4.5 Cultural Resources

This section describes the existing cultural resources conditions of the project site and vicinity, identifies associated regulatory requirements, evaluates potential impacts, and identifies mitigation measures related to implementation of the proposed project. The analysis included in this section is based on the findings of the documents listed below, as well as publicly available information referenced throughout this section. Sources used for this section include the following:

- **Appendix D:** Cultural Resources Inventory and Evaluation Report Irvine Gateway Project, City of Irvine, California (Cultural Resources Report); prepared by Dudek; dated March 2025
- **Appendix E-1:** Preliminary Geotechnical Subsurface Evaluation, Proposed Residential Development, Gateway Village, Irvine, California (Geotechnical Report); prepared by LGC Geotechnical Inc.; dated November 22, 2024

4.5.1 Existing Conditions

Prehistoric Context

Evidence for continuous human occupation in the region spans the last 10,000 years. Various attempts to parse out variability in archaeological assemblages over this broad time frame have led to the development of several cultural chronologies; some of these are based on geologic time, most are based on temporal trends in archaeological assemblages, and others are interpretive reconstructions. Each of these reconstructions describes essentially similar trends in assemblage composition in greater or lesser detail. This research employs a common set of generalized terms used to describe chronological trends in assemblage composition: Paleoindian (pre-5500 BC), Archaic (8000 BC–AD 500), Late Prehistoric (AD 500–1750), and Ethnohistoric (post-AD 1750).

Paleoindian (pre-5500 BC)

Evidence for Paleoindian occupation in the region is tenuous; the knowledge of associated cultural patterns is informed by a relatively sparse body of data that has been collected from within an area extending from coastal San Diego through the Mojave Desert and beyond. One of the earliest dated archaeological assemblages in this area (excluding the Channel Islands) derives from a cultural site designated as SDI-4669/W-12, in La Jolla, San Diego County. A human burial from SDI-4669 was radiocarbon dated to 9,920–9,590 years before present (95.4% probability) (Hector 2006). The burial is part of a larger site complex that contained more than 29 human burials associated with an assemblage that fits the Archaic profile (i.e., large amounts of ground stone, battered cobbles, and expedient flake tools). In contrast, typical Paleoindian assemblages include large-stemmed projectile points, high proportions of formal lithic tools, bifacial lithic reduction strategies, and relatively small proportions of ground stone tools. Prime examples of this pattern are sites that were studied by Davis (1978) on Naval Air Weapons Station China Lake near Ridgecrest, California. These sites contained fluted and unfluted stemmed points and large numbers of formal flake tools (e.g., shaped scrapers, blades). Other typical Paleoindian sites include the Komodo site (MNO-679), a multicomponent fluted point site, and MNO-680, a single-component Great Basin stemmed point site (Basgall et al. 2002). At MNO-679 and MNO-680, ground stone tools were rare, while finely made projectile points were common.

Archaic (8000 BC–AD 500)

The Archaic pattern is relatively easy to define, with assemblages that consist primarily of processing tools: milling stones, hand stones, battered cobbles, heavy crude scrapers, incipient flake-based tools, and cobble-core reduction. These assemblages occur in all environments across the region, with little variability in tool composition. Low assemblage variability over time and space among Archaic sites has been equated with cultural conservatism (Byrd and Reddy 2002; Warren 1968; Warren et al. 2004). Despite the enormous amounts of archaeological work at Archaic sites, little change in assemblage composition is apparent until the adoption of the bow and arrow at around AD 500, as well as ceramics at approximately the same time (Griset 1996; Hale 2009). Even then, assemblage formality remains low. After the bow is adopted, small arrow points appear in large quantities, and already low amounts of formal flake tools are replaced by increasing amounts of expedient flake tools. Similarly, shaped milling stones and hand stones decrease in proportion relative to expedient, unshaped ground stone tools (Hale 2009). Thus, the terminus of the Archaic period is equally hard to define as its beginning because basic assemblage constituents and patterns of manufacturing investment remain stable, complemented only by the addition of the bow and ceramics.

Late Prehistoric (AD 500–1750)

The period following the Archaic and prior to Ethnohistoric times (AD 1750) is commonly referred to as the Late Prehistoric (Rogers 1945; Wallace 1955; Warren et al. 2004). However, several other subdivisions continue to be used to describe various shifts in assemblage composition, including the addition of ceramics and cremation practices. The post-AD 1450 period is called the San Luis Rey complex (Meighan and True 1977). Rogers (1929) also subdivided the last 1,000 years into the Yuman II and III cultures, based on the distribution of ceramics. Despite these regional complexes, each is defined by the addition of arrow points and ceramics and the widespread use of bedrock mortars. Vagaries in the appearance of the bow and arrow and ceramics make the temporal resolution of the San Luis Rey complex difficult. For this reason, the term Late Prehistoric is well-suited to describe the last 1,500 years of prehistory in the region.

Ethnohistoric (post-AD 1750)

The history of the Native American communities prior to the mid-1700s has largely been reconstructed through later mission-period and early ethnographic accounts. The first records of the Native American inhabitants of the region come predominantly from European merchants, missionaries, military personnel, and explorers. These brief, and generally peripheral, accounts were prepared with the intent of furthering respective colonial and economic aims and were combined with observations of the landscape. They were not intended to be unbiased accounts regarding the cultural structures and community practices of the newly encountered cultural groups. The establishment of the missions in the region brought more extensive documentation of Native American communities, although these groups did not become the focus of formal and in-depth ethnographic study until the early twentieth century (Bean and Shipek 1978; Boscana 1846; Fages 1937; Geiger and Meighan 1976; Harrington 1934; Laylander 2000; White 1963).

The Native American inhabitants of the region would have generally spoken Luiseño–Juaneño (Acjachemen) and Gabrieleño (or Tongva) varieties of Takic, which may be assigned to the larger Uto-Aztecan family (Golla 2007). Golla has interpreted the amount of internal diversity within these language-speaking communities to reflect a time depth of approximately 2,000 years. Other researchers have contended that Takic may have diverged from Uto-Aztecan circa 2600 BC–AD 1, which was later followed by the diversification within the Takic-speaking tribes, occurring circa 1500 BC–AD 1000 (Laylander 2010). The Luiseño–Juaneño (Acjachemen) and Gabrieleño (or

Tongva) represent the descendants of local Late Prehistoric populations. They are generally considered to have migrated into the area from the Mojave Desert, possibly displacing the prehistoric ancestors of the Yuman-speaking Kumeyaay (Ipai Tipai) that lived to the south during Ethnohistoric times. The Luiseño–Juaneño shared boundaries with the Gabrieleño and Serrano to the west and northwest, the Cahuilla to the east, the Cupeño to the southeast, and the Kumeyaay to the south (Bean and Shipek 1978; Kroeber 1925). Southern Native American tribal groups of the San Diego and southern Imperial region have traditionally spoken Yuman languages, a subgroup of the Hokan phylum.

The Uto-Aztecan inhabitants of the region were called Juaneño and Gabrieleño by Franciscan friars who established the Missions San Juan Capistrano and San Gabriel Arcángel in the traditional territories of these two respective tribes. The project area is east of Aliso Creek, which is considered by Kroeber (1925) to be the ethnographic boundary marker between the Gabrieleño (or Tongva) (west of the Aliso Creek) and Juaneño (east of the Aliso Creek). A brief description of both ethnographic groups is provided in the following text.

The Gabrieleño may have numbered as many as 5,000 people during their peak in the pre-contact period; however, population estimates are difficult due to the gradual process of missionization (Kroeber 1925). The Gabrieleño territory included the Los Angeles Basin, the coast of Aliso Creek in Orange County (the County) to the south, and Topanga Canyon in the north, the four southern Channel Islands, and watersheds of the Los Angeles, San Gabriel, and Santa Ana Rivers. At the time of European contact, the Gabrieleño were actively involved in trade using shell and beads as currency. The Gabrieleño produced pipes, ornaments, cooking implements, inlay work, and basketry. Dwellings were constructed of tule mats on a framework of poles, but size and shape have not been recorded (Kroeber 1925). Basketry and steatite vessels were used rather than ceramics until near the end of the mission period in the nineteenth century (Garcia et al. 2011).

The Juaneño, or Acjachemen, territory was bounded to the north by Aliso Creek, the east by the crest of the Santa Ana Mountains, the south by San Onofre Creek, and west by the Pacific Ocean (Kroeber 1925). Ethnographic, linguistic, and archaeological evidence indicate that Juaneño and Luiseño are one cultural/tribal group. There is no existing record of the Juaneño population during the pre-contact period. Records indicated that approximately 1,300 individuals culturally affiliated with the Juaneño resided at Mission San Juan Capistrano in the year 1800 (Engelhardt 1922). The Mission San Juan Capistrano death register shows as many as 4,000 native burials in the mission cemetery (White 1963). From this, it is clear that the arrival of the Spanish decimated Native peoples through disease and changed living conditions (Bean and Shipek 1978).

Historic Context

This section provides an overview of the relevant historic and architectural contexts that informed the evaluation of built environment resources within the project site and their potential for significance.

Irvine Ranch and the Development of Irvine

The present-day City of Irvine (City) was built entirely on the former Irvine Ranch, a 93,000-acre piece of agricultural land in Orange County. Portions of the Irvine Ranch also became parts of neighboring cities such as Newport Beach, Costa Mesa, Laguna Beach, Santa Ana, Tustin, and Orange. The Irvine Ranch stemmed from three large Spanish/Mexican grants: Rancho Santiago de Santa Ana, Rancho San Joaquin, and Rancho Lomas de Santiago. In 1864, Jose Sepulveda, owner of Rancho San Joaquin, sold the rancho to sheep ranchers Benjamin and Thomas Flint, Llewellyn Bixby, and James Irvine. Two years later, James Irvine, Flint, and Bixby acquired Rancho Lomas de Santiago, followed by Rancho Santiago de Santa Ana in 1868. With these acquisitions, the three men's land

holdings stretched 23 miles from the Pacific Ocean inland, making up one-fifth of the total land comprising Orange County. The men rented out the land to tenant farmers, but the land was predominantly used for sheep and cattle grazing. In 1878, Irvine acquired his partners' interests, becoming the sole owner. He continued to use the land for ranching and grazing until his death in 1886 (City of Irvine 2025).

In the 1920s, various agricultural cooperatives were formed on the Irvine Ranch, including the Irvine Valenica Growers Association (1926). Beginning in 1929, the Frances Mutual Water District implemented an extensive reservoir and dam system on the ranch to support farming. This system included the Lambert Reservoir (1929); Santiago Canyon Dam (1931–1932) and Canyon Reservoir (1942); Peters Canyon Dam Number 1, Laguna Dam, and Bonita Dam (all between 1937 and 1938); Peters Canyon Dam Number 2 (1940); Sand Canyon Dam (1942); Syphon Canyon Dam (1948–1949); and Rattlesnake Canyon Dam (1960). James Irvine's son James Irvine Jr. also built canals to deliver water to the reservoirs and more than 2,500 miles of gravity-fed irrigation pipeline to move it to the fields. Although Irvine Ranch land continued to be productive through the 1920s, the nationwide effects of the Great Depression (1929–1939) impacted tenant farmers' ability to sell their crops and pay their leases. Still, the Irvine Ranch remained a central agricultural producer for the state during the 1930s and development remained sparse and scattered (IHS 2020a, 2020b; NETR 2025a, 2025b).

During World War II, many tenant farmers and ranchers enlisted in the military and left their properties at the Irvine Ranch, making cultivation difficult during the war. However, the food grown on the Irvine Ranch still fed the nearby military facilities and contributed to the County's overall war effort. After the conclusion of World War II in 1945, many former tenant and rancher farmers did not, or could not, return. In 1947, James Irvine Jr., who adamantly opposed selling Irvine Ranch land for development, died and his brother Myford took over operations (City of Irvine 2025; Jepsen 2021).

The Irvine Ranch faced development pressure in the years following World War II, commensurate with the rising population and corresponding urban and suburban sprawl developing on formerly agricultural land throughout Southern California. Residential sprawl, much of which consisted of individual housing tracts developed around freeways with no unifying plan, pushed at the borders of the Irvine Ranch.

In 1957, the University of California recognized the need to establish a new public university to serve the ever-growing population of the greater Los Angeles area. Architect and planner William Pereira proposed the Irvine Ranch as a location for the new university, noting that because the massive ranch was largely undeveloped and owned by a single entity, there was a unique possibility to design a master-planned city surrounding the university. Pereira prepared "A University Campus and Community Study," which advocated for the development of a planned "new town" associated with the intellectual and cultural impact of the university (City of Irvine 2025; Jepsen 2021; Watson 2002).

Pereira envisioned mixed-use residential, business, and commercial "villages" emanating like spokes out of the university center and connected by regional roads, bike trails, and open space corridors. In 1959, The Irvine Company donated 1,000 acres to the state for a new university campus, and the university opened its doors in October 1965 (Exhibit 2 of Appendix D). Planning and construction of elements of Pereira's master plan occurred concurrently with university development. By 1970, the villages of Turtle Rock, University Park, Culverdale, the Ranch, and Walnut were completed and the present-day Irvine Business Complex opened. Although originally tasked with planning the university campus and 10,000 acres, Pereira's master plan became the guiding goal for the entire 93,000-acre ranch. Pereira's plans included the preservation of 30,000 acres of farmland and 30,000 acres of mountainous wilderness (City of Irvine 2025; Ellison 2021; Jepsen 2021; Watson 2002).

From 1970 to 1980, the City of Irvine was California's fastest-growing city, although much of the present-day City remained agricultural land. In 1971, City residents voted to incorporate as a larger city than what was envisioned in the original Pereira master plan. The City continued to develop rapidly, with new civic, residential, and commercial structures constructed throughout the decade.

