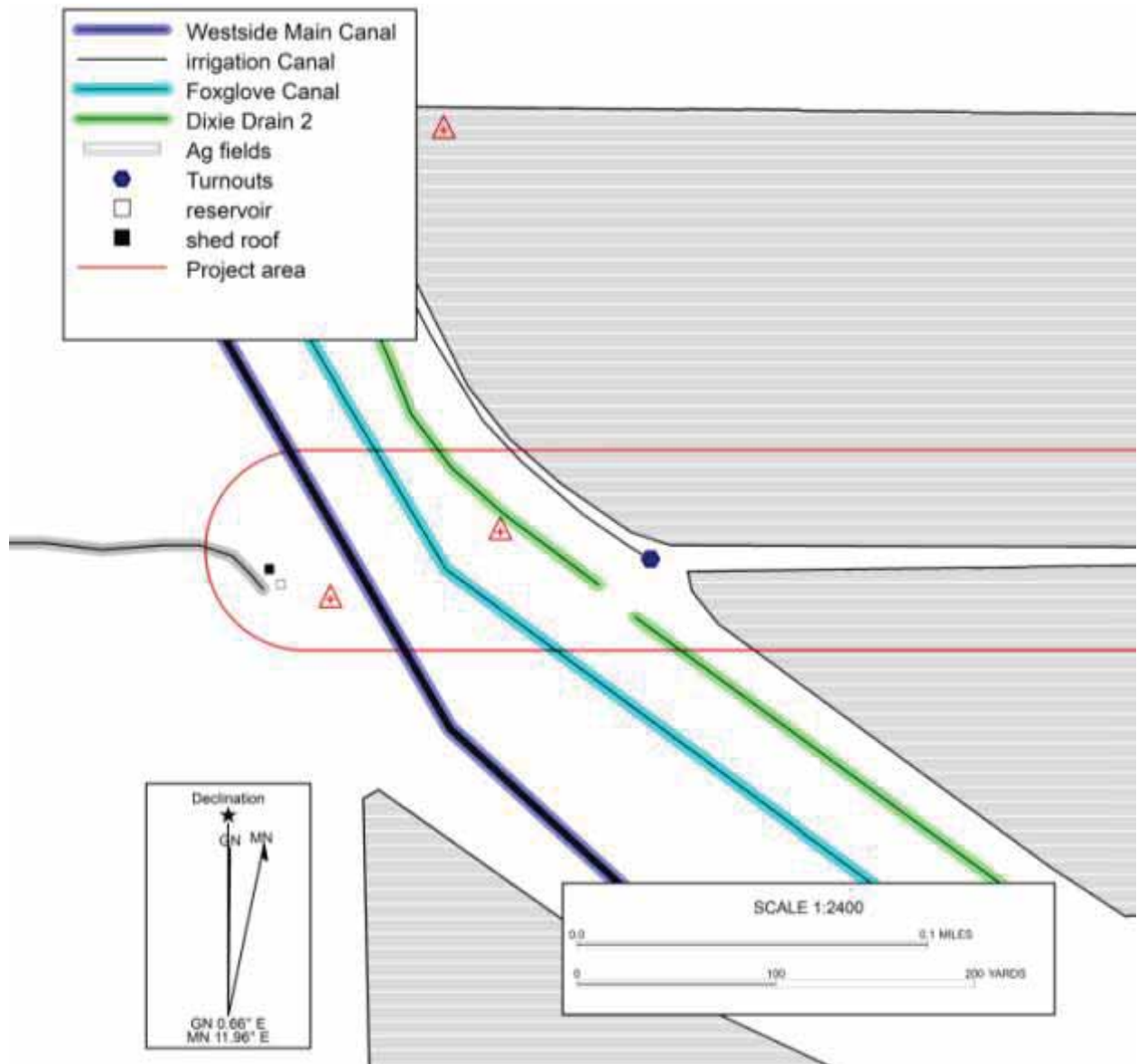
State of California —The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
SKETCH MAP

Primary # P-13-008334 UPDATE
HRI#
Trinomial CA-IMP-7834

Page 8 of 9 *Resource Name or # (Assigned by recorder) Westside Main Canal (portion)

*Drawn By: Heather Thomson

*Date: 11/07/2011



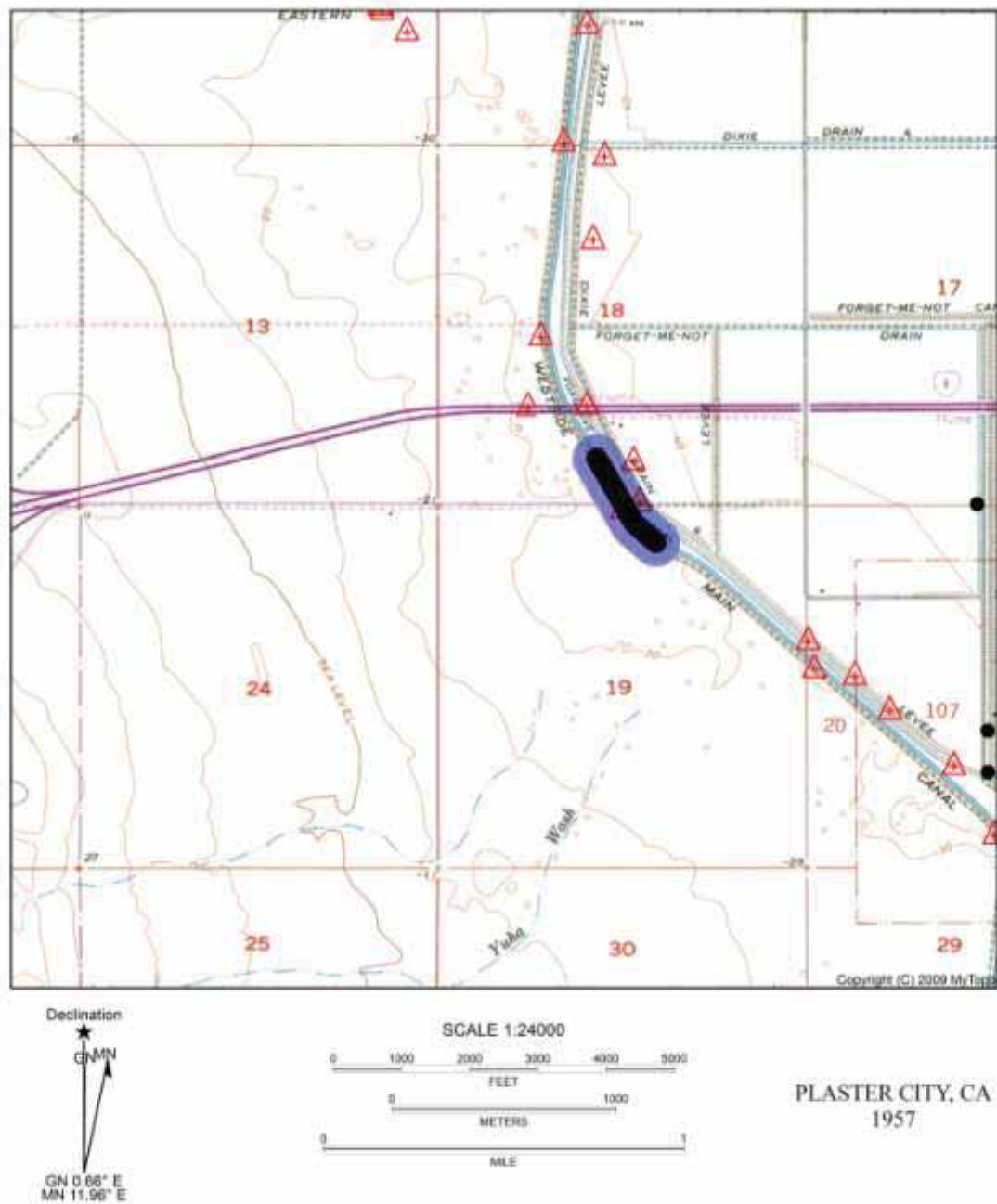
State of California —The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
LOCATION MAP

Primary # P-13-008334 UPDATE
HRI#
Trinomial CA-IMP-7834

Page 9 of 9 *Resource Name or # (Assigned by recorder) Westside Main Canal (portion)

*Drawn By: Heather Thomson

*Date: 11/07/2011



State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
CONTINUATION SHEET

Primary # P-13-008334 UPDATE (Westside Main Canal)
HRI #
Trinomial CA-IMP-7834 UPDATE (Westside Main Canal)
NRHP Status Code: 3D (Westside Main Canal) 6Z (Westside Drain)

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***Resource Name or # (Assigned by recorder)**

Westside Main Canal and Drain

Recorded by: Jennifer Krintz, Architectural Historian

Date: November 2011

☐ Continuation ☒ Update

P1. Other Identifier: ***P2. Location:** ☐ Not for Publication ☒ Unrestricted

***a. County:** Imperial

***b. USGS 7.5' Quad:** Plaster City, Seeley, Yuha Basin, Mount Signal **Date:** 1957; **T** 16S; **R** 11E; **of Sec.** Plaster City 7, 18, 19, 20, 107; Seeley 107; Yuha Basin 29; Mount Signal 29, 28, 33, 34, 35; S.B. **B.M**

c. Address: N/A **City:** Imperial **Zip:** N/A

d. UTM: Zone 11S; North end: 614961.43 **mE** / 3628012.34 **mN**; South end: 621656.46 **mE** / 3621746.51 **mN**

***P3a. Description:** Westside Main Canal was constructed in circa 1907 as one of four canals constructed for the earliest irrigation system in the Imperial Valley, in Imperial County, California It was later connected to the All-American Canal which extends westward from Yuma, Arizona north of the U.S.-Mexico border and terminates at the Westside Main Canal. The segment of the Westside Main Canal documented is approximately 5.5 mi. long, beginning just north of its intersection with Interstate extending southeast approximately .5 mi. past its intersection with Liebert Road and the Fern Canal in Imperial County, California. The canal is approximately 8 feet deep and approximately 40 feet wide. The integrity is good. The canal system also includes drains that remove the salinity from the agricultural lands the canal and its laterals irrigate.

***P3b. Resource Attributes:** HP20. Canal/Aqueduct



P5a. Photograph or Drawing:

P5b. Description of Photo: View of Westside Main Canal at Liebert Rd. looking south from northern side of the canal towards the Imperial Valley Substation; Picture taken November 2, 2011

***P6. Date Constructed/Age and Sources:**
Circa 1907, 1909 El Centro 15-minute US Army Corps Topo map,

***P7. Owner and Address:**
Imperial Irrigation District
333 E. Barioni Blvd.
Imperial, CA 92251

***P8. Recorded By:**
Jennifer Krintz, Architectural Historian
ASM Affiliates, Inc.

260 S. Los Robles Avenue Suite 106
Pasadena, CA 91107

***P9. Date Recorded:** November 2011

***P10. Survey Type:** Intensive

P11. Report Citation: Inventory, Evaluation, and Analysis of Impacts on Historic Resources On Private Lands within the Area of Potential Effect of the Campo Verde Solar Project, Imperial County, California, ASM Affiliates, November 2011.

***B10. Significance: Theme:** Agricultural Canal **Area:** Imperial County, CA

Period of Significance: 1907-1950 **Property Type:** Waterway **Applicable Criteria:** A/1

In 2007, J. Burkard, H. Thompson, and J. Covert of SWCA Environmental Consultants recommended the segment of the Westside Main Canal eligible for the National Register of Historic Places as a contributor to a larger National Historic District to include the All-American Canal. ASM concurs with this finding and recommends the Westside Main Canal eligible for the National Register of Historic Places and the California Register of Historic Resources under criteria A and 1, respectively for its association with the irrigation of the Imperial Valley.

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
CONTINUATION SHEET

Primary # P-13-008334 UPDATE (Westside Main Canal)
HRI #
Trinomial CA-IMP-7834 UPDATE (Westside Main Canal)
NRHP Status Code: 3D (Westside Main Canal) 6Z (Westside Drain)

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***Resource Name or # (Assigned by recorder)**

Westside Main Canal and Drain

Recorded by: Jennifer Krintz, Architectural Historian

Date: November 2011

☐ Continuation ☒ Update



P5a. Photograph or Drawing:

P5b. Description of Photo: View of part of the canal taken looking south from the northern part of the property area; Picture taken March 22, 2011

Page 3 of 3
Recorded by:

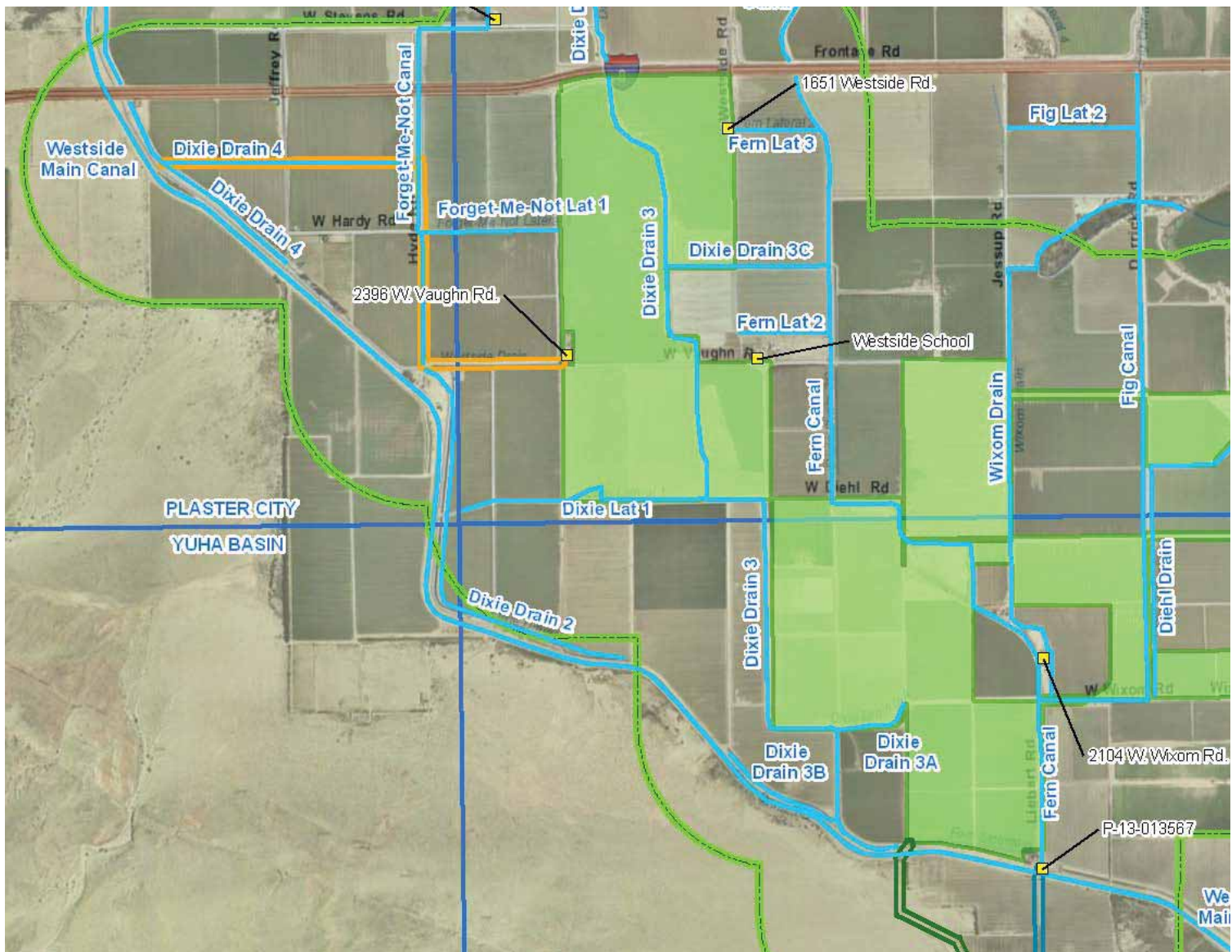
***Resource Name or # (Assigned by recorder)**
Jennifer Krintz, Architectural Historian

Westside Main Canal and Drain

Date: November 2011

☐ Continuation ☒ Update

Location Map of the Westside Main Canal and Drain



State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

CONTINUATION SHEET

Primary # P-13-008334 UPDATE

HRI #

Trinomial CA-IMP-7834 UPDATE

NRHP Status Code: 3D

Page 1 of 2

***Resource Name or # (Assigned by recorder)**

Westside Main Canal

Recorded by: Jennifer Krintz, Architectural Historian

Date: April 5, 2011

☐ Continuation ☒ Update

P1. Other Identifier: Westside Main Canal

***P2. Location:** ☐ Not for Publication ☒ Unrestricted

***a. County:** Imperial

***b. USGS 7.5' Quad:** Mount Signal **Date:** 1957; **T** 17S; **R** 12E/13E; **of Sec.** 3, 2, 11, 12, 13, 24, 19, 20, 17, 21; **S.B. B.M**

c. Address: N/A **City:** Imperial **Zip:** N/A

d. UTM: Zone 11S; **North end:** 620445.09 **mE** / 3622260.40 **mN**; **South end:** 625496.13 **mE** / 3613610.51 **mN**

***P3a. Description:** Westside Main Canal was constructed ca. 1907 as part of the earliest irrigation system in the Imperial Valley. It was later connected to the All-American Canal which runs east-west north of the international U.S.-Mexican borderline, as one of three main canals that receive water from the All-American Canal. This segment of the Westside Main Canal is approximately 5 miles long, with the northern end point southeast of Liebert Road and the southern end point where the canal intersects with the All-American Canal in Imperial County, California. The canal is approximately 8 feet deep and approximately 40 feet wide. The integrity is good.

***P3b. Resource Attributes:** HP20. Canal/Aqueduct



P5a. Photograph or Drawing:

P5b. Description of Photo: View of part of the canal taken looking south from the northern end of the property area; Picture taken March 22, 2011

***P6. Date Constructed/Age and Sources:**
Circa 1907

***P7. Owner and Address:**

Imperial Irrigation District
333 E. Barioni Blvd.
Imperial, CA 92251

***P8. Recorded By:**

Jennifer Krintz, Architectural Historian
ASM Affiliates, Inc.
260 S. Los Robles Avenue Suite 106
Pasadena, CA 91107

***P9. Date Recorded:** April 5, 2011

***P10. Survey Type:** Reconnaissance

P11. Report Citation: Inventory, Evaluation, and Analysis of Effect on Historic Built Environment Properties within the Area of Potential Effect of the Imperial Solar Energy Center South, Imperial County, California

***B10. Significance: Theme:** Agricultural Canal **Area:** Imperial County, CA

Period of Significance: Property Type: Waterway **Applicable Criteria:** A/1

In 2007, J. Burkard, H. Thompson, and J. Covert of SWCA Environmental Consultants recommended the segment of the Westside Main Canal eligible for the National Register of Historic Places as a contributor to a larger National Historic District to include the All-American Canal. ASM concurs with this finding and recommends the Westside Main Canal eligible for the National Register of Historic Places and the California Register of Historic Resources under criteria A and 1, respectively for its association with the irrigation of the Imperial Valley.

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
CONTINUATION SHEET

Primary # P-13-008334 UPDATE
HRI #
Trinomial CA-IMP-7834 UPDATE
NRHP Status Code: 3D

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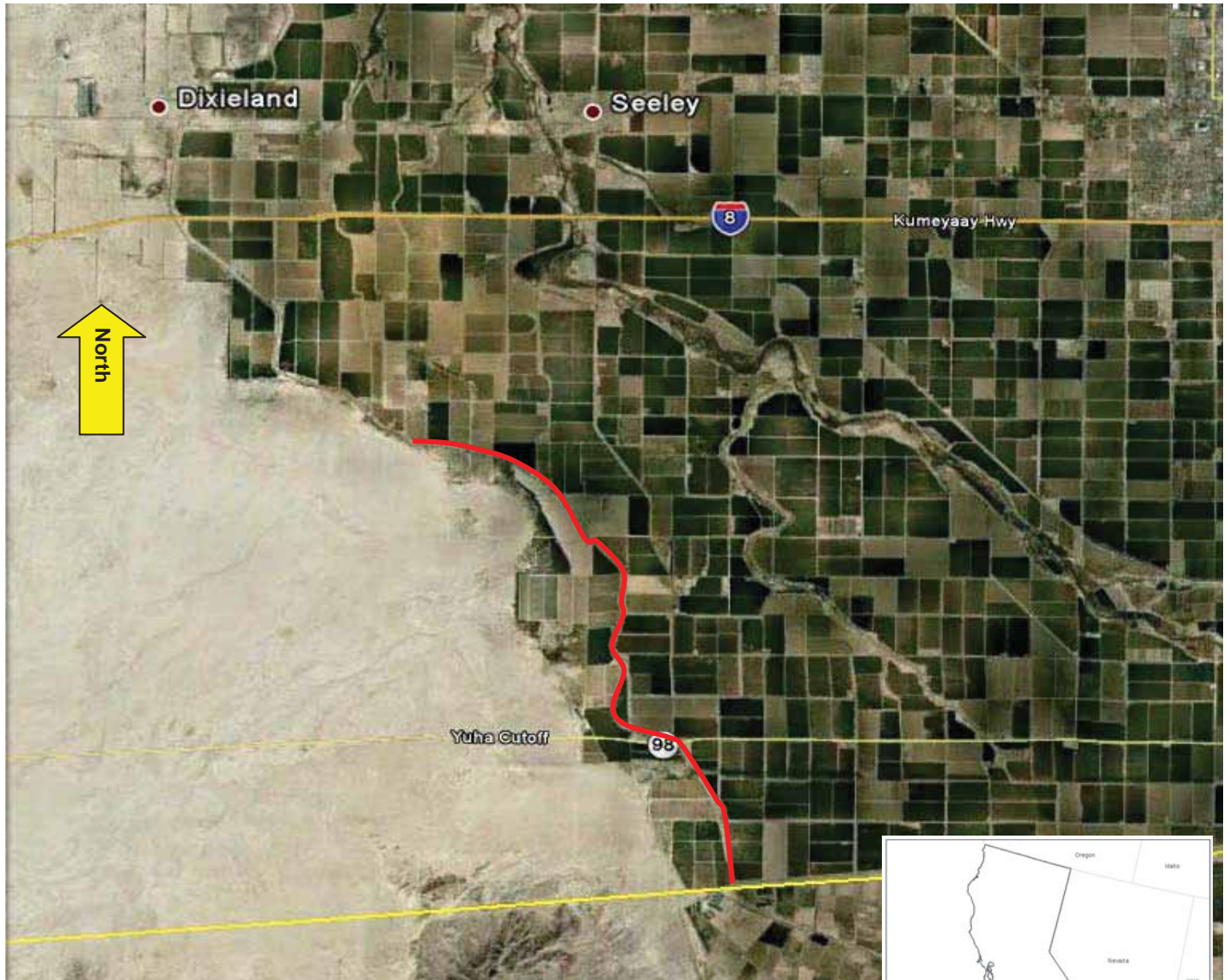
Recorded by: Jennifer Krintz, Architectural Historian

***Resource Name or # (Assigned by recorder)** Westside Main Canal

Date: April 5, 2011

☐ Continuation ☒ Update

Location Map of Westside Main Canal



Red line indicates subject property
Map courtesy of Google Earth



State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

CONTINUATION SHEET

Primary # P-13-008334 UPDATE

HRI #

Trinomial CA-IMP-7834 UPDATE

NRHP Status Code: 3D

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***Resource Name or # (Assigned by recorder)** Westside Main Canal

Recorded by: Jennifer Krintz, Architectural Historian

Date: March 28, 2011

☐ Continuation ☒ Update

P1. Other Identifier: Westside Main Canal

***P2. Location:** ☐ Not for Publication ☒ Unrestricted

***a. County:** Imperial

***b. USGS 7.5' Quad:** Plaster City, Seeley, Yuha Basin, Mount Signal **Date:** 1957; **T** 16S; **R** 11E; **of Sec.** Plaster City 7, 18, 19, 20, 107; Seeley 107; Yuha Basin 29; Mount Signal 29, 28, 33, 34, 35; S.B. **B.M**

c. Address: N/A **City:** Imperial **Zip:** N/A

d. UTM: Zone 11S; North end: 614961.43 **mE** / 3628012.34 **mN**; South end: 621656.46 **mE** / 3621746.51 **mN**

***P3a. Description:** Westside Main Canal was constructed in circa 1907 as part of a larger canal system in the Imperial Valley which started with the construction of the All-American Canal which runs east-west north of the international U.S.-Mexican borderline. The segment of the Westside Main Canal is approximately 5 miles long, with the northern end point just south of the community of Dixieland and the southern end point 1 mile southeast of Liebert Road in Imperial County, California. The canal is approximately 8 feet deep and approximately 40 feet wide. The integrity is good.

***P3b. Resource Attributes:** HP20. Canal/Aqueduct



P5a. Photograph or Drawing:

P5b. Description of Photo: View of part of the canal taken looking south from the middle of the property area; Picture taken March 22, 2011

***P6. Date Constructed/Age and Sources:**
Circa 1907

***P7. Owner and Address:**

Imperial Irrigation District
333 E. Barioni Blvd.
Imperial, CA 92251

***P8. Recorded By:**

Jennifer Krintz, Architectural Historian
ASM Affiliates, Inc.
260 S. Los Robles Avenue Suite 106
Pasadena, CA 91107

***P9. Date Recorded:** March 28, 2011

***P10. Survey Type:** Reconnaissance

P11. Report Citation: Assessment of Visual Impacts on the Historic Built Environment Properties within the APE of the Imperial Valley Solar Farm Project West Imperial County, California

***B10. Significance: Theme:** Agricultural Canal **Area:** Imperial County, CA

Period of Significance: Property Type: Waterway **Applicable Criteria:** A/1

In 2007, J. Burkard, H. Thompson, and J. Covert of SWCA Environmental Consultants recommended the segment of the Westside Main Canal eligible for the National Register of Historic Places as a contributor to a larger National Historic District to include the All-American Canal. ASM concurs with this finding and recommends the Westside Main Canal eligible for the National Register of Historic Places and the California Register of Historic Resources under criteria A and 1, respectively for its association with the irrigation of the Imperial Valley.

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
CONTINUATION SHEET

Primary # P-13-008334 UPDATE
HRI #
Trinomial CA-IMP-7834 UPDATE
NRHP Status Code: 3D

Page 2 of 2

Recorded by: Jennifer Krintz, Architectural Historian

***Resource Name or # (Assigned by recorder)**

Westside Main Canal

Date: March 28, 2011

☐ Continuation ☒ Update

Location Map of Westside Main Canal



Red line indicates subject property
Map courtesy of Google Earth



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DEPARTMENT OF PARKS AND RECREATION										
CONTINUATION SHEET		T		A	P					

Page: of of

*Resource Name or #: A

*Recorded by: *Date: U

P T D D P P P E A E A P

Cultural Resources Investigations Class III Report for the IID Dixieland 230 kV Transmission Line and Substation Expansion Project, Imperial County, California. P AE

P

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary # _____
HRI # _____
Trinomial CA-IMP-7834H UPDATE
NRHP Status Code _____
Other Listings _____
Review Code _____ Reviewer _____ Date _____

Page 1 of 14 *Resource Name or #: (Assigned by recorder) Portion of Westside Canal (CA-IMP-7834H)

P1. Other Identifier: N/A

*P2. Location: ☐ Not for Publication ☒ Unrestricted

*a. County Imperial and (P2c, P2e, and P2b or P2d. Attach a Location Map as necessary.)
*b. USGS 7.5' Plaster City Date 1976 T 16S R 12E ; 1/4 1/4 of S7 ; SB B.M.
c. Address N/A City N/A Zip N/A
d. UTM: (Give more than one for large and/or linear resources) Zone 11 , 615024 mE/ 3628650 mN
e. Other Locational Data: (e.g., parcel I, directions to resource, elevation, etc., as appropriate)

The portion of the Westside Main Canal (CA-IMP-7834H) surveyed is approximately one mile long and runs north-south within the Dixieland area of Imperial County. The TRS and UTM provided above are the approximate centerpoint of the portion of the canal surveyed.

*P3a. **Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)
The portion of the Westside Canal in the historic architecture APE is a small portion of a much larger 20-mile historic-period linear property that ultimately travels from the International Border area to the Brawley-Westmoreland area. Accordingly, formal recordation of the entire Westside Canal was considered unnecessary and outside of the project scope, since the project would not directly affect (e.g., alter, remove, change use or physical features, cause deterioration) the entire 20-mile historic-period property. Rather, the portion of the historic-period property within the historic architecture APE was studied within the context of the whole property only.

This portion of the Westside Main Canal is an earthen-bank irrigation canal that is approximately 25 feet wide and 10 feet deep (portions of the canal outside of the APE feature concrete-lining). It primarily has a U-shaped form. SEE CONTINUATION SHEET 523L (PAGE 3).

*P3b. **Resource Attributes:** (List attributes and codes) HP20. Canal/Aqueduct

*P4. **Resources Present:** ☐ Building ☒ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other (Isolates, etc.)

p5a. Photograph or Drawing (Photograph required for buildings, structures, and objects)



Description of Photo: (view, date, accession #)

P5b. View to northeast, Evan Hewes
Highway Crossing, March 2009

*P6. **Date Constructed/Age and Source:**

☒ Historic ☐ Prehistoric ☐ Both

Approximately 1908

1908 El Centro map

*P7. **Owner and Address:**

Bureau of Reclamation

27708 Jefferson Ave., Ste. 202

Temecula, CA 92590

*P8. **Recorded by:** (name, affiliation, and address)

URS Corporation

1615 Murray Canyon Rd., Suite 1000

San Diego, CA 92108

Date

*P9. **Recorded:** 12/2009

*P10. **Survey Type:** (Describe)

Pedestrian Survey

*P11. **Report Citation:** (Cite survey report and other sources, or enter "none")

Mutaw, Robert J. (Ph.D.), Elizabeth B. Roberts, Gordon C. Tucker Jr., Ph.D., Brian Shaw, Terrie Bagwell, Colin O'Hanlon, Rachael Nixon, Gary Fink, Jeremy Hollins, Mark Neal. 2010 Draft Final Class III Confidential Cultural Resources Technical Report for the Imperial Valley Solar (formerly Solar 2), Imperial Valley County. URS Corporation. Technical report prepared for Tessera Solar (Applicant). Submitted to the Bureau of Land Management – El Centro Field Office, El Centro, CA. Copies available from the Bureau of Land Management – El Centro Field Office, El Centro, CA.

*Attachments: ☐ NONE ☐ Location Map ☒ Continuation Sheet ☒ Building, Structure, and Object Record ☐ Archaeological Record
☐ District Record ☐ Linear Feature Record ☐ Milling Station Record ☐ Rock Art Record ☐ Artifact Record ☐ Photograph Record
☐ Other (List): _____

BUILDING, STRUCTURE, AND OBJECT RECORD

*NRHP Status Code 6Z

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*Resource Name or #: (Assigned by recorder) Portion of Westside Canal (CA-IMP-7834H)

B1. Historic Name: Encina Canal

B2. Common Name: Westside Main Canal

B3. Original Use: Irrigation Ditch

B4. Present Use: Irrigation Ditch

*B5. Architectural Style: N/A

*B6. Construction History: (Construction date, alterations, and date of alterations)

Actual construction date of this portion of the Westside Canal is unknown at present. However, by 1908, this portion of the Westside Main Canal was constructed. It was constructed as an earthen canal, banked by earthen levees, approximately 25 feet wide and 10 feet deep. Throughout the early twentieth century, the general alignment of this portion of the Westside Main Canal was not significantly altered. Based on the 1915 El Centro 15-minute USGS quadrangle maps, Albert G. Thurston's Imperial Valley Tract Map (1914), Blackburn's Map of Imperial County, California (1919, 1929, 1936, 1943, 1955 editions), the 1949 and 1976 USDA Aerial Collection, the 1957 Painted Gorge 7.5-Minute USGS quadrangle map, and the 1964 Western Portion of Blackburn's Map of Imperial County, the general course of the canal has remained consistent for most of its history.

*B7. Moved? ☒ No ☐ Yes ☐ Unknown Date: N/A Original Location: N/A

*B6. Related Features:

There is one related feature, the West side Main (WSM) Pump 6. The WSM Pump 6 is located in Township 17 South, Range 12 East, Section 3 and runs north-south from the south side of Mandrapa Road for approximately 0.34 miles, then east-west for approximately 0.25 miles. The WSM Pump 6 appears to be part of the larger West Side Main Canal and Fern Canal systems, which traverse the Dixieland area and converge in El Centro. SEE CONTINUATION SHEET 523L (PAGE 6)

B9. Architect: N/A

b. Builder: Unknown

*B10. Significance: Theme N/A Area Imperial County

Period of Significance N/A Property Type Irrigation Ditch Applicable Criteria N/A

(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.)

In 1849, Dr. Oliver M Wozencraft, on his way to the gold fields of San Bernardino from New Orleans, traveled through the Imperial Valley and noted the region's soil fertility and potential for arability. He was likely the first person to recognize the Imperial Valley's potential for agriculture. Wozencraft believed he could construct a gravity canal from the Colorado River to the Imperial Valley, because the river was at a higher elevation than the valley (Garnholz 1991). Wozencraft's opinion of the fertile valley was reaffirmed in 1853 when Jefferson Davis, U.S. Secretary of the War Department, ordered a scientific expedition along the Colorado River for the placement of fortifications. In this expedition, led by Lieutenant R. S. Williamson and Professor William Phipps Blake, the particular fertility of the alluvial soil at the southern end of the Salton Sink was noted. Blake prophetically noted, "it is indeed a serious question, whether a canal would not cause the overflow once more of a vast surface, and refill, to a certain extent, the dry valley of the ancient lake" (Garnholz 1991). Blake's expedition scientifically described how the Colorado River had meandered through the valley, delivered enough silt to block the mouth of the Gulf of California, and recognized that the banks of the current Colorado River course were much higher than that of Imperial Valley (Smith 1979). During the nineteenth century, the Colorado River historically flooded the valley several times, specifically in 1840, 1842, 1852, 1859, and 1867 (Garnholz 1991). SEE CONTINUATION SHEET 523L (PAGE 3 AND 4).

B11. Additional Resource Attributes: (List attributes and codes) N/A

*B12. References:

SEE CONTINUATION SHEET 523L (PAGE 6)

B13. Remarks:
None

(Sketch Map with north arrow required)

SEE CONTINUATION SHEET 523L (PAGE 5)

*B14. Evaluator: Jeremy Hollins

*Date of Evaluation: 12/2009

(This space reserved for official comments)

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*Resource Name or #: (Assigned by recorder) Portion of Westside Canal (CA-IMP-7834H)

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☐ Continuation ☒ Update

P3a. Description (Continued)

This portion runs perpendicular to Evan Hewes Highway (SH 80) and a San Diego and Arizona Railroad crossing (known as Union Pacific crossing 921-452D).

The banks feature earthen levees of natural vegetation, which have been reshaped and widened by modern dredging and grading activities. This portion is gravity-fed (since no control infrastructure was identified in the vicinity). Of note, immediately south of the Evan Hewes Highway crossing is a non-historic period gas pipeline (approximately one foot in diameter) which bisects the canal.

This pipeline disrupts the feeling, setting, visual narrative, and historic viewshed of this portion of the canal. Additionally, along the west bank are two non-historic period pumps, which are most likely used to divert water to/from nearby agricultural fields. The crossing at Evan Hewes Highway is an example of a non-historic period reinforced concrete girder bridge, characterized by a simple span, five abutments/bents (supported by five cylindrical columns), a metal guardrail, and square piers at the bridge portals. The crossing appears to be 40 years old. The crossing is in poor condition due to environmental effects (sun and heat exposure), exposed rebar, and a minimally-maintained travel surface. The crossing shows evidence of chipping, cracking, and spalling. The San Diego and Arizona Railroad crossing is also a non-historic period reinforced concrete girder bridge, and appears to be constructed within the past 30 years. The grade separation features a simple span, four abutments/bents (supported by three angular cylindrical columns), and cable-wire guardrails. The grade separation shows evidence of chipping and cracking, and shows extensive damage from insect infestation and environmental effects (sun and heat exposure). Overall, the portion of the Westside Main Canal is in good condition, but has been affected by dredging and grading activities and non-historic period construction and features, including the pipeline and the crossings.

B10. Significance (Continued)

With the information gathered from the scientific expedition, Wozencraft pressed California into granting him approximately 1,600 square miles or roughly ten million square acres (which included present-day Imperial County and portions of present-day Riverside County). However, the federal government retained title to the land in this region of California and Wozencraft was unable to convince Congress, even with the results of the scientific analysis of the valley, to support his efforts. Wozencraft then approached George Chaffey to finance the project. Chaffey, who would successfully spearhead irrigation projects in San Bernardino County and Australia, was also unconvinced and noted that the "Imperial Valley was to [sic] hot for white men to prosper" (Garnholz 1991). Chaffey would later change his mind and near the end of the nineteenth century led the effort to irrigate the valley. Still undeterred, Wozencraft hired the Los Angeles County surveyor, Ebenezer Hadley, in 1860 to draw up a plan to irrigate the valley by diverting the Colorado River through the Alamo River (Garnholz 1991). Wozencraft eventually left California for Washington, D.C. to lobby Congress. He died several years later without ever convincing Congress and never seeing his dream fulfilled. While Wozencraft failed to create an irrigation network, his efforts during the mid-nineteenth century led the way for future development efforts.

In 1896, a group of investors formed the California Development Company (CDC) and followed Wozencraft's earlier attempts to irrigate the Imperial Valley. The group was led by Engineer Charles R. Rockwood and George Chaffey and they wanted to establish a canal, referred to as the "main channel," constructed from the Colorado River through the Imperial Valley using an ancient overflow channel of the Colorado known as the Alamo River (Sperry 1975). Chaffey, to avoid conflict with the Mexican government over land development since the canal was to be developed almost entirely on the south side of the border, established a subsidiary to the CDC known as the Sociedad de Irrigación y Terrenos de la Baja California (Smith 1979). By 1901, portions of the Imperial Valley were irrigated and attracted many new settlers and farmers from the Midwest.

One of the main problems throughout the entire canal venture project was constant silting, which needed consistent dredging of muck. The solution was to build a wooden, although supposedly temporary, structure referred to as the "Chaffey Gate" (Sperry 1975; Tout 1932). The year the gate was constructed (1904) was one of the wetter years on record and the gate was constructed too high on the riverbank. Arguments at the time seem to suggest that Chaffey had the gate constructed correctly, but that because the water level was high at the time, the engineer in charge of the project placed several removable flashboards in the bottom of the gate, which silted over rapidly (Sperry 1975). The next few years were very dry causing the canals' water level to drop precipitating the construction of more diversion and gates around the Chaffey gate. The year 1905, however, was extremely wet causing several flooding episodes with the fifth one completely destroying all remaining gates and dams along the canal network system. The Colorado River, originally flowing toward the Gulf of Californian, had changed its course and started flooding the Alamo River to the Salton Sink in Imperial Valley.

By 1905, over 80 miles of irrigation canals had been built, with more than 100,000 acres under cultivation. However, the design and construction of several poorly planned canals and ditches made water delivery service unreliable and inefficient. Large quantities of silt would block the canals' intakes and reduce the amount of water reaching Imperial Valley crops. A widespread flood in the winter of 1905-1906 caused extensive damage to railroad property, farmlands, and the newly constructed canal system. The CDC did not believe it was practical to reconstruct several of the canals, and as an alternative decided to enlarge the Westside Main Canal, which at the time was a wooden flume conveyance system located south in Mexico and known as the Encina Canal (Hupp 1999). The extension of the Westside Canal into the United States approximately 1906 was intended to alleviate irrigation problems, and spark development of the county west of the New River. By 1908, the Westside Main Canal extended into the historic architecture APE. It was constructed as an earthen canal, banked by earthen levees, approximately 25 feet wide and 10 feet deep. Throughout the early twentieth century, the general alignment of the Westside Main Canal within the historic architecture APE was not significantly altered.

The Southern Pacific Railroad Company threatened a lawsuit against the CDC for flooding their railroad line along the Salton Sink in 1907. A year later, CDC reorganized and the board was taken over by Southern Pacific men, including Epes Randolph, who was the assistant to the president of the Southern Pacific (Sperry 1975). The task of returning the Colorado to its natural course heading toward the Gulf of California was such a daunting and expensive quest that the Southern Pacific eventually ended its association with the CDC. The Southern Pacific did, however, request over \$3 million from the U.S. government for expenses incurred in turning the Colorado back toward the Gulf; the government awarded them \$1 million 22 years later (Sperry 1975; Tout 1932). Only the construction of the Hoover Dam (then known as the Boulder Dam) in 1935 allowed for more effective control of the Colorado River for irrigation purposes.

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*Recorded by: URS Corporation

* Date: 12/2009

☐ Continuation ☒ Update

B10. Significance (Continued)

The Imperial Irrigation District (IID) was organized in 1911 to acquire the land rights of the California Development Company (CDC), and its Mexican subsidiary Sociedad de Irrigación y Terrenos de la Baja California, from the Southern Pacific. By the mid-1920s, IID was delivering water to over 500,000 acres of arable land (Imperial Irrigation District 1998). The Boulder Canyon Act, passed in 1928, authorized the Bureau of Reclamation to construct the Boulder Dam, completed in 1935, along the Colorado River. The Imperial Valley and IID benefited greatly as the Act and the dam provided immediate hydroelectric power to the valley.

The Act also provided for the construction of the All-American Canal. In 1932, the Secretary of the Interior and IID signed an agreement to allow IID the utilization of hydroelectric power from the canal system for repaying the costs of the canal construction. The All-American Canal was begun in 1934 and the first diesel-generating plant was constructed near Brawley in 1936 (Imperial Irrigation District 1998). Subsequent hydroelectric plants were constructed in 1941. The All-American Canal was completed in 1941, and the Westside Main Canal was incorporated into the All-American Canal System upon its completion. The portions of the Westside Main Canal within Mexico were removed from the IID system.

By the 1950s, regular dredging and widening of the canals were needed to alleviate problems from silt and other build-ups. This altered the structures' profiles, depth, and width, and improvements were also made to the canals' ceramic drain tiles and ditches. For example, the Fern Canal features several culverts and other structural improvements from the 1950s through the 1980s. By the 1960s, IID had implemented a plan to start lining its earthen canals with concrete (Hupp 1999). Through the 1970s, due to IIDs ongoing preventive and reactive maintenance, many original construction materials and features were replaced. These alterations have impacted the canals' historic setting, but were necessary for the agriculture industry's expansion and success (Henderson 1968).

Based on Caltrans' earlier 1999 assessment, the Westside Main Canal, as a whole, reflects the development associated with the construction and operation of the All-American Canal between 1941 and 1950, which is primarily when the system was widened, shortened (portions in Mexico were removed from service), and modernized. The canal appears to be significant under Criterion A and C of the NRHP and Criterion 1 and 3 of the CRHR for its association with the development of irrigated commercial agriculture in the Imperial County west of the New River and as a good example of an early large-scale irrigation canal system. It does not appear to be associated with the lives of significant people or appears to be likely to yield important information in prehistory or history. Therefore, it does not appear to be significant under Criterion B and D of the NRHP and Criterion 2 and 4 of the CRHR. The canal was associated only for a short period with the CDC, from 1905 to 1911, nearly ten years after the company was established. Additionally, the canal was already in operation upon the forming of the IID, and does not reflect or convey the contributions of the IID to Imperial County.

Overall though, research conducted as part of Caltrans' 1999 assessment of the system found that the canal as a whole (while significant) does not retain a sufficient amount of its historic integrity to convey its significance due to regular dredging grading, widening, and reconstruction that has occurred since the 1950s, though, an intensive survey of the entire canal has not occurred. The portion of the Westside Main Canal within the historic architecture APE also does not appear to possess sufficient integrity of workmanship, design, setting, feeling, and association (though it still retains sufficient historic integrity aspects of location and materials). Accordingly, it does not appear to be a contributing element or significant related feature/component to the larger linear Westside Main Canal system or individually eligible for listing to the NRHP, CRHR, or considered a historical resource for purposes of CEQA. While still earthen, extensive dredging and grading since the 1960s has changed the basic configuration of the canal, which has impacted its design, setting, and feeling. The canal currently has a U-shaped profile, whereas historically it was trapezoidal. The addition of a non-historic period pipeline, and highway and railroad crossings over the canal in the historic architecture APE disrupt the property's integrity aspects of setting and feeling, since these elements are outside of the property's period of significance, 1941 to 1950. Accordingly, due to these alterations, the workmanship and association of the historic-period property in the APE has been lost, since there is little physical evidence of the crafts of a particular culture or people from the period of significance, and the property is not sufficiently intact to convey the direct link between significant events and the canal.

In summary, the portion of the Westside Main Canal within the historic architecture APE does not appear to be individually eligible for listing to the NRHP, CRHR, or considered a historical resource for purposes of CEQA, and does not appear to be a contributing element or significant related feature/component to the larger linear Westside Main Canal system (if it is determined that such a resource exists).

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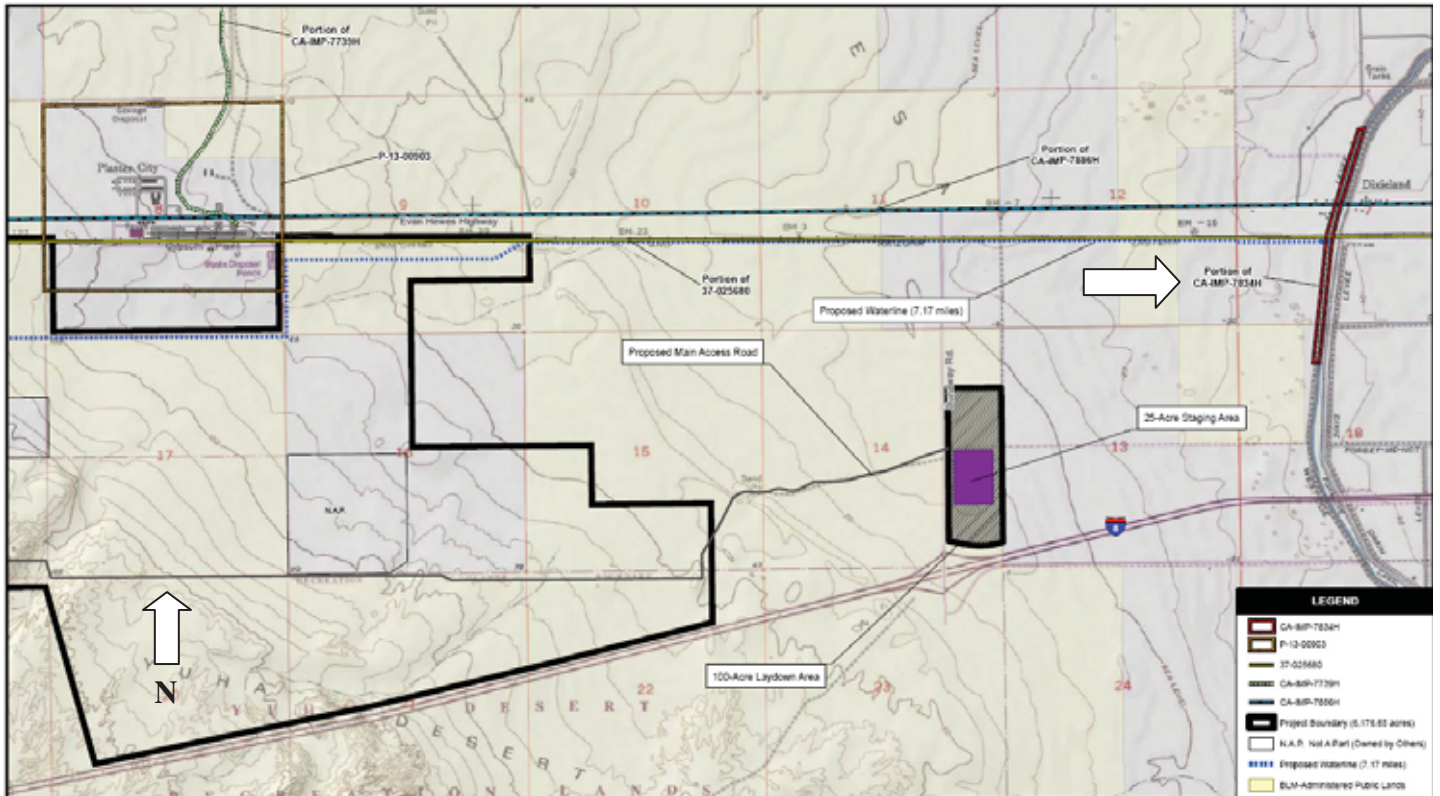
*Recorded by: URS Corporation

* Date: 12/2009

☐ Continuation ☒ Update

Sketch Map:

Not to scale



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*Recorded by: URS Corporation * Date: 12/2009
☐ Continuation ☒ Update

B12. References

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Hupp, Jill. 1999. CA-IMP-7834 Westside Main Canal. Sacramento: Caltrans Environmental Program Imperial Irrigation District, 2006. "General History." Located at <http://www.iid.com/Sub.php?pid=14>. Website last visited on 27 April 2007.

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Smith, Karen J. 1979. The Reclamation of the Imperial Valley, 1849-1916. Unpublished Masters Thesis, San Diego State University.

Sperry, Robert L. 1975. When the Imperial Valley Fought for its Life. The Journal of San Diego History, 21(1). Located at: <http://www.sandiegohistory.org/journal/75winter/imperial.htm>. Website last visited on 27 April 2007.

Thurston, Albert G. 1914. Imperial Valley Tract Map.

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USDA. 1949 & 1976. Aerial Survey of Imperial County. On file at UCSD Maps and Government Publications.

USGS. 1915. El Centro 15-minute USGS Quadrangle Map.

USGS. 1943, 1957. Painted Gorge Plaster City 7.5-minute USGS Quadrangle Maps.

B6. Related Features (Continued)

However, formal recordation of the entire Westside Main Canal and Fern Canal systems was considered unnecessary and outside of the project scope, since the project would not directly affect (e.g., alter, remove, change use or physical features, cause deterioration) the historic-period properties.

The north-south portion of the WSM Pump 6 is a concrete-lined channel that appears to be approximately five-feet wide and three-feet deep with concrete levees and earthen banks. This portion of the WSM Pump 6 is covered with dense, overgrown vegetation consisting of wild grasses and weeds. Due to the density of the vegetation, the shape of the channel is difficult to discern, but appears to be trapezoidal. This north-south channel shows evidence of heavy chipping, cracking, and spalling due to use and environmental effects. The north-south portion of the WSM Pump 6 terminates approximately 0.34 miles south of Mandrapa Road in a concrete ring culvert, which directs the flows westward through an inverted siphon into the east-west portion of the WSM Pump 6 (per conversation with Stephen Castillo from the Imperial Irrigation District on March 16, 2010). A metal drum pumping station is located at this terminus. Similar to the north-south portion, the east-west portion of the WSM Pump 6 is a trapezoidal concrete-lined channel that appears to be approximately five-feet wide and three-feet deep with concrete levees and earthen banks.

A metal check with slide gate is located at the origin of the east-west channel. Immediately west of the metal check, the channel bends slightly to the south then heads west again. This portion of the WSM Pump 6 is also covered with vegetation, although less overgrown than the north-south portion, and is in better condition. To the south of the origin of the east-west portion of the WSM Pump 6, there is a concrete-line structure appears to be a spillway or an intake structure, which has been filled with silt and dense vegetation, and is no longer in use.

The exact construction date of the WSM Pump 6 is unknown. However, the WSM Pump 6 appears on the 1953 aerial maps of the area but not on the 1949 aerial maps. Based on this information, it can be assumed that The WSM Pump 6 was constructed sometime between 1949 and 1953. The Imperial Irrigation District (IID) has records of a request to line the channels with concrete in 1956; thus, it can be assumed that prior to 1956, the WSM Pump 6 was an earthen channel.

In summary, the WSM Pump 6 does not appear to be individually eligible for listing to the NRHP, CRHR, or considered a historical resource for purposes of CEQA, and does not appear to be a contributing element or significant related feature/component to the larger linear All-American or Westside Main Canal system (if it is determined that such a resource exists). Further, the WSM Pump 6 is not located within the project APE and would not be affected.

