Archaeological Rept.

Title: Negative Cultural Survey Report Form (Appendix D) for Black Mountain Access Road Repair Project, San Diego, California

Project/PTS Number:

Prepared for:	Sandra Pentney Atkins North America, Inc. 3570 Carmel Mountain Road, Suite 300 San Diego, CA 92130
Prepared by:	ASM Affiliates, Inc. 2034 Corte Del Nogal Carlsbad, California, 92011
Authors:	Ian Scharlotta, Ph.D., RPA Principal Investigator
Date:	March 2014
USGS:	7.5-minute Quadrangle: Del Mar
Keywords:	Survey; San Diego; Black Mountain Open Space Park; San Diego Aqueduct

I. PROJECT DESCRIPTION AND LOCATION

This negative archaeological resources report summarizes the archaeological survey conducted by ASM Affiliates, Inc. (ASM) for Atkins for the Black Mountain Access Road Repair Project, within the City of San Diego, California (Figures 1 and 2). The project area is located within Assessor's Parcel Number 312-292-04, which is owned by the City of San Diego and is located in the Black Mountain Open Space Park. It can be referenced on the U.S. Geological Survey 7.5' Del Mar, California Quadrangle Map in Section 6, Township 14 South, Range 2 West of the San Bernardino Base and Meridian (Figure 3). This report is submitted in compliance with the City of San Diego Land Development Code Appendix D.

Erosion from overflow of the Black Mountain Reservoirs has created an incised gully along the western branch of the Black Mountain Access Road and threatens to expose three San Diego County Water Authority (CWA) underground 108-inch aqueducts located approximately 15 feet below grade (Figures 4 and 5). The final construction plan to address the eroded areas generally consist of the removal of the existing concrete headwalls and detention basins (Figures 6 – 8), and installation of a below grade 36" drainage pipe and revegetated downstream energy dissipater. After installation of the pipe is complete, all previously eroded areas would be re-contoured and restored to native upland vegetation. Staging and access would remain on urban/developed habitats within the existing access road when practicable; however, unavoidable temporary impacts to native upland vegetation would likely occur during construction in order to safely access all areas within the construction footprint.

The project area crosses the San Diego County Water Authority (SDCWA) 130-ft. wide aqueduct easement. The SDCWA easement includes three pipeline alignments: Pipeline 3 a 69-in. welded steel (WSP); Pipeline 4 a 96-in. pre-stressed concrete cylinder pipe (PCCP); and Pipeline 5, a 108-in. WSP. Pipeline 3 was constructed between 1957 and 1960 and Pipeline 4 was constructed between 1968 and 1971 as part of the Second San Diego Aqueduct. The pipelines are located between 5 and 12 ft. below proposed ground disturbance (Figure 5). Although the project Area of Potential Effect (APE) crosses the easement for the SDCWA aqueduct, ground disturbance associated with the project will not occur at depths such that the pipelines would be affected. Consequently, the proposed project will not result in impacts to historical resources.

The archaeologist for ASM at the site was Dr. Ian Scharlotta and Red Tail Monitoring and Research, Inc. (Red Tail) monitors Justin Linton provided Native American monitoring and consultation. All personnel involved in this project are certified by the City of San Diego to conduct the work described herein.

II. SETTING

The following information has been summarized from the draft *Black Mountain Open Space Park Natural Resource Management Plan*, February 2004, prepared by the City of San Diego. The rich natural environment described in the following paragraphs was used by prehistoric people of the region, and provided the setting for the mining activity that came later.

Geology and Soils

The Park is located in the geological area known as the "Poway Quadrant" which consists of rock units called "Santiago Peak Volcanics." The Santiago Peak Volcanics comprise an elongate belt of mildly metamorphosed volcanic, volcaniclastic, and sedimentary rocks that crop out from the southern edge of Los Angeles Basin southward towards Mexico (California Division of Mines 1975). The Santiago Peak Volcanics are extremely erosion-resistant, hard, and form topographic highs. Where fresh, most of the volcanic rocks are dark greenish-gray in color but where weathered are grayish-red to dark reddish-brown. The soil that develops from the volcanic rocks is the color of the weathered rocks and supports growth of dense chaparral. The majority of the soils onsite are classified as San Miguel-Exchequer rocky silt loam with smaller areas supporting San Miguel, Olivenhain, Auld, and Altamont soils. San Miguel soils are derived from meta-volcanic rock that is unique because of their relatively high acidity, clay subsoil layer, and low permeability. Olivenhain, Auld, and Altamont soils are also derived from meta- volcanic parent material and typically have a prominent clay layer (Bowman 1973).