Despite the rapidly evolving City, much of the Irvine Ranch remained heavily agricultural. In 1977, for example, the Irvine Ranch was the single biggest consumer of water in the County and still maintained more than 14,000 acres of oranges, berries, and vegetable crops. The City continued to densify in the 1980s and 1990s, although aerial photographs through the 1980s continue to show large swaths of undeveloped farmland around the City's central developed core. Today, the City has a population of nearly 315,000 and comprises 66 square miles (City of Irvine 2025; NETR 2025a; Skrove 1977).

North Irvine

North Irvine is an area of recent development within the City, including the development of the residential communities of Portola Springs and Orchard Hills. The residential community of Orchard Hills, located west of the project site, is currently in its final phase of development. State Route (SR) 261 and SR-241 provide highway access to the area. The developed areas of north Irvine sit adjacent to a large swath of open space called the Northern Open Space Preserve, which includes Limestone Canyon and Blackstar Canyon and extends to the Cleveland National Forest.

Project Site Development

An aerial photograph from 1938 shows the project site as farmland with one agricultural property located adjacent to the Highline Canal segment (Map ID 2) in the project site. This orientation remained consistent until 1967, when the California Labor Camp and the El Modena Nursery were constructed (Exhibit 3 of Appendix D).

By 1986, El Modena was the 12th-largest nursery wholesaler in the country, with reported total sales of $12 million; 3 years later, the operations expanded on the project site with the addition of several greenhouses at the west end of the project site. The business continued to operate for the next two decades until it closed permanently in 2009 and its equipment and inventory were sold to Color Spot. Similarly, the Hines Nursery filed for bankruptcy in 2010. The project site remained largely unchanged until 2012, when the remaining structures associated with the El Modena Nursery were demolished. The California Labor Camp remained extant until about 2020, when its buildings (except Map ID 1) were demolished (Exhibit 4 of Appendix D) (Kieffer 1986; Milbourn 2010; NETR 2025a).

Highline Canal (P-30-176748)

An approximately 0.10-mile-long segment of the Highline Canal is located in the project site. The Highline Canal (Exhibit 5 of Appendix D) is a gravity-fed water conveyance system constructed circa 1933 through the Frances Mutual Water Company that carried water to the agricultural fields of the Irvine Ranch. The segment of the Highline Canal that transects the project site was originally an open-channel canal that became part of a system that included over 2,500 miles of gravity-fed pipelines constructed for the Irvine Ranch by the Frances Mutual Water Company. The Highline Canal is fed by the Santiago Dam (1931–1932) and Irvine Lake (completed and filled in 1933), which were constructed as a joint venture by The Irvine Company and Serrano Irrigation District for the purposes of flood control, irrigation, and municipal water use. The canal begins at the Santiago Reservoir and winds southeast to the Syphon Reservoir. During the 1940s, a large portion of the canal was demolished and other segments were undergrounded for the construction of the El Toro Marine Base on Irvine Ranch land. The remaining segments of the canal remained operational through the late 1970s, when it was replaced by an underground pipeline constructed by the Irvine Ranch Water District (Sawyer 2003; Skrove 1977).

Work Camps

Between 1848 and 1941, the diversification of California's economy resulted in the establishment of work camps throughout the state to provide housing for laborers. Work camps were linked to specific industries, most commonly agriculture, mining, logging, reclamation projects (levee construction), fishing, and railroad construction. Often intended to be temporary, labor camps were typically designed with utilitarian forms and materials. Early work camps in California became common following the Gold Rush in 1848 as functional living spaces for the influx of miners seeking their fortunes. The number and size of camps expanded in subsequent decades as industrialization prompted the construction of new infrastructure and created the need to extract raw materials for development. Work camps varied in size, with some housing only a handful of workers while others could house hundreds of workers. Some camps were privately or corporate owned while others were created by the state and federal governments. Most work camps were not intended to be complete, full-service communities and the amount of infrastructure built was often "contingent on their anticipated duration, size, and demographic composition" (Caltrans 2013).

The Great Depression (1929–1939) resulted in widespread unemployment and led to a proliferation of work camps throughout the state. The election of Franklin Delano Roosevelt in 1933 marked the beginning of the New Deal, a program of large-scale federal public-relief efforts that resulted in the construction of state and federal relief camps and the establishment of the Civilian Conservation Corps, which provided housing and employment opportunities. Between 1936 and 1941, Roosevelt's Farm Security Administration also operated 13 work camps throughout California's rural agricultural valleys. Work camps began to decline in prevalence following the United States' entry into World War II in 1941 and, due to their intentionally ephemeral nature, many have been subsequently demolished. In the decades following the conclusion of World War II, labor camps in California primarily were established to house seasonal agricultural laborers (Caltrans 2013).

Transmission Lines

Aerial transmission lines are supported by a series of vertical poles or towers. The transmission lines provide power to plants and substations, which serve individual customers in cities, towns, industrial plants, and utility districts. Transmission line structures include three main design components: the tower structure, the conductors, and the insulators. The tower is the structure that holds the insulators, and the insulators hold the conductors, which come in the form of a transmission line. The electricity transmission includes anything above the electrical voltages of 60 kilovolts (kV) or more. Transmission lines with a voltage of 500 kV are the highest voltage connected to energy grids throughout the western United States. Lines with higher voltages (230 kV and above) are primarily carried on metal towers, while lines below 230 kV are usually on wooden pole structures. Extra-high-voltage lines (500 kV and above) usually have steel lattice towers that are larger than the those constructed for lower-voltage lines and that feature a cinched waist, massing with a wide base, narrow mid-point, and extended horizontal cross-arms. With technological advances in insulator and conductor design, components are replaced and repaired regularly. Transmission lines and systems are generally categorized by their conductor positioning, construction materials, and voltage (SCE 2017).

Character-defining features are the specific physical characteristics of data requirements that an individual property must possess to retain integrity. Key character-defining features of transmission lines often include the following:

- Alignment of transmission line from the date of original construction
- Intact primary tower structures
- Connectivity and association to power-generating plants and substations and transmission lines

In addition to possessing the character-defining features outlined above, the Southern California Edison Historic-Era Electrical Infrastructure Management Program identified periods of historic significance for Southern California Edison (SCE) transmission line systems according to their voltage. For systems transmitting electrical power at 66 kV or below, the period of significance is limited to 1907 to 1930. For systems transmitting electrical power between 67 kV to 230 kV, the period of significance is limited to 1912 to 1941. For systems transmitting electrical power at 500 kV, the period of significance is limited to 1965 to 1970 (SCE 2017).

Geomorphological Context

According to the U.S. Department of Agriculture's Natural Resources Conservation Service (USDA 2025a), the project site consists primarily of Anaheim clay loam with slopes ranging from 15% to 50%, Metz loamy sand, San Emigdio fine sandy loam with slopes ranging from 0% to 2%, and Sorrento loam with slopes ranging from 0% to 2%. The official U.S. Department of Agriculture soil descriptions for these soil series are provided below.

Anaheim Series. The Anaheim series soils are characterized as well-drained, moderately deep soils over weathered fine-grained sandstone and shale that formed in material weathered from fine grained sandstone or shell (USDA 2025b). Anaheim soils are on foothills, at elevations of 100 to 2,500 feet above mean sea level (amsl), and have a series profile typically consisting of 0 to 26 inches of grayish-brown clay loam and 26 to 54 inches of weathered fractured fine-grained sandstone and shale.

Metz Series. The Metz series soils are characterized as very deep, somewhat excessively drained soils that formed in alluvial material from mixed, but dominantly sedimentary rocks (USDA 2025c). Metz soils are on floodplains and alluvial fans, at elevations of 25 to 2,500 feet amsl, and have a series profile typically consisting of 0 to 12 inches of light brownish-gray fine sandy loam; 12 to 29 inches of light brownish-gray fine sand; 29 to 38 inches of light brownish-gray sand; 38 to 52 inches of light brownish-gray very fine sandy loam; and 52 to 118 inches of light brownish-gray fine sand.

San Emigdio Series. The San Emigdio series soils are characterized as very deep, well-drained soils that formed in dominantly sedimentary alluvium (USDA 2025d). San Emigdio soils are on fans, floodplains, and in narrow valleys, at elevations of 100 to 2,000 feet amsl, and have a series profile typically consisting of 0 to 22 inches of light brownish-gray fine sandy loam and 22 to 60 inches of light gray fine sandy loam.

Sorrento Series. The Sorrento series soils are characterized as very deep, well-drained soils that formed in alluvium mostly from sedimentary rocks (USDA 2025e). Sorrento soils are on alluvial fans and stabilized floodplains, at elevations of 25 to 2,100 feet amsl, and have a series profile typically consisting of 0 to 26 inches of grayish-brown heavy loam; 26 to 37 inches of grayish-brown mixed with light brownish-gray heavy loam; 37 to 58 inches of pale brown heavy loam; and 58 to 74 inches of light yellowish-brown loamy fine sand.

A review of the USGS mineral resources (USGS 2025) online spatial data for geology indicates that approximately 75% of the project site is underlain by Quaternary alluvium and marine deposits from the Pleistocene to Holocene epochs and the remaining approximately 25% of the project site is underlain by Oligocene nonmarine rocks from the middle Eocene to early Miocene. Late Pleistocene–era alluvial formations do have the potential to support the presence of buried archaeological resources. These soils are associated with the period of prehistoric human use, as well as representing ongoing processes of development that have potential to preserve cultural material in context, depending on area-specific topographical setting.

The Geotechnical Report (Appendix E-1) was prepared for the project in November 2024 to determine the subsurface geological conditions of the project site. The report details the results of 15 hollow-stem borings (HS-1 through HS-5 and I-1 through I-10) and 17 exploratory geotechnical test pits (TP-1 through TP-17). The 15 hollow-stem borings were excavated using a truck-mounted drill rig using 8-inch-diameter hollow-stem augers and extended to a maximum depth ranging from 5 to 30 feet below ground surface. The 17 exploratory geotechnical test pits were excavated with a backhoe and extended to a maximum depth ranging from 5 to 15 feet below ground surface. According to the Geotechnical Report, the soils encountered included (1) undocumented artificial fill, characterized as older artificial fill and/or agricultural till generally consisting of brown, clayey to silty sand and sandy silt; (2) Quaternary alluvium (native soils), characterized as Holocene to Late Pleistocene Epoch deposits predominantly consisting of brown, reddish-brown, and light-yellowish-brown sandy silt to silty sand, clayey sand, and silty to sandy clay; and (3) Tertiary Vaqueros and Sespe Formations (bedrock). The Tertiary Vaqueros and Sespe Formations (bedrock) was observed along the southern boundary of the project area, north of Bee Canyon Access Road. Undocumented artificial fill soils were observed throughout the project area to varying depths. A summary of the subsurface exploratory results for the project is provided in Table 4.5-1.

Table 4.5-1. Summary of Subsurface Investigative Results

Boring/ Test Pit	Dry Vegetation/ Topsoil or Gravel Over Topsoil	Undocumented Artificial Fill Soils	Quaternary Alluvium (Native Soils)	Tertiary Vaqueros and Sespe Formation (Bedrock)	Terminated Depth
	Feet Below Ground Surface				
HS-1	N/A	N/A	0–26.5	N/A	26.5
HS-2	N/A	N/A	0–26.5	N/A	26.5
HS-3	N/A	N/A	0–26.5	N/A	26.5
HS-4	N/A	N/A	0–26.5	N/A	26.5
HS-5	N/A	N/A	0–26.5	N/A	26.5
I-1	0–2.5	N/A	2.5–30	N/A	30
I-2	0–3.5	N/A	3.5–5	N/A	5
I-3	0–5	N/A	5–30	N/A	30
I-4	N/A	N/A	0–5	N/A	5
I-5	0–5	N/A	5–30	N/A	30
I-6	0–3.5	N/A	3.5–5	N/A	5
I-7	0–5	N/A	5–30	N/A	30
I-8	0–3.5	N/A	3.5–5	N/A	5
I-9	N/A	N/A	0–30	N/A	30
I-10	N/A	N/A	0–5	N/A	5
TP-1	N/A	0–2.5	2.5–12	N/A	12
TP-2	N/A	0–2	2–12	N/A	12
TP-3	N/A	0–2.5	2.5–12	N/A	12
TP-4	N/A	0–3	3–14	N/A	14
TP-5	N/A	0–6	6–15	N/A	15
TP-6	N/A	0–4	4–15	N/A	15
TP-7	N/A	0–2.5	2.5–10	N/A	10
TP-8	N/A	0–1	1–14	N/A	14

Table 4.5-1. Summary of Subsurface Investigative Results

Boring/ Test Pit	Dry Vegetation/ Topsoil or Gravel Over Topsoil	Undocumented Artificial Fill Soils	Quaternary Alluvium (Native Soils)	Tertiary Vaqueros and Sespe Formation (Bedrock)	Terminated Depth
	Feet Below Ground Surface				
TP-9	0–2	N/A	N/A	2–5	5
TP-10	N/A	0–2	2–14	N/A	14
TP-11	N/A	N/A	0–2	4–5	5
TP-12	N/A	N/A	0–2	4–5	5
TP-13	0–2	N/A	N/A	2–6	6
TP-14	N/A	0–2.5	2.5–13	N/A	13
TP-15	N/A	0–9	N/A	N/A	9
TP-16	N/A	0–8	N/A	N/A	8
TP-17	N/A	0–2	2–11	N/A	11

Source: Appendix E-1.
Note: N/A = not applicable (not found in boring or test pit).