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Additional Photos/Images:



Westside Main Canal, SD-AZ RR Crossing, View to the North



Westside Main Canal, View to the South

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*Resource Name or #: (Assigned by recorder) Portion of Westside Canal (CA-IMP-7834H)

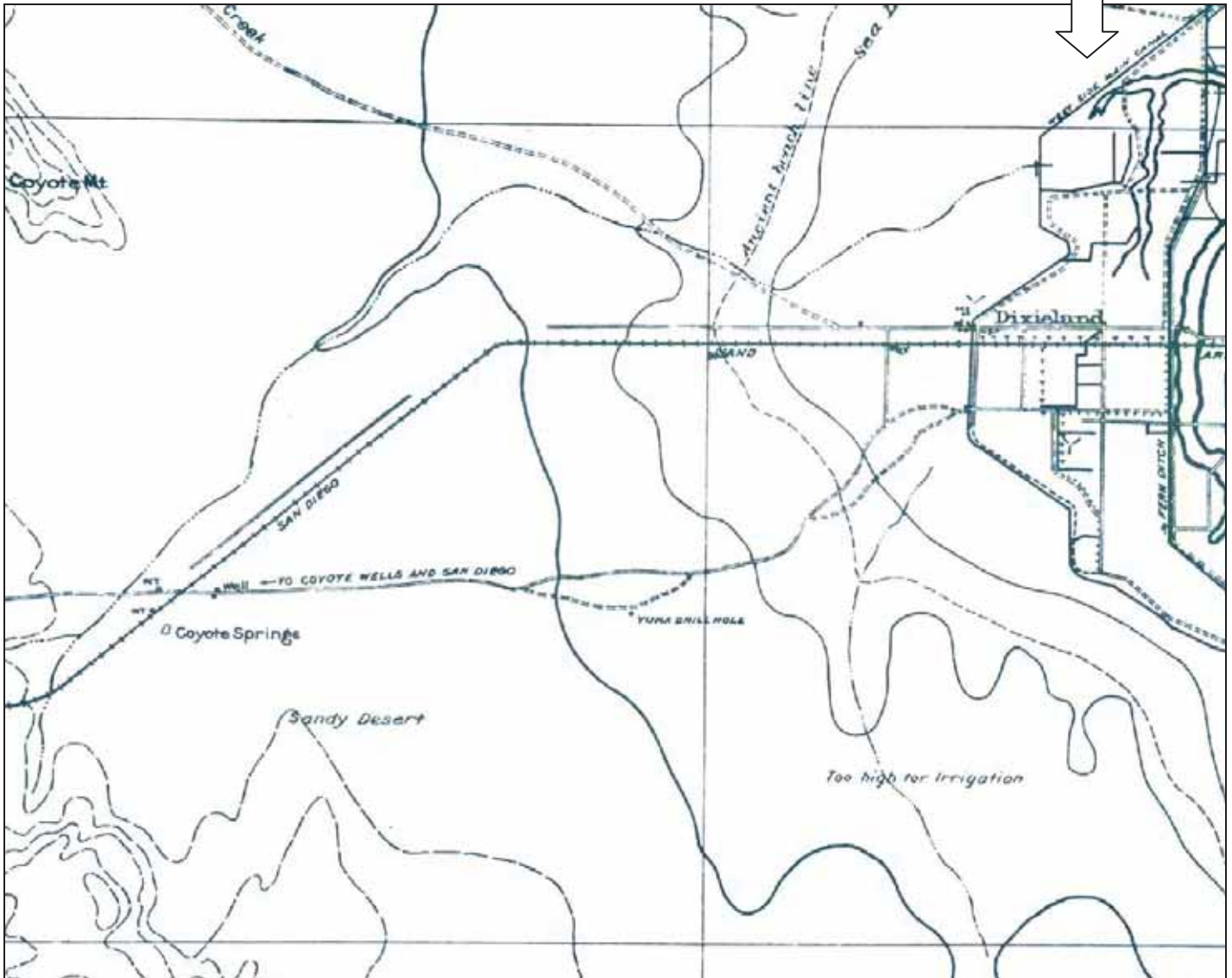
*Recorded by: URS Corporation

* **Date:** 12/2009

☐ Continuation ☒ Update

Additional Photos/Images:

El Centro 1908
Original Scale 1:125,000
Not to Scale



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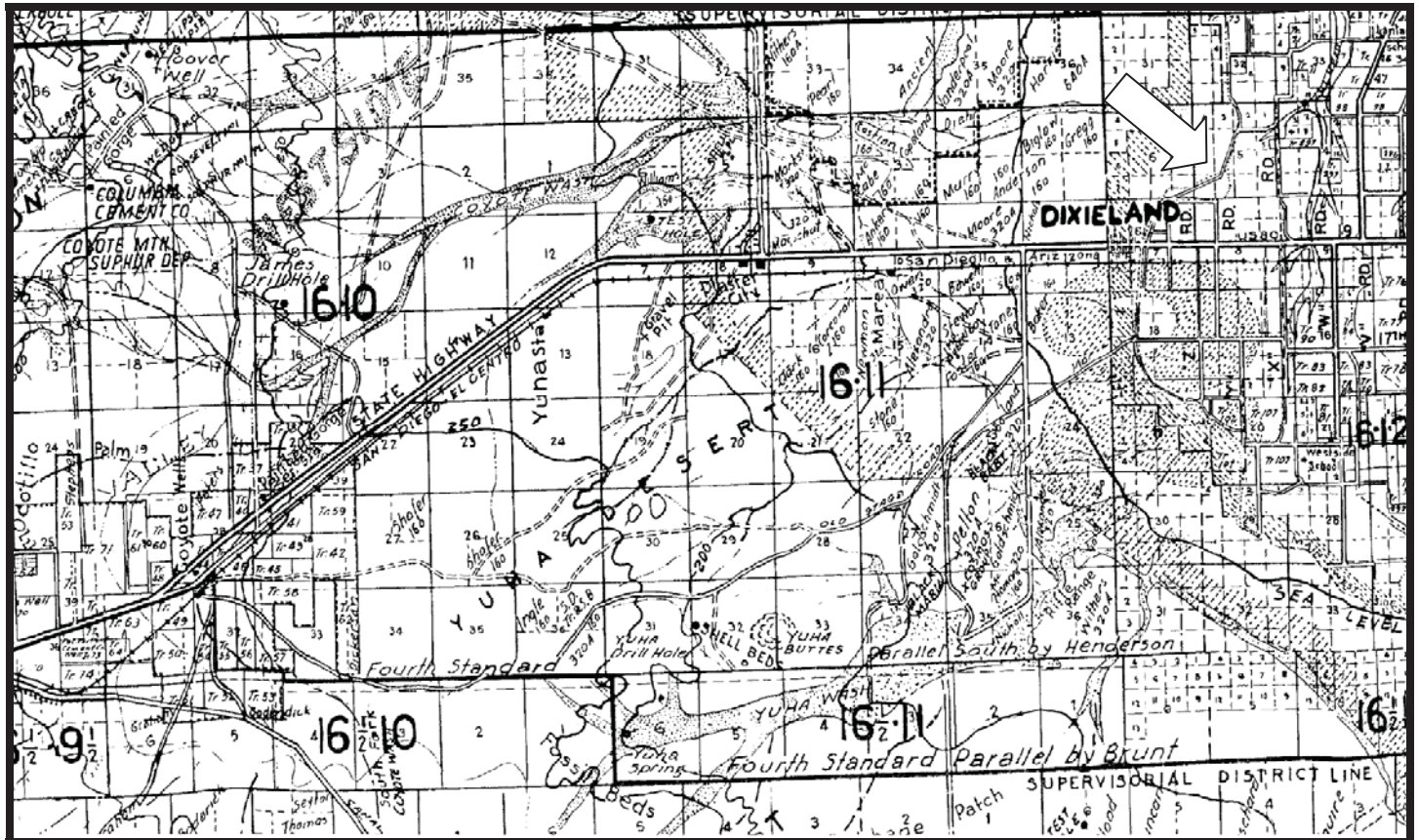
*Recorded by: URS Corporation

*Date: 12/2009

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Additional Photos/Images:

Western Portion of Blackburn's Map of Imperial County, 1936
Not to Scale



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*Recorded by: URS Corporation

*Date: 12/2009

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Additional Photos/Images:

Plaster City map, 1943
Original Scale 1:62,500
Not to scale.



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Additional Photos/Images:



View from just north of the WSM Pump 6, looking north towards Mandrapa Road



Looking south at the terminus and the north-south portion of WSM Pump 6

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*Resource Name or #: (Assigned by recorder) Portion of Westside Canal (CA-IMP-7834H)

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* Date: 12/2009

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Additional Photos/Images:



At the east-west portion of WSM Pump 6, looking west



At the origin of the east-west portion of WSM Pump 6, looking west at the metal check

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*Recorded by: URS Corporation

* Date: 12/2009

☐ Continuation ☒ Update

Additional Photos/Images:



At the origin of the east-west portion looking south at concrete-lined structure

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HRI # _____
Trinomial CA-IMP-7834H UPDATE

Page 14 of 14

*Resource Name or #: (Assigned by recorder) Portion of Westside Canal (CA-IMP-7834H)

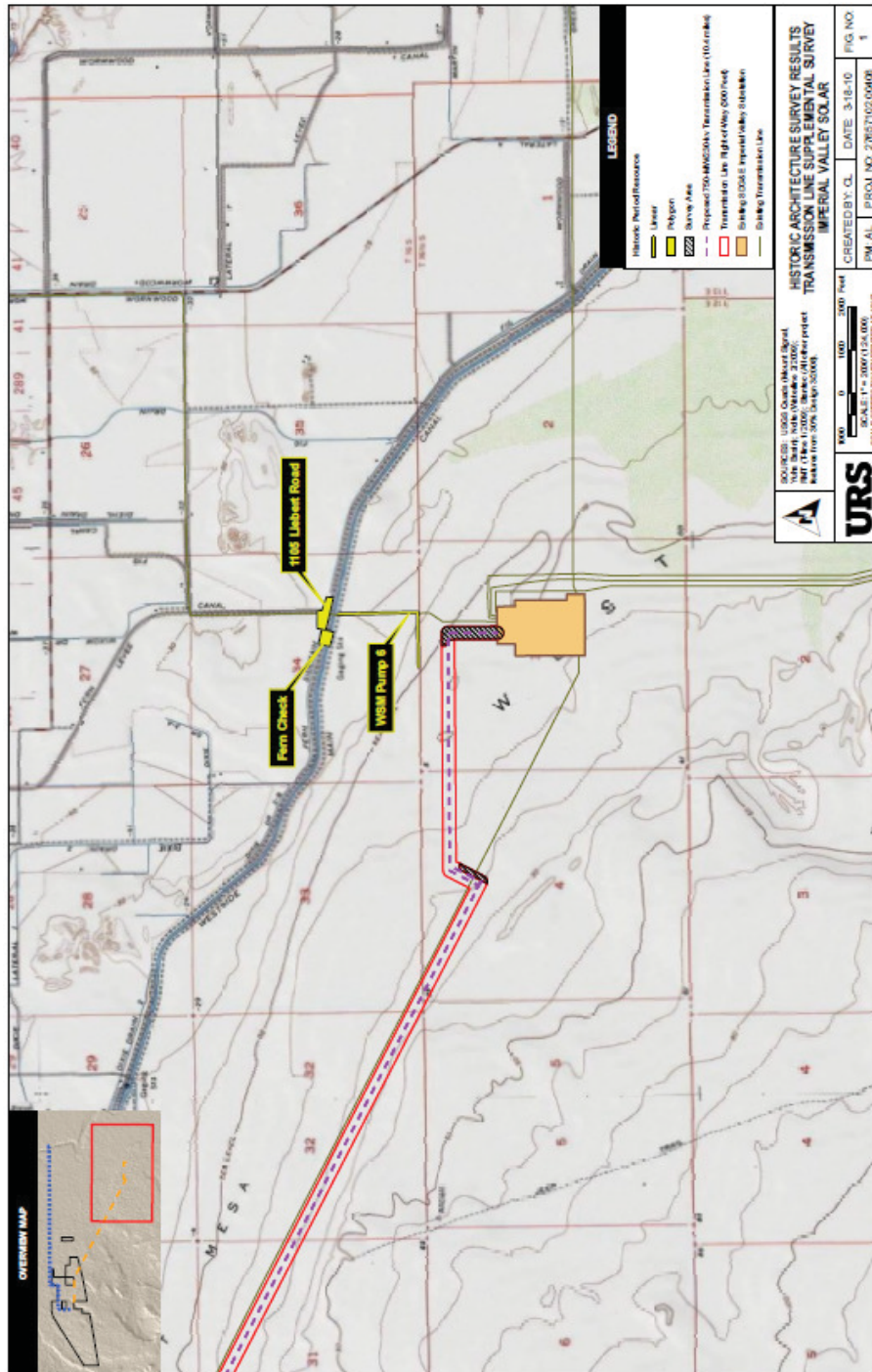
*Recorded by: URS Corporation

* Date: 12/2009

☐ Continuation ☒ Update

Additional Photos/Images:

Sketch map of WSM Pump 6
Not to scale



State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary # P-13-008334 UPDATE
HRI #
Trinomial CA-IMP-7834 UPDATE
NRHP Status Code 3D/CD

Other Listings
Review Code

Reviewer

Date

Page 1 of 4

*Resource Name or #: Westside Main Canal

P1. Other Identifier: CA-IMP-7834, P-13-008334, Westside Main Canal

*P2. Location: ☒ Not for Publication ☐ Unrestricted

*a. County: Imperial

and (P2b and P2c or P2d. Attach a Location Map as necessary.)

*b. USGS 7.5' Quad: Seeley, CA

Date: 1957 (P. 1979) T 16S; R 12E; NW ¼ of SE ¼ of Sec 21; S.B. B.M.

c. Address:

City:

Zip:

d. UTM: Zone: 11S; 618511 mE / 3635113 mN (G.P.S.) NAD 83

e. Other Locational Data: Starting in the City of El Centro, travel west on Interstate 8 and exit at Drew Road. Travel north on Drew Road for approximately 1.5 miles before turning left onto Evan Hewes Highway (old US 80). Travel west on Evan Hewes Highway for approximately 2 miles and make a right turn onto Huff Road. Travel north on Huff Road for approximately 5 miles and make a left turn onto Boley Road. Travel west on Boley Road for approximately 1 mile and park. Proceed on foot, in a northeast direction, along the West Main Canal to where a 1.2 kilometer segment of the canal was surveyed starting at UTM coordinate 618511 mE / 3635113 mN and an ending at 619491 mE / 3635877 mN.

*P3a. Description: This site form updates a 300-foot-long segment of the Westside Main Canal, part of the larger All-American Canal water conveyance system in Imperial County. Because the current project's survey corridor includes part of this canal, only that length within the survey corridor is documented, described, and evaluated.

The Westside Main Canal was built about 1907 as part of the larger Imperial Valley irrigation system, and later integrated into the All-American Canal system during its construction between 1934 and 1940. The Westside Main Canal has not been altered or modified since its last update in 1999 (Jill Hupp), when it was found not eligible for listing in the National Register (NRHP) as a separate property or as a contributor to a district. However, in 2001 the Bureau of Reclamation and California State Historic Preservation Officer concurred that the All-American Canal is ELIGIBLE for the NRHP; by extension the Westside Main Canal is now recommended ELIGIBLE for the NRHP and California Register of Historical Resources (CRHR) under Criterion A/1 for its significance in association with development of the Imperial Valley.

*P3b. Resource Attributes: HP20. Canal/aqueduct

*P4. Resources Present: ☐ Building ☒ Structure ☐ Object ☐ Site ☐ District ☒ Element of District ☐ Other (Isolates, etc.)



P5b. Description of Photo:

Photograph # 1599, Westside Main Canal looking northeast.

*P6. Date Constructed/Age and Sources: ☒ Historic

☐ Prehistoric ☐ Both
Main canal- 1907 with alterations

*P7. Owner and Address:

Imperial Irrigation District
333 E. Barioni Blvd
Imperial, CA 92251

*P8. Recorded by: J. Burkard,

H. Thompson, J. Covert

SWCA Environmental Consultants
625 Fair Oaks Avenue, Suite 190
South Pasadena, California 91030

*P9. Date Recorded: 4 / 19 / 2007

*P10. Survey Type: Intensive
Survey - 15 meter transects

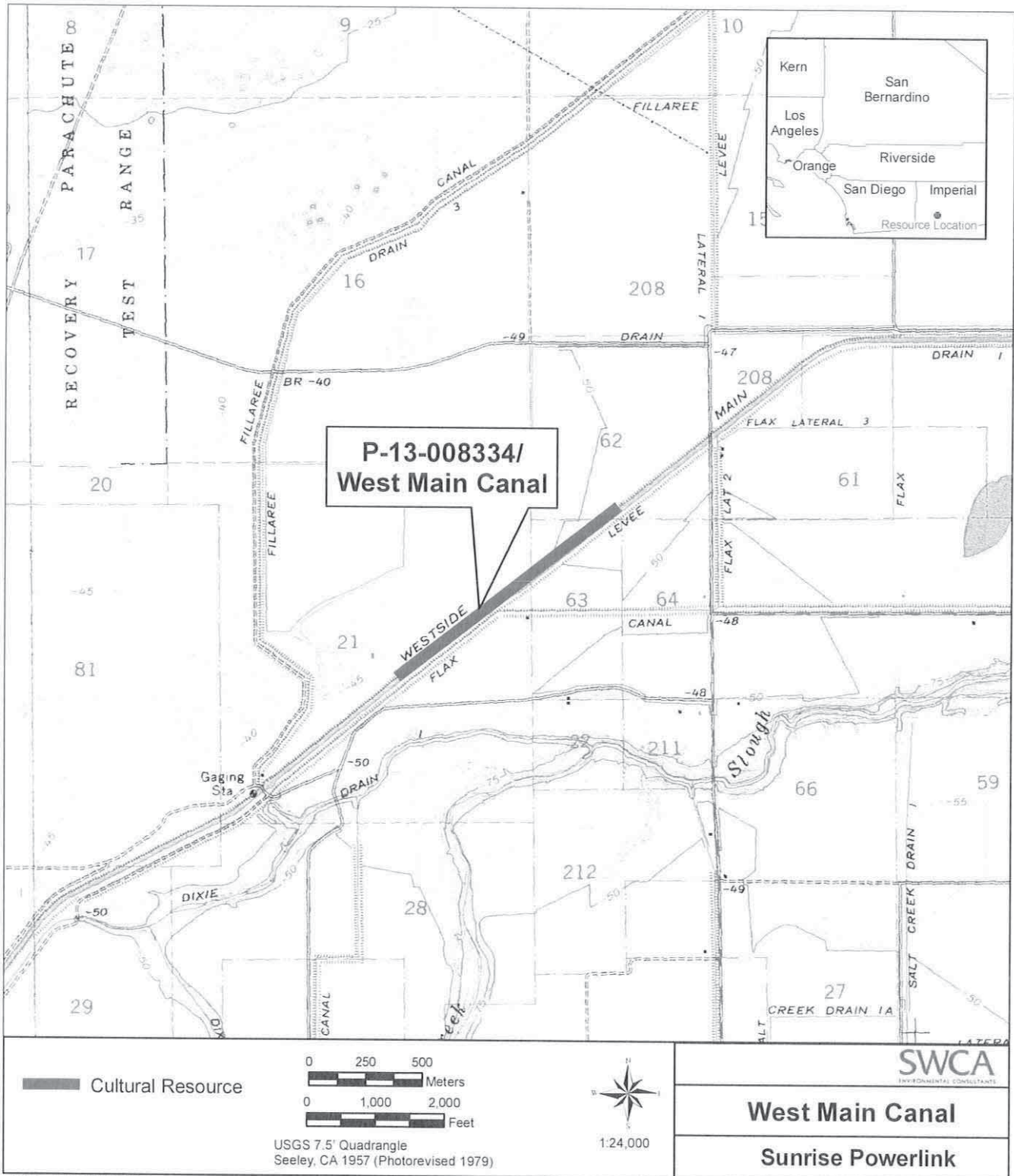
*P11. Report Citation: SWCA
Environmental Consultants and
Applied EarthWorks 2008: Cultural
Resources Survey of Alternatives for
the Sunrise Powerlink Project, San
Diego, Imperial, Riverside, and

Orange Counties, California

*Attachments: ☐ NONE ☒ Location Map ☐ Sketch Map ☐ Continuation Sheet ☐ Building, Structure, and Object Record
☐ Archaeological Record ☐ District Record ☒ Linear Feature Record ☐ Milling Station Record ☐ Rock Art Record
☐ Artifact Record ☒ Photograph Record ☐ Other (List):

DPR 523A (1/95)

*Required information



L1. Historic and/or Common Name: CA-IMP-7834, P-13-008334, Westside Main Canal

L2a. Portion Described: ☐ Entire Resource ☒ Segment ☐ Point Observation **Designation:** Segment of Westside Main Canal

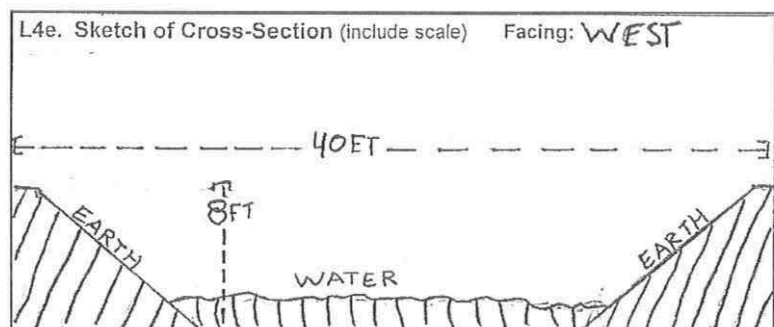
b. Location of point or segment: Starting in the City of El Centro, travel west on Interstate 8 and exit at Drew Road. Travel north on Drew Road for approximately 1.5 miles before turning left onto Evan Hewes Highway (old US 80). Travel west on Evan Hewes Highway for approximately 2 miles and make a right turn onto Huff Road. Travel north on Huff Road for approximately 5 miles and make a left turn onto Boley Road. Travel west on Boley Road for approximately 1 mile and park. Proceed on foot, in a northeast direction, along the West Main Canal to where a 1.2 kilometer segment of the canal was surveyed starting at UTM coordinate 618511 mE / 3635113 mN and an ending at 619491 mE / 3635877 mN.

L3. Description: Westside Main Canal was built about 1907 and is earth-lined in this specific section. It forms part of the larger All-American Canal System, which provides water for irrigation within Imperial County since its completion in 1940.

L4. Dimensions:

- a. Top Width: 40 feet
- b. Bottom Width: unknown
- c. Height or Depth: 8 feet
- d. Length of Segment: 3,937 feet

L5. Associated Resources: The Fox Glove Canal and Dixie Drain are both nearby, serving respectively as irrigation delivery and storm drainage for the Westside Main Canal. All three resources are part of the NRHP-eligible All-American Canal system.



L6. Setting: The canal is surrounded by local agriculture, and has played a significant role in bringing agriculture and people to the desert of Imperial County. A variety of crops grow along this segment, as well as ruderal vegetation along its banks. Dirt access roads run parallel to the canal along its berms.

L7. Integrity Considerations: The surveyed length of the canal is in working order, and appears to have been regularly maintained to keep the banks properly groomed and the quantity of silt minimal.



L8b. Description of Photo, Map, or Drawing: Photograph #1601, West Main Canal, looking southwest

L9. Remarks: The Westside Main Canal was previously recorded in 1999 by Jill Hupp for the Caltrans Environmental Program. Their mailing address is P.O. Box 942874, Sacramento, California 94274.

L10. Form Prepared by:
J. Burkard, G. Connel, J. Covert
SWCA Environmental
Consultants
625 Fair Oaks Avenue, Suite 190
South Pasadena, California 91030

L11. Date: 4 / 19 / 07

PHOTOGRAPH RECORD

Primary # P-13-008334 UPDATE

HRI#

Trinomial CA-IMP-7834 UPDATE

Page 4 of 4

Resource Name or #: Westside Main Canal UPDATE

Year 2007

Camera Format: Digital

Lens Size:

Film Type and Speed: Digital

Negatives Kept at: SWCA Environmental Consultants, South Pasadena office

Mo.	Day	Time	Exp./Frame	Subject/Description	View Toward	Accession #
4	19	-	1599	Westside Main Canal	Northeast	N/A
4	19	-	1600	Westside Main Canal	Southwest	N/A
4	19	-	1601	Westside Main Canal, facing southwest down survey corridor	Southwest	N/A
4	19	-	1602	Westside Main Canal	Northeast	N/A

State of California - The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
CONTINUATION SHEET

Primary # P-13-008334 UPDATE
HRI# _____
Trinomial CA-IMP-7834 (Update)

Page 1 of 1 * Resource Name or # (Assigned by recorder) CA-IMP-7834 (Update)

CA-IMP-7834 was recorded by Harris of HDR in 2000. This site is described as the Westside Main Canal built in the 1920s and incorporated into the All American Canal System (CA-IMP-7130H, built between 1933 and 1938). The Westside Canal is a forty mile canal alignment that, as part of the All American Canal System, has been determined eligible for listing in the National Register of Historic Places and as a California Historic Resource. The proposed pipeline alignment will connect to the Westside Main Canal.

The Westside Canal is a forty mile canal alignment that, as part of the All American Canal System, has been determined eligible for listing in the National Register of Historic Places and as a California Historic Resource. The proposed pipeline alignment will connect to the Westside Main Canal and, therefore, the proposed project has the potential to adversely impact a significant resource. McKenna et al. recommends that the area be monitored during construction and that the design, construction, and maintenance of the proposed pipeline be planned to avoid adverse impacts to the Canal.

Jeanette A. McKenna
February 28, 2007

State of California — The Resources Agency DEPARTMENT OF PARKS AND RECREATION PRIMARY RECORD	Primary #: P-13-008334 UPDATE HRI #: Trinomial: CA-IMP-7834 NRHP Status Code:
Other Listings: Review Code:	Reviewer: Date:

Page 1 of 3

Resource Name or #: (Assigned by recorder). SDY-S-10: Westside Main Canal

P1. Other Identifier: None

P2. Location: ☒ Not for Publication ☐ Unrestricted

a. County: Imperial

and (P2b and P2c or P2d. Attach a Location Map as necessary.)

b. USGS 7.5' Quad: Plaster City Date: 1957 photorevised 1979 T 16S ; R 12E ; Section 18; S.B.M.

c. Address: - City: - Zip: -

d. UTM: Zone 11; 615200 mE/ 3625820 mN to 3628400 mN

e. Other Locational Data (e.g., parcel #, directions to resource, elevation, etc., as appropriate): The Westside Main Canal crosses Old Hwy 80 in a northward direction at Dixieland; it intersects the project area approximately 1300' south of Dixieland at the ROW of the San Diego and Eastern Railroad. Elevation here is about 35' above sea level.

P3a. Description (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries): The Westside Main Canal is an older canal, built in the 1920s, that was incorporated into the All American Canal System (CA-IMP-7130H), constructed between 1933 and 1938, and opened in 1940. The Westside Main begins at the western terminus of the All American Canal and extends northward in a general "Z" shape for about forty miles. It ends about 5 miles west of the town of Westmorland. As part of the All American Canal System, this canal is eligible for NRHP inclusion.

P3b. Resource Attributes (List attributes and codes): HP20 - Canal

P4. Resources Present: ☐ Building ☒ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other (Isolates, etc.)

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

P6. Age and Sources:

☒ Historic ☐ Prehistoric☐ Both

P7. Owner and Address:

P8. Recorded by (Name, affiliation, and address):

N. Harris, HDR, 9444 Farnham, San Diego, CA 92123

P9. Date Recorded:

June, 2000

P10. Survey Type (Describe):

Intensive Surface Inventory

P11. Report Citation (Cite survey report and other sources, or enter "none") Cultural Resources Survey for the Level (3) Communications Fiber Optic Network Between City of San Diego, California, and the California/Arizona State Line at the Colorado River, Near Yuma, Arizona; on file with the BLM, Riverside, CA.

Attachments: NONE ☒ Location Map ☐ Sketch Map ☐ Continuation Sheet ☐ Building, Structure, and Object Record ☐ Archaeological Record ☐ District Record ☐ Linear Feature Record ☐ Milling Station Record ☐ Rock Art Record ☐ Artifact Record ☐ Photograph Record ☐ Other (List):

State of California — The Resources Agency
 DEPARTMENT OF PARKS AND RECREATION
ARCHAEOLOGICAL SITE RECORD

Primary #: P-13-008334 UPDATE
 Trinomial: CA-IMP-7834

Page 2 of 4

Resource Name or #: (Assigned by recorder): Westside Main Canal

- A1. **Dimensions:** a. Length: ca. 40 miles b. Width: unknown
Method of Measurement: ☐ Paced ☐ Taped ☐ Visual estimate ☒ Other: Derived from map
Method of Determination (check any that apply.): ☐ Artifacts ☐ Features ☐ Soil ☐ Vegetation ☐ Topography ☐ Cut bank
☐ Animal burrow ☐ Excavation ☐ Property boundary ☒ Other (Explain): Imperial Irrigation District map
Reliability of Determination: ☐ High ☒ Medium ☐ Low Explain: Measured off map
Limitations (check any that apply): ☐ Restricted access ☐ Paved/built over ☐ Site limits incompletely defined
☐ Disturbances ☐ Vegetation ☐ Other (Explain):
- A2. **Depth:** ☐ None ☒ Unknown **Method of Determination:**
- A3. **Human Remains:** ☐ Present ☒ Absent ☐ Possible ☐ Unknown (Explain):
- A4. **Features** (Number, briefly describe, indicate size, list associated cultural constituents, and show location of each feature on sketch map.): Canal channel, headgates, drops, etc.
- A5. **Cultural Constituents** (Describe and quantify artifacts, ecofacts, cultural residues, etc., not associated with features.): None noted.
- A6. **Were Specimens Collected?** ☒ No ☐ Yes (If yes, attach Artifact Record or catalog and identify where specimens are curated.)
- A7. **Site Condition:** ☒ Good ☐ Fair ☐ Poor (Describe disturbances.): Operational canal
- A8. **Nearest Water** (Type, distance, and direction.): n/a
- A9. **Elevation:** ca. 35 feet above sea level
- A10. **Environmental Setting** (Describe culturally relevant variables such as vegetation, fauna, soils, geology, landform, slope, aspect, exposure, etc.): Agricultural properties on the east side, and creosote, acotillo, cactus, grasses, mesquite, shrubs, forbs on the west side; soils are light brown alluvial sandy silt loams and sand dunes on the western edge of the cultivated portion of the Imperial Valley.
- A11. **Historical Information:** The Westside Main Canal is an older canal, built in the 1920s, that was incorporated into the All American Canal System (CA-IMP-7130H), constructed between 1933 and 1938, and opened in 1940. The Westside Main begins at the western terminus of the All American Canal and extends northward in a general "Z" shape for about forty miles. It ends about 5 miles west of the town of Westmorland. As part of the All American Canal System, this canal is eligible for NRHP inclusion.
- A12. **Age:** ☐ Prehistoric ☐ Protohistoric ☐ 1542-1769 ☐ 1769-1848 ☐ 1848-1880 ☐ 1880-1914 ☒ 1914-1945 ☐ Post 1945
☐ Undetermined (Describe position in regional prehistoric chronology or factual historic dates if known):
- A13. **Interpretations** (Discuss data potential, function(s), ethnic affiliation, and other interpretations): The canal is part of the historic system of canals that make up the extensive hydraulic irrigation system in the Imperial Valley. These canals profoundly influenced the Euro-American land use, settlement patterns, economy, and the cultural landscape of southern California, and continues to do so today.
- A14. **Remarks:** None.

CA-IMP-7834

P-13-008334 UPDATE

A15. References (Documents, informants, maps, and other references): None.

A16. Photographs (List subjects, direction of view, and accession numbers or attach a Photograph Record):
Kept at:

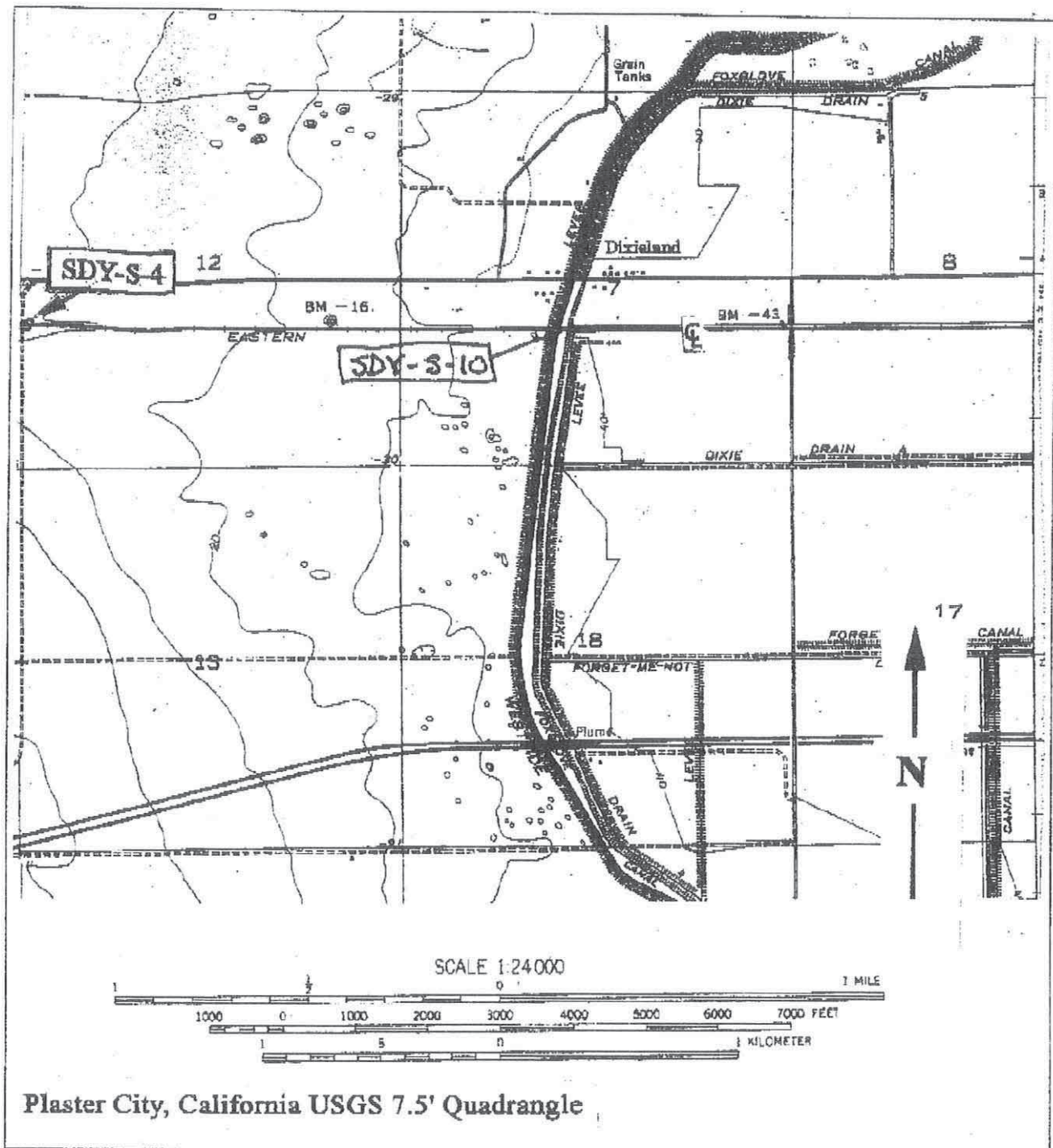
A17. Form Prepared by Michael Oberndorf
Affiliation and Address: HDR Engineering, Inc.
9444 Farnham Street, Suite 300
San Diego, CA 92123

Date: 12/4/2000

UPDATE

Page ⁴ 2 of ⁴ 3 4

Resource Name or #: SDY-S-10



PRIMARY RECORD

Primary # P-13-008334

HRI # _____

Trinomial: CA-IMP-7834

NRHP Status Code: 6

Other Listings: _____

Review Code _____ Reviewer _____ Date _____

County/Route/Postmile: 11-IMP-98, P.M. 0.3-30.3/K.P 0.5-48.8

Map Reference No.: 1

*Resource Name or #: Westside Main Canal

P1. Other Identifier: N/A

*P2. Location: *a. County Imperial

b. Address SR 98 at Postmile 22.02 City Calexico Zip 92231

*c. USGS 7.5 Quad: _____ d. UTM: _____

*e. Other Locational Data: (e.g. parcel #, directions to resource, elevation, etc., as appropriate)

Segment within the APE crosses SR 98 at P.M. 22.02 (K.P. 35.23) just west of Drew Rd.

*P3a. Description:

The Westside Main Canal is a wide irrigation canal that runs through agricultural land in the Imperial Valley section of Imperial County. It enters the current project area where State Route 98 crosses the canal at Postmile 22.02 (K.P. 35.23) west of Drew Road. At this point the canal is approximately 25 feet wide (7.62 m) and about 10 feet deep (3.04 m), running perpendicular to the highway in a northwest-southeast direction. It is banked by earthen levees of natural vegetation and is unlined. Dirt access roads run along the levees on both sides of the canal to precipitate maintenance and dredging operations. The Westside Main Canal as a whole is primarily earthen lined and subject to regular dredging. Rigorous dredging has reshaped the canal's banks and inner surface.

Originating at the All-American Canal along the International Boundary, Westside Canal extends northwest roughly 11 miles (17.8 km), where it becomes the Tamarack Canal. At this point (between Brawley and Westmoreland) Westside branches off to the west, terminating at the Trifolium Canal, which continues northwest a short distance to the boundary of the Imperial Irrigation District, with laterals serving a considerable area lying south of Salton Sea. Bridge #58-274, constructed in 1955, carries SR 98 across the canal. Parallel to Westside Main is a smaller waterway, the concrete-lined Wormwood Canal. The surrounding area consists primarily of irrigated cropland.

*P3b. Resource Attributes: HP20 (Canal/Aqueduct)

P5. Photograph or Drawing (Photograph required for buildings, structures, and objects.)



*P4. Resources Present:

- ☐ Building ☒ Structure
☐ Object ☐ Site ☐ District
☐ Element of District

P5b. Description of Photo:
4/28/99. Canal segment N
of SR 98 looking S.

*P6. Date Constructed/Age:
c.1906; recent
modifications

- ☐ Prehistoric ☒ Historic
☐ Both

*P7. Owner and Address:
Imperial Irrigation District
333 E. Barioni Blvd.
Imperial, CA 92251

*P8. Recorded by:
Jill Hupp
Caltrans Environmental
Program
PO Box 942874
Sacramento, CA 94274-0001
(916) 654-3567

*P9. Date Recorded: 4/28/99

*P10. Type of Survey: ☒ Intensive
☐ Reconnaissance ☐ Other

*P11. Report Citation: IMP-98 HASR, 11-IMP-98, P.M. 0.3/30.3, EA 173400

*Attachments: ☐ NONE ☐ Map Sheet ☐ Continuation Sheet ☒ Building, Structure, and Object Record

☐ Linear Resource Record ☐ Archaeological Record ☐ District Record ☐ Milling Station Record ☐ Rock Art Record

☐ Artifact Record ☐ Photograph Record ☐ Other (List): _____

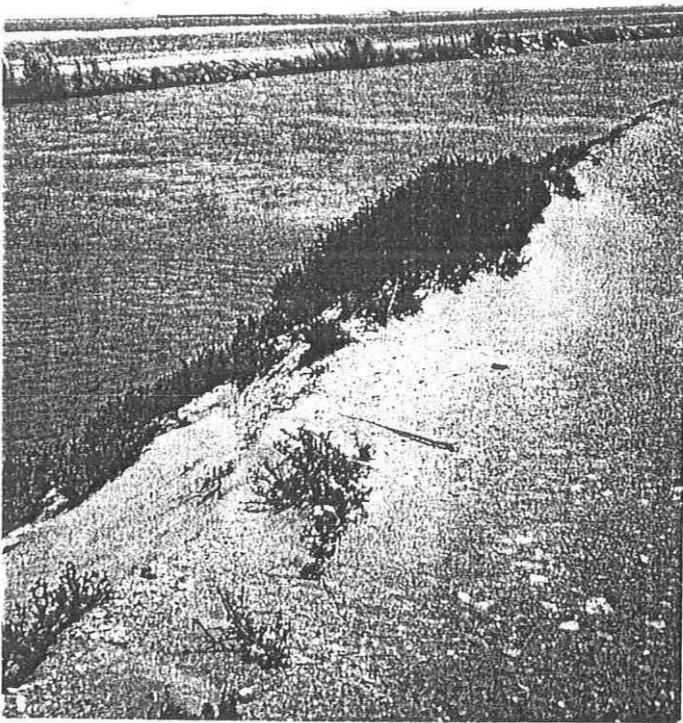
CONTINUATION SHEET

Resource Name or #: Westside Main Canal

☒ Continuation ☐ Update

County/Route/Postmile: 11-IMP-98, P.M. 0.3/30.3

P5b. Description of Photo (continued)



4/28/99. Westside Main Canal segment north of SR 98, looking NW.

BUILDING, STRUCTURE, AND OBJECT RECORD

*NRHP Status Code: 6

*Resource Name or #: Westside Main Canal

B1. Historic Name: Westside Main Canal
B2. Common Name: Westside Main Canal
B3. Original Use: Irrigation ditch

County/Route/Postmile: 11-IMP-98, P.M. 0.3/30.3

B4. Present Use: Irrigation ditch

*B5. Architectural Style: N/A

*B6. Construction History: built c. 1906 as part of the Imperial canal system with recent modifications.

*B7. Moved? ☒ No ☐ Yes ☐ Unknown

Date: N/A

Original Location: N/A

*B8. Related Features: None

B9a. Architect: N/A

B9b. Builder: Calif. Devel. Co., Southern Pacific Co., I.I.D.

*B10. Significance: N/A

Theme: N/A

Area: N/A

Period of Significance: N/A

Property Type: N/A

Applicable Criteria: N/A

Westside Main Canal was built about 1906 as part of the expansive Imperial irrigation system, which transformed the Colorado Desert into fertile farmland. The movement to reclaim this seemingly inhospitable wasteland for agrarian purposes had originated with Dr. O. M. Wozencraft in the 1850s. Wozencraft was convinced that the area had unlimited agricultural potential, if only a potable water supply could be established; he believed that this could be accomplished by means of a single gravity-flow canal, by which several hundred acres could be irrigated. Despite Wozencraft's best efforts, no progress was made on the project during his lifetime. In 1896 a group of investors formed the California Development Company (CDC), determined to take on the challenge of desert irrigation. Headed by civil engineers Charles Rookwood and George Chaffey, the company began constructing a canal that would divert water from the Colorado River into the dry channels of the Alamo and New rivers, which would in turn carry the water north to the Colorado Desert (now the Imperial Valley). In early 1902, the first irrigation water was delivered. A CDC subsidiary, the Imperial Land Company, promoted colonization of the area and handled land sales. Under Chaffey's direction, several mutual water companies were organized as well, and the CDC built most of the distribution systems, main canals and laterals needed to service these newly developed areas. By 1905, 80 miles of main canals had been built, with more than 100,000 acres under cultivation. Water delivery service was unreliable however, the canals being poorly designed and maintained. The muddy Colorado River had a tendency to deposit heavy loads of silt, which soon blocked the canal's intake, thereby reducing the amount of water reaching Valley crops. In an attempt to combat this, the CDC cut a bypass channel in the riverbank four (See Continuation Sheet)

B11. Additional Resource Attributes: N/A

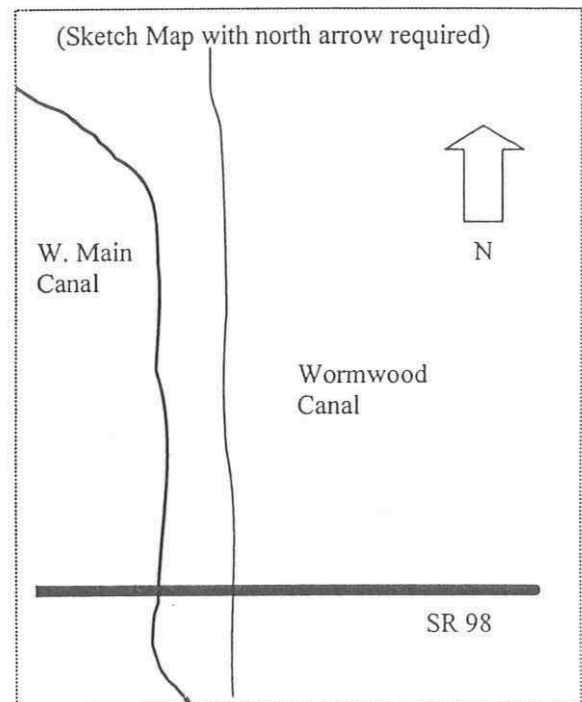
B12. References: Clement 1996: primary record 1;
Lortie, 1997: 6, 8-10, 13-17;
IID website: 1, 6; Tout 1990: 110, 114-115;
Fisher 1998: 11-14.

B13. Remarks: N/A

B14. Evaluator: Jill Hupp
Caltrans Environmental Program
PO Box 942874
Sacramento, CA 94274-0001
(916) 654-3567

*Date of Evaluation: 5/24/99

(This space reserved for official comments)



CONTINUATION SHEET

Resource Name or #: Westside Main Canal

☒ Continuation ☐ Update

County/Route/Postmile: 11-IMP-98, P.M. 0.3/30.3

B10. Significance (continued) miles south of the border, without legal authority or adequate gates to control the force of the water. Widespread flooding in the winters of 1905-06 and 1907 as a result of this action caused extensive damage to farmland and railroad property, as well as to the canal system itself. The wooden flume that had carried the Encina (Westside Main) Canal across New River in Mexico was destroyed in the floods, as was a similar flume across New River 20 miles north of the border. It was not deemed practical to rebuild the latter, as the floodwaters had greatly increased the width and depth of the New River Channel at that locale. As an alternative, the CDC decided to enlarge Westside Main Canal (then located primarily within Mexico) and extend it north into the United States. By the end of 1907, a new enlarged wooden flume with a length of some 1,860 feet carried the canal across New River in Mexico. The extended Westside Main Canal was designed to serve all of the area lying west of New River, which had not yet been developed.

Unable to recover from its huge financial losses after the floods, the CDC was forced into bankruptcy. Southern Pacific (as the CDC's main creditor) assumed management of the company, and water delivery service continued without interruption. Between 1912-1916, development work in Imperial Valley in the way of canal extensions and territorial improvements advanced at an accelerated pace. The Imperial Irrigation District (IID) purchased the existing canal system in 1916, and in 1922 the region's smaller mutual water companies were absorbed by the District. By 1930 the district was operating some 1,700 miles of canals and laterals, with a service area of 550,000 acres. As an agricultural center, the Imperial Valley was particularly hard-hit by the Depression; maintenance and expansion work on the canals slowed to a near-standstill as economic conditions worsened. To Valley residents, the completion of Hoover Dam on the lower Colorado River in 1935 seemed an indication of better times to come. This massive Federal undertaking would help reduce the volume of silt carried by the river, and prevent the possibility of another devastating flood in the Imperial Valley. The All-American Canal was finished in 1941 as part of the same project as Hoover Dam, fulfilling the long-held ambition of Valley farmers and IID officials to build a new canal that was entirely within the boundaries of the United States. Improvements were made to the existing canal system as well, particularly the drain ditches, which were widened and fitted with drain tiles to help alleviate the problem of salt build-up in Valley soil.

Beginning in the 1960s, the IID endeavored to line all of its earthen canals with concrete. The section of Westside Main Canal within the project area is earthen, although other segments are now concrete. The canal originally lay primarily within Mexico, but was considerably widened and extended within the United States in 1907, and again between 1912-1916. More extensive improvements were made after the completion of the All-American Canal in 1941, and the sections of Westside Canal located south of the border were no longer part of the IID system. The earthen sections have been subject to regular dredging operations since the 1950s.

Westside Main Canal today, like the IID irrigation system overall, reflects the developments that occurred as a result of the construction of the All-American Canal in 1941, after which the system was considerably expanded and modernized. The Westside Main Canal appears to possess significance under criteria A and C for its association with the development of irrigated commercial agriculture in the Imperial Valley west of New River in the early 1900s and as a good example of an early large-scale irrigation canal system. However, research to date appears to indicate that the canal as a whole, while significant, would not possess the requisite degree of integrity due to reconstruction and dredging activities since the 1950s, but no survey of the canal in its entirety has yet been undertaken. Caltrans architectural historian Frank Lortie, after an extensive study of the IID system in 1997, concluded that the elements in the IID that retain integrity for the period 1941-1950 could be contributors to a potentially eligible National Register historic district. The segment of Westside Main Canal within the project vicinity does not appear to possess sufficient integrity of workmanship, design, feeling and association to represent the canal's significance in itself or as a contributor to a larger property. While still earthen, extensive dredging since the 1960s has changed the basic configuration of the canal, because modern dredging equipment created a different ditch profile, more U-shaped and with steeper sides. The canal was extended and widened over time as the IID attempted to keep up with its ever-expanding service area. Because of these alterations it reflects neither the period of significance outlined by Lortie (1941-1950) or the earlier period of the canal system's history (1901-1907).

In July 1997 and April 1998, segments of several canals within the IID system (including portions of Westside Main) were examined and found ineligible due to loss of integrity. The segment of Westside Main Canal within the current project area also appears to lack integrity to be individually eligible for the National Register of Historic Places or to be a contributing element of the canal as a whole, should the entire canal constitute an eligible property. There is no evidence of a possible historic district or historic landscape which might include this segment of the canal as a contributing element. Likewise, Caltrans has evaluated the canal in accordance with Section 15064.5 (a)(2)-(3) of the CEQA Guidelines, using criteria outlined in Section 5024.1 of the California Public Resources Code, and determined that the canal is not a historical resource for the purposes of CEQA.

P-13-008334
P-13-008334
CA-IMP7834

WORMWOOD CANAL
MAIN CANAL
DRAIN I
DRAIN
LEVEE
YUHA
CUTOFF
LATERAL DRAIN
WOODBINE
CARPENTER
WOODBINE DRAIN
WALNUT CANAL
Gaging Sta
MT SIGNAL DRAIN 4
MT SIGNAL DRAIN 3
Gaging Sta
BM 1
CALIFORNIA
BAJA CALIFORNIA

83334
8334

MT SIGNAL
CANAL
TRAIL
JEEP
Gravel Pit
Gravel Pit
Gravel Pit
SEA LEVEL

MOUNT SIGNAL, CALIF.
NW/4 HEBER 15' QUADRANGLE
N3237 5-W11537 5/7.5
1957

AVAIL
ERR V A T I O N
V A R M - 41

NW/4 HEBER 15' QUADRANGLE
N3237 5-W11537 5/7.5

68

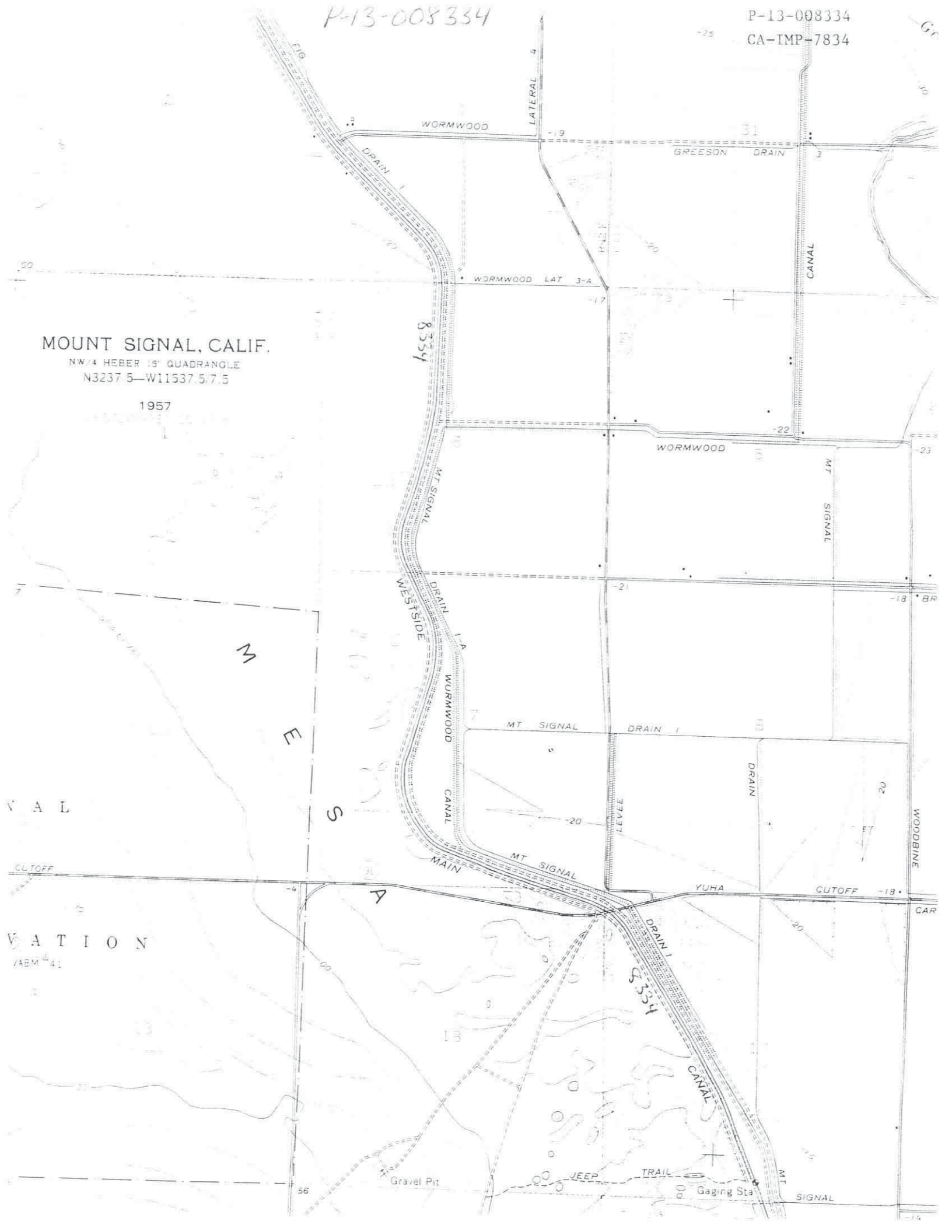
275 224

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MOUNT SIGNAL, CALIF.
NW 1/4 HEBER 15' QUADRANGLE
N3237 5-W11537 5.7.5

1957



UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

P-13-008 434
CA-IMP-7834
STATE OF
DEPARTMENT OF



MOUNT SIGNAL, CALIF.

Scale 1:250,000
N. 30° E. 1/4 Sec. 36, T. 36 N., R. 12 E., S. 4 E.