When viewed from a regional scale, Black Mountain is part of a chain of relatively high coastal peaks stretching from northern Baja California to Camp Pendleton. A number of these peaks support sensitive plant species because of unique soils or microclimates (Beauchamp 1986:241). The Park ranges in elevation from 600 ft. above mean sea level at the southern portion of the study area to 1,552 ft. at Black Mountain Peak. The topography is characterized by bands of steep ridges and canyons across the majority of the site. Most of the site is greater than 25 percent slope and much of the remainder is more than 10 percent. The Park is situated on the north slope of Black Mountain and includes Black Mountain Peak and a system of interconnected ridges and ravines, including several U.S. Geological Service blue line streams that eventually drain to Los Peñasquitos, Carmel, and Lusardi creeks. A small portion of the site at the north to northeast boundary consists of more gradually sloping hills and meadows. Surface water within the park drains into channels that lead the water off-site and eventually empty into the San Dieguito River.

Biological Resources

The Park area is comprised of a diverse assemblage of vegetation types and wildlife habitats. Chaparral, chaparral-coastal sage scrub, and coastal sage scrub are the dominant plant communities onsite. Non-native grassland and ruderal habitats are also found within the Park in areas associated with past disturbance. Small patches of native grassland (less than one acre) exist within larger stands of coastal sage scrub. One small patch of freshwater marsh exists in the northern portion of the Park.

Some hillsides include substantial populations of the native purple needle grass (*Nassella pulchra*). These native patches of grassland may provide nesting habitat for the grasshopper sparrow (*Ammodramus savannarum*). Native grasslands have been severely depleted throughout the coastal area and are often overlooked as sub-components of larger stands of non-native grasses.

A total of approximately 308 acres of Diegan coastal sage scrub habitat and approximately 252 acres of coastal sage-chaparral scrub are scattered throughout the Park. A large portion of the coastal sage scrub (100 acres) and coastal sage-chaparral (195 acres) habitat is found on the

Montana Mirador section of the Park. Approximately 185 acres of this habitat is California gnatcatcher (*Polioptila californica californica*) core habitat. Dominant species include coastal sagebrush (*Artemisia californica*), black sage (*Salvia mellifera*), and lemonadeberry (*Rhus integrifolia*). The coastal sage scrub onsite contains many sensitive plant species including California adolphia (*Adolphia californica*), San Diego viguiera (*Viguiera laciniata*), and San Diego barrel cactus (*Ferocactus viridescens*).

Sensitive wildlife known to use the Diegan coastal sage scrub and chaparral-coastal sage scrub include: the coastal California gnatcatcher, and the orange-throated whiptail (*Cnemidophorus hyperythrus*). The San Diego coast horned lizard (*Phrynosoma coronatum blainvillei*) is also present in small numbers. Many bird species typical of scrub habitats in southern California occur here, such as the California towhee (*Pipilo crissalis*), California quail (*Callipepla californica*), wrentit (*Camaea fasciata*), and California thrasher (*Toxostoma redivivum*). Other animals found in this habitat include the desert cottontail (*Sylvilagus* audubonnii) and western fence lizard (*Sceloporus occidentalis*).

Southern mixed chaparral is the most common habitat type within the Park, totaling approximately 252 acres. Southern mixed chaparral is a plant community dominated by drought-tolerant tall shrubs. This habitat is typically found on north-facing slopes where drier conditions are present. This plant community is dominated by chamise (*Adenostoma fasciculatum*), toyon (*Heteromeles arbutifolia*), ceanothus (*Ceanothus* spp.), mission manzanita (*Xylococcus bicolor*), and sugar bush (*Rhus ovata*). This vegetation type is usually dense with little or no understory cover. As a slightly more common habitat, southern mixed chaparral does not support a large number of sensitive species. However, some of the same species, which inhabit the nearby scrub habitats, may also utilize chaparral habitat.