4.5.2 Relevant Plans, Policies, and Ordinances

Federal

National Historic Preservation Act and the National Register of Historic Places

The National Historic Preservation Act (NHPA) established the National Register of Historic Places (NRHP) and the Advisory Council on Historic Preservation. Under the NHPA, significant cultural resources are referred to as "historic properties," which include any prehistoric or historic district, site, building, structure, or object included in, or determined eligible for inclusion in, the NRHP. This term includes artifacts, records, and remains that are related to and located within such properties. The term includes properties of traditional religious and cultural importance to a Native American tribe or Native Hawaiian organization. Historic properties that are designated by the Secretary of the Interior to be National Historic Landmarks are nationally significant historic places that possess exceptional value or quality in illustrating or interpreting the heritage of the United States. A property is considered historically significant if it meets one of the NRHP criteria and retains sufficient historic integrity to convey its significance.

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

The NRHP criteria for evaluation (36 CFR 60.4) considers the quality of significance in American history, architecture, archaeology, engineering, and culture that is present in districts, sites, buildings, structures. For a property to be listed in or determined eligible for listing, it must meet at least one of the following criteria:

A. That are associated with events that have made a significant contribution to the broad patterns of our history; or

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

To be listed in the NRHP, a property must not only be shown to be significant under the NRHP criteria, but it also must have integrity. Integrity is the ability of a property to convey its significance. Because the concept of integrity is based on significance, the assessment of a property's integrity can only proceed after its significance has been fully established. The assessment of integrity requires consideration under the following seven aspects or qualities: location, design, materials, workmanship, setting, feeling, and association. To retain integrity, a property will always possess several, and generally most, of these aspects (NPS 1997).

Implementing Regulations for Section 106 of the National Historic Preservation Act

Section 106 of the NHPA (36 CFR 800) requires federal agencies to take into account the effects of their undertakings on historic properties. The Section 106 process consists of four principal steps: (1) initiation of the Section 106 process, which includes identifying and initiating consultation with Native American tribes, local governments, and other interested parties; (2) identification of historic properties; (3) assessment of adverse effects; and (4) delineation of stipulations to resolve adverse effects in an agreement document.

Section 106 affords the Advisory Council on Historic Preservation and the State Historic Preservation Officer, as well as other consulting parties, a reasonable opportunity to comment on any project that would adversely affect historic properties. The Advisory Council on Historic Preservation is an independent administering agency that develops procedures at the federal level to protect cultural resources included in, or eligible for inclusion in, the NRHP. The State Historic Preservation Officers administer the national historic preservation program at the state level, in addition to reviewing NRHP nominations, maintaining data on historic properties, and consulting with federal agencies during the Section 106 review.

Native American Graves Protection and Repatriation Act

The Native American Graves Protection and Repatriation Act of 1990 sets provisions for the intentional removal and inadvertent discovery of human remains and other cultural items from federal and tribal lands. The act clarifies the ownership of human remains and sets forth a process for repatriation of human remains and associated funerary objects and sacred religious objects to the Native American groups claiming to be lineal descendants of or culturally affiliated with the remains or objects. It requires any federally funded institution housing Native American remains or artifacts to compile an inventory of all cultural items within the institution or agency and to provide a summary to any Native American tribe claiming affiliation.

State

California Register of Historic Resources

California Public Resources Code (PRC) Section 5024.1 establishes the California Register of Historical Resources (CRHR), which lists all significant resources in California that are considered to be historical resources. In California, the term historical resource includes, but is not limited to, "any object, building, structure, site, area, place, record, or manuscript which is historically or archaeologically significant, or is significant in the architectural, engineering,

scientific, economic, agricultural, educational, social, political, military, or cultural annals of California" (PRC Section 5020.1[j]). The CRHR is "to be used by state and local agencies, private groups, and citizens to identify the state's historical resources and to indicate what properties are to be protected, to the extent prudent and feasible, from substantial adverse change" (PRC Section 5024.1[a]). The criteria for listing resources in the CRHR were expressly developed to be in accordance with previously established criteria developed for listing in the NRHP. As such, a resource is considered historically significant if it meets at least one of the following criteria outlined under PRC Section 5024.1(c):

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

In addition to meeting one of the significance criteria described in PRC Section 5024.1(c), a resource must also possess sufficient integrity to qualify for listing in the CRHR. Integrity as defined in 14 CCR 4852(c) as "the authenticity of an historical resource's physical identity evidenced by the survival of characteristics that existed during the resource's period of significance" as evaluated with regard to the resource's retention of location, design, setting, materials, workmanship, feeling, and association. Historical resources that lack sufficient integrity to meet the criteria for listing in the NRHP may still be eligible for listing in the CRHR if they have the potential to yield significant scientific, historical information, specific data.

The CRHR includes not only listed prehistoric and historic cultural resources but also California Historical Landmarks (numbered 770 and above), California Points of Historical Interest designated by the State Historical Resources Commission, and resources that are identified through local historical resource surveys or designated under local ordinances, provided the surveys and ordinances meet the criteria in 14 CCR 4852(e)–(f).

California Environmental Quality Act

The California Environmental Quality Act (CEQA) requires that the lead agency consider the impacts of a project on historical resources. PRC Section 21084.1 defines historical resources as those listed, or eligible for listing, in the CRHR, or those officially designated or recognized as historically significant by a local government pursuant to a local county or city ordinance or jurisdiction, unless the preponderance of the evidence demonstrates that the resource is not historically or culturally significant. Historical resources also include "historic properties" in California that are listed, or determined eligible for listing, in the NRHP and CRHR. The CEQA Guidelines provide specific guidance for determining the significance of impacts on historical resources. As described in Section 15064.5 of the CEQA Guidelines:

(b) 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.

(1) A "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 (Section 15064.5[b][1]).

(2) The significance of an historical resource is materially impaired when a project:

(A) Demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the California Register of Historical Resources; or

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

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

The CEQA Guidelines also provide guidance on minimizing or avoiding significant adverse impacts on historical resources as outlined in the following provisions of Section 15064.5(b):

(3) Generally, a project that follows the Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings or the Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings (1995), Weeks and Grimmer, shall be considered as mitigated to a level of less than a significant impact on the historical resource.

(4) A lead agency shall identify potentially feasible measures to mitigate significant adverse changes in the significance of an historical resource. The lead agency shall ensure that any adopted measures to mitigate or avoid significant adverse changes are fully enforceable through permit conditions, agreements, or other measures.

(5) When a project will affect state-owned historical resources, as described in Public Resources Code Section 5024, and the lead agency is a state agency, the lead agency shall consult with the State Historic Preservation Officer as provided in Public Resources Code Section 5024.5. Consultation should be coordinated in a timely fashion with the preparation of the environmental documents.

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

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

(1) Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.

(2) Has a special and particular quality such as being the oldest of its type or the best available example of its type.

(3) Is directly associated with a scientifically recognized important prehistoric or historic event or person.

Impacts to non-unique archaeological resources are generally not considered a significant environmental impact (PRC Section 21083.2[a]; 14 CCR 15064.5[c][4]). However, if a non-unique archaeological resource qualifies as tribal cultural resource (TCR) (PRC Sections 21074[c], 21083.2[h]), further consideration of significant impacts is required.

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

California Health and Safety Code Section 7050.5 and PRC Section 5097.98

CEQA Guidelines Section 15064.5 assigns special importance to human remains and specifies procedures to be used when Native American remains are discovered. As described below, the procedures are detailed in California Health and Safety Code (HSC) Section 7050.5 and PRC Section 5097.98.

California law protects Native American burials, skeletal remains, and associated grave goods, regardless of their antiquity, and provides for the sensitive treatment and disposition of those remains. HSC Section 7050.5 requires that if human remains are discovered in any place other than a dedicated cemetery, no further disturbance or excavation of the site or nearby area reasonably suspected to contain human remains shall occur until the county coroner has examined the remains (HSC Section 7050.5[b]). PRC Section 5097.98 also outlines the process to be followed in the event that remains are discovered. If the coroner determines or has reason to believe the remains are those of a Native American, the coroner must contact the California Native American Heritage Commission (NAHC) within 24 hours (HSC Section 7050.5[c]). In accordance with PRC Section 5097.98(a), the NAHC will notify the Most Likely Descendant (MLD). With the permission of the landowner, the MLD may inspect the site of discovery. Within 48 hours of being granted access to the site, the MLD may recommend means of treatment or disposition, with appropriate dignity, of the human remains and associated grave goods.

Native American Historical Cultural Sites (PRC Section 5097 et seq.)

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

California Native American Graves Protection Repatriation Act

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

California State Assembly Bill 52

California Assembly Bill (AB) 52, which took effect July 1, 2015, establishes a consultation process between California Native American tribes and lead agencies in order to address tribal concerns regarding project impacts and mitigation to "tribal cultural resources" (TCRs). PRC Section 21074(a) defines TCRs and states that a project that has the potential to cause a substantial adverse change to a TCR is a project that may have an adverse effect on the environment. TCRs are defined as follows (PRC Section 21074[a]):

1. Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either of the following:
   a. Included or determined to be eligible for inclusion in the California Register of Historical Resources.
   b. Included in a local register of historical resources as defined in subdivision (k) of Section 5020.1.
2. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Section 5024.1. In applying the criteria set forth in subdivision (c) of Section 5024.1 for the purposes of this paragraph, the lead agency shall consider the significance of the resource to a California Native American tribe.

California State Senate Bill 18

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

Local

City of Irvine General Plan

The Cultural Resources Element of the City of Irvine's General Plan, adopted in 1973, contains the following goal, objectives, and policies relating to protection of cultural resources (City of Irvine 1973):

Goal. Ensure the proper disposition of historical, archaeological, and paleontological resources to minimize adverse impacts, and to develop an increased understanding and appreciation for the community's historic and prehistoric heritage, and that of the region.

Objective E-1: Historical, Archaeological, Paleontological Surveys. Identify and obtain information on the existence and significance of historical, archaeological, and paleontological sites and encourage land use planning which incorporates this information.

Policy (a): Require appropriate surveys and necessary site investigations in conjunction with the earliest environmental document prepared for a project, in accordance with California Environmental Quality Act (CEQA) and the City's CEQA procedures.

Policy (b): Require surveys, prior to discretionary approval, for areas where the possibility of encountering sites exists. Additional specific site investigations may also be required in order to obtain sufficient information to determine the site's significance. The project sponsor shall fund this level of investigation.

Policy (c): Require a written report [to] be submitted to the City following a survey or investigation describing the findings and making recommendations as to the site's significance, future disposition, and the amount of further investigation which should be undertaken. Copies of site survey records and reports shall be filed with the appropriate clearinghouse.

Policy (d): Encourage, if appropriate, removal of all materials collected during the survey/ investigation to local museums, universities, or other depositories providing access for public review or scientific research.

Policy (e): Funding of Archaeological Excavations: Use the following in the case of archaeological salvage excavations: 75 percent project sponsor; 25 percent City or other public or quasi-public agency or organization. The costs of other mitigation measures may also be shared by the landowner or developer, the City, and other agencies or organizations.

Policy (f): Maintain information on areas surveyed, numbers of sites located, their status and the names and addresses of individuals or organizations knowledgeable of the sites.

Policy (g): Maintain specific locations of unprotected sites as confidential information to avoid vandalism and the resultant irretrievable loss of the historic and prehistoric record of the community.

Policy (h): Determine the proper disposition of each historical site prior to approval of zoning or discretionary development applications. Disposition determinations shall be based upon a detailed historical report, including an inventory form, a written evaluation, and slides documenting the building and its location. This information shall be reviewed by staff and the approval authority for discretionary development cases. Each historical report shall be filed at the Irvine Historical Museum and the City of Irvine Community Development Department.

Policy (i): Buffer and protect the integrity of an historic site and/or resources contained therein, if the Planning Commission, during review of a discretionary development case, determines preservation is required.

Objective E-2: Hazard Occurrence. Evaluate surveyed sites for their present and potential cultural, educational, recreational, and scientific value to the community and the region, and determine their proper disposition prior to the approval of any project which could adversely affect them.

Policy (a): Ensure that sites determined to be significant are protected through the City's planning policies, ordinances, approval conditions, and mitigation measures.

Policy (b): Encourage the nomination of significant historical sites to the National Registry [sic] of Historic Places.

Policy (c): Include sites which are appropriate for educational or recreational purposes as an integral part of either public or community facilities or as part of the Citywide bikeway, pedestrian, and equestrian trail systems. Encourage agencies, organizations, and individuals to develop interpretive and educational programs in order to properly utilize the site for the benefit of the entire community.

Policy (d): Ensure that appropriate staff is available to act in matters relating to the implementation of this element to include identification of costs, and to coordinate the investigation and disposition of sites between City departments and Commissions, The Irvine Company, and other agencies, institutions, organizations, and individuals.

Policy (e): Determine the methods and means of preservation on a case-by-case basis according to a site's importance and disposition methods available. These may include public or private acquisition or one of the following, provided extreme care is exercised not to adversely affect the site:

- Including the site within greenbelts, parks, open space spines, preservation areas or other open space.
- Covering surface or sub-surface sites by adequate fill, pavement, or buildings.
- Using the site for nondestructive public interest or educational purposes, such as museums, interpretive centers, or outdoor classrooms.
- Moving buildings for preservation as part of a consolidated historic site.
- Using significant historic buildings in a preserved state as a part of their functional capacity (e.g., a building preserved and used as an office, restaurant, or home).

Policy (f): Encourage site preservation through economic incentives such as increased building densities, reduced taxes, credit toward park dedication, or reduction of other amenity requirements. Where incentives are not sufficient, the land owner shall be directly compensated by the City or other public or quasi-public agencies or organizations for land preserved as an archaeological, paleontological, or historical site. The costs of site preservation may be the principal responsibility of the City, other public or quasi-public agencies, or other organizations.