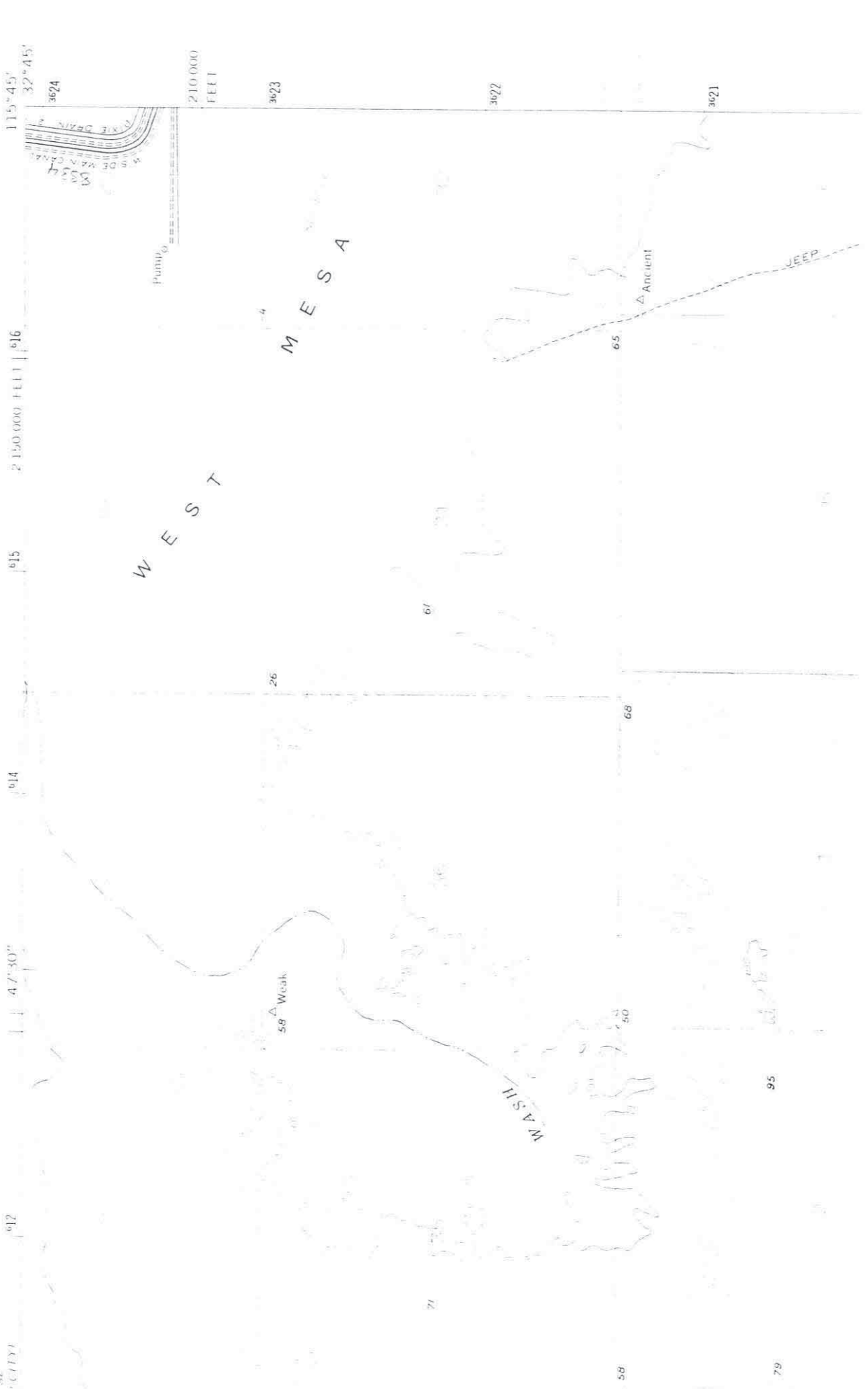
1955

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YUHA BASIN QUADRANGLE
CALIFORNIA--IMPERIAL CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)

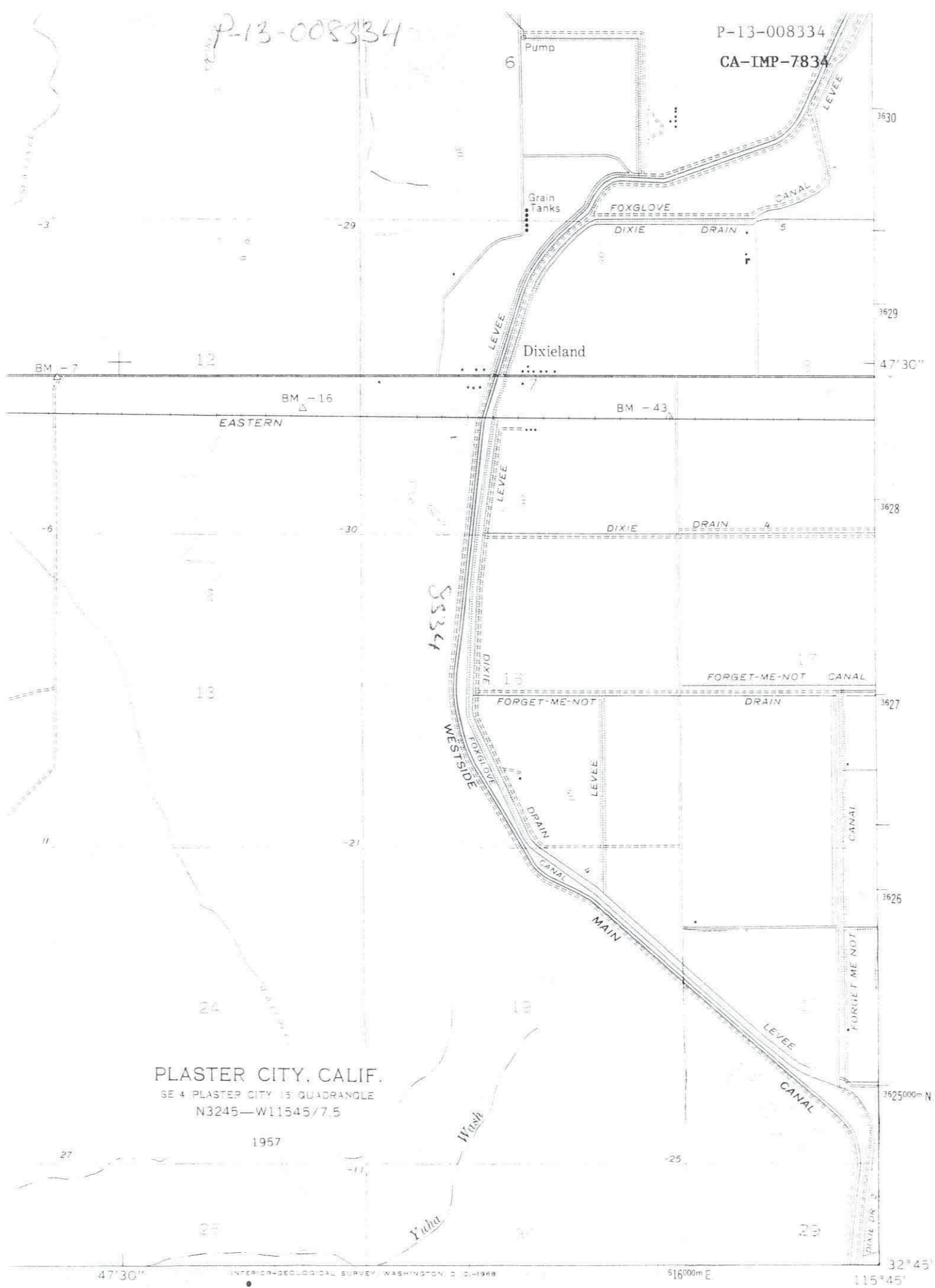
ALIFORNIA
H.T. GOVERNOR
R OF WATER RESOURCES



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PLASTER CITY, CALIF.

SE 4 PLASTER CITY 13 QUADRANGLE
N3245—W11545/7.5

1957

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CA-IMP-7834

250,000
FEET

3635

3634

450

3633

3632

(SEELEY)
2849 1 SW

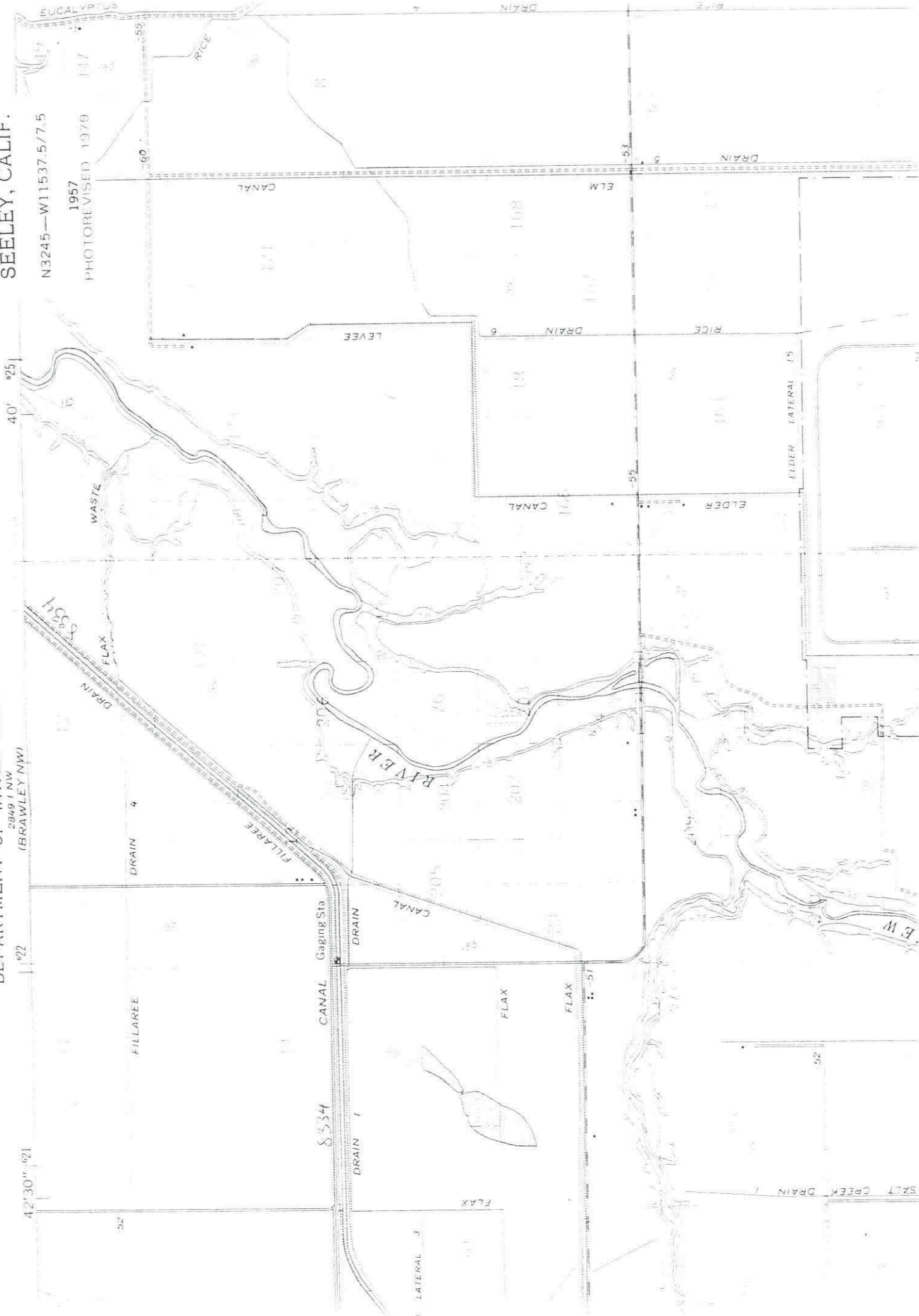
3630

PLASTER CITY, CALIF.

SE 4 PLASTER CITY IS QUADRANGLE
N3245—W11545/7.5

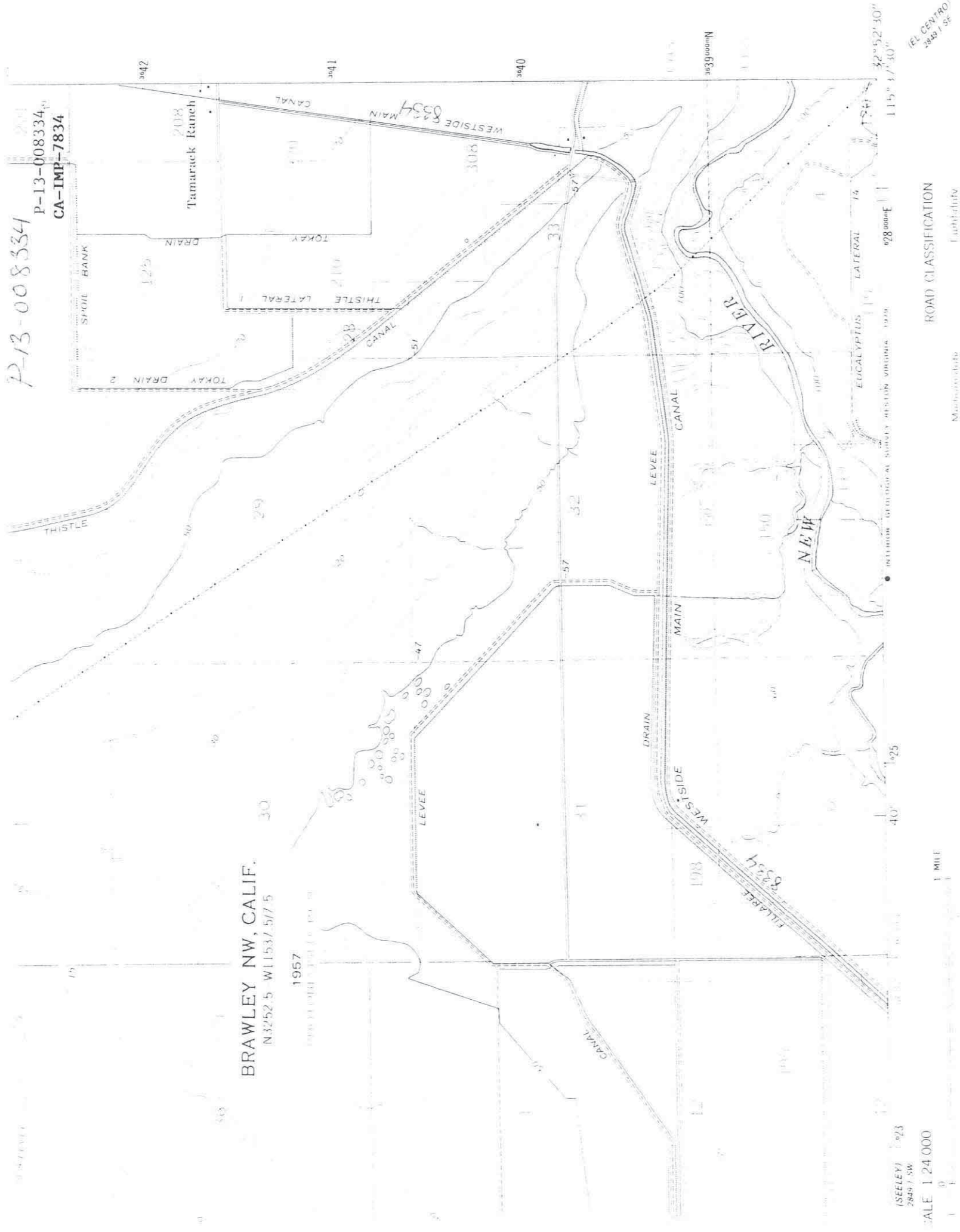
1957

Pump



P-13-008334

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CA-IMP-7834



(SEELEY) 1023

2849 J SW

SCALE 1:24,000

1 MILE

ROAD CLASSIFICATION

Map by G. G. G. G.

Light duty

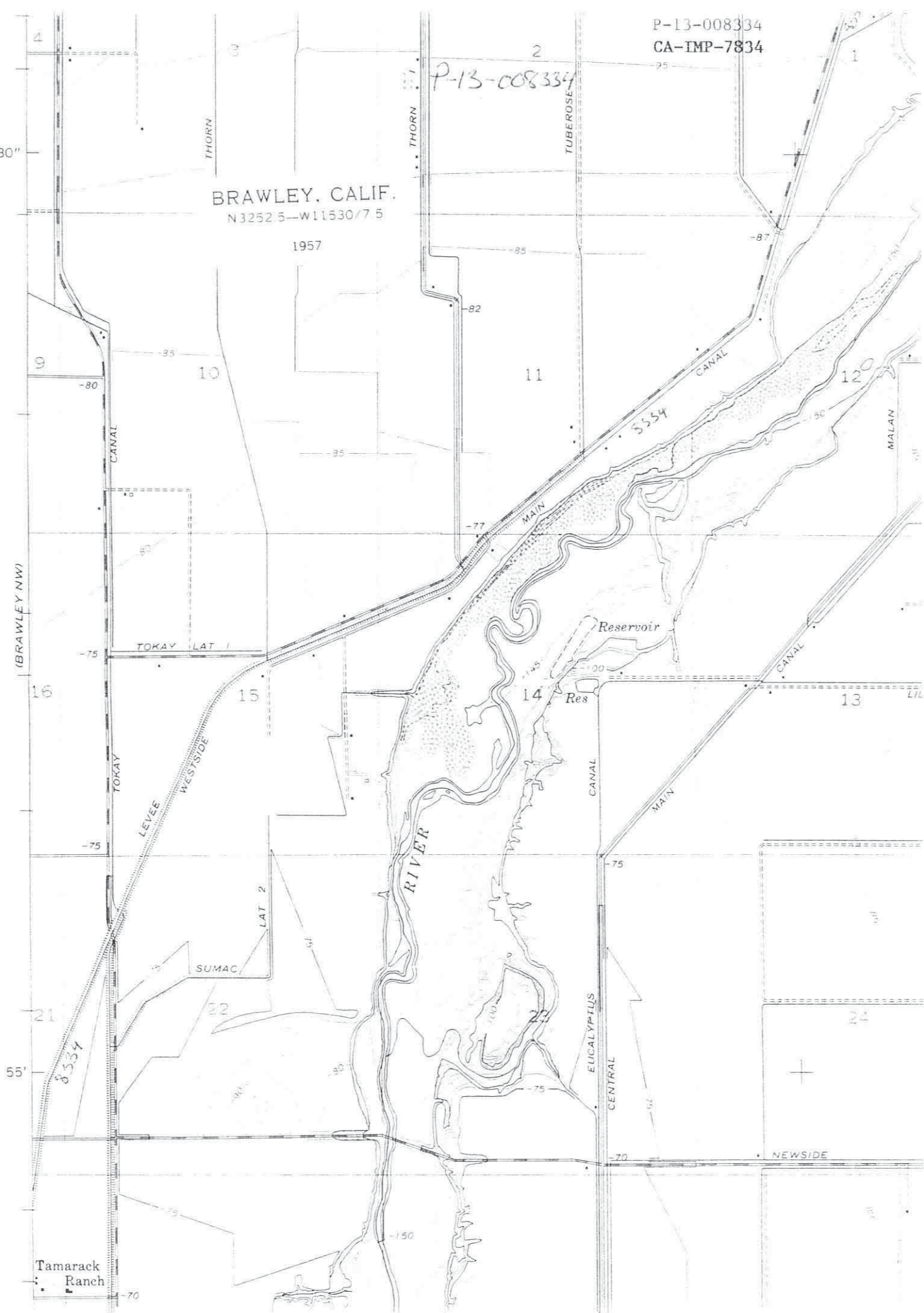
1E1 CENTRO
2849 J SW

P-13-C08334

1957

(BRAWLEY NW)

Tamarack
: Ranch

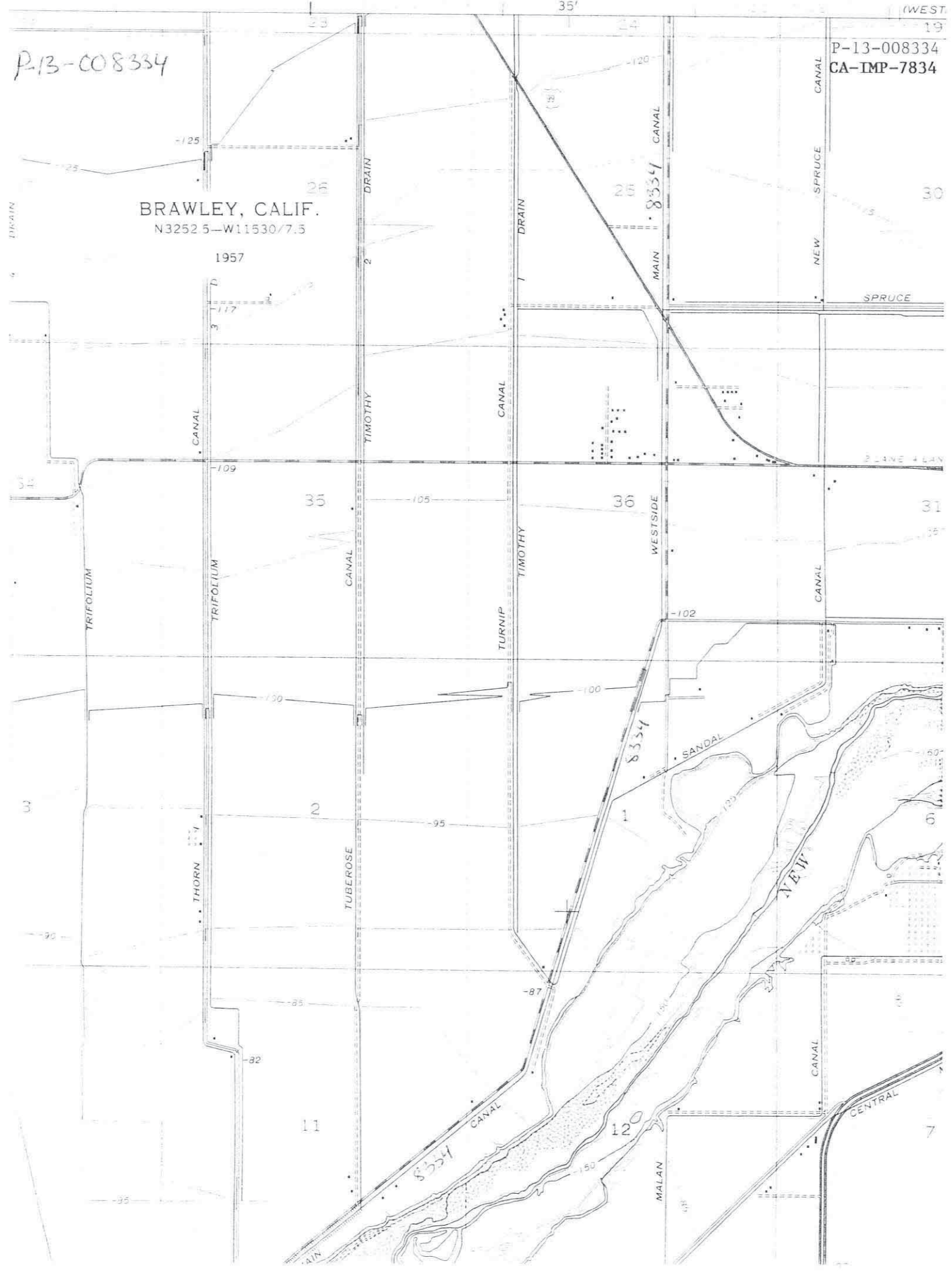


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CA-IMP-7834

BRAWLEY, CALIF.
N3252.5-W11530/7.5

1957



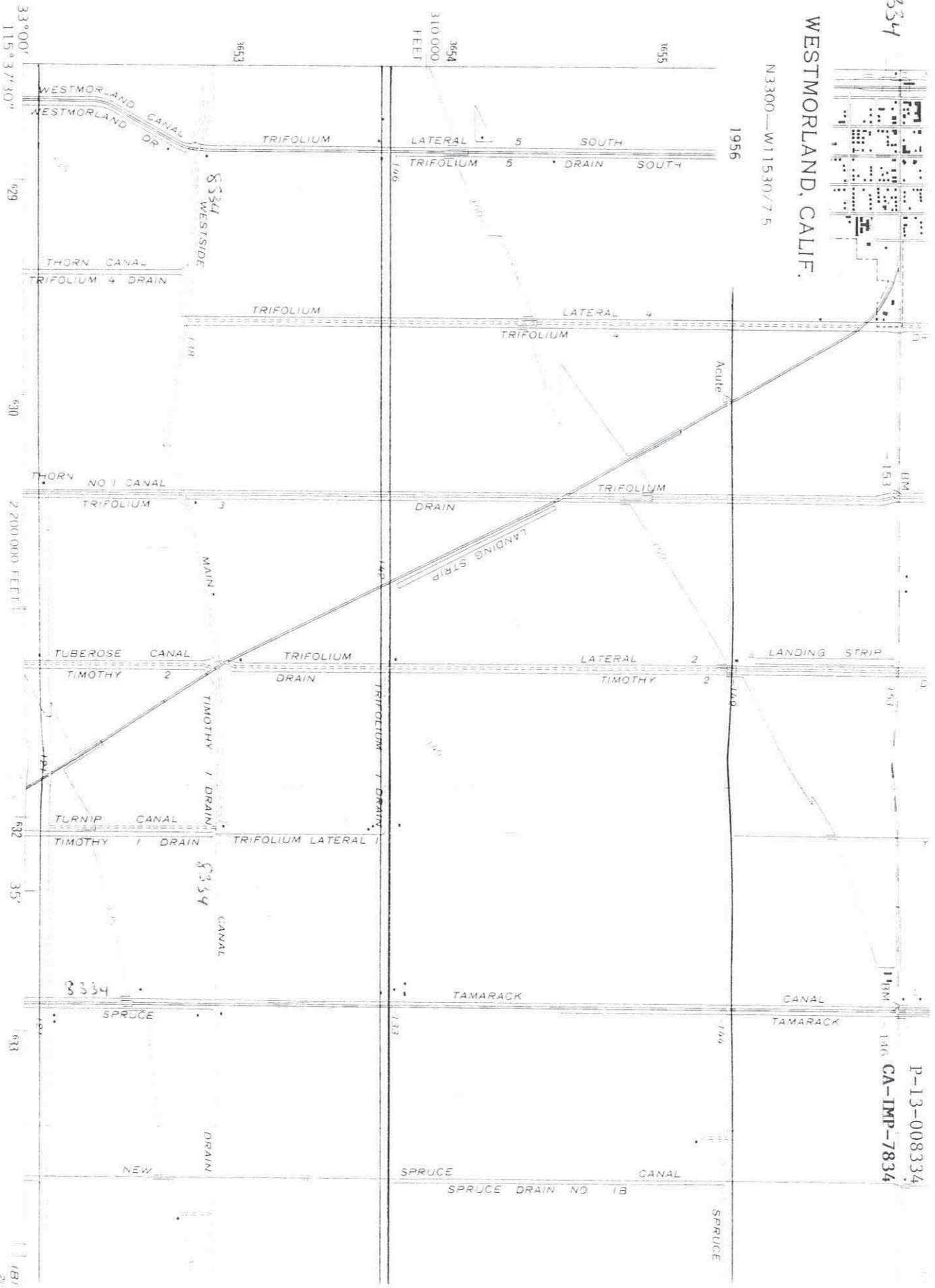
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P-13-008334
CA-IMP-7834

WESTMORLAND, CALIF.

N 3300—W 1530/7.5

1956



Mapped, edited, and published by the Geological Survey

Control by USGS, USCGS, and State of California

Culture and drainage compiled from aerial photographs

taken 1953 Topography by plane-table surveys 1956

Polycrystalline projection, 1927 North American datum

10,000 foot based on California coordinate system,

(BRAWLEY NW)
28° 5' 11" N
115° 37' 30" W

0° 47' 11" N
115° 37' 30" W
1:62,500

Scale
1 inch = 1000 feet
1:62,500

P-13-008334

CA-IMP-7834

1156

P-13-008334

WESTMORLAND WEST, CA

(FORMERLY CALIPATRIA SW)

33115-A6-TF-024

1992



QUADRANGLE LOCATION

Interstate Route

U.S. Route

State Route



INTERIOR - GEOLOGICAL SURVEY, RESTON, VIRGINIA, 1995

ROAD CLASSIFICATION

- Primary highway
- hard surface
- Secondary highway
- improved surface
- Unimproved road



QUADRANGLE LOCATION

Interstate Route

U.S. Route

State Route



INTERIOR - GEOLOGICAL SURVEY, RESTON, VIRGINIA, 1995

ROAD CLASSIFICATION

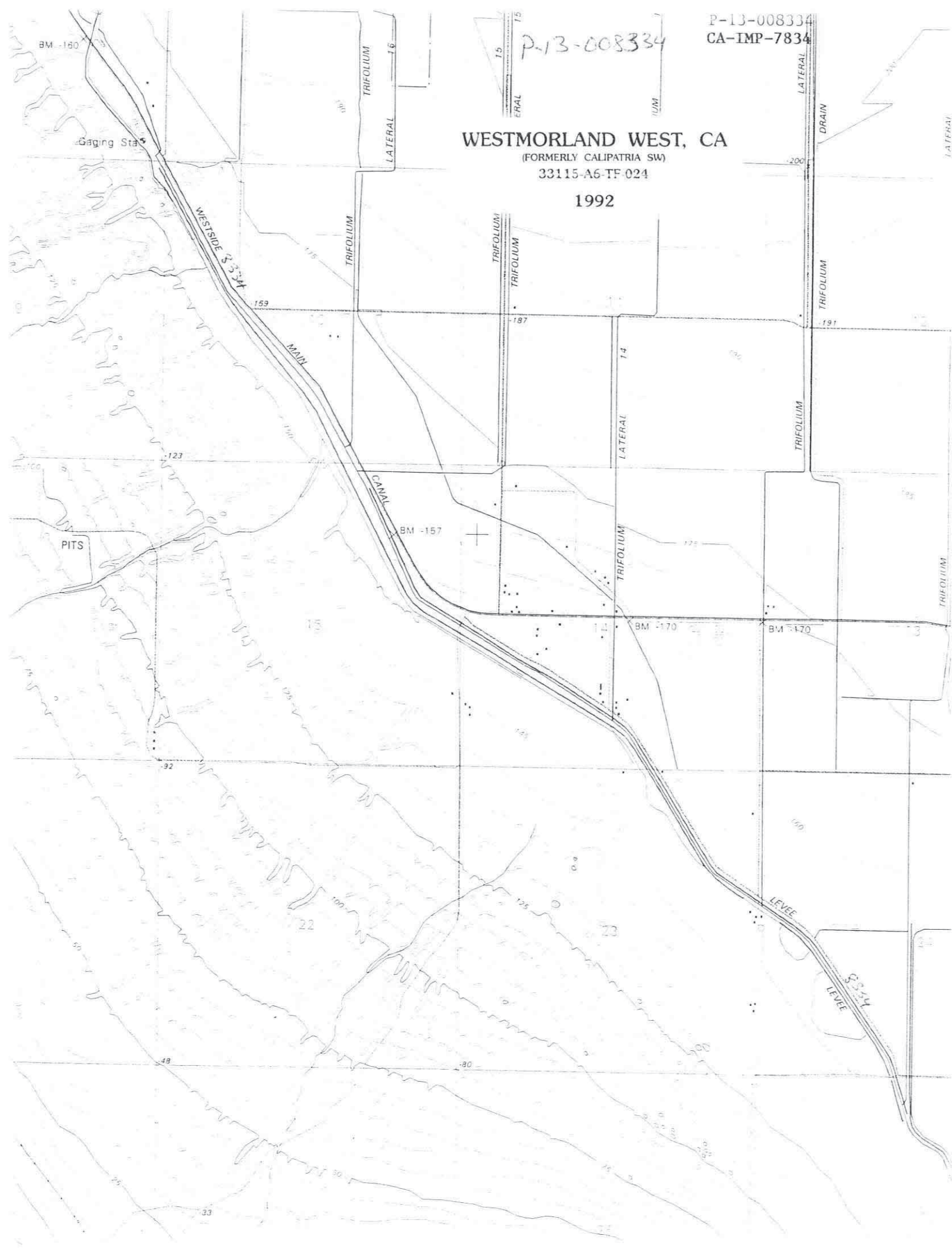
- Primary highway
- hard surface
- Secondary highway
- improved surface
- Unimproved road

P-13-008334
CA-IMP-7834

P-13-008334

WESTMORLAND WEST, CA
(FORMERLY CALIPATRIA SW)
33115-A6-TF-024

1992



S E A P-13-008334
CA-IMP-7834

ELEVATION 228 FEET BELOW SEA LEVEL
SEPTEMBER 1992

22

P-13-008334

WESTMORLAND WEST, CA
(FORMERLY CALIPATRIA SW)
33115-A6-TF-024

SALTON

SEA

1992

27

NATIONAL

WILDLIFE

REFUGE

LEVEE

LEVEE

DRAIN	ONE
-------	-----

DRAIN

TRIFOLIUM

LATERAL

BRAIN

LATERAL

TRIFOLIUM

Gaging Station

WEST

Ogilby, Cal., May 14, 1901

A. M. Chaffey, 244 Stowell Block, Los Angeles. --
Water turned through gate at 11 a.m. Everything
all right.

George Chaffey

The first delivery of water in the United States occurred in June, 1901, when delivery was made as far as Calexico through the Boundary Canal. Some 1500 acres was put under crops in the fall of that year.

Additional Mutual Water Companies

As already noted, Imperial Water Company No. 1 was organized in 1900. Later in the same year, Imperial Water Company No. 4 (20,000 acres) was organized, followed in 1901 by Imperial Water Companies No. 5 (100,000 acres) and No. 6 (20,000 acres), and in 1902 by No. 7 (18,000 acres) and No. 8 (45,000 acres). Tri-Party contracts were entered into by each, which in general, except for that of No. 6 Co., were similar to the one heretofore described for No. 1 Company. No. 7 Company bought its water rights from the C. D. Company for a lump sum cash payment of \$50,000 and built its own distribution system; the C. D. Company built the distribution systems for the others.

No more water companies were organized until 1908. These are discussed at a later point.

Additional Construction

Canals

The Central Main Canal was continued on from the international boundary line through No. 1 Company to its north limits (No. 4 Heading), a few miles to the southwest of the present city of Brawley, and put into service in March 1902. From this point, water service was furnished to Water Company No. 4. A branch canal from the Central Main, with a crossing by flume of what was then the relatively narrow and shallow channel of New River, was constructed to provide service to Water Company No. 8.

The Encina Canal - now West Side Main - was constructed in Lower California from Sharp's Heading to the south, crossing New River channel in a flume, then swinging to the west and north to the international boundary line at a point about ten miles west of Calexico, for providing service to Water Co. No. 6.

Diverting from the Alamo Canal about 1-½ miles upstream from Sharp's Heading, the East Side Main Canal was constructed north to the international boundary line (Allison Heading) to serve Water Co. No. 7.

For service to Water Co. No. 5, the original plan utilized the old Alamo River channel as a canal from Sharp's Heading to Holtville, where an earthen dam was constructed in the channel to raise the water high enough to make delivery. However, the dam failed within a short time, and No. 5 Company built a main canal from Allison Heading north to its lands; this became known as the Low Line or No. 5 Main Canal.

By January 1, 1905, there had been constructed eighty miles of main canals in the Imperial and Mexicali Valleys belonging to the C. D. Company and the Mexican Company and some seven hundred miles of distribution canals in Imperial Valley.

Structures

In addition to the Chaffey Gate and other structures already mentioned, major structures built during the first years included: head gates for the Central Main and Encina Canals and a waste gate to the Alamo River, all at Sharp's Heading, and the 134 Waste Gate on the Central Main Canal in Mexico about two miles downstream from Sharp's Heading, which discharged into a side channel of New River.

Holton Power Plant

From a point on the No. 5 Main Canal southeast of Holtville known as No. 5 Heading, W. F. Holt, developer of No. 7 Water Company, the town of Holtville, and other enterprises, built a canal to the Alamo River where he installed a small hydroelectric plant in 1903-04 with a head of about 20 feet. This was the start of the Holton Power Company and supplied the first electric service to Holtville and El Centro. Water for the plant was secured from the C. D. Company by a special contract and when available up to 150 second-feet was used for power purposes. The deepening of the Alamo River by flood waters from the river break of 1905-07 increased the available head at the plant about 25 feet, and a second hydro plant was built to utilize the increased head. The two plants had a capacity of about 1500 kilowatts.

Concession from Mexican Government

From the discussion which has been given of the Mexican Company relating to the various contracts in which it became involved, as well as its intended purpose of selling or leasing water to serve lands in Mexico in addition to those it owned, it can be seen that the Company was, in fact, a public utility; but the right to operate as such had not been granted by the Mexican Government. Moreover, as will be referred to at a later point, questions arose as to the right of the C. D. Company to appropriate water from the Colorado River under California State law, since the River was considered navigable and such right had not been recognized by the United States Government; hence it appeared desirable to the C. D. Company to secure the right, if possible, to divert water from the River in Mexico.

These were among the reasons why the C. D. Company, through its subsidiary, the Mexican Company, sought a concession from the Mexican Government to legalize all of the activities of the latter Company.

Such a concession, or contract, was obtained under date of May 17, 1904, being approved by action of the Mexican Congress and the President under date of June 7, 1904.

The concession authorized the Mexican Company to carry through its canal system in Mexico, 284 cubic meters per second (10,000 second-feet) of water to be diverted from the Colorado River in the United States by the C. D. Company and turned over to the Mexican Company at the international boundary line. It also authorized the Mexican Company to divert from the Colorado River in Mexico, 284 cubic meters per second (10,000 second-feet) of water to be carried through its canal system, provided that such diversion did not injure the

completed in March of that year.

Complications With Work in Mexico

One of the complicating factors in connection with all work carried on in Mexico was that neither the C. D. Company nor the Southern Pacific Company, as such, could do any work in Mexico under their own names. At a later date, the U. S. Federal Government ran into a similar complication when it undertook to construct river levees in Mexico. It was therefore necessary that the work in connection with the canal system and the closing of the break be carried on in the name of La Sociedad de Yrrigation y Terrenos de la Baja California, S. A., the Mexican Company, with funds advanced by the C. D. Company or the Southern Pacific Company.

Damages from the Break

Erosion of New and Alamo Rivers

During the break, the large flow of water through the Alamo Canal caused an overflow for many miles and created a very serious situation. The larger part of the water overflowed the south bank and collected in New River channel in Lower California and thence passed down the west side of Imperial Valley to Salton Sea. At the closure of the Break, New River, which had been a rather shallow channel, had become a gorge 40 to 60 feet deep through Imperial Valley and extending for some six or eight miles into Lower California.

It was possible, through the use of the Alamo Wasteway at Sharp's Heading, to control the flow at that point during the River break, so that most of the area in the Valley east of New River received a continuous water supply. However, the large amounts of water which, to maintain control at Sharp's Heading, had to be wasted through the Alamo Wasteway to the Alamo River and thence to Salton Sea widened the River and deepened it as much as 20 to 30 feet in some places; but the resulting channel was small compared to that of New River.

It is estimated that some 13,000 acres of irrigable land, part of which was in crop, was destroyed by the erosion of the Alamo and New Rivers.

Salton Sea

Salton Sea, which had been practically dry, reached an elevation of approximately 195 feet below sea level by the time the break was closed in February, 1907. The surface area of the Sea at that time was about 500 square miles, (285,000 acres) with a length of 50 miles and a width of some 10 to 15 miles.

Flumes Over New River

In addition to the damage caused to the Alamo Canal, the water from the break destroyed the wooden flume which carried the Encina (West Side Main) Canal across New River in Mexico, and a similar flume across New River some 20 miles to the north of the international boundary line which supplied No. 8 Water Company.

Inasmuch as it was not practical to rebuild the No. 8 flume because of the greatly increased width and depth of the New River channel in that locality created by the flood, it was decided to enlarge the West Side Main Canal in Mexico and

same vicinity, to the west into Imperial Valley, was imminent at the time. As a matter of fact, such a natural diversion did occur in 1908-09 about twenty miles downstream at a point in the River about opposite the lower (Arizona - Mexico) international boundary line. The end had come to the peaceful meandering of the River along the east side of its delta in Mexico, which had existed over the previous five hundred years. While the 1905 break was a bitter and costly experience, still the knowledge gained from it and the realization of the need for a levee system, perhaps saved Imperial Valley from a far worse disaster at a later time through the River diverting itself into the Valley.

Permanent Hanlon Heading

Original Structure

The loan of \$200,000 made to the C. D. Company by the Southern Pacific Company in the early part of 1905 was primarily for the construction of permanent head works to replace the wooden Chaffey Gate and to construct the Alamo waste gate at Sharp's Heading. Work on the new head gate, known as Hanlon Heading, was started in December 1905 and completed in June 1906. The new structure was constructed on solid rock where a spur of Pilot Knob Mountain extended out near the River channel, the location of the structure being somewhat to the north and a short distance to the west of the Old Chaffey Gate. A new intake canal was excavated from the River to the new structure. Hanlon Heading had 11 gate openings each 12 feet wide and 10 feet high, the flow through them being controlled by radial gates. The designed capacity was 10,000 cubic feet per second at low-flow stages of the River, with the sill of the gate placed at a much lower elevation than that of the Chaffey Gate. There was also a "navigation pass" 10 feet 3 inches wide at the east end of the structure for the purpose of passing small power boats through the structure.

Addition to Hanlon Heading

In 1913, a "Stoney" gate was added to the west side of Hanlon Heading, occupying three of the original gate openings. This gate has a single opening of 25 feet by 14 feet, with the sill 5 feet lower than that of the main structure and was completed in May of that year. The purpose was to improve diversion conditions during low-flow periods of the River.

Repairs and Improvements to Canal System

Following the closure of the break, in addition to the rebuilding of the Encina (West Side Main) flume over New River and extension of that canal in the United States, other work was undertaken.

The banks of the Alamo Canal were repaired and strengthened and the work of straightening and confining the channel was commenced.

At a point on the Alamo River west of Holtville, a large concrete drop structure - known as Rositas Wasteway - was constructed to raise the water in the River for service to the Mesquite Lake area through the Rose Canal, for which a concrete head gate was also installed. In this way, reuse was made of the water discharged from the Holton Power Plant, as well as that which was passed through the Alamo Wasteway at Sharp's Heading in Mexico.

The Rositas Wasteway was designed for a capacity of 2,000 second-feet. The

The appropriation was used to extend the existing levee - C. D. Levee - along the River for a distance of about twenty-five miles in Mexico, which carried it across and for several miles below the break of the old channel into Bee River, the new levee being named Ockerson Levee. The work was completed in May 1911, but floods a short time later breached the new levee at the Bee River break and at many other points. The result was an almost total loss of the work, and the River was again flowing through Bee River into the Volcano Lake area.

United States Government Withdraws

In 1912, a part of the unexpected funds remaining from the 1910 appropriation was used in repairing numerous breaks in the upstream section of the Ockerson Levee, and again the work had to be carried on in the name of the Colorado River Land Company. In 1913, the remainder of the 1910 appropriation was used in repairing a break in the C. D. Levee a few miles below the international boundary line in Mexico, to which cost \$30,000 was contributed by Imperial Irrigation District.

By the start of 1915, the general situation as to flood control was chaotic. The C. D. Company and the Mexican Company were bankrupt and in the hands of Receivers with insufficient funds available, and Imperial Irrigation District was not yet in position to take over because of legal complications. In view of these conditions, a further appeal was made to the Congress for assistance, and the sum of \$100,000 was appropriated in March of that year, with the provision that Imperial Irrigation District contribute a like amount, which it did. These funds were expended in raising, strengthening, and extending the Volcano Lake Levee about four miles, and in rock revetting the parts of the C. D. Levee then under attack by the River. This was the last expenditure of funds by the United States Government on flood-protection work for Imperial Valley; the people of the Valley were left to their own fate, being faced with a flood menace far more critical than had existed up to that time.

Additions and Betterments to the Canal System

Receiver's Certificates

When the Receiver for the C. D. Company took over in December 1909, he found there were no funds available with which to operate. To secure the necessary funds, he obtained an order from the Court to issue Receiver's Certificates, and to April 1918, \$315,000 of such Certificates were sold at par to the Southern Pacific Company. This money, together with subsequent collections for water delivered to the mutual water companies, financed the operations of the Receiver.

Major Structures

Mention has already been made of the Stoney gate attached to Hanlon Heading, which was installed during the receivership. Other important canal structures built during this period included Cudahy Check, Laurence Heading (this was on the Alamo Canal in Mexico at the point of diversion for the new East Highline Canal), and a new head gate for the West Side Main (Encina) Canal at Sharp's Heading.

Due to a washout of the West Side Main Canal at the upstream end of the

a field survey of an All-American Canal.

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Cierro Prieto Canal

One of the first improvements undertaken by the District was the construction of the Cierro Prieto Canal diverting from Volcano Lake through a head gate constructed in the Volcano Lake Levee near its lower end at Black Butte. The canal was built to the northwest and then north, a total distance of some sixteen miles, keeping to the south of New River, to a junction with the West Side Main Canal near Wistaria Check.

There were several reasons for building this canal. By diverting water from Volcano Lake, the demand on the Alamo Canal would be reduced. Also, because much of the silt in the River was being deposited in the Volcano Lake region, the silt content of the water diverted would be materially reduced, which would result in a saving to both the District and the landowners in the cost of water service. Moreover, the entire west side of the Valley was dependent upon the flume which carried the West Side Main over New River, and any accident to the flume, such as had occurred in the past, might cause not only great inconvenience to the water users, but severe damage to their crops. The Cierro Prieto Canal would furnish another source of supply, independent of the flume, for the west side of the Valley.

The canal was completed in August 1916 at an initial cost, including the head gate, of about \$300,000. Tule Check, on the Cierro Prieto Canal was constructed in the spring of 1917, and the canal enlarged to a capacity of 1,200 second-feet, at a cost of about \$125,000.

The water surface of Volcano Lake varied with the amount of flow in the River, and during the periods of lowest flow it was not possible to divert to the Cierro Prieto Canal. For this reason, diversion was made from the Lake to the canal for about twenty days in August, 1916 and intermittently thereafter until September, 1921. The diversion of the River through the Pescadero Cut and out of the Volcano Lake region, made by the District in 1922, dried up the Lake, making further diversion into the canal impossible. After 1917, the canal was served primarily by the Solfataras Canal, discussed at a later point.

Board of Consulting Engineers

In view of conditions on the River and the very serious problem of maintaining an adequate water supply, the District Board of Directors, by resolution of September 26, 1916, appointed a Board of Consulting Engineers to make an investigation and recommend what should be done to cope with the critical situation. The Board consisted of G. G. Anderson and C. E. Grunsky, both of whom were well known for their ability and long experience in connection with Colorado River irrigation matters.

Report No. 1

The Consulting Board issued its Report No. 1 under date of October 25, 1916. This was of a preliminary nature and contained eight recommendations to be carried out immediately. These included a new head gate and intake canal at Andrade, with the use of large suction dredgers for handling heavy silt in the intake canal; improvements to the Alamo canal; and an upstream extension of the Cierro Prieto Canal to a connection with the Alamo Canal.

ed from a point about two miles below its Volcano Lake heading, to the north a distance of sixteen miles to the Alamo Canal at Cudahy Check, the extension being known as the Solfatara Canal. As has been pointed out, diversions to the Cierro Prieto Canal from Volcano Lake could be made only during the higher stages of the flow of the River. So the first purpose of the new canal was to assure a constant supply to the Cierro Prieto, and thus to the west side of Imperial Valley. The upper end of the new canal was located adjacent to and on the westerly side of the Volcano Lake Levee. Excavation from this section was used to raise and strengthen the Volcano Lake Levee. The lower portion of the canal veered away from the Volcano Lake Levee and crossed extensive alkali flats. The area between the canal and the levee was silted in, which not only provided good material for raising the levee, but also gave it backing and increased its stability.

Cudahy Check had been constructed in 1914 with funds provided by the Imperial Development Company, which owned a large tract of land in the vicinity, the check being used for diversion of water for the development of that tract. When the Solfatara Canal was constructed, its heading was located on the Alamo Canal immediately upstream from Cudahy Check, and the District reimbursed the Imperial Development Company in the sum of \$43,000 on the cost of the check.

The canal was completed in 1917 at a cost of \$171,000.

4. Improvements to the Alamo Canal

Considerable work was done on the Alamo Canal, including the cutting off of bends to improve alignment, widening of certain sections to increase capacity, and channelizing of a number of sections to prevent excessive deposition of heavy silt. On this work, a total of \$625,000 was expended.

5. Improvements to Levee System

In accordance with the Consulting Board's recommendation, \$500,000 was expended on the protective levee system, principally in extending, raising and revetting the Saiz and Volcano Lake Levees. Conditions which required this work will be discussed at a later point, under the heading of "Pescadero Cut".

6. Other Items of Construction

Among other major items constructed in accordance with the recommendations of the Consulting Board was the replacement of the Alamo Waste Gate at Sharp's Heading. This was a large wooden structure and was the main control not only for the several canals diverting from the Alamo Canal at Sharp's Heading, but also for the regulation of the entire Alamo Canal. It diverted surplus water to the Alamo River and was used in sluicing the lower end of the Alamo Canal. It was originally constructed in 1903, and although the Consulting Board had recommended that it be replaced with a concrete structure, this was not done, the replacement being a similar type of wooden structure costing \$86,500.

Also, a concrete wasteway structure was installed on the east side of the West Side Main Canal at Wistaria Heading in Mexico, discharging into a channel leading into New River. The cost of the structure was \$45,000.

In addition, there were a number of miscellaneous structures built, such as canal headings, small sluiceways and wasteways, both in Mexico and in the Imperial Valley, which completed the expenditure of funds from the second bond issue.

Construction of Deep Drains

The major portion of the work was carried on with the \$2,500,000 made available from the fourth bond issue, and by 1929, when these funds were exhausted, there had been completed a total of 190 miles of deep drain outlets. In addition, General Fund monies had been used in the construction of 44 miles of such drains, making the total 234 miles at the end of 1929.

Soils of Imperial Valley

These main drains were but a start toward solving the drainage problem of Imperial Valley. While such a system of deep drains had to be provided in any event, yet it was found that in most instances their effect did not extend to a very great distance laterally, for reasons which will be explained.

The soils of the delta portion of Imperial Valley - the area then developed are made up of alluvial deposits of fine textured clays, silts, and sands laid down by the Colorado River, the thickness and type of a stratum at any particular location having been determined by the course of the River and the type of silt it was carrying when the deposit occurred. The result is a very greatly stratified soil, made up of lenses or pockets of varying size and type of material, and this condition tends to retard natural drainage. There are no gravel and sand water-bearing strata and hence no "general" underground water table such as is found under many western irrigation projects. In most parts of the Valley, the water table is perched on underlying relatively impervious strata, so that drainage by deep-well pumping, successfully used in many projects, is ruled out.

These conditions made the problem of adequate drainage of the lands in the delta portion of Imperial Valley one of the most difficult of solution of any to be found in the West. Drainage methods which have been successful in areas of homogenous soils are not adapted to the stratified, alluvial and lacustrine soils of Imperial Valley.

Expansion of Drainage System

It became apparent that the answer to the problem was a drainage system that would meet the varying soil conditions on the individual farms. To this end, the District began an expansion of its drainage system, as rapidly as funds would permit, to reach each 160 acres of land throughout the Valley. Such would then provide an outlet for whatever additional drainage facilities as might be required on the individual farm to give it adequate drainage.

The program required the development of a lateral drain system by the deepening of existing surface drains to a depth of 6 or 8 feet and the construction of additional deep drains to serve as outlets. Also as a part of the program, the District adopted a policy of cooperating with the individual landowner in the making of a detailed survey and examination of his land, from which facilities to provide adequate drainage could be designed, and, if the landowner proceeded with the installation, furnishing all the engineering work required, all without expense to the landowner, but the latter was required to pay all other costs of the installation. As further assistance in getting the work underway, the District purchased two tile-laying machines, the use of which it furnished to the landowner at cost.

1929, which provided that the Imperial District would construct all of the works, with the Niland District paying for the excavation and Imperial standing the cost of the necessary structures. Work performed by Imperial in 1929 under this contract included the extension of the East Highline Canal for 2½ miles and the construction of five laterals extending westerly to Salton Sea, totalling 32 miles in length, together with parallel surface drains from the Southern Pacific Railroad to the Sea. In subsequent years, Imperial continued construction until the proposed work was completed.

Miscellaneous Canal System Improvements

The Thistle Canal on the west side of the Valley west of Brawley was enlarged and its laterals extended to make possible the development of several thousand acres of new land. Also, the Trifolium (West Side Main) Canal was extended for several miles to the western boundary of the District, with laterals to the north to serve a considerable area lying south of Salton Sea.

In addition to funds provided by bond issues for work on realigning and controlling the Alamo Canal in Mexico, the District expended a considerable amount from General Funds for this purpose.

Commencing about six miles downstream from Cudahy Check, a section of the Alamo Canal some three or four miles in length, known as Alamo Mocho, gave particular trouble. Bed silt depositing in this section caused a continuous rise of the bottom of the Canal and hence of the water surface, requiring raising of the canal banks. This rise in water surface averaged between one-half and one foot per year.

It was also noted that, year by year, the bed silt was gradually moving farther into the main canals and laterals in the Imperial Valley, necessitating more dredging and, hence, increasing the cost of maintenance to the District. Sluicing of the canals into the Alamo and New Rivers was of benefit in removing bed silt, but still large amounts of this type and most of the suspended silt were carried through to the farms, causing added expense to the water users too.

Silt Problem

As an illustration of the seriousness of the silt problem to the Imperial Valley, conditions in the year 1923 are cited.

