Cultural and Paleontological Resources Assessment

Bedford Canyon Marketplace
(Arantine Hills Specific Plan Amendment No. 3)

City of Corona, Riverside County, California

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Per California Government Code 6254.10 archaeological site location information is exempt from the California Public Records Act. Therefore archaeological site location information should be kept confidential and not be made available for public view.

TABLE OF CONTENTS

Figures:

Tables:

Appendix

MANAGEMENT SUMMARY

Duke Cultural Resources Management, LLC (DUKE CRM) is under contract to Bedford Marketplace, LLC to provide cultural and paleontological resources services for the Bedford Canyon Marketplace Project (Arantine Hills Specific Plan Amendment No. 3) (Project), located in the Bedford Canyon area of the Santa Ana Mountain foothills in the southeastern portion of the City of Corona, Riverside County, California. The Project boundaries encompass approximately 27.8 acres. Guardian Capital proposes to amend the Arantine Hills Specific Plan (AHSP) to increase the boundary of the AHSP by approximately 17.7 acres. The purpose of this report is to document efforts made to comply with the California Environmental Quality Act (CEQA).

The cultural and paleontological resources assessment includes background research and a field survey to identify cultural and paleontological resources. The cultural resource record search did not reveal any cultural resources within the Project boundary; however, seventeen previously recorded cultural resources were identified within a one-mile buffer of the project. Multiple fossil localities were documented in the vicinity of the Project. The field survey identified one isolated prehistoric artifact, a trifacial granite mano/shaping tool, within the Project area west of the Bedford Canyon wash.

There is a high sensitivity for paleontological resources in the Project. Deposits of high paleontological sensitivity may be encountered in deep ground excavation (greater than 10 feet) in the north portion of the project, and in ground disturbance at the surface in the southern portion of the Project. This ground disturbance would have the potential to impact unique paleontological resources. As a result, DUKE CRM recommends paleontological monitoring for any ground disturbance in APN 279-240-019 south of the Bedford Canyon Wash and for ground disturbance deeper than 10 feet b.g.s. throughout the Project area west of the Bedford Canyon Wash.

Our research shows that the Project was previously farmed for citrus production for multiple decades. However, one prehistoric isolated artifact was observed within the Project during the 2019 field survey. Additionally, five artifacts and one potential archaeological feature were observed during construction monitoring in 2018 on the adjacent AHSP property. DUKE CRM recommends that ground disturbance may have the potential to impact prehistoric and historic archaeological resources and recommends archaeological monitoring during ground disturbance for the Project.

If human remains are encountered, State Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to Public Resources Code Section 5097.98. The County Coroner must be notified of the find immediately. If the remains are determined to be prehistoric, the Coroner will notify the Native American Heritage Commission (NAHC), which will determine and notify a Most Likely Descendant (MLD). With the permission of the landowner or his/her authorized representative, the MLD may inspect the site of the discovery. The MLD shall complete the inspection within 48 hours of notification by the NAHC. The MLD may recommend scientific removal and nondestructive analysis of human remains and items associated with Native American burials.

INTRODUCTION

Duke Cultural Resources Management, LLC (DUKE CRM) is under contract to Bedford Marketplace, LLC to provide cultural and paleontological resources services for Bedford Canyon Marketplace Project (Arantine Hills Specific Plan Amendment No. 3) (Project), located in the Bedford Canyon area of the Santa Ana Mountain foothills in the southeastern portion of the City of Corona, Riverside County, California. The Project boundaries encompass approximately 27.8 acres. The purpose of this report is to document efforts made to comply with the California Environmental Quality Act (CEQA).

Project Description

The Applicant, Bedford Marketplace, LLC, proposes to amend the Arantine Hills Specific Plan (AHSP Amendment No. 3) to increase the boundary of the AHSP on its eastern most side by approximately 17.7 acres. The entire Project area is 27.8 acres, where approximately 10 acres was included in the AHSP (located on the northeastern portion of the current Project area, west of the newly constructed Bedford Canyon Road) and designated for Commercial use. Approximately 5.82 acres of the Modified Project Site would be designated Open Space within the AHSP. The Applicant is requesting a General Plan Amendment, Zone Change, Specific Plan Amendment, Parcel Map, Construction Hours/Noise Variance, Precise Plan, Conditional Use Permit, and Supplement to the previously certified AHSP EIR.

The additional 17.7 acres is located on a lower elevation than the existing 10-acre graded commercial pad included in the AHSP. The additional acreage on the eastern edge of the Project area is also lower in elevation than the newly constructed sewer lift station within the AHSP, such that at the current elevation, the added acreage would not gravity flow to the lift station, resulting in the need for additional pumps. To bring Project area up to an elevation similar (within five feet) of the existing 10-acre commercial pad and at an elevation where sewer could gravity flow to the existing lift station, import of approximately 440,000 cubic yards of dirt is required. Prior to the import operations, the eastern portion of the Project area (the additional 17.7 acres to the AHSP) will require the over-excavation of approximately 4-6 feet below existing ground surface.

Project Location

The Project site is situated in the Bedford Canyon area of the Santa Ana Mountain foothills in the southeastern portion of Corona. The City of Corona is generally situated southwest of the City of Riverside, south of the City of Norco, and north of the City of Lake Elsinore in Riverside County, California (Map 1). Areas surrounding the Project include the AHSP to the north and west; undeveloped land and rural residential to the south; and the Eagle Glen Golf Club to the west. The Project is located within the United States Geological Survey (USGS) 7.5-Minute Topographic Map *Corona South* Quadrangle (Map 2). The eastern most 17.7 acres is owned by the Riverside County Transportation Commission (RCTC) and has Assessor's Parcel Numbers (APN) 279-240-033 and 279-240-019. The Project boundary overlaid onto an aerial photograph is shown in Map 3. All Project maps are located in Appendix A.

SETTING

Natural

California is divided into 11 geomorphic provinces, each naturally defined by unique geologic and geomorphic characteristics. The Project is located in the northwestern portion of the Peninsular Ranges geomorphic province. The Peninsular Ranges province is distinguished by northwest trending mountain ranges and valleys following faults branching from the San Andreas Fault. The Peninsular Ranges are bound to the east by the Colorado Desert and extend north locally to the Santa Monica Mountains (Yerkes and Campbell, 2005; Hillhouse, 2010), west into the submarine continental shelf, and south to the California state line.

The Project area is located between two topographic highs, the Temescal Mountains to the east and the Santa Ana Mountains to the south. The Temescal Mountains are a portion of the Peninsular Ranges Batholith known as the Perris Block. The Perris Block is a large, relatively unbroken, body of igneous rock that originally formed underground between 120 and 105 million years ago (Todd et al., 2003). The Santa Ana

Mountains are the result of two geologic processes. First, an episode of folding in the Plio-Pleistocene (approximately 2.5 million years ago) uplifted the future Santa Ana Mountains and caused an accompanying down-drop to the northeast that created the current valley that contains Corona (Gray, 1961). In the late Pleistocene (approximately 10,000 years ago), the formation of the Corona and Elsinore Fault uplifted the Santa Ana Mountains and resulted in abundant sediment being eroded off the mountains and deposited onto the valley floor (Gray, 1961). In the area of Corona, this sediment was deposited as one large fan, the Corona Fan that essentially defines the borders of the modern City of Corona (Gray, 1961). The Project area is located in an incised valley that has been cut into the southeastern portion of the Corona Fan.

The geology in the vicinity of the Project has been mapped by Morton and Miller (2006) at a scale of 1:100,000. A review of this map indicated that the Project area is located on two geologic units: young alluvial fan deposits (*Qyf*) and old alluvial fan deposits (*Qof*) (Figure 4). Young alluvial fan deposits (*Qyf*) are composed of unconsolidated to moderately consolidated silt, sand, pebbly cobbly sand, and bouldery alluvial fan deposits of late Pleistocene (2.5 million years ago to 11,700 years ago) to Holocene (11,700 years ago to today) Epochs, with local deposits dominated by cobbles and boulders (Morton and Miller, 2006). These deposits occur in most of the Project area. Old alluvial fan deposits (*Qof*) are composed of moderately to well-consolidated silt, sand, and gravel, with local deposits dominated by sand to boulder size clasts (Morton and Miller, 2006). These deposits occur in the southern "finger" of the eastern 17.7 acres in APN 279-240-019, south of Bedford Canyon Wash.

Cultural

Prehistory

Two primary regional schemas are commonly cited in the archaeological literature for western Riverside County where the Project is located. These schemas or syntheses generalize the presence or absence of certain artifact types into explanatory frameworks of temporal chronologies and/or subsistence practices. Schemas are necessary because many archaeological sites lack absolute datable material (ex. Carbon for radiometric ^{14}C dating) and so researchers need to cross-date sites by comparison to either coastal or desert chronologies with established chronological sequences backed by absolute dates. In western Riverside County, it is thought to be the meeting ground of both coastal and inland desert schemas and neither exclusively explains prehistoric finds.

