Appendix H:
CEQA Cultural Resources Technical Report (Redacted)

CEQA CULTURAL RESOURES TECHNICAL REPORT FOR PSR#TD004 BAKER BOULEVARD OVER MOJAVE RIVER BRIDGE REPLACEMENT PROJECT SAN BERNARDINO COUNTY, CALIFORNIA

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San Bernardino County
Baker, CA 7.5' Quadrangle
Township 14N, Range 8E, Sections 25, 30, and 36
San Bernardino Baseline and Meridian
Acreage: APE 16 acres

February 2025

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Appendices

1. INTRODUCTION

This document reports efforts to identify and evaluate cultural resources within the Area of Potential Effects in support of the PSR#TD004 Baker Bridge over Mojave River Bridge Replacement Project (Project). The Project proponents are the San Bernardino County, Department of Public Works (County), who is the California Environmental Quality Act (CEQA) lead agency and California Department of Transportation (Caltrans), who is acting as the lead agency for National Environmental Policy Act (NEPA) and Section 106 of the National Historic Preservation Act (NHPA). An Initial Study with Mitigated Negative Declaration (ISMND) is being prepared for the Project for the following purposes:

- To satisfy the requirements of the California Environmental Quality Act (CEQA) (Public Resources Code (PRC) Section 21000, et seq.) and the CEQA Guidelines (California Code of Regulations, Title 14, Chapter 3, Section 15000, et seq.).

- To inform public agency decision-makers and the public of the significant environmental effects of the Proposed Project, as well as possible ways to minimize those significant effects, and reasonable alternatives to the Proposed Project that would avoid or minimize those significant effects.

- To enable San Bernardino County to consider environmental consequences when deciding whether to approve the Proposed Project.

This Cultural Resources Technical Report (CRTR) was prepared to support the ISMND analysis. The analysis in this CRTR is primarily based on the following document prepared for compliance with Section 106 of the National Historic Preservation Act of 1966 (Section 106):

> *Archaeological Survey Report for the National Trails Highway at 10 Bridges Project* prepared by Dokken Engineering, January 2025

The information presented in the Section 106 document is adapted in this CRTR to meet the necessary requirements of CEQA.

2. PROJECT DESCRIPTION

The existing bridge was originally built in 1931 as a 93-foot (plus or minus) 5 span simple-supported stringer timber bridge crossing the Mojave River Channel on Baker Boulevard (formerly US 91 and State Route 31). It was repaired and lengthened in 1938. Repairs conducted in 1938 included replacement of all untreated Douglas Fir timber within the existing bridge with Redwood; the addition of 9 new spans to the west and 8 new spans to the east increasing bridge overall length to 408-feet (plus or minus), and channel excavation for the length of the structure to maintain a minimum clearance of 6-feet below the bottom stringer (soffit) of the bridge. The bridge currently exists as a 22-span simple-supported stringer timber bridge with a 5- to 6-inch-thick continuous cast in place reinforced concrete deck overlain with asphalt concrete and closed end reinforced concrete strutted abutments supported on Coastal Douglas Fir (CDF) timber piles. The bents and abutments are set at a 45-degree skew to accommodate flows within the Mojave River Channel below. Timber railing and plywood planking accommodating an elevated 2-foot-wide walk on both sides of the bridge is worn and deteriorating. Current sufficiency rating per Caltrans biannual bridge inspection reports (BRIS) for the structure is roughly 76.

The Project includes the demolition of the existing two-lane 22 span simple-supported stringer timber bridge and its replacement with a four-lane, 10-span cast-in-place reinforced concrete slab structure founded on cast-in-drilled hole piles (CIDH) or driven concrete pile extensions (Figure 3. Project Features). This proposed structure will meet and address County and American Association of State Highway and Transportation Officials (AASHTO) standards and criteria, or equivalent. Approximately 1,200 feet of approach roadway work would be required to widen Baker Boulevard to its ultimate width. The design would construct and/or tie into existing, planned and projected ultimate roadway improvements from 0.14 miles west of the existing structure to Death Valley Road (State Highway 127). Additionally, the new bridge will include sidewalks, streetlights, and bridge barrier railing meeting current MASH safety and testing requirements. Existing driveways located within the Project area may require improvements to ensure conformity with the widened bridge and roadway approaches.

It is anticipated that excavators, dozers, dump trucks, concrete trucks, drill rigs, pile driving rigs and concrete pumps will be required to rehabilitate and widen the existing road surface and replace the bridge. Temporary and permanent right of way acquisition may be required for construction. The existing structure is well suited for either staged construction, with part of the new structure built adjacent to the existing bridge prior to removal of the existing bridge or a full detour (1.25-mile detour length) using adjacent SR-127/I-15 and the local road network to provide a complete closure for construction. Both options will keep the new bridge and approach road widenings within existing ROW. The Project will require relocation of overhead utilities, utilities attached to the bridge, and may require relocation of underground utilities along the roadway approaches. Construction may start as early as 2026 and may last 24 months.

The proposed Project may construct a permanent ramp providing access into the San Bernardino County (SBC) Flood Control District (FCD) owned floodway channel north of the bridge along the eastern levee to better facilitate channel maintenance and future bridge inspections.

The Project will utilize local funds in addition to federal funds from the Federal Highways Administration (FHWA), administered through Caltrans. As such, the Project requires compliance

with both the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA). The lead agency for NEPA compliance is Caltrans and the lead agency for CEQA compliance is the County.

Purpose
The purpose of the Project is to improve structure safety and operations through replacement of the existing bridge and roadway approach.

Need
The project is needed to meet current bridge structural design and safety standards along with projected future traffic capacity needs albeit the project in and of itself will not generate increase traffic volume and/or demand.

2.1 Area of Potential Effects

In accordance with Section 106 PA Stipulation VIII.A, the APE for the Project was established in consultation with Gary Jones, Caltrans District 8 Principal Investigator, and Alberto Vergel de Dios, District Local Assistance Engineer, on January 7, 2025. The APE map is located in **Appendix A** as **Figure 3**.

The APE for the Project was configured to include the bridge, approach roadways, areas of street striping, expected grading areas within the Mojave River Channel, and staging areas for construction equipment. The horizontal APE encompasses approximately 1,200 feet of roadway approach work on Baker Boulevard, several potential temporary construction staging areas, potential temporary construction easements (TCEs), utility relocation, installation of roadway/bridge lighting, and all associated grading activities to accommodate the bridge demolition, replacement bridge installation, permanent channel access ramp construction, and channel modifications to address hydraulic capacity. The entire horizontal APE is approximately 16 acres in size.

The vertical APE encompasses all grading activities required to demolish the existing bridge, install the replacement bridge, install street lighting, and relocate utilities. The vertical APE also encompasses the full height of the replacement bridge, as measured from the deepest ground disturbance in the existing channel, and the height of proposed roadway and bridge lighting, as measured from the roadway elevation. The deepest ground disturbance is associated with installation of the replacement bridge. The proposed depth for the bridge abutment walls and buried rock slope protection is 10 feet below existing channel grade with abutment piles extending an additional 30 feet (a total of 40 feet in depth for the abutments). The bridge piers will extend down about 53 feet below existing channel grade.

The proposed bridge height, including the railings, will be approximately 17 feet, as measured from the existing channel grade. The roadway lighting will match the heights of existing light poles along Baker Boulevard, extending up to 40 feet above existing roadway grade.

The majority of the deep ground disturbance will occur within the existing channel. Since its construction in 1938, the channel has been subject to significant flood (storm) events, associated storm water surface run-off/flows, and at least one additional more modification to the channel limits/structure. Such extensive ground disturbance indicates that the potential for buried sites

present with the APE is *low*. This is discussed further in Section 4.4 Archaeological Site Sensitivity of this report.

3. REGULATORY FRAMEWORK

Generally, a lead agency must consider a property a historical resource under CEQA if it is eligible for listing in the California Register of Historical Resources (California Register). The California Register is modeled after the National Register of Historic Places (National Register). Furthermore, a property is presumed to be historically significant if it is listed in a local register of historical resources or has been identified as historically significant in a historic resources survey (provided certain statutory criteria and requirements are satisfied) unless a preponderance of evidence demonstrates that the property is not historically or culturally significant. A lead agency may also treat a resource as historic if it meets statutory requirements and substantial evidence supports the conclusion. The National Register, California Register, and relevant County policies are discussed below.

3.1 Federal Regulations

3.1.1 National Register of Historic Places

The National Register is "an authoritative guide to be used by federal, state, and local governments, private groups, and citizens to identify the nation's cultural resources and to indicate what properties should be considered for protection from destruction or impairment."

Criteria

To be eligible for listing in the National Register, a property must be at least 50 years of age (unless the property is of "exceptional importance") and possess significance in American history and culture, architecture, or archaeology. A property of potential significance must meet one or more of the following four established criteria:

- **Criterion A:** Associated with events that have made a significant contribution to the broad patterns of our history
- **Criterion B:** Associated with the lives of persons significant in our past
- **Criterion C:** Embodies the distinctive characteristics of a type, period, or method of construction, or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components may lack individual distinction
- **Criterion D:** Has yielded, or may be likely to yield, information important in prehistory or history

3.1.2 Context

To be eligible for listing in the National Register, a property must also be significant within a historic context. *National Register Bulletin #15: How to Apply the National Register Criteria for Evaluation* states that the significance of a historic property can be judged only when it is evaluated within its historic context. Historic contexts are "those patterns, themes, or trends in history by which a specific…property or site is understood and its meaning…is made clear" (US Department of the Interior, National Park Service, N.D.). A property must represent an important aspect of the area's history or prehistory and possess the requisite integrity to qualify for the National Register.

3.1.3 Integrity

In addition to possessing significance within a historic context, to be eligible for listing in the National Register a property must have integrity. Integrity is defined in National Register Bulletin #15 as "the ability of a property to convey its significance" (US Department of the Interior, National Park Service, N.D.). Within the concept of integrity, the National Register recognizes the following seven aspects or qualities that in various combinations define integrity: feeling, association, workmanship, location, design, setting, and materials. Integrity is based on significance: why, where, and when a property is important. Thus, the significance of the property must be fully established before the integrity is analyzed.

3.1.4 Historic Districts

The National Register includes significant properties, which are classified as buildings, sites, districts, structures, or objects. A historic district "derives its importance from being a unified entity, even though it is often composed of a variety of resources. The identity of a district results from the interrelationship of its resources, which can be an arrangement of historically or functionally related properties" (US Department of the Interior, National Park Service, N.D.).

A district is defined as a geographically definable area of land containing a significant concentration of buildings, sites, structures, or objects united by past events or aesthetically by plan or physical development. A district's significance and historic integrity should help determine the boundaries. Other factors include:

- Visual barriers that mark a change in the historic character of the area or that break the continuity of the district, such as new construction, highways, or development of a different character
- Visual changes in the character of the area due to different architectural styles, types, or periods, or to a decline in the concentration of contributing resources
- Boundaries at a specific time in history, such as the original city limits or the legally recorded boundaries of a housing subdivision, estate, or ranch
- Clearly differentiated patterns of historical development, such as commercial versus residential or industrial

Within historic districts, properties are identified as contributing and noncontributing. A contributing building, site, structure, or object adds to the historic associations, historic architectural qualities, or archaeological values for which a district is significant because:

- It was present during the period of significance, relates to the significance of the district, and retains its physical integrity; or
- It independently meets the criterion for listing in the National Register.

3.1.5 Criteria Consideration G

Certain types of properties are not usually eligible for listing in the National Register. These properties include buildings and sites that have achieved significance within the past 50 years. Fifty years is a general estimate of the time needed to develop historical perspective and to evaluate significance. In addition to being significant under one of the four criteria listed above, these properties must meet a special requirement called a criteria consideration in order to be eligible for

listing in the National Register. There are seven criteria considerations. Criteria Consideration G, which is the most likely to be relevant to potential historical resources in the Study Area, states "a property achieving significance within the last 50 years is eligible if it is of exceptional importance" (US Department of the Interior, National Park Service, N.D.). This criteria consideration guards against the listing of properties of fleeting contemporary interest.

3.2 State Regulations

3.2.1 California Register of Historical Resources

In 1992, Governor Wilson signed Assembly Bill 2881 into law establishing the California Register. The California Register is an authoritative guide used by state and local agencies, private groups, and citizens to identify historical resources and to indicate what properties are to be protected, to the extent prudent and feasible, from substantial adverse impacts.

The California Register consists of properties that are listed automatically as well as those that must be nominated through an application and public hearing process. The California Register automatically includes the following:

- California properties listed in the National Register and those formally Determined Eligible for the National Register;
- State Historical Landmarks from No. 0770 onward; and
- Those California Points of Historical Interest that have been evaluated by the State Office of Historic Preservation (SOHP) and have been recommended to the State Historical Resources Commission for inclusion on the California Register.

3.2.2 Criteria and Integrity

For those properties not automatically listed, the criteria for eligibility of listing in the California Register are based upon National Register criteria, but are identified as 1-4 instead of A-D. To be eligible for listing in the California Register, a property generally must be at least 50 years of age and must possess significance at the local, state, or national level, under one or more of the following four criteria:

- Criterion 1: It is associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States; or
- Criterion 2: It is associated with the lives of persons important to local, California, or national history; or
- Criterion 3: It embodies the distinctive characteristics of a type, period, or method of construction or represents the work of a master, or possesses high artistic values; or
- Criterion 4: It has yielded, or has the potential to yield, information important in the prehistory or history of the local area, California, or the nation.

Properties eligible for listing in the California Register may include buildings, sites, structures, objects, and historic districts. It is possible that properties may not retain sufficient integrity to meet the criteria for listing in the National Register, but they may still be eligible for listing in the California Register. An altered property may still have sufficient integrity for the California Register if it

maintains the potential to yield significant scientific or historical information or specific data. A property less than 50 years of age may be eligible if it can be demonstrated that sufficient time has passed to understand its historical importance.