From tests made during that year, it was determined that about 25,000 acre-feet of silt passed through Rockwood Heading into the Alamo Canal; this equals 40,000,000 cubic yards but did not include all of the bedload or sand which was carried along the bottom of the canal and out of reach of the silt-sampling apparatus. Of this total quantity of silt, it was estimated, in round figures that 1,000,000 cubic yards was removed from the intake canal by suction dredging; 3,000,000 cubic yards was excavated in cleaning, by various methods, the remainder of the canal system; 10,500 cubic yards were disposed of by sluicing the canals and laterals; and deliveries of water to lands in Mexico carried 5,500,000 cubic yards onto those lands. The total of the foregoing amounts is 20,000,000 cubic yards, or one-half of the total of 40,000,000 cubic yards. This means that the other half, or at least 20,000,000 cubic yards of silt, was carried onto the irrigated lands in Imperial Valley.

Other Events to 1940

Improved Situation

With the Plan of Composition becoming effective, the District's financial position very greatly improved. However, it had been a most difficult decade through which the District and its people had had to operate; but on the bright side, several events had taken place which offered much encouragement.

During the period prior to storage in Lake Mead in 1935, there had been no large river floods; hence expenditures required for flood protection were at a minimum. The silt content of the water, which had been excessive for several years prior to 1931, greatly increasing the cost of canal maintenance, had returned to normal, which assisted in carrying out the retrenchment program.

As had been anticipated, this very severe retrenchment program in the early thirties resulted in a deterioration of the canal and drainage systems, but toward the latter part of the period it was possible to catch up on a considerable part of the delayed work. Also, with the monies made available to the Drainage Fund under the Plan of Composition, drainage construction was going forward at a much increased pace. Moreover, after 1932 the District issued no more registered warrants and had maintained its cash position for current expenditures.

Commencing on February 1, 1935, storage of water in Lake Mead behind Hoover Dam had begun, which removed the major flood danger and assured an ample water supply for the Valley. Construction of the All-American Canal had started in 1934, the head works had been dedicated in 1938, and service to the Valley was to be commenced in a short time. The Canal not only would eliminate the international difficulties and diversion problems which had previously existed, but, together with Hoover Dam, would in time largely eliminate the silt problem. In May, 1936, the District's power system had gone into operation and was rapidly being expanded to cover the entire Valley. Revenue from power sales was increasing rapidly, and an additional source of power would soon be available from plants then under construction by the District on the All-American Canal. Lastly, to all of the foregoing should be added the effect from the rapidly improving market for agricultural products, both as to prices and demand, which had developed in the latter part of the period.

1939 Storm

But mention should be made of two serious events which the District had to meet, one of which occurred in 1939 and the other in 1940.

In September, 1939, a storm resulting from a hurricane off the west coast of Mexico swept up through the trough of the Colorado River Valley, and during one week in which rain fell in Imperial Valley almost continuously, there was nearly 7 inches of precipitation - not only the maximum amount for any one storm but more than the total amount for any one year, in the history of the Valley.

Great damage was done to both the canal and drainage systems. The West Side Main Canal and the north end of the East Highline Canal were broken in many places and canal banks were seriously damaged over a length of many miles.

A large number of lateral headings and drop and delivery structures were destroyed, as well as a number of miles of lateral canal banks. Several major drainage structures were washed out, and other serious damage to the drainage system occurred at many points.

The cost of repairing the damage to the canal and drainage systems amounted to about \$110,000. A part of this cost was met with funds from the newly created Emergency Fund provided for by the 1939 Plan of Composition and the balance from the General Fund.

1940 Earthquake

The second disastrous event was the earthquake of May 18, 1940 - the most severe since the development of the Valley commenced. It was caused by a movement of the San Jacinto fault, which passes through the Valley, from the northwest to the southeast, a few miles to the west of Brawley and several miles to the east of El Centro and Calexico. The epicenter was located approximately on the international boundary line, and it was possible to trace the fault for a distance of some forty to fifty miles, commencing in Mexico near Volcano Lake and extending through Lower California and on through Imperial Valley to north of Brawley. The maximum slippage was over 14 feet near the international boundary line.

The principal damage occurred to the canal system in Mexico. For several miles below Tortuoso Drop the Solfatara Canal was completely destroyed. The large flume carrying the West Side Main over New River was completely wrecked and large longitudinal cracks were opened up in many miles of the Alamo and other canals.

In Imperial Valley, the East Highline Canal was cracked in many places, and the Ash Canal and its laterals were severely damaged. Along the fault itself, the shift caused an offset in the canals it crossed, and in several cases structures were destroyed.

The earthquake also caused very extensive damage in most of the cities and towns of the Valley, and several people lost their lives. The remarkable thing is that great numbers were not killed or severely injured.

The entire water supply to the District's canal system had to be cut off for several days until repairs were completed and service re-established to most of the canal system. With the loss of the Solfatara Canal and the New River Flume in Lower California, the entire water supply for the west side of Imperial Valley was cut off. However, the All-American Canal had been completed from the Central Main Canal east of Calexico to the West Side Main Canal and, with water from the Central Main Canal, was put into service to supply the west side of the Valley. Had this not been available, there would have been considerable loss of crops in that area.

The Solfatara Canal was rebuilt and, together with the partial use of the All-American Canal, supplied the west side of the Valley until the balance of the All-American Canal was completed and put into service. As it was known that water would soon be available through the All-American Canal, the New River Flume in Lower California was not rebuilt.

☐ Continuation ☒ Update

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
CONTINUATION SHEET

Primary # P-13-008983 (Wormwood Canal)
HRI #
Trinomial
NRHP Status Code: 6Z

Page 2 of 4 ***Resource Name or # (Assigned by recorder)** Wormwood Canal, Lateral 7 and Drain Update
Recorded by: Jennifer Krintz, Architectural Historian **Date:** November 2011
☐ Continuation ☒ Update

*b. USGS 7.5' Quad	Mount Signal	Date	1957; 1976	T	16S	R	13E;	¼ of	of Sec	36; S.B.
c. Address	Graham and Drew Roads			City	El Centro					Zip 92243
d. UTM: (give more than one for large and/or linear resources)	Zone	11S,			622691.78		mE/	3623217.68		mN;

***P3a. Description:** The Wormwood Lateral 7 is an irrigation canal constructed in 1950. It is located east of the Westside Main Canal and flows east and south in the Imperial Valley in Imperial County, CA. The canal is approximately 10 feet wide and about 6 feet deep. The lateral is lined with concrete. The entire lateral is approximately 1 mile long and terminates at the Wormwood Canal to the east.

***P3b. Resource Attributes:** HP20. Canal/Aqueduct
P5a. Photograph or Drawing:



P5b. Description of Photo:
View of Wormwood Lateral 7 looking south
Photo taken November 2, 2011.

***P6. Date Constructed/Age and Sources:**
☒ Historic ☐ Prehistoric ☐ Both
1950,
1949 Imperial County Aerials, US Dept of Agriculture
1957 Seeley 7.5-minute USGS quad map

***P7. Owner and Address:**
Imperial Irrigation District
333 East Barioni Blvd.
Imperial, CA 92251

Page 3 of 4 ***Resource Name or # (Assigned by recorder)** Wormwood Canal, Lateral 7 and Drain Update
Recorded by: Jennifer Krintz, Architectural Historian **Date:** November 2011
☐ Continuation ☒ Update

***b. USGS 7.5' Quad:** Seeley **Date:** 1957; **T** 16 S; **R** 12 E; **of Sec.** 90; **S.B.** B.M

c. Address: N/A **City:** Imperial **Zip:** N/A

d. UTM: Zone 11S; **616764.98mE** / **3626776.20mN**;

***P3a. Description:** The Wormwood Drain is an irrigation canal constructed circa 1909, one of the earliest drains in the Imperial Valley. It is located northeast of the Westside Main Canal and flows north and south in the Imperial Valley in Imperial County, CA. The drain is approximately 10-20 feet wide and about 10 feet deep. It is an earthen dug ditch. The entire drain is approximately 1.5 miles long and expels to New River to the north.

***P3b. Resource Attributes:** HP20. Canal/Aqueduct

P5a. Photograph or Drawing:



P5b. Description of Photo:

Photo of the Wormwood Drain looking south.
Photo taken November 2, 2011.

***P6. Date Constructed/Age and Sources:**

☒ Historic ☐ Prehistoric ☐ Both

Circa 1909,
1909 El Centro 15-minute US Army Corps Topo map,

***P7. Owner and Address:**

Imperial Irrigation District
333 East Barioni Blvd.
Imperial, CA 92251

***P8. Recorded By:**

Jennifer Krintz, Architectural Historian
ASM Affiliates, Inc.
260 S. Los Robles Avenue Suite 106

Pasadena, CA 91107

***P9. Date Recorded:** November 2011

***P10. Survey Type:** Intensive

P11. Report Citation: INVENTORY, EVALUATION, AND ANALYSIS OF IMPACTS ON HISTORIC RESOURCES ON PRIVATE LANDS WITHIN THE AREA OF POTENTIAL EFFECT OF THE CAMPO VERDE SOLAR PROJECT, IMPERIAL COUNTY, CALIFORNIA, ASM Affiliates, November 2011.

***B10. Significance: Theme:** Irrigation Water Conveyance Systems **Area:** Imperial Valley

Period of Significance: N/A **Property Type:** Irrigation System **Applicable Criteria:** N/A

The Wormwood Canal was one of the earliest irrigation canals in the Imperial Valley, constructed in 1911, with the Wormwood Drain constructed even earlier in 1909, while Lateral 7 was constructed much later in 1950. According to a previous evaluation by Caltrans, the Wormwood Canal was recommended not eligible for listing in the NRHP because the canal was realigned and lined with concrete from its original earthen materials. Therefore the canal does not retain enough integrity to convey its significance as one of the original irrigation canals for the Imperial Valley. ASM concurs with this finding and recommends the Wormwood Canal as not eligible for listing in the NRHP and the CRHR. Although the canal is associated with the early irrigation system of the Imperial Valley, and the important local theme of agricultural development, this particular canal, nor the early Wormwood Drain on its own, convey that theme as well as other similar resources such as the Westside Main and the All-American canals. Therefore, the Wormwood Canal is recommended not eligible for the National Register of Historic Places nor the California Register of Historic Resources.

Page 4 of 4
Recorded by: _____

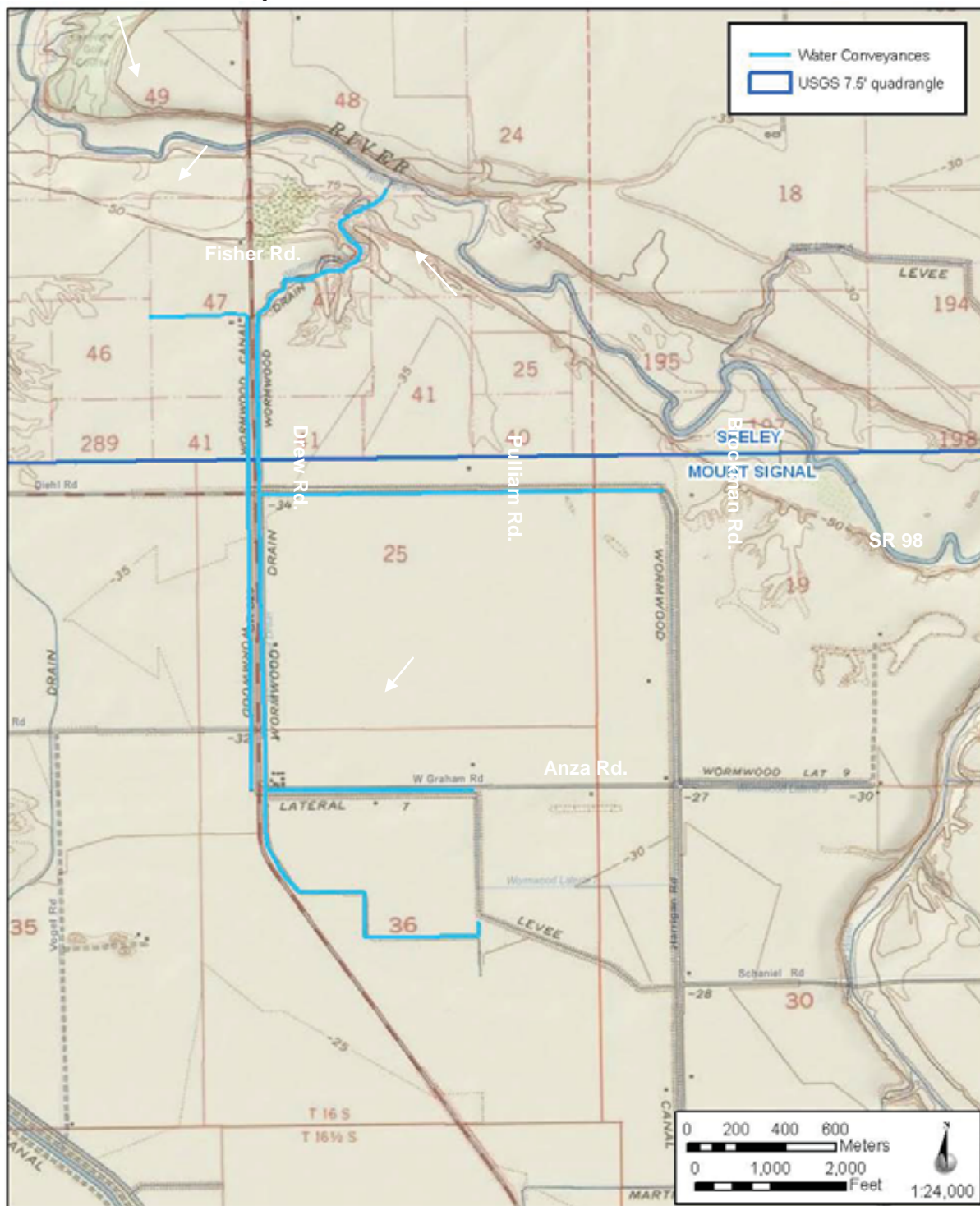
*Resource Name or # (Assigned by recorder)

Wormwood Canal, Lateral 7 and Drain Update

Date: November 2011

☐ Continuation ☒ Update

Location Map of the Wormwood Canal, Lateral 7 and Drain



State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
CONTINUATION SHEET

Primary # P-13-008983 update
HRI#
Trinomial

Page 1 of 6

*Resource Name or # (Assigned by recorder) Wormwood Canal

*Recorded by: H. Thomson, M. Adame

*Date: 07/15/2011

☐ Continuation ☒ Update

P-13-08983, the Wormwood Canal, was first recorded by Hupp in 1999. A bridge crossing over SR98 was recorded during this survey and inspection of the canal was limited to the portion adjacent to the bridge.

The site record was updated in December 2010 by archaeologists with Laguna Mountain Environmental. Two previously unrecorded segments of the Wormwood Canal were documented at this time. These segments are located to the south of the current project area.

An additional 2272' segment of canal was recently documented by KPE archaeologists. The segment identified is situated on the west side of and runs parallel to Drew Road, north of the intersection with West Diehl Road. The Wormwood Canal is channeled beneath Drew Road from the east to a check. A check is a structure built to regulate or raise the water level and in this case, combines the functions of both a check and a drop: the water level may be raised upstream of a gate and is dropped on the downstream side. Gate 88 is also located here and this supplies water to the Wormwood Lateral 7 which is adjacent to the west and to the south. The segment inspected, begins 617' north of West Diehl, and ends 2.19 miles south at the intersection of Drew Road and West Wixom Road. There are several gates, associated with these canals. These include Gate 94 a turnout to ag fields to the west and a check gate about half way up the portion of the lateral within the project area on Wormwood Lateral 7 and on the Wormwood Canal, Gate 88 located at the southern end, is situated at the intersection of Wormwood and Drew, and 90, 90A and 90B are at a check in the north. Wormwood Lateral 7 turns into a ditch and terminates just south of this spot. There are also several concrete irrigation canals and ditches located around the perimeters of the ag fields to the west. Wormwood Lateral 7 has a date stamp of 1954 with the initials JP next to the date in the south and a date of 1950 with the initial P next to the date in the north. Wormwood Canal has a date stamp of 1984 as well as a stamp with the text, Rykerson and the date 1984.



IMG_1846-view to north
Wormwood Lateral 7 at Wixom Road



IMG_1847- view
Wormwood Lateral 7 at Gate 94

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
CONTINUATION SHEET

Primary # P-13-008983 update
HRI#
Trinomial

Page 2 of 6

*Resource Name or # (Assigned by recorder) Wormwood Canal

*Recorded by: H. Thomson, M. Adame

*Date: 07/15/2011

☐ Continuation ☒ Update

Huff determined that the 1911 Wormwood Canal, like the IID irrigation system overall, reflects the developments that occurred as a result of the construction of the All American Canal in 1941. Huff determined that although important for its association with the development of agriculture in the Imperial Valley, it did not possess the requisite degree of integrity due to reconstruction since the 1950's.

Laguna stated that the portions they documented retained good integrity. Further, Caltrans historian Frank Lorrie conducted an extensive study of the system in 1997 and concluded that the elements in the Imperial Irrigation District that retain sufficient integrity for the period 1941-1950 could be contributors to a potentially eligible National Register District.

This resource has not been surveyed in its entirety; however, Shannon Davis (ASM Affiliates, Inc.) did evaluate the segments within the Campo Verde Solar Project APE and recommended the Wormwood Canal not eligible for the NRHP and CRHR. Although the Wormwood Canal is associated with the early irrigation system of the Imperial Valley, and the important local theme of agricultural development, it does not convey that theme as well as other similar resources such as the Westside Main and the All-American canals, in part due to their loss of integrity (Davis et al. 2011; Mitchell 2011).

Davis, Shannon, Jennifer Krintz, Sarah Stringer-Bowsher, and Sinéad Ní Ghabhláin. 2011. Impacts on Historic Resources on Private Lands, Campo Verde Solar Project, Imperial County, California.

Mitchell, Patricia T. 2011. Inventory Report of the Cultural Resources Recorded within the Campo Verde Solar Project, Imperial County, California.



IMG_1849- View to NNE
Wormwood Canal at West Diehl Road.

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
CONTINUATION SHEET

Primary # P-13-008983 update
HRI#
Trinomial

Page 3 of 6

*Resource Name or # (Assigned by recorder) Wormwood Canal

*Recorded by: H. Thomson, M. Adame

*Date: 07/15/2011

☐ Continuation ☒ Update



IMG_1851
Wormwood Lateral 7 at West Diehl



IMG_1850
Wormwood Canal at West Diehl

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PHOTOGRAPH RECORD

Primary # P-13-008983 update
HRI#
Trinomial

Page 4 of 6
Year 2011

Resource Name or #: Wormwood Canal

Camera Format: Digital – Canon Powershot SD1300 IS Digital ELPH 12.1 megapixel
Negatives Kept at: kp environmental, LLC. 2387 Montgomery Ave, Cardiff by the Sea, CA 92007

07	15	1846	/	Wormwood lateral at Wixom Road 1954 date	D
07	15	1847	/	1954 date and initials FP	
07	15	1848	/	Wormwood check and turnout	NW
07	15	1849	/	Wormwood at Diehl	
07	15	1850	/	Date of 1984	NE
07	15	1851	/	Wormwood Canal at West	N
07	15	1852	/	Fig Drain at West Diehl	NW
07	15	1853	/	Fig Drain at Diehl south side	SE
07	15	1854	/	Shoe cemetery	
07	15	1855	/	Fig drain field crossing north side	W
07	15	1856	/	Fig drain south side	NW
07	15	1857	/	North middle corner siphon and turnout	SW
07	15	1858	/	North end of canal next to wormwood	
07	15	1859	/	Fig drain at southern end of western area	SE
07	15	1860	/	Same as above with tile line sign	
07	15	1861	/	East-west lateral at Derrick Drive & Wixom concrete ditch, check is out of project area on other side of road.	
07	15	1863	/	owl	
07	16	1873	/	Rykerson 1966	
07	16	1874	/	Overview at NE corner of west area turnouts 26 & 27	ESE
07	16	1875	/	Turnout 27	
07	16	1876	/	Bone	D
07	16	1877	/	Bone	D
07	16	1878	/	Bone	D
07	18	1879	Site 6	1-Yellow ceramic fragment with part of handle	D
07	18	1880	Site 6	2- can with external friction lid and piece of cut bone pork?	D
07	18	1881	Site 6	-3 bottle base	D
07	18	1882	Site 6	-4 Metal hinge and piece of milled lumber	D
07	18	1883	Site 6	5- light green bottle fragment	D
07	18	1884	Site 6	6- white ceramic fragment	D
07	18	1885	Site 6	Sherd and pipe stem	D
07	18	1886	Site 6	Sherd	D
07	18	1887	Site 6	pipe stem	D

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
SKETCH MAP

Primary # P-13-008983 update
HRI#
Trinomial

Page 5 of 6

*Resource Name or # (Assigned by recorder) Wormwood Canal

*Drawn By: H. Thomson, kp environmental, LLC, 2387 Montgomery Ave. Cardiff By The Sea, CA 92007

*Date: 07/15/2011



LOCATION MAP

Trinomial

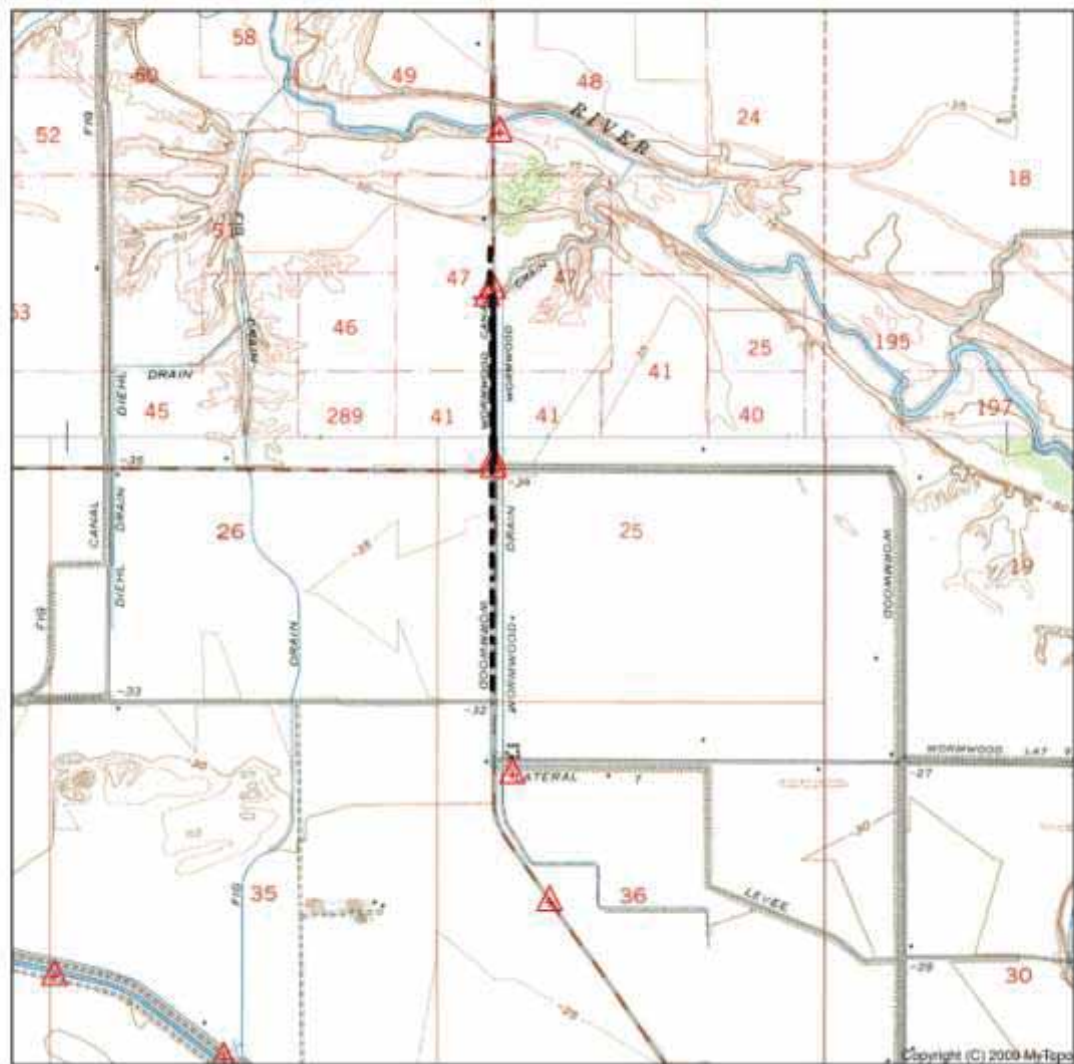
Page 6 of 6

*Resource Name or #: Wormwood Canal

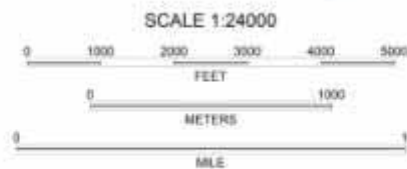
*Map Name: Mt. Signal, Calif.

*Scale: 1:24,000

*Date of Map: 1957



Declination
★
GNMN
GN 0.71° E
MN 11.93° E



MT SIGNAL, CA
1957

Page 1 of 2

***Resource Name or # (Assigned by recorder)**

Wormwood Canal Update

Recorded by: Jennifer Krintz, Architectural Historian

Date: May 2011

☐ Continuation ☒ Update

P1. Other Identifier:

***P2. Location:** ☐ Not for Publication ☒ Unrestricted

***a. County:** Imperial

***b. USGS 7.5' Quad:** Mount Signal **Date:** 1957; **T** 17S; **R** 13E; **of Sec.** 6,7; **S.B.** B.M

c. Address: N/A **City:** Imperial **Zip:** N/A

d. UTM: Zone 11S; **North end:** 623340.61 **mE** / 3619020.88 **mN**; **South end:** 623517.44 **mE** / 3616761.21 **mN**

***P3a. Description:** The Wormwood Canal is an irrigation canal constructed circa 1911. It is located east of the Westside Main Canal and flows east and south in the Imperial Valley in Imperial County, CA. The canal is approximately 10 feet wide and about 6 feet deep. Dirt roads access the canal from Old Highway 80, SR 98, and I-8. The canal is lined with concrete. It was originally constructed in 1911 and extended years later. Modifications were added to the canal in the 1960s. The entire canal is approximately 6 miles long and terminates at the northern end at the Wormwood Drain and at the southern end at the intersection of Drew Road and SR98.

***P3b. Resource Attributes:** HP20. Canal/Aqueduct

P5a. Photograph or Drawing:

P5b. Description of Photo:

Looking southeast at the canal.
Picture taken May 4, 2011.

***P6. Date Constructed/Age and Sources:**

☒ Historic ☐ Prehistoric ☐ Both
Circa 1911,
1999 DPR 523 Form, Jill Hupp

***P7. Owner and Address:**

Imperial Irrigation District
333 E. Barioni Blvd.
Imperial, CA 92251

***P8. Recorded By:**

Jennifer Krintz, Architectural Historian
ASM Affiliates, Inc.
260 S. Los Robles Avenue Suite 106
Pasadena, CA 91107



***P9. Date Recorded:** May 2011

***P10. Survey Type:** Intensive

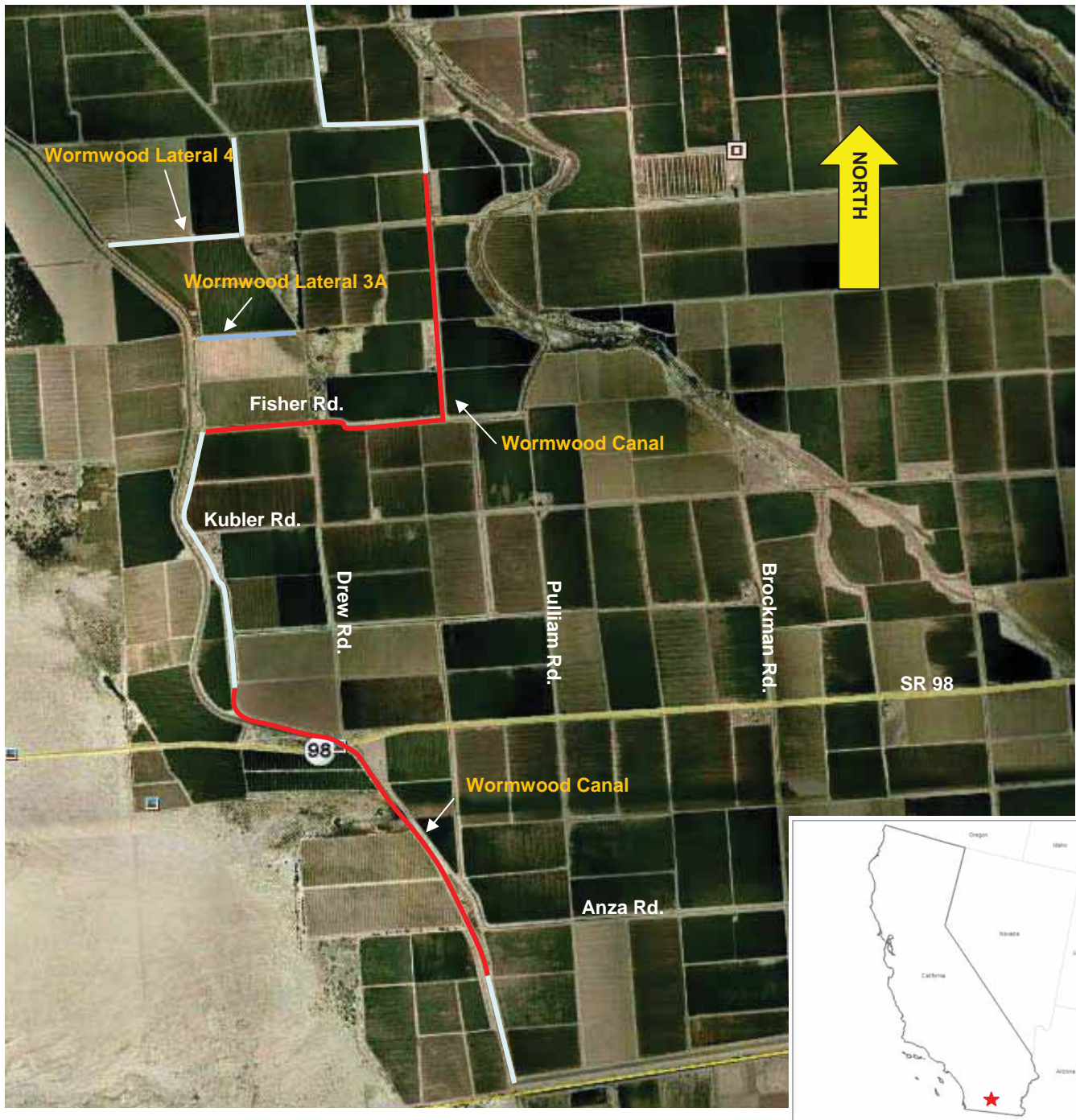
P11. Report Citation: Draft Inventory, Evaluation and Analysis of Effects on Historic Built Environment Properties Within the Area of Potential Effect of the Centinela Solar Energy Project, Imperial County, CA

***B10. Significance: Theme:** Irrigation Canal of the Imperial Valley **Area:** Imperial Valley, CA

Period of Significance: 1911-1930 **Property Type:** N/A **Applicable Criteria:** None

In 1999, Judy Hupp of Caltrans recommended the Wormwood Canal not eligible for the National Register of Historic Places because the canal was realigned and lined with concrete from its original earthen materials. Therefore the canal does not retain enough integrity to convey its significance as one of the original irrigation canals for the Imperial Valley. Although the canal is associated with the early irrigation system of the Imperial Valley, this particular canal does not convey the significance of the irrigation system as well as the Westside Main Canal or the All-American Canal. While it was part of this larger canal system, it alone is not individually significant. ASM concurs with this finding and recommends the Wormwood Canal not eligible for the National Register of Historic Places nor the California Register of Historic Resources.

Location Map of the Wormwood Canal



Red outline indicates the canal segments within the survey area
Blue outline indicates the canal laterals within the survey area

PRIMARY RECORD

Primary # P-13-008983

UPDATE

HR #:

Trinomial:

NRHP Status Code:

Other Listings:

Review Code:

Reviewer:

Date:

Page 1 of 2

Resource Name or #: Wormwood Canal (other portions not recorded on 1999 site form)

P1. Other Identifier: Wormwood Canal

P2. **Location:** ☒ Not for Publication ☐ Unrestricted

a. County: Imperial

and (P2b and P2c or P2d. Attach a Location Map as necessary.)

b. USGS 7.5' Quad: Mt. Signal Date: 1997. **N portion:** T17S; R13E; NE ¼ of Section 5; T16S; R13E; SE ¼ of Section 31; **Southern portion:** T17S; R13E; NW & SE ¼ of Section 7; T17S; R13E; NE ½ of Section 17; S.B. BM

c. Address: None

d. UTM: Zone 11; NAD 83; **N portion:** South: 625277mE/3619009mN; North: 625260mE/3620234mN; APN #052-170-050/052-430-009; **Southern portion:** North: 623231mE/3618203mN; South: 625137mE/3615323mN; APN #052-190-007

e. Other Locational Data. This resource is located south of Interstate 8, southwest of El Centro. The **northern portion** is situated between Drew Rd. and Pulliam Rd. extending northward from Fisher Rd.; (with another segment paralleling Fisher Rd. to the west); the **southern portion** is situated west of the upper portion west of Drew Rd. paralleling Mandrapa Rd. immediately to the east. This portion of the canal extends south of St Route 98 for nearly 2 mi. where it connects with the All-American Canal along the Mexican border (1 mi. is outside of current survey area). Elevation in the northern portion varies from 21 to 25 ft. below sea level portion (from south to north) and from 13 to 9 ft. below sea level portion (from north to south) in the southern.

P3a. Description: Two additional segments of the previously recorded Wormwood Canal were recorded during survey of agricultural property (for a proposed solar project), roughly 1.4 mi. apart (SW to NE). The north-south aligned 0.75 mi. long **northern** portion parallels the east side of Wormwood Rd. on the western border of parcels #052-170-050 and 052-430-009, north of Fisher Rd. This segment continues northward out of the survey area for several miles towards Seeley (the east-west segment heading west is south of Fisher Rd. and outside the current survey area).

The **southern** portion within the current survey area is an irregular alignment roughly 2.3 mi. long (east of the major Westside Main Canal) starting approximately 117 ft. west of the western end of Kubler Rd. at the north, heading south paralleling Mandrapa Rd. then crossing SR 98 some 1.5 mi. south of Kubler Rd, and extending south-southeast another 0.8 mi. along the western edge of the survey area (a small portion is within BLM land however).

A "1964" date stamp was noted on a flow gate along the northern portion, but no other date stamps were observed. The canal varies in width from roughly 11 to 15 ft. across at the top (depth is unknown since the canal was full of water). The canal segments appear to be well-maintained and the integrity is good in spite of the recent earthquake activity in the area.

P3b. Resource Attributes: H20; Canal/aqueduct

P4. Resources Present: ☐ Building ☐ Structure ☐ Object ☒ Site ☐ District ☐ Element of District ☐ Other:

P5b. Description of Photo: Canal overview (southern portion), looking north, 0.2 mi. north of SR 98, where canal turns northward no longer paralleling the Westside Main Canal (white flow gate is 500 ft. due east of West Main Canal); Mandrapa Rd. is dirt farm road along east side; 12/20/10; PR-03131-022



P6. Age and Sources

☒ Historic ☐ Prehistoric ☐ Both

P7. Owner and Address:

Unknown

P8. Recorded by:

Frank Dittmer and Alette van den Hazelkamp
Laguna Mountain Environmental, Inc.
7969 Engineer Road, Suite 208
San Diego, CA 92111

P9. Date Recorded: Dec. 8 & 20, 2010

P10. Survey Type: Intensive Pedestrian

P11. Report Citation: 2011 Pigniolo, Andrew, and Pepe Aguilar. *Cultural Resource Survey for a Portion of the Centinela Solar Project Area, Imperial County, California*. Prepared for kp environmental, Carlsbad, California.

Attachments: ☐ NONE ☒ Location Map ☐ Sketch Map ☐ Continuation Sheet ☐ Building ☐ Structure, and Object Record ☐ Archaeological Record ☐ District Record ☐ Linear Feature Record ☐ Milling Station Record ☐ Rock Art Record ☐ Artifact Record ☐ Photograph Record ☐ Other (List):

LOCATION MAP

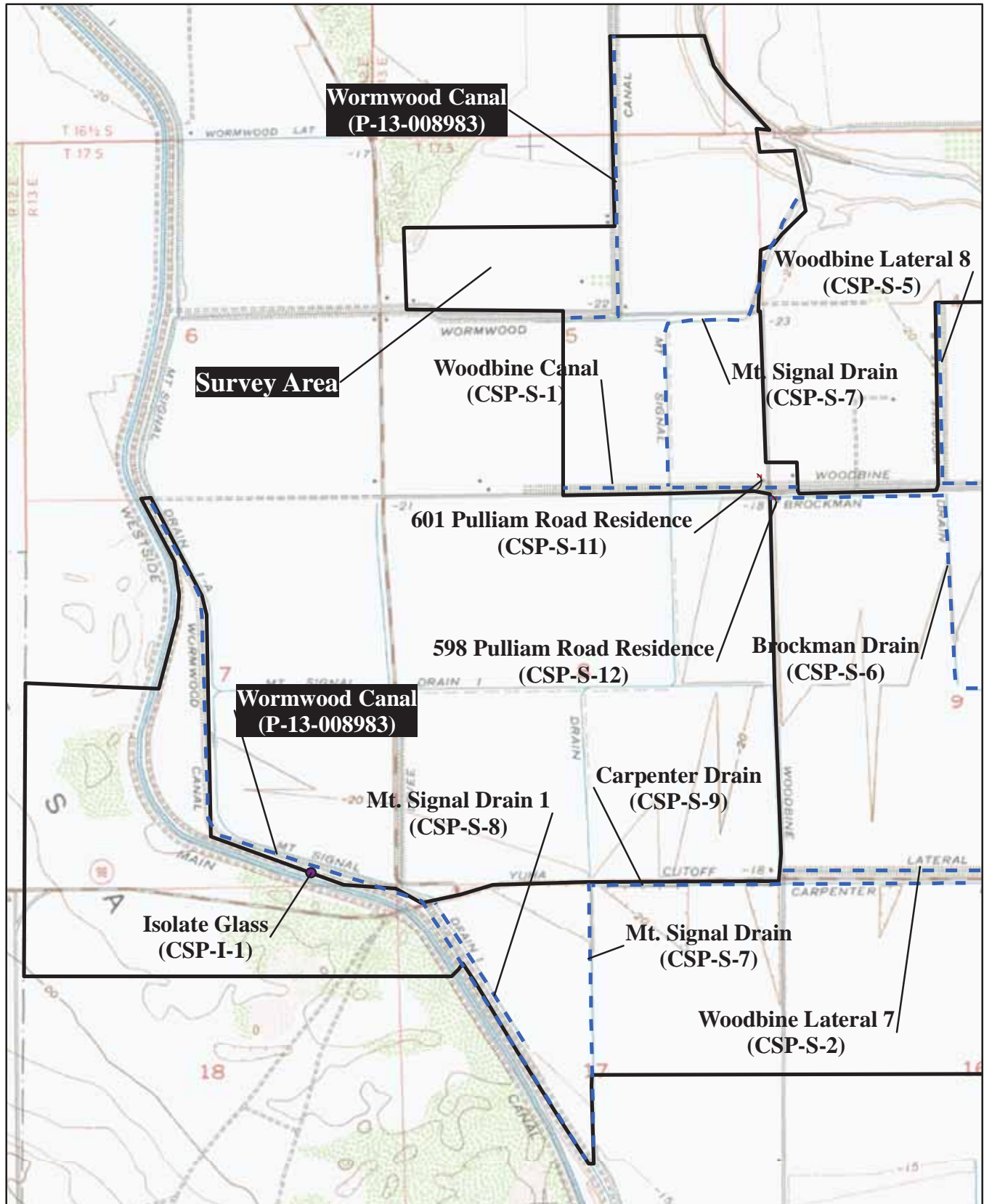
Page 2 of 2

Resource Name or #: P-13-008983

Map Name: USGS Mount Signal Quadrangle

Scale: 1:24,000

Date of Map: 1957/1976



PRIMARY RECORD

Primary # P-13-008983

HRI #:

Trinomial:

NRHP Status Code: 6

Other Listings:

Review Code Reviewer Date

*Resource Name or #: Wormwood Canal

Map Reference No.: 2

P1. Other Identifier: N/A

County/Route/Postmile: 11-IMP-98, P.M. 0.3-30.3/K.P 0.5-48.8

*P2. Location: *a. County Imperial

b. Address SR 98 at Postmile 22.07

City Calexico

Zip 92231

*c. USGS 7.5 Quad:

d. UTM:

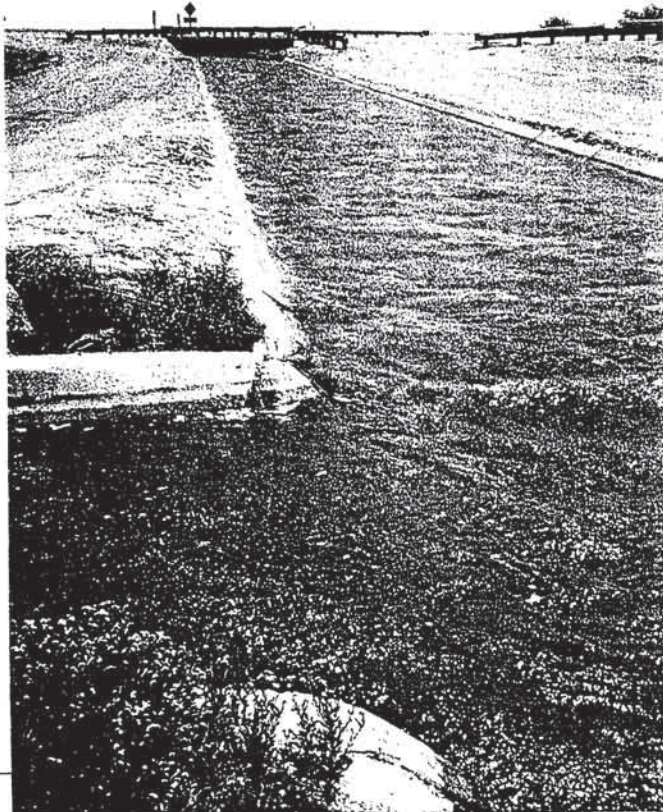
*e. Other Locational Data: (e.g. parcel #, directions to resource, elevation, etc., as appropriate)

Segment within the APE crosses SR 98 at P.M. 22.07 (K.P. 35.31) just west of Drew Rd.

*P3a. Description:

The Wormwood Canal is an irrigation ~~ditch~~ ^{canal} that runs through agricultural land in the Imperial Valley section of Imperial County. It enters the current project area where State Route 98 crosses the canal at Postmile 22.07 (K.P. 35.31) west of Drew Road. At this point the canal is approximately 10 feet wide (3.04 m) and about 6 feet deep (1.82 m), running perpendicular to the highway in a northwest-southeast direction. It is concrete lined with a trapezoidal shaped profile. Dirt access roads run along the levees on both sides of the canal to precipitate maintenance and dredging operations. Originating at the All-American Canal along the U.S.-Mexican border, Wormwood Canal extends northwest roughly 6 miles (9.65 km), terminating at Wormwood Drain, roughly 2.8 miles (4.5 km) south of Seeley. Bridge #58-275, constructed in 1955, carries SR 98 across the canal. Built around 1911, Wormwood Canal parallels the much larger Westside Main Canal; a dirt access road runs between the two. Just north of the project APE, Wormwood Lateral 1 intersects its parent canal. The surrounding area consists primarily of irrigated cropland.

P5. Photograph or Drawing (Photograph required for buildings, structures, and objects.)



*P3b. Resource Attributes: HP20
(Canal/Aqueduct)

*P4. Resources Present:

☐ Building ☒ Structure
☐ Object ☐ Site ☐ District
☐ Element of District

P5b. Description of Photo:
4/28/99. Canal segment S
of SR 98 looking SW.

*P6. Date Constructed/Age:
c.1911; recent modifications
☐ Prehistoric ☒ Historic ☐ Both

*P7. Owner and Address:
Imperial Irrigation District
333 E. Barioni Blvd.
Imperial, CA 92251

*P8. Recorded by:
Jill Hupp
Caltrans Environmental Program
PO Box 942874
Sacramento, CA 94274-0001
(916) 654-3567

*P9. Date Recorded: 4/28/99

*P10. Type of Survey: ☒ Intensive
☐ Reconnaissance ☐ Other

*P11. Report Citation: IMP-98 HASR,
11-IMP-20, P.M. 0.3/30.3, EA 173400

*Attachments: ☐ NONE ☐ Map Sheet ☐ Continuation
Sheet ☒ Building, Structure, and Object Record
☐ Linear Resource Record ☐ Archaeological Record ☐
District Record ☐ Milling Station Record ☐ Rock Art
Record ☐ Artifact Record ☐ Photograph Record ☐ Other
(List):

BUILDING, STRUCTURE, AND OBJECT RECORD

*NRHP Status Code: 6

*Resource Name or #: Wormwood Canal

- B1. Historic Name: Wormwood Canal
B2. Common Name: Wormwood Canal
B3. Original Use: Irrigation ditch
*B5. Architectural Style: N/A

County/Route/Postmile: 11-IMP-98, P.M. 0.3/30.3

B4. Present Use: Irrigation ditch

- *B6. Construction History: built c. 1911 as part of the Imperial canal system with recent modifications.
*B7. Moved? ☒ No ☐ Yes ☐ Unknown Date: N/A Original Location: N/A
*B8. Related Features: None

B9a. Architect: N/A

B9b. Builder: Southern Pacific Co., I.I.D.

*B10. Significance: N/A

Theme: N/A

Area: N/A

Period of Significance: N/A

Property Type: N/A

Applicable Criteria: N/A

Wormwood Canal was built about 1911 as part of the expansive Imperial irrigation system, which transformed the Colorado Desert into fertile farmland. The movement to reclaim this seemingly inhospitable wasteland for agrarian purposes had originated with Dr. O. M. Wozencraft in the 1850s. Wozencraft was convinced that the area had unlimited agricultural potential, if only a potable water supply could be established; he believed that this could be accomplished by means of a single gravity-flow canal, by which several hundred acres could be irrigated. Despite Wozencraft's best efforts, no progress was made on the project during his lifetime. In 1896 a group of investors formed the California Development Company (CDC), determined to take on the challenge of desert irrigation. Headed by civil engineers Charles Rookwood and George Chaffey, the company began constructing a canal that would divert water from the Colorado River into the dry channels of the Alamo and New rivers, which would in turn carry the water north to the Colorado Desert (now the Imperial Valley). In early 1902, the first irrigation water was delivered. A CDC subsidiary, the Imperial Land Company, promoted colonization of the area and handled land sales. Under Chaffey's direction, several mutual water companies were organized as well, and the CDC built most of the distribution systems, main canals and laterals needed to service these newly developed areas. By 1905, 80 miles of main canals had been built, with more than 100,000 acres under cultivation. Water delivery service was unreliable however, the canals being poorly designed and maintained. The muddy Colorado River had a tendency to deposit heavy loads of silt, which soon blocked the canal's intake, thereby reducing the amount of water reaching Valley crops. In an attempt to combat this, the CDC cut a bypass channel (See Continuation Sheet)

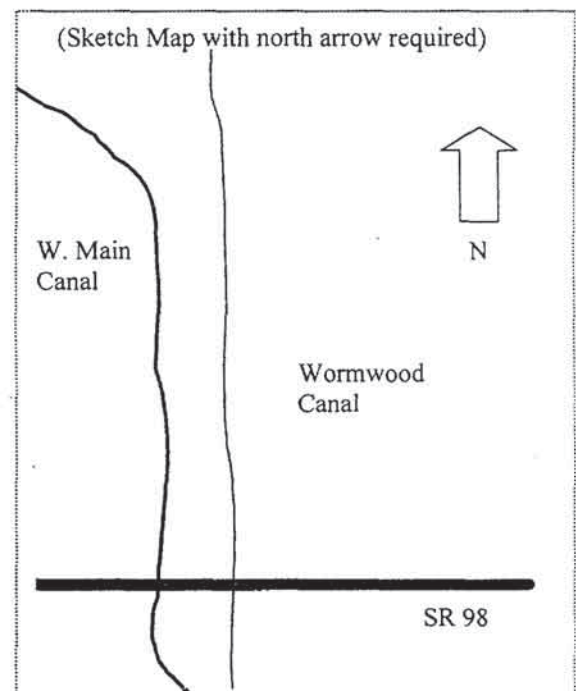
- B11. Additional Resource Attributes: N/A
B12. References: Clement 1996: primary record 1;
Lortie, 1997: 6, 8-10, 13-17;
IID website: 1, 6; Tout 1990: 110, 114-115;
Fisher 1998: 11-14.

B13. Remarks: N/A

B14. Evaluator: Jill Hupp
Caltrans Environmental Program
PO Box 942874
Sacramento, CA 94274-0001
(916) 654-3567

*Date of Evaluation: 5/26/99

(This space reserved for official comments)



CONTINUATION SHEET

Resource Name or #: Wormwood Canal

☒ Continuation ☐ Update

County/Route/Postmile: 11-IMP-98, P.M. 0.3/30.3

B10. Significance (continued) in the riverbank four miles south of the border, without legal authority or adequate gates to control the force of the water. Widespread flooding in the winters of 1905-06 and 1907 as a result of this action caused extensive damage to farmland, railroad property, as well as to the canal system itself. After the floodwaters subsided, the decision was made to enlarge Westside Main Canal, then located primarily within Mexico, and extend it north into the United States. Completed by the end of 1907, the canal would serve all the formerly undeveloped land west of New River. Wormwood canal, running parallel to Westside Main, was added to the system around 1911. Initially, the canal drew its water from Westside Main but by 1913 it had been extended into Mexico.

Unable to recover from its huge financial losses after the floods, the CDC was forced into bankruptcy. Southern Pacific (as the CDC's main creditor) assumed management of the company, and water delivery service continued without interruption. Between 1912-1916, development work in Imperial Valley in the way of canal extensions and territorial improvements advanced at an accelerated pace. A number of canals, laterals and drains were added to the area between New River and Westside Main Canal. The Imperial Irrigation District (IID) purchased the existing canal system in 1916, and in 1922 the region's smaller mutual water companies were absorbed by the District. By 1930 the IID was operating some 1,700 miles of canals and laterals, with a service area of 550,000 acres. As an agricultural center, the Imperial Valley was particularly hard-hit by the Depression; maintenance and expansion work on the canals slowed to a near-standstill as economic conditions worsened. To Valley residents, the completion of Hoover Dam on the lower Colorado River in 1935 seemed an indication of better times to come. This massive Federal undertaking would help reduce the volume of silt carried by the river, and prevent the possibility of another devastating flood in the Imperial Valley. The All-American Canal was finished in 1941 as part of the same project as Hoover Dam, fulfilling the long-held ambition of Valley farmers and IID officials to build a new canal that was entirely within the boundaries of the United States. Improvements were made to the existing canal system as well, particularly the drain ditches, which were widened and fitted with drain tiles to help alleviate the problem of salt build-up in Valley soil. Wormwood Canal now originated at the All-American Canal; sections of the waterway located in Mexico were no longer part of the IID system. Beginning in the 1960s, the IID endeavored to line all of its earthen canals and laterals with concrete, including the Wormwood Canal. Laterals were extensively resurveyed and straightened before being lined with concrete.

The Wormwood Canal today, like the IID irrigation system overall, reflects the developments that occurred as a result of the construction of the All-American Canal in 1941, after which the system was considerably expanded and modernized. Research to date appears to indicate that Wormwood Canal as a whole, although important for its association with the development of agriculture in the Imperial Valley, would not possess the requisite degree of integrity due to reconstruction since the 1950s, but no survey of the entire canal has yet been undertaken. Caltrans architectural historian Frank Lortie, after an extensive study of the IID system in 1997, concluded that the elements in the IID that retain integrity for the period 1941-1950 could be contributors to a potentially eligible National Register historic district. The segment of Wormwood Canal within the project vicinity does not appear to possess sufficient integrity of workmanship, design, feeling and association to represent the canal's significance in itself or as a contributor to a larger property. Enlarging the canal and lining it with concrete in recent decades has changed its basic configuration; originally the conduit would have been more U-shaped, with a flat bottom, rather than the trapezoidal profile it bears today. It does not reflect the period of significance identified by Lortie (1941-1950), and it was built after the canal system's earlier period of significance (1901-1907). Nor does it embody any distinctive characteristics of type, period, or method of construction under Criterion C. Further, the canal is neither associated with a historical event under Criterion A nor associated with persons significant in history under Criterion B.

In July 1997 and April 1998, segments of other canals within the IID system were examined and found ineligible because of loss of integrity. The section of Wormwood Canal within the current project area also appears to lack integrity to be individually eligible for the National Register of Historic Places or to be a contributing element of the canal, as a whole, should the canal constitute an eligible property. There is no evidence of a possible historic district or historic landscape which might include this segment of the canal as a contributing element. Likewise, Caltrans has evaluated the resource in accordance with Section 15064.5 (a)(2)-(3) of the CEQA Guidelines, using criteria outlined in Section 5024.1 of the California Public Resources Code, and determined that the canal is not a historical resource for the purposes of CEQA.

BRIDGE EVALUATION FORM

(To be appended to the HPSR)

Note: This form is only to be used for structure types listed in the Caltrans/FHWA/SHPO Memorandum of Understanding dated December 12, 1980.

Location: Attach Map showing structure location.

File: EA 173400 ENVR **Fed. No.:** _____

Road: 11-IMP-98 **Location:** SR 98 at Postmile 25.56

(K.P. 41.13) Calexico, Imperial Co. Bridge Number: 58-132

Description: Attach at least one side photo and one view of the deck along the center line.