The first schema, advanced by Wallace (1955), defines four cultural horizons for the southern California coastal province, each with characteristic local variations:

I. Early Man (~9000–8500 B.P.) is a hunting culture based on almost exclusive evidence of chipped-stone hunting materials: dart points, scrapers, choppers, and bifaces.
II. Milling Stone (8500–4000 B.P.) reflects a change to a more sedentary, plant-collecting lifestyle as evidenced by the introduction and dominance of milling stone artifacts and a decrease in well-made projectile points.
III. Intermediate (4000–1500 B.P.) is characterized by a larger dependency on hunting, use of the dart and atlatl, and the shift from using the mano/metate to mortar/pestle. However, knowledge of this horizon suffers from lack of knowledge about what occurred during this time, not a lack of inhabitants along the southern California coast.
IV. Late Prehistoric (1500~200 B.P.) contains a more nuanced artifact assemblage indicative of a more complex lifestyle and an increase of population. This horizon is characterized by an increase in bow and arrow use, steatite containers, pottery, circular fish hooks, perforated stones, asphaltum, diversified bone tools, ample shell ornaments, and elaborate mortuary customs.

Warren and Crabtree (1986) employ a more ecological approach to the deserts of southern California, defining five traditions in prehistory:

I. Lake Mojave (12000–7000 B.P.)
II. Pinto (7000–4000 B.P.)

III. Gypsum (4000–1500 B.P.)
IV. Saratoga Springs (1500–800 B.P.)
V. Shoshonean (800~200 B.P.)

Warren and Crabtree (1986) viewed cultural continuity and change in terms of various significant environmental shifts, defining the cultural ecological approach for archaeological research of the California deserts. The authors viewed changes in settlement pattern and subsistence as cultural adaptations to a changing environment, beginning with the gradual environmental warming in the late Pleistocene, the desiccation of the desert lakes during the early Holocene, the short return to pluvial conditions during the middle Holocene, and the general warming and drying trend, with periodic reversals, that continues to this day. The work by Warren and Crabtree (1986) is built upon, in part, by Warren (1980) in which he argued for a chronology based on projectile points as period markers backed by radiocarbon assays providing absolute dates.

The two schemas contrast in important ways. The units employed by Warren are "traditions," and in contrast to Wallace (1955), traditions may be spatially restricted but display temporal continuity. For Wallace, "horizons" or "periods," are extensive through space but restricted in time. More recent schema have been attempted to reconcile these differences. More recently, Koerper and Drover (1983) synthesized chronologies for coastal southern California and employed Wallace's (1955) horizon terminology but use radiometric data to sequence stylistic changes observed in the artifact assemblages, which they interpreted as material indication of cultural change through time. Regardless of the overall schema to best explain the prehistory of western Riverside County, the region can be understood within broad chronological frameworks and as the meeting ground of the coastal and desert subsistence patterns.

Early Holocene (11,600 – 7,600 BP)

Traditional models of the prehistory of California hypothesize that its first inhabitants were the big game hunting Paleoindians who lived at the close of the last ice-age (~11,000 years before present [BP]). As the environment warmed and dried, large Ice Age fauna died out, requiring adaption by groups to survive. The western Great Basin and deserts of southern California were characterized by large pluvial (rainfall-fed) lakes, streams, marshes, and grasslands. The human response to this environment is known as the Western Pluvial Lakes Tradition (WPLT) (Moratto 1984). The WPLT is generally identified by an advanced flaked-stone industry of foliate knives/points, Silver Lake and Lake Mojave points, lanceolate bifaces, and long-stemmed points. Other flaked-stone tools include crescents, scrapers, choppers, scraper-planes, hammer stones, cores, drills, and gravers. People of this period hunted diverse populations of smaller animals and collected a wide number of plants from diverse eco-zones. Importantly, this period lacks widespread evidence of milling stones, and, therefore, hard seed processing was likely not widely practiced. Sites are generally found along the shores of former pluvial lakes, marshes, and streams (Moratto 1984). The desert manifestation of the WPLT is the Lake Mojave Complex, while along the coast the WPLT is seen in the San Dieguito Complex. Along the coast, rising sea levels created bays and estuaries. Following initial settlement along the coast, groups adopted marine subsistence including fish and shellfish. These shell middens contain flaked cobble tools, metates, manos, discoidals, and flexed burials and allowed for a semi sedentary life style (Byrd and Raab 2007). Eventually, shellfish became the primary source of food, while plant gathering, hunting and fishing were less important.

The Paleocoastal Tradition (PCT) has many similarities to the WPLT but it reflects a coastal adaptation (Davis et al. 1969). PCT sites are located along bays and estuaries. Subsistence patterns indicate the eating of mollusks, sea mammals, sea birds, and fish in addition to land plants and animals. The argument for a PCT has gained momentum. This is based on a vast amount of recent research that has been conducted along the California coast and the Channel Islands (Byrd and Raab 2007). A recent study dates habitation on San Miguel Island back to ~11,300 BP (Daisy Cave), while a site on San Clemente (Eel Point) shows that a Paleocoastal Tradition was entrenched at Eel point in the early Holocene, with the hunting of seals, sea lions, and dolphins, as well as the gathering of shellfish.

Middle Holocene (7,600 – 3,650 BP)

The middle Holocene is a time of change and transition. As conditions continued to warm and dry, lakes and streams in the desert disappeared. This resulted in a shift in subsistence strategies, namely a shift to the gathering of plant seeds, grasses and shellfish along the coast as the primary dietary staple. Fishing and the hunting of smaller animals played a less important role in day to day activity. This shift in subsistence is what Wallace named the Millingstone Horizon (Wallace 1955) and this name has continued among archaeologists working on the coastal province of southern California. Large habitations are seen in the inland areas and considerable variability is seen along coastal occupation of southern California. Occupation revolved around seasonal and semi-sedentary movements in coastal Orange and San Diego counties. Trade networks are postulated by researchers that have dated Ollivella grooved rectangle shell beads as far north as central Oregon dating to 4900-3500 BP (Byrd and Raab 2007). Characteristics of the middle Holocene sites include ground stone artifacts (manos and metates) used for processing plant material and shellfish, flexed burial beneath rock or milling stone cairns, flaked core or cobble tools, dart points, cogstones, discoidals, and crescentics.

Late Holocene (3,650 – 233 BP)

During the late Holocene there was a migration of Takic speakers from the Great Basin into southern California. Sutton (2009) was able to show while Takic speakers did in fact physically migrate, linguistic, biological, and archaeological evidence indicates that by about 1,500 B.P., the Gabrielino language had become sufficiently distinct from its northern origins to be classified in a different branch of Takic. About this same time, the language was adopted by an existing Yuman group to the south that would become Luiseño (Sutton 2009:62). Characteristics of the late Holocene include the introduction of the bow and arrow, mortar and pestle, use of ceramics, and a change in mortuary behavior from inhumations to cremations in southern California. This was also a period of climatic fluctuation. Paleoenvironmental data show that periods of drought alternated with cooler and moister periods (Vellanoweth and Grenda 2002; Byrd and Raab 2007; Jones et al. 2004). This resulted in dynamic regional cultural patterns with considerable local variation. Byrd and Raab (2007) suggest that foragers in southern California over-exploited high-ranked food, such as shellfish, fish, marine and land mammals, and plant remains. This led to resource depression, causing people to forage more costly resources that were more abundant.

Ethnography

The Project is located in an area that was used by three Tribes: the Gabrielino, the Cahuilla, and, the Luiseño Indians. All are Takic speakers and descended from Late Prehistoric populations of the region. Takic is part of the larger Uto-Aztecan language stock which migrated west from the Great Basin (Bean and Smith 1978).

The Gabrielino are one of the least known Native American groups in California (Bean and Smith 1978; Bean and Shipley 1978). Generally, their territory included all of the Los Angeles Basin, parts of the Santa Ana and Santa Monica Mountains along the coast from Aliso Creek in the south to Topanga Canyon in the north, and San Clemente, San Nicolas, and Santa Catalina Islands. The environmental conditions within this territory are very diverse, including the following zones: interior mountains/foothills, Prairie, exposed coast, and sheltered coast. The Gabrielino lived in villages year-round and utilized smaller camps from which they could hunt and gather, likely on a seasonal basis. Villages were almost always situated near water. Gabrielino families lived in domed, round structures with thatching made from local plants. Villages were politically autonomous from other villages, while each village was led by a chief who would, at times, reign over several villages (Bean and Smith 1978).

Acorns were the most important food for the Gabrielino; although the types and quantity of different foods varied by season and locale. Other important sources of food were grass and many other seed types, deer, rabbit, jackrabbit, woodrat, mice, ground squirrels, quail, doves, ducks and other fowl, fish, shellfish, and marine mammals.

The territory of the Luiseño extended along the coast south to Agua Hedionda Lagoon, northwestward to Aliso Creek just north of San Juan Capistrano, and eastward to the Elsinore Valley and Palomar Mountain. Like other Native American groups in southern California, the Luiseño caught and collected seasonally

available food resources and led a semi-sedentary lifestyle with the majority of individuals residing at the village for the entire year (Oxendine 1983:57). Luiseño villages were generally located in valley bottoms near to water. The Luiseño had a well-developed sense of ownership (White 1963:122), and their concept of property rights included the idea of private property. Property rights covered items and land owned by the village as well as items such as houses, gardens, ritual equipment, trade beads, eagle nests, and songs that were owned by individuals. Luiseño villages were politically independent and were administered by a chief, who inherited his position from his father (Bean and Shipek 1978).