3.2.3 SOHP Survey Methodology

The California Register may also include properties identified during historic resource surveys. However, the survey must meet all of the following criteria:

- The survey has been or will be included in the State Historic Resources Inventory;
- The survey and the survey documentation were prepared in accordance with office [SOHP] procedures and requirements;
- The resource is evaluated and determined by the office [SOHP] to have a significance rating of Category 1 to 5 on a California Department of Parks and Recreation (DPR) Form 523; and
- If the survey is five or more years old at the time of its nomination for inclusion in the California Register, the survey is updated to identify historical resources that have become eligible or ineligible due to changed circumstances or further documentation and those that have been demolished or altered in a manner that substantially diminishes the significance of the resource.

The evaluation instructions and classification system prescribed by the SOHP in its Instructions for Recording Historical Resources provide a Status Code for use in classifying potential historical resources. In 2003, the Status Codes were revised to address the California Register. These Status Codes are used statewide in the preparation of historical resource surveys and evaluation reports. The first code is a number that indicates the general category of evaluation. The second code is a letter that indicates whether the property is separately eligible (S), eligible as part of a district (D), or both (B). There is sometimes a third code that describes some of the circumstances or conditions of the evaluation. The general evaluation categories are as follows:

- **Category 1:** Listed in the National Register or the California Register.
- **Category 2:** Determined eligible for listing in the National Register or the California Register.
- **Category 3:** Appears eligible for listing in the National Register or the California Register through survey evaluation.
- **Category 4:** Appears eligible for listing in the National Register or the California Register through other evaluation.
- **Category 5:** Recognized as historically significant by local government.
- **Category 6:** Not eligible for listing or designation as specified.
- **Category 7:** Not evaluated or needs re-evaluation.

The specific Status Codes referred to in this report are as follows:

1CL State Historical Landmark (CHL) numbered 770 and above, or an earlier CHL reheard by the State Historic Resources Commission (SHRC) and determined that it also meets California Register criteria. Listed in the California Register.

2S2 Individual property determined eligible for National Register by a consensus through Section 106 process. Listed in the California Register.

2D2 Contributor to a multi-component resource determined eligible for National Register by a consensus through Section 106 process. Listed in the California Register.

3.3 Local Regulations

The County of San Bernardino does not have a local register of historical resources. The San Bernardino County Policy Plan includes a Cultural Resources Element with polices related to historical resources.

3.3.1 San Bernardino County Policy Plan

The County Policy Plan (2022) serves as the County's General Plan for unincorporated areas. The Conservation Element of the Policy Plan includes the following relevant Goal and Policies regarding historical resources:

> ***Goal CR-2 Historic and Paleontological Resources.*** *Historic resources (buildings, structures, or archaeological resources) and paleontological resources that are protected and preserved for their cultural importance to local communities as well as their research and educational potential.*
>
> ***Policy CR-2.1 National and state historic resources****. We encourage the preservation of archaeological sites and structures of state or national significance in accordance with the Secretary of Interior's standards.*
>
> ***Policy CR-2.2 Local historic resources.*** *We encourage property owners to maintain the historic integrity of resources on their property by (listed in order of preference): preservation, adaptive reuse, or memorialization.*
>
> ***Policy CR-2.3 Paleontological and archaeological resources.*** *We strive to protect paleontological and archaeological resources from loss or destruction by requiring that new development include appropriate mitigation to preserve the quality and integrity of these resources. We require new development to avoid paleontological and archeological resources whenever possible. If avoidance is not possible, we require the salvage and preservation of paleontological and archeological resources.*

4. EXISTING SETTING

This section describes the natural environment, ethnographic information, Indigenous record, and historical cultural setting of the general Project region to provide context for understanding the types, nature, and significance of the potential types of archaeological resources that could be identified within the APE. The following discussion is excerpted with minor editing for purposes of the current Project from the Archaeological Survey Report for the San Bernardino County Route 66 Bridge Replacement Project, San Bernardino County, California (Thomas and Mirro 2017).

4.1 Environment

The Project area is located within the northeastern area of San Bernardino County, California, which resides in the northwestern/western area of the Mojave Desert. The northwestern/western Mojave Desert extends from the western extremity of the greater Antelope Valley, just east of Gorman, eastward to the upper Mojave River, and the region east and southeast of Barstow. This region is composed of a number of larger and smaller closed orographic basins and one major river system, the Mojave, which debouches at its easterly terminus into the Soda Lake (Dry Lake) basin near Baker, California. However, during the last glacial maximum in the late Pleistocene, the Mojave River flowed farther north, merging with the Armargosa River and ultimately flowing into Death Valley and Lake Manly. At one time, this drainage system included Lake Manix and Lake Mojave. Lake Manix encompassed Afton, Troy, Coyote, Harper, and Cronise basins; and Lake Mojave included the Soda Lake (Dry Lake) and Silver Lake (Dry Lake) basins (Parsons 2004:15). Geomorphic and geologic variability within the greater Project region is extensive. Piedmonts, pediments, and valley floors display a variety of Pleistocene and Holocene land surfaces and lacustrine deposits, while the adjacent uplands contain Mesozoic, Tertiary, and Quaternary volcanic formations. Common throughout the region are cryptocrystalline, basalt, rhyolite, and felsite outcrops, as well as secondary cobble deposits that served as ready tool stone sources for the Indigenous populations that exploited the study region (Hall 1993:6).

The western Mojave Desert is bound by mountain ranges to the northwest and south, and an increasingly intensive rain shadow effect occurs from west to east, causing average rainfall to decrease markedly. Rainfall decreases from 14–16 inches (in.) (35–40 centimeters [cm]) per annum in the western end of the Antelope Valley to 5–6 in. (12–15 cm) east of Barstow. This rainfall gradient is reflected in significant changes in vegetation from west to east, as foothill scrub oak woodlands transition to Joshua-juniper woodland, then to creosote and shadscale scrub plant communities. The fault systems that are reflected in the positional relation of the southern Sierra Nevada and Tehachapi ranges and the San Gabriel and San Bernardino ranges to the desert floor also create desert-margin and desert-floor springs. In addition, the flow of stream runoff in the western Mojave Desert into closed alluvial basins featuring winter-flooded dry lake playas created conditions where artesian-flow subterranean aquifers existed in the centers of these closed basins. Such localities could attract settlement due to the availability of water, while areas located at higher elevations on the flanks of these basins might have less water located at greater depths. The distribution of subterranean water resources could also vary a great deal even within short distances. The distribution of rainfall, stream flow, and subsurface aquifers, as well as the springs, mountain-origin creek systems, and Mojave River would have a determining effect on patterns of human settlement in the region (Earle 1998:100–102).

Culturally significant biotic diversity in the greater Mojave Desert is relatively low compared to surrounding regions, and paleoenvironmental data suggest that the modern biotic communities found within the region emerged largely over the past six or seven thousand years (Hall 1993:7). Specifically, vegetation communities within the APE include urban/barren, disturbed areas, saltbush scrub, and the Mojave River Channel. Within the urban/barren landscape, urban structures, dirt roads, pavement, landscaping, and other developments are noted. These areas provide little to no suitable habitats for local wildlife species. Disturbed landscaped within the APE include undeveloped lots adjacent to Baker Boulevard that lack substantial vegetation and appear to have been disturbed by human activity. The Saltbush scrub habitat is primarily comprised of sparse, low-lying shrubs such as big saltbush (*Atriplex lentiformis*) and saltcedar (*Tamarix ramosissima*). Additional species within this habitat community include occasional stands of non-native Mediterranean canarygrass (*Phalaris minor*) as well as infrequent populations of creosote bush (*Larrea tridentata*) and honey mesquite (*Neltuma odorata*). Within the APE, this habitat is highly fragmented and occurs along the margins of developed or highly disturbed areas. Saltbush scrub provides suitable foraging and/or refuge habitat for a variety of wildlife species.

Fauna common in the general study area include locally common bird species including common raven (*Corvus corax*), house sparrow (*Passer domesticus*), rock pigeon (*Columbia livia*), and Eurasian collared dove (*Streptopelia decaocto*).

Climate

During the Wisconsin Glacial Stage (60,000 to 10,500 B.P.), regional climates were significantly impacted by massive continental ice sheets which tended to restrict Arctic air flow, resulting in cooler summer and warmer winter temperatures than are now experienced in the Mojave Desert (Bupp et al. 1998). This more pluvial character gave rise to large standing lakes, such as those once present in the Mojave Desert (such as Pleistocene Lake Thompson at Edwards Air Force Base) and Great Basin regions. The last glacial maximum in the late Pleistocene pushed storm tracks far to the south, causing frequent and intense Pacific storms over the San Bernardino Mountains and Mojave causing vigorous floods along the Mojave River depositing large quantities of sediment, filling basins. During this period, the Mojave River is thought to have changed course several times shifting between Harper Lake and Lake Manix between ca 28,000 and 21,500 B.P. (Meek 1999, 2004). The closing of the Harper Basin to the Mojave River may have occurred as a result of minor uplift, alluvial fan deposition, and downcutting of the Mojave River after the formation of Afton Canyon around 18,000 B.P., which lowered stream levels of the river (Enzel et al. 2003; Meek 1999).

A trend towards a warmer, drier climate after the last glacial maximum has been documented throughout western North America (Spaulding and Graumlich 1986; Thompson 1990; Van Devender 1990). As temperatures warmed at the start of the Holocene, glaciers slowly retreated, sea levels rose, and the interior lakes and marshes stone Holocene (ca. 10,000–7500 B.P.) warming trend (also referred to as the Altithermal Climatic Phase), the Pleistocene lakes began to desiccate, resulting in the scattered dry playa basins found throughout the desert regions. With few exceptions, desert basin lakes were probably dry soon after the close of the Pleistocene (Basgall 1993; Basgall and Overly 2004;).

Increased aridity between the Early and Middle Holocene periods about 7500 and 5000 B.P. was apparently more pronounced across the Mojave Desert (S. Hall 1985; Spaulding 1991). It is during this time that woodland attained its approximate modern elevation range, and the modernization of

desert scrub communities was completed with the migration of plant species, such as creosote bush, into the area (Byers and Broughton 2004; Spaulding 1990). Gradual amelioration of the climate began by around 5000 B.P., culminating in the Neoglaciation at about 3600 B.P., with a period of increased moisture dating to the latter part of the Middle Holocene (Spaulding 1995).

The climatic patterns that now characterize the Mojave Desert actually developed during the middle Holocene (post-7500 B.P.) (Basgall and Overly 2004). Analyses of fossil pollen from woodrat middens and lake sediments indicate that vegetation across the greater Mojave Desert was sustained by a milder (cool-wet) climate during the Wisconsin glacial maximum, with forest and woodland communities occurring at elevations as much as 3,000 to 4,000 feet lower than today (Basgall and Overly 2004; Earle et al. 1997). As the climate became warmer and drier during the middle Holocene, these plant communities were gradually replaced by desert scrub vegetation (Byers and Broughton 2004; Spaulding 1990). For example, fossil pollen from Searles Lake indicates that the vegetation around the lake during its last maximum was juniper woodland, while today a mixed saltbush and creosote scrub predominates (Earle 1997). At Edwards Air Force Base, studies of recovered pollens from wood rat middens spanning the last 5,600 years depict an essentially modern floristic community (Rhode and Lancaster 1996). With climatic changes and resulting vegetation shifts that occurred during the approach of the Holocene, many large-bodied mammals faced extinction, while numerous smaller mammals made substantial changes in habitat ranges (Grayson 1993). Archaeofauna assemblages from Fort Irwin clearly document the emergence of fully modern Mojavean fauna within the first one or two millennia of the Holocene (Basgall 1990, 1993; Basgall and Hall 1993; Douglas et al. 1988; Hall 1992).

While climatic patterns in the Mojave Desert can be traced back to the Middle Holocene, several important climatic episodes occurred during the Late Holocene (4000 B.P.–Present) that may have influenced the cultural development and played an important role in population movement. These episodes include the Neopluvial (or Neoglacial) ca. 4000 to 2000 B.P.; Medieval Warm Period ca. 1100 to 700 B.P.; and the Little Ice Age ca. 700 to 200 B.P.

The Neopluvial, or Neoglacial, climatic episode was characterized in the American Southwest by a cool-moist climate that produced brief lake stands at Soda and Silver Lake (Dry Lake)s around 3600 B.P. (Enzel et al. 1989:92; West et al. 2007:33), which corresponds with strongest of the wet events suggested in the Northern Great Basin (Wigand and Rhode 2002:346). The Neopluvial persisted in the Little Granite Mountains until after ca. 2700 B.P. as indicated by the presence of more mesic floral species including blackbrush (*Coleogyne ramosissima*), Mojave sage (*Salvia pachyphylla*), and goldenbush (*Haplopappus linearifoliusat*) at upper elevations (West et al. 2007:33).

Following the brief lake stands at Silver and Soda Lake (Dry Lake)s, Ely and others (1993) suggest an absence of large floods in the Southwest during the next 1,800 years (i.e., ca 3600 to 1800 B.P.), possibly the result of a shift in precipitation from heavy winter storms characteristic of the Middle Holocene, to increased summer or monsoonal weather systems. Severe drought around 2000 B.P. marks the end of the Neopluvial in southern Nevada. In Western Arizona, warmer global temperatures may have been accompanied by increased aridity between 2000 B.P. and 1500 B.P., although this period is credited as one of "poorly understood transitions" (Stone 1991:59). Lamarche (1974) documented a dramatic rise in tree lines at that time, which lasted for the next 300 years or until ca 1700 B.P. (Wigand and Rhode 2002:371).