A small amount of freshwater marsh (0.47 acre) occurs in the northern portion of the Park. Freshwater marsh consists of peripheral stands of vegetation around permanent or late-drying ponds. During the drier portions of the year, the marsh vegetation in these ponds typically dies back to the tuberous root system with only short and sparse young leaves remaining green. Several of these ponds are highly alkaline during the summer months and a thin layer of salt can often be seen crusting over drying mud in mid and late summer. Dominant plants include cattails (*Typha* spp.) and bulrush (*Scirpus* spp.). Other native plant species likely occurring include marsh fleabane (*Pluchea odorata*), toad rush (*Juncus bufonius*), and several species of sedge (*Cyperus eragrostis*, *C. odoratus*, *C. erythrorhizos*).

Small stands of non-native grassland, totaling approximately 23 acres, 17 acres of which occur within the 325-acre Montana Mirador conservation area, can also be found throughout the Park, usually in areas of disturbance. Eurasian grasses dominate these areas, generally between patches of sage scrub. The dominant non-native grasses include wild oat (*Avena barbata*), bromes (*Bromus madritensis* ssp. *rubens*, *B. hordaceous*, *B. diandrus*), foxtail fescue (*Vulpia myuros*), hare barley (*Hordeum murinum* ssp. *leporinum*), and English ryegrass (*Lolium perenne*).

A variety of wildlife (invertebrates, amphibians, reptiles, birds, and mammals) is found in the Park due to the size and diversity of habitat within the Preserve. A variety of butterfly species, such as

Behr's metalmark (*Apodemia mormo virgulti*) and California ringlet (*Coenonympha californica*), are found throughout the Park. Limited habitat exists in the Park for the Hermes copper butterfly (*Lycaena hermes*). Host plant for this species is spiny redberry (*Rhamnus crocea*), which is found within limited areas of the sage scrub in the Park.

A variety of frog and toad species is known to occur in the Park area. One species, the pacific tree frog (*Hyla regilla*), was observed on-site (City of San Diego 1993:42). The bullfrog (*Rana catesbeiana*) is occasionally found throughout the Plan area, usually in lowland aquatic habitats such as streams and ponds. This species is native to Southeast Asia and Australia and was introduced into California around the turn of the century. It is one of the largest anurans in North America, and preys on native frogs and toads.

Lizard species observed on-site include the side-blotched lizard (*Uta stansburiana*) and western fence lizard (City of San Diego 1993). Previous sightings of orange-throated whiptail have been recorded on-site. The San Diego alligator lizard (*Gerrhonotus multicarinatus*), gopher snake (*Pituophis melanoleucus*), San Diego horned lizard and western rattlesnake (*Crotalus viridis*) are additional snake and lizard species expected to occur on-site.

Ample nesting and foraging habitat for many avian species exists on-site, and a wide variety of birds have been observed. Migratory birds species, such as Wilson's warbler (*Wilsonia pusilla*) and olive-sided flycatcher (*Contopus borealis*), are known to visit the Park. Anna's hummingbird (*Calypte anna*), Say's phoebe (*Sayornis saya*), common raven (*Corvus corax clarionensis*), Bewick's wren (*Thyromanes bewickii*), rock wren (*Salpinctes obsoletus*), California thrasher (*Toxostoma redivivum redivium*), lesser goldfinch (*Carduelis psaltria hesperophilus*), yellow-rumped warbler (*Dendroica coronata*), coastal California gnatcatcher (*Polioptila californica californica*), and fox sparrow (*Zonotrichia iliaca*) are among the perching bird species occupying habitat within the Park.

Several rock outcrop formations located throughout the site are embellished with "whitewash," indicating their use as raptor perches. Birds of prey observed within the Park include red-tailed hawk (*Buteo jamaicensis*), American kestrel (*Falco sparverius*), northern harrier, Cooper's hawk (*Accipiter cooperii*), and turkey vulture (*Cathartes aura*). Other species not observed within the Park, but likely to use the area, are golden eagle (*Aquila chrysaetos canadensis*), red-shouldered hawk (*Buteo lineatus elegans*), and sharp-shinned hawk (*Accipiter striatus velox*). Owls and nighthawks are likely to occur within the Park; however, detection of these species is difficult because they are nocturnal. Species likely to utilize the habitat on-site include common barn owl (*Tyto alba*), great horned owl (*Bubo virginiansus*), lesser nighthawk (*Chordeiles acutipennis*), and common poorwill (*Phalaenoptilus nuttallii*).