Subsistence was based primarily on seeds from local grasses, manzanita, sunflower, sage, chía, and pine nuts, as well as acorns. Seeds were dried, ground, and cooked into a mush. Seasonal camps were also established along the coast and near bays and estuaries to gather shellfish and hunt waterfowl (Hudson 1971). Game animals such as deer, rabbit, jackrabbit, wood rat, mice, antelope, and many types of birds were regularly hunted (Bean and Shipek 1978). In addition, the Luiseño utilized fire for crop management and communal rabbit drives (Bean and Shipek 1978). Small seasonal habitation sites in the area would contain quantities of fire affected rock (FAR), some burned bone, and small amounts of ground and flaked stone tools. They might be found as open sites atop knolls or ridges, or in protected areas near streams, or even in rock shelters.

Cahuilla territory included the Coachella Valley, the San Jacinto and Santa Rosa Mountain ranges. Bean and Shipek (1978) estimated that the Cahuilla numbered between 6,000 and 10,000 people at the time of Spanish Contact. Politically and ceremonially Cahuilla clans were led by a Chief or *Net*. The *Net* had charge of the sacred dance house and the sacred bundle, *masut*, which consisted of matting which was wrapped around items sacred to the clan such as ritual paraphernalia. Importantly, the *masut* was the sacred expression of each clan. A *Paha*, ritual assistant, is also found among other Takic speaking groups. The office of *Paha* varied however, as it was not always present within some of the southern-most Desert Cahuilla clans (Bean and Saubel 1972, Bean and Shipeck1978; Hooper 1920). As other Takic speaking groups did, the Cahuilla would publically gather for the naming of children, marriage, female and male initiation ceremonies, for the ascendency of a *Net*, for an Eagle-Killing Ceremony and the mourning ceremony. The mourning ceremony took place as a way to collectively mourn all those that died since the previous mourning ceremony. Each person was cremated along with his or her individual possessions in a ceremony separate from the mourning ceremony. Mourning ceremonies were one of the most important ceremonies for clan in that sacred songs were sung, sacred dances were danced, and moieties exchanged food and valued goods.

Cahuilla diet emphasized acorn, *Salvia islay*, yucca, agave and pinyon gathering, or the gathering of mesquite, cactus, and hard seeds such as screwbean, juniper and mesquite depending upon the local environment (Bean and Saubel 1972). The Cahuilla were also observed to cultivate small quantities of corn, beans, squashes, pumpkins, melons and wheat as early as 1824 by the Romero expedition. These crops and the cultivation of them potentially made their way from the Colorado River area to the Coachella Valley. The inhabitants of the Coachella did not practice flood recessional agriculture of the Colorado River groups (Bean and Lawton 1993).

History

The first Europeans to explore what would become the state of California belonged to the 1542 expedition of Juan Rodriguez Cabrillo, who sailed along and occasionally landed on the coast. Europeans are thought to have first visited portions of the interior in 1769, when Gaspar de Portola (Brown 2001) led a 62-person overland expedition from San Diego to Monterey (Cramer 1988). Two later expeditions, led by Juan Bautista de Anza in 1774 and 1775 from Sonora through southwestern Arizona and southern California, crossed the Santa Ana River at Anza Narrows in today's Santa Ana River Regional Park.

The Spanish government subsequently established missions and military outposts in San Diego in 1769 to facilitate colonization of the area and to keep rival European nations out of the area. After Mexico won independence from Spain in 1822, colonization efforts in Alta California decreased. The Spanish mission system was largely abandoned and the Mexican government bestowed land grants or ranchos to those loyal to the Mexican government including some Anglo settlers. The Mexican period (1822-1848) is largely identified

with the ranchos acquired by individuals through the land grant system as well as the secularization of the missions. Mission secularization began on July 25, 1826 with a decree by Governor Jose Maria Echeandfa and was completed by 1836 after an additional decree in 1831 (Engstrand and Ward 1995).

The end of the Mexican period in California began on June 14, 1846 when a band of American settlers supported by the American explorer John C. Fremont and his team captured Mexican General Mariano Guadalupe Vallejo in a dawn raid in Sonoma (Ide 1967, Rolle 2003). The Americans raised a flag for the "California Republic" and their actions became known as the "Bear Flag Revolt." The so-called California Republic was short-lived however, as on July 7, 1846, U.S. Navy forces captured Monterey, California, where the U.S. flag was raised (Rolle 2003). On February 2, 1848, the war between the U.S. and Mexico ended with the signing of the Treaty of Guadalupe Hidalgo, which greatly expanded U.S. territory (including California) and resulted in Mexico being paid $15 million for the land (Rolle 2003).

Although gold had been found prior to this in various parts of California, the well-publicized discovery of gold near Sutter's fort in 1848 dramatically increased the Anglo settlement of California. Despite property rights of rancho owners being secured by provisions in the Treaty of Guadalupe Hidalgo, California in the early American period experienced the transfer and subdivision of many of the ranchos as well as a shift from ranching to agriculture as the primary means of subsistence.

In 1886, the City of Corona was established by the South Riverside Water and Land Company (Duke 2010). The company developed the purchased 12,000 acres of land then known as southwestern San Bernardino County. A railroad depot and irrigation systems were put in place to transform the territory which would soon include a new citrus industry (City of Corona). As the rural community began to develop, it was referred to as South Riverside and on July 13,1896, the citizens voted for the incorporation of their small town into the newly formed Riverside County. Between 1913 and 1916 an international speedway was established which attracted over one million spectators in total during its operation. Ultimately, the speedway failed to attract additional commerce and development to the city and the speedway was shut down. Ultimately, the citrus industry would be responsible for attracting larger populations to the city (Duke 2010).

METHODS

Research materials, including historic maps, previous surveys, planning documents, ordinances, and published local and regional historical accounts were collected and reviewed.

Record Search

A record search was conducted on June 18, 2019, at the Eastern Information Center (EIC) by DUKE CRM archaeologist, Megan Wilson M.A., R.P.A. The EIC is part of the California Historical Resources Information System (CHRIS) and is located at University of California, Riverside. The records search included a review of all recorded historic and prehistoric archaeological sites within the Project area as well as a one-mile radius of the Project and included a review of cultural resource survey and excavation reports. In addition, the California State Historic Property Data File (HPD) was reviewed, which includes the National Register of Historic Places (National Register), California Register of Historical Resources (California Register), California Historical Landmarks (CHL), and California Points of Historical Interest (CPHI). The paleontological research conducted for the Project was conducted by Benjamin Scherzer, M.S. This included a paleontological records search though the Western Science Center (WSC) in Hemet. In addition, DUKE CRM paleontologist Benjamin Scherzer performed a search of the University of California Museum of Paleontology (UCMP) and San Diego Natural History Museum online collections, the online Paleobiology Database and Quaternary Faunal Mapping Project, and other published literature for fossil localities from similar deposits near the Project.

Field Survey

The goal of the pedestrian survey was to identify cultural or paleontological resources that may be within the Project boundaries. The pedestrian survey covered the entire Project area using 15 meter transects. Transects covered all areas within the Project which included areas of minimal disturbance, areas that had a moderate to

high sensitivity for cultural resources, as well as various areas of prior disturbance. Special attention was paid to rodent burrows, erosion cuts that allowed the observation of soils below the surface, including a close inspection of the approximately 15 meter high vertical cliff face along the eastern edge of the project. Digital photographs of the Project were taken, along with detailed field notes.

Personnel

Mr. Duke is the Principal Archaeologist of DUKE C R M . Mr. Duke meets the professional qualifications of the Secretary of the Interior for prehistoric and historical archaeology; he is also a Registered Professional Archaeologist (RPA) who has worked in all phases of archaeology (archival research, field survey, testing and data recovery excavation, laboratory analysis, construction monitoring) since 1994. Mr. Duke holds a Master of Arts degree in Anthropology with an emphasis in archaeology from California State University, Fullerton and a Bachelor of Arts degree in Anthropology from the University of California, Santa Cruz. Mr. Duke has worked throughout southern and Northern California and parts of Arizona and Nevada. He is included on the County's list of qualified archaeologists. Mr. Duke is the Principal Investigator and oversaw completion of all tasks and reviewed this report.

Megan Wilson conducted the records search, filed survey, produced the report maps, and drafted portions of this report. Ms. Wilson received a M.A. in Anthropology with an emphasis in archaeology from California State University, Fullerton and a B.A. degree in Anthropology from the University of California, Los Angeles. Ms. Wilson is a Registered Professional Archaeologist and GIS analyst with 8 years of experience in archaeology and cultural resources management in southern California

Benjamin Scherzer prepared the paleontology and geology sections of this report. Mr. Scherzer received a M.S. in Earth Sciences from Montana State University, Bozeman. He has 16 years of experience in paleontological research, field surveys, fossil salvage, laboratory identification, report preparation, and curatorial experience. Mr. Scherzer is a listed paleontologist with the Riverside County.

Please see Appendix B for staff resumes.

RESULTS

Records Search

Cultural Resources

On June 18, 2019, Megan Wilson conducted a records search at the EIC. One previous cultural resources study included a portion of the current Project area; however, no cultural resources were identified in the Project area. There are 36 cultural resources reports on file within one-mile of the Project. All reports that fall within the Project area are listed in Table 1.

Table 1. - Prior Cultural Report within the Project

Report No.	Author(s)	Title	Year
RI-04985	Mckenna et al.	A Phase I Cultural Resources Investigation of 500 Acres in the Bedford Canyon Area near the City of Corona of Riverside County, California	2003

Records from the EIC indicate that there are no previously recorded cultural resources mapped within the Project area. There are 17 previously recorded cultural resources within a one-mile radius of the Project area and include one prehistoric archaeological site, nine prehistoric isolates, six historic archaeological sites, and one historic resource. These resources are summarized in Table 2 below.