The centuries following the end of the Neoglacial were characterized by warming temperatures and a more arid climate and, at approximately cal 1060 B.P., a period of persistent drought called the Medieval Warm began. Higher temperatures and decreased precipitation occurred throughout the western United States and continued until cal 575 B.P. The desert interior and inland areas of southern California would have been adversely affected by these conditions, although the desert would have been more susceptible to these droughts, making the inland areas more attractive to Indigenous people. At the end of the Medieval Warm, cooler temperatures and greater precipitation ushered in the Little Ice Age, during which time ecosystem productivity greatly increased along with the availability and predictability of water. The differences between the inland areas and the desert regions would have become less pronounced, making both areas suitable for human habitation.

4.2 Records Search Results

A record search for previously recorded resources and surveys or reports within the APE and a 1-mile search radius of the APE was requested from the South Central Coastal Information Center (SCCIC) of the California Historical Resources Information System (CHRIS). On November 16, 2023, Isabela Kott, the Information Center Assistant Coordinator, provided the results of the record search. The results indicate tha [redacted] two (2) linear cultural resources were within the APE. The two resources include segments of P-34-007689/CA-SBR-7689H – Arrowhead Trail/Highway and P-36-034306 – Death Valley Road. **Table** 1 details all of the previously recorded resources. Document citations returned by the records search can be found in **Appendix D** of this report.

Table 1. SCCIC Identified Cultural Resources within the APE and Within The 1-mile Search Radius

Primary No.	Trinomial	Age	Resource Type	Description
P-[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

Primary No.	Trinomial	Age	Resource Type	Description
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
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Primary No.	Trinomial	Age	Resource Type	Description

Bolded items mark resources within the APE

In addition to the records search results, the existing bridge, Bridge No. 54C-0127, is over 50 years in age. Brief descriptions of the existing bridge, P-34-007689/CA-SBR-7689H– Arrowhead Trail/Highway, and P-36-034306 – Death Valley Road are provided below.

Bridge No. 54C-0127

The existing bridge was originally built in 1931 as a 93-foot (plus or minus) 5 span simple-supported stringer timber bridge crossing the Mojave River on Baker Boulevard (formerly US-91 and State Route 31). It was repaired and lengthened in 1938 and 1939. Repairs conducted included replacement of all untreated Douglas Fir timber within the existing bridge with Redwood; the addition of 9 new spans to the west and 8 new spans to the east increasing bridge overall length to 408-feet (plus or minus).

P-36-007689/CA-SBR-7689h (Arrowhead Trail/Highway)

The trail was established in 1916 as a transcontinental road that once spanned over 850 miles between Los Angeles, California, and Salt Lake City, Utah. As a designated all-weather "scenic highway", the development of this road stimulated travel through Southern California. In 1926, the road was absorbed by the U.S. Route 91 and portions of modern-day Interstate 15 (I-15). Today, the resource consists of multiple discontinuous segments that parallel I-15. Within the APE, a short segment was recorded at the intersection of SR 127 and Baker Boulevard. Discontinuous segments have been recorded both immediately west and east of the APE.

P-36-034306 (Death Valley Road)

This resource is a two-lane paved road that originates in Baker near Kelbaker Road and extends northwest for approximately 41 miles. It was designated as SR 127 in 1933.

The SCCIC results also identified multiple reports within the APE and within the 1-mile search radius. Caltrans conducted an internal review of their records and provided additional mapping and excerpts from a cultural resource inventory of the area which occurred between the 1920s and 1940s. Combined, 13 previous cultural resource studies were conducted within the APE and an additional 28 previous cultural resource studies were reported within the 1-mile search radius. Results of the combined review are represented below in **Table 2**, and the SCCIC record search results can be found in **Appendix D**.

Table 2. Cultural Resource Studies Within the APE and Within the 1-mile Search Radius

Report # (SB-)	Title	Author	Year	Inside or outside APE
00007	The Archaeology of Pleistocene Lake Mohave: the Lake Mohave Site.	Campbell, Elizabeth, W. Crozer and William H. Campbell	1937	Inside
00008	Age of the Lake Mohave Culture	Ernst Antevs	1937	Outside
00009	The Lake Mohave Artifacts	Charles Avery Amsden	1937	Outside
00010	Technique of the Implements from Lake Mohave	Joseph A. Barbieri	1937	Outside
00011	Geology of Lake Mohave Outlet Channel	Francis D. Bode	1937	Inside

Report # (SB-)	Title	Author	Year	Inside or outside APE
00068	Problems in Dating Lake Mojave Artifacts	Robert F. Heizer	1965	Inside
00075	Certain Crescentic Stone Objects as a time marker in the Western United States	W. Lewis Tadlock	1966	Inside
00082	A Cross Check on the Dating of Lake Mojave Artifacts	George F. Carter	1967	Inside
00095	Breakage, Burin Facets, and the probably technological linkage among Lake Mohave, Silver Lake (Dry Lake), and other varieties of projectile points in the Desert West.	Donald R. Tuohy	1969	Inside
00096	Recent Discoveries of Fluted Points in California and Nevada	Emma Lou Davis and Richard Shuttler, Jr.	1969	Outside
00097	Time and Topography: Elizabeth W.C. Campbell's approach to the prehistory of the California Deserts	Claude N. Warren	1970	Outside
00098	Environment and Culture: the Lake Mohave Case	Robert F. Heizer	1970	Inside
00567	An analysis of a Survey of the Northwest Shoreline of Pluvial Lake Mojave	William T. Venner	1977	Outside
00755	Dating Lake Mohave Artifacts and Beaches	Claude N. Warren, John De Costa	1964	Inside
00756	Lake Pleistocene - Early Holocene geomorphic history of Lake Mojave, California	H. Thomas Ore, Carol H. Rector and Philip J. Wilke	1971	Inside
00874	An archaeological sampling of the proposed Allen-Warner Valley Energy System, Western transmission line corridors, Mojave Desert, Los Angeles and San Bernadino Counties, California and Clark County, Nevada	James P. Barker, Carol H. Rector, and Philip J. Wilke	1979	Outside
01219	An archaeological survey of the Proposed Southern California Edison Ivanpah Generating Station, Plant site, and related rail, coal, slurry, water and transmission line corridors, San Bernadino County, California, and Clark County, Nevada	Matthew C. Hall, Philip J. Wilke, Doran L. Cart, and James D. Swenson	1981	Outside
01220	The Ivanpah Generating Station Project: Ethnographic (Native American) Resources	Lowell John Bean, Sylvia Brakke Vane, and Jackson Young	1981	Outside
01479	Mead/McCullough – Victorville/Adelanto Transmission Project Technical Report: Volume IV, Cultural Resources	Dames & Moore	1985	Outside
01551	Class III Archaeological Survey of Pro-Peace Proposed Lunch and Camp Sites, San Bernadino County, California	Michael K. Lerch	1986	Outside

Report # (SB-)	Title	Author	Year	Inside or outside APE
01613	Final Report: Cultural Resource Inventory and Evaluation for Proposed Williams Telecommunication Company's Fiber Optic cable right-of-way: California-Nevada State Line to Etiwanda	Elizabeth E. Budy	1986	Outside
01723	Environmental Impact Evaluation: An Archaeological and Historical Resources Assessment of 75-acres in the community of Baker, San Bernardino County, California	DE Munck, Victor C. and Stephen J Bouscaren	1987	Inside
01734	Cultural and Paleontological Resources Survey: US Sprint Fiber Optic Cable Project, Rial to, California to Las Vegas, Nevada	Steven M. Shackley	1987	Inside
01820	Cultural Resource Survey and Clearance for re-routed portions of the Proposed American Telephone and Telegraph Las Vegas to San Bernadino Fiberoptics Communication Route	Peak & Associates, Inc.	1988	Outside
02315	A Cultural Resource Assessment for ten Proposed Pac Tel Microwave Tower Sites, I15/Barstow to Mountain Pass	John Cook and Drew Pallette	1991	Outside
02343	Outside Danger Cave: A view of Early Man in the Great Basin	Claude N. Warren and Anthony J. Ranere	1968	Inside
02345	A re-examination of the dating evidence for the Lake Mohave Artifact Assemblage	George W. Brainerd	1952	Outside
02470	A Cultural Resource Assessment for Thirteen Proposed Pac Tel Microwave Tower Sites, I15/Barstow to Mountain Peak	John Cook and Drew Pallette	1991	Outside
02680	The Cultural and Paleontological Resource Investigations and Inventory for the Proposed McCook Billboards (AP # 544-321-17), Baker, San Bernadino County. California	Leta J. Franklin and Jeanette A. McKenna	1992	Outside
02860	Cultural Resources Assessment of a 9.5 Acre Proposed Recreational Vehicle Park in Baker, San Bernadino, California	James Brock	1994	Outside
03658	Identification and Evaluation of Historic Property: AT&T Wireless Site C921, Community of Baker, San Bernadino County, California. 10PP	Bruce Love	2000	Outside
03659	Historic Resources Assessment Report for a 23-acre quarry site in Baker, CA. 12PP	James Brock	1999	Outside
03661	Historic, Architectural & Archaeological Survey Report from TPM #14892. 29PP	Roger Hatheway	1997	Outside
03662	Cultural Resource Assessment for a Proposed 5-acre Wastewater Lagoon in Baker, San Bernadino County, CA. 10PP	James Brock	1996	Outside
03668	Class III Cultural Resources Inventory for LA Department of Water & Power-Mead to	Andrew York, W.G. Spaulding, D. Powers,	1995	Outside

Report # (SB-)	Title	Author	Year	Inside or outside APE
	Adelanto Transmission Line Project: Stateline and Baker Divisions: 218PP	L. Peterson, G. Davis, and T. Wahoff		
04368	A Historical Resources Investigation at the Jacobson Construction Company Gravel Quarry in the Vicinity of Baker, San Bernadino County, CA. 86PP	Alex Androwicz and John Stephen	2003	Outside
06714	Cultural Resource Inventory of Caltrans District 9 Rural Conventional Highways in Inyo, Eastern Kern, Mono and Northern San Bernadino Counties.	Leach-Palm, Laura et al.	2010	Outside
07363	Class II Cultural Resources Inventory for the Sulurian Wind Project, Silurian Valley, San Bernadino County, California.	Diane Winslow, Micah Hale	2012	Inside
07960	Class III Cultural Resources Survey Addendum for the Proposed Calnev Expansion Project, California Portion San Bernadino County, California	William Self	2010	Outside
07980	Archaeological Survey Report for the Interstate 15 Median Regrade Project from East Yermo Crossing to the Nevada State Line, San Bernadino County, California EA 0C040	Kurt Heidelberg	2005	Outside
--*	M-115 Excerpts	Malcolm J Rogers	No Date	Inside
Excerpted material provided by Caltrans (all other entries provided by SCCIC)				

4.2.1 Indigenous Peoples Context

Probably the most widely cited Indigenous cultural framework for the California deserts was proposed by Claude N. Warren (1980, 1984; Warren and Crabtree 1986). Warren's framework for human history in the Mojave Desert divided prehistory into five distinct archaeological periods associated with changes in climate related to the terminal Pleistocene and Holocene epoch. These include Lake Mojave, Pinto, Gypsum, Saratoga Springs, and Shoshonean (or Late Prehistoric) periods. Claims have also been made for archaeological assemblages dating to periods earlier than Lake Mojave but have yet to be substantiated.

Sutton and others (2007) recently expanded on Warren (1984) to include elements more closely aligned to Indigenous cultural complexes of the Central Mojave Desert. Sutton and others (2007) use the term 'complex' to emphasize cultural rather than temporal association, deferring temporal association to the term 'period,' which they associate with geologic time. Sub-divisions of the Mojave Desert cultural framework proposed by Sutton and others (2007) include hypothetical "Pre-Clovis" and "Paleo-Indian" complexes, and the Lake Mojave, Pinto, Dead Man Lake, Gypsum, Rose Spring, and Late Prehistoric complexes.

Terminal Pleistocene (12,000 to 10,000 B.P.)

Paleo-Indian Complex. The Paleo-Indian complex within the Mojave Desert is thus far represented exclusively by Clovis material culture, though the relationship with later Great Basin stemmed series points is also a consideration. Some early researchers pose the theory of two different traditions relating to the interior and coastal adaptation during the Late Pleistocene to Early Holocene transition. Based on work in Panamint Valley, Davis (1970) posited the theory of "Paleo-Desert," a geographic distinction from Paleo-Indian sites of the "Paleo-Coastal" tradition. In the Paleo-Desert geographic region, Paleo-Indian sites are generally located along the shorelines of ancient pluvial lakes (Davis 1970).

One common theme among nearly all Paleo-Indian complex sites in North America is the tool assemblage—fluted projectile points made from fine-grained lithic material, hafted to the end of a spear and launched using a throwing tool (atlatl). Fluted points, defined as a component of the Clovis material culture in California, have been found nearly throughout the entire state from coastal estuary environments to ancient Pleistocene lakeshores, which are now in desert areas. At least five sites near Cajon Pass containing fluted projectile points have been identified, suggesting an early occupation of approximately 12,000 B.P., which corresponds to the "hypothetical Pre-Clovis" complex (pre-10,000 B.P.) for San Bernardino County (Sutton et al. 2007:236). In addition to fluted points, the Paleo-Indian tool assemblage was composed mainly of scrapers, burins, awls, and choppers, all used for the processing of animal remains and foodstuffs.

Early Holocene (10,000 to 8,500 B.P.)

Lake Mojave Complex. The onset of the Lake Mojave complex is marked by climatic changes, which resulted in a population shift as people living in the desert regions migrated towards the coastal region to exploit littoral resources. A small frequency of ground stone implements is present during this time, from which limited hard seed grinding activities can be inferred (Sutton et al. 2007:234, 237) representing a shift toward a more diversified and generalized economy (Sutton 1996:228). The high incidence of extra-local materials and marine shell is interpreted as wider spheres of interaction than witnessed previously. Sutton and others (2007:237) interpret these and other data as indicators of "a forager-like strategy organized around relatively small social units."