Policy (g): Ensure that adverse impacts of a proposed project on cultural resources are mitigated in accordance with CEQA, as well as other appropriate City policies and procedures, where preservation of a significant site is not practical.

Policy (h): Assign the Community Services Commission the responsibility to oversee implementation programs for sites or buildings which have been acquired by the City.

Policy (i): Identify and implement revenue sources which can be expended in support of this objective.

Policy (j): Undertake a comprehensive survey to inventory the remaining historical resources within the City of Irvine incorporated territory and adopted Sphere of Influence, including the location and significance of all remaining tenant farm homes over 50 years of age. This survey shall be used to determine the appropriate disposition of the resources located within any area not designated for preservation as a historical resource.

4.5.3 Thresholds of Significance

The significance criteria used to evaluate the project impacts to cultural resources are based on Appendix G of the CEQA Guidelines. According to Appendix G, a significant impact related to cultural resources would occur if the project would:

1. Cause a substantial adverse change in the significance of a historical resource pursuant to § 15064.5.
2. Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5.
3. Disturb any human remains, including those interred outside of dedicated cemeteries.

4.5.4 Impacts Analysis

1. Would the project cause a substantial adverse change in the significance of a historical resource pursuant to § 15064.5?

Cultural Resources Field Survey

Dudek cultural resources specialists Roshanne Bakhtiary and David Alexander conducted an intensive-level pedestrian survey of the project site on January 21, 2025. The project site totals approximately 105 acres. The topography is a mixture of flat landscape along the western portion of the project site, a flat terrace in the central portion of the project site, and hilly terrain throughout the eastern and southern portions of the project site. Nearly the entire western half of the project site is currently used for agricultural operations, while the northwestern and central portions of the project site are in use as construction laydown and haul-out yards. While the majority (65%) of the project site appears to have been disturbed by development and grading, the eastern, southeastern, and southern portions of the project site remain heavily vegetated.

Built Environment

Five built environment properties were recorded on the project site during the intensive-level pedestrian survey. These properties are summarized in Table 4.5-2. Each resource is described and evaluated following the table. California Department of Parks and Recreation (DPR) Series 523 forms (DPR site records) are provided in Appendix D of the Cultural Resources Report (Appendix D to this Draft EIR).

Table 4.5-2. Built Environment Properties Recorded and Evaluated on the Project Site

Map ID	Property Type	Name or Address	Year Built	Primary Numbers
Previously Recorded on the Project Site				
2	Canal	Highline Canal	ca. 1933	P-30-176748
Newly Recorded on the Project Site				
1	Labor Camp Barracks	11405 Jeffrey Road	ca. 1967	N/A
3	Well	Decommissioned well	ca. 1972	N/A
4	Culvert	Road culvert	ca. 1967	N/A
5	Transmission line	Transmission line	ca. 1980	N/A

Notes: ca. = circa (approximately); N/A = not applicable.

Map ID 1: 11405 Jeffrey Road

Description

Map ID 1 is a one-story rectangular plan former labor camp barracks. The eastern half of the building has been renovated and is clad with replacement vertical plank siding (Photograph 3 of Appendix D). The western half of the building has not been renovated and is clad in corrugated metal siding (Photograph 4 of Appendix D). The building has a medium-pitch side-gable roof clad in corrugated metal. Fenestration includes single- and multi-light, original wood and replacement vinyl-frame slider windows arranged in long rows. Some windows on the north and south elevations are missing window frames and glass and were covered at the time of the survey. Entrances include a half-light metal door with metal security bars at the west end of both the north and the south elevation, a single metal door on the west elevation, and two single wooden doors on the east elevation. The building is in overall fair physical condition. At the time of this property's recordation, the property did not have a legal Assessor's Parcel Number because it was in the process of being consolidated with adjacent parcels; however, the property is bounded by Irvine Haul Access Road to the north, an unnamed access road to the east, Bee Canyon Access Road to the south, and a line of trees located approximately 15 feet west of the subject property.

Statement of Significance

Under NRHP and CRHR Criteria A/1, the California Labor Camp barracks building (Map ID 1) lacks a direct and important association with any event significant in local, state, or national history. Map ID 1 is associated with the California Labor Camp, which was originally composed of four buildings constructed in 1967 to provide housing for agricultural laborers and used for this purpose until 2005. Many workers who inhabited the camp worked at the El Modena Nursey, located adjacent to the camp, or the Hines Nursery, headquartered approximately 1.5 miles to the west. Although they were successful during their years in operation, neither nursery is known to have made a particularly significant contribution to the development of local agriculture. As a barracks building purposely constructed for agricultural laborers who worked on land owned by the Irvine Ranch, Map ID 1 is associated with the general pattern of agricultural development in Orange County. Map ID 1 did not, however, play a significant role in this trend. It is also not known to be directly associated with any event(s) significant in the history of Irvine, Orange County, California, or the nation. Therefore, the property does not meet NRHP Criterion A or CRHR Criterion 1 and is recommended not eligible.

Under NRHP and CRHR Criteria B/2, the California Labor Camp building lacks a significant association with the productive life of any person important in local, state, or national history. Research identified one former owner of the California Labor Camp, Arturo Espinoza, who owned the camp in the 1980s; however, research did not identify Espinoza as an individual important to our past. Although the workers who inhabited the labor camp barracks contributed to the development of the agricultural industry in Irvine, Orange County, and California, research did not uncover information to indicate that any of the workers who occupied the labor camp building made a singular and specific significant contribution to this development. Due to a lack of identified significant associations with any persons important in our past, the property is recommended not eligible under NRHP Criterion B or CRHR Criterion 2.

Under NRHP and CRHR Criteria C/3, the California Labor Camp barracks building does not fully embody the distinctive characteristics of a particular architectural style, nor is it known to represent the work of a master, possess high artistic value, or be a component of a potential or existing historic district. With its

one-story height, horizontal massing, rambling footprint, and low-pitched roof, the subject building displays some of the characteristics of the Ranch-style aesthetic, but it does not represent a fully developed articulation of the style. Additionally, alterations such as the replacement of the original windows and wall cladding have diminished architectural features that would otherwise be considered a distinctive characteristic of the style. Overall, the property lacks sufficient design and construction value to meet NRHP Criterion C or CRHR Criterion 3.

Under NRHP and CRHR Criteria D/4, Map ID 1 is not significant as a source, or likely source, of important historical information, nor does it appear likely to yield important information about historic construction methods, materials, or technologies. This technology is well understood through contemporary trade journals and scientific monographs. As such, the property lacks significance under NRHP Criterion D and CRHR Criterion 4.

Because the California Labor Camp building lacks the necessary significance to meet any of the NRHP or CRHR listing criteria, an analysis of the property's physical integrity was considered unwarranted and immaterial to the overall finding that Map ID 1 is ineligible for listing in either the NRHP or the CRHR. As such, this evaluation concludes that the California Labor Camp building is not a historical resource for the purposes of CEQA as defined under Title 14 of the California Code of Regulations, Section 15064.5(a) (14 CCR 15064.5[a]), nor is it considered a historic property under Section 106 of the NHPA because it does not meet any of the NRHP evaluation criteria as described under Title 36 of the Code of Federal Regulations, Section 60.4 (36 CFR 60.4).

Map ID 2: Highline Canal (P-30-176748)

Description

The approximately 0.10-mile segment of the Highline Canal located on the project site is concrete lined with an earthen base. It is approximately 3 feet deep and 4 feet wide and undergrounds at a concrete culvert. There is one concrete pipe positioned vertically on the west bank of the canal and one corrugated metal pipe, also positioned vertically, on the east bank at approximately latitude 33.716057, longitude −117.734778 (Photograph 5 of Appendix D). It is unclear whether these features are original to the canal segment. The Highline Canal winds southeast from the project site for approximately 0.40 miles to the Syphon Reservoir. The canal is in poor condition because it has been decommissioned since the late 1970s.

Statement of Significance

Under NRHP and CRHR Criteria A/1, the Highline Canal lacks a direct and important association with any event significant in local, state, or national history. The Highline Canal, constructed in 1933, is associated with the agricultural development of the Irvine Ranch and the local economy. As a private water supply system, it provided irrigation water to farming operations on the ranch. Although the Highline Canal is representative of the agricultural development of the Orange County area, it was not the first such local irrigation system and did not contribute in any significant way to this development pattern. The Highline Canal was one of many water infrastructure features constructed on the Irvine Ranch by The Irvine Company and Frances Mutual Water Company in the 1920s and 1930s. By the mid-1930s, for example, the Highline Canal was part of a water conveyance system that included more than 2,500 miles of gravity-fed irrigation pipeline designed to deliver water from the various reservoirs on the Irvine Ranch to agricultural fields. Because the Highline Canal represents a later expansion of the water conveyance systems in the Orange County area and is not known to be directly associated with any event(s) important in history, it therefore does not meet NRHP Criterion A or CRHR Criterion 1 and is recommended not eligible.

Under NRHP and CRHR Criteria B/2, the Highline Canal lacks a significant association with the productive life of any person important in local, state, or national history. The Highline Canal was commissioned as a joint venture by The Irvine Company and the Serrano Irrigation District and was constructed by the Frances Mutual Water Company. The canal was therefore constructed through the combined efforts of both public and private entities and is not attributable to any single individual. Due to a lack of identified significant associations with any persons important in our past, the property is recommended not eligible under NRHP Criterion B or CRHR Criterion 2.

Under NRHP and CRHR Criteria C/3, the Highline Canal is not a particularly distinctive example of an irrigation canal, nor is it known to represent the work of a master engineer, possess high artistic value, or be a component of a potential or existing historic district. The Highline Canal is a standard gravity-fed water conveyance system that supplied water to the agricultural and ranching enterprises on the Irvine Ranch. It was constructed in 1933 and remained in use through the 1970s, although its alignment was altered and substantial portions piped underground in 1940 for the construction of the El Toro Marine Base. Gravity-fed water conveyance systems have been utilized for hundreds of years and research did not indicate that the Highline Canal was constructed using methods that were technologically or materially innovative. The Highline Canal was constructed by the Frances Mutual Water Company, a local construction company established by James Irvine Jr. to construct reservoirs and water conveyance systems throughout the Irvine Ranch. Research did not indicate that the design or the construction of the canal by the Frances Mutual Water Company was the work of a master engineer or builder. Overall, the property lacks sufficient design and construction value to meet NRHP Criterion C or CRHR Criterion 3.

Under NRHP and CRHR Criteria D/4, Map ID 2 is not significant as a source, or likely source, of important historical information, nor does it appear likely to yield important information about historic construction methods, materials, or technologies. This technology is well understood through contemporary trade journals and scientific monographs. As such, the property lacks significance under NRHP Criterion D and CRHR Criterion 4.

Because the Highline Canal lacks the necessary significance to meet any of the NRHP or CRHR listing criteria, an analysis of the property's physical integrity was considered unwarranted and immaterial to the overall finding that Map ID 2 is ineligible for listing in either the NRHP or the CRHR. As such, this evaluation concludes that the Highline Canal is not a historical resource for the purposes of CEQA as defined under 14 CCR 15064.5(a), nor is it considered a historic property under Section 106 of the NHPA because it does not meet any of the NRHP evaluation criteria as described under 36 CFR 60.4.

Map ID 3: Decommissioned Well

Description

Map ID 3 consists of a decommissioned well that was associated with the former agricultural functions of the El Modena Nursery. It has a footprint measuring approximately 4 feet by 5 feet, with uneven concrete walls clad in stucco extending approximately 1 to 2 feet aboveground (Photograph 6 of Appendix D). Its opening was covered with a wooden chipping pallet and debris during the field survey. The well is in fair condition.

Statement of Significance

Under NRHP and CRHR Criteria A/1, the subject irrigation well (Map ID 3) lacks a direct and important association with any event significant in local, state, or national history. Map ID 3 is a decommissioned well constructed circa 1972. The well supported the El Modena Nursery that opened on the project site in 1967. The El Modena Nursery was one of five large nurseries in operation around Jeffrey Road and Irvine Boulevard when it opened. El Modena Nursery remained in operation until 2009, at which point it permanently closed and its greenhouses were demolished. Although associated with the general pattern of agricultural development in the County, El Modena Nursery and the related well did not play a singularly important role in that overall trend. Map ID 3 is a standard piece of commonly installed agricultural infrastructure and is one of many irrigation wells established throughout the region. Because it is not known to have made a significant contribution to the history of Orange County, California, or the nation, the property does not meet NRHP Criterion A or CRHR Criterion 1 and is recommended not eligible.

Under NRHP and CRHR Criteria B/2, the subject well lacks a significant association with the productive life of any person important in local, state, or national history. Research did not identify any information relating to individuals associated with the development or use of Map ID 3. Due to a lack of identified significant associations with any persons important in our past, the property is recommended not eligible under NRHP Criterion B or CRHR Criterion 2.

Under NRHP and CRHR Criteria C/3, the subject well is not a particularly distinctive example of a late 1960s agricultural well, nor is it known to represent the work of a master engineer, possess high artistic value, or be a component of a potential or existing historic district. Map ID 3 is a common water infrastructure feature constructed to support agricultural endeavors. Similar wells are used for agricultural uses throughout Orange County, California, and the nation. Map ID 3 does not represent a new or innovative technology in the field of agricultural water infrastructure. As such, the property is recommended not eligible under NRHP Criterion C or CRHR Criterion 3.