Type (circle one): Temporary Standard Culvert

Type of superstructure: None

Type of substructure: Concrete slab; 14.3 feet long, 13.3 feet wide.

History: **Date of construction/designer:** 1990/ Division of Structures

Other historical information (persons, events—e.g. WPA/CCC) Structure
replaced an older bridge at this location, built c. 1955.

Prepared by: Jill Hupp

Position: Environmental Planner-Architectural History

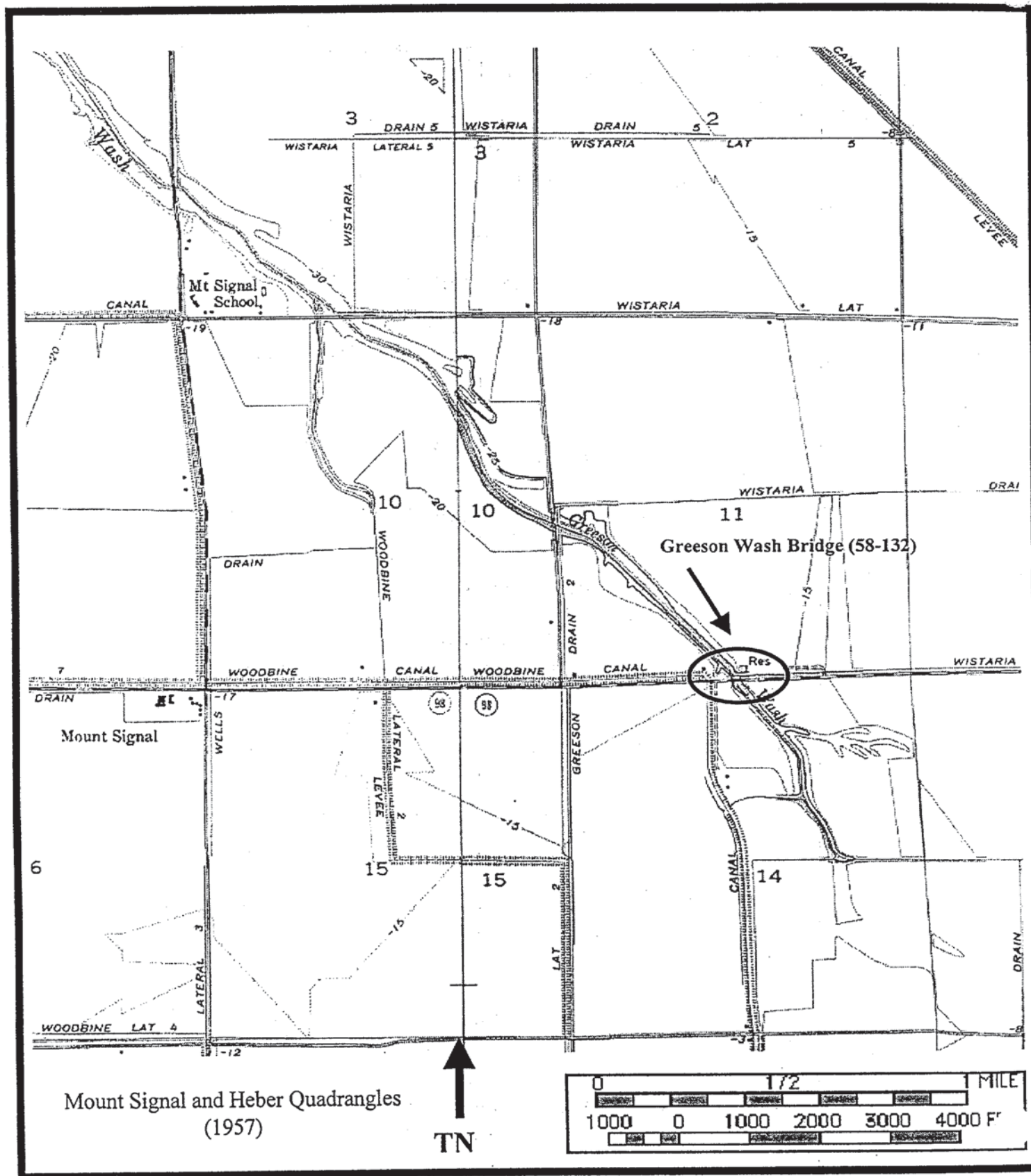
Date: May 27, 1999

Reviewed by: Murray P. King CHIEF, HISTORY, ARCHITECTURE & COMMUNITY STUDIES BRANCH
(Name/Title)

Greeson Wash Bridge—#58-132

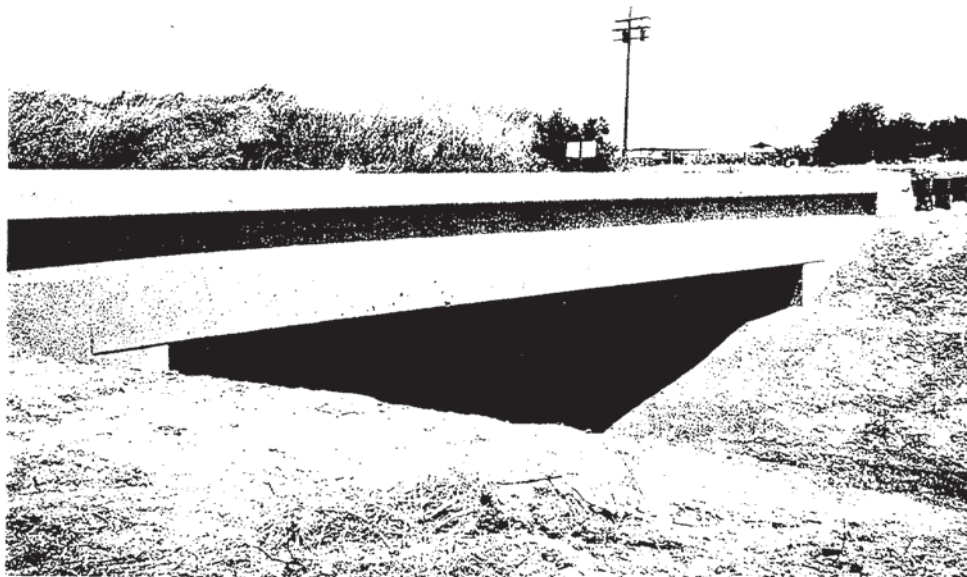
FIGURE 4. Bridge #58-132 Location

11-IMP-98
K.P. R0.5-48.8/P.M. R0.3-30.3
EA 173400





DECK VIEW LOOKING EAST



SIDE VIEW LOOKING NORTHEAST

Page 1 of 2

*Resource Name or # (Assigned by recorder) Woodbine Canal Update

Recorded by: Jennifer Krintz, Architectural Historian

Date: May 2011

☐ Continuation ☒ Update

P1. Other Identifier:

*P2. Location: ☐ Not for Publication ☒ Unrestricted

*a. County: Imperial

*b. USGS 7.5' Quad: Mount Signal Date: 1957; T 17S; R 13E; of Sec. 5, 4, 8, 9, 10, 16, 15, 10, 11, 14; S.B. B.M

c. Address: N/A City: Imperial Zip: N/A

d. UTM: Zone 11S; North end: 626303.85 mE / 3618459.89 mN; South end: 627671.18 mE / 3614946.70 mN;
West end: 625062.70 mE / 3618232.97 mN; East end: 629950.24 mE / 3616313.20 mN

*P3a. Description: The Woodbine Canal is an irrigation canal constructed circa 1915. It is located east of the Westside Main Canal and flows east and south in the Imperial Valley in Imperial County, CA. The canal is approximately 10 feet wide and about 6 feet deep. Dirt roads access the canal from Old Highway 80, SR 98, and I-8. The canal is lined with concrete. The Woodbine Canal appears as early as 1915 on the El Centro 15' USGS quad map. However, modifications such as the concrete lining were added to the canal in the 1950s/1960s as well as date stamps from the time of these modifications. One date stamp is labeled 1961 on the Woodbine Canal that runs east/west from the Greeson Wash along SR98; another date stamp labeled 1955 is on Woodbine Lateral 3 facing south. The entire canal is approximately 3 miles long with several associated laterals.

*P3b. Resource Attributes: HP20. Canal/Aqueduct



P5a. Photograph or Drawing:

P5b. Description of Photo:

Looking west at the canal just north of Kubler Road. Picture taken May 4, 2011.

***P6. Date Constructed/Age and Sources:**

☒ Historic ☐ Prehistoric ☐ Both
Circa 1915, El Centro 15' USGS quad map,
Andrew Pignolo, Laguna Mountain
Environmental, Inc., Sept. 2010

***P7. Owner and Address:**

Imperial Irrigation District
333 E. Barioni Blvd.
Imperial, CA 92251

***P8. Recorded By:**

Jennifer Krintz, Architectural Historian
ASM Affiliates, Inc.
260 S. Los Robles Avenue Suite 106
Pasadena, CA 91107

*P9. Date Recorded: May 2011

*P10. Survey Type: Intensive

P11. Report Citation: Draft Inventory, Evaluation and Analysis of Effects on Historic Built Environment Properties Within the Area of Potential Effect of the Centinela Solar Energy Project, Imperial County, CA

***B10. Significance: Theme:** Irrigation Canal of the Imperial Valley **Area:** Imperial Valley, CA

Period of Significance: 1915-1930 **Property Type:** N/A **Applicable Criteria:** None

The Woodbine Canal was one of the earliest irrigation canals in the Imperial Valley. According to a previous inventory record by Andrew Pignolo of Laguna Mountain Environmental, Inc., the Woodbine Canal was shown on the 1915 El Centro 15' USGS quad map. However, later date stamps marked from the 1950s and 1960s were labeled on the canal and laterals when they were lined with concrete. Although the canal is associated with the early irrigation system of the Imperial Valley, this particular canal does not convey the significance of the irrigation system as well as the Westside Main Canal or the All-American Canal. While it was part of this larger canal system, it alone is not individually significant. Additionally, the integrity of the original materials and craftsmanship of the 1915 canal system was not retained and therefore the Woodbine Canal is recommended not eligible for the National Register of Historic Places nor the California Register of Historic Resources.

Location Map of the Woodbine Canal



Red outline indicates the canal within the survey area.
Blue outline indicates the laterals within the survey area.

PRIMARY RECORD

Primary # _____ P-13-013073
HR #: _____
Trinomial: _____
NRHP Status Code: _____

Other Listings: _____
Review Code: _____ Reviewer: _____ Date: _____

Page 1 of 2

Resource Name or #: CSP-S-1

P1. Other Identifier: Woodbine Canal

P2. **Location:** ☒ Not for Publication ☐ Unrestricted

a. **County:** Imperial

and (P2b and P2c or P2d. Attach a Location Map as necessary.)

b. **USGS 7.5' Quad:** Mt. Signal Date: 1997. T17S; R13E; S edge of Sec. 4 & 5; E edge of Sec. 9; S edge of Sec. 10; S.B. BM

c. Address: None

d. UTM: Zone 11; NAD 83; W end: 625036mE/3618255mN; E end: 625924mE/3618262mN; APN #052-170-018 & -019

West end: 626695mE/3618272mN; East end: 627501mE/3618280mN; APN #052-170-068

North end: 627502mE/ 3618276mN; South end: 627622mE/3616593mN; APN #052-170-034 & -035

West end: 627622mE/3616589mN; East end: 629300mE/3616593mN; APN #052-180-033 & -032

e. Other Locational Data. This resource is located south of Interstate 8, southwest of El Centro, adjacent to Kubler Rd. and Brockman Rd. (Co. Highway S30), and also north of or adjacent to State Route (SR) 98, at an elevation of approximately 15 to 17 feet below sea level.

P3a.Description: Two portions of the western portion of the Woodbine irrigation canal were recorded during survey of agricultural property (for a proposed solar project). The east-west aligned 0.5 mi. long western-most segment parallels the north side of Kubler Rd. on the southern border of Section 5, east of Drew Rd. Another 0.5 mi. east-west aligned portion was recorded starting 0.5 mi. to the east and ending at the (former) Mt. Signal School property southwest corner. The north-south oriented segment runs from the intersection of Kubler Rd. and Brockman Rd. (SW corner) down the west side of Brockman Rd. for just a little over 1 mi. (due to eastward 'bulge' in section line). At SR 98, the canal heads east paralleling the north side of the highway. A 1 mi. east-west segment between Brockman Rd. and Rockwood Rd. was recorded during this survey, but the canal continues eastward for over 7 mi. to Anza Rd.

The Woodbine Canal is shown on the 1915 El Centro 15' USGS quad. map, however, the canal channel was lined with concrete at a later date, sometime in the late 1950s/early 1960s. There is a "1957" date stamp on a small elevation drop at the northwestern corner of Brockman Rd. and SR 98, and two gates along the north-south segment have "1979" date stamps. The segment of the canal between the two 1979 dated gates has concrete of a different appearance indicating an even more recent replacement. The segment of the canal is roughly 13 ft. across at the top, but depth is unknown since the canal was full of water. Features associated with the canal include a small elevation drop, a gate opening to Woodbine Lateral 7, a gate along the canal itself, and the Brockman Road undercrossing. The canal segments appear to be well-maintained and the integrity of the features is good.

P3b.Resource Attributes: H20; Canal/aqueduct

P4. Resources Present: ☐ Building ☐ Structure ☐ Object ☒ Site ☐ District ☐ Element of District ☐ Other:

P5b. Description of Photo: View of Woodbine Canal looking west (Kubler Rd. at left) from Brockman Rd.; 9-1-10; PR-03055-011



P6. Age and Sources

☒ Historic ☐ Prehistoric ☐ Both

P7. Owner and Address:

Unknown

P8. Recorded by:

Andrew Pignolo
Laguna Mountain Environmental, Inc.
7969 Engineer Road, Suite 208
San Diego, CA 92111

P9. Date Recorded: June 21, Aug. 25, Sept. 1, 2010

P10. Survey Type: Intensive Pedestrian

P11. Report Citation: 2011 Pignolo, Andrew, and Pepe Aguilar. *Cultural Resource Survey for a Portion of the Centinela Solar Project Area, Imperial County, California*. Prepared for kp environmental, Carlsbad, California.

Attachments: ☐ NONE ☒ Location Map ☐ Sketch Map ☐ Continuation Sheet ☐ Building ☐ Structure, and Object Record
☐ Archaeological Record ☐ District Record ☐ Linear Feature Record ☐ Milling Station Record ☐ Rock Art Record
☐ Artifact Record ☐ Photograph Record ☐ Other (List):

LOCATION MAP

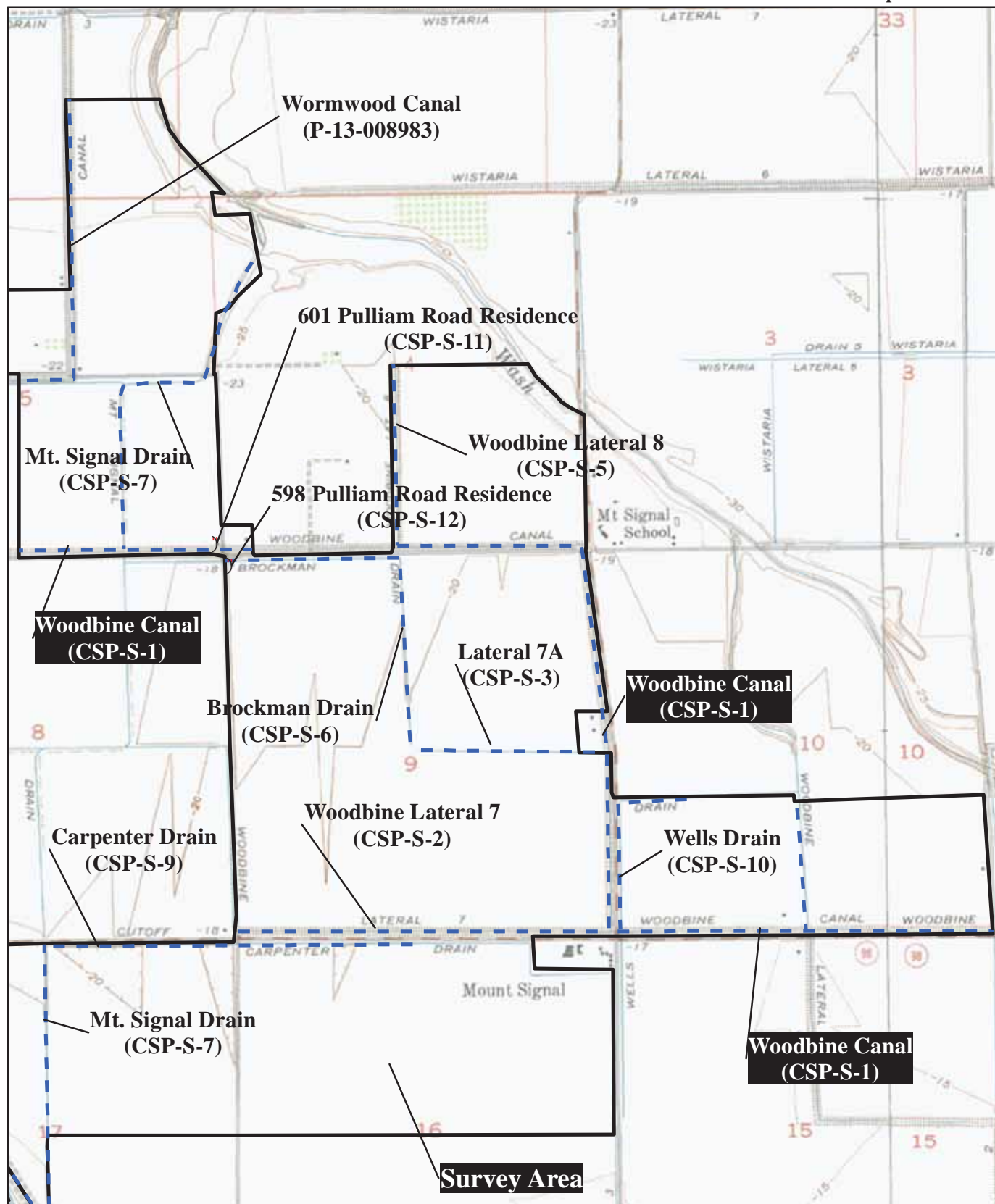
Page 2 of 2

Resource Name or #: CSP-S-1

Map Name: USGS Mount Signal Quadrangle

Scale: 1:24,000

Date of Map: 1957/1976



PRIMARY RECORD

Primary # _____ P-13-013074
HR #: _____
Trinomial: _____
NRHP Status Code: _____
Other Listings: _____
Review Code: _____ Reviewer: _____ Date: _____

Page 1 of 2

Resource Name or #: CSP-S-2

P1. Other Identifier: Woodbine Lateral 7

P2. **Location:** ☒ Not for Publication ☐ Unrestricted **a. County:** Imperial
and (P2b and P2c or P2d. Attach a Location Map as necessary.)
b. **USGS 7.5' Quad:** Mt. Signal Date: 1997. T17S; R13E; S edge of Section 9; S.B. BM
c. Address: None
d. UTM: Zone 11; NAD 83; West end: 625996mE/3616590mN; East end: 627617mE/ 3616588mN
e. Other Locational Data. This resource is located south of Interstate 8, southwest of El Centro, just east of Brockman Rd. (Co. Highway S30), and immediately north of State Route (SR) 98, along the southern boundary of parcels APN #052-170-035, -036 & -078, at an elevation of approximately 14 to 16 feet below sea level.

P3a.**Description:** The Woodbine Lateral 7 irrigation canal was recorded during survey of agricultural property (for a proposed solar project). The east-west aligned 1 mi. long lateral, coming off the main Woodbine Canal to the east, is situated on the north side of SR 98 along the southern border of Section 9, between Pulliam Rd. on the west and Brockman Rd. at the east. The canal continues to the north for 0.5 mi. but in the next parcel to the west, outside of the current survey boundary.

This canal system was lined with concrete sometime in the late 1950s/early1960s. There is a "1957" date stamp in the concrete of a flow gate at the northeastern corner of Pulliam Rd. and SR 98; a second gate to the east appears contemporaneous, but is unmarked. A "1979" date stamp is present where the lateral connects to the main Woodbine Canal to the east. The canal is roughly 11.5 ft. across at the top. Depth is unknown since the canal was full of water. The integrity of the canal is good in spite of the earthquake activity that has been occurring in the area.

P3b.**Resource Attributes:** AH6. Water Conveyance

P4. **Resources Present:** ☐ Building ☐ Structure ☐ Object ☒ Site ☐ District ☐ Element of District ☐ Other:

P5b. Description of Photo: Easterly view down Woodbine Lateral 7 (SR 98 at right, in distance); 6-21-10; PR-02991-037



P6. **Age and Sources**

☒ Historic ☐ Prehistoric ☐ Both

P7. **Owner and Address:**

unknown

P8. **Recorded by:**

Andrew Pignolo
Laguna Mountain Environmental, Inc.
7969 Engineer Road, Suite 208
San Diego, CA 92111

P9. **Date Recorded:** April 21 & June 21, 2010

P10. **Survey Type:** Intensive Pedestrian

P11. **Report Citation:** 2011 Pignolo, Andrew, and Pepe Aguilar. *Cultural Resource Survey for a Portion of the Centinela Solar Project Area, Imperial County, California*. Prepared for kp environmental, Carlsbad, California.

Attachments: ☐ NONE ☒ Location Map ☐ Sketch Map ☐ Continuation Sheet ☐ Building ☐ Structure, and Object Record
☐ Archaeological Record ☐ District Record ☐ Linear Feature Record ☐ Milling Station Record ☐ Rock Art Record
☐ Artifact Record ☐ Photograph Record ☐ Other (List):

LOCATION MAP

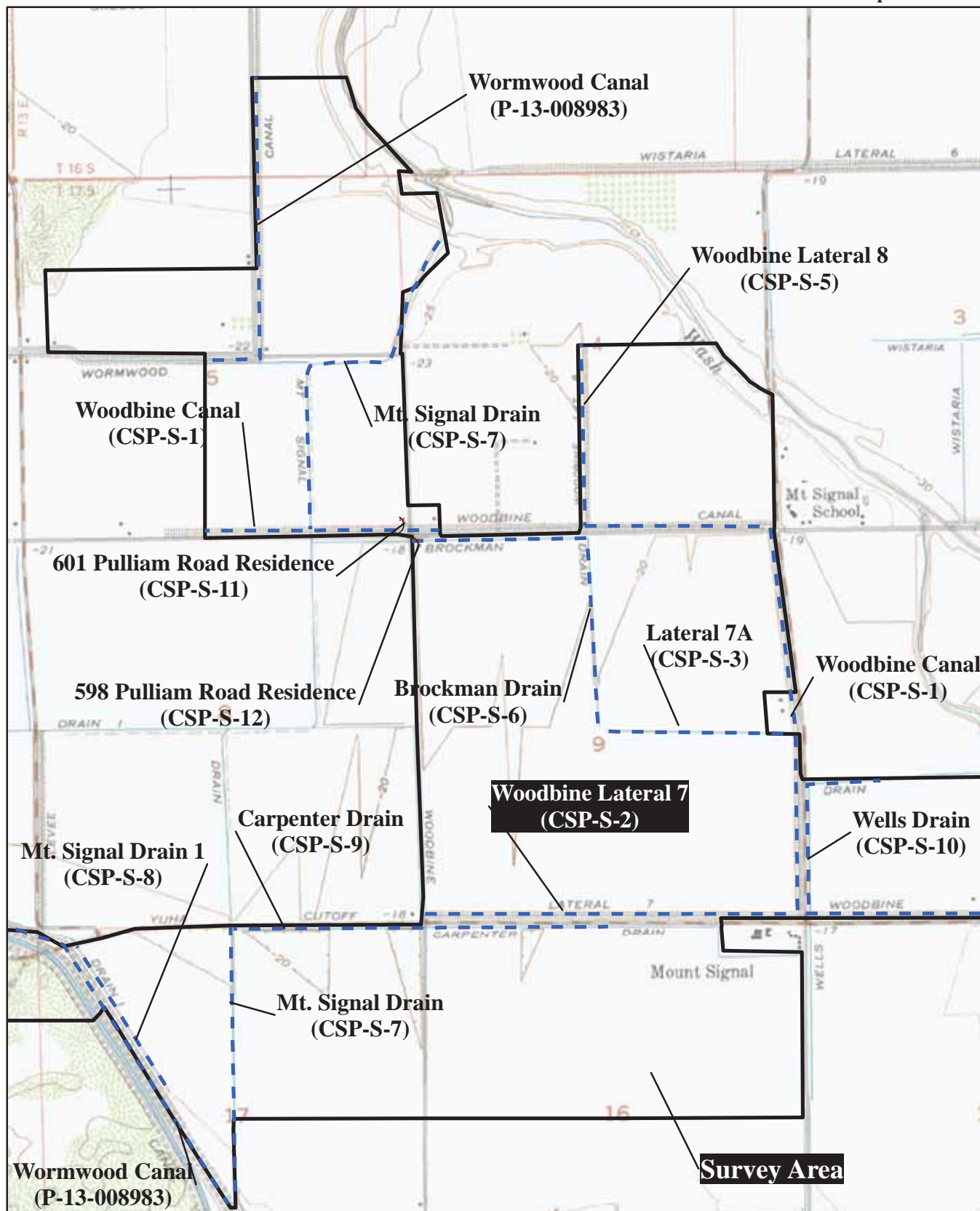
Page 2 of 2

Resource Name or #: CSP-S-2

Map Name: USGS Mount Signal Quadrangle

Scale: 1:24,000

Date of Map: 1957/1976



PRIMARY RECORD

Primary # _____ P-13-01307
HR #: _____
Trinomial: _____
NRHP Status Code: _____
Other Listings: _____
Review Code: _____ Reviewer: _____ Date: _____

Page 1 of 2

Resource Name or #: CSP-S-3

P1. Other Identifier: ☐ oodbine Lateral 7A

P2. **Location:** ☒ Not for Publication ☐ ☐ unrestricted **a. County:** Imperial
and (P2b and P2c or P2d. Attach a Location Map as necessary.)
b. **USGS 7.5' Quad:** Mt. Signal Date: 1997. T17S R13E E 12 of Section 9 S.B. BM
c. Address: None
d. ☐ TM: ☐ one 11 ☐ NAD 83 ☐ est end: 626787mE 361738mN ☐ East end: 627609mE 361737mN
e. Other Locational Data. This resource is located south of Interstate 8, southwest of El Centro, south of Kubler Rd., and immediately west of Brockman Rd. (Co. Hwy S30), at an elevation of 16 ft. below sea level.

P3a. **Description:** This approximately 2,780 ft. long supplemental canal segment was recorded during survey of agricultural property (for a proposed solar project). This earthen channel extends west from the main oodbine Canal at Brockman Rd., situated on the southern border of parcels APN #02-170-077 & -034 and the northern border of parcels APN #02-170-078 & -034. It appears to be occasionally maintained by excavation and removal of sediment although it is currently overgrown in some areas. The top of the channel maintains an average width of 10 ft. Just over 0.2 mi. west of Brockman Rd. are two concrete control gates. One of these has a date stamp of "1994" but the other gate is unmarked. The integrity of the canal is fair.

P3b. **Resource Attributes:** AH6. ☐ ater Conveyance

P4. **Resources Present:** ☐ Building ☐ Structure ☐ Object ☒ Site ☐ District ☐ Element of District ☐ Other:

P5b. Description of Photo: ☐ view of earthen canal and gates, looking northwest 6-21-10 PR-02991-018



P6. **Age and Sources**

☒ Historic ☐ Prehistoric ☐ Both

P7. **Owner and Address:**

☐ nknown

P8. **Recorded by:**

Pepe Aguilar
Laguna Mountain Environmental, Inc.
7969 Engineer Road, Suite 208
San Diego, CA 92111

P9. **Date Recorded:** June 21, 2010

P10. **Survey Type:** Intensive Pedestrian

P11. **Report Citation:** 2011 Pigniolo, Andrew, and Pepe Aguilar. *Cultural Resource Survey for a Portion of the Centinela Solar Project Area, Imperial County, California*. Prepared for kp environmental, Carlsbad, California.

Attachments: ☐ NONE ☒ Location Map ☐ Sketch Map ☐ Continuation Sheet ☐ Building ☐ Structure, and Object Record
☐ Archaeological Record ☐ District Record ☐ Linear Feature Record ☐ Milling Station Record ☐ Rock Art Record
☐ Artifact Record ☐ Photograph Record ☐ Other (List):

LOCATION MAP

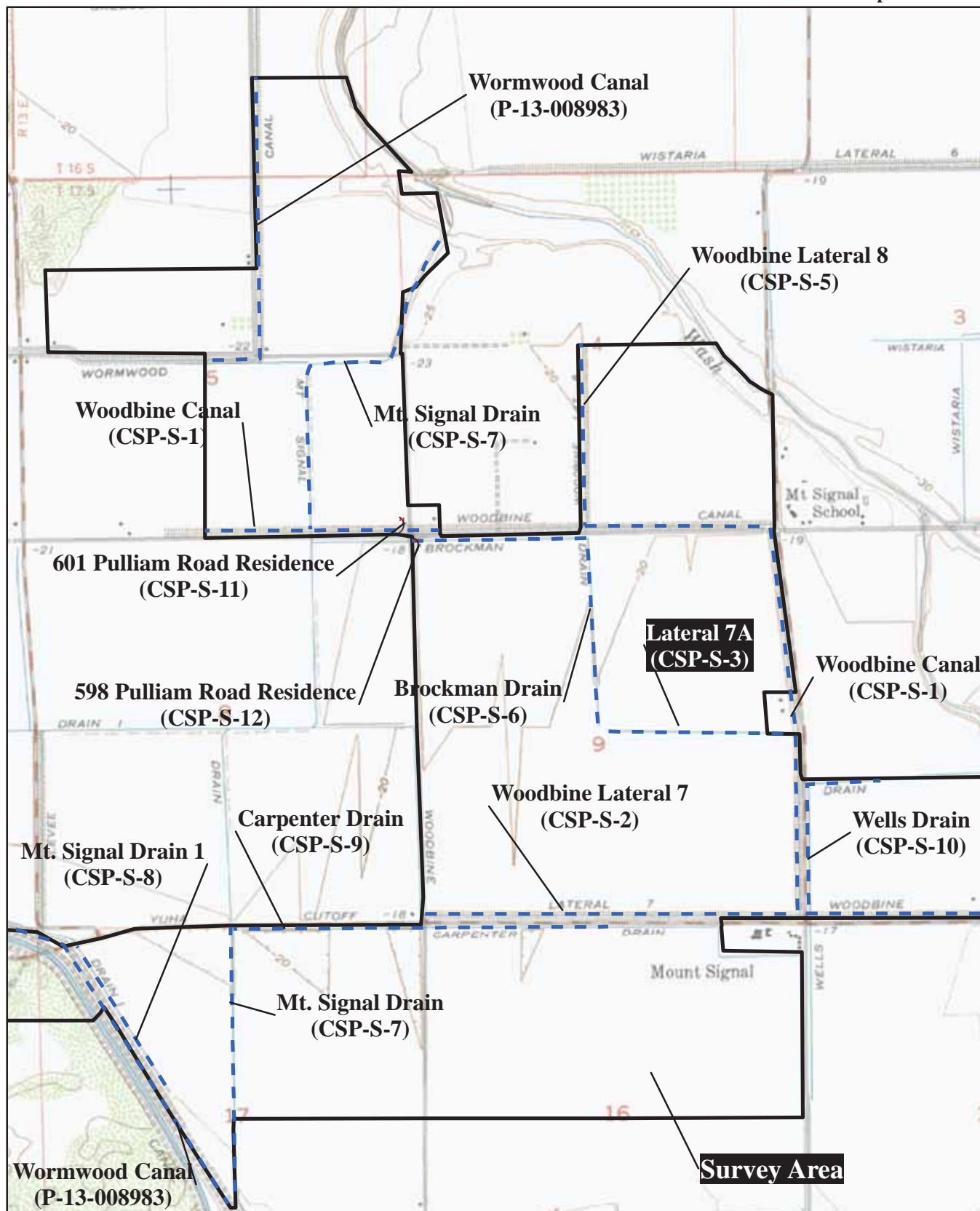
Page 2 of 2

Resource Name or #: CSP-S-3

Map Name: USGS Mount Signal Quadrangle

Scale: 1:24,000

Date of Map: 1957/1976



PRIMARY RECORD

Primary # _____ P-13-013078
HR #: _____
Trinomial: _____
NRHP Status Code: _____
Other Listings: _____
Review Code: _____ Reviewer: _____ Date: _____

Page 1 of 2

Resource Name or #: CSP-S-6

P1. Other Identifier: Brockman Drain

P2. **Location:** ☒ Not for Publication ☐ Unrestricted

a. **County:** Imperial

and (P2b and P2c or P2d. Attach a Location Map as necessary.)

b. **USGS 7.5' Quad:** Mt. Signal Date: 1997.

T17S R13E N & middle of Section 9 S.B. BM

c. Address: None

d. ☐ TM: ☐ one 11 ☐ NAD 83 ☐ est end: 62°941mE 3618227mN ☐ East end: 626703mE 3618228mN ☐ APN #02-170-076

North end: 62670°mE 3618229mN ☐ South end: 6267°2E 3617409mN ☐ APN #02-170-076 & -077

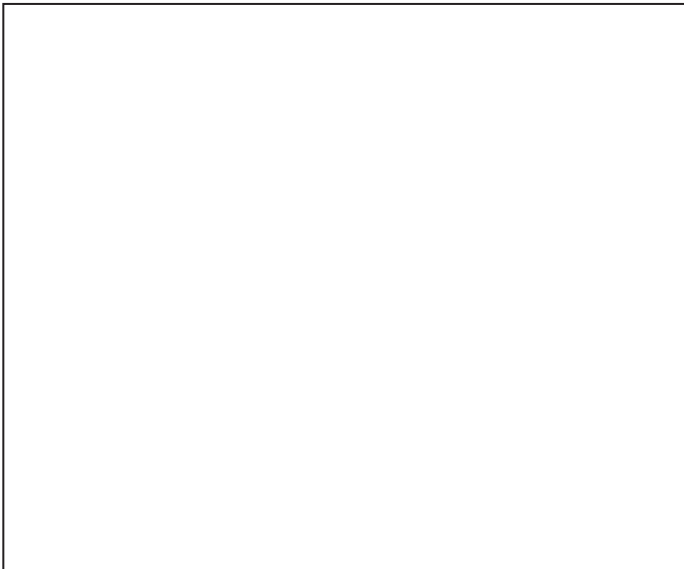
e. Other Locational Data. This resource is located south of Interstate 8, southwest of El Centro, immediately south of Kubler Rd., between Pulliam Rd. and Brockman Rd., at an elevation of approximately 17 feet below sea level.

P3a. **Description:** Two segments of the Brockman Drain irrigation drainage channel were recorded during survey of agricultural property (for a proposed solar project). This earthen channel appears to begin in the center of Section 9, at approximately -16 ft. in elevation (ground surface), extending north for approximately 2,740 ft. to -18 ft. where it turns west for approximately 2,410 ft. and then goes under Pulliam Rd. and outside of the study area. Based on ☐ S ☐ S and aerial maps (and elevation slant), this drainage channel continues to the west of Pulliam Rd. for approximately 1,327 ft., draining into the larger Mt. Signal Drain. The channel appears to be occasionally maintained by excavation and removal of sediment although it is currently overgrown in some areas. The top of the channel maintains an average width of 10 ft. Concrete culverts are present at road undercrossings (and where the channel changes directions). None of the concrete gates have a date stamp, so construction period is uncertain. The integrity of the drain is fair.

P3b. **Resource Attributes:** AH6. ☐ ater Conveyance

P4. **Resources Present:** ☐ Building ☐ Structure ☐ Object ☒ Site ☐ District ☐ Element of District ☐ Other:

P4b. Description of Photo: No photo



P6. **Age and Sources**

☒ Historic ☐ Prehistoric ☐ Both

P7. **Owner and Address:**

☐ nknown

P8. **Recorded by:**

Pepe Aguilar
Laguna Mountain Environmental, Inc.
7969 Engineer Road, Suite 208
San Diego, CA 92111

P9. **Date Recorded:** August 2, 2010

P10. **Survey Type:** Intensive Pedestrian

P11. **Report Citation:** 2011 Pigniolo, Andrew, and Pepe Aguilar. *Cultural Resource Survey for a Portion of the Centinela Solar Project Area, Imperial County, California*. Prepared for kp environmental, Carlsbad, California.

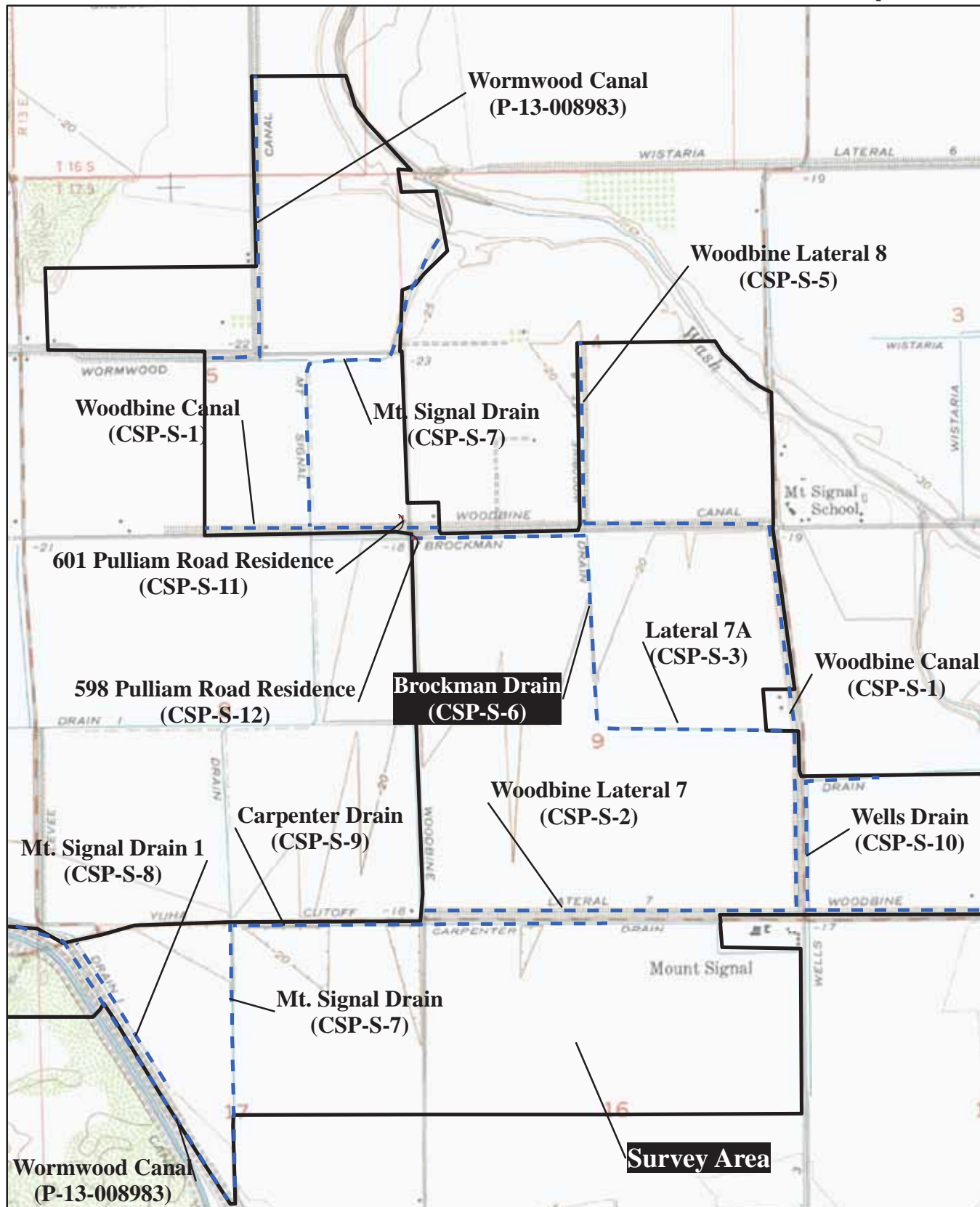
Attachments: ☐ NONE ☒ Location Map ☐ Sketch Map ☐ Continuation Sheet ☐ Building ☐ Structure, and Object Record
☐ Archaeological Record ☐ District Record ☐ Linear Feature Record ☐ Milling Station Record ☐ Rock Art Record
☐ Artifact Record ☐ Photograph Record ☐ Other (List):

Resource Name or #: CSP-S-6

Page 2 of 2

Scale: 1:24,000

Date of Map: 1957/1976



PRIMARY RECORD

Primary # _____ P-13-013079
HR #: _____
Trinomial: _____
NRHP Status Code: _____
Other Listings: _____
Review Code: _____ Reviewer: _____ Date: _____

Page 1 of 2

Resource Name or #: CSP-S-7

P1. Other Identifier: Mt. Signal Drain

- P2. **Location:** ☒ Not for Publication ☐ Unrestricted **a. County:** Imperial
and (P2b and P2c or P2d. Attach a Location Map as necessary.)
b. **USGS 7.5' Quad:** Mt. Signal Date: 1997. T17S R13E N ☐ of Sec. 4 SE ☐ of Sec. ☐ N ☐ (mid) of Sec. 17 S.B. BM
c. Address: None
d. ☐ TM: ☐ one 11 ☐ NAD 83 ☐ S ☐ end: 62 ☐ 8 ☐ 4 mE ☐ 361903 ☐ mN ☐ NE end: 62 ☐ 6089 mE ☐ 3619 ☐ 6 ☐ mN ☐ APN #0 ☐ 2-170-0 ☐ 2
(middle section) ☐ est end: 62 ☐ 494 mE ☐ 3618981 mN ☐ East end: 62 ☐ 824 mE ☐ 3618999 mN ☐ APN #0 ☐ 2-170-018
North end: 62 ☐ 488 mE ☐ 3618973 mN ☐ South end: 62 ☐ 494 E ☐ 3618270 mN ☐ APN #0 ☐ 2-170-090 & -018
Southern portion: North end: 62 ☐ 149 mE ☐ 3616 ☐ 29 mN ☐ South end: 62 ☐ 168 E ☐ 361 ☐ 3 ☐ 9 mN ☐ APN #0 ☐ 2-190-007
e. Other Locational Data. This resource is located south of Interstate 8, southwest of El Centro. The northern portion is situated about 0.6 mi. south of Lyons Rd. and east of ☐ orrmwood Rd., and continues south of Fisher Rd. ending at Kubler Rd. and varies in elevation of approximately 17 to 26 ft. below sea level. The southern portion e ☐ tends south from St. Route (SR) 98 for 0.7 ☐ mi. to Mandrapa Rd. This segment varies in elevation (north to south) of approximately 17 to 7 ft. below sea level.

P3a. **Description:** The Mt. Signal Drain is shown on the ☐ S ☐ S ☐ quad. map to meander for nearly 4 mi. beginning south of SR 98 (at -6 ft. elev.) and emptying into ☐ reeson ☐ ash about 0.6 mi. south of Lyons Rd. (at -4 ☐ ft. elev.). Only two portions of this earthen irrigation drainage channel occur within the current survey area of agricultural property (for a proposed solar project). The **northern portion** has a northeasterly aligned 2, ☐ 00 ft. segment, starting at Fisher Rd. on the border between sections 4 & ☐ (along the eastern boundary of parcel 0 ☐ 2-170-0 ☐ 2) that is nearly 6 ☐ ft. across -- from bank to bank. An east-west segment just south of Fisher Rd. (immediately west of Pulliam Rd.) is approximately 1,190 ft. long and varies from 60-7 ☐ ft. across. The channel turns south at the boundary between parcels 0 ☐ 2-170-019 & 0 ☐ 2-170-018 where it narrows to about ☐ ft. across. This segment e ☐ tends approximately 2,390 ft. north south (within the project area) to Kubler Rd. The drain continues to the south outside the project APE. The **southern portion** within the APE begins south of SR 98 (between Drew and Pulliam roads) and e ☐ tends along the east side of parcel #0 ☐ 2-190-007 to its southern end. Here (outside the APE) the channel turns southeast before heading eastward. No historic-age features were observed within these portions of the drain, but it is part of the larger historic-age agricultural system. The drain appears to retain good integrity and is probably maintained by regular clearing with a backhoe.

P3b. **Resource Attributes:** AH6. ☐ ater Conveyance

P4. **Resources Present:** ☐ Building ☐ Structure ☐ Object ☒ Site ☐ District ☐ Element of District ☐ Other:

P ☐ b. Description of Photo: ☐ iew of Mt. Signal Drain (south portion) channel looking south from SR 98 ☐ 12-9-10 ☐ PR-03129-028



P6. **Age and Sources**

☒ Historic ☐ Prehistoric ☐ Both

P7. **Owner and Address:**

☐ nknown

P8. **Recorded by:**

Andrew Pignuolo
Laguna Mountain Environmental, Inc.
7969 Engineer Road, Suite 208
San Diego, CA 92111

P9. **Date Recorded:** July 9 & Dec. 9, 2010

P10. **Survey Type:** Intensive Pedestrian

P11. **Report Citation:** 2011 Pignuolo, Andrew, and Pepe Aguilar. *Cultural Resource Survey for a Portion of the Centinela Solar Project Area, Imperial County, California*. Prepared for kp environmental, Carlsbad, California.

Attachments: ☐ NONE ☒ Location Map ☐ Sketch Map ☐ Continuation Sheet ☐ Building ☐ Structure, and Object Record
☐ Archaeological Record ☐ District Record ☐ Linear Feature Record ☐ Milling Station Record ☐ Rock Art Record
☐ Artifact Record ☐ Photograph Record ☐ Other (List):

LOCATION MAP

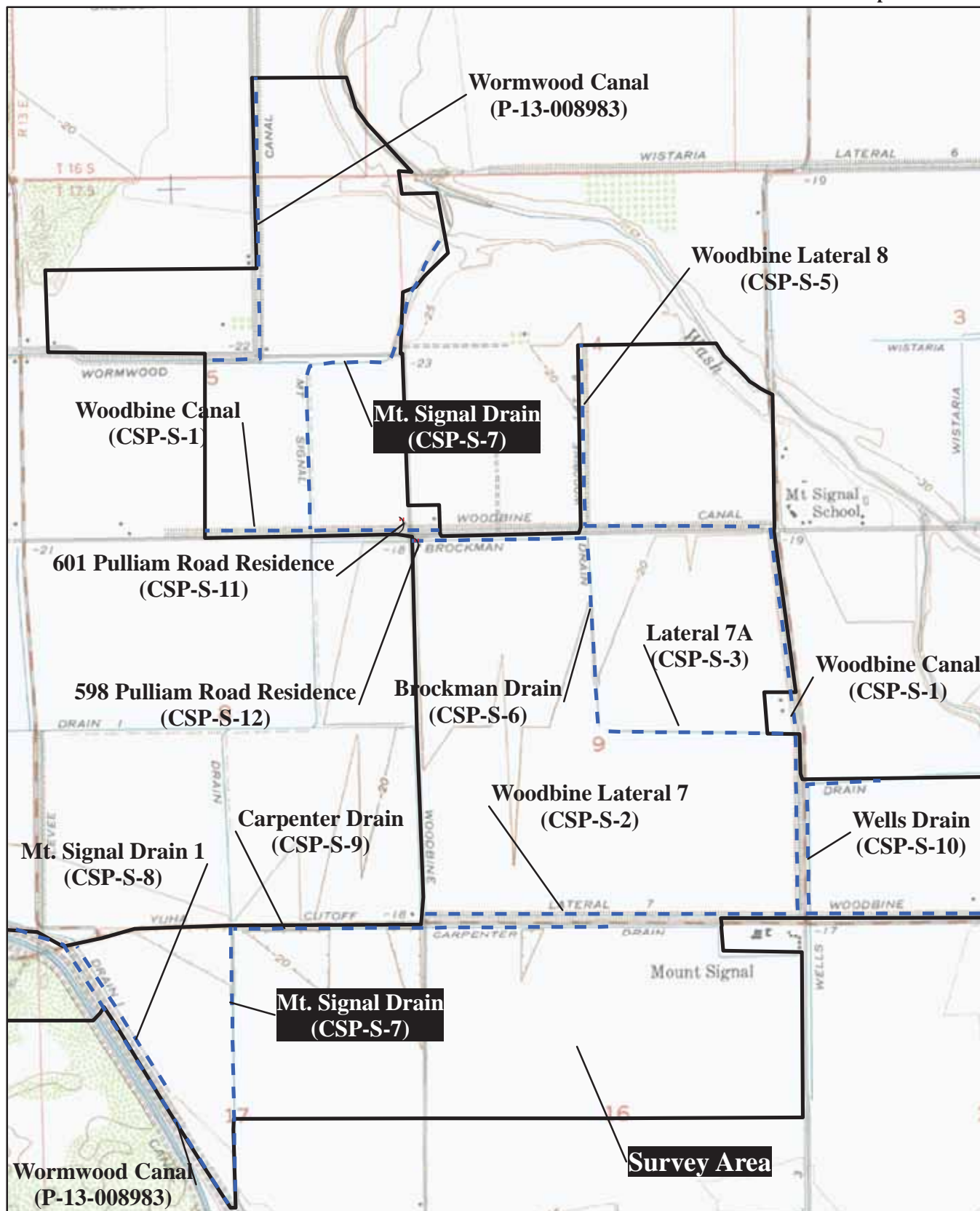
Page 2 of 2

Resource Name or #: CSP-S-7

Map Name: USGS Mount Signal Quadrangle

Scale: 1:24,000

Date of Map: 1957/1976



P 1 Resource Name or #: P-9

P1 

0

09

0-190-00 0-190-009 1

P3 Resource Attributes:

Resources Present:

P P P 1 -0 - 010 P -031 9-0



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[illegible]

79 9 □□ □□□□□□□□ □□□□□□ □□□□□□**0** □□

□ □ □ □ □ □ □ □ □ □ 9 □ 1 1 1 □

P9 Date Recorded: 01 01 2010

P10 **Survey Type** P[illegible]

LOCATION MAP

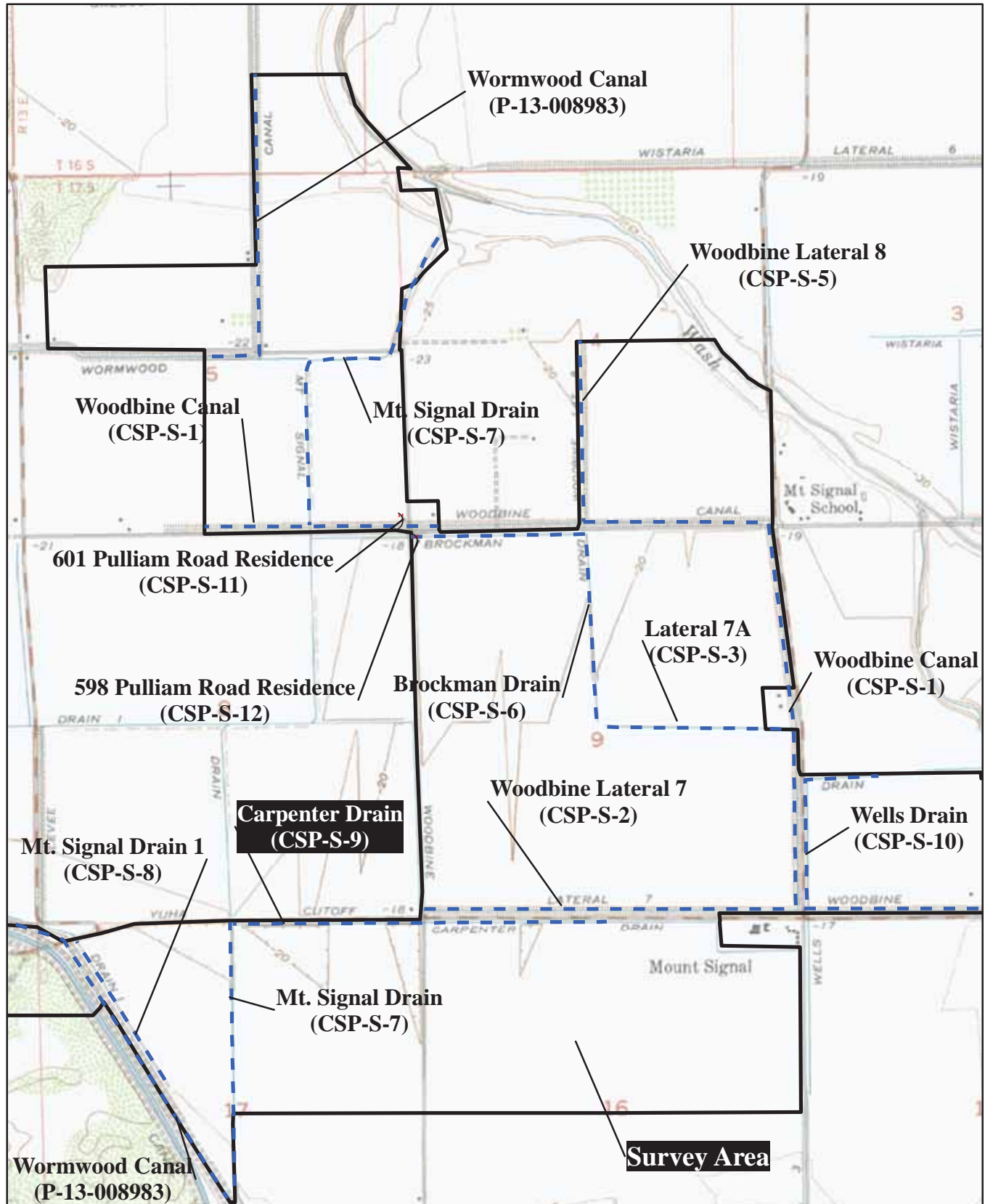
Page 2 of 2

Resource Name or #: CSP-S-9

Map Name: USGS Mount Signal Quadrangle

Scale: 1:24,000

Date of Map: 1957/1976



PRIMARY RECORD

P1 **Resource Name or #:** P-11

P1

P **Location** a. **County:**

P P P

USGS 7.5' Quad: 1997 17 13

01 P 9 31

11 3 90 3 1 90

P 0 170-01 17

P3 **Description:** 01 P 191

70 1 0 130

P3 **Resource Attributes:** P

P **Resources Present:**

P 1 00



P **Age and Sources**

P

P7 **Owner and Address:**

P **Recorded by**

P 79 9 9 111 0

P9 **Date Recorded:** 9 010

P10 **Survey Type:** P

P11 **Report Citation:** 011 P Cultural Resource Survey for a Portion of the Centinela Solar Project Area, Imperial County, California P