Cultural materials dating from this complex encompass the Playa cultures (Rogers 1939), the San Dieguito complex (Warren 1967), and the Lake Mojave complex (Warren and Crabtree 1986). This phase is considered ancestral to the Early Archaic cultures of the Pinto complex. The Lake Mojave assemblages (Campbell et al. 1937) include Lake Mojave series projectile points (leaf- shaped, long stemmed points with narrow shoulders) and Silver Lake (Dry Lake) points (short bladed, stemmed points with distinct shoulders). Other diagnostic items include flaked stone crescents, abundant bifaces, and a variety of large, well-made scrapers, gravers, perforators, and heavy core tools (Sutton et al. 2007:234).

Middle Holocene (8,500 to 4,000 B.P.)

The Pinto Complex. The Pinto complex represents a broad continuity in the use of flaked stone technology, including less reliance on obsidian and cryptocrystalline silicates, as well as the prevalence of ground stone implements in the material culture (Sutton et al. 2007:238), which

distinguishes it from the Lake Mojave complex. Warren (1984) argues that cultural adaptation to the changing desert environment between 7,500 and 5,000 B.P. may account for the material characteristics of the Pinto complex, which gradually replaced those of the preceding Lake Mojave complex. The age and motivations for technological adaptation noted in the Pinto complex remains one of dispute, as Sutton and others (2007:238) cite recent work conducted on Fort Irwin and Twenty-nine Palms that produced radiocarbon dates associated with Pinto complex assemblages as early as 8,820 B.P., thus pushing back the inception of the complex coincidental with the Lake Mojave complex.

The Pinto complex is marked by the appearance of Pinto series projectile points, characterized as thick, shouldered, expanding stem points with concave bases, as well as bifacial and unifacial core tools, and an increase in milling stones. Pinto points were typically produced by percussion reduction, with limited pressure retouch.

The Dead Man Lake Complex. This newly proposed complex by Sutton and others (2007) may indicate a local variation of the Pinto complex as suggested by archaeological discoveries in the Twenty-nine Palms area. The primary variation between Pinto and the Dead Man Lake complex is the presence of small to medium-sized contracting stemmed or lozenge-shaped points, battered cobbles, bifaces, simple flaked tools, milling implements, and shell beads (Sutton et al. 2007:239).

Based on the current archaeological data there appears to have been an occupational hiatus within the inland desert regions between the Middle and Late Holocene period; few sites have been found that date between 5000 and 4000 B.P. It is believed that climatic changes during this period resulted in hotter and drier conditions, which may have led to the abandonment of this region for approximately 1,000 years when people migrated to areas with more suitable climates (Sutton et al. 2007:241).

Late Holocene (4,000 B.P. to Present)

Gypsum Complex (4,000–1,800 B.P.). Technologically, the artifact assemblage of the Gypsum complex was similar to that of the preceding Pinto complex although new tools were added either as innovations or as "borrowed" cultural items as adaptations to the desert environment. Gypsum complex sites are characterized by medium to large stemmed and corner-notched projectile points, including Elko series, Humboldt Concave Base, and Gypsum styles. In addition, rectangular-based knives, flake scrapers, and occasionally, large scraper planes, choppers and hammerstones, handstones, and milling tools become relatively commonplace, and the mortar and pestle appear for the first time. Ritual activities became important, as evidenced by split-twig figurines (likely originating from northern Arizona) and petroglyphs depicting hunting scenes. Finally, increased contact with neighboring groups likely provided the desert occupants important storable foodstuffs during less productive seasons or years, in exchange for valuable lithic materials such as obsidian and cryptocrystalline silicates. Archaeological assemblages attributed to the Gypsum complex have been radiocarbon dated to roughly 4,000 B.P. to 1,800 B.P.

Population increases and broadening economic activities characterize the Gypsum complex. Hunting continued to be an important subsistence focus, but the processing of plant foods took on greater importance. Perhaps due to these new adaptive mechanisms, the increase in aridity during the late Gypsum complex (after ca. 2500 B.P.) seems to have had relatively little consequence on

the distribution and increase in human populations (Warren 1984; Warren and Crabtree 1986). In addition to open sites, the use of rock shelters appears to have increased at this time. Base camps with extensive midden development are a prominent site type in well-watered valleys and near concentrated subsistence resources (Warren and Crabtree 1986). Additionally, evidence of ritualistic behavior during this time exists through the presence of rock art, quartz crystals, and paint (Sutton et al. 2007:241).

Mountain sheep and deer, rabbits and hares, rodents, and reptiles remains are reported from Gypsum complex sites in the central Mojave Desert (Hall and Basgall 1993). Rock art suggests that the hunting of mountain sheep was important during the Gypsum complex (Grant et al. 1968). However, Whitley (1994:361-363) argues that petroglyphs depicting mountain sheep, and the hunting of mountain sheep should not be interpreted literally. Whitley contends that engravings of mountain sheep, killed mountain sheep, and scenes depicting the hunting of mountain sheep found within the Coso Range are associated with shamanistic behavior relating to Numic-speaking rain shamans and the process by which they maintained supernatural control over the weather (i.e., rainmaking).

Evidence from the western Mojave Desert suggests that there was a major population increase ca. 3000 to 2300 B.P. (Gilreath and Hildebrandt 1991). A shift in subsistence orientation and mobility near the end of the Gypsum complex is suggested, with increased emphasis on the hunting of smaller mammals, perhaps coinciding with the introduction of bow and arrow technology (Basgall et al. 1986; Sutton 1996:234).

Rose Spring Complex (1,800–900 B.P.). The Rose Spring complex is characterized by small projectile points, such as the Eastgate, Rose Spring, (and possibly ancestral Cottonwood series), stone knives, drills, pipes, bone awls, various milling implements, and marine shell ornaments; the use of obsidian (most notably Coso Obsidian) is prevalent in this complex (Sutton et. al. 2007:241). Smaller projectile points such as the types noted above appear to mark the introduction of bow and arrow technology and the decline of the atlatl and spear weaponry (Sutton 1996:235). Sutton (1996) notes that Rose Spring complex sites are common in the Mojave Desert and are often found near springs, washes, and lakeshores.

Subsistence practices during the Rose Spring complex appear to have shifted to the exploitation of medium and small game, including rabbits/hares and rodents, with a decreased emphasis on large game. At the Rose Spring archaeological site, numerous bedrock milling features, including mortar cups and slicks, are associated with rich midden deposits, indicating that the milling of plant foods had become an important activity. In addition, evidence of permanent living structures are found during this time (Sutton et al. 2007:241). In the eastern Mojave Desert, agricultural people appear to have been present, as Anasazi populations from Arizona controlled or influenced a large portion of the northeastern Mojave Desert by 1300 B.P. (Sutton et al. 2007:242).

Warren (1984:420–424) contends that the Rose Spring complex was marked by strong regional cultural developments (compare Saratoga Springs to Rose Springs) especially in the southern California desert regions, which were heavily influenced by technology and style originating from the lower Colorado River area (termed by Warren as the Hakataya culture). Warren (1984) divided the Rose Spring (Saratoga Springs) into three, possibly four, regionally distinct cultural developments

deduced from pottery types and projectile point styles: northwestern Mojave, eastern Mojave, southern desert, and possibly Antelope Valley (Warren 1984:420–424).

In the northwestern Mojave, the Saratoga Springs Period was marked by the dominance of Rose Spring and Eastgate arrow points over the earlier Elko and Humboldt series dart points. Apart from this technological change, there appears to have been a strong continuity of Gypsum complex material assemblages in the northwestern Mojave. In the eastern Mojave Desert, Anasazi interest in turquoise likely influenced populations living in the Mojave Desert as far west as the Halloran Springs area where hundreds of small turquoise mines existed. The presence of Anasazi pottery at many of the turquoise mines suggests that these mines initially were operated by the Anasazi between 1500 and 1300 B.P.

In the southern desert region, the impetus for change appears to have derived from Hakataya influences from the lower Colorado River, evidenced by the introduction of Buff and Brown Ware pottery and Cottonwood and Desert Side-notched projectile points. The initial date for the first Hakataya influence on the southern Mojave Desert remains unknown; however, it does appear that by 1200 to 1000 B.P., the Mojave Sink was heavily influenced, if not occupied by, lower Colorado River peoples. Additionally, trade along the Mojave River extended Hakataya influence west and appears to have blocked all Anasazi influence west of the Cronise Basin and south of the New York and Providence mountains by 1000 B.P.; this influence apparently continued well after the Saratoga Springs Period (Warren 1984:423).

In sum, the Rose Spring (Saratoga Springs) complex is best characterized by cultural diversification with strong regional developments. Turquoise mining and long-distance trade networks appear to have attracted both the Anasazi and Hakataya peoples into the California deserts from the east and southeast, respectively. Trade with the California coastal populations also appears to have been important in the Antelope Valley region and stimulated the development of large, complex villages. In the northwestern Mojave Desert, however, the basic pattern established during the Gypsum complex changed little during the Saratoga Springs Period. Toward the end of the Rose Spring/Saratoga Springs complex, the Hakataya apparently moved far enough north to gain control of the turquoise mines, thus replacing the Anasazi occupation of the eastern California desert.

Late Prehistoric Complex (900 B.P. to Contact). Late Prehistoric sites contain a significantly different suite of material culture than seen in the preceding archaeological complexes. Characteristic artifacts of the Late Prehistoric complex include Desert series projectile points (Desert Side-notched and Cottonwood Triangular), Brown Ware ceramics, Lower Colorado Buff Ware, higher frequencies of milling stones (e.g., unshaped handstones, mortars, and pestles), incised stones, and shell beads (Warren and Crabtree 1986). The faunal assemblages typically contain deer, rabbits/hares, reptile, and rodents. The use of obsidian dropped off during this time with the increased use of cryptocrystalline silicates.

Evidence of large occupation sites, representing semi-permanent and permanent villages, characterizes Late Prehistoric settlement strategies. Large, complex house pit village sites (e.g., Guapiabit in Summit Valley) were established along the headwaters of the Mojave River (Smith 1963) and were somewhat similar to those reported in Antelope Valley. Although both of these areas appear to have participated in extensive trade between the desert and the coast, the lack of Buff and

Brown Ware pottery at the Antelope Valley sites suggests that these people were minimally influenced by the Hakataya developments along the Mojave River (Warren 1984:426).
The Late Prehistoric complex marks an era of increased linguistic complexity within the Mojave Desert. One of the most important regional developments of the Late Prehistoric complex was the apparent expansion of Numic-speakers (Shoshonean groups) throughout most of the Great Basin. Many researchers accept the idea that sometime around 1000 B.P., the Numa spread westward from a homeland in the southwestern Great Basin, possibly from Death Valley (Lamb 1958) or Owens Valley (Bettinger and Baumhoff 1982). While there is little dispute that the Numic spread occurred, there is much disagreement over its mechanics and timing (Madsen and Rhode 1994).

Regional cultural developments established during the preceding Rose Spring (and Saratoga Springs) complex continued with some modifications. In the Southern Desert region (i.e., Colorado Desert; southeastern Mojave Desert), Brown and Buff Ware pottery, first appearing on the lower Colorado River at about 1200 B.P., started to diffuse across the California deserts by about 1100 B.P. (Warren 1984:425). Associated with the diffusion of this pottery were Desert Side-notched (DSN) and Cottonwood Triangular projectile points dating to about 850 to 800 B.P., suggesting a continued spread of Hakataya influences. This influence appears to have diminished during the late Protohistoric Period when the extensive trade networks along the Mojave River and in Antelope Valley appear to have broken down and the large village sites were abandoned. Warren (1984:428) provides two possible explanations for the disruption of trade networks: (1) the drying up of the lakes in the Cronise Basin; and/or (2) the movement of Chemehuevi southward across the trade routes during late protohistoric times.

Socio-cultural Interaction and the Prehistory of the Mojave Desert. Indigenous life in the Mojave Desert did not occur in a vacuum. The interaction between desert dwellers and peoples from neighboring regions was a part of life and is abundantly evident in the archaeological and ethnographic data. Mojave traders would routinely cross the Mojave Desert from their home along the Lower Colorado River (modern City of Needles) to destinations along the Coast (Los Angeles/Santa Barbara). Obsidian derived from the Coso source near China Lake, as well as smaller amounts from additional sources farther north (Casa Diablo, Mono, etc.), are well documented in Indigenous archaeological sites associated with the Rose Spring complex. In addition, shell beads originating from the Santa Barbara Channel region as well as from the Gulf of California are found in archaeological deposits throughout southern California. There is little doubt that social interaction, material exchange networks with neighboring regions, as well as population movements (e.g., Chemehuevi migration to Twenty-nine Palms during historic times) influenced material cultural development in the Mojave Desert.

4.2.2 Ethnographic Context

In a recent discussion of Mojave Desert Ethnohistory, Earle (n.d.) identified the region of the lower Mojave River Valley and adjacent areas as a “zone of interaction between several neighboring ethnic groups” during the late eighteenth century, including the Mountain and Desert Serrano (Vanyumé), Chemehuevi, Desert Kawaiisu, and the Mojave. The Vanyumé territory is generally accepted as consisting of the “area south of the riverbed of the lower Mojave River” and to the southeast in the foothills of the San Bernardino Mountains, although the area also was occupied by clan and subgroupings belonging to the Serrano of the San Bernardino Mountains (Earle n.d:1). Many of the uncertainties regarding the nature of the relationship between Mountain and Desert Serrano and the

timing of the Vanyumé occupation of the area have been resolved through recent ethnohistorical research (Earle 1990, 2004a, 2004b, and 2005).