Under NRHP and CRHR Criteria D/4, Map ID 3 is not significant as a source, or likely source, of important historical information, nor does it appear likely to yield important information about historic construction methods, materials, or technologies. This technology is well understood through contemporary trade journals and scientific monographs. As such, the property lacks significance under NRHP Criterion D and CRHR Criterion 4.

Because the subject well lacks the necessary significance to meet any of the NRHP or CRHR listing criteria, an analysis of the property's physical integrity was considered unwarranted and immaterial to the overall finding that Map ID 3 is ineligible for listing in either the NRHP or the CRHR. As such, this evaluation concludes that the subject well is not a historical resource for the purposes of CEQA as defined under 14 CCR 15064.5(a), nor is it considered a historic property under Section 106 of the NHPA because it does not meet any of the NRHP evaluation criteria as described under 36 CFR 60.4.

Map ID 4: Road Culvert

Description

The road culvert located at latitude 33.719809, longitude −117.731310 runs north–south underneath Irvine Haul Road, an asphaltic concrete road that runs parallel to Jeffrey Road to the north. The road

culvert has an inlet made of stacked flat concrete fragments atop a corrugated steel pipe (Photograph 7 of Appendix D) that outlets on the north side of the road (Photograph 8 of Appendix D). The culvert is in fair condition.

Statement of Significance

Under NRHP and CRHR Criteria A/1, the subject culvert (Map ID 4) lacks a direct and important association with any event significant in local, state, or national history. Map ID 4 is a road culvert constructed circa 1967 to provide drainage to the surrounding area, likely to support the El Modena Nursery that opened on the project site in 1967. The El Modena Nursery was one of five large nurseries in operation around Jeffrey Road and Irvine Boulevard when it opened. Although associated with the general pattern of agricultural and roadway development of the Orange County area, neither the El Modena Nursery nor the road culvert played a particularly important role in that overall trend. Map ID 4 is a standard piece of commonly installed water conveyance and roadway infrastructure, and it is not known to be directly associated with any event(s) significant in the history of the Orange County area, California, or the nation. Therefore, the property does not meet NRHP Criterion A or CRHR Criterion 1 and is recommended not eligible.

Under NRHP and CRHR Criteria B/2, the subject culvert lacks a significant association with the productive life of any person important in local, state, or national history. Research did not identify any information relating to individuals associated with the development or use of Map ID 4. Due to a lack of identified significant associations with any persons important in our past, the property is recommended not eligible under NRHP Criterion B or CRHR Criterion 2.

Under NRHP and CRHR Criteria C/3, the subject culvert is not a particularly distinctive example of a late 1960s road culvert, nor is it known to represent the work of a master engineer, possess high artistic value, or be a component of a potential or existing historic district. Map ID 4 is a common concrete and metal road culvert constructed to provide drainage to the El Modena Nursery. Similar culverts are used throughout Irvine, Orange County, California, and the nation. Map ID 4 does not represent any new design approaches or innovative technologies or construction methods in roadway infrastructure. As such, the property is recommended not eligible under NRHP Criterion C or CRHR Criterion 3.

Under NRHP and CRHR Criteria D/4, Map ID 4 is not significant as a source, or likely source, of important historical information, nor does it appear likely to yield important information about historic construction methods, materials, or technologies. This technology is well understood through contemporary trade journals and scientific monographs. As such, the property lacks significance under NRHP Criterion D and CRHR Criterion 4.

Because the subject culvert lacks the necessary significance to meet any of the NRHP or CRHR listing criteria, an analysis of the property's physical integrity was considered unwarranted and immaterial to the overall finding that Map ID 4 is ineligible for listing in either the NRHP or the CRHR. As such, this evaluation concludes that the subject culvert is not a historical resource for the purposes of CEQA as defined under 14 CCR 15064.5(a), nor is it considered a historic property under Section 106 of the NHPA because it does not meet any of the NRHP evaluation criteria as described under 36 CFR 60.4.

Map ID 5: Transmission Line

Description

Map ID 5 consists of an approximately 0.20-mile-long segment of an SCE 120 kV transmission line with five wooden utility poles that are approximately 35 feet tall and spaced approximately 125 feet apart, constructed circa 1980 (Photograph 9 of Appendix D). The power transmission lines and associated equipment are mounted at the top of each utility pole. Wires supported by insulators are located on each pole's cross-arm. The transmission line's terminus is in the northeastern portion of the project site at Irvine Haul Road and extends outside the project site to the southeast. Many of the poles appear to have been recently replaced and the overall line is in good condition.

Statement of Significance

Under NRHP and CRHR Criteria A/1, the segment of the SCE transmission line along Jeffrey Road evaluated for this study lacks a direct and important association with any event significant in local, state, or national history. The 120 kV transmission line was built in circa 1980, substantially after the 1912–1941 period that the SCE Historic-Era Electrical Infrastructure Management Program identified as a significant period in the development of transmission line systems designed to transmit electrical power within the 67 kV to 230 kV range. Although the Jeffrey Road transmission line is representative of power infrastructure in the City of Irvine, it is not associated with any event(s) or period(s) important in SCE or electrical engineering history. As such, the SCE transmission line along Jeffrey Road is recommended not eligible under NRHP Criterion A and CRHR Criterion 1.

Under NRHP and CRHR Criteria B/2, the SCE transmission line along Jeffrey Road lacks a significant association with the productive life of any person important in local, state, or national history. Archival research indicates that the transmission line system is associated with SCE. Although the power company played an important role in the development of electrical infrastructure in Irvine, Orange County, and Southern California, the transmission line segment represents the collective work of many individuals rather than the single work of any single individual. Because research did not identify any individuals who made a singular and specific significant contribution to the development of electrical transmission line systems in Orange County, the transmission line along Jeffrey Road lacks the necessary associative significance to meet NRHP Criterion B and CRHR Criterion 2.

Under NRHP and CRHR Criteria C/3, the SCE transmission line along Jeffrey Road is not distinctive in terms of a particular type of transmission line system, a period, or a method of transmission line construction, nor does it represent the work of a master engineer, possess high artistic value, or contribute to the significance of a potential or existing historic district. The subject system is representative of a standardized transmission system consisting of wooden T-frame transmission poles, transmission lines, and hardware, and it lacks innovation regarding its overall design, form, and function. Additionally, research did not indicate that the subject system is associated with the work of a master engineer or builder, nor did it reveal that the subject line segment represents an important variation, evolution, or transition of transmission line development. Lacking sufficient design and construction value, the SCE transmission line along Jeffrey Road is recommended not eligible under NRHP Criterion C and CRHR Criterion 3.

Under NRHP and CRHR Criteria D/4, the SCE transmission line along Jeffrey Road is not significant as a source, or likely source, of important historical information, nor does it appear likely to yield important information about historic construction methods, materials, or technologies. Therefore, the SCE transmission line along Jeffrey Road is recommended not eligible under NRHP Criterion D and CRHR Criterion 4.

Because the SCE transmission line system along Jeffrey Road lacks the necessary significance to meet any of the NRHP or CRHR listing criteria, an analysis of its physical integrity was considered unwarranted and immaterial to the overall finding that the system is ineligible for listing in either the NRHP or the CRHR. As such, this evaluation concludes that the subject transmission line system is not a historical resource for the purposes of CEQA as defined under 14 CCR 15064.5(a), nor is it considered a historic property under Section 106 of the NHPA because it does not meet any of the NRHP evaluation criteria as described under 36 CFR 60.4.

Impacts Discussion

No Impact. As defined by the CEQA Guidelines (14 CCR 15000 et seq.), a "historical resource" is a resource that is listed in or eligible for listing in the NRHP or CRHR, has been identified as significant in a historical resource survey, or is listed on a local register of historical resources. Under CEQA, a project may have a significant effect on the environment if it may cause "a substantial adverse change in the significance of a historical resource" (PRC Section 21084.1; 14 CCR 15064.5[b]). If a site is listed or eligible for listing in the CRHR, or included in a local register of historic resources, or identified as significant in a historical resources survey (meeting the requirements of PRC Section 5024.1[q]), it is a historical resource and is presumed to be historically or culturally significant for the purposes of CEQA (PRC Section 21084.1; 14 CCR 15064.5[a]).

No historical resources or historic properties were identified within the project site as a result of archival research, a records search, a field survey, and significance evaluations. Map IDs 1, 2, 3, 4, and 5, discussed in the Cultural Resources Field Survey subsection in Section 4.5.4(1), are not currently listed in any national, state, or local registers, nor have they been previously identified in any local historical resources surveys.

Resources on the project site were evaluated in accordance with Sections 15064.5(a)(2) and 15064.5(a)(3) of the CEQA Guidelines using the criteria outlined in PRC Section 5024.1 and it was determined that none of the resources on the project site are considered historical resources for the purposes of CEQA. The recommended status code for Map IDs 1, 2, 3, 4, and 5 is 6Z (found ineligible for the NRHP, CRHR, or local designation through survey evaluation). No further cultural considerations are required for these resources and no other resources were identified on the project site as a result of this investigation. Therefore, the project would not cause a substantial adverse change in the significance of a known historical resource pursuant to Section 15064.5, and no impacts would occur.

2. Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?

Background Research

Cultural Resources Records Search

On December 9, 2024, Dudek conducted a search of the California Historical Resources Information System at the South Central Coastal Information Center (SCCIC), located on the campus of California State University, Fullerton. The search included a review of their collection of mapped prehistoric, historical, and built-environment resources; DPR site records; technical reports; historical maps; and local inventories. Additional consulted sources included the NRHP; CRHR; and listed Office of Historic Preservation Archaeological Determinations of Eligibility, California Points of Historical Interest, and California Historical Landmarks. The confidential records search results are provided in Confidential Appendix A of Appendix D to this Draft EIR.

Previously Conducted Cultural Resources Studies

Results of the California Historical Resources Information System records search indicate that 28 previous cultural resources technical studies have been conducted within a 0.5-mile radius of the project site, 11 of which address portions of the project site (Table 4.5-3). See Confidential Appendix A of Appendix D to this Draft EIR for the complete SCCIC records search results and associated documentation. Summaries of the reports relevant to the currently proposed project are provided following Table 4.5-3.

Table 4.5-3. Previous Cultural Resource Studies Overlapping the Project Site

Report ID	Year	Title	Authors
Studies Overlapping the Project Site			
OR-00252	1978	Cultural Resources Report – Preliminary Assessment on the Proposed San Diego Creek Watershed Erosion and Sedimentary Control System in Hicks Canyon, Hicks Canyon Wash, Rattlesnake Creek Wash, San Diego Creek, and the San Joaquin Marsh Located in Orange County	Desautels, R.J.
OR-00305	1979	The History of Archaeological Research on Irvine Ranch Property: The Evolution of a Company Tradition	Schroth, A.
OR-00648	1982	Cultural Resource Survey: Archaeological Resources: Foothill Transportation Corridor, Phase II	Breece, B., and B. Padon
OR-00847	1985	Archaeological Resource Inventory City of Irvine and Its Sphere of Influence	Padon, B.
OR-01428	1994	First Supplemental Archaeological Survey Report for the Eastern Transportation Corridor (SR 231): Siphon Ridge Revegetation Area Orange County, California	Daey, D., and J. McKeehan
OR-02106	1994	Supplemental Historic Property Survey Report for Siphon Ridge Revegetation Area, Orange County, California, 12-ORA-231, 12830-111000	Huey, G.
OR-02225	1978	The Irvine Company Planning Process and California Archaeology – A Review and Critique	Strozier, H.
OR-02342	2001	Peer Review of "A Phase I Cultural Resources Inventory for Planning Area 9, Irvine, California," dated April 12, 2001; author, C. Drover, PhD; prepared by The Keith Companies, Incorporated, for the Irvine Community Development Company	Bissell, R.M.
OR-02845	2001	A Phase I Cultural Resources Inventory for Planning Area 9 Irvine, California	Drover, C.E.
OR-03600	2007	Results of Archaeological Survey and Monitoring for Southern California Edison's Pole Replacements After Santiago Fire Along Santiago Canyon Road, Modjeska Canyon Road, and Hicks Canyon Road; Orange County, California; JO:6259-0468	Garcia, K.H., and M. Rockman
OR-03824	2000	A Cultural Resources Inventory of Planning Areas 1 & 2, Irvine, California	Drover, C.

OR-00252

Cultural Resources Report – Preliminary Assessment on the Proposed San Diego Creek Watershed Erosion and Sedimentary Control System in Hicks Canyon, Hicks Canyon Wash, Rattlesnake Creek Wash, San Diego Creek, and the San Joaquin Marsh Located in Orange County (Desautels 1978) documents the results of an archaeological assessment to determine if the construction of two dams within Hicks Canyon would impact archaeological resources. The area of study overlaps approximately 70% of the project site. The assessment included a literature search and a pedestrian survey. No archaeological resources were discovered within the project site. At the time the study was performed, the final project plans, including the location of staging and borrow areas, were not available; however, it was determined that no archaeological resources would be impacted at the location of the two dams.

OR-00648

Cultural Resource Survey: Archaeological Resources: Foothill Transportation Corridor, Phase II (Breece and Padon 1982) documents the results of an archaeological investigation for proposed freeway alignments. The study area covers 23 miles and overlaps approximately 50% of the project site. The investigation included archival research and a pedestrian survey; however, the project site was not surveyed due to the presence of a nursery and the disturbed nature of the ground surface. No archaeological resources were discovered within the project site as a result of the literature review.

OR-00847

Archaeological Resource Inventory City of Irvine and Its Sphere of Influence (Padon 1985) documents the results of an archaeological study performed to provide the City of Irvine with a comprehensive database of existing archaeological resources. The area of study overlaps the entire project site. The study included a literature review and a pedestrian survey; however, the project site was not able to be surveyed due to the presence of an active agricultural operation. No archaeological resources were discovered within the project site as a result of the literature review. It was recommended that the unsurveyed portions be surveyed as soon as field conditions permit.