Attachments:

LOCATION MAP

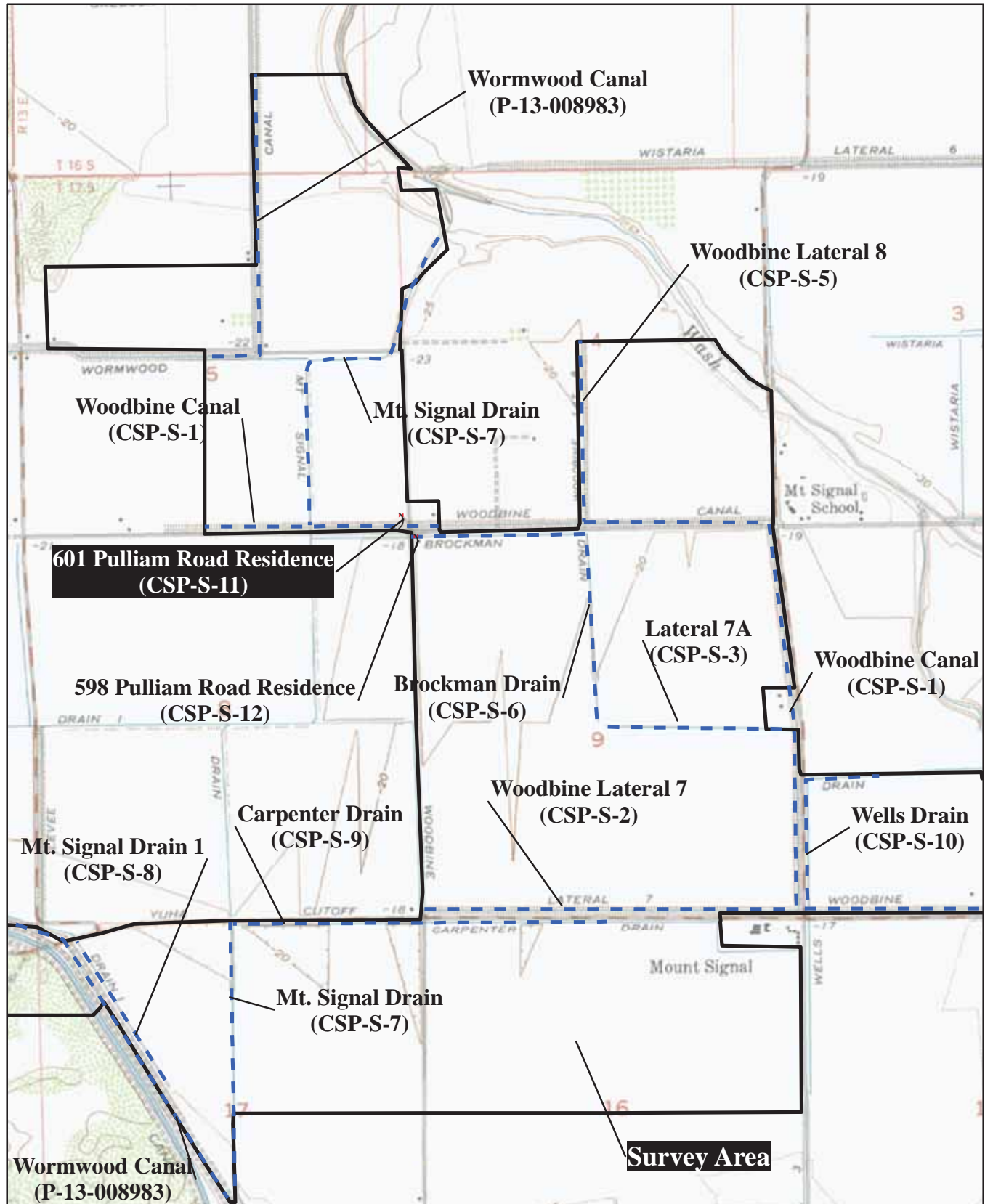
Page 2 of 2

Resource Name or #: CSP-S-11

Map Name: USGS Mount Signal Quadrangle

Scale: 1:24,000

Date of Map: 1957/1976



PRIMARY RECORD

P1 **Resource Name or #:** P-1

P1

P **Location** a. **County:**

P P P

USGS 7.5' Quad: 1997 17 13 9

9 P 9 31

11 3 9 9 3 1 199

0 170-019 17

P3 **Description:** 9 P 191 70 19 0 130

P3 **Resource Attributes:** P

P **Resources Present:**

P 7 9 10 P-03011-01



P **Age and Sources**

P7 **Owner and Address:**

P **Recorded by:**

79 9 0 9 11

P9 **Date Recorded:** 9 010

P10 **Survey Type** P

P11 **Report Citation** 011 P *Cultural Resource Survey for a Portion of the Centinela Solar Project Area, Imperial County, California* P

Attachments:

LOCATION MAP

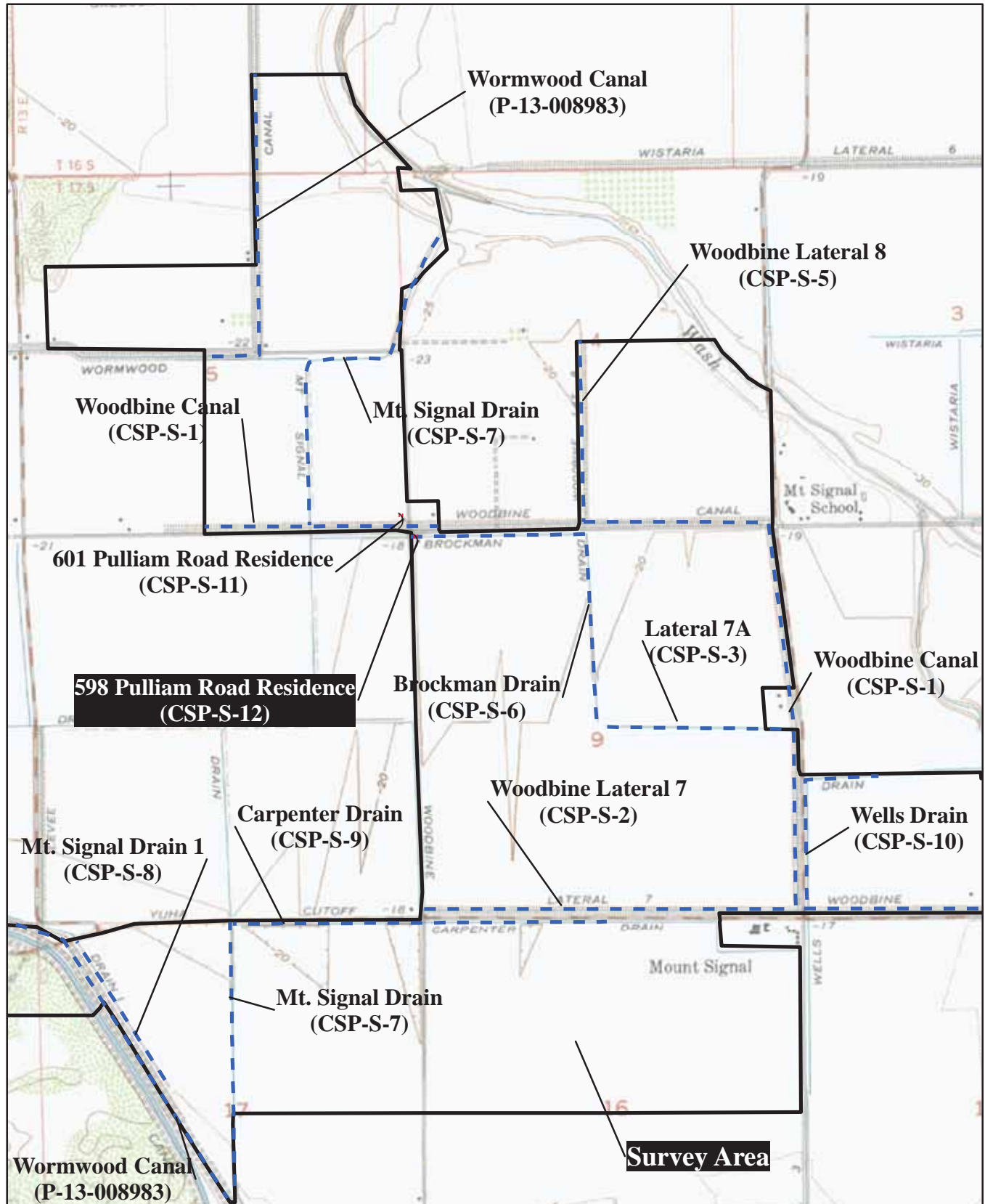
Page 2 of 2

Resource Name or #: CSP-S-12

Map Name: USGS Mount Signal Quadrangle

Scale: 1:24,000

Date of Map: 1957/1976



PRIMARY RECORD

Primary #
HRI #

P-13-013837
CA-IMP-11784

Trinomial
NRHP Status Code

Other Listings
Review Code

Reviewer

Date

Page 1 of 4

*Resource Name or #: ESA-CAL-1

P1. Other Identifier:

*P2. Location: ☒ Not for Publication ☐ Unrestricted

*a. County: Imperial

and (P2b and P2c or P2d. Attach a Location Map as necessary.)

*b. USGS 7.5' Quad: Mount Signal

Date: 1957 T 17S; R 13E ; SW ¼ of SE ¼ of Sec 16; S.B.B.M.

c. Address:

City:

Zip:

d. UTM: Zone: 11S; 626834 mE/ 3615229 mN (G.P.S.)

e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate) Elevation: -15 ft

From Calexico, drive 8.64 miles west on Highway 98. Turn south on an unnamed dirt road and continue for .75 miles. The site is 960 feet north of Anza Road and 0.5 miles west of Brockman Road.

*P3a. Description: (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

This is a sparse historic artifact scatter, measuring 200 feet north-south by 23 feet east-west, located within an elevated roadbed between a concrete-lined irrigation canal and an agricultural field. Over 100 artifacts were recorded including glass fragments, whiteware fragments, and one whole glass jar.

*P3b. Resource Attributes: (List attributes and codes) AH4

*P4. Resources Present: ☐ Building ☐ Structure ☐ Object ☒ Site ☐ District ☐ Element of District ☐ Other (Isolates, etc.)

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



P5b. Description of Photo: (View, date, accession #) IMG_079, 10/ 12/ 11, facing south

*P6. Date Constructed/Age and Sources: ☒ Historic ☐ Prehistoric ☐ Both

*P7. Owner and Address: Unknown

*P8. Recorded by: (Name, affiliation, and address)
M. Bray
ESA
626 Wilshire Blvd. Ste 1100
Los Angeles, CA 90017

*P9. Date Recorded: 10/ 12/ 11

*P10. Survey Type: (Describe)
Intensive pedestrian

*P11. Report Citation: (Cite survey report and other sources, or enter "none.") ESA, *Calexico Solar and Mount Signal Solar Farms, Calexico, Imperial County: Phase I Archaeological Survey Report*, prepared for 8minutenergy Renewables, LLC, 2011.

*Attachments: ☐ NONE ☒ Location Map ☒ Sketch Map ☐ Continuation Sheet ☐ Building, Structure, and Object Record ☒ Archaeological Record ☐ District Record ☐ Linear Feature Record ☐ Milling Station Record ☐ Rock Art Record ☐ Artifact Record ☐ Photograph Record ☐ Other (List):

DPR 523A (1/95)

*Required information

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
ARCHAEOLOGICAL SITE RECORD

Primary # ☐
Trinomial

P-13-013837
CA-IMP-11784

Page 2 of 4

*Resource Name or #: ESA-CAL-1

*A1. Dimensions: a. Length: 200 feet (N/S) × b. Width: 23 feet (E/W)

Method of Measurement: ☐ Paced ☐ Taped ☐ Visual estimate ☒ Other: GPS

Method of Determination (Check any that apply.): ☒ Artifacts ☐ Features ☐ Soil ☐ Vegetation ☐ Topography
☐ Cut bank ☐ Animal burrow ☐ Excavation ☐ Property boundary ☐ Other (Explain):

Reliability of Determination: ☐ High ☒ Medium ☐ Low Explain:

Limitations (Check any that apply): ☐ Restricted access ☐ Paved/built over ☐ Site limits incompletely defined
☐ Disturbances ☐ Vegetation ☐ Other (Explain):

A2. Depth: ☐ None ☒ Unknown Method of Determination:

*A3. Human Remains: ☐ Present ☒ Absent ☐ Possible ☐ Unknown (Explain):

*A4. Features (Number, briefly describe, indicate size, list associated cultural constituents, and show location of each feature on sketch map.):
None

*A5. Cultural Constituents (Describe and quantify artifacts, ecofacts, cultural residues, etc., not associated with features.):

One small complete glass jar, colorless with an iridescent patina, measuring 4x1.5 in. The bottle is machine made and has a bead neck finish. There is an embossed maker's mark on the base, but it is not legible.

75+ fragments of colorless glass

4 fragments of opaque white glass with an embossed floral design

One colorless glass milk bottle rim

12 fragments amethyst-colored solarized glass

8 fragments aqua glass

1 fragment green glass

2 fragments brown glass

One colorless glass bottle neck fragment, with a double ring finish.

5 fragments white-glazed whiteware ceramic

Unglazed orange ceramic fragments

One large white-glazed whiteware rim sherd

Glass base with the maker's mark "333" within a diamond

Large colorless glass base with the maker's mark "Bishop's California"

*A6. Were Specimens Collected? ☒ No ☐ Yes (If yes, attach Artifact Record or catalog and identify where specimens are curated.)

*A7. Site Condition: ☐ Good ☒ Fair ☐ Poor (Describe disturbances.): Site is located within a dirt access road, which appears to be frequently used by vehicles and agricultural machinery. The road is elevated several feet above the surrounding fields, and it is likely that the artifacts are in a disturbed context and were possibly imported to this location when the road was constructed.

*A8. Nearest Water (Type, distance, and direction.): New River, 21,800 feet NE; numerous 20th century agricultural canals nearby.

*A9. Elevation: -15 feet

A10. Environmental Setting (Describe culturally relevant variables such as vegetation, fauna, soils, geology, landform, slope, aspect, exposure, etc.): Disturbed dirt road between canal and agricultural field. Slope is flat, exposure is open.

A11. Historical Information: the maker's mark "Bishop's California" may refer to Bishop & Co., a food manufacturer based in Los Angeles that operated from 1887 to 1930, when it was acquired by Nabisco (Los Angeles Downtown News, 12/ 22/ 2008). Bishop sold products such as "Bishop's California Preserves". The maker's mark "333" within a diamond is likely an Illinois Glass Co. mark, dating between 1900-1929 (Lockhart et al. 2005, Lockhart and Whitten 2006).

*A12. Age: ☐ Prehistoric ☐ Protohistoric ☐ 1542-1769 ☐ 1769-1848 ☐ 1848-1880 ☐ 1880-1914 ☒ 1914-1945
☐ Post 1945 ☐ Undetermined Describe position in regional prehistoric chronology or factual historic dates if known:

A13. Interpretations (Discuss data potential, function[s], ethnic affiliation, and other interpretations):

A14. Remarks:

A15. References (Documents, informants, maps, and other references): Los Angeles Downtown News, "Rise and Fall of a Candy Empire", December 22, 2008. http://www.ladowntownnews.com/news/the-rise-and-fall-of-a-candy-empire/article_2fa83e47-536b-58ae-9edd-011022651f95.html, accessed Oct 20, 2011.

Lockhart, Bill, Bill Lindsay, David Whitten, Carol Serr, *The Dating Game: The Illinois Glass Company*, Bottles and Extras 16(1):54-60 Winter 2005.

Lockhart, Bill, Bill David Whitten, *The Dating Game*, Bottles and Extras 17(1):36-43 Winter 2006.
http://www.sha.org/bottle/pdffiles/B_Lockhart_FHGW.pdf

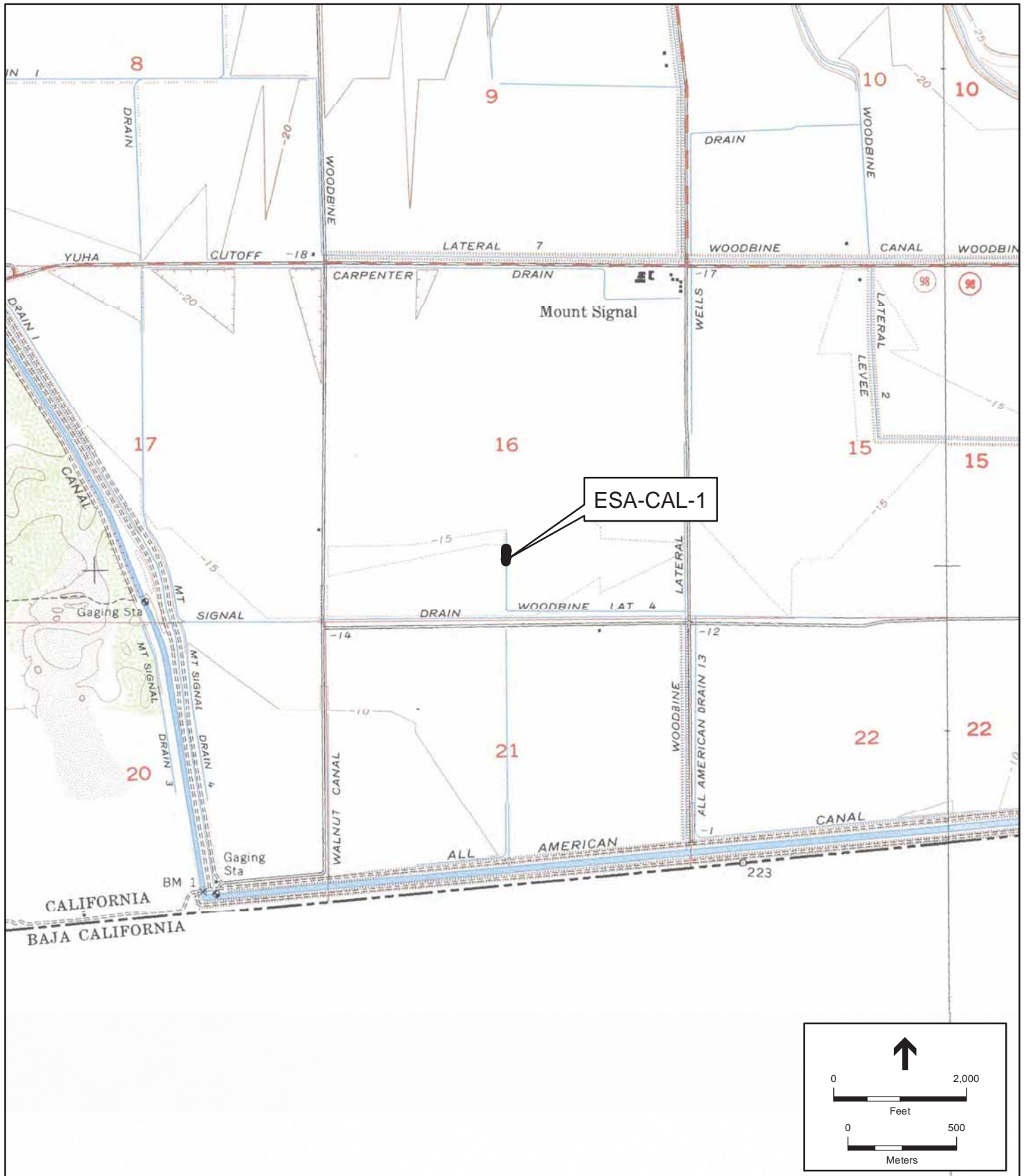
A16. Photographs (List subjects, direction of view, and accession numbers or attach a Photograph Record.):
Original Media/Negatives Kept at:

*A17. Form Prepared by: Madeleine Bray

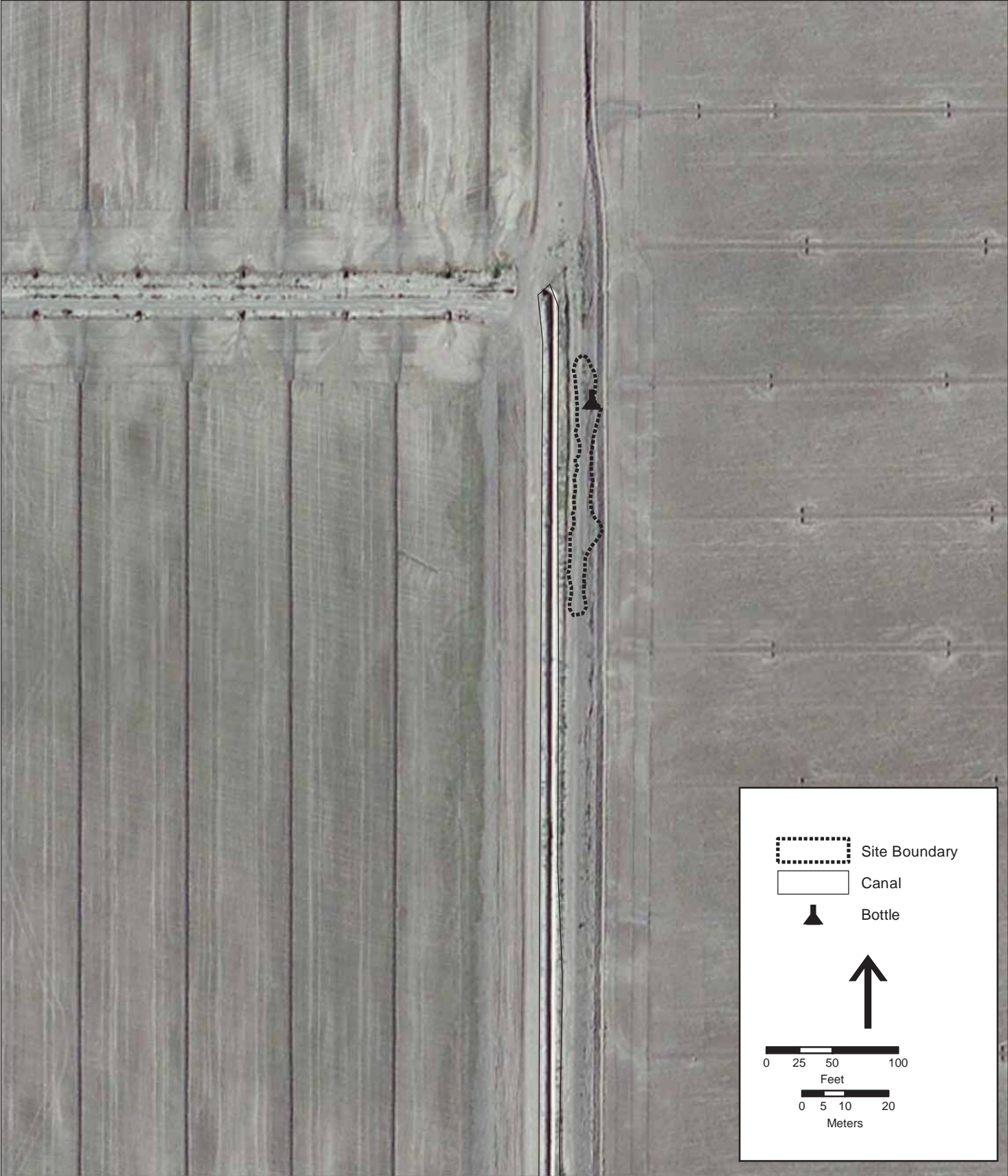
Date: 10/ 20/ 11

Affiliation and Address: ESA, 626 Wilshire Blvd. Ste. 1100, Los Angeles, CA 90017

LOCATION MAP



SKETCH MAP



PRIMARY RECORD

Primary #
HRI #

P-13-013843
CA-IMP-11788

Trinomial
NRHP Status Code

Other Listings
Review Code

Reviewer

Date

Page 1 of 5

*Resource Name or #: TS 2

P1. Other Identifier:

*P2. Location: ☒ Not for Publication ☐ Unrestricted

*a. County: Imperial

and (P2b and P2c or P2d. Attach a Location Map as necessary.)

*b. USGS 7.5' Quad: Mt Signal; Date: 1957 (1976) T 17S; R 12E; NE¼ of NE¼ of Sec 13; M.D. San Bernardino B.M.

c. Address:

City:

Zip:

d. UTM: Zone: 11 ; (NW) 622272 mE/ 3616133 mN; (NE) 622292 mE/ 3616133 mN; (SW) 622285 mE/ 3616086 mN; (SE) 622311 mE/ 3616098 mN; (G.P.S.) NAD 83

e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate) Elevation: AMSL

The site is located in the West Mesa area of the Yuha Desert in Imperial Valley. It is approximately 3 ½ miles west of the community of Mt. Signal. The site can be reached via Hwy 98. Coming from El Centro on the I-8, take Drew Road south to Hwy 98. Take Hwy 98 west for approximately one mile and turn left on to Mount Signal Road (dirt road). Go ¼ mile south to a Border Patrol dirt access road on the west side of the road and turn right. Go ¼ mile. The site is immediately north of the dirt access road.

*P3a. **Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

The site consists of eight lithic artifacts. The artifacts included three cores, one with an associated flake (one black volcanic and two green porphyritic volcanic); two primary flakes (green porphyritic volcanic); a flake scraper (green porphyritic volcanic); a secondary flake (green porphyritic volcanic); and a piece of debitage (black porphyritic volcanic).

*P3b. **Resource Attributes:** (List attributes and codes) AP2 (Lithic Scatter)

*P4. **Resources Present:** ☐ Building ☐ Structure ☐ Object ☒ Site ☐ District ☐ Element of District ☐ Other (Isolates, etc.)



*P5b. **Description of Photo:** (View, date, accession #)

View to N, 01/26/2012, CSE 012612 009

*P6. **Date Constructed/Age and Sources:**

☐ Historic ☒ Prehistoric ☐ Both

*P7. **Owner and Address:**

BLM El Centro Field Office
1661 South 4th St.
El Centro CA 92243

*P8. **Recorded by:** (Name, affiliation, and address)

Patricia Mitchell, Heather Thomson, Erica Maier
kp environmental, LLC
2387 Montgomery Ave
Cardiff By The Sea, CA 92007
Frank Brown, Viejas Band of Kumeyaay Indians

*P9. **Date Recorded:** 01/26/2012

*P10. **Survey Type:** Limited test excavation

*P11. **Report Citation:** (Cite survey report and other sources, or enter "none.")

Mitchell, Patricia T. 2012. Testing Letter Report for the Centinela Solar Energy Gen-tie Line Project, Imperial County, California.

*Attachments: ☐ NONE ☒ Location Map ☒ Sketch Map ☐ Continuation Sheet ☐ Building, Structure, and Object Record
☒ Archaeological Record ☐ District Record ☐ Linear Feature Record ☐ Milling Station Record ☐ Rock Art Record
☐ Artifact Record ☒ Photograph Record ☐ Other (List):

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
ARCHAEOLOGICAL SITE RECORD

Primary #
Trinomial

P-13-013843
CA-IMP-11788

Page 2 of 5

*Resource Name or #: TS 2

***A1. Dimensions:** a. Length: 50 (N-S) × b. Width: 26 (E-W)

Method of Measurement: ☐ Paced ☐ Taped ☐ Visual estimate ☒ Other: GPS (Trimble)

Method of Determination (Check any that apply.): ☒ Artifacts ☐ Features ☐ Soil ☐ Vegetation ☐ Topography

☐ Cut bank ☐ Animal burrow ☐ Excavation ☐ Property boundary ☒ Other (Explain): Border Patrol dirt road through south end of the site.

Reliability of Determination: ☐ High ☒ Medium ☐ Low Explain: Erosional processes may expose additional artifacts in the future.

Limitations (Check any that apply): ☐ Restricted access ☐ Paved/built over ☐ Site limits incompletely defined
☒ Disturbances ☐ Vegetation ☐ Other (Explain): Border Patrol dirt road through south end of the site.

A2. Depth: ☐ None ☒ Unknown Method of Determination:

***A3. Human Remains:** ☐ Present ☐ Absent ☐ Possible ☒ Unknown (Explain): No human remains observed.

***A4. Features** (Number, briefly describe, indicate size, list associated cultural constituents, and show location of each feature on sketch map.):
None observed.

***A5. Cultural Constituents** (Describe and quantify artifacts, ecofacts, cultural residues, etc., not associated with features.): The TS 2 artifacts found on the surface included three cores, one with an associated flake (one black volcanic and two green porphyritic volcanic); two primary flakes (green porphyritic volcanic); a flake scraper (green porphyritic volcanic); a secondary flake (green porphyritic volcanic); and a piece of debitage (black porphyritic volcanic). No artifacts were recovered from nearby shovel test pit 6 between the 0-30 cm levels.

***A6. Were Specimens Collected?** ☒ No ☐ Yes (If yes, attach Artifact Record or catalog and identify where specimens are curated.)

***A7. Site Condition:** ☐ Good ☒ Fair ☐ Poor (Describe disturbances.): Adjacent to Border Patrol dirt road and road cuts through south end of the site.

***A8. Nearest Water** (Type, distance, and direction.): Pinto Wash, approximately two miles west.

***A9. Elevation:** 8'

A10. Environmental Setting (Describe culturally relevant variables such as vegetation, fauna, soils, geology, landform, slope, aspect, exposure, etc.): The site is situated below the shoreline of ancient Lake Cahuilla. Soils in the area are typically composed of lacustrine silt and sands. Wind and water erosion often exposes underlying alluvial gravel and clay surface that has been carried into the area via the Colorado River, and over time becomes desert pavement. The topography is relatively flat and is crossed by several washes. Vegetation in the vicinity consists of creosote scrub brush community.

A11. Historical Information:

***A12. Age:** ☒ Prehistoric ☐ Protohistoric ☐ 1542-1769 ☐ 1769-1848 ☐ 1848-1880 ☐ 1880-1914 ☐ 1914-1945
☐ Post 1945 ☐ Undetermined Describe position in regional prehistoric chronology or factual historic dates if known:

A13. Interpretations (Discuss data potential, function[s], ethnic affiliation, and other interpretations): Pending formal evaluation, and in order to minimize damage from evaluation efforts, KPE recommends that site TS 2 be treated as eligible for listing in the National Register under Criterion D.

A14. Remarks:

A15. References (Documents, informants, maps, and other references):

A16. Photographs (List subjects, direction of view, and accession numbers or attach a Photograph Record.): Attached.

Original Media/Negatives Kept at: kp environmental, LLC, 2387 Montgomery Ave. Cardiff By The Sea, CA 92007

***A17. Form Prepared by:** Patricia Mitchell

Date: 01/26/2012

Affiliation and Address: kp environmental, LLC, 2387 Montgomery Ave. Cardiff By The Sea, CA 92007

[illegible]

SKETCH MAP

Primary #

HRI#

Trinomial

P-13-013843

CA-IMP-11788

Page 4 of 5

Drawn by: Trish Mitchell

*Resource Name or #: TS 2

Date: 01/26/2012



LOCATION MAP

Page 5 of 5

Primary #

HRI#

Trinomial

P-13-013843

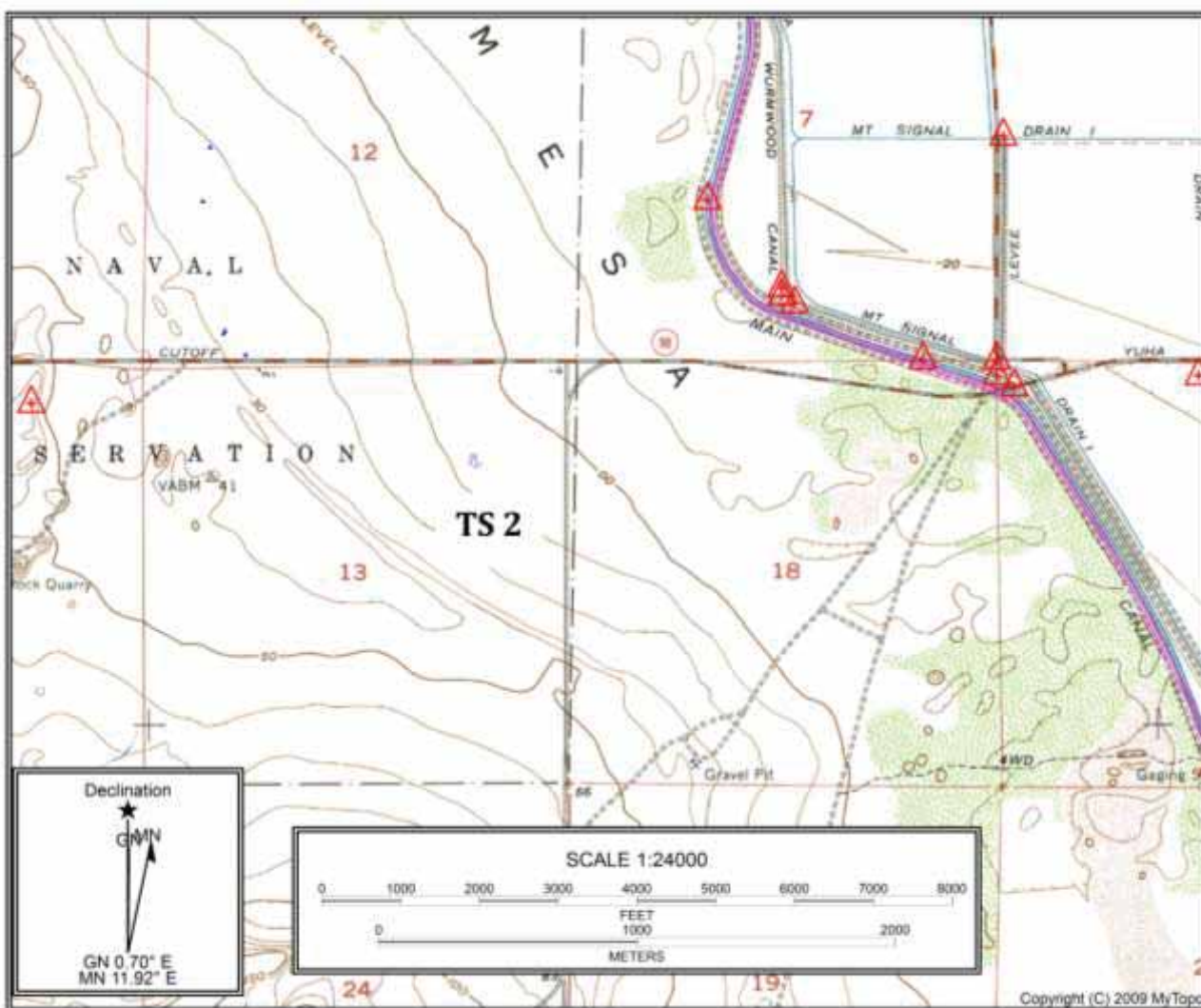
CA-IMP-11788

*Resource Name or #: TS 2

*Date of Map: 1957 (1976)

*Map Name: Mt Signal

*Scale: 1:24,000



APPENDIX B

*NAHC Sacred Lands File Search Results
and Tribal Correspondence*

November 16, 2017

NAHC Staff
Associate Government Program Analyst
Native American Heritage Commission

Subject: NAHC Sacred Lands File Records Search Request for the Drew Solar Project, Imperial County, California

Dear NAHC Staff,

The Drew Solar Project is being proposed in Imperial County, California. The project proposes to develop 762.8 acres into a solar field. This area falls within the following PLSS area: Township 17S/ Range 13E - Sections 7 and 8; Mount Signal, CA 1:24,000 USGS maps (Figure 1).

Dudek is requesting a NAHC search for any sacred sites or other Native American cultural resources that may fall within the proposed project location or a surrounding one-mile buffer. Please provide a Contact List with all Native American tribal representatives that may have traditional interests in this parcel or the surrounding search area. The results of this search can be faxed to 760-632-0164.

If you have any questions relating to this investigation, please contact me directly by email or phone.

Regards,



Angela Pham, M.A., RPA
Archaeologist

DUDEK

Phone: (760) 942-3814

Cell: (760) 274-3056

Email: apham@dudek.com

Attachments:

Figure 1. SLF Records Search Request Map

NATIVE AMERICAN HERITAGE COMMISSION

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



November 17, 2017

Angela Pham
Dudek

Sent by E-mail: apham@dudek.com

RE: Proposed Drew Solar Project, near the City of Calexico; Mount Signal USGS Quadrangle, Imperial County, California

Dear Ms. Pham:

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

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

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

Sincerely,

A handwritten signature in blue ink that reads "Gayle Totton".

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

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

**Native American Heritage Commission
Native American Contact List
Imperial County
11/17/2017**

Barona Group of the Capitan Grande

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

Kumeyaay

Campo Band of Mission Indians

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

Kumeyaay

Cocopah Indian Reservation

H. McCormick, Tribal
Archaeologist
County 15th & Avenue G
Sommerton, AZ, 85350
Phone: (928) 530 - 2291
culturalres@cocopah.com

Cocopah

Ewilaapaayp Tribal Office

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

Kumeyaay

Ewilaapaayp Tribal Office

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

Kumeyaay

Iipay Nation of Santa Ysabel

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

Kumeyaay

Iipay Nation of Santa Ysabel

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

Kumeyaay

Inaja Band of Mission Indians

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

Kumeyaay

Jamul Indian Village

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

Kumeyaay

Kwaaymii Laguna Band of Mission Indians

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

Kumeyaay

La Posta Band of Mission Indians

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

Kumeyaay

La Posta Band of Mission Indians

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

Kumeyaay

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

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed Drew Solar Project, Imperial County.

**Native American Heritage Commission
Native American Contact List
Imperial County
11/17/2017**

**Manzanita Band of Kumeyaay
Nation**

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

**Mesa Grande Band of Mission
Indians**

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

**Mesa Grande Band of Mission
Indians**

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

**San Pasqual Band of Mission
Indians**

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

**San Pasqual Band of Mission
Indians**

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

**Sycuan Band of the Kumeyaay
Nation**

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

**Sycuan Band of the Kumeyaay
Nation**

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

**Viejas Band of Kumeyaay
Indians**

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

**Viejas Band of Kumeyaay
Indians**

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

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

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed Drew Solar Project, Imperial County.

November 28, 2017

10756.001-02

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

Subject: The Drew Solar Project, Imperial County, California

Dear Mr. Flores:

Drew Solar LLC has retained Dudek to conduct a cultural resources study in support of the proposed Drew Solar Project (project) located west of Pullman Road, east of Mandrapa Road, and south of Kubler Road, approximately 6.5 miles southwest of the city of El Centro in Imperial County, California. The proposed project would involve the conversion and construction of approximately 800 acres of previously utilized agricultural lands to a solar farm. The project area currently has an historic-age reservoir located within the central portion of the site. The project falls within the following PLSS area: Township 17S/ Range 13E – Sections 7 and 8; Mount Signal, CA 1:24,000 USGS maps (Figure 1).

As part of the cultural resources study prepared for the proposed project, Dudek contacted the California Native American Heritage Commission (NAHC) to request a Sacred Lands File (SLF) search and a list of Native American individuals and/or tribal organizations who may have knowledge of cultural resources in or near the proposed project area. The NAHC emailed a response on November 17, 2017, which stated that the SLF search failed to indicate the presence of Native American cultural resources in the immediate project area.

The NAHC recommended that we contact you regarding your knowledge of the presence of cultural resources that may be impacted by this project. If you have any knowledge of cultural resources that may exist within or near the proposed project area, please contact me directly at (760) 479-4855 or at apham@dudek.com within 30 days of receipt of this letter.

Please note that this letter does not constitute Assembly Bill (AB) 52 notification or initiation of consultation. AB 52 is a process between the lead agency and California Native American Tribes concerning potential impacts to tribal cultural resources. Tribes that wish to be notified of projects for the purposes of AB 52 must contact the lead agency, Drew Solar LLC, in writing (pursuant to Public Resources Code Section 21080.3.1 (b)).

Thank you for your assistance.

Mr. Flores:

Subject: The Drew Solar Project, Imperial County, California

Sincerely,

A handwritten signature in black ink, appearing to read 'Angela Pham', with a large, stylized loop at the end.

Angela Pham, M.A., RPA
Archaeologist

Attachments: Project Location Map

November 28, 2017

10756.001-02

Mr. Michael Garcia, Vice Chairperson
Ewiiapaayp Tribal Office
4054 Willows Road
Alpine, CA 91901

Subject: The Drew Solar Project, Imperial County, California

Dear Mr. Garcia:

Drew Solar LLC retained Dudek to conduct a cultural resources study in support of the proposed Drew Solar Project (project) located west of Pullman Road, east of Mandrapa Road, and south of Kubler Road, approximately 6.5 miles southwest of the city of El Centro in Imperial County, California. The proposed project would involve the conversion and construction of approximately 800 acres of previously utilized agricultural lands to a solar farm. The project area currently has an historic-age reservoir located within the central portion of the site. The project falls within the following PLSS area: Township 17S/ Range 13E – Sections 7 and 8; Mount Signal, CA 1:24,000 USGS maps (Figure 1).

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Thank you for your assistance.

Mr. Garcia:

Subject: The Drew Solar Project, Imperial County, California

Sincerely,

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Angela Pham, M.A., RPA
Archaeologist

Attachments: Project Location Map

November 28, 2017

10756.001-02

Mr. Ralph Goff, Chairperson
Campo Band of Mission Indians
36190 Church Road, Suite 1
Campo, CA 91906

Subject: The Drew Solar Project, Imperial County, California

Dear Mr. Goff:

Drew Solar LLC retained Dudek to conduct a cultural resources study in support of the proposed Drew Solar Project (project) located west of Pullman Road, east of Mandrapa Road, and south of Kubler Road, approximately 6.5 miles southwest of the city of El Centro in Imperial County, California. The proposed project would involve the conversion and construction of approximately 800 acres of previously utilized agricultural lands to a solar farm. The project area currently has an historic-age reservoir located within the central portion of the site. The project falls within the following PLSS area: Township 17S/ Range 13E – Sections 7 and 8; Mount Signal, CA 1:24,000 USGS maps (Figure 1).

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Thank you for your assistance.

Mr. Goff:

Subject: The Drew Solar Project, Imperial County, California

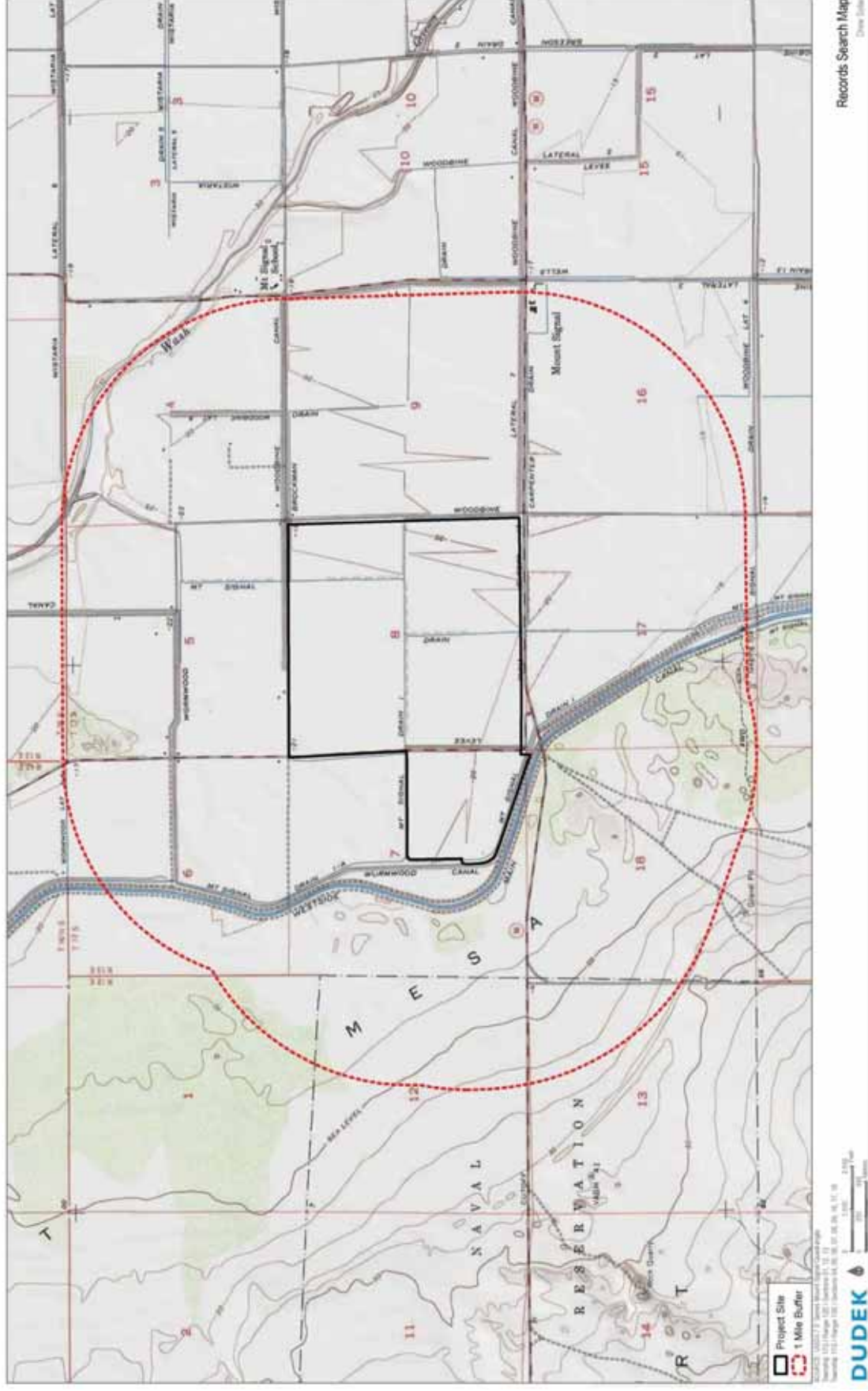
Sincerely,

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Angela Pham, M.A., RPA
Archaeologist

Attachments: Project Location Map

Mr. Goff: *The Drew Solar Project, Imperial County, California*



November 28, 2017

10756.001-02

Ms. Julie Hagen, Cultural Resources
Viejas Band of Kumeyaay Indians
P.O. Box 908
Alpine, CA 91903

Subject: The Drew Solar Project, Imperial County, California

Dear Ms. Hagen:

Drew Solar LLC retained Dudek to conduct a cultural resources study in support of the proposed Drew Solar Project (project) located west of Pullman Road, east of Mandrapa Road, and south of Kubler Road, approximately 6.5 miles southwest of the city of El Centro in Imperial County, California. The proposed project would involve the conversion and construction of approximately 800 acres of previously utilized agricultural lands to a solar farm. The project area currently has an historic-age reservoir located within the central portion of the site. The project falls within the following PLSS area: Township 17S/ Range 13E – Sections 7 and 8; Mount Signal, CA 1:24,000 USGS maps (Figure 1).

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Thank you for your assistance.

Ms. Hagen:

Subject: The Drew Solar Project, Imperial County, California

Sincerely,

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Angela Pham, M.A., RPA
Archaeologist

Attachments: Project Location Map

Subject: *The Drew Solar Project, Imperial County, California*



November 28, 2017

10756.001-02

Ms. Lisa Haws, Cultural Resource Manager
Sycuan Band of the Kumeyaay Nation
1 Kwaaypaay Court
El Cajon, CA 92019

Subject: The Drew Solar Project, Imperial County, California

Dear Ms. Haws:

Drew Solar LLC retained Dudek to conduct a cultural resources study in support of the proposed Drew Solar Project (project) located west of Pullman Road, east of Mandrapa Road, and south of Kubler Road, approximately 6.5 miles southwest of the city of El Centro in Imperial County, California. The proposed project would involve the conversion and construction of approximately 800 acres of previously utilized agricultural lands to a solar farm. The project area currently has an historic-age reservoir located within the central portion of the site. The project falls within the following PLSS area: Township 17S/ Range 13E – Sections 7 and 8; Mount Signal, CA 1:24,000 USGS maps (Figure 1).

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Thank you for your assistance.

Ms. Haws:

Subject: The Drew Solar Project, Imperial County, California

Sincerely,

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Angela Pham, M.A., RPA
Archaeologist

Attachments: Project Location Map

Subject: *The Drew Solar Project, Imperial County, California*



November 28, 2017

10756.001-02

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

Subject: The Drew Solar Project, Imperial County, California

Dear Mr. Lawson:

Drew Solar LLC retained Dudek to conduct a cultural resources study in support of the proposed Drew Solar Project (project) located west of Pullman Road, east of Mandrapa Road, and south of Kubler Road, approximately 6.5 miles southwest of the city of El Centro in Imperial County, California. The proposed project would involve the conversion and construction of approximately 800 acres of previously utilized agricultural lands to a solar farm. The project area currently has an historic-age reservoir located within the central portion of the site. The project falls within the following PLSS area: Township 17S/ Range 13E – Sections 7 and 8; Mount Signal, CA 1:24,000 USGS maps (Figure 1).

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Thank you for your assistance.

Mr. Lawson:

Subject: The Drew Solar Project, Imperial County, California

Sincerely,

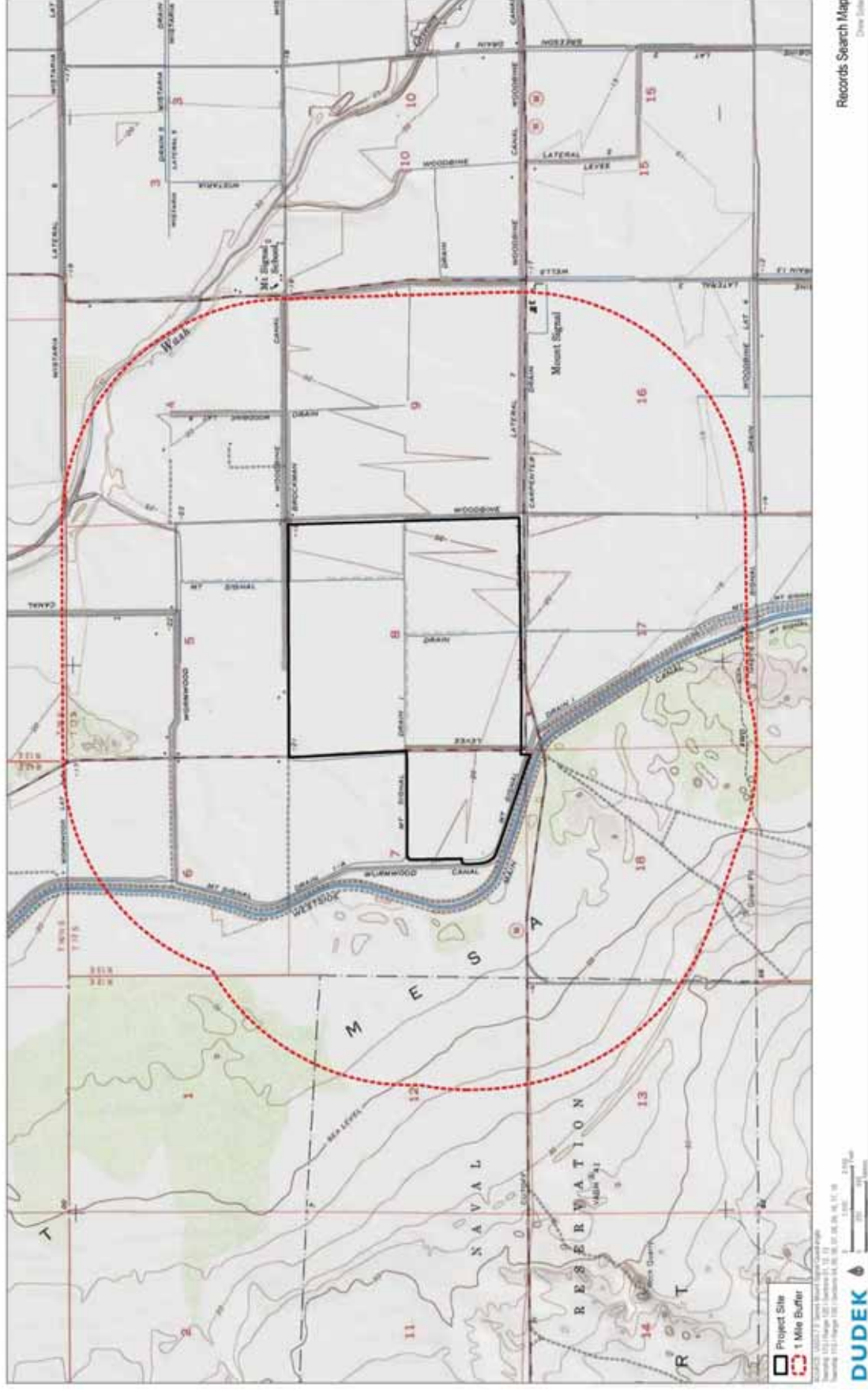
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Angela Pham, M.A., RPA
Archaeologist

Attachments: Project Location Map

Mr. Lawson:

Subject: The Drew Solar Project, Imperial County, California



November 28, 2017

10756.001-02

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

Subject: The Drew Solar Project, Imperial County, California

Dear Mr. Linton:

Drew Solar LLC retained Dudek to conduct a cultural resources study in support of the proposed Drew Solar Project (project) located west of Pullman Road, east of Mandrapa Road, and south of Kubler Road, approximately 6.5 miles southwest of the city of El Centro in Imperial County, California. The proposed project would involve the conversion and construction of approximately 800 acres of previously utilized agricultural lands to a solar farm. The project area currently has an historic-age reservoir located within the central portion of the site. The project falls within the following PLSS area: Township 17S/ Range 13E – Sections 7 and 8; Mount Signal, CA 1:24,000 USGS maps (Figure 1).