At Spanish contact, along the western course of the Mojave River was likely utilized by the Takic-speaking Desert Serrano, or Vanyumé (Bean and Smith 1978; Earle 1990, 1997; Kroeber 1925), while the central and eastern portions of the area south of the Mojave National Preserve may have been occupied by the desert division of the Chemehuevi; this latter area also likely saw sporadic occupation and use by Mojave traders from the Colorado River on their way to and from the coastal regions to obtain beads and other ornaments of marine shell (Earle 2009).

After the beginning of Spanish settlement along coastal California, several Spanish military expeditions passed through the general Project region during the first decade of the nineteenth century (Cook 1960; Earle 1997:78). These, and other unrecorded military forays, were intended to round up missionized native people who had fled the southern California missions, particularly the San Fernando and San Gabriel missions.

Diary accounts of travel through the Mojave River region left by Franciscan missionaries Father Garcés (1776), Zalvidea (1806), and Nuez (1819) have provided important information on the native settlement, village locations, and place names along the Mojave River (Earle 2005:7-10). Both Garcés and Jedediah Smith heard versions of the term Vanyumé used to refer to the native inhabitants of the Mojave River corridor (Earle 2005:4). Kroeber (1925:614-615) also referred to the native peoples of the Mojave River region as Vanyumé, whom he described as a linguistically differentiated desert division of the Serrano language and culture group, the latter being historically associated with the San Bernardino Mountains and surrounding areas. Mojave groups along the Colorado River also appeared to distinguish between what they called the Vanyumé of the Mojave River and the Serrano-speakers of the San Bernardino Mountain regions (Earle 2005:4).

By the 1840s and through much of the nineteenth century, Numic-speaking Chemehuevi and related Southern Paiute peoples from the Providence Mountains region and southern Nevada slowly moved westward and southwestward into the western Mojave Desert area (Earle 1997:78). In effect, these cultural groups replaced the Takic-speaking Serrano who had been previously removed to the missions and established small settlements in the region for varying periods of time where livestock rustling raids became common. After the Civil War was over, the flood of non-native settlers and accompanying livestock threatened the traditional native subsistence base. Thus, dispossessed of the traditional sources of subsistence, the Serrano went to work building railroads and in newly opened mines, as well as on ranches for the new Euromerican settlers.

In the late eighteenth century, the Mojave River formed portions of a major native travel and exchange corridor between the Colorado River and points east and the southern San Joaquin Valley and the Pacific Coast. The Vanyumé occupied the Mojave River portion of this corridor, while the Chemehuevi had settled the desert region to the east of the Sinks of the Mojave, and the Desert Kawaiisu ranged to the north of the Mojave River. Mojave traders from the Colorado River traveled via this corridor to the southern San Joaquin Valley and coastal southern California to acquire shell beads and other items for exchange (Earle 2005:1). Marine shell beads, particularly those made from the Olivella shell, and abalone ornaments were obtained directly from the Chumash-speaking groups of coastal southern California; shell beads imported from Chumash territory could also be obtained from the Yokuts of the southern San Joaquin Valley (Earle 2005:12).

Regarding the use of the Mojave River as a trade/travel corridor, Earle states that "The late eighteenth century political geography of this area appears to have reflected the importance of this travel corridor to long-distance exchange, and particularly to the exchange involving Pacific coast shell beads which served as an important medium of exchange, and which were circulated far to the east of desert California" (Earle 2005:1).

Ethnohistorical information on the Mojave River area from the 1770s through the 1840s makes it clear that the Mojave River communities of the Vanyumé had developed long-standing political and social ties with the Mojave and functioned as intermediaries in the longer distance trade networks maintained by the Mojave. The frequency of Mojave long-distance travel through the region created an unusual situation, as they often recognized sacred places that were located hundreds of miles to the west of their zone of settlement and flood farming on the Colorado River. The Mojave traders negotiating the Mojave River route relied on the Vanyumé for sustenance and shelter along the trek, as they did not carry their own supplies (Earle 2005:10; Harrington 1986: III:167:20). Gifts of shell beads and other goods were bestowed upon the Vanyumé as reciprocal exchanges for this hospitality and cemented relationships between the two groups (Earle 2005:30).

Certain aspects of the two ethnographic groups that likely occupied and/or utilized various portions of the Project area, namely the Vanyumé, and Mojave, are provided in the following sections.

Vanyumé (Serrano)

The Vanyumé were a Takic-speaking group who occupied settlements along the Mojave River drainage and to the southeast in the foothills of the San Bernardino Mountains. Thus, the Project area vicinity appears to have been a favored territory for this group. Elements of the Vanyumé land use and settlement system, subsistence regime, and trade and external relations may have shaped the archaeological record of the Project area. Each of these elements as it relates to the Vanyumé is discussed below.

Vanyumé seasonal or permanent settlement of the western Mojave Desert lowland frontier occurred where water and other resources were available, such as along the Mojave River. However, the upland or higher altitude areas within their territory were preferred for permanent settlement because of the availability of tree crops (acorns [*Quercus* sp.] and piñon [*Pinus monophylla*]), as well as the availability of water, forage, and the greater seasonal availability of certain classes of game (Earle 1997:62). Vanyumé dwellings consisted of circular, domed tule- mat houses built around willow frames (Pritzker 2000:142). Most household activities took place in nearby ramadas. Other structures associated with the Vanyumé include granaries, sweat houses, and large ceremonial houses (Pritzker 2000:142).

Two ethnohistoric Vanyumé village sites have been identified by Earle (n.d.). The location of *Ahamoha*, or birthplace of Moha, a Vanyumé informant to Kroeber who survived an attack by the Mojaves in the 1830s, is situated somewhere in the Barstow-Daggett area. Moha herself placed the village near Daggett, while a Mojave informant to Kroeber stated it was a few miles north of Victorville (Earle 2005:9–10). The Vanyumé apparently occupied the village during the 1820s. A second village site, *Timiŋa*, was reportedly located at Newberry Springs (Harrington 1986:147, 695). Earle places the village approximately 5 miles west of the southwest shore of Troy Dry Lake. The Vanyumé apparently occupied the village area prior to the 1830s, by which time Chemehuevi bands were reported in the area. Earle (n.d.:27) notes, "As late as 1904, a small group of 'Paiute' were mentioned

as still following a traditional way of life in the Newberry Mountains and the Newberry Springs region."

For the most part, the harsh desert environment that characterizes the general Project region permitted only the sparsest of populations composed of groups of nuclear families joined by kinship ties. These small groups practiced a hunter-gatherer lifestyle, moving seasonally, or more frequently, in response to the local availability of water and food resources. Generally speaking, winter was a time in which nuclear families camped together at the more permanent settlements in the San Bernardino Mountains or along the Mojave River, living off of stored seeds or pine nuts and dried meats (Earle 1997:62). In the spring, or whenever the winter-stored foodstuffs were exhausted, the camps broke up into family units, which began foraging for the buds and stalks of the Joshua tree (*Yucca brevifolia*), mesquite (*Prosopis* sp.) bean, and seasonally available seeds and tubers. Summer was a time of maximum population dispersion, in which very small groups of people could be found exploiting rice grass (*Oryzopsis hymenoides*) on the large alluvial fans. During the fall months, the California juniper (*Juniperus californica*), piñon, and live oak were harvested in anticipation of the lean winter months.

The sparse resources of the study region also produced a highly diverse hunting economy, where small game was an important source of protein. Mammals such as antelope, deer, mountain sheep, rabbits, squirrels, wood rats, and desert chipmunks were hunted; lizards, chuckwallas, rattlesnakes, desert tortoises, birds and bird eggs, and insects were also eaten when encountered (Steward 1938:33–34).

A variety of tools were used by the Vanyumé for the procurement and processing of subsistence resources. The sinew-backed bow and arrows of willow or cane were used for hunting both large and small game. Baskets were used extensively for carrying, seed beating, winnowing, and parching, boiling water, and storage. Digging sticks were used for procuring roots and tubers. Finally, manos and milling stones, mortars and pestles, and pottery were used for the processing of food-related items. As with most Native groups in California, the basic division of labor was by sex and there were few individual specializations; thus, the nuclear family was a self- sufficient unit as long as communal tasks (e.g., animal drives) were unnecessary. Women were typically responsible for the gathering of the plant foods and food preparation, while the men conducted most of the hunting. Each sex was also responsible for the manufacture of the tools required for their respective tasks: women made the baskets, pottery, and clothing; men generally produced the flaked stone tools and built the houses (Steward 1938:44).

Trade was conducted with other Native groups on the Pacific Coast and in the Central Valley to the west, as well as with groups along the Colorado River and the greater Southwest. Vanyumé groups apparently traded for goods that were consumed locally, as well as serving as intermediaries in longer-distance commerce relationships.

Mojave

The Mojave Indians are a tribe of the Yuman linguistic stock, which is spoken by various tribes in eastern California, Arizona, and Mexico. The geographic region associated with the Mojave Indians lies within the Mohave Valley, extending from just north of the modern Davis Dam north to the area around Needles, California. Historically, the Colorado River Valley was also part of the Mojave Tribe territory, and a faction of that tribe still resides in that region, which is part of the Colorado River Indian Tribe Reservation.

The Mojave subsistence economy was dependent on several wild and agricultural staples that, in good flood years, were grown in plentiful supply within their territory. The most important staple foods to the Mojave were the standard Southwest/Mesoamerican agricultural crops (i.e., corn, beans, and squash), supplemented by wild mesquite pods (both honey mesquite and screwbean), fish, and rabbits (Castetter and Bell 1951). Other important dietary plants and vegetal foods included pigweed (*Amaranthus palmeri*) seeds and greens, quailbush (*Atriplex* sp.) fruits, arrowhead (*Sagittaria*) root, and cattail (*Typha*) roots and pollen (Castetter and Bell 1951). These key staples of the Mojave diet were found in and near the Colorado River bottomlands. Upland forays to the alluvial slopes above the river and to surrounding mountain areas were made, however, for Agave (*Agave* sp.), cactus (*Opuntia* sp.), and other upland desert resources (Castetter and Bell 1951).

The Mojave system (shared by Yuman/Lower Colorado River tribes) of floodplain agriculture was unique in the Southwest and differed from the agricultural system of their neighbors to the east along the Gila River that resulted in the construction of vast irrigation systems. The Colorado River, fed by snow melt from the Colorado Plateau and the Rocky Mountains, overflowed seasonally onto the broad (4- to 6-mi-wide) river floodplain. In June, when the floodwaters receded, a blanket of new, fertile, nutrient rich silt was left behind, for the Mojave to plant their staple crops. The Mojave tended to small garden plots, watering, weeding, and disposing of varmints until the fall harvest when they would dry their crops and store them in granaries for the winter months. According to Castetter and Bell (1951), the Mojave also practiced semi-cultivation of several grasses planted in the thin mud flats near the riverbank, including panic grass (*Panicum hirticaule* and *P. sonorum*), crowfoot grass (*Dactyloctenium aegypticum*), barnyard grass (*Echinochloa cusgalli*), and dock (*Rumex* sp.).

Due to the paucity of game along the river, hunting was of minor significance to the general Mojave subsistence strategy (Castetter and Bell 1951). Favored game included woodrats (*Neotoma sp*.), rabbits (*Sylvilagus audubonii*), mule deer (*Odocoileus hemionus*), and desert bighorn sheep (*Ovis canadensis*). Procurement of large game animals likely followed an opportunistic strategy (Castetter and Bell 1951). The majority of protein came from piscine resources. The Mojave utilized large nets for fishing and were quite successful at procuring the fish from the shallow, oxbow lakes adjacent to the Colorado River (Castetter and Bell 1951).

Mojave settlements or villages were spread out, with individual homes 100 m or more apart and neighborhood clusters of such homes extending for 1 to 2 mi along the river. Neighborhood clusters, in turn, were found 4 to 5 mi apart. Nuclear Mojave families apparently owned or had territorial and gathering rights to particular sections of the floodplain. Families would establish a residence, plant crops, and gather pods from local mesquite trees. Typical Mojave architecture included open-sided ramadas during the summer months that were constructed on the floodplain, only to be destroyed during the springtime floods. Winter homes were on low rises above the floodplains and consisted of square-shaped, semi-subterranean structures. Construction of these houses included placing

four large cottonwood posts upright, then building a flat-topped roof with sloping sides. A thatched roof of arrow weed (*Pleuchea sericea*) was then covered with piled sand and packed mud for an airtight and watertight roof (Smith 1977; Stewart 1983).

The Mojave retained an egalitarian political system colored by influential leaders that included a paramount chief, several local sub-chiefs, as well as healers and feast or festival leaders. There is some debate regarding the aboriginal roots of paramount chiefdom political organization, and it is possible that such positions were made in response to the pressures of maintaining diplomatic relations with the European Americans. The Mojave, however, did consider themselves as one nation with a clearly defined territory (Stewart 1983).

The Mojave were renowned for their long-distance trade networks, which connected the Colorado River to the California coastline and American Southwest. The Mojave reportedly traveled as far east as Zuni Pueblo in New Mexico and as far west as San Gabriel and Santa Barbara in southern California. The Mojave trail, which spanned the length of the trade route between the Colorado River and Pacific Coast, linked inland Uto-Aztecan speaking groups such as the Serrano and the Tataviam, to coastal Chumash and Gabrielino cultures as well as to River Pai and Southwest Puebloan cultures. Exotic items such as pacific marine shell and in later times, cotton cloth and woven blankets, were exchanged along the long-distance trade networks, oftentimes by the Mojave who were avid traders and middlemen. The Mojave facilitated the trade of California marine shell to the southwest, which in turn was traded as far west as Texas, and brought goods such as pottery, gourd rattles, and blankets to California. While the focus of the Mojave trade network appears to have been in the major economic centers found along the California coast and Southwestern Pueblos, the Mojave undoubtedly traded goods at the various interior village settlements, resulting in the sparse dispersal of multiregional material items throughout the California desert (Earle 2005; Koerper 1996; Stewart 1983).