OR-01428

First Supplemental Archaeological Survey Report for the Eastern Transportation Corridor (SR 231): Siphon Ridge Revegetation Area, Orange County, California (Daey and McKeehan 1994) documents the results of a supplemental archaeological investigation for the revegetation of an area associated with the Eastern Transportation Corridor project. The area of study overlaps approximately 10% of the project site along the site's southern boundary. The investigation included a literature review, a pedestrian survey, Native American outreach, and the excavation of a 1-meter by 1-meter (3.3-foot by 3.3-foot) test unit. The investigation identified one prehistoric site, currently identified as P-30-001400, that is located approximately 80 meters (262 feet) south of the project site. P-30-001400 was determined to be entirely disturbed by terracing, planting, and road construction; had no subsurface deposits; and contained no diagnostic datable carbon or obsidian. Further scientific study of P-30-001400 was not recommended.

OR-02845

A Phase I Cultural Resources Inventory for Planning Area 9, Irvine, California (Drover 2001) documents the results of an archaeological investigation conducted to determine whether development would impact cultural resources. The area of study overlaps approximately 25% of the project site. The investigation included a records search, an archival review, and a pedestrian survey; however, the project site was not surveyed. No archaeological resources were discovered within the project site as a result of the records search and archival review. It was suggested that due to its proximity to intermittent drainages, such as Hicks Canyon Wash, the study area could contain prehistoric sites that could have been either destroyed or buried by alluvial soils. It was recommended that a qualified monitor be present during all grading activities to inspect soils for previously unknown archaeological resources.

OR-03600

Results of Archaeological Survey and Monitoring for Southern California Edison's Pole Replacements After Santiago Fire Along Santiago Canyon Road, Modjeska Canyon Road, and Hicks Canyon Road; Orange County, California; J0:6259-0468 (Garcia and Rockman 2007) documents the results of pedestrian surveys and cultural monitoring for the replacement of SCE distribution poles that were destroyed as a result of the Santiago Fire. A pedestrian survey of a 15-meter radius around each pole that is located along Hicks Canyon Road was performed after the power pole replacements had already taken place. No cultural monitoring was performed within the project site and no archaeological resources were identified on or directly adjacent to the project site as a result of the survey. Further, there was no evidence to suggest that subsurface cultural deposits were impacted by the distribution pole replacements.

OR-03824

A Cultural Resources Inventory of Planning Areas 1 & 2, Irvine, California (Drover 2000) documents the results of an archaeological investigation conducted to determine whether commercial and residential development would impact cultural resources. The area of study overlaps approximately 10% of the project site along the site's northeastern boundary. The investigation included a records search and a pedestrian survey. No cultural resources were identified within the project site as a result of the investigation.

Previously Identified Cultural Resources

The SCCIC records search indicates that seven previously recorded cultural resources are located within a 0.5-mile radius of the project site, one of which intersects the project site. The overlapping resource, P- 30- 176748, or the Highline Canal, is characterized as a historic-era built environment resource and is addressed in this report as Map ID 2. Of the seven resources within the 0.5-mile radius, four are prehistoric sites, two are historic-era built environment resources, and one is a multicomponent site containing both prehistoric and historic-era components. All previously recorded cultural resources identified within 0.5 miles of the project site are listed in Table 4.5-4. See Confidential Appendix A of EIR Appendix D for the complete SCCIC records search results, documentation, and DPR site records.

Table 4.5-4. Previously Identified Cultural Resources Within 0.5 Miles of Project Site

Primary Number	Trinomial	Age	Description	Eligibility for NRHP	Recording Event
Resources on the Project Site					
P-30-176748	N/A	Historic-era	Highline Canal	6Z	2003 (W.A. Sawyer)
Resources Within 0.5 Miles of the Project Site					
P-30-000601	CA-ORA-000601	Prehistoric	Flake scatter	Not evaluated	1974 (N. Farrell); 1982 (W.H. Breece)
P-30-001237	CA-ORA-001237	Prehistoric	Lithic scatter consisting of flakes, flaked stone tools, and hammer stones	Not evaluated	1990 (J. Sorensen, G. Brown, P. Fulton, and B. Texier)
P-30-001246	CA-ORA-001246	Prehistoric	Lithic scatter consisting of manos and a possible core	Not evaluated	1990 (J.M. Foster)
P-30-001371	CA-ORA-001371/H	Prehistoric; Historic-era	Prehistoric component: a lithic scatter consisting of flakes, a flaked stone tool, and ground stone; Historic-era component: a dilapidated wooden building, household debris, building materials, and fragments of farm equipment	Found ineligible through subsurface testing	1994 (D. McLean and D. Taylor); 1995 (G. Calvano)
P-30-001400	CA-ORA-001400	Prehistoric	Lithic scatter consisting of ground stone, flakes, cores, and a core tool	Not evaluated	1994 (D. Davy and J. McKeehan)
P-30-161867	N/A	Historic-era	Building, South Coast Gun Club; OHP Property Number 070071	Appears ineligible	1990 (R. Hatheway)

Notes: NRHP = National Register of Historic Places; N/A = not applicable; 6Z = found ineligible for NRHP, California Register of Historical Resources, or local designation through survey evaluation.

Historical Maps and Aerial Photographs Review

Dudek consulted historical topographic maps and aerial photographs through the Nationwide Environmental Title Research LLC to better understand any natural or human-made changes to the project site and surrounding properties over time.

Topographic Maps

Topographic maps depict the elevation of the study area as well as the areas surrounding it and illustrate the location of roads and some buildings. Although topographic maps are not comprehensive, they are another tool in determining whether a study area has been disturbed and at times to what approximate depth. Dudek examined historic topographic maps from 1935, 1944, 1950, 1958, 1960, 1963, 1970, 1978, 1982, 1984, 2000, 2012, 2015, 2018, and 2022 to determine the growth in the area and how the properties developed over time (Table 4.5-5) (NETR 2025b).

Table 4.5-5. Review of Historical Topographic Maps

Year	Description
1935	Only the western half of the project site is illustrated on the 1935 topographic map. There is an informal road along the southern boundary of the project site, where Bee Canyon Access Road is currently located. The road turns north toward the Hicks Canyon Wash, then turns west along the project site's northern boundary, and then continues north. There is a structure in the center of the project site, south of the informal road. Hicks Canyon Wash is depicted as stopping at the northern boundary of the project site, at the edge of the illustrated area. Map ID 2 (the Highline Canal) is not depicted.
1944	Depicts the same information as the 1935 topographic map.
1950	The entire project site is illustrated on the 1950 topographic map. Hicks Canyon Wash borders the northern boundary of the project site, intersecting the site at various points, including the approximate location of Map ID 4 (road culvert). The Highline Canal is present, connecting to the Hicks Canyon Wash and intersecting the center of the project site. The area where the Highline Canal intersects the project site is labeled "Siphon." The informal road depicted in the 1935 topographic map is still present; however, it follows a slightly different layout. The informal road intersects the center of the project site but the northern and southern ends of the road fork into different directions. The southern end forks with one portion of the road following the Highline Canal south, and the other portion intersecting the southwestern portion of the project site. The northern end of the informal road forks with one portion following Hicks Canyon Wash to the northwest, and the other portion continuing north. There are two additional structures on the project site, one small square structure and one long rectangular structure. Both are located directly north of the northern fork of the informal road.
1958	Depicts the same information as the 1950 topographic map.
1960	The informal road is depicted extending along the northern section of the project site, following Hicks Canyon Wash. There is an additional square structure in the center of the project site, directly west of where the informal road intersects the center of the project site. Hicks Canyon Wash intersects the project site at three locations: the northern border, the eastern portion, and the center of the project site; however, it no longer intersects the center of the project site from north to south, instead running east to southwest. This is not consistent with the layout of the Highline Canal.
1963	Depicts the same information as the 1960 topographic map.
1970	Hicks Canyon Wash and the Highline Canal follow the same paths depicted on the 1950 topographic map. The southern portion of the informal road follows the same layout as it did in the 1950 topographic map. The northern portion of the informal road connects to a formal road that borders approximately two-thirds of the project site's northern boundary and appears to follow the same path as Jeffrey Road. This formal road intersects Hicks Canyon Wash in the approximate location of the road culvert. Two roads break off to the south from the formal road, intersecting the northeastern portion of the project site. One of the roads that breaks off to the south stops at four structures that represent the California Labor Camp (11405 Jeffrey Road, including Map ID 1). Only one other structure, the square structure in the center of the project site, is depicted on the map.
1978	There are three additional structures in the center of the project site: one large rectangular structure and two small square structures.
1982	There is an additional rectangular structure along the northern boundary of the project site.
1984	There are eight additional large rectangular structures in the western portion of the project site, lined up along the informal road.

Table 4.5-5. Review of Historical Topographic Maps

Year	Description
2000	The informal road is now depicted as a formal road and forks in the center of the project site. There is now a formal road along the western boundary of the project site, where Portola Parkway is currently located. Bee Canyon Access Road is now present. There is an additional large rectangular structure in the western portion of the project site, as well as two small square structures in the southwestern portion of the project site, and two small square structures in the center of the project site. The small square structure depicted south of the informal road, in the center of the project site, on the 1970 topographic map is no longer present.
2012	No structures are depicted on the topographic map. Portola Parkway, Jeffrey Road, and Bee Canyon Access Road appear as they do today.
2015, 2018, and 2022	There is an increase in development in the area west of Portola Parkway. There are no changes to the project site to suggest ground disturbance has occurred.

Source: NETR 2025b.

Although topographic maps are informative, they do not illustrate the minute changes that can occur to a landscape over time, and at times are inconsistent with what is depicted on the maps year to year. Most often, structures depicted in topographic maps are limited to those with community or social significance (e.g., fire stations or hospitals), including additions or changes to roads and/or waterways. Therefore, the information gathered contributes to the overall understanding of the chronological development of a study area but must be considered with these limitations in mind.

Aerial Photographs

A review of historic aerial photographs for the years 1938, 1946, 1952, 1963, 1967, 1972, 1980, 1981, 1985, 1987, 1988, 1992–2000, 2002–2005, 2009, 2010, 2012, 2014, 2016, 2018, 2020, and 2022 was conducted as part of the archival research effort for the proposed project. The aerial photographs provided a general idea of the growth on the project site and its surroundings and changes over time (Table 4.5-6) (NETR 2025a; UCSB 2025).

Table 4.5-6. Review of Historical Aerial Photographs

Year	Description
1938	The project site is intersected by an informal road and the Highline Canal. A structure and a small number of trees are in the center of the project site, adjacent to the informal road and the Highline Canal. Consistent with what is depicted on the 1950 topographic map, there are two roads leading away from the structure. The roads are parallel to one another at first, trending southwest, and then one road curves to the south, following the Highline Canal, and the other continues southwest.
1946	The western half of the project site appears to have been disked. The eastern border of the disked area appears consistent with the informal road depicted on the 1935 topographic map. Hicks Canyon Wash appears unchanneled, bordering the northern boundary of the project site and intersecting the northeastern portion of the project site. There is a group of small structures south of the road that is trending to the southwest, five of which appear to overlap the project site. The area surrounding the project site is undeveloped, with the area to the west being used for agricultural purposes.

Table 4.5-6. Review of Historical Aerial Photographs

Year	Description
1952	The majority of the project site appears to have been disked, with the exception of the hill that is currently located south of Bee Canyon Access Road and the hills in the eastern portion of the project site. The trees located at the center of the project site have been removed. Only two of the small structures in the southwestern portion of the project site remain. The northern end of the road intersecting the project site now forks to the north and northwest. This is consistent with the informal road depicted on the 1950 topographic map. Directly north of the fork in the road, inside the northern boundary of the project site, there are three rectangular structures. Syphon Reservoir is present south of the project site.
1963	The western portion of the project site is being used for agricultural purposes. The portion of Hicks Canyon Wash located north and outside of the project site appears to have been channelized. There is a road along the northern boundary of the project site. The road curves to the south, stopping at the center of the eastern portion of the project site, where the California Labor Camp is to be constructed. There are various roads along the hill located in the northeast corner of the project site. There appears to be a small object where Map ID 3 (decommissioned well) is located; however, it is not discernible due to the quality of the image.
1967	The California Labor Camp (11405 Jeffrey Road, including Map ID 1) is now present in the eastern portion of the project site. The decommissioned well is now visible in its present location.
1972	As it does in the present day, the road along the northern boundary of the project site now follows the hillside within the northeastern portion of the project site. Hicks Canyon Wash now appears channelized directly north of the project site and turns south, overlapping the northeastern portion of the project site. The road crosses Hicks Canyon Wash in the same location as the road culvert. Approximately 90% of the project site is being used for agricultural operations that include fields, greenhouses, and parking.
1980	The hillside currently located south of Bee Canyon Access Road appears to have been disked. There are various small structures along the southwestern boundary of the project site. Map ID 5 (transmission line) is visible in its present location.
1985	The hillside currently located south of Bee Canyon Access Road appears to be in use as an orchard.
1987	Bee Canyon Access Road is under development. The various small structures along the southwestern boundary of the project site are no longer present.
1988	Bee Canyon Access Road is present.
1992	There are no significant changes to the project site.
1993	Portola Parkway is under development directly west of the project site.
1994	Portola Parkway now connects to Jeffrey Road. Most of the trees in the orchard south of Bee Canyon Access Road have been removed.
1995	The remaining trees south of Bee Canyon Access Road have been removed.
1996–1999	There is an increase in development west of the project site, although there are no significant changes to the project site.
2000	The parking lot in the northeastern corner of the project site is present.
2002	There are no significant changes to the project site.
2003	There are no significant changes to the project site.
2004 and 2005	There are no significant changes to the project site.
2009	The rectangular structure along the northern border of the project site has been removed.