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Thank you for your assistance.

Mr. Linton:

Subject: The Drew Solar Project, Imperial County, California

Sincerely,

A handwritten signature in black ink, appearing to read 'Angela Pham', with a horizontal line underneath it.

Angela Pham, M.A., RPA
Archaeologist

Attachments: Project Location Map

Subject: *The Drew Solar Project, Imperial County, California*



November 28, 2017

10756.001-02

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

Subject: The Drew Solar Project, Imperial County, California

Dear Ms. Lucas:

Drew Solar LLC retained Dudek to conduct a cultural resources study in support of the proposed Drew Solar Project (project) located west of Pullman Road, east of Mandrapa Road, and south of Kubler Road, approximately 6.5 miles southwest of the city of El Centro in Imperial County, California. The proposed project would involve the conversion and construction of approximately 800 acres of previously utilized agricultural lands to a solar farm. The project area currently has an historic-age reservoir located within the central portion of the site. The project falls within the following PLSS area: Township 17S/ Range 13E – Sections 7 and 8; Mount Signal, CA 1:24,000 USGS maps (Figure 1).

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Thank you for your assistance.

Ms. Lucas:

Subject: The Drew Solar Project, Imperial County, California

Sincerely,

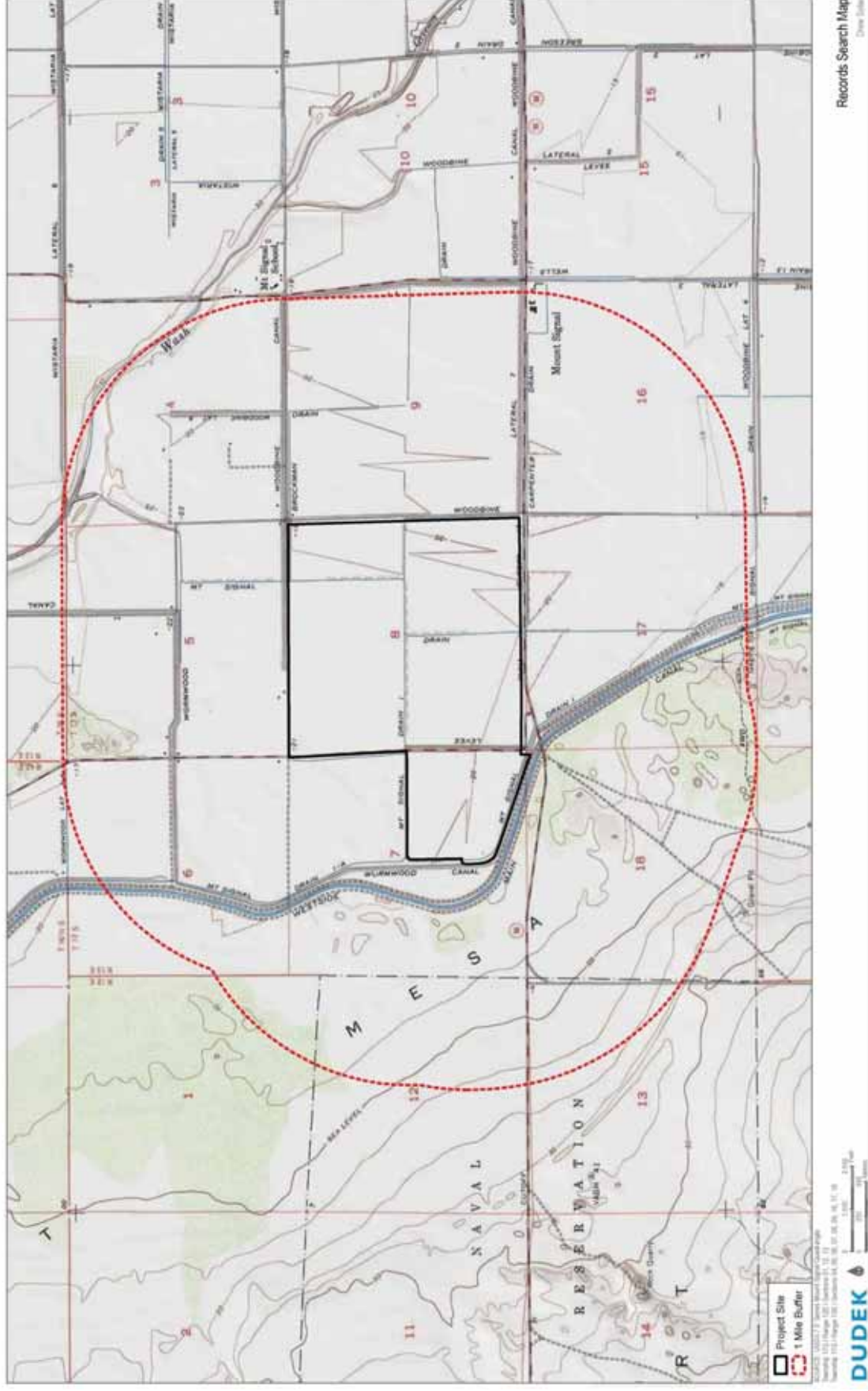
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Angela Pham, M.A., RPA
Archaeologist

Attachments: Project Location Map

Ms. Lucas:

Subject: The Drew Solar Project, Imperial County, California



November 28, 2017

10756.001-02

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

Subject: The Drew Solar Project, Imperial County, California

Dear Mr. Martinez:

Drew Solar LLC retained Dudek to conduct a cultural resources study in support of the proposed Drew Solar Project (project) located west of Pullman Road, east of Mandrapa Road, and south of Kubler Road, approximately 6.5 miles southwest of the city of El Centro in Imperial County, California. The proposed project would involve the conversion and construction of approximately 800 acres of previously utilized agricultural lands to a solar farm. The project area currently has an historic-age reservoir located within the central portion of the site. The project falls within the following PLSS area: Township 17S/ Range 13E – Sections 7 and 8; Mount Signal, CA 1:24,000 USGS maps (Figure 1).

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Thank you for your assistance.

Mr. Martinez:

Subject: The Drew Solar Project, Imperial County, California

Sincerely,

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Angela Pham, M.A., RPA
Archaeologist

Attachments: Project Location Map

Subject: *The Drew Solar Project, Imperial County, California*



November 28, 2017

10756.001-02

Mr. H. McCormick, Tribal Archaeologist
Cocopah Indian Reservation
County 15th & Avenue G
Sommerton, AZ 85350

Subject: The Drew Solar Project, Imperial County, California

Dear Mr. McCormick:

Drew Solar LLC retained Dudek to conduct a cultural resources study in support of the proposed Drew Solar Project (project) located west of Pullman Road, east of Mandrapa Road, and south of Kubler Road, approximately 6.5 miles southwest of the city of El Centro in Imperial County, California. The proposed project would involve the conversion and construction of approximately 800 acres of previously utilized agricultural lands to a solar farm. The project area currently has an historic-age reservoir located within the central portion of the site. The project falls within the following PLSS area: Township 17S/ Range 13E – Sections 7 and 8; Mount Signal, CA 1:24,000 USGS maps (Figure 1).

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Thank you for your assistance.

Mr. McCormick:

Subject: The Drew Solar Project, Imperial County, California

Sincerely,

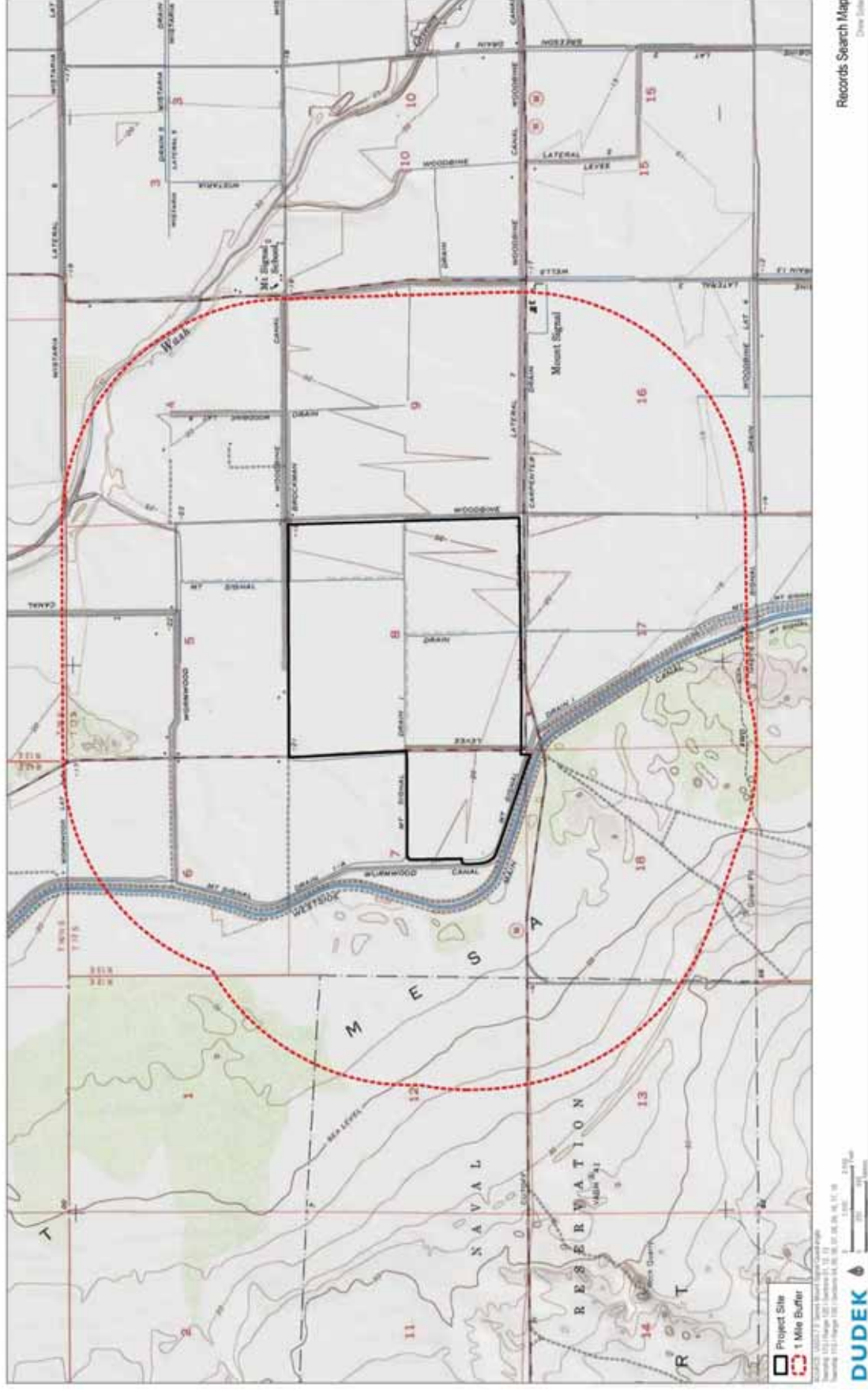
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Angela Pham, M.A., RPA
Archaeologist

Attachments: Project Location Map

Mr. McCormick:

Subject: The Drew Solar Project, Imperial County, California



November 28, 2017

10756.001-02

Ms. Javaughn Miller,
La Posta Band of Mission Indians
8 Crestwood Rd.
Boulevard, CA 91905

Subject: The Drew Solar Project, Imperial County, California

Dear Ms. Miller:

Drew Solar LLC retained Dudek to conduct a cultural resources study in support of the proposed Drew Solar Project (project) located west of Pullman Road, east of Mandrapa Road, and south of Kubler Road, approximately 6.5 miles southwest of the city of El Centro in Imperial County, California. The proposed project would involve the conversion and construction of approximately 800 acres of previously utilized agricultural lands to a solar farm. The project area currently has an historic-age reservoir located within the central portion of the site. The project falls within the following PLSS area: Township 17S/ Range 13E – Sections 7 and 8; Mount Signal, CA 1:24,000 USGS maps (Figure 1).

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Thank you for your assistance.

Ms. Miller:

Subject: The Drew Solar Project, Imperial County, California

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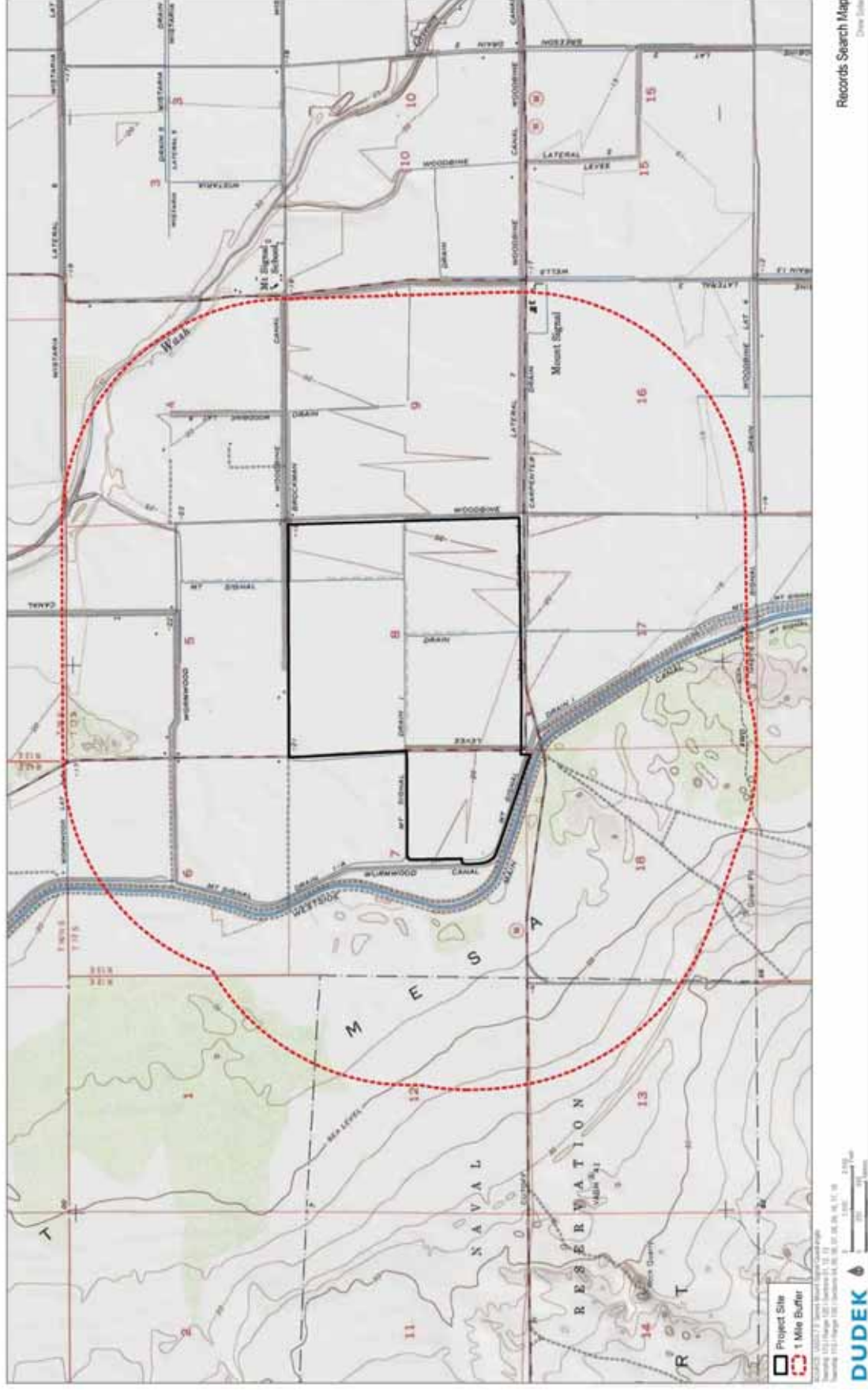
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Angela Pham, M.A., RPA
Archaeologist

Attachments: Project Location Map

Ms. Miller:

Subject: The Drew Solar Project, Imperial County, California



November 28, 2017

10756.001-02

Mr. Mario Morales, Cultural Resources Rep
Mesa Grande Band of Mission Indians
35008 Pala Temecula Rd. #366
Pala, CA 92059

Subject: The Drew Solar Project, Imperial County, California

Dear Mr. Morales:

Drew Solar LLC retained Dudek to conduct a cultural resources study in support of the proposed Drew Solar Project (project) located west of Pullman Road, east of Mandrapa Road, and south of Kubler Road, approximately 6.5 miles southwest of the city of El Centro in Imperial County, California. The proposed project would involve the conversion and construction of approximately 800 acres of previously utilized agricultural lands to a solar farm. The project area currently has an historic-age reservoir located within the central portion of the site. The project falls within the following PLSS area: Township 17S/ Range 13E – Sections 7 and 8; Mount Signal, CA 1:24,000 USGS maps (Figure 1).

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Thank you for your assistance.

Mr. Morales:

Subject: The Drew Solar Project, Imperial County, California

Sincerely,

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Angela Pham, M.A., RPA
Archaeologist

Attachments: Project Location Map

November 28, 2017

10756.001-02

Ms. Rebecca Osuna, Chairman
Inaja Band of Mission Indians
2005 S. Escondido Blvd.
Escondido, CA 92025

Subject: The Drew Solar Project, Imperial County, California

Dear Ms. Osuna:

Drew Solar LLC retained Dudek to conduct a cultural resources study in support of the proposed Drew Solar Project (project) located west of Pullman Road, east of Mandrapa Road, and south of Kubler Road, approximately 6.5 miles southwest of the city of El Centro in Imperial County, California. The proposed project would involve the conversion and construction of approximately 800 acres of previously utilized agricultural lands to a solar farm. The project area currently has an historic-age reservoir located within the central portion of the site. The project falls within the following PLSS area: Township 17S/ Range 13E – Sections 7 and 8; Mount Signal, CA 1:24,000 USGS maps (Figure 1).

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Thank you for your assistance.

Ms. Osuna:

Subject: The Drew Solar Project, Imperial County, California

Sincerely,

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Angela Pham, M.A., RPA
Archaeologist

Attachments: Project Location Map

Subject: *The Drew Solar Project, Imperial County, California*



November 28, 2017

10756.001-02

Mr. Virgil Oyo, Chairperson
Mesa Grande Band of Mission Indians
P.O. Box 270
Santa Ysabel, CA 92070

Subject: The Drew Solar Project, Imperial County, California

Dear Mr. Oyo:

Drew Solar LLC retained Dudek to conduct a cultural resources study in support of the proposed Drew Solar Project (project) located west of Pullman Road, east of Mandrapa Road, and south of Kubler Road, approximately 6.5 miles southwest of the city of El Centro in Imperial County, California. The proposed project would involve the conversion and construction of approximately 800 acres of previously utilized agricultural lands to a solar farm. The project area currently has an historic-age reservoir located within the central portion of the site. The project falls within the following PLSS area: Township 17S/ Range 13E – Sections 7 and 8; Mount Signal, CA 1:24,000 USGS maps (Figure 1).

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Thank you for your assistance.

Mr. Oyos:

Subject: The Drew Solar Project, Imperial County, California

Sincerely,

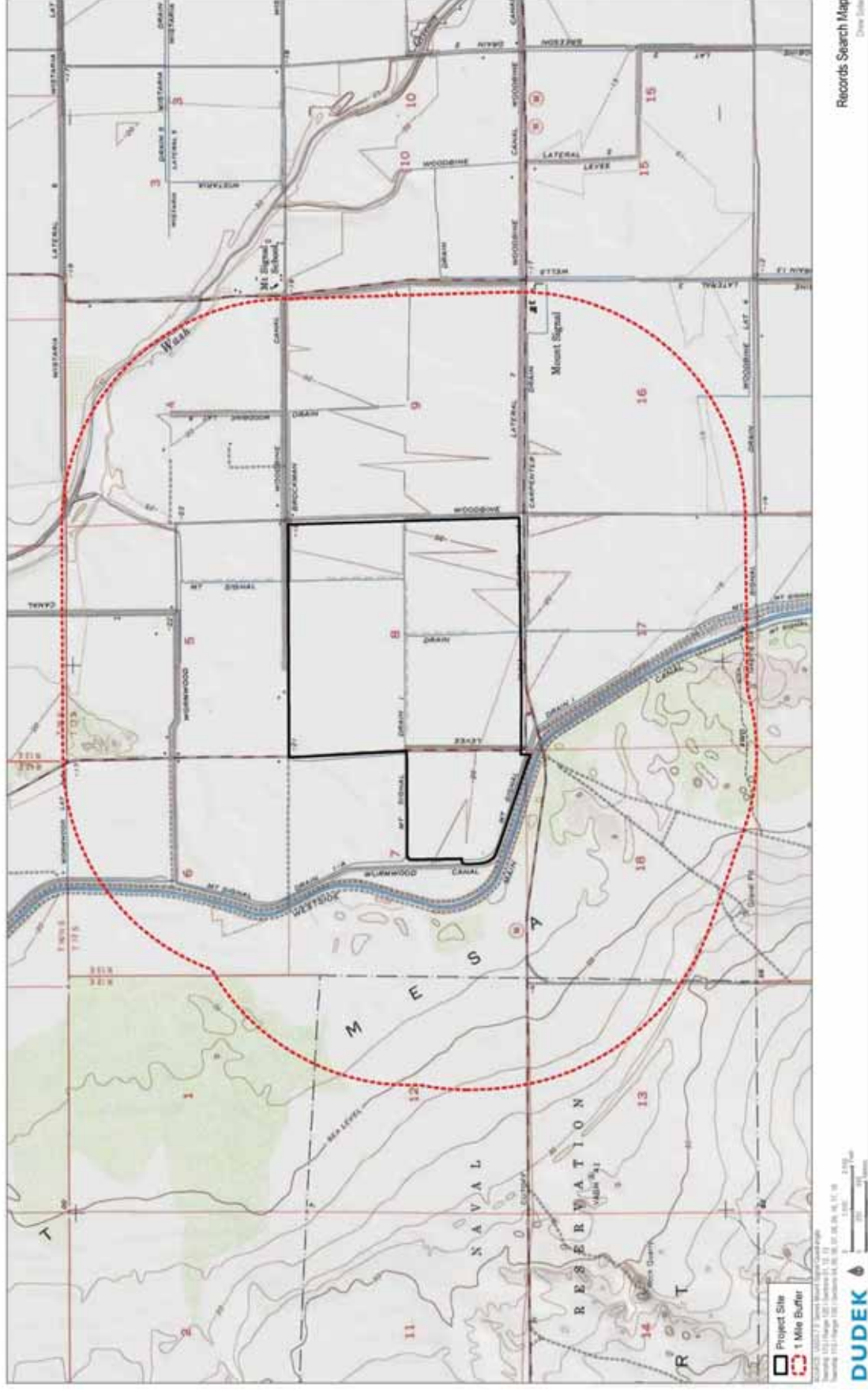
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Angela Pham, M.A., RPA
Archaeologist

Attachments: Project Location Map

Mr. Oyos:

Subject: The Drew Solar Project, Imperial County, California



DUDEK

10756.001-02
November 2017

November 28, 2017

10756.001-02

Ms. Gwendolyn Parada, Chairperson
La Posta Band of Mission Indians
8 Crestwood Rd.
Boulevard, CA 91905

Subject: The Drew Solar Project, Imperial County, California

Dear Ms. Parada:

Drew Solar LLC retained Dudek to conduct a cultural resources study in support of the proposed Drew Solar Project (project) located west of Pullman Road, east of Mandrapa Road, and south of Kubler Road, approximately 6.5 miles southwest of the city of El Centro in Imperial County, California. The proposed project would involve the conversion and construction of approximately 800 acres of previously utilized agricultural lands to a solar farm. The project area currently has an historic-age reservoir located within the central portion of the site. The project falls within the following PLSS area: Township 17S/ Range 13E – Sections 7 and 8; Mount Signal, CA 1:24,000 USGS maps (Figure 1).

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Thank you for your assistance.

Ms. Parada:

Subject: The Drew Solar Project, Imperial County, California

Sincerely,

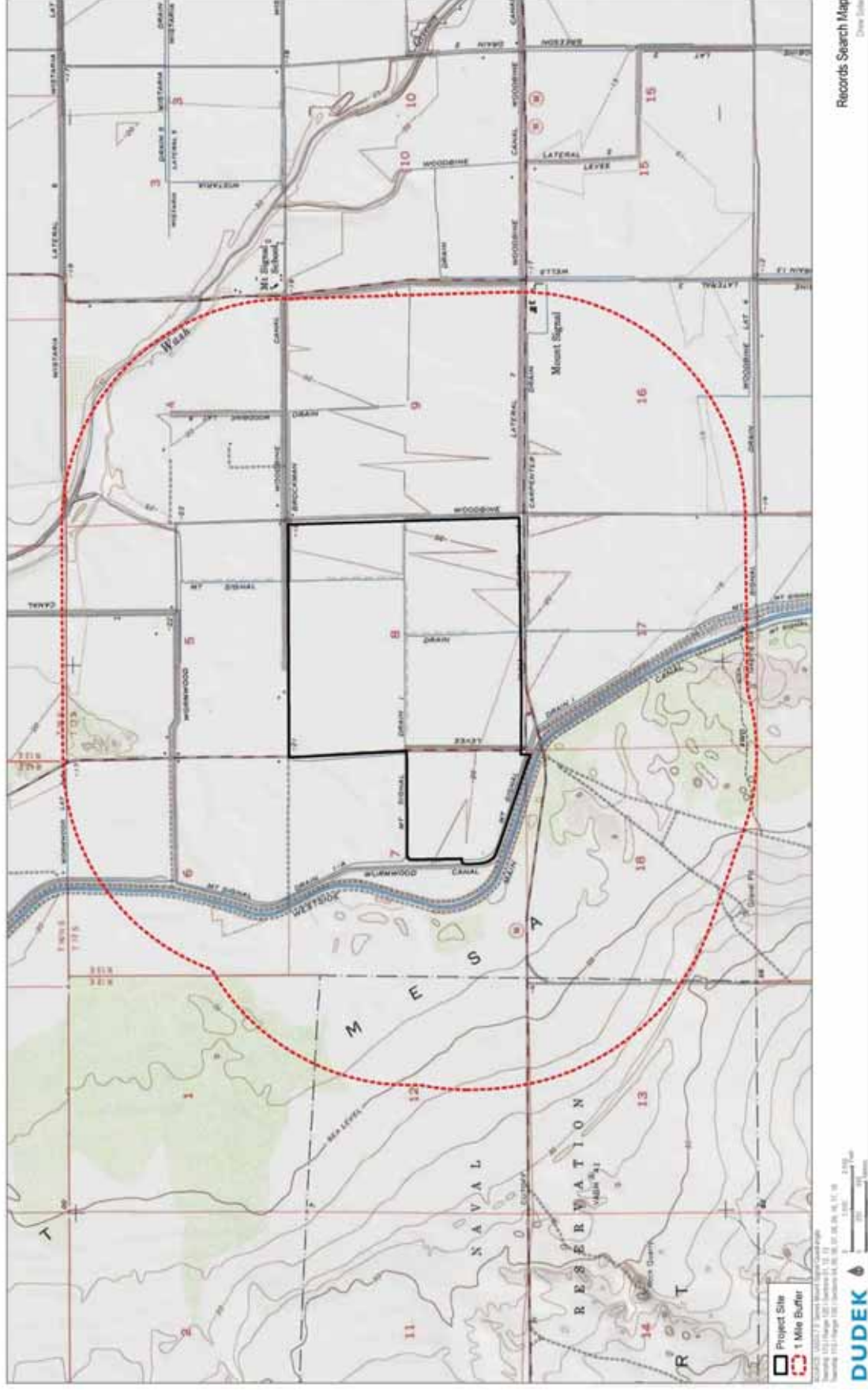
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Angela Pham, M.A., RPA
Archaeologist

Attachments: Project Location Map

Ms. Parada:

Subject: The Drew Solar Project, Imperial County, California



November 28, 2017

10756.001-02

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

Subject: The Drew Solar Project, Imperial County, California

Dear Mr. Perez:

Drew Solar LLC retained Dudek to conduct a cultural resources study in support of the proposed Drew Solar Project (project) located west of Pullman Road, east of Mandrapa Road, and south of Kubler Road, approximately 6.5 miles southwest of the city of El Centro in Imperial County, California. The proposed project would involve the conversion and construction of approximately 800 acres of previously utilized agricultural lands to a solar farm. The project area currently has an historic-age reservoir located within the central portion of the site. The project falls within the following PLSS area: Township 17S/ Range 13E – Sections 7 and 8; Mount Signal, CA 1:24,000 USGS maps (Figure 1).

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Thank you for your assistance.

Mr. Perez:

Subject: The Drew Solar Project, Imperial County, California

Sincerely,

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Angela Pham, M.A., RPA
Archaeologist

Attachments: Project Location Map

Subject: *The Drew Solar Project, Imperial County, California*



November 28, 2017

10756.001-02

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

Subject: The Drew Solar Project, Imperial County, California

Dear Ms. Pinto:

Drew Solar LLC retained Dudek to conduct a cultural resources study in support of the proposed Drew Solar Project (project) located west of Pullman Road, east of Mandrapa Road, and south of Kubler Road, approximately 6.5 miles southwest of the city of El Centro in Imperial County, California. The proposed project would involve the conversion and construction of approximately 800 acres of previously utilized agricultural lands to a solar farm. The project area currently has an historic-age reservoir located within the central portion of the site. The project falls within the following PLSS area: Township 17S/ Range 13E – Sections 7 and 8; Mount Signal, CA 1:24,000 USGS maps (Figure 1).

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Thank you for your assistance.

Ms. Pinto:

Subject: The Drew Solar Project, Imperial County, California

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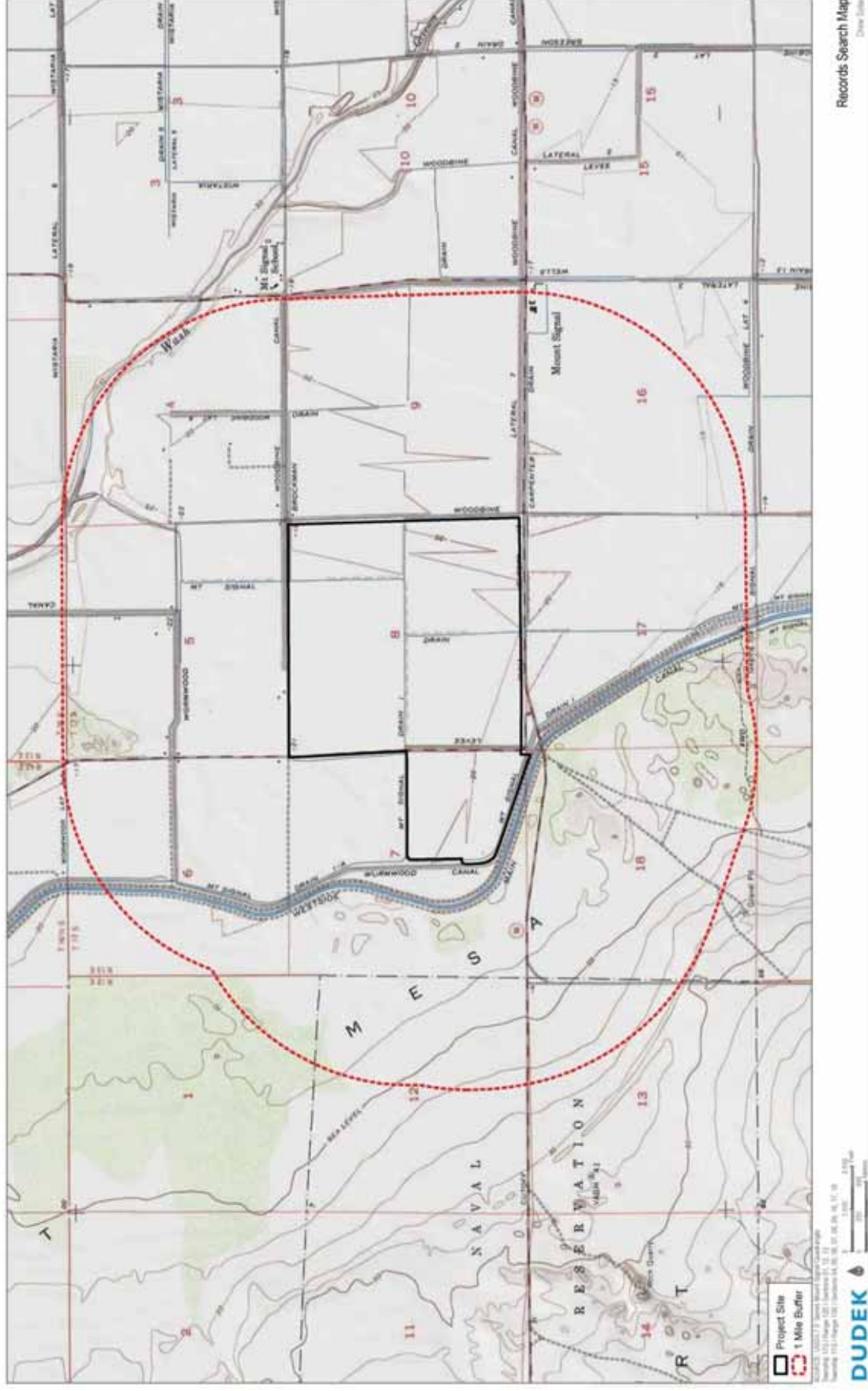
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Angela Pham, M.A., RPA
Archaeologist

Attachments: Project Location Map

Ms. Pinto:

Subject: The Drew Solar Project, Imperial County, California



DUDEK

November 28, 2017

10756.001-02

Mr. Robert Pinto, Sr., Chairperson
Ewiaapaayp Tribal Office
4054 Willow Rd.
Alpine, CA 91901

Subject: The Drew Solar Project, Imperial County, California

Dear Mr. Pinto, Sr.:

Drew Solar LLC retained Dudek to conduct a cultural resources study in support of the proposed Drew Solar Project (project) located west of Pullman Road, east of Mandrapa Road, and south of Kubler Road, approximately 6.5 miles southwest of the city of El Centro in Imperial County, California. The proposed project would involve the conversion and construction of approximately 800 acres of previously utilized agricultural lands to a solar farm. The project area currently has an historic-age reservoir located within the central portion of the site. The project falls within the following PLSS area: Township 17S/ Range 13E – Sections 7 and 8; Mount Signal, CA 1:24,000 USGS maps (Figure 1).

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Mr. Pinto, Sr.:

Subject: The Drew Solar Project, Imperial County, California

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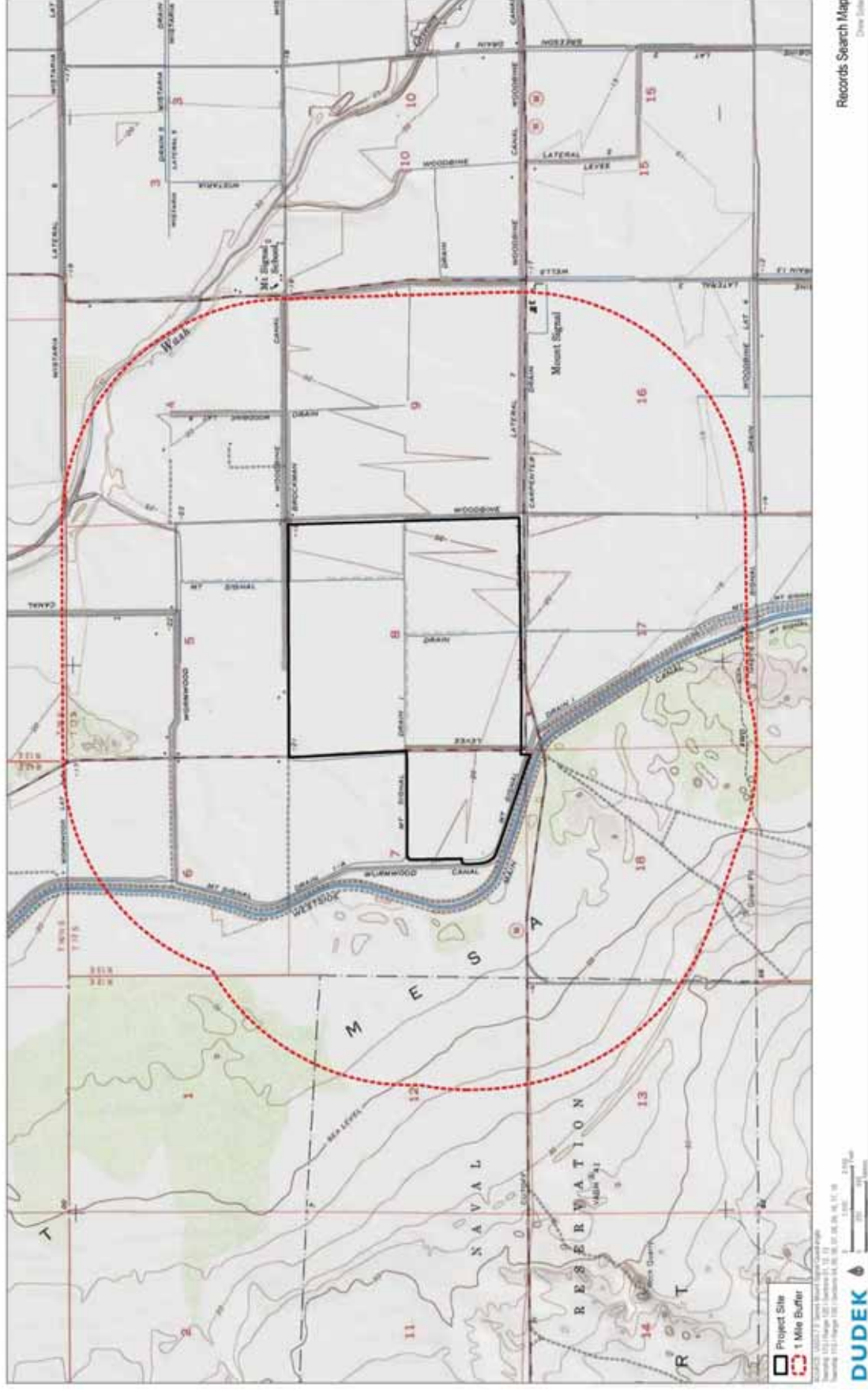
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Angela Pham, M.A., RPA
Archaeologist

Attachments: Project Location Map

Mr. Pinto, Sr.:

Subject: The Drew Solar Project, Imperial County, California



November 28, 2017

10756.001-02

Mr. Edwin (Thorpe) Romero, Chairperson
Barona Group of the Capitan Grande
1095 Barona Road
Lakeside, CA 92040

Subject: The Drew Solar Project, Imperial County, California

Dear Mr. Romero:

Drew Solar LLC retained Dudek to conduct a cultural resources study in support of the proposed Drew Solar Project (project) located west of Pullman Road, east of Mandrapa Road, and south of Kubler Road, approximately 6.5 miles southwest of the city of El Centro in Imperial County, California. The proposed project would involve the conversion and construction of approximately 800 acres of previously utilized agricultural lands to a solar farm. The project area currently has an historic-age reservoir located within the central portion of the site. The project falls within the following PLSS area: Township 17S/ Range 13E – Sections 7 and 8; Mount Signal, CA 1:24,000 USGS maps (Figure 1).

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Thank you for your assistance.

Mr. Romero:

Subject: The Drew Solar Project, Imperial County, California

Sincerely,

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Angela Pham, M.A., RPA
Archaeologist

Attachments: Project Location Map

November 28, 2017

10756.001-02

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

Subject: The Drew Solar Project, Imperial County, California

Dear Ms. Santos:

Drew Solar LLC retained Dudek to conduct a cultural resources study in support of the proposed Drew Solar Project (project) located west of Pullman Road, east of Mandrapa Road, and south of Kubler Road, approximately 6.5 miles southwest of the city of El Centro in Imperial County, California. The proposed project would involve the conversion and construction of approximately 800 acres of previously utilized agricultural lands to a solar farm. The project area currently has an historic-age reservoir located within the central portion of the site. The project falls within the following PLSS area: Township 17S/ Range 13E – Sections 7 and 8; Mount Signal, CA 1:24,000 USGS maps (Figure 1).

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Thank you for your assistance.

Ms. Santos:

Subject: The Drew Solar Project, Imperial County, California

Sincerely,

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Angela Pham, M.A., RPA
Archaeologist

Attachments: Project Location Map

Subject: *The Drew Solar Project, Imperial County, California*



November 28, 2017

10756.001-02

Mr. Robert J. Welch, Jr., Chairperson
Viejas Band of Kumeyaay Indians
1 Viejas Grade Rd.
Alpine, CA 91901

Subject: The Drew Solar Project, Imperial County, California

Dear Mr. Welch, Jr.:

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Thank you for your assistance.

Mr. Welch, Jr.:

Subject: The Drew Solar Project, Imperial County, California

Sincerely,

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Angela Pham, M.A., RPA
Archaeologist

Attachments: Project Location Map

Subject: *The Drew Solar Project, Imperial County, California*



November 28, 2017

10756.001-02

Mr. Robert Welch, Sr., Chairperson
Viejas Band of Kumeyaay Indians
1 Viejas Grade Rd.
Alpine, CA 91901

Subject: The Drew Solar Project, Imperial County, California

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Thank you for your assistance.

Mr. Welch, Sr.:

Subject: The Drew Solar Project, Imperial County, California

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Angela Pham, M.A., RPA
Archaeologist

Attachments: Project Location Map

Subject: *The Drew Solar Project, Imperial County, California*



VIEJAS

TRIBAL GOVERNMENT

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

Phone: 6194453810
Fax: 6194455337
viejas.com

December 20, 2017

Angela Pham
M.A, RPA
Dudek
605 Third Street
Encinitas, CA 92024

RE: The Drew Solar Project, Imperial County

Dear Ms. Pham,

In reviewing the above referenced project the Viejas Band of Kumeyaay Indians ("Viejas") would like to comment at this time.

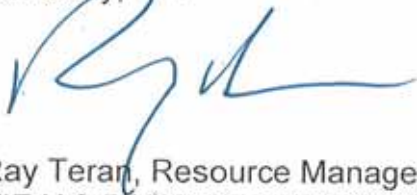
The project area may contain many sacred sites to the Kumeyaay people. We request that these sacred sites be avoided with adequate buffer zones.

Additionally, Viejas is requesting, as appropriate, the following:

- All NEPA/CEQA/NAGPRA laws be followed
- Immediately contact Viejas on any changes or inadvertent discoveries.

Thank you for your collaboration and support in preserving our Tribal cultural resources. I look forward to hearing from you. Please call me at 619-659-2312 or Ernest Pingleton at 619-659-2314, or email, rteran@viejas-nsn.gov or epingleton@viejas-nsn.gov, for scheduling. Thank you.

Sincerely,



Ray Teran, Resource Management
VIEJAS BAND OF KUMEYAAY INDIANS

CONFIDENTIAL APPENDIX C
*Cultural Resources Overview Map and
New DPR Forms*

July 18, 2018

10756

Drew Solar
1166 Avenue for the Americas, Ninth Floor
New York, New York, 10036

Subject: Historic Resource Evaluation for the Drew Solar Project, Imperial County, California

To whom it may concern:

Dudek prepared a historic resource evaluation report for the Drew Solar Project (project), located approximately 6.5 miles southwest of the City of El Centro, Imperial County, California (Figure 1). This study included an intensive-level cultural resources survey, archival research, and evaluation of nine (9) irrigation canal/drainage ditch segments (Figure 2) in consideration of National Register of Historic Places (NRHP) and California Register of Historical Resources (CRHR) designation criteria and integrity requirements. The Project site consists of six Assessor's Parcel Numbers (APNs 052-170-031, 052-170-032, 052-170-037, 052-170-039, 052-170-056, and 052-170-067) that total approximately 859.3 gross acres (762.8 net acres) of land that was previously used for agriculture. The entire 859.3 gross acres (762.8 net acres) constitutes the cultural resources project area.

This study was completed under the provisions of local regulations as well as the California Environmental Quality Act (CEQA). Public Resources Code (PRC) Section 5024.1, Title 14 California Code of Regulations (CCR) Section 15064.5 of the CEQA Guidelines, and PRC Sections 21083.2 and 21084.1 were also used as basic guidelines for this cultural resources study (Governor's Office of Planning and Research 1998). PRC Section 5024.1 requires the identification and evaluation of cultural resources to determine their eligibility for the CRHR.

Nine cultural resources, consisting of historic irrigation canals designated as: DS-I-1, DS-I-2, DS-I-3 (Wormwood Lateral 1 segment), DS-I-4, P-13-013073 (Woodbine canal segment), P-13-013079 (Mt. Signal Drain Segment), P-13-013074 (Woodbine Lateral 7), DS-I-8 (Carr Drain), and DS-I-9 (Mt. Signal Drain No. 1-B) were identified within the project area during the intensive-level pedestrian survey conducted by Dudek on November 20, 2017 and February 21, 2018

Subject: Historic Resources Evaluation for the Drew Solar Project, Imperial County, California

This evaluation report was prepared by Dudek architectural historians Sarah Corder, MFA and Samantha Murray, MA, both of whom meet the Secretary of the Interior's Professional Qualification Standards for architectural history.

Figure 1. Project Location Map

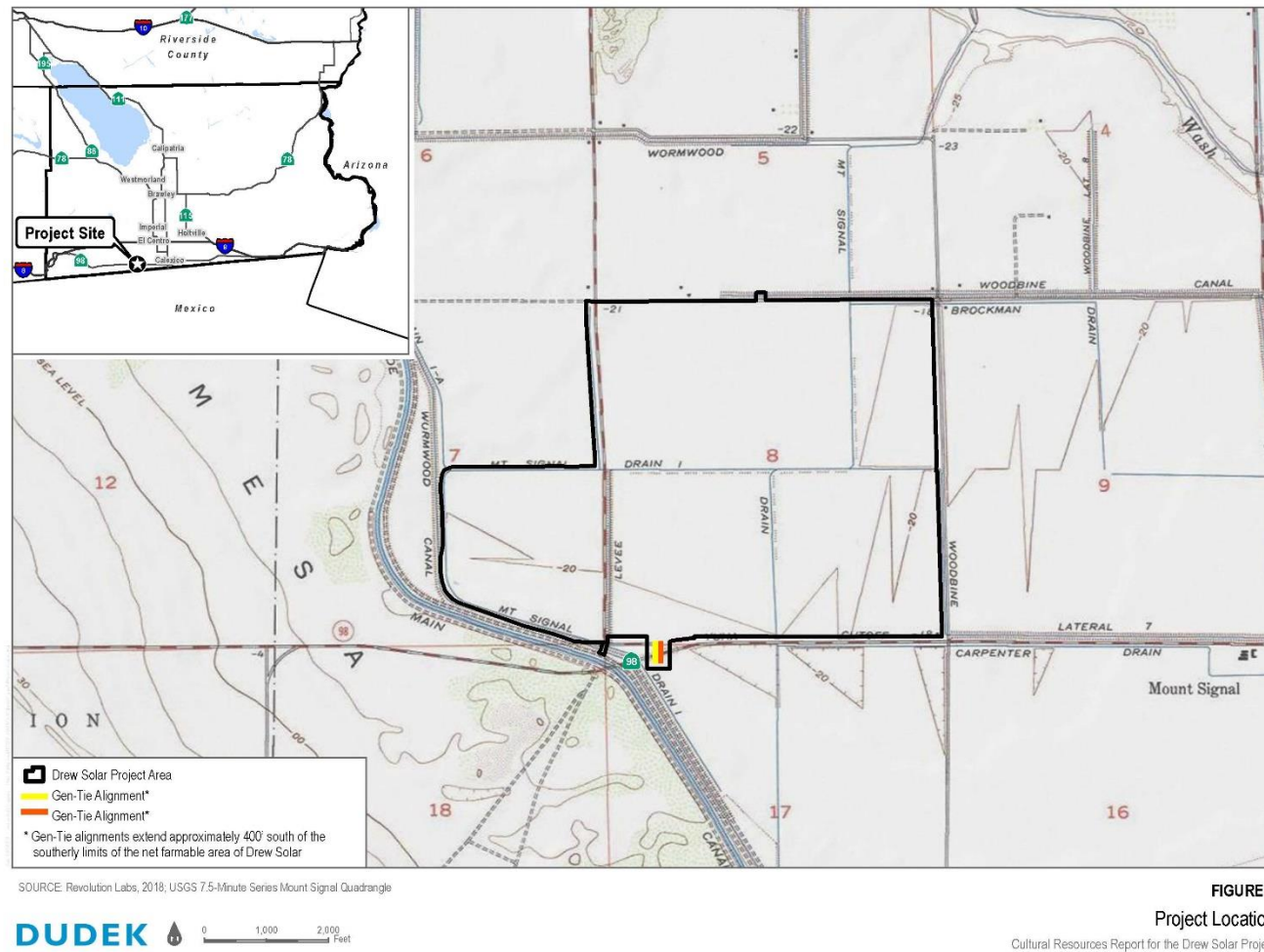


Figure 2. Canal/Drainage Segments within the Project Area



Figure 3. Cultural Resources Overview Map



PROJECT DESCRIPTION AND LOCATION

The Drew Solar Project is located in Imperial County, California, approximately 6.5 miles southwest of the city of El Centro, California, and 7.5 miles directly west of Calexico, California. The Project site is generally located south of Kubler Road, east of Westside Main Canal, north of State Route 98, and west of Pulliam Road. The U.S./Mexico border is approximately 1.85 miles south of the Project area. The project is located on agricultural land owned by Imperial Irrigation District (IID). Specifically, the project is located in Township 17 South, Range 13 East, Sections 7 and 8 of the Mount Signal, California USGS 7.5 Minute Series Quadrangles (Figure 1).

The project site consists of approximately 859.3 gross acres (762.8 net acres) of land that have been previously used for agriculture. The Project site is located on APNs 052-170-031, 052-170-032, 052-170-037, 052-170-039, 052-170-056, and 052-170-067.

The project will use solar photovoltaic (PV) technology to convert sunlight directly into direct current (DC) electricity. The Project may include only one PV technology or a combination of various PV technologies, including but not limited to crystalline silicon-based systems, thin-film systems, perovskites, and may include energy storage. The project also proposes to construct the Project's generation interconnection (gen-tie) transmission lines from the south end of the Project site running south across Drew Road and State Route 98 into the existing Drew Switchyard located on APN 052-190-039. The gen-ties alignment will extend approximately 400 feet south of the southerly limits of the net farmable area of the Project APE. The gen-ties will consist of transmission structures that will require drilling, to a maximum depth of 10 feet, for pole foundations. Following the setting of structures, conductor will be installed via use of pullers and from bucket trucks. The Project also includes a utility scale energy storage system.

Site preparation would be planned and designed to minimize the amount of earth movement required for the Project to the extent feasible. The hydrology design would be given first priority in order to protect the Project's facilities and adjacent facilities including any IID/County facilities from large storm events. It is the intent of the project to support the panels on driven piles. Additional compaction of the soil in order to support the building and traffic loads as well as the PV module supports may be required and is dependent on final project engineering design.

The on-site drainage patterns would be maintained to the greatest extent possible. It will be necessary to remove, relocate and/or fill in 30 x 30 foot portions of the existing private drainage ditches or delivery canals to accommodate the final panel layout for the Project (as indicated by the pink dots shown on Figure 2). As for IID facilities, the drain and canal connections will be modified based on the final engineering design for these facilities in accordance with IID and the County standards to be sure that the purpose for the facilities would still be met.

During construction, temporary facilities would be developed on site to facilitate the construction process. These facilities may include construction trailers, a temporary septic system or holding tank, parking areas, material receiving / storage areas, water storage ponds, construction power service, recycling / waste handling areas, and others. These facilities would be located at the construction areas designated on the final site plan(s).

REGULATORY SETTING

While there is no federal nexus for this project, the subject property was evaluated in consideration of the National Register of Historic Places (NRHP) designation criteria and integrity requirements.

National Register of Historic Places

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

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

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

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

Integrity is defined in NRHP guidance, "How to Apply the National Register Criteria," as "the ability of a property to convey its significance. To be listed in the NRHP, a property must not only

be shown to be significant under the NRHP criteria, but it also must have integrity”. NRHP guidance further asserts that properties be completed at least 50 years ago to be considered for eligibility. Properties completed fewer than 50 years before evaluation must be proven to be “exceptionally important” (criteria consideration G) to be considered for listing.

State

California Register of Historical Resources

In California, the term “historical resource” includes but is not limited to “any object, building, structure, site, area, place, record, or manuscript which is historically or archaeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California” (California Public Resources Code Section 5020.1(j)). In 1992, the California legislature established the CRHR “to be used by state and local agencies, private groups, and citizens to identify the state’s historical resources and to indicate what properties are to be protected, to the extent prudent and feasible, from substantial adverse change” (California Public Resources Code Section 5024.1(a)). The criteria for listing resources on the CRHR were expressly developed to be in accordance with previously established criteria developed for listing in the NRHP, enumerated below. According to California Public Resources Code Section 5024.1(c)(1–4), a resource is considered historically significant if it (i) retains “substantial integrity,” and (ii) meets at least one of the following criteria:

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

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

The CRHR protects cultural resources by requiring evaluations of the significance of prehistoric and historic resources. The criteria for the CRHR are nearly identical to those for the NRHP, and properties listed or formally designated as eligible for listing in the NRHP are automatically listed

in the CRHR, as are the state landmarks and points of interest. The CRHR also includes properties designated under local ordinances or identified through local historical resource surveys.