4.2.3 Historic Context

Exploration and Early Settlement – Mojave Desert and San Bernardino County

For the most part, the western Mojave Desert has a somewhat abbreviated history as it was a frontier to be crossed rather than settled. In 1776, Francisco Garcés, a priest associated with a Spanish mission in Tucson, traveled with several Native American guides along the Old Mojave Indian Trail and approached the Mojave River area in the vicinity of present-day Hesperia in March of that year.
In 1821, Mexico declared its independence, and as the colonial administration disintegrated, Euro-American explorers and entrepreneurs began exploring the California desert, the first of which was Jedediah Strong Smith, who first crossed the Colorado River into California in 1826. As with Garcés, several Native American guides along the Old Mojave Indian Trail led Smith and his group of approximately 30 trappers over the Cajon Pass, to the Mission San Gabriel. As early as 1828, Native American horse thieves, including some from the Mojaves, the Chemehuevis, and the Utes, as well as white men and runaway mission neophytes, began raiding the large coastal missions and Mexican ranchos stealing hundreds of fine horses. Summit Valley, just east of the Cajon Pass, likely became a rendezvous point for the horse thieves prior to crossing the Mojave Desert (De Barros 1990:2-51).
By the early 1830s, the Old Mojave Trail became a part of the Old Spanish Trail, a major commercial caravan route that linked northern New Mexico with Los Angeles. The first charted route across the Great Basin, the Old Spanish Trail witnessed heavy commercial traffic in wool products, horses,

livestock, and other goods traded between New Mexico and California during the Mexican rancho period (1833–1848) (Parsons 2004:21). After gold was discovered on the western slope of the Sierra Nevada Mountains in 1849, many immigrants followed the Old Spanish Trail in search of riches in California. California officially became a state of the United States in 1850.

One of the most important journeys along the Old Spanish Trail was that of John C. Frémont, whose explorations of the Great Basin in 1843–1845 for the U.S. Corps of Topographical Engineers provided the first reliable descriptions and maps of the region and paved the way for the United States' annexation of what are now the states of New Mexico, Utah, Arizona, Nevada, and California. It was Frémont who named and—through his widely published maps— popularized the Old Spanish Trail (Parsons 2004:22).

The San Bernardino Baseline and Meridian were established in 1853, and mapping of the desert lands began in earnest, followed by settlers seeking land to homestead (Sturm 1993:17). Also, in the early 1850s, a graded road had been built up the southern face of the San Bernardino Mountains, making it possible to freight wagon loads of supplies and lumber to and from the sawmills in the mountains that provided lumber for residences and commercial businesses in the San Bernardino Valley.

After the Mormons colonized Utah, Salt Lake City gradually supplanted Santa Fe as a destination of commerce, and this route became known as the Santa Fe and Salt Lake Trail (Sturm 1993:16). The Old Spanish Trail had become a favored route for Mormon settlers traveling from the Great Salt Lake to the San Bernardino area of southern California; thus, becoming known as the "Mormon Trail." Today, the Mormon Trail/Santa Fe and Salt Lake Trail/Old Spanish Trail/Mojave Trail is California Historical Landmark No. 577.

Baker

The town of Baker was founded in 1908 as a rail station along the Tonopah and Tidewater (T&T) Railroad and later established as a community in 1929. The town was named after Richard C. Baker, who largely aided in the foundation of the T&T Railroad with Francis Smith (Desert USA 2024). The primary purpose of this railway was to transport borax between Beatty, Nevada and Ludlow, California (Abandoned Rails n.d.).

Two roadways within and adjacent to Baker, the Arrowhead Trail and Death Valley Road, began to be formalized due to the rising occurrence and reliability of personal vehicles. Established in 1916, much of Arrowhead Trail was constructed following the alignment of preexisting routes, such as the Mormon Trail, which were integrated into the route. Arrowhead Trail initially spanned as a simple graded road and was later improved to have an oiled gravel road surface. In 1926, Arrowhead Trail was superseded and absorbed by U.S.91. By the 1930s, much of the former Arrowhead Trail was widened and improved to accommodate increased traffic in the region. In the 1950s and 1960s, portions of the former route were integrated into Interstate 15. The road once provided a link between the Lincoln Highway in Utah and the Old National Trails route in California. Death Valley Road is part of State Route 127, which was added to the state highway system in 1933 and provides access to

services, other recreational lands, and local access routes, as well as State Route 178, which enters Death Valley National Park.

The development of these roads stimulated travel through the Mojave Desert region, Las Vegas, and National Parks, including Death Valley National Park. With the rise of travel through the area, Baker was viewed as a location to capitalize on the increase in tourism, especially as the community was starting to be considered as the gateway to Death Valley. Several motels, restaurants, and gas stations catering to travelling motorists were opened between the 1920s and 1960s. One of the more notable businesses was the Arne's Royal Hawaiian Motel, which opened in 1957. The motel offered 43 rooms, a tennis court, recreation room, and a pool.

Despite the initial economic rise due to tourism, there was no significant economic boom and development within the Baker community. The construction of I-15, the ability for motorists to travel longer distances faster, and the boom of hotels in Las Vegas drew tourists' attention away from Baker. Consequently, the motels and many of the restaurants closed. Today, Baker is home to a population of less than 1000. Baker still serves as a stopover for motorists traveling along I-15 and boasts attractions like Alien Jerky and the world's largest thermometer, built in 1991 and renovated to utilize LED lights in 2014 (Desert USA 2024).

4.3 Additional Research

A review of available GLO plat maps and diagrams of Township 14 North, Range 8 East (Sections 25 and 36), and Township 14 North, Range 9 East (Section 30) was reviewed. The 1856 GLO map for Township 14 North, Range 9 East did not have any terrain, structures, roads, or other identifying features within or near the APE. Further, the 1857 GLO map for Township 14 North, Range 8 East is also relatively blank except for "Hills" which are depicted in both Sections 25 and 30.

In addition to GLO survey maps, historic aerial imagery and topographic maps of the APE were reviewed. Topographic maps of the APE range between 1957 and 2021 (Historic Aerials 2024). The earlier topographic maps indicate that Baker Boulevard is in its historic alignment. In 1983, the construction of Interstate-15 (The Mojave Freeway/I-15) was completed, and Baker Boulevard is in the same alignment. During this time, the area of Baker was developed, which included the construction of restaurants, a hotel, some residential areas, gas stations, electric charging stations, and other commercial buildings. Today, Baker Boulevard is largely unchanged and in its historic alignment.

4.4 Archaeological Site Sensitivity

To determine the archaeological sensitivity of the APE, historic literature, geographic features, soils, landform modifications, and past cultural resources survey results were reviewed. The geological formations within the APE consist of Pleistocene-Holocene aged soils (Department of Conservation 1978). Unfortunately, no digital data of the soils composition within the APE is available (Web Soil Survey 2024 and SoilWeb 2024), however, the site record for [redacted]

[redacted] notes the topsoil to be composed of a silty granite and gravel (**Appendix D**).

A review of historic aerials and events was completed to assist in determining if the topography within the APE had undergone modifications. Several flooding events occurred within Baker in 1862, 1938, 1978, 2005, and 2014. These events would have eroded soils from the APE, potentially removing or damaging archaeological resources, while also redepositing soils from other areas. The most severe flood appears to have been the March 1938 flood, which damaged the former banks of the Mojave River Channel and resulted in damage to the Baker Boulevard bridge which predates the existing structure. It is unclear if the shallow embankments of the channel were washed away during the flood event or if the channel was significantly widened to prevent future flooding damage. Either way, the much shorter 93-feet long bridge was repaired and lengthened to approximately 408 feet to match the significantly wider channel constructed adjacent to the bridge. This indicates that a great amount of natural soil was removed from the APE. If cultural resources were present along these banks, they have since most likely been removed during the expansion of the flood control channel.

Three additional distinct modifications occurred within the Mojave River Channel, as shown below. First, the 1973 aerial image (**Image 1**) indicates an artificial basin was created north of the bridge with a distinct low-flow water channel visibly transporting water. Later, the 1994 aerial image (**Image 2**) shows a more uniform, expanded corridor of the Mojave River Channel created by and currently maintained by the San Bernardino County Flood Control District. The basin is also no longer present. Last, sometime between 1994 and 2004, the southeast extent of the channel was narrowed as a result of a commercial property extending approximately 100 feet into the channel (**Image 3**). This lot expansion required excavation of the existing channel bed and embankments and deposition of fill into the channel to maintain the lot's elevation and extend its square footage and usable space.

The remainder of the APE largely consists of previously disturbed soils due to the construction of the roadway, Baker Bridge piers and abutments, and installation of utilities (buried and aerial) and street lighting.

Although Pleistocene-Holocene aged soils are present (Department of Conservation 1978), which were present during human occupation, the APE has undergone several decades of extensive landform modification due to flood events, creation and maintenance of the Mojave River Channel for flood control, construction of the roadway, installation of buried and aerial utilities, installation of roadway lighting, and construction of the existing bridge, including its piers and abutments. The overall APE vicinity has also been heavily modified from its original landscape due to the construction of gas stations and other commercial ventures. These extensive disturbances, combined with a lack of recorded archaeological resources within the APE confirm there is a very low potential for archaeological resources to be present within the APE.

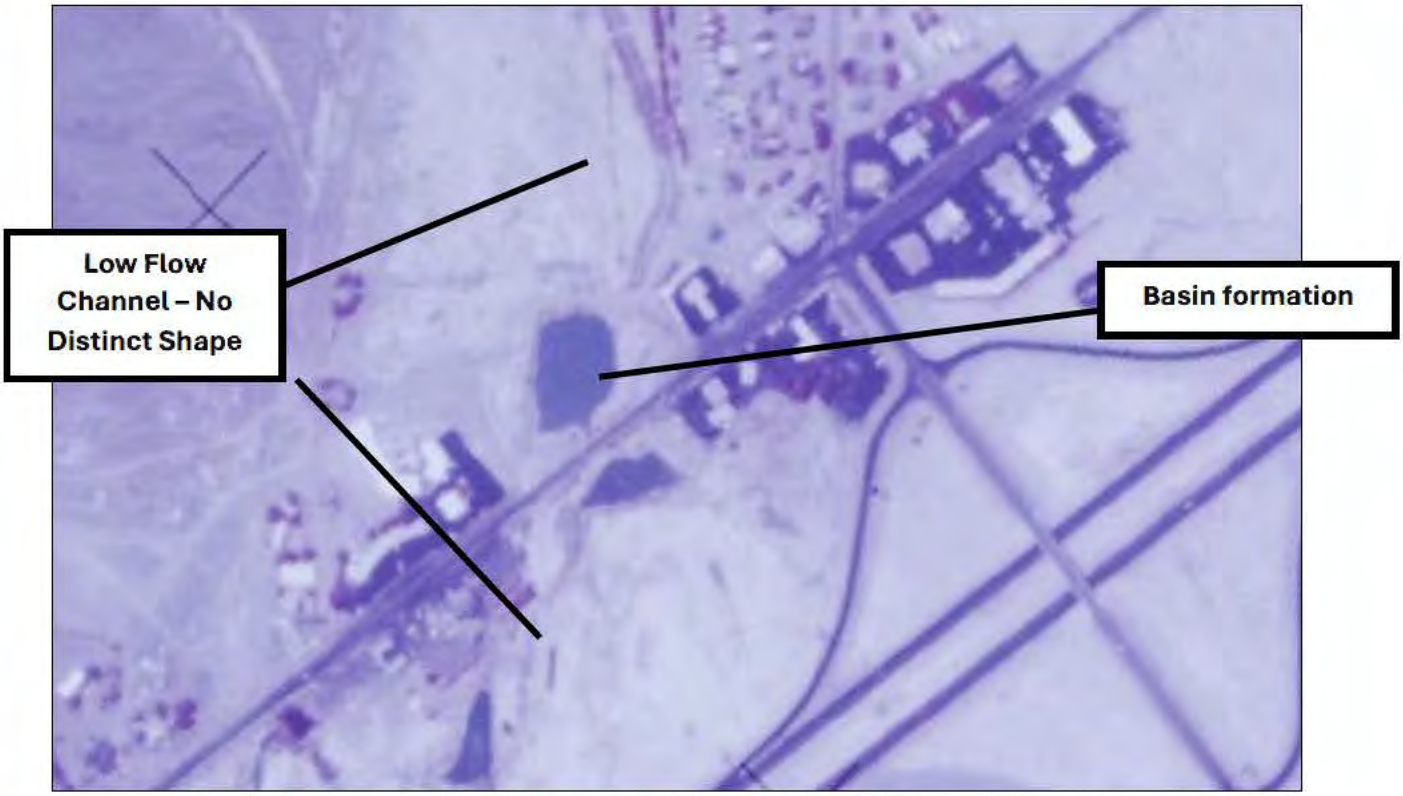

Image 1: 1973 Aerial overview of APE

Image 2: 1994 Aerial overview of APE.

Image 3: 2023 Aerial overview of APE.

4.5 Native American Consultation

A letter and map figures depicting the Project vicinity and location were sent to the NAHC requesting a review of the Sacred Lands File (SLF) for any Native American cultural resources that might be affected by the Project. The NAHC replied that the results of the review were *negative*.

On December 18, 2023, initial consultation letters were mailed to the Twenty-Nine Palms Band, Colorado River Indian Tribes, and the Yuhaaviatam of San Manual Nation (formerly San Manuel Band of Mission Indians). The Yuhaaviatam of San Manual Nation replied December 28, 2023 that the Project is outside of their area of interest and declined to consult on the Project. No response from the Twenty-Nine Palms Band of Mission Indians has been received.