Table 4.5-6. Review of Historical Aerial Photographs

Year	Description
2010 and 2012	Greenhouses on the project site (associated with El Modena Nursery) have been removed but the project site is still being used for agriculture.
2014	There are no significant changes to the project site.
2018	The agriculture fields in the center of the project site have been graded.
2020	All the structures associated with the California Labor Camp except Map ID 1 have been demolished.
2022	There are no significant changes to the project site and the project site appears as it does in the present day.

Sources: NETR 2025a; UCSB 2025.

Native American Coordination

NAHC Sacred Lands File Search

Dudek requested a NAHC Sacred Lands File search for the project site on August 9, 2024. The NAHC replied via email on August 21, 2024, stating that the Sacred Lands File search was completed with negative results. Additionally, the NAHC provided a list of Native American tribes and individuals/organizations with traditional geographic associations to the project site that might have knowledge of cultural resources in the area. See Appendix B of the Cultural Resources Report (Appendix D to this Draft EIR) for complete documentation of Sacred Lands File search results. For more detail regarding Native American coordination efforts, refer to Section 4.17, Tribal Cultural Resources, of this Draft EIR.

Cultural Resources Field Survey

Dudek cultural resources specialists Roshanne Bakhtiary and David Alexander conducted an intensive-level pedestrian survey of the project site on January 21, 2025. The project site totals approximately 105 acres. The topography is a mixture of flat landscape along the western portion of the project site, a flat terrace in the central portion of the project site, and hilly terrain throughout the eastern and southern portions of the project site. Nearly the entire western half of the project site is currently used for agricultural operations, while the northwestern and central portions of the project site are in use as construction laydown and haul-out yards. While the majority (65%) of the project site appears to have been disturbed by development and grading, the eastern, southeastern, and southern portions of the project site remain heavily vegetated and undeveloped.

Archaeology

Ground surface visibility on the project site ranged from poor to excellent (0%–90%). Poor ground surface visibility (0%–25%) was observed in areas covered in dense vegetation, hardscape, and fill (Photograph 1 of Appendix D, Cultural Resources Report). This accounted for approximately 40% of the total and encompassed the majority of the eastern, southeastern, and southern portions of the project site. Fair to good ground surface visibility (25%–75%) was observed in the central portion of the project site (accounting for 10% of the total project site), and excellent (75%–90%) ground surface visibility was observed in the fallow agricultural fields in the western half of the project site (Photograph 2 of Appendix D). Excellent ground surface visibility accounted for the remaining 50% of the project site. Vegetation included various species of invasive grasses, black mustard (*Brassica nigra*), eucalyptus (*Eucalyptus* sp.), Italian plumeless

thistle (*Carduus pycnocephalus*), wild tobacco (*Nicotiana* sp.), coyote brush (*Baccharis pilularis*), and various agricultural grasses (alfalfa, etc.). Disturbances included modern debris, various informal roadways, laydown yards, borrow piles, ongoing construction activity, and agricultural fields. Additionally, there was evidence of vegetation clearing and overland vehicle travel (tire ruts, etc.) throughout the entire project site. Overall, no prehistoric or historic-era archaeological resources were identified on the project site during the intensive-level pedestrian survey.

Impacts Discussion

Less-Than-Significant Impact with Mitigation Incorporated. The cultural resources inventory and evaluation of the project site indicates that there is a moderate potential for the inadvertent discovery of archaeological resources during project implementation. Although the SCCIC records search did not identify any archaeological resources within the project site, several are located within the 0.5-mile radius. An NAHC Sacred Lands File search was also conducted for the proposed project, and results were negative for Native American cultural resources within the search area. Although the archival review indicates that the project site has been subject to past disturbances associated with the development of agricultural fields, the California Labor Camp, and El Modena Nursery throughout the mid and late twentieth century, alluvial soils are present throughout the project site, which generally have a moderate potential to contain intact archaeological deposits. Although no archaeological resources were identified on the project site during the pedestrian survey, approximately 40% of the ground surface was heavily obscured by dense vegetation, hardscape, and fill.

Although the project would not have any impacts on known significant or unique archaeological resources, there is a moderate potential for the inadvertent discovery of subsurface archaeological resources during project implementation. The records search, NAHC Sacred Lands File search, and pedestrian survey did not identify any archaeological resources within the project site; however, the project site likely would have been used by indigenous Native American inhabitants prior to Euromerican contact, and there is ample evidence to indicate the project site's historical use as an agricultural operation and labor camp.

The potential for intact cultural deposits to exist within native soils to the depths of assumed ground disturbance is unknown. In the event that unanticipated cultural resources are encountered during project implementation, an assessment and evaluation of the resource would be conducted, potentially resulting in the determination that the resource is historical in accordance with the definition outlined in CEQA Guidelines Section 15064.5. As a result, the project has the potential to impact and thus cause a substantial adverse change in the significance of a yet unknown archaeological resource. Therefore, mitigation is required to address impacts related to the inadvertent discovery of yet unknown archaeological resources, as outlined in Mitigation Measure (MM) CUL-1 (Cultural Resources Sensitivity Training) and MM-CUL-2 (Cultural Resources Monitoring and Inadvertent Discovery Protocols; refer to Section 4.5.5 for the text of all Cultural Resources mitigation measures). MM-CUL-1 requires that all project construction personnel participate in cultural resources sensitivity training for the proper identification and treatment of inadvertent discoveries. MM-CUL-2 requires the retention of an on-call qualified archaeologist to address inadvertent discoveries and requires that construction work occurring within 50 feet of a cultural resource discovery be immediately halted until the qualified archaeologist can assess and evaluate the discovery pursuant to CEQA. With implementation of MM-CUL-1 and MM-CUL-2, significant impacts to archaeological resources would be reduced to less than significant with mitigation incorporated.

3. Would the project disturb any human remains, including those interred outside of dedicated cemeteries?

Less-Than-Significant Impact with Mitigation Incorporated. The project site is not used as a cemetery and is not otherwise known to contain human remains. The pedestrian field survey conducted for the project did not identify any human remains or find any indications that they would be expected to be found at the project site. However, although it is unlikely, there is the possibility of human remains being discovered during ground-disturbing activities on the project site. If remains are discovered during project construction activities, mitigation is proposed that would require that work in the vicinity of the discovery be halted and that procedures set forth in PRC Section 5097.98 and HSC Section 7050.5 be followed. The project would be required to comply with Section 7050.5 of the HSC and the project applicant would implement MM-CUL-3 (Unanticipated Discovery of Human Remains). Implementation of MM-CUL-3 would ensure that potential impacts to human remains would be less than significant with mitigation incorporated.

Summary of Impacts

Although the project would not have any impacts on known significant or unique archaeological resources, there is a moderate potential for the inadvertent discovery of subsurface archaeological resources or human remains during project implementation. These impacts would be potentially significant, absent mitigation.

No impact would occur related to causing an adverse change in the significance of a historical resource.

4.5.5 Mitigation Measures

Implementation of the following mitigation measures would address the project's potentially significant impacts relating to discovery of yet unknown archaeological resources and the discovery of human remains:

MM-CUL-1 Cultural Resources Sensitivity Training. Prior to the initiation of ground-disturbing activities, construction crews shall be made aware of the potential to encounter cultural resources and the requirement for cultural monitors to be present during these activities. Topics addressed should include definitions and characteristics of cultural resources and tribal cultural resources, regulatory requirements and penalties for intentionally disturbing cultural resources, and protocols to be taken in the event of an inadvertent discovery.

MM-CUL-2 Cultural Resources Monitoring and Inadvertent Discovery Protocols. A Cultural Resources Monitoring and Inadvertent Discovery Plan (Plan) shall be prepared by an archaeological principal investigator meeting the Secretary of the Interior's Professional Qualification Standards for Archaeology, and subject to City of Irvine (City) review prior to initiation of construction. The Plan shall detail, at a minimum, requirements for archaeological monitoring (as applicable); roles and responsibilities; inadvertent discovery, management, and communication protocols; and daily and post-construction reporting.

An archaeological monitor shall be present during all initial ground-disturbing activities for the project in areas with the highest perceived archaeological sensitivity. This includes areas along Hicks Canyon Wash and throughout the northeastern portion of the project area, which has not been subject to past mass-grading efforts. Areas of lower sensitivity, including areas previously graded for agricultural use shall be subject to weekly spot checks. Archaeological monitoring may be adjusted (increased, decreased, or discontinued) at the recommendation of the archaeological

principal investigator based on inspection of exposed cultural material and the observed potential for soils to contain intact cultural deposits or otherwise significant archaeological material. The archaeological monitor shall have the authority to temporarily halt work to inspect areas for potential cultural material or deposits.

In the event that unanticipated archaeological deposits or features are exposed during construction activities, all construction work occurring within 50 feet of the find shall immediately stop until the archaeological principal investigator is provided access to the project site and can assess the significance of the find and determine whether additional study is warranted. The work exclusion buffer may be adjusted as appropriate to allow work to feasibly continue at the recommendation of the archaeological principal investigator. Should it be required, temporary flagging shall be installed around the resource to avoid any disturbance from construction equipment. The potential for avoidance and preservation in place should be the primary consideration of this initial process. The significance of the find shall be assessed as outlined in the California Environmental Quality Act (CEQA) Guidelines and statute (14 CCR 15064.5[f]; California Public Resources Code Section 21082). If the archaeological principal investigator observes the discovery to be potentially significant under CEQA, additional efforts, such as the preparation of an archaeological treatment plan, testing, and/or data recovery, are warranted prior to allowing construction to proceed in this area.

Daily monitoring logs shall be completed by the on-site archaeological monitor. Within 60 days following completion of construction, the archaeological principal investigator shall provide an archaeological monitoring report to the City. This report shall include the results of the cultural monitoring program (even if negative), including a summary of any findings or evaluation/data recovery efforts, and supporting documentation that demonstrates that all mitigation measures defined in this environmental impact report were appropriately met. Appendices shall include archaeological monitoring logs and documentation relating to any newly identified or updated cultural resources. This report shall be submitted to the South Central Coastal Information Center once considered final.

MM-CUL-3 Unanticipated Discovery of Human Remains. In accordance with Section 7050.5 of the California Health and Safety Code and the requirements of the California Environmental Quality Act (CEQA) Guidelines Section 15064.5(e), if human remains are found, the Orange County Coroner (County Coroner) shall be immediately notified of the discovery. No further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains shall occur until the County Coroner has determined the appropriate treatment and disposition of the human remains. If the County Coroner determines that the remains are, or are believed to be, Native American, the County Coroner shall notify the Native American Heritage Commission (NAHC) within 24 hours. In accordance with California Public Resources Code Section 5097.98, NAHC must immediately notify the person or persons it believes to be the Most Likely Descendant of the deceased Native American. The Most Likely Descendant shall complete inspection after being granted access to the site and make recommendations for the treatment and disposition, in consultation with the landowner, of the human remains and associated grave goods.

4.5.6 Level of Significance After Mitigation

Impacts relating to inadvertent discovery of archaeological resources would be addressed by implementation of MM-CUL-1 and MM-CUL-2, which would reduce impacts to a less-than-significant level. Impacts from potential discovery of human remains would be addressed by implementation of MM-CUL-3, which would reduce impacts to a less-than-significant level.

No impacts would occur relating to historical resources; therefore, no mitigation is required.

4.5.7 Cumulative Impacts

Cultural cumulative impacts include the project's impacts and those likely to occur as a result of other existing, proposed, and reasonably foreseeable projects (refer to Table 3-1 in Chapter 3). These projects have all involved or will involve grading or other excavation activities that have potential to impact cultural resources. The geographic scope for cumulative project was selected because the archaeological and historical resources within this area are expected to be similar to those that occur on the project site due to their proximity and because similar environments, landforms, and hydrology would result in similar land use and thus similar site types.

The project would not cause a substantial adverse change in significance of a known historic site, either directly or indirectly. This is because there are no known significant historical built environment resources in the project area. Additionally, as needed, projects would incorporate individual mitigation for site-specific historical resources present on each individual project site. Therefore, the project's impacts combined with those of nearby projects would not result in a cumulatively considerable or significant impact on historic sites. Therefore, the project would not result in a cumulatively considerable contribution to this impact.

The project would have the potential to cause a substantial adverse change in the significance of a known archaeological resource, directly or indirectly. There are no known significant archaeological resources in the project area. However, the potential for intact cultural deposits to exist within native soils to the depths of assumed ground disturbance is unknown. Cumulative projects would be required to assess impacts to archaeological resources through the environmental review (CEQA) process. Additionally, as needed, projects would incorporate individual mitigation for site-specific archaeological resources present on each individual project site. Furthermore, the proposed project does not include construction (including grading/excavation) or design features that could directly or indirectly contribute to an increase in a cumulative impact to archaeological resources, because the implementation of MM-CUL-1 (Cultural Resources Sensitivity Training) and MM-CUL-2 (Cultural Resources Monitoring and Inadvertent Discovery Protocols) would ensure that any significant archaeological resources uncovered during project excavations would be properly analyzed and salvaged by the archaeological monitor, reducing any potentially significant impacts to less-than-significant levels. Therefore, the project would not result in cumulatively considerable impacts to archaeological resources.