Table 2. Cultural Resources within One Mile of the Project

Primary No.	Trinomial	Resource Type	Resource Description	Year Recorded	Distance (mi), Direction
P-33-000883	CA-RIV-883	Prehistoric Archaeological Site	Lithic and Groundstone Scatter	1973, 1987, 1988, 2007, 2011	0.5-1, NE
P-33-003832	CA-RIV-3832	Historic Archaeological Site	Railroad, Old Santa Fe Railroad through the Temescal Valley	1990, 1996, 2001, 2005, 2006, 2011	0.5-1, NE
P-33-004112	CA-RIV-4112H	Historic Archaeological Site	Concrete foundations of an industrial plant, water conveyance system, tailings, structural debris, former location of the Owens-Illinois Glass/Sand Plant	1991, 1997, 2005, 2007	0.25-0.5,
P-33-007719	CA-RIV-6197	Historic Archaeological Site	Mine, open pit "Jones/Hoag Ranch sand deposit"	1999	0.25-0.5, W
P-33-012557		Prehistoric Isolate	Quartzite flake	1986	0.5-1, NE
P-33-012559		Prehistoric Isolate	Quartzite secondary flake	1987, 2007	0.5-1, NE
P-33-012560		Prehistoric Isolate	Dactite flake	1987	0.5-1, SE
P-33-013146		Prehistoric Isolate	Bifacial mano	Unknown	0.5-1, NE
P-33-013147		Prehistoric Isolate	Mano fragment	1990, 2007	0.5-1, NE
P-33-013148		Prehistoric Isolate	Mano/hammerstone	1990, 2007	0.5-1, NE
P-33-015322	CA-RIV-8090	Historic Resource	Historic mine/quarry, " Harlow Quarry"	2006	0.5-1, E
P-33-023790	CA-RIV-11685	Historic Archaeological Site	Refuse deposit	2013	0.5-1, N
P-33-024723	CA-RIV-12241	Historic Archaeological Site	Road, "Starne Road" segment and historic refuse deposit	2015	0.5-1, N
P-33-024724		Prehistoric Isolate	Chert core	2015	0.5-1, NW
P-33-024725		Prehistoric Isolate	Siltstone core	2015	0.5-1, NW
P-33-024726		Prehistoric Isolate	Chert flake tool	2015	0.5-1, NW
P-33-026860	CA-RIV-12617	Historic Archaeological Site	bedrock milling feature	2016	0.5-1, NE

Paleontological Resources

On July 11, 2019 the WSC performed a paleontological records search to locate fossil localities within and in the vicinity (one-mile radius) of the proposed Project area. No fossil localities were documented within or in the vicinity of the project area (Radford, 2019). The records search by B. Scherzer for fossil localities in similar deposits nearby (within three miles) produced two localities:

- "Bedford Properties" (SBCM 5.6.229-5.6.246 and 5.6.250-5.6.258) produced material from desert cottontail (*Sylvilagus audubonii*), smooth-toothed pocket gopher (*Thomomys bottae*), kangaroo rat (*Dipodomys*), pocket mouse (*Perognathus*), harvest mouse (*Reithrodontomys*), deer mouse (*Peromyscus*), pack rat (*Neotoma*), California vole (*Microtus californicus*), fox (*Vulpes*), mastodon (*Mammut americanum*), mammoth (*Mammuthus*), camel (*Camelops*), chub (*Gila*), toad (*Bufo*), pond frog (*Rana*), turtle (Chelonia), western side-blotched lizard (*Uta stansburiana*), skink (*Eumeces*), milk snake (*Lampropeltis*), pit viper (*Crotalidae*), and bird (Aves) from Pleistocene deposits at an unspecified depth and unspecified distance from the Project (Jefferson, 1991a,b).
- "Corona East" (UC-RV8601) produced material from mastodon (*Mammut*), horse (*Equus*), camel (*Camelops*), bison (*Bison*), rabbit (Lagomorpha), and multiple rodents including California vole (*M. californicus*), and pack rat (*Neotoma*) from Pleistocene deposits at an unspecified depth and unspecified distance from the Project (UCMP).

Holocene deposits are too young to have accumulated or fossilized enough biologic material to contain significant paleontological resources and are assigned a low paleontological sensitivity. However, these deposits may transition with depth to Pleistocene deposits, which are assigned a high paleontological sensitivity. The Paleontological Resources Impact Mitigation Program (PRIMP) prepared for this Project in indicates the young alluvial fan deposits (*Qaf*) are composed of Holocene deposits from the surface until approximately 10 feet below ground surface (b.g.s.), where they transition into Pleistocene deposits (Rieboldt, 2015). As a result, the young alluvial fan deposits (*Qaf*) in the Project are assigned a low paleontological sensitivity at the surface, but a high paleontological sensitivity below 10 feet b.g.s. The old alluvial fan deposits (*Qof*) are assigned a high paleontological sensitivity at the surface.

Table 3. Geologic Units and Their Paleontological Potential

Age	Geologic Unit	Fossils Present[1]	Paleontological Sensitivity
Holocene	Young alluvial fan deposits (*Qaf*)	Desert cottontail, smooth-toothed pocket gopher, kangaroo rat, pocket mouse, harvest mouse, deer mouse, pack rat, California vole, fox, mastodon, mammoth, camel, chub, toad, pond frog, turtle, western side-blotched lizard, skink, milk snake), pit viper, bird, horse, camel, bison, rabbit	Low at surface, high at depth (>10')[2]
Pleistocene			
Pleistocene	Old alluvial fan deposits (*Qof*)		High

[1]UCMP; Jefferson, 1991a,b
[2] Rieboldt, 2015

Additional Research

Previous Arantine Hills Specific Plan Reports

Reports pertaining to the AHSP not filed and/or processed at theEIC were also reviewed. These reports include the *Cultural and Paleontological Resources Assessment, Arantine Hills Specific Plan Amendment No.2, City of Corona, California* (Duke and Scherzer 2018), the *Results of Paleontological Mitigation Monitoring for the Arantine Hills Specific Plan Project, Corona, Riverside County, California* (Reiboldt 2018), the *Phase IV Archaeological Monitoring for the Arantine Hills Project*, (Tonley et al.), and the *Cultural Resources Assessment, Arantine Hills Specific Plan, City of Corona, Riverside County, California* (Duke 2010).

The results of the 2018 archaeological monitoring indicated that five isolated artifacts, one archaeological feature, and 14 isolated tribal cultural resources were observed and recorded (Tonely et al. 2018). The results for the 2018 paleontological monitoring were negative (Rieboldt 2018). The results for the original 2010 and extended 2018 cultural resources field surveys were both negative for surface cultural resources.

Historic Map and Aerial Photograph Analysis

USGS topographic maps of the Project (1948 through present) were examined for details that would aid in reconstructing the history of the Project property. Maps were obtained from the USGS TopoView website (U.S. Department of the Interior, USGS 2019). The maps available earlier than 1942 are 1:250,000 scale and do not offer suitable resolution for analysis of this type. The 1947- Present USGS Corona South, Calif. 1:24,000 maps indicate that no structures, roads, or dwellings have been built within the Project. The most substantial development in the area appears on the 1967 Corona South 7.5' Topographic map that depicts interstate 15 immediately north of the Project area. No other changes are noted on the topographic maps.

A review of available historic aerial photographs (Nationwide Environmental Title Research, LLC (NETR 2019) was conducted to document changes to the Project area as far back as 1948. At that time, the Project property was undeveloped and located within the Bedford Wash. At some time between 1948- 1966 the Project property was converted to orchards with dirt roads bisecting the northern and southern ends of the Project area. The Project area was utilized for agriculture as late as 2005 and agriculture activities were abandoned after that.

Field Survey

On July 3, 2019 a pedestrian survey of the 27.8 acres Project and was conducted by DUKE C R M Archaeologist and cross trained paleontologist Megan Wilson, M.A., RPA. The pedestrian survey covered the entire Project using 15 meter transects. Special attention was paid to rodent burrows, erosion cuts that allowed the observation of soils below the surface, including a close inspection of the approximately 15 meter high vertical cliff face (Figures 1 and 2) along the eastern boundary of the Project along the Bedford Canyon Wash. Soils are alluvial in origin, dark-brown to tan coarse sand at the surface, and contain approximately 60% gravel, cobbles, and boulders of Bedford Canyon Metasedimentary rock. Granite, quartzite, and sandstone cobbles make up less than 1% of the content. Soils at depth in the cliff face and erosion cut (Figure 1 below) appear to be a dark brown to brown, alluvial, coarse sand with the same gravel and cobble content.

Topography of the Project area is relatively flat within the confines of the canyon, with Bedford Wash bisecting the Project area on the eastern end in a southwest to northeast orientation. Although the Project is relatively flat there exist two steep changes in elevation. The first occurs on the west side where previous grading has already taken place in the original 10 -acres designated for Commcerial use by the AHSP and is approximately six meters higher than the newly added 17.7 acres below it (Figure 3). The second change in elevation occurs in the eastern portion of the Project area immediately east of the Bedford Canyon Wash where an approximately 15-meter cliff (Figure 1) exists between the wash and another flat, disturbed area of land formally utilized for agriculture above it.

Ground visibility was poor and averaged 70% over the entire Project due to thick vegetation cover. Plant species within the Project include invasive grasses and weeds, although some Jimson weed (*Datura stramonium*) was observed. Observable ground surface was limited to the previously graded are to the west (previously approved AHSP), the access roads throughout the Project area (Figure 4), and within and adjacent to the Bedford Canyon Wash.