5. SIGNIFICANCE THRESHOLDS AND METHODOLOGY

5.1 Significance Thresholds

In accordance with Appendix G, Item V. of the State CEQA Guidelines, the Project may have a significant impact on cultural resources if it would:

a) Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5.
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5.
c) Disturb any human remains, including those interred outside of dedicated cemeteries.

Also, in accordance with Appendix G, Item XVIII. of the State CEQA Guidelines, the Project may have a significant impact on tribal cultural resources if it would:

a) Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code § 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:
    i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or
    ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code § 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code § 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

The definition of historical resource for CEQA includes properties listed in or determined eligible for the California Register. Properties listed in a local register of historical resources or identified as historically significant in a historic resources survey (provided certain statutory criteria and requirements are satisfied) are also presumed to be a historical resource unless a preponderance of evidence demonstrates that the property is not historically or culturally significant. A lead agency may also treat a property as historical resource if it meets statutory requirements and substantial evidence supports the conclusion.

The State CEQA Guidelines set the standard for determining the significance of impacts to historical resources in Title 14 California Code of Regulations Section 15064.5(b), which states:

> *A project with an effect that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment.*

Title 14 California Code of Regulations Section 15064.5(b)(1) further clarifies "substantial adverse change" as follows:

> *Substantial adverse change in the significance of an historical resource 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*.

Title 14 California Code of Regulations Section 15064.5(b)(2) in turn explains that a historical resource is "materially impaired" when a project:

> *Demolishes or materially alters in an adverse manner those physical characteristics of an 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*.

5.1.1 Secretary of the Interior's Standards for the Treatment of Historic Properties

Projects that may affect historical resources are considered mitigated to a level of less than significant if they are conducted in a manner consistent with the Secretary of the Interior's Standards for the Treatment of Historic Properties (Standards). The Standards were issued by the National Park Service and are accompanied by Guidelines for four types of treatments for historical resources: Preservation, Rehabilitation, Restoration, and Reconstruction. The most common treatment is rehabilitation and is the treatment that applies to the Proposed Project. The definition of rehabilitation assumes that at least some alteration of the historic property will be needed in order to provide for an efficient contemporary use; however, these alterations must not damage or destroy materials, features, or finishes that are important in defining the property's historic character.
The Standards for Rehabilitation are as follows:

1. A property will be used as it was historically or be given a new use that requires minimal change to its distinctive materials, features, spaces and spatial relationships.
2. The historic character of a property will be retained and preserved. The removal of distinctive materials or alteration of features, spaces, and spatial relationships that characterize a property will be avoided.
3. Each property will be recognized as a physical record of its time, place and use. Changes that create a false sense of historical development, such as adding conjectural features or elements from other historic properties, will not be undertaken.
4. Changes to a property that have acquired significance in their own right will be retained and preserved.
5. Distinctive materials, features, finishes and construction techniques or examples of craftsmanship that characterize a property will be preserved.
6. Deteriorated historic features will be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature shall match the old in design, color, texture, and where possible, materials. Replacement of missing features will be substantiated by documentary and physical evidence.
7. Chemical or physical treatments, if appropriate, will be undertaken using the gentlest means possible. Treatments that cause damage to historic materials will not be used.

8. Archeological resources will be protected and preserved in place. If such resources must be disturbed, mitigation measures will be undertaken.
9. New additions, exterior alterations, or related new construction will not destroy historic materials, features, and spatial relationships that characterize the property. The new work shall be differentiated from the old and will be compatible with the historic materials, features, size, scale and proportion, and massing to protect the integrity of the property and its environment.
10. New additions and adjacent or related new construction will be undertaken in such a manner that if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.

It is important to note that the Standards are not intended to be prescriptive, but instead provide general guidance. They are intended to be flexible and adaptable to specific project conditions to balance continuity and change, while retaining materials and features to the maximum extent feasible. Their interpretation requires exercising professional judgment and balancing the various opportunities and constraints of any given project. Not every Standard necessarily applies to every aspect of a project, nor is it necessary to comply with every Standard to achieve compliance. For the Proposed Project, the most applicable Standards for Rehabilitation are standards nine and ten, which provide guidance for new construction that is adjacent to a historic property.

5.2 Methodology

The following is a summary of the methodology utilized for the survey, identification, and recordation of known and potential built environment historical resources in the APE.

5.2.1 Field Methods

An archaeological field survey was conducted on August 8, 2024, by consulting archaeologist Namat Hosseinion for the purposes of identifying and recording archaeological resources. The surface survey was conducted via controlled transects spaced at no greater than 10-meter intervals within the entire APE. Special attention was paid to all observed surface exposures and possible anthropogenic soils. All field conditions and observances were documented in the field notes and photographs. Please see **Appendix B** for representative photographs of the APE conditions.

6. DESCRIPTION OF CULTURAL RESOURCES

No archaeological resources were identified during the pedestrian survey. The survey did confirm that the previously recorded historic-era built environment resources were present and in the same condition as noted in the site record forms: P-36-007689/CA-SBR-7689h - Arrowhead Trail/Highway; P-36-034306 - Death Valley Road; and Bridge No. 54C-0127. These resources and their eligibility for listing on the National Register and California Register are discussed below.

6.1 Bridge No. 54C-0127

The existing bridge was originally built in 1931 as a 93-foot (plus or minus) 5 span simple-supported stringer timber bridge crossing the Mojave River on Baker Boulevard (formerly State Route 31). It was repaired and lengthened in 1938 and 1939. Repairs conducted included replacement of all untreated Douglas Fir timber within the existing bridge with Redwood; the addition of 9 new spans to the west and 8 new spans to the east increasing bridge overall length to 408-feet (plus or minus) along with widening and excavation of the channel beneath to maintain minimum 6-feet vertical clearance.

The bridge was evaluated by Caltrans and is listed on the California Historic Bridge Inventory as a "category 5" bridge, not eligible for the National Register. Research conducted for this Project did not identify any additional information that would contradict the previous evaluation; therefore, an additional evaluation was not completed for this resource. A copy of the Historic Bridge Inventory is included in **Appendix C**. As the California Register significance criteria are modeled on the National Register criteria, this resource is also not considered eligible for listing on the California Register; therefore, it is not considered an historical resource.

6.2 P-36-007689/CA-SBR-7689h (Arrowhead Trail/Highway)

The trail was established in 1916 as a transcontinental road that once spanned over 850 miles between Los Angeles, California, and Salt Lake City, Utah. As a designated all-weather "scenic highway", the development of this road stimulated travel through Southern California. In 1926, the road was absorbed by the U.S. Route 91 and portions of modern-day Interstate 15 (I-15). Today, the resource consists of multiple discontinuous segments that parallel I-15. Within the APE, a short segment was recorded at the intersection of SR 127 and Baker Boulevard. Discontinuous segments have been recorded both immediately west and east of the APE.

These discontinuous segments were previously evaluated by the Bureau of Land Management and determined not eligible for inclusion in the National Register through SHPO consultation. Research conducted for this Project did not identify any additional information that would contradict the previous evaluation; therefore, an additional evaluation was not completed for this resource. A copy of the SHPO concurrence is included in **Appendix C** while the resource recordation form is included in **Appendix D**. As the California Register significance criteria are modeled on the National Register criteria, this resource is also not considered eligible for listing on the California Register; therefore, it is not considered an historical resource.

6.3 P-36-034306 (Death Valley Road)

This resource is a two-lane paved road that originates in Baker near Kelbaker Road and extends northwest for approximately 41 miles. It was designated as SR 127 in 1933. The roadway was evaluated by the Bureau of Land Management and determined not eligible for inclusion in the National Register through consultation with the SHPO. Research conducted for this Project did not identify any additional information that would contradict the previous evaluation; therefore, an additional evaluation was not completed for this resource. A copy of the Office of Historic Preservation's Built Environment Resource Directory which notes the evaluation code of 6Y (not eligible for the National Register) is included in **Appendix C** while the resource recordation form is included in **Appendix D**. As the California Register significance criteria are modeled on the National Register criteria, this resource is also not considered eligible for listing on the California Register; therefore, it is not considered an historical resource.

7. IMPACT ANALYSIS

The following section includes an analysis of Project impacts on cultural resources, including historical resources, archaeological resources, and human remains, and impacts to tribal cultural resources (TCR).

7.1 Cultural Resources

7.1.1 Historical Resources

Impact a) Would the Project cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?

Less than Significant with Mitigation. The only cultural resources identified within the APE were: P-36-007689/CA-SBR-7689h - Arrowhead Trail/Highway; P-36-034306 - Death Valley Road; and Bridge No. 54C-0127. As mentioned, all three resources have been previously determined as not eligible for listing on the National Register through consultation with the SHPO. Research conducted for this Project did not identify any additional information that would contradict the previous evaluations; therefore, additional evaluations were not completed for these resources. Further, as the California Register significance criteria are modeled on the National Register criteria, these resources are also not considered eligible for listing on the California Register; therefore, there are no known historical resources present that could be impacted by the Project.

While there are no known historical resources present within the APE, an assessment of the potential for signficant subsurface cultural resources to be present within the APE was conducted for this Project, as presented in Section 4.4 of this report. This analysis determined the potential as low due to the amount of previous landform modifications throughout the area which would have removed subsurface cultural resources, should they have been present. However, should currently unknown subsurface cultural resources that have the potential to be eligible for the National Register or California Register be encountered during construction, implementation of measures **CR-1** and **CR-2** would reduce Project impacts to less than significant.

7.1.2 Archaeological Resources

Impact b) Would the Project cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?

Less than Significant with Mitigation. The only cultural resources identified within the APE were: P-36-007689/CA-SBR-7689h - Arrowhead Trail/Highway; P-36-034306 - Death Valley Road; and Bridge No. 54C-0127. While these are historic-era cultural resources, they are not considered archaeological resources. Further, all three cultural resources were previously determined as not eligible for listing on the National Register through consultation with the SHPO. As the California Register significance criteria are modeled on the National Register criteria, these resources are also not considered eligible for listing on the California Register.

While there are no known archaeological resources present within the APE, an assessment of the potential for signficant subsurface cultural resources to be present within the APE was conducted for this Project, as presented in Section 4.4 of this report. This analysis determined the potential to be low due to the amount of previous landform modifications throughout the area which would have removed subsurface cultural resources, should they have been present. However, should currently unknown subsurface cultural resources that have the potential to be eligible for the National Register or California Register be encountered during construction, implementation of measures **CR-1** and **CR-2** would reduce Project impacts to less than significant.

7.1.3 Human Remains

Impact c) Would the Project disturb any human remains, including those interred outside of dedicated cemeteries?

Less than Significant with Mitigation. As stated in responses to questions **a)** and **b)**, there are only three cultural resources identified within the APE - P-36-007689/CA-SBR-7689h - Arrowhead Trail/Highway; P-36-034306 - Death Valley Road; and Bridge No. 54C-0127. None of these resources have the potential for associated human remains to be present. Further, as discussed in Section 4.4 of this report, an assessment of the potential for subsurface cultural resources to be present within the APE was conducted for this Project. This analysis determined the potential as low due to the amount of previous landform modifications throughout the area which would have removed subsurface cultural resources, should they have been present. However, should currently unknown human remains be encountered during construction, implementation of measures **CR-1** and **CR-2** would reduce Project impacts to less than significant.

7.2 Tribal Cultural Resources

Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code § 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

Impact i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k)?

Impact ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code § 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code § 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe?

Less than Significant with Mitigation. No TCR was identified during identification and consultation efforts conducted for the Project. As such, the Project is not anticipated to cause a substantial adverse change in the significance of a TCR listed or eligible for listing in the California Register or in

a local register of historic resources as defined in Public Resources Code section 5020.1(k). No impacts are anticipated for the Project related to TCRs.

Further, as noted in Section 4.4 of this report, extensive landform modifications and past ground disturbance associated with widening and maintaining the Mojave River Channel as a flood control channel, construction of the extant bridge, construction of the roadway, installation of buried and aerial utilities, expansion of commercial property into the Mojave River Channel/Soda Lake (Dry Lake), and overall residential/commercial development would have removed any potential TCRs from the APE. However, should currently unknown subsurface cultural resources that have the potential to be considered TCRs be encountered during construction, implementation of measures **CR-1** and **CR-2** would reduce Project impacts to less than significant.

8. CUMULATIVE ANALYSIS

Cumulative impacts under CEQA would be assessd for any identified and impacted historical resoruces. As no such resources are present, no cumulative impacts to any historical resoruces are anticipated for the Project

9. MITIGATION MEASURES

Mitigation Measure CR-1

If cultural materials are discovered during construction, all earth-moving activity within and around the immediate discovery area will be diverted until a qualified archaeologist can assess the nature and significance of the find.

Mitigation Measure CR-2

If human remains are discovered, California Health and Safety Code (H&SC) Section 7050.5 states that further disturbances and activities shall stop in any area or nearby area suspected to overlie remains, and the County Coroner contacted. If the remains are thought by the coroner to be Native American, the coroner will notify the NAHC, who, pursuant to PRC Section 5097.98, will then notify the Most Likely Descendent (MLD). Further provisions of PRC 5097.98 are to be followed as applicable.

10. SIGNIFICANCE OF IMPACTS AFTER MITIGATION

As discussed in Section 7 of this report, implementation of mitigation measures **CR-1** and **CR-2** would reduce Project level impacts to a less than significant level, should any historical resources, archaeological resources, human remains, and/or TCRs be identified during construction of the Project.

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12. LIST OF PREPARERS

DOKKEN ENGINEERING
Amy Dunay, Senior Archaeologist, M.A., R.P.A.