California Environmental Quality Act

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

- California Public Resources Code Section 21083.2(g) defines “unique archaeological resource.”
- California Public Resources Code Section 21084.1 and CEQA Guidelines Section 15064.5(a) define “historical resources.” In addition, CEQA Guidelines Section 15064.5(b) defines the phrase “substantial adverse change in the significance of an historical resource.” It also defines the circumstances when a project would materially impair the significance of an historical resource.
- California Public Resources Code Section 21074(a) defines “tribal cultural resources.”
- California Public Resources Code Section 5097.98 and CEQA Guidelines Section 15064.5(e) set forth standards and steps to be employed following the accidental discovery of human remains in any location other than a dedicated ceremony.
- California Public Resources Code Sections 21083.2(b)-(c) and CEQA Guidelines Section 15126.4 provide information regarding the mitigation framework for archaeological and historic resources, including examples of preservation-in-place mitigation measures; preservation-in-place is the preferred manner of mitigating impacts to significant archaeological sites because it maintains the relationship between artifacts and the archaeological context and may also help avoid conflict with religious or cultural values of groups associated with the archaeological site(s).

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

A “substantial adverse change in the significance of an historical resource” reflecting a significant effect under CEQA means “physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired” (CEQA Guidelines Section 15064.5(b)(1); California Public Resources Code Section 5020.1(q)). In turn, CEQA Guidelines section 15064.5(b)(2) states the significance of an historical resource is materially impaired when a project:

1. Demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the California Register of Historical Resources; or
2. Demolishes or materially alters in an adverse manner those physical characteristics that account for its inclusion in a local register of historical resources pursuant to section 5020.1(k) of the Public Resources Code or its identification in an historical resources survey meeting the requirements of section 5024.1(g) of the Public Resources Code, unless the public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically or culturally significant; or
3. Demolishes or materially alters in an adverse manner those physical characteristics of a historical resource that convey its historical significance and that justify its eligibility for inclusion in the California Register of Historical Resources as determined by a lead agency for purposes of CEQA.

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

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

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

1. Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.

2. Has a special and particular quality such as being the oldest of its type or the best available example of its type.
3. Is directly associated with a scientifically recognized important prehistoric or historic event or person.

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

CEQA Guidelines Section 15064.5 assigns special importance to human remains and specifies procedures to be used when Native American remains are discovered. As described below, these procedures are detailed in California Public Resources Code Section 5097.98.

Local

Imperial County

Section III(B) of the Imperial County Conservation and Open Space Element describes the cultural resources, goals and objectives to protect such resources (County of Imperial 2016). The planning goals and objectives are described below.

Goal 3 of the goals and objectives section of the Imperial County Conservation and Open Space Element addresses the preservation of cultural resources. Goal 3 states that the County will “preserve the spiritual and cultural heritage of the diverse communities of Imperial County.” (County of Imperial 2016). Three objectives are enumerated to assist in implementation of the goal:

- Objective 3.1: Project and preserve sites of archaeological, ecological, historical, and scientific value, and/or cultural significance.
- Objective 3.2: Develop management strategies to preserve the memory of important historic periods, including Spanish, Mexican, and early American settlements of Imperial County.
- Objective 3.3: Engage all local Native American Tribes in the protection of tribal cultural resources, including prehistoric trails and burials sites.

BACKGROUND RESEARCH

This study consisted of pre-field, background, and resource-specific research from a variety of sources, including a records search at the South Coastal Information Center (SCIC) at San Diego State University and research conducted of the IID archives.

CHRIS Records Search

On November 15, 2017, Dudek conducted a search of the California Historical Resources Information System (CHRIS) at the SCIC, located on the campus of San Diego State University, California. The search included any previously recorded cultural resources and investigations within a one-mile radius of the project area. The CHRIS search also included a review of the NRHP, the CRHR, the California Points of Historical Interest list, the California Historical Landmarks list, the Archaeological Determinations of Eligibility list, and the California State Historic Resources Inventory list. Confidential Attachment A provides the records search results maps and a complete bibliography of all prior cultural resources studies occurring within one-mile of the project area.

Previous Cultural Resources Studies

Thirteen (13) cultural resources studies have been previously conducted within one-mile of the Project area. None of these are located within the project area. All studies have been conducted within one-mile of the Project area between 1975 and 2012. Relevant studies to the Project detailed in Table 1 and are discussed in the section below.

Table 1
Previous Cultural Resources Studies within the Project Area

Year	Author	SCIC Report ID	Report Title
1979	Gallegos, Dennis	IM-00203	Class II Cultural Resource Inventory East Mesa and West Mesa Regions, Imperial Valley, California, Volume I
1980	Davis, Emma Lou	IM-00207	Class II Cultural Resource Inventory East Mesa and West Mesa Regions, Imperial Valley, California
1980	Von Werlhof, Jay and Karen McNitt	IM-00210	Archaeological Examinations of the Republic Geothermal Field, East Mesa, Imperial County
1999	Hupp, Jill	IM-00698	Historical Architectural Survey Report Pavement Rehabilitation and Shoulder, Bridge, Culvert Widening Project, Imperial County, California
1999	Schaeffer, Jerry, Drew Palette, Collin O'Neill, and Jim Eighmey	IM-00766	Extended Phase I Study of Eight Archaeological Sites (VA-IMP-1427, -3969, -6914, -6915, -6916, -6918, -6920, -6923) on State Route 98, Imperial County, California
1990	Pignuolo, Andrew, Roxanna Phillips, and Dennis Gallegos	IM-1057	Cultural Resources Study of the Mount Signal and Dixie Ranch Imperial County Prison Alternatives Imperial County, California
1975	Ritter, Eric W.	IM-01275	An Analysis of Cultural Resources Along the Proposed Yuha Desert ORV Courses

Table 1
Previous Cultural Resources Studies within the Project Area

Year	Author	SCIC Report ID	Report Title
2011	Pignolo Andrew, Carol Serr, Jose Aguilar, and Frank Dittmer	IM-01442	Cultural Resource Survey for a Portion of the Centinela Solar Energy, LLC Project Area, Imperial County, California
2011	Mitchell, Patricia T.	IM-01464	Inventory Report of the Cultural Resources within the Centinela Solar Energy Gen Tie Line, Imperial County, California
2012	Mitchell, Patricia	IM-01490	Evaluation Letter Report for the Centinela Solar Energy Gen-Tie Line Project, Imperial County, California
2011	Glenny, Wayne	IM-01498	Draft Archaeological Survey Investigation for the San Diego County Water Authority Fish Pond, Imperial County, California
2011	Davis, Shannon, Jennifer Krintz, Shelby Gunderman, and Sinead Ni Ghabhlain	IM-01515	Inventory, Evaluation, and Analysis of Effects on Historic Resources within the Area of Potential Effect of the Centinela Solar Energy, LLC, Imperial County, California
2011	Davis, Shannon	IM-01516	Final Inventory, Evaluation, and Analysis of Effects on Historic Built Environment Properties within the Area of Potential Effect of the Imperial Solar Energy Center, South Imperial County, California

IM-01442

Laguna Mountain Environmental conducted an archaeological survey of approximately 2,165 acres of agricultural land as part of the Centinela Solar Energy (CSE), LLC Project, Imperial County, in 2011. The CSE project is located directly east of the proposed Drew Solar project. The study addressed the CSE project portions that are located on private lands. The archaeological investigation included a records search of the project area and a one-mile buffer around the project, at the SCIC, literature review, historic maps, and an intensive pedestrian survey.

The records search indicated that nine cultural resources have been identified within a one-mile radius of the project area; two of which are located within the project (CA-IMP-6641, a lithic and ceramic scatter associated with the past shoreline of Lake Cahuilla, and P-13-008983, a segment of a historic age agricultural irrigation canal). The field survey identified 13 previously unrecorded historic-age cultural resources within the project area. The resources include segments of the Woodbine Canal and Laterals (P-13-013073,-013074,-013075,-013076,-013077), portions of the Brockman Drain (P-13-013078), portions of the Mt. Signal Drain (P-13-013079 and P-13-013080), the Carpenter Drain (P-13-013081), the Wells Drain (P-13-013082), two historic residential structures (P-13-013083 and P-13-013084), and a historic isolate (P-13-13085). The

archaeological crew relocated one (P-13-008983) of the two previously recorded cultural resources during the field survey.

Archaeological monitoring was recommended during all ground disturbing activities due to the presence of CA-IMP-6631 within the project area. No formal evaluations of the various irrigation canals or the residential structures were conducted by Laguna Mountain Environmental. It was recommended that impacts to the irrigation structures be avoided and that the resources should be incorporated into open space easements. If the structures could not be avoided during project implementation, additional documentation and recording was recommended to evaluate and mitigate impacts to the resources.

IM-01515

ASM Affiliates Inc. conducted a survey for historic resources for the Centinela Solar Energy, (CSE) LLC Project, Imperial County, California, in 2011. The CSE project is located directly east of the proposed Drew Solar project. The study identified and evaluated historic resources within the project area for eligibility for inclusion in the NRHP and the CRHR.

The study identified sixteen (16) historic resources that are more than 45 years old located within the project area: the Westside Main Canal, Wormwood (P-13-8983) and Woodbine (P-13-13073) Canals, the town of Mount Signal, three (3) farm complexes, an agricultural building, and eight (8) residential buildings,. One NRHP eligible historic resource was identified, the Westside Main Canal (CA-IMP-7834). No significant visual, auditory, or atmospheric effects were identified as the result of the evaluation of indirect effects on the Westside Main Canal. The other fifteen (15) historic resources were determined ineligible for listing in the NRHP and the CRHR.

Previously Recorded Cultural Resources

The SCIC records indicate that no previously recorded cultural resources are located within the project area. The records also indicate that an additional sixteen (16) cultural resources have been recorded within the one-mile search buffer of the proposed Project (Table 2). Three of the previously recorded resources (P-13-008983, P-13-013073, and P-13-013079) are located directly adjacent to the current Project. These three resources are discussed below in the next section. Of the sixteen cultural resources, three (P-13-008334, P-13-008983, and P-13-013073) have been evaluated and have been determined not eligible for listing on the CRHR and the NRHP.

Table 2
Previously Recorded Cultural Resources Within One-Mile of the Project Area

Primary Number	Trinomial	Resource Type	Description	Recorded By/Date	NRHP/CRHR Status
P-13-008334	CA-IMP-8334	Historic	Westside Main Canal	AECOM, 2011	Not Eligible
P-13-008983	-	Historic	Wormwood Canal, Lateral-7	Jill Hupp, 1999; Frank Dittmaer and Alette van den Hazelkamp, 2010; Jennifer Krintz, 2011	Not Eligible
P-13-013073	-	Historic	Woodbine Canal and Laterals 2,4,7,8	Andrew Pignolo, 2010; Jennifer Krintz, 2011	Not Eligible
P-13-013074	-	Historic	Woodbine Lateral 7	Andrew Pignolo, 2010	No Formal Recommendation
P-13-013075	-	Historic	Woodbine Lateral 7A	Pepe Aguilar, 2010	No Formal Recommendation
P-13-013078	-	Historic	Brockman Drain	Pepe Aguilar, 2010	No Formal Recommendation
P-13-013079	-	Historic	Mount Signal Drain	Andrew Pignolo, 2010	No Formal Recommendation
P-13-013081	-	Historic	Carpenter Drain	Frank Dittmer, 2010	No Formal Recommendation
P-13-013083	-	Historic	Single Family Residence	Pepe Aguilar, 2010	No Formal Recommendation
P-13-013084	-	Historic	Single Family Residence	Pepe Aguilar, 2010	No Formal Recommendation
P-13-013837	CA-IMP-11784	Historic	Historic Refuse Scatter	M. Bray, 2011	No Formal Recommendation

P-13-008983 (Wormwood Canal, Lateral 7 and Drain)

This irrigation canal was originally recorded by Jill Hupps of Caltrans in 1999. This section of the Wormwood Canal, which was first built in 1911, was evaluated and recommended not eligible for listing in the NRHP because it was realigned and lined with concrete, replacing its original earthen lining, thereby affecting the resource's integrity. ASM Affiliates Inc. revisited and evaluated the canal in 2011 for the Centinela Solar Energy Project. ASM concurred with Caltrans findings and recommended that the Wormwood Canal and Drain are not eligible for listing in the NRHP and the CRHR.

P-13-013073 (Woodbine Canal)

Andrew Pigniolo of Laguna Mountain Environmental recorded this segment of the Woodbine Canal in 2010. According to Pigniolo, the canal was one of the earliest irrigation canals in the Imperial Valley as it is shown on the 1915 El Centro 15- minute USGS topographic quad map. ASM Affiliates Inc. revisited and evaluated the canal in 2011 for the Centinela Solar Energy Project. ASM determine that the canal was not significant because it was lined with concrete in the 1950s and 1960s. The integrity of the original 1915 craftsmanship was not retained, therefore the canal was not recommended eligible for the NRHP or the CRHR.

P-13-013074 (Woodbine Lateral 7 Canal)

Andrew Pigniolo of Laguna Mountain Environmental recorded this segment of the Woodbine Canal in 2010. Pigniolo noted that no historic age features were observed associated with the drain and that the drain is part of a larger historic age agricultural system. No formal evaluation was conducted for the resource.

P-13-013079 (Mt. Signal Drain)

Andrew Pigniolo of Laguna Mountain Environmental recorded this segment of the Mt. Signal Drain in 2010. Pigniolo noted that no historic age features were observed associated with the drain and that the drain is part of a larger historic age agricultural system. No formal evaluation was conducted for the resource.

Historic Archival Research

Historic Aerial Photographs

Historic aerial photographs (years available: 1953, 1996, 2002, 2005, 2009, 2010, and 2012) reveal that the project area has been utilized for agricultural development since 1953. The irrigation canals located within the project site date to at least 1953. The photographs reveal that the canal locations have not changed since 1953. No other historic age structures are located within the project area in the photos.

Imperial Irrigation District Archival Research

The IID maintains a webpage of previously prepared historic content related to the broad scale water distribution and irrigations systems attributed to the development of Imperial Valley. These documents were used in preparation of the historic context provided in this report, and include:

- A Century of Service: Imperial Irrigation District (IID 2011)

- IID: The First 40 Years (Dowd 1956)
- IID Water History (IID 2015)

Of particular relevance to the current project was Dowd's 1956 manuscript, which details the historic development of the IID and subsequent rise of the City of Imperial. This manuscript was used as a baseline source for development of the historic context.

Dudek also contacted with Sherry L. O'Malley, Water Vault – Procurator and Water Engineer at the IID on January 3, 2018 to inquire about original dates of construction for all irrigation components within the project area. Ms. O'Malley responded on January 8, 2018 and stated she would research the archives for drawings. This report will be updated upon receipt of any consequential information from the IID water vault archives.

HISTORIC CONTEXT

Water Conveyance in Imperial Valley

The rapid development and sustainability of Imperial Valley rests solely on water conveyance systems. As stated by Dowd (1956), "There are few, if any, other areas in the United States which are so dependent upon the importation of water for all their requirements." Historically, Imperial Valley was considered an inhospitable place. It is located within the large enclosed basin of the Colorado Desert and confined between the western Coast Range Mountains and the eastern Chocolate Mountains. The high temperatures and low average rainfall of the area proved to many of the first European explorers that the Imperial Valley was worthless and irreclaimable land (Farr 1918). Although the first European exploration of what is now Imperial County was accomplished by the Spanish in 1540, when Hernando de Alarcón ascended the Colorado River likely up to present day Yuma and claimed Alta (upper) California for the king of Spain, the area remained largely unexplored for the two centuries that followed (Lawton 1976; Warren 1984).

It was not until the 1770's that travel through Imperial Valley resumed with the onset of the de Anza expedition. In 1774, Captain Juan Bautista de Anza of the Spanish Army sought to provide a major land use route for the Spanish colonization of California. His overland route departed from Sonora Mexico (south of present day Arizona) to the future city of Los Angeles. The epic expedition successfully crossed the Colorado River from the west, traveled along the modern California/Mexico border, passed through Imperial Valley, and ended at its destination at the Mission San Gabriel Arcángel. The expedition brought with it achievement by which other Spanish and Mexican settlers followed. Subsequent use of the Anza Trail was interrupted by the 1781 Quechan revolt, but resumed in the early nineteenth century (Lawton 1976; Warren 1984).

This overland route was the first of many historic events that brought interest to Imperial Valley over the coming century. The Mexican-American war of 1846-1848, the Gold Rush in northern California, the development of the Butterfield Stage route, and explorations of potential railroad routes through the Colorado Desert opened the region up to possibilities of its development (Schaefer and Gunderman 2009). However, none of these events had as much impact on the development of Imperial Valley as did the possibility of harnessing water for the arid yet potentially fertile region.

Bringing Irrigation to Imperial Valley

The following historical information is summarized from IID: The First 40 Years (Dowd 1956), which was prepared by Mr. Dowd, Consulting Engineer and Executive Officer to the Board of Directors, Imperial Irrigation District. This manuscript presents the history of the Imperial Irrigation District and the subsequent development of the Imperial Valley from early development to the 1940's, and identified important periods, events, and patterns of development for Imperial Valley.

It was on one of the railroad corridor expeditions in 1853; led by Lieutenant R. S. Williamson of the U.S. Topographical Engineers, that geologist Dr. W. P. Blake discovered the possibility of irrigating Imperial Valley from the Colorado River. Blake observed a region of fertile soil capable of sustaining agriculture but lacking in water. He measured the dry bed of the Salton Sea at below sea level, a fact that made feasible the cutting of a canal from the Colorado River to the interior of the desert, which would bring with it a constant supply of water. Dr. Oliver Wozencraft, a proponent of irrigating Imperial Valley, lobbied support from the California legislature, who, in turn, asked Congress to convey six million acres to Wozencraft. He endeavored to secure action by Congress on his plan to bring potable water to the desert for over thirty years without success. Despite Wozencraft's failed attempts at reclamation, by his death in 1887, settlers and developers alike were eager to bring water to Imperial Valley.

Preliminary investigations into the feasibility of irrigating the Colorado Desert began in 1893 with the Colorado River Irrigation Company, but inability to procure financing quickly led to the company's demise. In 1896, the California Development Company was organized, under the direction of Charles Rockwood and George Chaffey, to take hold of the project. The proposed canal route would run from the diversion point at the Colorado River through lower California, Mexico, and back into the United States in order to reach Imperial Valley. To gain title to the Mexican lands, the California Development Company organized a Mexican subsidiary company in 1898 known as La Sociedad de Yrrigacion y Terrenos de la Baja California, S. A. With plans to colonize the region, the California Development Company divided Imperial Valley into districts of varying size, each with its own mutual water company.

By August 1900, construction of the first diversion canal and irrigation system was underway. The canal was excavated from the point of diversion from the Colorado River south about 4 miles into Mexico where it swung west and connected for forty miles within the Alamo River channel until it reached Sharp's Heading and turned north to the Salton Sea. A series of main canals was constructed to divert from Sharp's Heading into various stretches of Imperial Valley: Central Main, Boundary, West Side Main, and East Side Main. The Central Main Canal continued from the international boundary line and traveled north through the present cities of Brawley and Imperial; the Boundary Canal diverted west towards Calexico; the West Side Main Canal traveled west towards Calexico then north; and the East Side Main Canal traveled east then north to the eastern Salton Sea. Water delivery reached Calexico through the Boundary Canal less than one year after the start of construction. That same year, nearly 1,500 acres of land was put under crops.

Few natural resources existed for potable water prior to the construction of the irrigation system. Domestic use water had to be hauled to the Valley via the Southern Pacific Railroad. Once considered a barren wasteland, Imperial Valley was making good progress with colonization by the early 1900's. The Imperial Land Company, under the direction of the California Development Company, began laying out townsites in Imperial Valley based primarily on the density of purchased water stock. The town of Imperial was the first to be laid out with settlement commencing in 1901. Over a period of ten years from 1901 to 1911, irrigable land in Imperial Valley jumped from 1,500 acres to 220,000 acres. As the water flowed into the Valley, so did the people. In 1902, a year after the first water reached Calexico, nearly 2,000 settlers came to Imperial Valley. The population grew to seven times that amount within four years. To accommodate the growing population, the Southern Pacific Railroad constructed the Niland to Calexico branch rail. At the same time, the newly developed Imperial Valley broke apart from San Diego County to form its own government as Imperial County, with El Centro being designated as the County Seat.

The rapid colonization of Imperial Valley in the early 1900's strained the relationship between settlers and the California Development Company. Initial land and soil surveys were inaccurate leading to discrepancies with land titles, and water rights held by the California Development Company were called into question. The Reclamation Act was proposed in 1902 to take the Imperial Valley project from the California Development Company and organize it under Government control. Further dissatisfaction with California Development Company arose after hurried and negligible attempts to correct the heavily silt laden waters of the Colorado River ultimately led to grave damage to Imperial Valley following the massive flooding events of 1905 and 1906. The River break destroyed nearly 12,000 acres of cultivated land and over 30,000 acres of irrigable land, caused immense damage to Southern Pacific Company railroad lines; and severed the ties between settlers and the California Development Company. The River break took two years to repair, during which time the Salton Sea filled and expanded to a length of 50 miles and a width of 10 to 15 miles.

Preceding litigation brought to the California Development Company following the flood ultimately resulted in bankruptcy. In 1911, a petition for formation of an irrigation district was presented to the Imperial County Board of Supervisors. The IID was formed to acquire properties of the bankrupt California Development Company and its Mexican subsidiary. Over the span of a decade, IID completed improvements and repairs to the canal and distribution system, rebuilt the entire Westside Main Canal, received deeds to all of the properties of the California Development Corporation, and acquired 13 mutual water companies. Within a few years of acquiring the mutual companies, IID was delivering water to nearly 550,000 acres of Imperial Valley. Over a century later, IID is still servicing communities of the Imperial Valley. IID is the largest irrigation district in the nation and Imperial County ranks among the top ten agricultural counties in the nation. Ninety-eight percent of the water IID transports is used for agriculture and the remaining 2% is treated potable and delivered to the nine Imperial Valley cities (IID 2015).

Drainages and Laterals

Around the mid 1910's, there was a growing realization that drainage of the land in Imperial Valley was becoming necessary. High water tables were developing in several areas and crop production was at a loss due to inundation and saturation. Some of the mutual water companies started constructing miles of shallow ditches at the lower end of fields to drain surplus irrigation water; however, the surface waste ditches were considered a quick fix for a much larger drainage problem.

By the 1920's, investigations into ground water drainage solutions were sorely needed. The IID hired a consulting drainage engineer to plan the drainage system. What developed was a grid system of lines north-south and east-west, spaced at one mile intervals, and laid out over the entire Valley. Included in the design were observation wells used for noting elevation of the ground water table with required monthly checks of the wells. A comprehensive system of main drain outlets was installed in areas with a high water table. While 234 miles of deep drains were constructed by 1929, the drainage problem continued, due in part to the fact that the water table was perched on a compact and impervious geological strata in select portions of the Valley.

IID implemented an intensive program to initiate the development of a lateral drain system. The system consisted of deepening existing surface drains to a depth of 6 or 8 feet and constructing additional deep drains to serve as outlets. The drain systems were tailored to meet the needs of individual landowner following a survey and examination of their land. The use of farm tile drains was also implemented. The intensive program paid off; within one year, the IID had added 740 miles of lateral drains and 10 miles of tile drains to the drainage system.

HISTORIC RESOURCE EVALUATIONS

Nine cultural resources, consisting of historic irrigation canals and drainages designated as: DS-I-1, DS-I-2, DS-I-3 (Wormwood Lateral 1 segment), DS-I-4, P-13-013073 (Woodbine canal segment), P-13-013079 (Mt. Signal Drain Segment), P-13-013074 (Woodbine Lateral 7), DS-I-8 (Carr Drain), and DS-I-9 (Mt. Signal Drain No. 1-B) were identified within the project area during the intensive-level pedestrian surveys conducted by Dudek on November 20, 2017 and February 21, 2018. According to information obtained from the ParcelQuest online property information system on February 22, 2018, all of the nine cultural resources are owned by the IID-Trust Lands.

DS-I-1

Located between APN 052-170-039 and 052-170-067. The resource is bound by fallow agricultural land to the north and south, Drew Road to the east, and the Westside Main Canal to the west. The resource consists of a historic-age earthen canal that runs east to west. The canal is approximately ten feet wide and five feet in depth. The entire canal is approximately half-mile long. A crossing with a concrete pipe, measuring approximately two feet in diameter and twelve feet in length, is located in the center of the canal. Discarded terra cotta bricks and concrete fragments are present at the pipe location. No visible date stamp is available for the canal or the pipe. The canal is in fair condition (See Figure 4).



Figure 4. DS-I-1 – Overview of canal and concrete pipe drain looking west, 11/20/17, IMG_00001.

Evaluation of the DS-I-1 under NRHP/CRHR criteria included archival research. The date of construction for the earthen irrigation canal was not found during archival research, but a review of historic aerial photographs indicates that the canal was present in 1953 (NETR 2017). No previous recordings or evaluations of this canal segment were identified as a result of the CHRIS records research.

Despite the association with irrigation history and agricultural development in Imperial County, the lack of clear association with larger canals in the area suggests that this was a canal used by a single property owner for agricultural purposes and not part of a larger and more complex infrastructure. Thus, it does not rise to the level of significance required for either the NRHP or the CRHR under Criterion A/1. Archival research also failed to establish any associations to significant persons important on the local, state, or national level, thus making it not eligible under Criterion B/2. The subject property does not embody the distinctive characteristics of a type, period, region, or method of construction. The earthen canal segment is not representative of a specific and significant infrastructure or architectural style. There is no evidence to suggest that it was constructed or conceived by an important creative individual, and it represents a ubiquitous piece of infrastructure seen throughout Imperial Valley. Therefore, DS-I-1 does not appear eligible under NRHP/CRHR Criteria C/3. There is no evidence to suggest that this property has the potential to yield information important to state or local history, nor is it associated with a known archaeological resource. Therefore, DS-I-1 is recommended not eligible under NRHP/CRHP Criterion D/4. Although the concrete lateral canal segment retains requisite integrity of location, design, setting, workmanship, feeling, and association, it has no important historical associations and lacks architectural merit. As such, DS-I-1 is recommended not eligible under all NRHP and CRHR designation criteria.

DS-I-2

Located on APN 052-170-056. The resource is bound by fallow agricultural land to the north and south, Drew Road to the west, and Mount Signal Drain to the east. This resource consists of a historic age irrigation canal. The canal is earthen and runs east to west. The canal is approximately ten feet wide and five feet in depth. The entire canal is approximately half-mile long. A crossing with a concrete pipe and gate, measuring two feet in diameter and ten feet in length, is located in the center of the canal. No date stamp was observed for the canal or the pipe during the survey. The canal is in good condition and is likely maintained regularly (see Figure 5)



Figure 5. DS-I-2 – Overview of canal and concrete gate looking northeast, 11/20/17, IMG_00008.

Evaluation of the DS-I-2 under NRHP/CRHR criteria included archival research. The date of construction for the earthen irrigation canal was not found during archival research, but a review of historic aerial photographs indicates that the canal was present in 1953 (NETR 2017). No previous recordings or evaluations of this canal segment were found during the course of archival research. Despite the association with irrigation history and agricultural development history in Imperial County, the lack of clear association with larger canals in the area suggests that this was a canal used by a single property owner for agricultural purposes and not part of a larger and more complex infrastructure thus it does not rise to the level of significance required for either the NRHP or the CRHR under Criterion A/1. Archival research also failed to establish any associations to significant persons important on the local, state, or national level, thus making it not eligible under Criterion B/2. The subject property does not embody the distinctive characteristics of a type, period, region, or method of construction. The earthen canal segment is not representative of a specific and significant infrastructure or architectural style. There is no evidence to suggest that it was constructed or conceived by an important creative individual, and it represents a ubiquitous piece of infrastructure seen throughout Imperial Valley. Therefore, DS-I-2 does not appear eligible under NRHP/CRHR Criteria C/3. There is no evidence to suggest that this property has the potential to yield information important to state or local history, nor is it associated with a known archaeological resource. Therefore, DS-I-2 is recommended not eligible under NRHP/CRHP Criterion D/4. Although the earthen canal retains the requisite integrity of location, design, setting, materials, workmanship, feeling, and association it has no important historical associations and

lacks architectural merit. As such, DS-I-2 is recommended not eligible under all NRHP and CRHR designation criteria.

DS-I-3 (Wormwood Lateral 1 segment)

Located on APN 052-170-056, this historic resource consists of a segment of the Wormwood Lateral 1 irrigation canal. The canal runs parallel and east of Drew Road. The southern portion of the canal ends at SR-98. This is an earthen canal and runs north to south. It measures approximately ten feet wide by six feet in depth. The entire canal is approximately one half-mile long. A concrete wall with the text stamp “Wormwood LAT 1” and two concrete and wood gates (gates lat-1 and 11) are located at the southern end of the canal. The southern gates have a date stamp of 1957. Two additional concrete and wood gates (gates 11A and 12) are located within the center on the canal. These gates have a date stamp of 1953. The canal is in good condition and is likely maintained regularly (See Figure6).



Figure 6. DS-I-3 – Overview of canal and gate 12 looking northeast, 11/20/17, IMG_00017.

Evaluation of the DS-I-3 under NRHP/CRHR criteria included archival research and review of previous evaluations of sections of the Wormwood Canal and the surrounding area. Constructed in 1911, the Wormwood Canal was one of the early canals in the Imperial County Irrigation District. In 1999, a section of Wormwood Canal was evaluated by Caltrans and recommended not eligible for listing in the NRHP due to alterations including lining the canal with concrete and realignment of the canal. In 2011, ASM evaluated Wormwood Canal again and concurred with the 1999 Caltrans finding of ineligibility. For the purposes of this evaluation, Dudek evaluated a

segment of the Wormwood Lateral 1. Despite the clear association with irrigation history and agricultural development history in Imperial County, a single segment of a larger canal does not rise to the level of significance required for either the NRHP or the CRHR under Criterion A/1. Canals, like many other types of linear features, have significance because they are parts of a larger and oftentimes complex system. Therefore, the significance of the canal is not tied to a specific segment, but to the canal as a whole. For this reason, many linear features are listed on the NRHP as historic districts with contributing and non-contributing segments and related infrastructure. Canal segments can have individual eligibility when associated with a particular farmstead or show a significant engineering or architectural feature. However, archival research did not identify any significant associations and this segment does not display any innovative architectural or engineering features that set it apart from other canal segments in the area. This canal segment further lacks the required significance for individual eligibility, as it is representative of a ubiquitous irrigation structure seen throughout the Imperial Valley. Archival research also failed to establish any associations to significant persons important on the local, state, or national level, thus making it not eligible under Criterion B/2. The subject property does not embody the distinctive characteristics of a type, period, region, or method of construction. The earthen canal, while associated with the Wormwood Canal is not representative of a specific and significant infrastructure or architectural style. There is no evidence to suggest that it was constructed or conceived by an important creative individual, as it is part of a vast network of drainage canals of a similar type throughout the Imperial Valley. This resource represents a small segment of a much larger canal, and it represents a ubiquitous piece of infrastructure seen throughout Imperial Valley. Therefore, DS-I-3 does not appear eligible under NRHP/CRHR Criteria C/3. There is no evidence to suggest that this property has the potential to yield information important to state or local history, nor is it associated with a known archaeological resource. Therefore, DS-I-3 is recommended not eligible under NRHP/CRHR Criterion D/4. While DS-I-3 retains the requisite integrity of location, design, setting, materials, workmanship, feeling, and association it has no important historical associations and lacks architectural merit. As such, DS-I-3 is recommended not eligible under all NRHP and CRHR designation criteria.

DS-I-4

Located on APN 052-170-037, this resource consists of a historic age irrigation canal. The canal is bound by fallow agricultural fields to the north and south. The southern portion of the canal ends at Woodbine Lateral 7 Canal, adjacent to Pulliam Road to the east. The canal is concrete lined and runs east to west. It is approximately eight feet wide by four feet in depth. The entire canal is approximately one half-mile long, and connects to Woodbine Lateral 7 Canal to the east at gate 42. Small metal gates, measuring approximately 12 inches, are located along the northern portion of the canal in 50-foot intervals. These gates appear to feed water to the field located to the north

of the canal. No date stamp was observed during the survey. The canal is in good condition and is likely maintained regularly (See Figure 7).



Figure 7. DS-I-4 – Overview of canal looking east, 11/20/17, IMG_00028.

Evaluation of the DS-I-4 under NRHP/CRHR criteria included archival research. The date of construction for the concrete irrigation canal was not found during archival research, but a review of historic aerial photographs indicates that the canal was not present in 1953 (NETR 2017). Given the use of concrete lining in this segment and the popularity of lining canals with concrete in the 1950s and 1960s throughout Imperial County suggests this date is likely accurate. No previous recordings or evaluations of this canal segment were found during the course of archival research. For the purposes of this evaluation, Dudek evaluated the canal segment that terminates at the Woodbine Lateral 7 Canal. Despite the association with irrigation history and agricultural development history in Imperial County, the lack of clear association with larger canals in the area suggests that this was a canal used by a single property owner for agricultural purposes and not part of a larger and more complex infrastructure thus it does not rise to the level of significance required for either the NRHP or the CRHR under Criterion A/1. Archival research also failed to establish any associations to significant persons important on the local, state, or national level, thus making it not eligible under Criterion B/2. The subject property does not embody the distinctive characteristics of a type, period, region, or method of construction. The concrete lined lateral canal segment is not representative of a specific and significant infrastructure or architectural style. There is no evidence to suggest that it was constructed or conceived by an important creative

individual, and it represents a ubiquitous piece of infrastructure seen throughout Imperial Valley. Therefore, DS-I-4 does not appear eligible under NRHP/CRHR Criteria C/3. There is no evidence to suggest that this property has the potential to yield information important to state or local history, nor is it associated with a known archaeological resource. Therefore, DS-I-4 is recommended not eligible under NRHP/CRHP Criterion D/4. Although the concrete lateral canal segment retains the requisite integrity of location, design, setting, materials, workmanship, feeling, and association it has no important historical associations and lacks architectural merit. As such, DS-I-4 is recommended not eligible under all NRHP and CRHR designation criteria.

P-13-013073 (Woodbine canal segment)

Located on APN 052-170-031, this resource consists of a historic age irrigation canal. The resource runs parallel and south of Kubler Road. The western end of the canal is located at the intersection of Drew and Kubler Roads. The canal is concrete lined and runs east to west. The canal is approximately ten feet wide by five feet in depth. The entire canal is approximately one half-mile long. A concrete gate (gate 57) is located at the east end of the canal. The gate has a date stamp of 1959. This canal segment connects to the Woodbine Canal at gate 57 to the north. The canal is in good condition and is likely maintained regularly (See Figure 8).

Two portions of the western portion of the Woodbine irrigation canal were recorded during survey of agricultural property (for a proposed solar project). The east-west aligned 0.5 mi. long western-most segment parallels the north side of Kubler Rd. on the southern border of Section 5, east of Drew Rd. Another 0.5 mi. east-west aligned portion was recorded starting 0.5 mi. to the east and ending at the (former) Mt. Signal School property southwest corner. The north-south oriented segment runs from the intersection of Kubler Rd. and Brockman Rd. (SW corner) down the west side of Brockman Rd. for just a little over 1 mi. (due to eastward „bulge“ in section line). At SR 98, the canal heads east paralleling the north side of the highway. A 1 mi. east-west segment between Brockman Rd. and Rockwood Rd. was recorded during this survey, but the canal continues eastward for over 7 mi. to Anza Rd. The Woodbine Canal is shown on the 1915 El Centro 15“ USGS quad. map, however, the canal channel was lined with concrete at a later date, sometime in the late 1950s/early 1960s. There is a “1957” date stamp on a small elevation drop at the northwestern corner of Brockman Rd. and SR 98, and two gates along the north-south segment have “1979” date stamps. The segment of the canal between the two 1979 dated gates has concrete of a different appearance indicating an even more recent replacement. The segment of the canal is roughly 13 ft. across at the top, but depth is unknown since the canal was full of water. Features associated with the canal include a small elevation drop, a gate opening to Woodbine Lateral 7, a gate along the canal itself, and the Brockman Road

undercrossing. The canal segments appear to be well-maintained and the integrity of the features is good (Laguna Mountain 2010a)



Figure 8. P-13-013073 – Overview of concrete lined canal looking east, 11/21/17, IMG_00046.

Evaluation of P-13-013073 under NRHP/CRHR criteria included archival research and review of previous evaluations of this segment of the Woodbine Canal and the surrounding area. Constructed circa 1915, the Woodbine Canal was one of the early canals in the Imperial County. While it would have originally been an earthen canal, it was lined with concrete at some point during the 1950s and 1960s based on date stamps noted in previous recordings of sections of the canal. In 2010, Andrew Pigniolo of Laguna Mountain Environmental recorded this segment of the Woodbine Canal and determined that it was one of the earliest irrigation canals in the Imperial Valley based on its appearance on the 1915 El Centro 15- minute USGS topographic quad map. In 2011, ASM evaluated this segment of the canal again founded the canal was not recommended eligible for the NRHP or the CRHR due to alterations that included concrete lining of the canal in the 1950s-1960s. For the purposes of this evaluation, Dudek evaluated the segment of the Woodbine Canal that runs along the northern boundary of the project area. Despite the clear association with irrigation history and agricultural development history in Imperial County, a single segment of a larger canal does not rise to the level of significance required for either the NRHP or the CRHR under Criterion A/1. Canals, like many other types of linear features, have significance because they are parts of a larger and oftentimes complex system. Therefore, the significance of the canal is not tied to a specific segment, but to the canal as a whole. For this reason, many linear features

are listed on the NRHP as historic districts with contributing and non-contributing segments and related infrastructure. Canal segments can have individual eligibility when associated with a particular farmstead or show a significant engineering or architectural feature. However, archival research did not identify any significant associations and this segment does not display any innovative architectural or engineering features that set it apart from other canal segments in the area. This canal segment further lacks the required significance for individual eligibility, as it is representative of a ubiquitous irrigation structure seen throughout the Imperial Valley. Archival research also failed to establish any associations to significant persons important on the local, state, or national level, thus making it not eligible under Criterion B/2. The subject property does not embody the distinctive characteristics of a type, period, region, or method of construction. The concrete lined drainage ditch, while associated with the Woodbine Canal is not representative of a specific and significant infrastructure or architectural style. There is no evidence to suggest that it was constructed or conceived by an important creative individual, as it is part of a vast network of drainage canals of a similar type throughout the Imperial Valley. This resource represents a small segment of a much larger canal, and it represents a ubiquitous piece of infrastructure seen throughout Imperial Valley. The canal segment has been altered from its original materials and any evidence of original craftsmanship or artistic value would have been lost during the alterations. Therefore, P-13-013073 does not appear eligible under NRHP/CRHR Criteria C/3. There is no evidence to suggest that this property has the potential to yield information important to state or local history, nor is it associated with a known archaeological resource. Therefore, P-13-013073 is recommended not eligible under NRHP/CRHP Criterion D/4. Furthermore, it lacks the requisite integrity of materials, design and craftsmanship to be considered eligible due to significant alterations including concrete lining of the canal. As such, the segment of P-13-013073 is recommended not eligible under all NRHP and CRHR designation criteria.

P-13-013079 (Mt. Signal Drain Segment)

This resource consists of a segment of the Mount Signal Drain and Mount Signal Drain 1. The segment is located on APN 052-170-032 and between APNs 052-170-031, 052-170-056, 052-170-037, 052-170-056, and north of 052-170-039. The drain starts from the north from Kubler Road and runs south. The western portion of the drain crosses Drew Road and ends at Mandrapa Road. The southern drain ends at SR-98. Mount Signal Drain is earthen and runs north to south. Mount Signal Drain 1 runs east to west from the Mount Signal Drain. The drainage is approximately eight feet wide by ten feet in depth. The drain is approximately two miles in length. The drain is in good condition and is likely maintained regularly (See Figure 9).

The Mt. Signal Drain is shown on the USGS quad. map to meander for nearly 4 mi. beginning south of SR 98 (at -6 ft. elev.) and emptying into Greeson Wash about 0.6 mi. south of Lyons Rd.(at -45 ft. elev.). Only two portions of this earthen irrigation drainage channel occur within the current survey area of agricultural

property (for a proposed solar project). The northern portion has a northeasterly-aligned 2,500 ft. segment, starting at Fisher Rd. on the border between sections 4 & 5 (along the eastern boundary of parcel 052-170-052) that is nearly 65 ft. across -- from bank to bank. An east-west segment just south of Fisher Rd. (immediately west of Pulliam Rd.) is approximately 1,190 ft. long and varies from 60-75 ft. across. The channel turns south at the boundary between parcels 052-170-019 & 052-170-018 where it narrows to about 55 ft. across. This segment extends approximately 2,390 ft. north/south (within the project area) to Kubler Rd. The drain continues to the south outside the project area. The southern portion within the project area begins south of SR 98 (between Drew and Pulliam roads) and extends along the east side of parcel #052-190-007 to its southern end. Here (outside the project area) the channel turns southeast before heading eastward. No historic-age features were observed within these portions of the drain, but it is part of the larger historic-age agricultural system. The drain appears to retain good integrity and is probably maintained by regular clearing with a backhoe (Laguna Mountain 2010b).



Figure 9. P-13-013079 – Overview of drain looking west, 11/21/17, IMG_00042.

Evaluation of P-13-013079 under NRHP/CRHR criteria included archival research and review of previous evaluations of this segment of the Mt. Signal Drain Segment and the surrounding area. A date of construction for the Mt. Signal Drain was not found during archival research. In 2010,

Andrew Pignuolo of Laguna Mountain Environmental recorded this segment of the Mt. Signal Drain and noted no historic features and made no determination of eligibility under NRHP/CRHR. For the purposes of this evaluation, Dudek evaluated a segment of the Mt. Signal Drain. Despite the clear association with irrigation history and agricultural development history in Imperial County, a single segment of a larger irrigation drainage channel does not rise to the level of significance required for either the NRHP or the CRHR under Criterion A/1. Canals and drainages, like many other types of linear features, have significance because they are part of a larger and oftentimes complex system. Therefore, the significance of the drain is not tied to a specific segment, but to the drainage as a whole. For this reason, many linear features are listed on the NRHP as historic districts with contributing and non-contributing segments and related infrastructure. Drain segments can have individual eligibility when associated with a particular farmstead or show a significant engineering or architectural feature. However, archival research did not identify any significant associations and this segment does not display any innovative architectural or engineering features that set it apart from other drain segments in the area. This drain segment further lacks the required significance for individual eligibility, as it is representative of a ubiquitous irrigation structure seen throughout the Imperial Valley. Archival research also failed to establish any associations to significant persons important on the local, state, or national level, thus making it not eligible under Criterion B/2. The subject property does not embody the distinctive characteristics of a type, period, region, or method of construction. The earthen drainage channel is not representative of a specific and significant infrastructure or architectural style. There is no evidence to suggest that it was constructed or conceived by an important creative individual, as it is part of a vast network of drainage channels of a similar type throughout the Imperial Valley. Therefore, P-13-013079 does not appear eligible under NRHP/CRHR Criteria C/3. There is no evidence to suggest that this property has the potential to yield information important to state or local history, nor is it associated with a known archaeological resource. Therefore, P-13-013079 is recommended not eligible under NRHP/CRHP Criterion D/4. Although the earthen drainage channel retains the requisite integrity of location, design, setting, materials, workmanship, feeling, and association; the earthen drainage channel has no important historical associations and lacks architectural merit. As such, the segment of P-13-013079 is recommended not eligible under all NRHP and CRHR designation criteria.

P-13-013074 (Woodbine Lateral 7)

Located on APN 052-170-032 and 052-170-037, this resource consists of a segment of the Woodbine Lateral 7 irrigation canal. The canal runs parallel to the west of Pulliam Road. The canal is concrete lined and runs north to south. It is approximately ten feet wide by five feet in depth. The entire canal is approximately one-mile long. The segment connects to another canal that runs west to east at gate 42. No date stamps were observed during the survey. The canal is in good condition and is likely maintained regularly (See Figure 10).

The Woodbine Lateral 7 irrigation canal was recorded during survey of agricultural property (for a proposed solar project). The east-west aligned 1 mi. long lateral, coming off the main Woodbine Canal to the east, is situated on the north side of SR 98 along the southern border of Section 9, between Pulliam Rd. on the west and Brockman Rd. at the east. The canal continues to the north for 0.5 mi. but in the next parcel to the west, outside of the current survey boundary.

This canal system was lined with concrete sometime in the late 1950s/early 1960s. There is a “1957” date stamp in the concrete of a flow gate at the northeastern corner of Pulliam Rd. and SR 98; a second gate to the east appears contemporaneous, but is unmarked. A “1979” date stamp is present where the lateral connects to the main Woodbine Canal to the east. The canal is roughly 11.5 ft. across at the top. Depth is unknown since the canal was full of water. The integrity of the canal is good in spite of the earthquake activity that has been occurring in the area (Laguna Mountain 2010c).



Figure 10. P-13-013074 – Overview of canal looking south, 11/21/17, IMG_00036.

Evaluation of the P-13-013074 under NRHP/CRHR criteria included archival research and review of previous evaluations of this segment of the Woodbine Lateral 7 Canal and the surrounding area. Constructed circa 1915, the Woodbine Canal was one of the early canals in the Imperial County. While the Woodbine Canal was constructed circa 1915, construction of the Woodbine Lateral segments took place later in the development period of the Woodbine Canal. Date stamps on Woodbine Lateral & Canal indicate a possible date of construction or concrete lining of the canal in 1957. Given the use of concrete lining in this segment and the popularity of lining canals with concrete in the 1950s and 1960s throughout Imperial County suggests this date would be feasible. In 2010, Andrew Pignuolo of Laguna Mountain Environmental recorded this segment of the Woodbine Lateral 7 Canal and determined there were no historic resources present. For the purposes of this evaluation, Dudek evaluated a segment of the Woodbine Lateral 7 Canal. Despite the clear association with irrigation history and agricultural development history in Imperial County, a single segment of a larger canal does not rise to the level of significance required for either the NRHP or the CRHR under Criterion A/1. Canals, like many other types of linear features, have significance because they are parts of a larger and oftentimes complex system. Therefore, the significance of the canal is not tied to a specific segment, but to the canal as a whole. For this reason, many linear features are listed on the NRHP as historic districts with contributing and non-contributing segments and related infrastructure. Canal segments can have individual eligibility when associated with a particular farmstead or show a significant engineering or architectural feature. However, archival research did not identify any significant associations and this segment does not display any innovative architectural or engineering features that set it apart from other canal segments in the area. This canal segment further lacks the required significance for individual eligibility, as it is representative of a ubiquitous irrigation structure seen throughout the Imperial Valley. Archival research also failed to establish any associations to significant persons important on the local, state, or national level, thus making it not eligible under Criterion B/2. The subject property does not embody the distinctive characteristics of a type, period, region, or method of construction. The concrete lined lateral canal segment, while associated with the Woodbine Canal is not representative of a specific and significant infrastructure or architectural style. There is no evidence to suggest that it was constructed or conceived by an important creative individual, as it is part of a vast network of drainage canals of a similar type throughout the Imperial Valley. Therefore, P-13-013074 does not appear eligible under NRHP/CRHR Criteria C/3. There is no evidence to suggest that this property has the potential to yield information important to state or local history, nor is it associated with a known archaeological resource. Therefore, P-13-013074 is recommended not eligible under NRHP/CRHP Criterion D/4. Although the concrete lateral canal segment retains the requisite integrity of location, design, setting, materials, workmanship, feeling, and association it has no important historical associations and lacks architectural merit. As such, the segment of P-13-013074 is recommended not eligible under all NRHP and CRHR designation criteria.

DS-I-8 (Carr Drain)

Located between Assessor's Parcel No. 052-170-032 (North) and 052-170-037 (south), this resource consists of a historic age earthen irrigation drain. The drain is located west of Pulliam Road and runs east to west. The drain is approximately ten feet wide by five feet in depth. The entire drain is approximately 0.25-miles long (See Figure 11).



Figure 11. DS-I-8– Overview of drain looking east, 2/22/18 (IMG_0341)).

Evaluation of the DS-I-8 under NRHP/CRHR criteria included archival research. The date of construction for the earthen irrigation drain was not found during archival research, but a review of historic aerial photographs indicates that the channel was present in 1953 (NETR 2017). No previous recordings or evaluations of this drain segment were found during the course of archival research. During the course of research, the IID plat book sheet 32 from 2011 identified the drain as the Carr Drain. Despite the association with irrigation history and agricultural development history in Imperial County, the lack of clear association with larger canals in the area suggests that this was a drain used by a single property owner for agricultural purposes and not part of a larger and more complex infrastructure thus it does not rise to the level of significance required for either the NRHP or the CRHR under Criterion A/1. Archival research also failed to establish any associations to significant persons important on the local, state, or national level, thus making it not eligible under Criterion B/2. The subject property does not embody the distinctive characteristics of a type, period, region, or method of construction. The earthen drain segment is

not representative of a specific and significant infrastructure or architectural style. There is no evidence to suggest that it was constructed or conceived by an important creative individual, and it represents a ubiquitous piece of infrastructure seen throughout Imperial Valley. Therefore, DS-I-8 does not appear eligible under NRHP/CRHR Criteria C/3. There is no evidence to suggest that this property has the potential to yield information important to state or local history, nor is it associated with a known archaeological resource. Therefore, DS-I-8 is recommended not eligible under NRHP/CRHP Criterion D/4. Although the earthen drain retains the requisite integrity of location, design, setting, materials, workmanship, feeling, and association it has no important historical associations and lacks architectural merit. As such, the segment of DS-I-8 is recommended not eligible under all NRHP and CRHR designation criteria.

DS-I-9 (Mt. Signal Drain No. 1-B)

Located between Assessor's Parcel No. 052-170-030 (west) and 052-170-031 (east), this resource consists of a historic age earthen irrigation drain. The drain is located west of Drew Road. It is earthen and runs east to west; with the western end curving and continuing towards the south. The drain is approximately ten feet wide and five feet in depth. The drain is approximately ten feet wide and five feet in depth. The entire drain is approximately 0.70-miles long (See Figure 12).



Figure 12. DS-I-9– Overview of drain looking north, 2/22/18 (IMG_0327)).

Evaluation of the DS-I-9 under NRHP/CRHR criteria included archival research. The date of construction for the earthen irrigation drain was not found during archival research, but a review of historic aerial photographs indicates that the drain was present in 1953 (NETR 2017). No previous recordings or evaluations of this canal segment were found during the course of archival research. During the course of research, the IID plat book sheet 32 from 2011 identified the canal as the Mt. Signal Drain No. 1-B. Despite the clear association with irrigation history and agricultural development history in Imperial County, a single segment of a larger irrigation drainage channel does not rise to the level of significance required for either the NRHP or the CRHR under Criterion A/1. Canals and drainages, like many other types of linear features, have significance because they are parts of a larger and oftentimes complex system. Therefore, the significance of the drain is not tied to a specific segment, but to the drainage as a whole. For this reason, many linear features are listed on the NRHP as historic districts with contributing and non-contributing segments and related infrastructure. Drain segments can have individual eligibility when associated with a particular farmstead or show a significant engineering or architectural feature. However, archival research did not identify any significant associations and this segment does not display any innovative architectural or engineering features that set it apart from other canal segments in the area. This drain segment further lacks the required significance for individual eligibility, as it is representative of a ubiquitous irrigation structure seen throughout the Imperial Valley. Archival research also failed to establish any associations to significant persons important on the local, state, or national level, thus making it not eligible under Criterion B/2. The subject property does not embody the distinctive characteristics of a type, period, region, or method of construction. The earthen drainage channel is not representative of a specific and significant infrastructure or architectural style. There is no evidence to suggest that it was constructed or conceived by an important creative individual, as it is part of a vast network of drainage canals of a similar type throughout the Imperial Valley. Therefore, DS-I-9 does not appear eligible under NRHP/CRHR Criteria C/3. There is no evidence to suggest that this property has the potential to yield information important to state or local history, nor is it associated with a known archaeological resource. Therefore, DS-I-9 is recommended not eligible under NRHP/CRHP Criterion D/4. Although the earthen drainage channel retains the requisite integrity of location, design, setting, materials, workmanship, feeling, and association; the earthen drainage channel has no important historical associations and lacks architectural merit. As such, DS-I-9 is recommended not eligible under all NRHP and CRHR designation criteria.

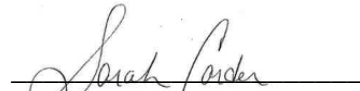
FINDINGS AND CONCLUSIONS

All historic age canal/drainage resources evaluated as part of the current study are recommended not eligible for the NRHP and CRHR based on a lack of historical significance, and in some cases, a lack of integrity. Therefore, this study finds that the proposed project will have a less-than-

significant impact on historical resources under CEQA. No further management recommendations are required.

Please feel free to contact us with any questions.

Sincerely,



Sarah Corder, MFA
Architectural Historian



Samantha Murray, MA
Historic Built Environment Lead

Att A: Confidential Records Search Results

Att B.: DPR Forms (to be provided in final document)

cc: Micah Hale, Dudek

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ATTACHMENT A
Confidential Records Search Results

ATTACHMENT B

DPR Forms (to be provided in final document)