Disturbances include agricultural plowing, grading, erosion, modern ground disturbance, and a scatter of modern construction refuse. As previously stated, the western portion of the Project area was previously graded as part of the previously approved AHSP (Figure 5). An area was recently disturbed immediately west of the Bedford Canyon Wash and north (below) the six-meter terrace within the additional 17.7 acres added to the AHSP an isolated trifacial mano/shaping stone was observed (Figure 6).

Isolated Artifact

In the eastern end of the Project area an isolated trifacial granite mano/shaping tool was observed in the recently disturbed area west of the Bedford Canyon Wash (452143.59 m_E, 3742149.12 m_N). The mano/shaping stone is triangular in shape due to its three grinding surfaces, tapering slightly at one end. Two of the grinding surfaces are concave, while one grinding surface is convex. These grinding surfaces are atypical of more common manos, or hand-held grinding stones indicating it may have been utilized for primarily shaping versus grinding. The artifact measures 16 cm long, 8.5 cm wide, and 6.5cm wide at its tapered end. No other cultural resources were observed.

Figure 1. Close up of Bedford Canyon Wash sediments

Figure 2. Overview of cliff immediately east of Bedford Canyon Wash, view east

Figure 3. Northwest area of the Project, view east (note elevation change)

Figure 4. Center of project area, on access road, view south

Figure 5. East end of Project, plowed area, view west

Figure 6. Close up of mano observed.

IMPACTS ANALYSIS AND RECOMMENDATIONS

This section addresses the Project's potential to impact cultural and paleontological resources. If changes are made to the Project or if the level of planned disturbance changes, the recommendations herein may be subject to change.

Paleontological Resources

Our research indicates that there is a high sensitivity for paleontological resources in the Project area, as a result of the age of the deposits and nearby fossil localities in similar geological units. Ground disturbance past 10 feet b.g.s. in the eastern portion of the Project area has the potential to impact high-sensitivity Pleistocene deposits of young alluvial fan deposits (*Qaf*), and ground disturbance at the surface in APN 279-240-019 south of the basin will impact high-sensitivity old alluvial fan deposits (*Qof*). Paleontological monitoring is recommended for any ground disturbance in APN 279-240-019 south of the Bedford Canyon Wash and for ground disturbance deeper than 10 feet b.g.s. throughout the Project area west of the Bedford Canyon Wash.

A paleontological monitor shall be present to observe ground disturbing activities within the project. The monitor shall work under the direct supervision of a qualified paleontologist (B.S. /B.A. in geology, or related discipline with an emphasis in paleontology and demonstrated experience and competence in paleontological research, fieldwork, reporting, and curation).

1. The qualified paleontologist shall be on-site at the pre-construction meeting to discuss monitoring protocols.
2. Paleontological monitoring shall start at full-time. If no paleontological resources are discovered after half of the ground disturbance has occurred, monitoring can be reduced to part-time or spot-checking.
3. The monitor shall be empowered to temporarily halt or redirect grading efforts if paleontological resources are discovered.
4. In the event of a paleontological discovery the monitor shall flag the area and notify the construction crew immediately. No further disturbance in the flagged area shall occur until the qualified paleontologist has cleared the area.
5. In consultation with the qualified paleontologist the monitor shall quickly assess the nature and significance of the find. If the specimen is not significant it shall be quickly removed and the area cleared.
6. If the discovery is significant the qualified paleontologist shall notify the applicant immediately.
7. In consultation with the applicant, the qualified paleontologist shall develop a plan of mitigation which will likely include salvage excavation and removal of the find, removal of sediment from around the specimen (in the laboratory), research to identify and categorize the find, curation of the find in a local qualified repository, and preparation of a report summarizing the find.

Cultural Resources

Impacts to cultural resources are generally considered to be direct (e.g. destruction or demolition of a resource) or indirect (e.g. visual, audible, or cumulative changes to the setting). Under CEQA cultural resources are evaluated for significance and eligibility for the California Register. If a resource is considered eligible for the California Register it is considered a historical resource under CEQA. For the purposes of CEQA, impacts are only considered significant for historical resources.

DUKE CRM conducted a records search, field survey, and supplemental research for archaeological and historical resources. The results of the records search indicate there are no previously recorded cultural resources within, or near, the Project boundary. One isolated, granite mano was observed within the Project area west of the Bedford Canyon Wash. This isolated artifact is consistent with six prehistoric artifacts observed during archaeological monitoring for the 2018 Arantine Hills Project (Toney et al. 2018). Although there is a high energy deposition of Bedford Canyon Wash and the area is highly disturbed due to decades of agricultural activities, the results of the pedestrian survey coupled with the presence of artifacts observed during the 2018 construction indicates that there is a moderate probability to observe additional cultural

resources during ground disturbing activities. Therefore, DUKE CRM recommends that ground disturbance may have the potential to impact prehistoric and historic archaeological resources. Due to the moderate potential to impact cultural resources, DUKE CRM recommends archaeological monitoring during ground disturbances related to the Project, specifically during grading activities within the eastern portion of the Project area.

If archaeological and/or paleontological resources are discovered during construction, a qualified archaeologist and/or paleontologist shall be retained to assess the nature and significance of the discovery. If human remains are encountered, State Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to Public Resources Code Section 5097.98. The County Coroner must be notified of the find immediately. If the remains are determined to be prehistoric, the Coroner will notify the Native American Heritage Commission (NAHC), which will determine and notify a Most Likely Descendant (MLD). With the permission of the landowner or his/her authorized representative, the MLD may inspect the site of the discovery. The MLD shall complete the inspection within 48 hours of notification by the NAHC. The MLD may recommend scientific removal and nondestructive analysis of human remains and items associated with Native American burials. In addition, according to the California Health and Safety Code, six or more human burials at one location constitute a cemetery (Section 8100), and unauthorized disturbance of Native American cemeteries is a felony (Section 7052).

If the proposed Project changes additional efforts may be necessary.

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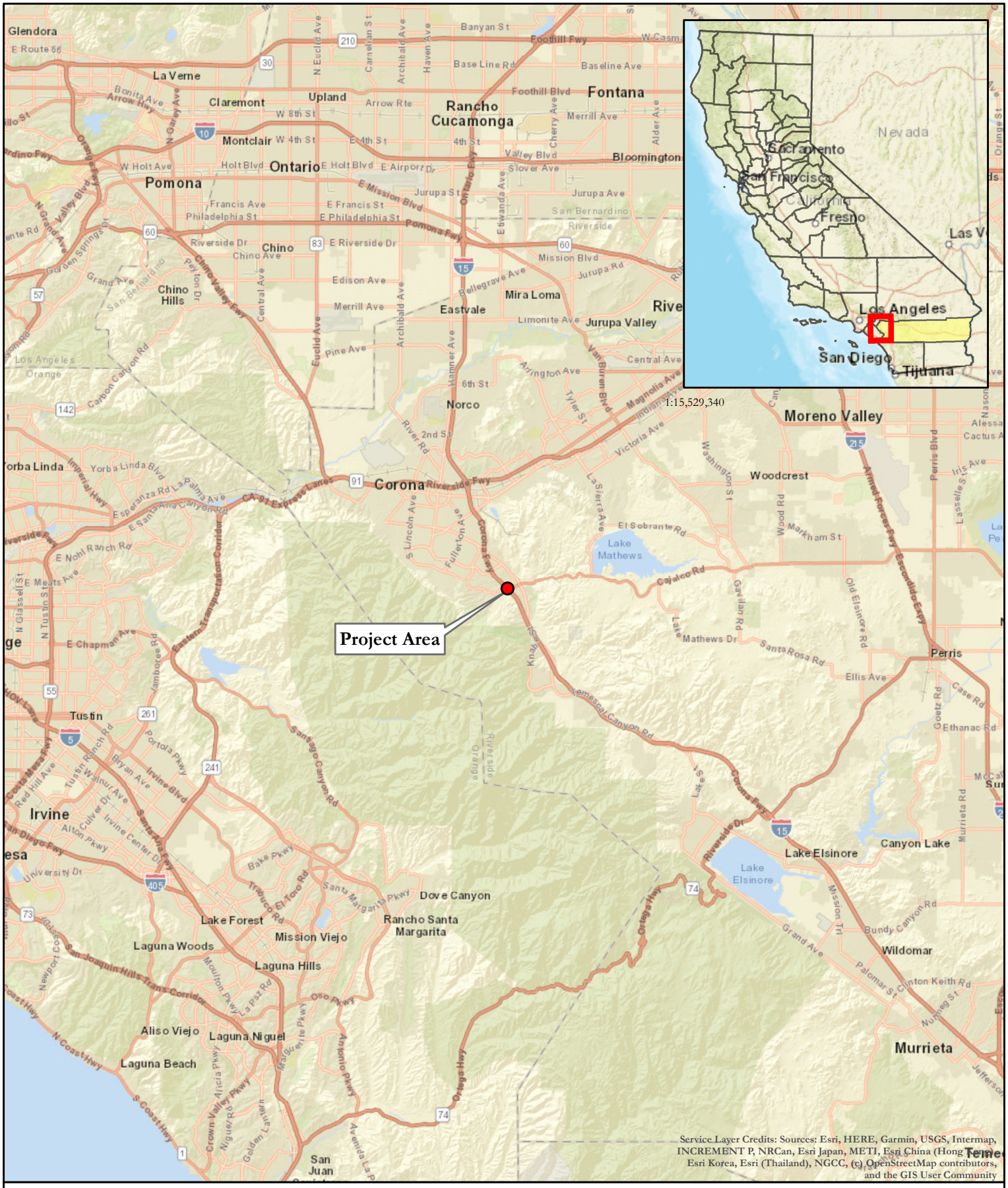
APPENDIX A