Appendix A
Project Maps

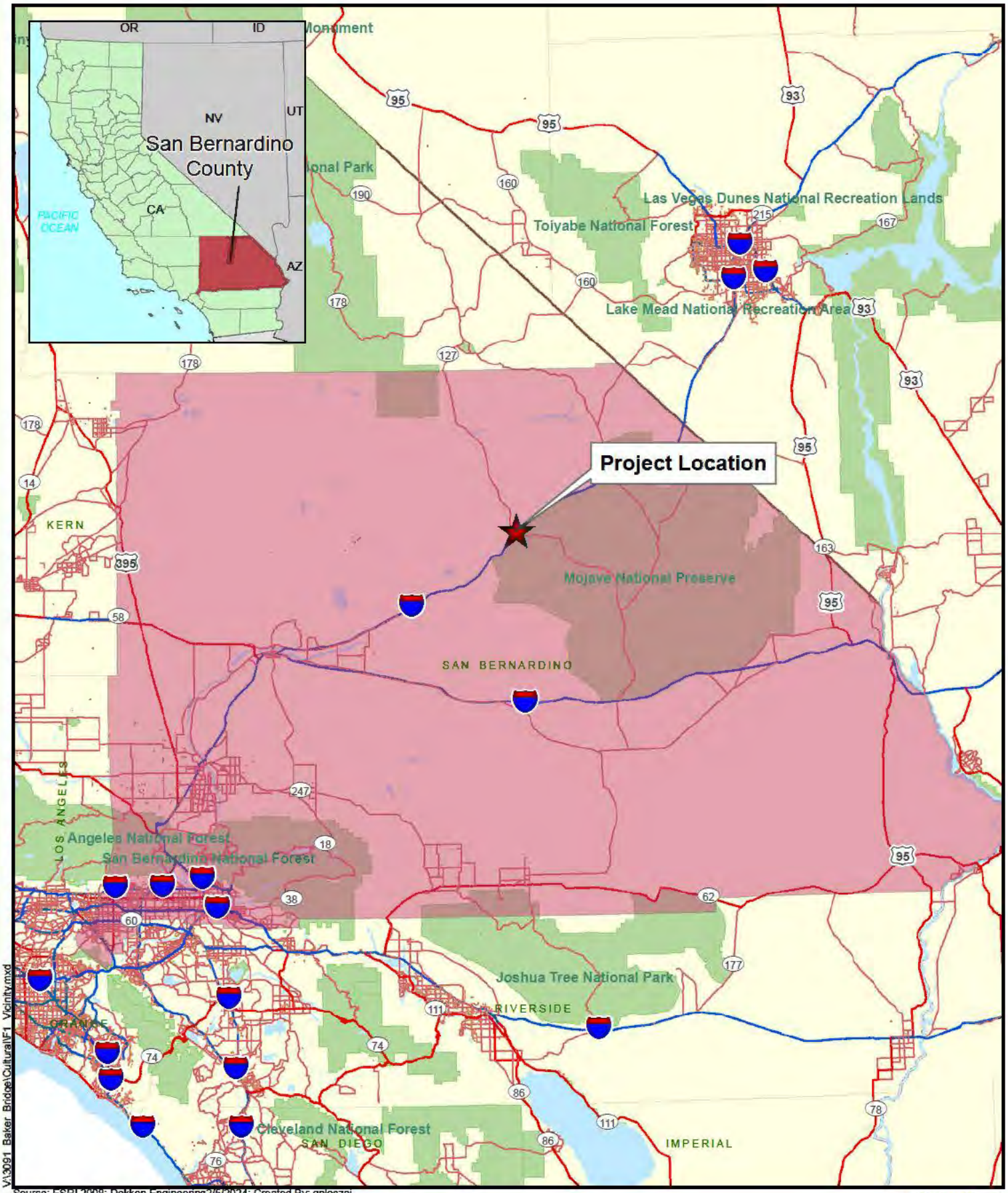
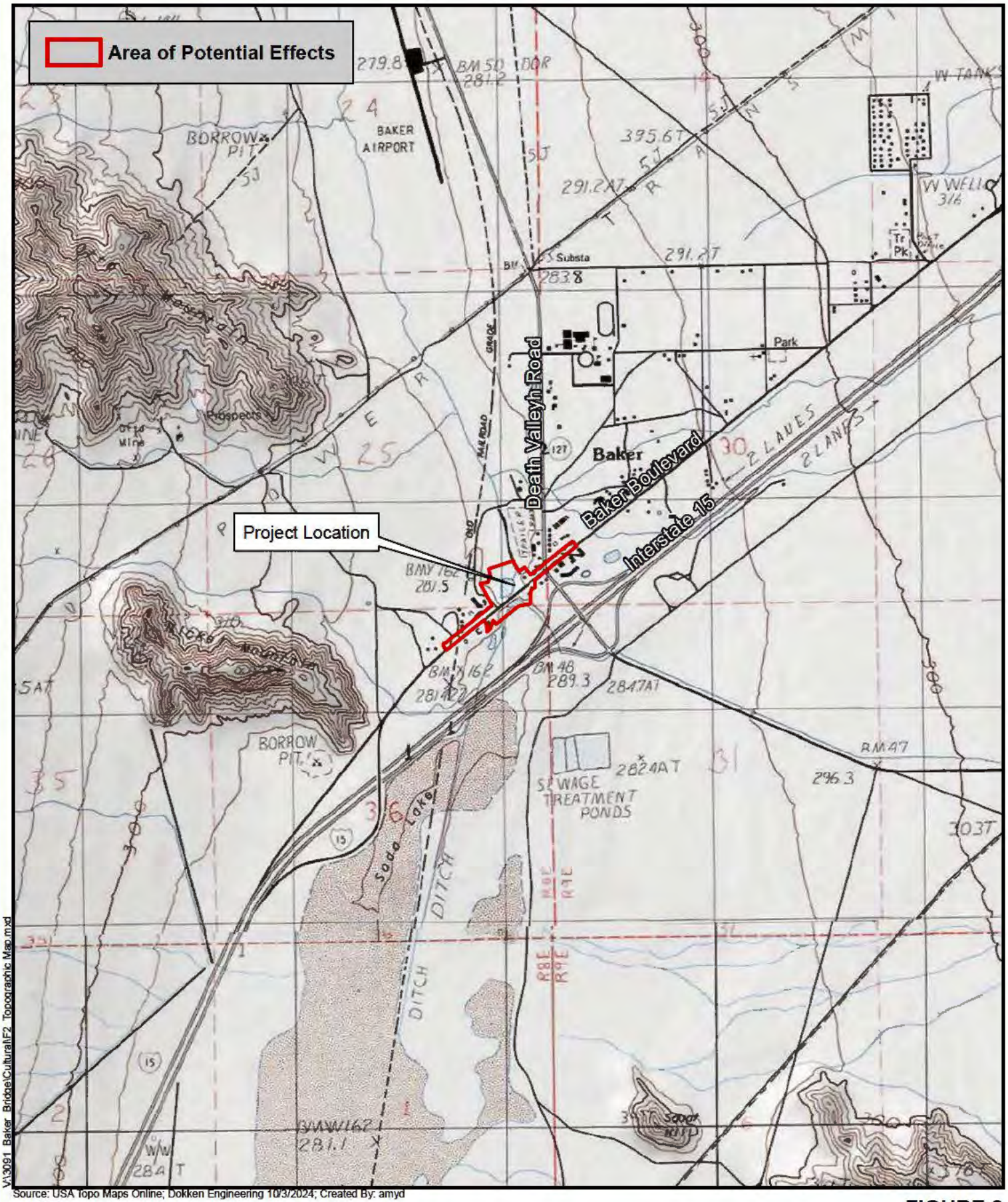


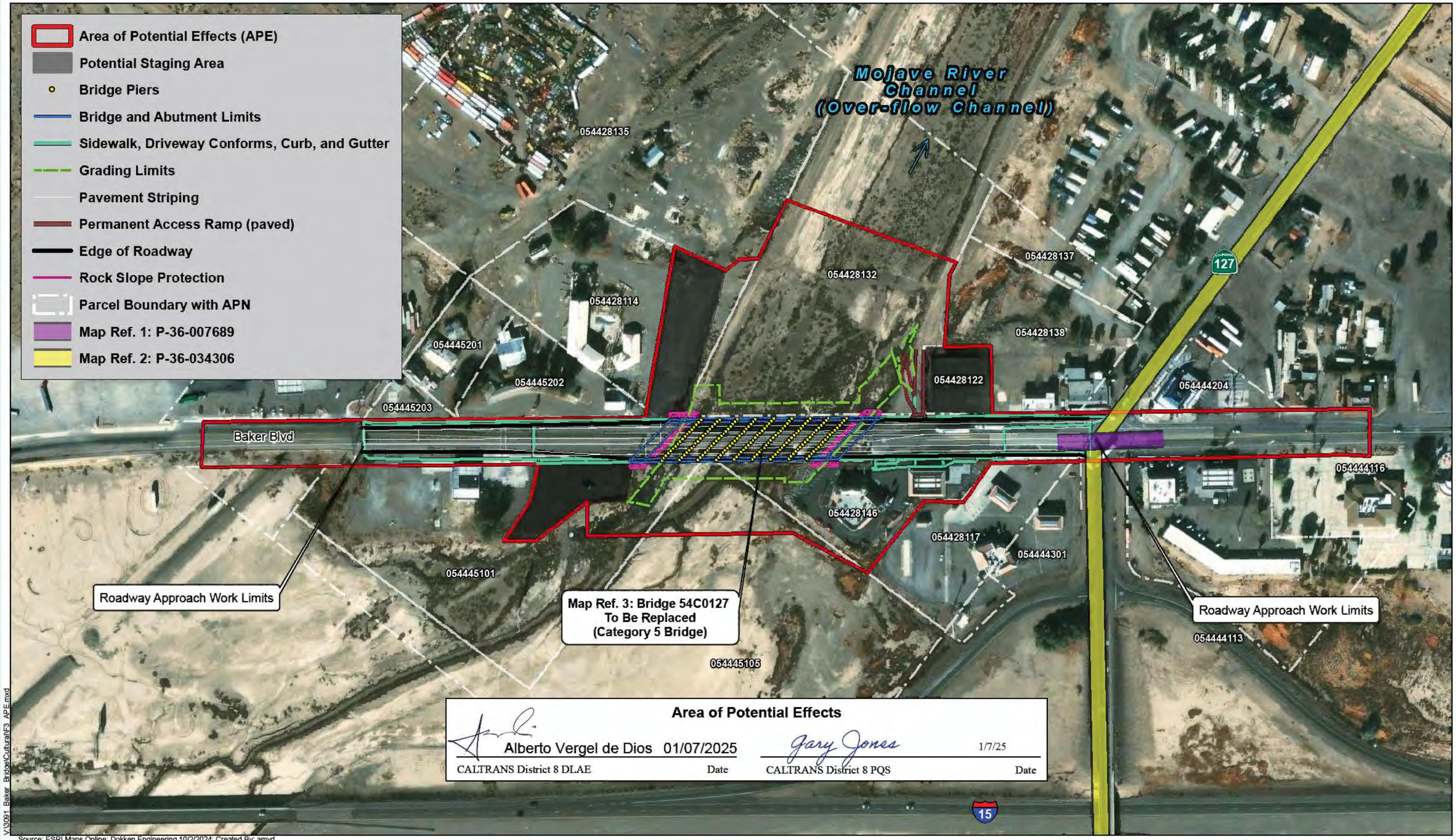
FIGURE 1
Project Vicinity
PSR#TD004 Baker Boulevard Over Mojave River Bridge Replacement
STPL-5954(193)
Baker, San Bernardino County, California



V:\3091 Baker Bridge\Cultural\F2 Topographic Map.mxd

Source: USA Topo Maps Online; Dokken Engineering 10/3/2024; Created By: amyd

FIGURE 2
Project Location
USGS 7.5-minute Quad: Baker, CA
PSR#TD004
Baker Boulevard Over Mojave River Bridge Replacement
STPL-5954(193)
Baker, San Bernardino County, California



Area of Potential Effects

Alberto Vergel de Dios 01/07/2025
CALTRANS District 8 DLAE Date

Gary Jones 1/7/25
CALTRANS District 8 PQS Date

V:\3091_Baker_Bridge\Cultural\F3_APE.mxd

Source: ESRI Maps Online; Dokken Engineering 10/2/2024; Created By: amyd

0 200 400 600 800 1,000 Feet

Figure 3
Area of Potential Effects (APE)

PSR#TD004 Baker Boulevard Over Mojave River Bridge Replacement
STPL-5954(193)
Baker, San Bernardino County, California

Appendix B
Representative Photographs

Photo 1. Overview of northern profile of Bridge No. 54C-0127 from within the Mojave River Channel. View facing southwest.

Photo 2. Overview of APE near the northeastern wingwall of the existing bridge. View facing southwest.

Photo 3. Overview of north face of bridge from within the Mojave River Channel. View facing northeast.

Photo 4. View of Mojave River Channel along the south edge of Bridge No. 54C-0127 with the modern Mobil gas station in the background. View facing southwest.

Photo 5. Overview of Baker Boulevard within the APE and the modern Chevron gas station in the background. View facing east.

Photo 6. Overview of the APE near proposed staging area northwest of the bridge. View facing east.

Photo 7. Typical view of the Mojave River Channel and vegetation within APE. Abandoned and graffitied motel in the background (not within APE). View facing west.

Photo 8. Typical view along existing bridge. View facing southwest.

Photo 9. Typical view of modern debris found scattered throughout the APE (northeast wing wall of bridge). View facing south.

Photo 10. Overview of proposed staging area northwest of the bridge. View facing north.

Photo 11. Typical overview of vegetation and shoulder composition within APE. View facing northwest.

Appendix C Previous Evaluations

NOT INCLUDED DUE TO CONFIDENTIAL INFORMATION

Appendix D
Records Search Results

NOT INCLUDED DUE TO CONFIDENTIAL INFORMATION