Direct observation of mammal species is very difficult due to their shy and sometimes nocturnal habits. Evidence such as scat, tracks, burrows, and dens aid in determining presence of various animals. Abundant signs of common species, such as coyote (*Canis latrans*), woodrat (*Neotoma* spp.), mule deer (*Odocoileus hemionus*), and cottontail rabbit (*Sylvilagus auduboni*), have been observed within the Park. Signs of large predators, such as bobcat (*Lynx rufus*) and gray fox (*Urocyon cinereoargentus*), have been observed in portions of the Park (City of San Diego 1993).

Habitat within the Park has a high probability of supporting a wide variety of mammals, including rodents such as California ground squirrel (*Spermophilus beecheyi*), striped skunk (*Mephitis mephitus*), and long-tailed weasel (*Mustela frenata*). The old arsenic mine site may potentially be home to a wide variety of bat species. Raccoons (*Procyon lotor*) and related species, such as the ringtail (*Bassariscus astutus*), could also occur within the Park.

CULTURAL HISTORY

Prehistoric Period

Archaeological fieldwork along the southern California coast has yielded a diverse range of human occupation extending from the early Holocene into the Ethnohistoric period (Erlandson and Colten 1991; Jones 1992; Moratto 1984). Several different regional chronologies, often with overlapping terminology, are used in coastal southern California and they vary from region to region (Moratto 1984: Figures 4.5 and 4.17). Today, the prehistory of San Diego County is generally divided into three major temporal periods: Paleoindian, Archaic, and Late Prehistoric. These time periods are characterized by patterns in material culture that are thought to represent distinct regional trends in the economic and social organization of prehistoric groups. In addition, some scholars, referring to specific areas, utilize a number of cultural terms synonymously with these temporal labels: San Dieguito for Paleoindian, La Jolla for Archaic, and San Luis Rey for Late Prehistoric (Meighan 1959; Moriarty 1966; Rogers 1939, 1945; True 1966, 1970; Wallace 1978; Warren 1964).

Paleoindian Period

The antiquity of human occupation in the New World is still a subject of considerable debate spanning the last several decades. The currently accepted model is that humans first entered the western hemisphere between 13,000 and 15,000 years before present (B.P.). While there is no firm evidence of human occupation in coastal southern California prior to 12,000 B.P., dates as early as 23,000 B.P., and even 48,000 B.P., were reported (Bada et al. 1974; Carter 1980; Rogers 1974). However, the amino acid racemization technique by which these dates were obtained is largely discredited through more recent accelerator mass spectroscopy (AMS) dating of early human remains along the California coast (Taylor et al. 1985). Despite intense interest and a long history of research, no widely accepted evidence of human occupation of North America dating before 15,000 B.P. has emerged.

As in most of North America, the earliest recognized period of California prehistory is termed Paleoindian. In southern California, this period is usually considered to date from at least 10,000 B.P. until 8,500 to 7,200 B.P. (Moratto 1984; Warren et al. 1993), and is represented by what is known as the San Dieguito complex (Rogers 1966). Within the local classificatory system, San Dieguito assemblages are composed almost entirely of flaked stone tools, including scrapers, choppers, and large projectile points (Warren 1987; Warren et al. 1993). Until recently, the near absence of milling tools in San Dieguito sites was viewed as the major difference between Paleoindian economies and the lifeways which characterized the later Archaic period.

Based upon rather scant evidence from a small number of sites throughout San Diego County, it is hypothesized that the people linked to the San Dieguito complex lived within a generalized hunter-gatherer society with band-level organization. This portrayal is essentially an extension to

the inland and coastal areas of San Diego County of what has long been considered a continent-wide Paleoindian tradition. This immediate post-Pleistocene adaptation occurred within a climatic period characterized by somewhat cooler and moister conditions than exist presently. The range of possible economic adaptations of San Dieguito bands to this environment are poorly understood at present, but it is typically assumed that these groups followed lifeways similar to other Paleoindian groups in North America. This interpretation of the San Dieguito complex as the local extension of a post-Clovis tradition is based primarily on materials from the Harris Site (Ezell 1983, 1987; Warren 1966, 1967).