PROJECT MAPS



Map 1- Project Vicinity

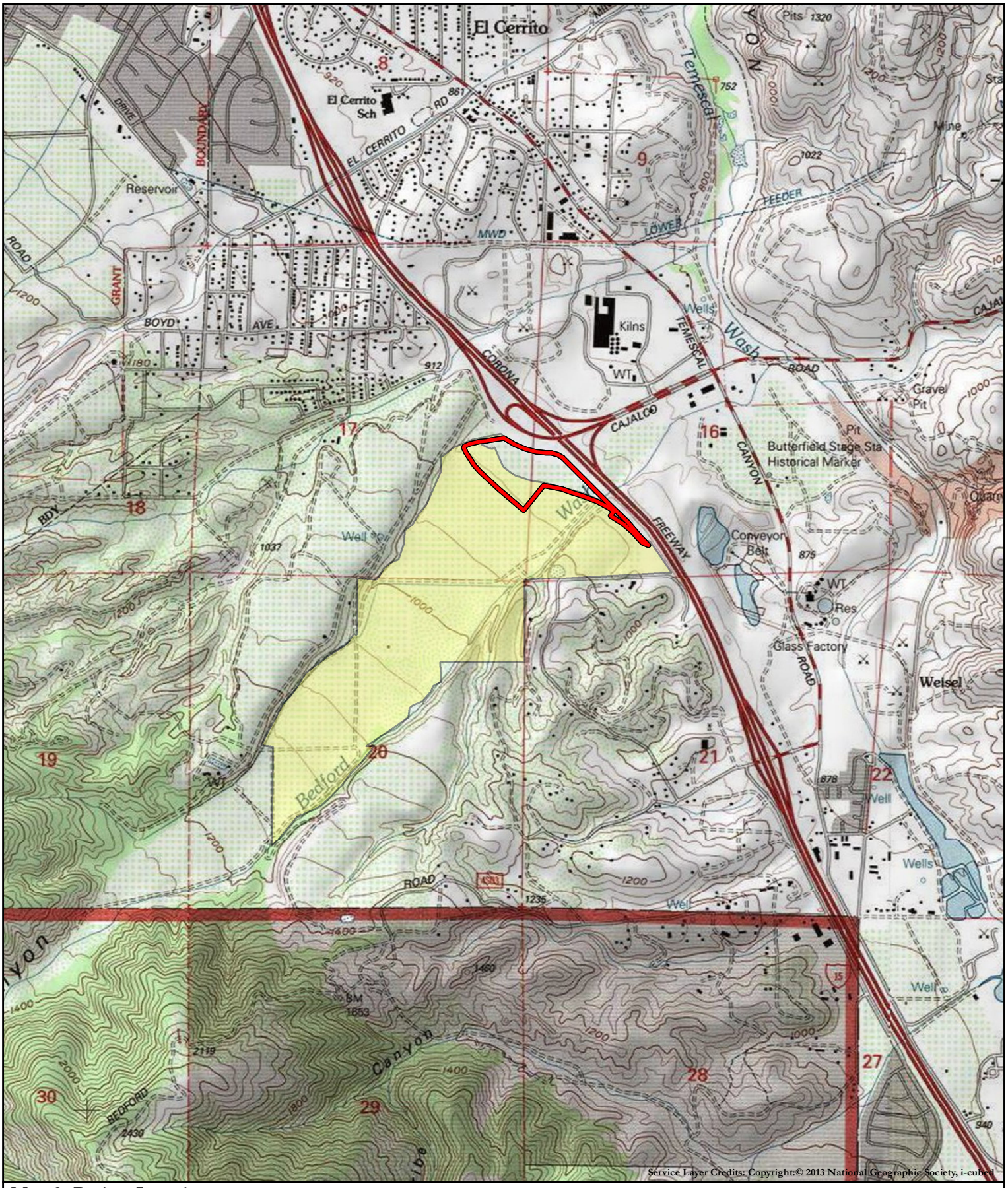
Bedford Canyon Marketplace,
City of Corona, Riverside County, CA

DUKE CRM

0 5 10 Miles

1 inch = 5 miles 1:316,800

N



Map 2- Project Location

Bedford Canyon Marketplace,
City of Corona, Riverside County, CA

DUKE CRM

Project Area

Arantine Hills Specific Plan

0 0.25 0.5 Miles

0 0.25 0.5 Kilometers

N

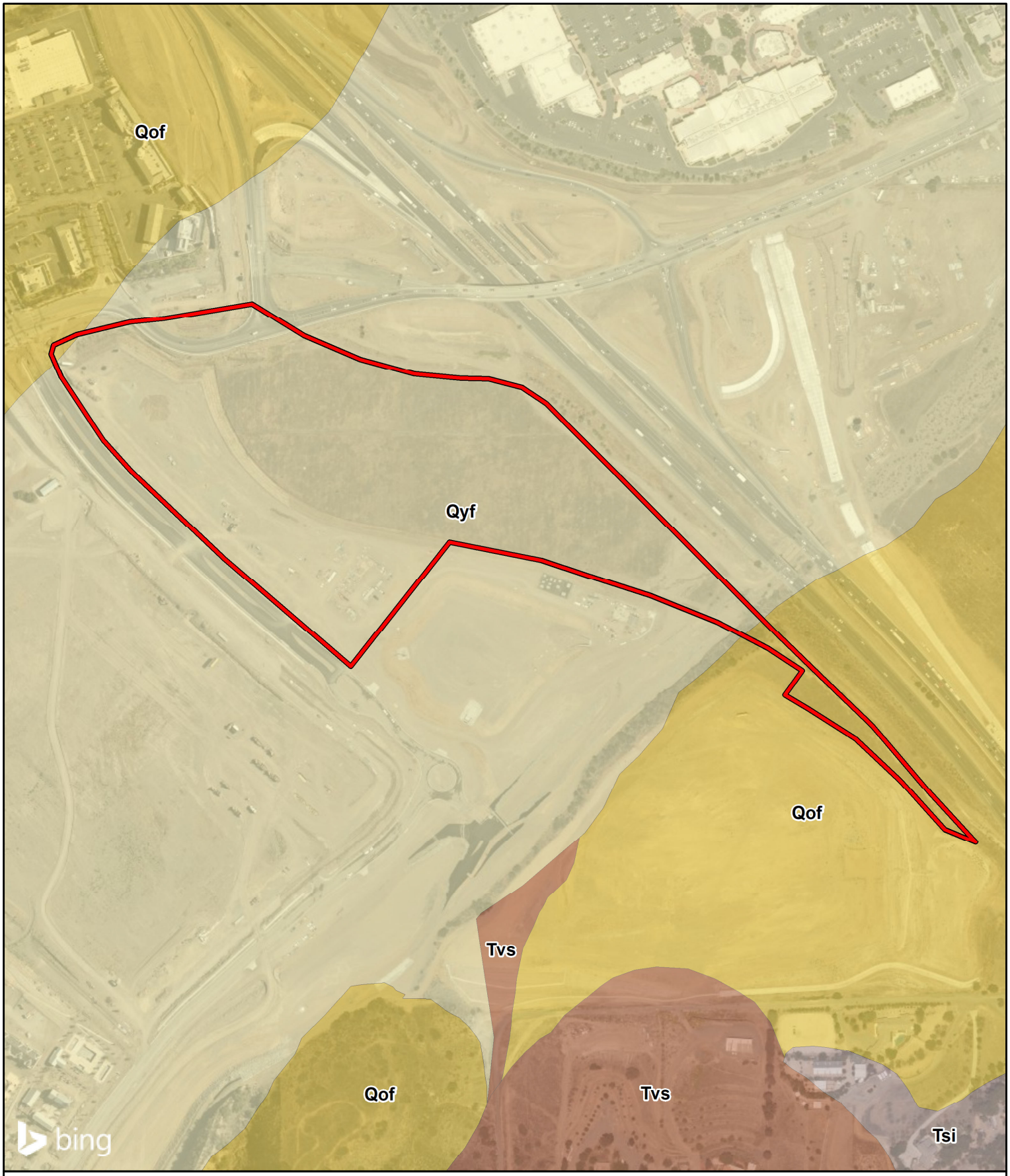
1 inch = 2,000 feet 1:24,000

Map 3- Project Aerial
Bedford Canyon Marketplace,
City of Corona, Riverside County, CA

DUKE CRM

Project Area
Arantine Hills Specific Plan

0 200 400 Feet
N
1 inch =400 feet
1:4,800



Map 4- Project Geology

Bedford Canyon Marketplace,
City of Corona, Riverside County, CA

DUKE CRM

Geology from Morton and Miller 2006

- Qyf: young alluvial-fan deposits
- Qof: old alluvial fan deposits
- Tvs: Silverado Formation
- Tsi: Silverado Formation
- Project Area

0 200 400 Feet

N

1 inch = 400 feet 1:4,800

APPENDIX B

RESUMES

DUKE CRM

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Curt Duke

President/Principal Archaeologist

Expertise

Cultural Resources Management
California Prehistory
Section 106 Compliance
CEQA Compliance
Native American Consultation