The project would have the potential to disturb human remains, including those interred outside of dedicated cemeteries. The pedestrian field survey conducted for the project did not identify any human remains or find any indications that they would be expected to be found at the project site. However, although it is unlikely, there is the possibility of human remains being discovered during ground-disturbing activities on the project site, which would represent a potentially significant impact. If remains are discovered during project construction activities, mitigation is proposed (MM-CUL-3, Unanticipated Discovery of Human Remains) that would require that work in the vicinity of the discovery be halted and that procedures set forth in PRC Section 5097.98 and HSC

Section 7050.5 be followed, reducing potential impacts to less-than-significant levels. Cumulative projects would also be required to assess impacts through the environmental review (CEQA) process. Additionally, as needed, projects would incorporate individual mitigation for site-specific potential to disturb human remains on each individual project site. Therefore, the project's impacts combined with those of nearby projects would not result in a cumulatively considerable or significant impact regarding the disturbance of human remains, including those interred outside of dedicated cemeteries.

4.5.8 References

Basgall, M.E., L. Johnson, and M. Hale. 2002. "An Evaluation of Four Archaeological Sites in the Lead Mountain Training Area, Marine Corps Air Ground Combat Center, Twentynine Palms, California." Submitted to U.S. Army Corps of Engineers, Fort Worth, Texas.

Bean, L.J., and F.C. Shipek. 1978. "Luiseño." In *Handbook of North American Indians, Vol. 8, California*, edited by R.F. Heizer, 550–563. Washington, DC: Smithsonian Institution.

Boscana, G. 1846. "Chinigchinich: A Historical Account of the Origin, Customs, and Traditions of the Indians at the Missionary Establishment of St. Juan Capistrano, Alta California." In *Life in California*, by A. Robinson, 227–341. New York: Wiley & Putnam.

Breece, B., and B. Padon. 1982. *Cultural Resource Survey: Archaeological Resources: Foothill Transportation Corridor, Phase II*. On file at South Central Coastal Information Center, located on the campus of California State University, Fullerton. Accessed December 9, 2024.

Byrd, B.F., and S.N. Reddy. 2002. "Late Holocene Adaptations Along the Northern San Diego Coastline: New Perspectives on Old Paradigms." In *Cultural Complexity on the California Coast: Late Holocene Archaeological and Environmental Record*s, edited by J.M. Erlandson and T.L. Jones, 41–62. University of California–Los Angeles Press.

Caltrans (California Department of Transportation). 2013. "A Historical Context and Archaeological Research Design for Work Camp Properties in California." Accessed January 2025. https://dot.ca.gov/-/media/dot-media/programs/environmental-analysis/documents/ser/work-camps-a11y.pdf.

City of Irvine. 1973. "Cultural Resources Element." Element E in *City of Irvine General Plan*. Accessed February 2025. https://legacy.cityofirvine.org/civica/filebank/blobdload.asp?BlobID=20693#:~:text=Description%20of%20Cultural%20Resources,%2C%20and%20where%20appropriate%2C%20preservation.

City of Irvine. 2025. "History of the City." Accessed January 2025. https://www.cityofirvine.org/about-irvine/history-city.

Daey, D., and J. McKeehan. 1994. *First Supplemental Archaeological Survey Report for the Eastern Transportation Corridor (SR 231): Siphon Ridge Revegetation Area, Orange County, California*. On file at South Central Coastal Information Center, located on the campus of California State University Fullerton. Accessed December 9, 2024.

Davis, E.L. 1978. *The Ancient Californians: Rancholabrean Hunters of the Mojave Lakes Country*. Natural History Museum of Los Angeles County.

Desautels, R.J. 1978. *Cultural Resources Report – Preliminary Assessment on the Proposed San Diego Creek Watershed Erosion and Sedimentary Control System in Hicks Canyon, Hicks Canyon Wash, Rattlesnake Creek Wash, San Diego Creek, and the San Joaquin Marsh Located in Orange County*. On file at South Central Coastal Information Center, located on the campus of California State University, Fullerton. Accessed December 9, 2024.

Drover, C. 2000. A Cultural Resources Inventory of Planning Areas 1 & 2, Irvine, California. On file at South Central Coastal Information Center, located on the campus of California State University Fullerton. Accessed December 9, 2024.

Drover, C.E. 2001. *A Phase I Cultural Resources Inventory for Planning Area 9, Irvine, California*. On file at South Central Coastal Information Center, located on the campus of California State University, Fullerton. Accessed December 9, 2024.

Ellison, K. 2021. "A Look Back: The Story of William Pereira, Irvine's Original Planner." *Irvine Standard*, November 30, 2021. Accessed February 2025. https://www.irvinestandard.com/2021/the-story-of-william-pereira-irvines-original-planner/.

Engelhardt, Z. 1922. *San Juan Capistrano Mission*. New Series: Local History – The Missions and Missionaries of California. Los Angeles, California.

Fages, P. 1937. *A Historical, Political, and Natural Description of California (1775)*. Translated by H.I. Priestly. Berkeley: University of California Press.

Garcia, K.H., M. Gonzalez, and J. Wilson. 2011. *Phase I Cultural and Paleontological Resources Assessment for the Proposed Sky Ridge Project, Orange County, California*. Prepared for Vandermost Consulting Services Inc. On File at South Central Coastal Information Center, located on the campus of California State University Fullerton.

Garcia, K.H., and M. Rockman. 2007. *Results of Archaeological Survey and Monitoring for Southern California Edison's Pole Replacements After Santiago Fire Along Santiago Canyon Road, Modjeska Canyon Road, and Hicks Canyon Road; Orange County, California; Jo:6259-0468*. On file at South Central Coastal Information Center, located on the campus of California State University, Fullerton. Accessed December 9, 2024.

Geiger, M., and C.W. Meighan. 1976. *As the Padres Saw Them: California Indian Life and Customs as Reported by the Franciscan Missionaries, 1813–1815*. Santa Barbara, California: Santa Barbara Mission Archive Library.

Golla, V. 2007. "Linguistic Prehistory." In *California Prehistory: Colonization, Culture, and Complexity*, edited by T.L. Jones and K.A. Klar, 71–82. New York: Altamira Press.

Griset, S. 1996. "Southern California Brown Ware." PhD dissertation; University of California, Riverside.

Hale, M. 2009. "San Diego and Santa Barbara: Socioeconomic Divergence in Southern California." PhD dissertation; University of California, Davis.

Harrington, J.P. 1934. "A New Original Version of Boscana's Historical Account of the San Juan Capistrano Indians of Southern California." Smithsonian Miscellaneous Collections Vol. 92, No. 4.

Hector, S.M. 2006. *Cultural Resources Study for the Maintenance of Old Mission Dam, Mission Trails Regional Park, San Diego, California*. Prepared for the City of San Diego.

IHS (Irvine Historical Society). 2020a. "Irvine Development to the 1950s." October 2020. Accessed January 2025. https://irvinehistory.org/wp-content/uploads/2020/10/Irvine-Development-into-1950s.pdf.

IHS. 2020b. "Legacy of James Irvine Sr." October 2020. Accessed January 2025. https://irvinehistory.org/wp-content/uploads/2020/10/Legacy-of-James-Irvine-Sr.pdf.

Jepsen, C. 2021. "O.C. History: The Irvine Ranch, 1930s–1950s." *County Connection: A Digital Magazine for and About County of Orange Employees*, March/April 2021. Accessed January 2025. https://issuu.com/ocgov/docs/marapr21-final/28.

Kieffer, B. 1986. "Holiday Cheer Sprouts Locally." Newspapers.com: *Free Lance* (Hollister, California), December 24, 1986, page 1.

Kroeber, A. 1925. *Handbook of the Indians of California*. Washington, DC: Smithsonian Institution.

Laylander, D. 2000. *Early Ethnography of the Californias, 1533–1825*. Salinas, California: Coyote Press Archives of California Prehistory.

Laylander, D. 2010. "Linguistic Prehistory." *Research Issues in San Diego Prehistory*. Accessed August 31, 2012. http://www.sandiegoarchaeology.org/Laylander/Issues /index.htm.

Meighan, C.W., and D.L. True. 1977. "Additional Comments on Molpa Archaeological Site." *Journal of California Anthropology* 4(2): 316–318.

Milbourn, M.A. 2010. "Hines Nurseries to Shutter Irvine Production Facility." *Orange County Register*, October 13, 2010. Accessed February 2025. https://www.ocregister.com/2010/10/13/hines-nurseries-files-chapter-11-bk/.

NETR (Nationwide Environmental Title Research LLC). 2025a. Historic Aerial Photographs of the Irvine Gateway Project API, Irvine, California, dating from 1938, 1946, 1952, 1963, 1967, 1972, 1980, 1981, 1985, 1987, 1988, 1992–2000, 2002–2005, 2009, 2010, 2012, 2014, 2016, 2018, 2020, and 2022. Accessed January 2025. https://www.historicaerials.com/viewer.

NETR. 2025b. Historic Topographic Maps of the Irvine Gateway Project API, Irvine, California, dating from 1935, 1944, 1950, 1958, 1960, 1963, 1970, 1978, 1982, 1984, 2000, 2012, 2015, 2018, and 2022. Accessed January 2025. https://www.historicaerials.com/viewer.

NPS (National Park Service). 1997. *National Register Bulletin: How to Apply the National Register Criteria for Evaluation*. U.S. Department of the Interior, NPS. Washington, DC: Government Printing Office.

Padon, B. 1985. *Archaeological Resource Inventory City of Irvine and Its Sphere of Influence*. On file at South Central Coastal Information Center, located on the campus of California State University, Fullerton. Accessed December 9, 2024.

Rogers, M.J. 1929. "The Stone Art of the San Dieguito Plateau." *American Anthropologist* 31(3): 454–467.

Rogers, M.J. 1945. "An Outline of Yuman Pehistory." *Southwestern Journal of Anthropology* 1:167–198.

Sawyer, W. 2003. "DPR 523 Form for the Highline Canal (P30-176748)." From the *Archaeological Reconnaissance and Test Level Investigations in Planning Area 1, Irvine, California, January 2004*. On file at the Dudek office in Pasadena, California.

Skrove, T. 1977. "Drought Pinches OC's Biggest Water User." Newspapers.com: *The Register* (Santa Ana, California), April 25, 1977, page 41.

SCE (Southern California Edison). 2017. *Historic-Era Electrical Infrastructure Management Program: A Program for the Identification, Review, Exemption, and Treatment of Generating Facilities, Transmission Lines, Subtransmission Lines, Distribution Lines, and Substations within the Southern California Edison Company's Service Territory*. Prepared by Urbana Preservation for SCE. Published 2015; revised 2017.

UCSB (University of California, Santa Barbara). 2025. Historic Aerial Photographs dating from 1938, 1946, 1952, 1963, 1967, 1972, 1980, 1981, 1985, 1987, 1988, 1992-2000, 2002-2005, 2009, 2010, 2012, 2014, 2016, 2018, 2020, and 2022. Map & Imagery Laboratory (MIL) UCSB Library, Electronic Resource. Accessed January 2025. https://www.library.ucsb.edu/geospatial/finding-airphotos.

USDA (U.S. Department of Agriculture). 2025a. Web Soil Survey. USDA, Natural Resources Conservation Service, Soil Survey Staff. Accessed January 9, 2025. https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx.

USDA. 2025b. "Official Soil Series Description: Anaheim Series." USDA, Natural Resources Conservation Service, Soil Survey Staff. Accessed January 9, 2025. https://soilseries.sc.egov.usda.gov/OSD_Docs/A/ANAHEIM.html.

USDA. 2025c. "Official Soil Series Description: Metz Series." USDA, Natural Resources Conservation Service, Soil Survey Staff. Accessed January 9, 2025. https://soilseries.sc.egov.usda.gov/OSD_Docs/M/METZ.html.

USDA. 2025d. "Natural Resources Conservation Service Official Soil Series Description of San Emigdio." USDA, Natural Resources Conservation Service, Soil Survey Staff. Accessed January 9, 2025. https://soilseries.sc.egov.usda.gov/OSD_Docs/S/SAN_EMIGDIO.html.

USDA. 2025e. "Natural Resources Conservation Service Official Soil Series Description of Sorrento." USDA, Natural Resources Conservation Service, Soil Survey Staff. Accessed January 9, 2025. https://soilseries.sc.egov.usda.gov/OSD_Docs/S/SORRENTO.html.

USGS (U.S. Geological Survey). 2025. Mineral Resources Online Spatial Data. Interactive maps and downloadable data for regional and global analysis. Accessed January 9, 2025. https://mrdata.usgs.gov/.

Wallace, W.J. 1955. "A Suggested Chronology for Southern California Coastal Archaeology." *Southwestern Journal of Anthropology* 11(3): 214–230.

Warren, C.N. 1968. "Cultural Tradition and Ecological Adaptation on the Southern California Coast." In *Archaic Prehistory in the Western United States*, edited by C. Irwin-Williams, 1–14. Portales, New Mexico: Eastern New Mexico University Contributions in Anthropology.

Warren, C.N., G. Siegler, and F. Dittmer. 2004. "Paleoindian and Early Archaic Periods." In *Prehistoric and Historic Archaeology of Metropolitan San Diego: A Historic Properties Background Study*. Prepared for the Metropolitan Wastewater Department, City of San Diego. Encinitas, California: ASM Affiliates.

Watson, R. 2002. "Irvine Ranch Master Plan: Irvine, California, 1961." in *William Pereira*, edited by J. Steel, 108–139. Los Angeles: University of Southern California.

White, R.C. 1963. "Luiseno Social Organization." *University of California Publications in American Archaeology and Ethnology* 48(2): 91–194. Berkeley: University of California.

INTENTIONALLY LEFT BLANK