Education

CSU, Fullerton, M.A., Anth, 2006
SDSU, Grad Studies, Anth, 1996-97
UC Santa Cruz, B.A., Anth, 1994

Professional Registrations

RPA, No. 15969
County of Riverside (No. 151)
County of Orange

Professional Memberships

Society for California Archaeology
Society for American Archaeology
Pacific Coast Archaeological Society
Assoc. of Environmental Professionals
Building Industry Association

Professional Experience

President/Principal Archaeologist, DUKE CRM, March 2011 to present
Archaeologist/Principal, LSA Associates, 1997-2011
Archaeological/Paleontological Technician, Various Companies, 1995-97
Archaeological Technician/Teachers Assistant, Cabrillo College, 1994
Anthropological Laboratory Technician, UC Santa Cruz, 1994

Selected Project Experience

Sweeny Road, Lompoc, 2018
Vantage Point Church, Eastvale, 2016 and 2018
Murrieta's Hospitality Commons, Murrieta, 2017-Present
VA West Los Angeles Campus Master Plan, 2017-Present
Avenue S-8 and 40th St. E. Roundabout, Palmdale, 2017-18
SR-110 Improvements, Los Angeles, 2017
Diamond Valley Estates Specific Plan, Hemet, 2017
VA West Los Angeles Campus Hospital Replacement, 2016-Present
Shoemaker Bridge Replacement, Long Beach, 2016-Present
Spruce Goose Hangar, Playa Vista, 2016
Rice Avenue at 5th Street Grade Separation, Oxnard, 2015-Present
Vila Borba, Chino Hills, 2013-Present
Skyridge Residential, Mission Viejo, 2011-Present
Baker Water Treatment Plant, Lake Forest, 2014-2015
VA Clinic, Loma Linda, 2014-Present
Evanston Inn, Pasadena, 2014-2016
Petersen Ranch, Leona Valley, 2013-2014
California Street/Highway 101, Ventura, 2014-Present
6th Street Bridge Replacement, Los Angeles, 2013-Present
I-15/I-215 IC Project, Devore, 2008-10
Colton Crossing Rail-to-Rail Grade Separation, 2008-11
City of LA DPW BOE, On-Call, Cultural/Paleo Services, 2008-11
Mid County Parkway, Riverside County, 2014-10
McSweeny Farms Specific Plan, Hemet, 2004-08
Mesquite Regional Landfill, Coachella Valley, 2006-08
Hacienda at Fairview Valley Specific Plan, Apple Valley2007-08
Majestic Hills Specific Plan, Hesperia, 2006-07
Chuckwalla Solar I Project, Desert Center, 2007-08
Needles Highway Improvement Project, 2004-06
Superstition Solar I Project, Salton Sea, Imperial County, 2008
Muddy Canyon Archaeological Project, Newport Beach, 1997-2001
Temecula 32, Archaeological Phase II Testing, 2007
Mammoth Lakes Parks/Rec and Trail System Master Plan, 2010
24th Street Improvements, City of Bakersfield, 2008-11
California Valley Solar Ranch, San Luis Obispo County, 2009-10
Delano-Alpaugh Water Pipeline, Kern/Tulare Counties, 2006-09
I-15/SR-79 IC Project, Temecula, 2006-10
Westlake Historic Resources Survey, Los Angeles, 2008-09
CETAP, western Riverside County, 1999-2001
Los Coches Creek Elementary School, near Alpine, 2003-06
Oak Valley Specific Plan 1 Amendment, Beaumont, 2004
Fort Irwin, National Training Center, 1999
San Nicolas Island, Naval Base Ventura County, CA, 1997
Cell Sites, ~3,000 projects in CA and in NV, AZ, IL, WI, 1997-2018

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Megan Patricia Wilson

Archaeologist/GIS Analyst

Expertise

Cultural Resources Management
California Archaeology and History
Geographical Information Systems
Trimble, Pathfinder, TerraSync, GPS Software
Section106, NEPA, and CEQA Compliance
Native American Consultation

Education

CSU, Fullerton, M.A., Anthropology, 2014
UCLA B.A., Anthropology, 2006

Professional Registrations

RPA, No. 30984245

Certifications

GIS Certification, CSU, Fullerton, 2013

Professional Memberships

Society for California Archaeology
Society for American Archaeology
Society for Historical Archaeology
Orange County Historical Society

Professional Experience

Archaeologist and GIS Analyst, Duke CRM, 2019-Present
Archaeologist and GIS Manager, Cogstone RMI, 2014-2019
Assistant Archaeology Curator, John D. Cooper Center, 2012-2014
Lab Assistant, California State University, Fullerton Archaeology Lab, 2011-2012
Archaeological Field Technician, The Keith Companies, 2003

Selected Project Experience

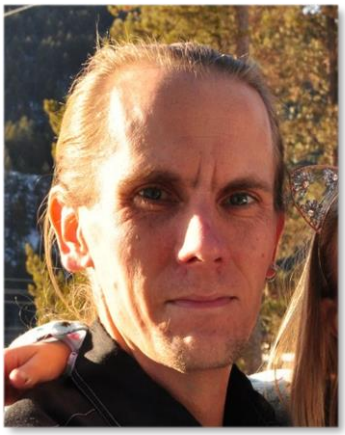
Purple Line Extension (Westside Subway), Metro/FTA, Los Angeles, 2019
Brea 265 Specific Plan, City of Brea, 2019
Ontario International Airport Evaluation, City of Ontario, 2019
Irvine General Plan, Update, 2019
River Street Marketplace, City of San Juan Capistrano, 2019
Lake Forest General Plan Update, City of Lake Forest, 2018
I-5/Venta Spur Trail Bicycle and Pedestrian Bridge, City of Irvine, 2018
Newport Crossing Development, Newport Beach, 2018
La Verne General Plan Update, City of Laverne, 2018
I-605 Katella Interchange Improvements Project, 2018
Chino High School, City of Chino, 2018
SR 57 Widening Project-Orangewood to Katella, Caltrans District 12, 2018
Harriet M. Weidner Regional Park, City of Huntington Beach, 2017
Park Place Extension and Grade Separation EIR EA, Caltrans District 7, El Segundo, , 2017
Accelerated Charter Elementary School, Los Angeles Unified School District, Los Angeles, 2017
Del Sur Solar EIR, Lancaster, 2016
Little Corona Infiltration/Buck Gully, Newport Coast Watershed Management Plan, Newport Beach, 2016
Longboat Solar Photovoltaic, EDF Renewable Energy, Barstow and Lenwood, 2016
I-5 Jeffrey Open Space Trail (JOST) Segments 1 & 2, Irvine, City of Irvine/Caltrans District 12, 2015
Sweany Pipeline, Phase II, Laguna Beach County Water District, Crystal Cove State Park, 2014
Little Tujunga Canyon Road Project, Angeles National Forest, 2015
Greenville-Banning Channel Rehabilitation, OC Public Works, Costa Mesa, 2014
Lopez and Agua Dulce Canyons Restoration Due Diligence, Mountains Recreation and Conservation Authority, Angeles National Forest, 2014

DUKE CRM

18 Technology Dr., Ste. 103
Irvine, CA 92618
949-356-6660
www.dukecrm.com

Benjamin Scherzer

Paleontologist



Expertise

Paleontological Resources Management
Fossil excavation
Fossil preparation
Stratigraphy
Natural gas mudlogging
Directional drilling

Education

M.S., Earth Science, 2008, MSU, Bozeman, MT
B.A., Geology/Math, 2002, Earlham College, IN

Professional Registrations

Paleontologist, County of Orange
Paleontologist, County of Riverside

Professional Memberships

Society of Vertebrate Paleontology
Geological Society of America
Society for Sedimentary Geology
American Association of Petroleum Geologists, Pacific Section
South Coast Geological Society
Western Association of Vertebrate Paleontologists

Publications and Professional Papers

Scherzer, B. 2017. A possible physeteroid (cetacea: odontoceti) from the Yorba member of the Puente Formation, Orange County, California.

Scherzer, B. 2016. An archaic baleen whale (Cetacea: Mysticeti) from the Vaqueros Formation, and other fossil material from the Skyridge Project, Orange County, California.

Scherzer, B. 2015. Miocene teleost fish from Chino Hills: preliminary results from the Vila Borba Project, San Bernardino County, California.

Professional Experience

Paleontologist, DUKE CRM, February 2014-present
Paleontologist, L&L Environmental, 2017-2018
Stratigrapher, Archeological Resource Management Corp., 2015-2018
Paleontological Specialist II, SD Natural History Museum, 2013-2018
Paleontological Specialist II, SWCA (Pasadena), 2012-2015
Paleontologist, SWCA (Vernal, UT), 2011-2012
Fossil Preparator, Carter County Museum, 2010-2011
Physical Science Technician, Badlands National Park, 2010
Mudlogger/Geologist, Pason Systems USA, 2006-2009
Paleontological Field Assistant, ARCADIS US, 2006-2007

Selected Project Experience

Prairie Avenue Bridge Rehabilitation, Torrance, 2019-present
San Jacinto GP & Update, San Jacinto, 2019-present
I-5 Widening, Aliso Viejo, 2018-present
Sweeny Rd, Lompoc, 2018-present
Atlanta Avenue Widening, Huntington Beach, 2018-present
Ocean Place, Seal Beach, 2018-present
Lake Forest Civic Center, Lake Forest, 2018-present
Vanderham Monitoring, Jurupa Valley, 2017-2018
Ave S-8 and 40th St Roundabout, Palmdale, 2017-present
Gold Flora Farms, Desert Hot Springs, 2017-present
I-5 HOV Truck Lanes, Santa Clarita, 2017-2018
Brasada Homes, San Dimas, 2017-2018
Indus Light Industrial Building, Chino Hills, 2017-2018
Murrieta's Hospitality Commons, Murrieta, 2017
6th Street Viaduct, Los Angeles, 2017-present
I-15 TEL, Riverside and San Bernardino Counties, 2017
Lewis Street, Anaheim, 2017
The Crossings, Chino Hills, 2016-2017
Reata Glen, Mission Viejo, 2016-2018
Greenville-Banning Channel, Costa Mesa, 2016
Fairfield Ranch, Chino Hills, 2016
Diamond Valley, Hemet, 2017
Marywood Residential, Orange, 2016-2017
Rancho Mission Viejo, Mission Viejo, 2015-2018
Santa Margarita Water District Tesoro Reservoirs, Mission Viejo, 2015
Evanston Inn, Pasadena, 2015
Village of Terrassa, Corona, 2015
Sycamore to Peñasquitos 230 kV Transmission Line, San Diego, 2015
Lakeside Temescal Valley, Temescal Valley, 2015-present
Vila Borba, Chino Hills, CA, 2013-present
RP-Outfall Relocation, Ontario, 2014
Serrano Ridge, Temescal Valley, 2014
Lago Los Serranos, Chino Hills, 2014
Baker WTP, Lake Forest, 2014
Skyridge Residential, Mission Viejo, 2014-present
Pacific Highlands, San Diego, 2014
Sol y Mar, Ranchos Palos Verdes, 2013-2014
Mojave Solar Power, Hinkley, 2013
Genesis Solar Energy, Blythe, 2012-13

APPENDIX C

CONFIDENTIAL DPR FORM

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

PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code

Other Listings
Review Code | Reviewer | Date

*Resource Name or #: C-0300-ISO-001

P1. Other Identifier: C-0300-ISO-001

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

***a. County:** Riverside

***b. USGS 7.5′ Quad:** Corona South **Date:** 1967 **T** 4 S**; R** 6 W**;** NW ¼ **of** SW ¼ **of Sec;** San Bernardino **B.M.**

c. Address: Southwest of Interstate 15 and Calajco Road intersection **City** Corona **Zip** 92881

d. Zone 11N: 452144. **mE/** 3742149 **mN** NAD 83

e. Other Locational Data: APN 279-240-019, approximately 80 meters west of Bedford Creek

***P3a. Description** This artifact consists of one isolated trifacial granite mano. The mano was observed in the recently disturbed area 80 meters west of the Bedford Canyon Wash. The Bedford Canyon is a dry wash formally utilized for agriculture, specifically a citrus orchard. The location of the artifact was located in a recently plowed area; the surrounding area was covered in dense invasive weeds. The mano is triangular in shape due to its three grinding surfaces, tapering slightly at one end. Two of the grinding surfaces are slightly concave, while one is convex, which indicates is may have been used more as a shaping tool than a mano to grind against a metate or bedrock mortar. It measures 16 cm long, 8.5 cm wide, and 6.5cm wide at its tapered end.

***P3b. Resource Attributes:** AH 16, other-prehistoric isolate

***P4. Resources Present:** □ Building □ Structure □ Object □ Site □ District □ Element of District ☒ Other: Prehistoric Isolate-trifacial mano/shaping tool

P5a Photograph or Drawing

P5b. Description of Photo: Plane view of trifacial mano, in field

***P6. Date Constructed/Age and Source:** ☒ Prehistoric □ Historic □ Both

***P7. Owner and Address:**
Riverside County Transportation Commission (RCTC)
P.O. Box 12008
Riverside CA, 92502

***P8. Recorded by** Megan Wilson, M.A., R.P.A DUKE CRM, 18 Technology Drive, Irvine, CA 92618

***P9. Date Recorded:** 07/03/2019

***P10. Type of Survey:** ☒ Intensive □ Reconnaissance □ Other
Describe:

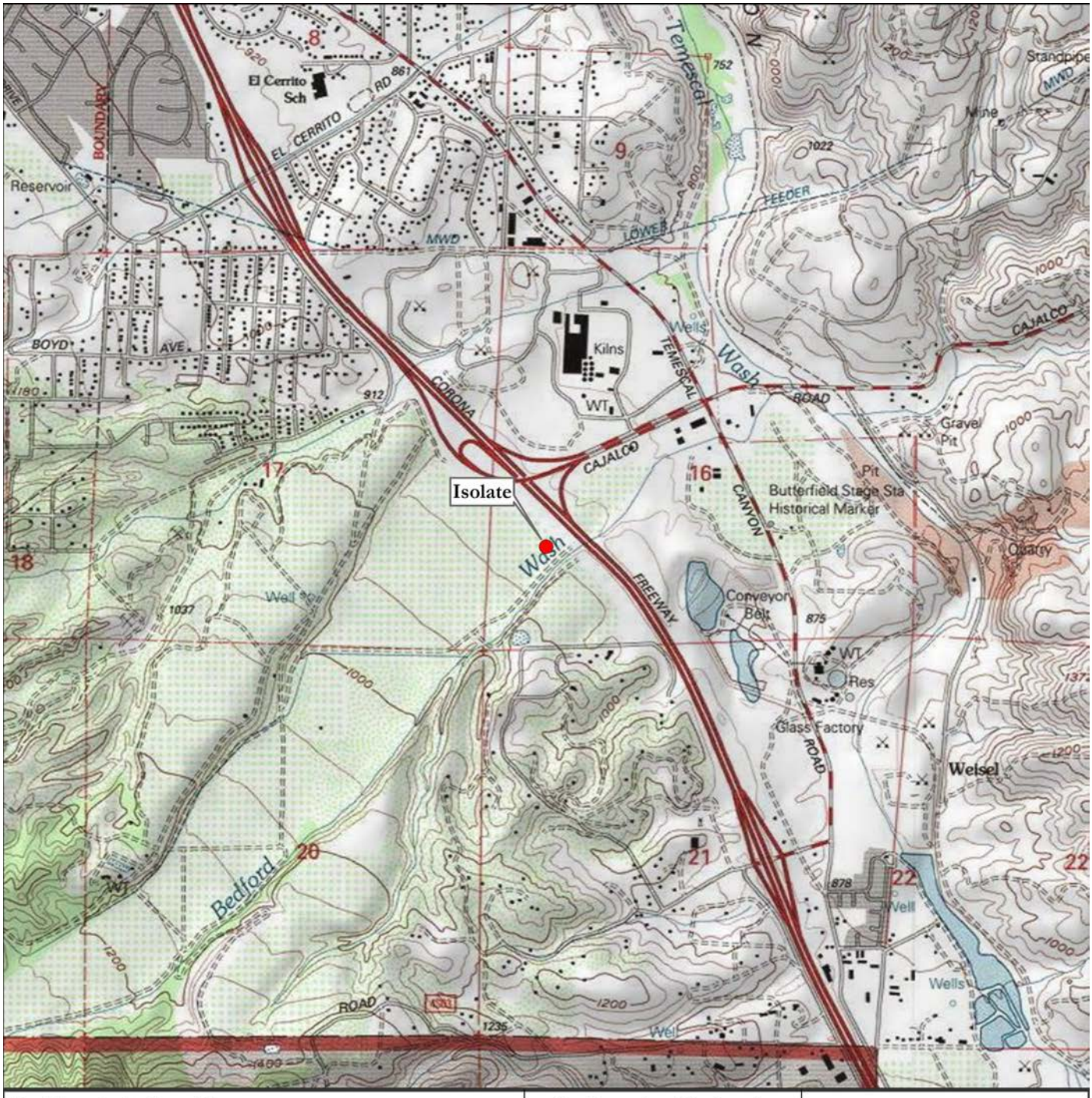
***P11. Report Citation**: Duke, C. and M. Wilson
Cultural and Paleontological Resources Assessment, Bedford Canyon Marketplace, City of Corona, Riverside County, California

***Attachments:** □ None ☒ Location Map □ Site Map □ Continuation Sheet □ Building, Structure, and Object Record □ Archaeological Record □ District Record □ Linear Feature Record □ Milling Station Record □ Rock Art Record □ Artifact Record □ Photograph Record Other:

State of California -- The Resources Agency	Primary #
DEPARTMENT OF PARKS AND RECREATION	HRI#
LOCATION MAP	Trinomial

Page 2 **of** 2 ***Resource Name or #:** C-0300-ISO-001

***Map Name:** Corona South ***Scale:** 1:24,000 ***Date of Map:** 1967



Prehistoric Isolate:Mano

Service Layer Credits: Copyright:© 2013 National Geographic Society, i-cubed *This data represents an extension of the federal PLSS prepared by the California Department of Pesticide Regulation. Gaps and irregularities caused by civil land grants have been mathematically filled without the benefit of field surveys. Townships, ranges, and sections are an extrapolation, and might not exist in the federal survey.

Site Location Depicted on the Corona South, Calif. USGS 7.5-Min. Quad.

Township 4 South, Range 6 West, Section 16

0 2,000 Feet N

0 300 Meters 1:24,000