Archaic Period

The Archaic (also referred to as the Early Milling period) extends back at least 7,200 years, possibly as early as 9,000 B.P. (Moratto 1984; Rogers 1966; Warren et al. 1993). Archaic subsistence is generally considered to have differed from Paleoindian subsistence in two major ways. First, gathering activities were emphasized over hunting, with shellfish and seed collecting of particular importance. Second, milling technology, frequently employing portable ground stone slabs, appears. The shift from a mostly maritime-based subsistence focus to a terrestrial focus is traditionally seen as marking the transition from the Paleoindian to the Archaic period. In reality, the implications of this transition are poorly understood from both an economic and cultural standpoint (see Warren et al. 1993 for a broader review).

Early Archaic occupations in San Diego County are most apparent along the coast and the major drainage systems that extend inland from the coastal plains (Moratto 1984). Coastal Archaic sites are characterized by cobble tools, basin metates, manos, discoidals (disk-shaped grinding stones), a small number of Pinto- and Elko-series dart points, and flexed burials. Together these elements typify what is termed the La Jolla complex in San Diego County, which appears as the early coastal manifestation of a more diversified way of life.

For many years the common model has included something that D. L. True (1958) termed the Pauma complex, an archaeological construct based upon a number of inland Archaic period sites in northern San Diego that appeared to exhibit assemblage attributes different from coastal Archaic sites. Pauma complex sites were typically located on small saddles and hills overlooking stream drainages, and were characterized by artifact scatters of basin and slab metates, manos, some scraper planes, debitage, and occasional ground stone discoidals. Further analysis suggests that the Pauma complex is simply an inland counterpart to the coastal La Jolla complex (Cardenas and Van Wormer 1984; Gallegos 1987; True and Beemer 1982). Given that the distance between the coastal and inland environments is only a few dozen kilometers, and that sites attributed to each complex appear to be contemporaneous, it seems more parsimonious to consider the differences in materials as seasonal manifestations of a mobile residence strategy using both coastal and inland resources (see Bayham and Morris 1986; Sayles 1983; Sayles and Antevs 1941).

In recent years, local archaeologists have questioned the traditional definition of the Paleoindian San Dieguito complex as consisting solely of flaked lithic tools and lacking milling technology. There is speculation that differences between artifact assemblages of "San Dieguito" and "La Jolla" sites may reflect functional differences rather than temporal or cultural variability (Bull 1987; Gallegos 1987; Wade 1986). Gallegos (1987) has proposed that the San Dieguito, La Jolla,

and Pauma complexes are manifestations of the same culture, that is, different site types are the result of differences in site locations and resource exploitation (Gallegos 1987:30). This hypothesis, however, has been strongly challenged by Warren and others (1993).

In short, our understanding of the interplay between human land use, social organization, and material culture for the first several millennia of San Diego prehistory is poorly developed, although some progress has been made. Recent data collection has accelerated in the areas of paleoenvironmental analysis, paleoethnobotany, faunal analysis, and lithic technology studies. More importantly, efforts are being made to re-examine the assumptions surrounding existing artifact typologies and climatic reconstructions that form the basis of the standard systematics.

Late Prehistoric Period

In his later overviews of San Diego prehistory, Malcolm Rogers (1945) hypothesized that around 2000 B.P., Yuman-speaking people from the Colorado River region began migrating into southern California. This hypothesis was based primarily on patterns of material culture in archaeological contexts and his reading of ethnolinguistics. This "Yuman invasion" is still commonly cited in the literature, but some later linguistic studies suggest that the movement may have actually been northward from Baja California.

Assemblages derived from Late Prehistoric sites in San Diego County differ in many ways from those in the Archaic tradition. The occurrence of small, pressure-flaked projectile points, the replacement of flexed inhumations with cremations, the introduction of ceramics, and an emphasis on inland plant food collection, processing, and storage are only a few of the cultural patterns that were well established by the second millennium A.D. The centralized and seasonally permanent residential patterns that had begun to emerge during the Archaic period became well established in most areas. Inland semi-sedentary villages appeared along major watercourses in the foothills and in montane valleys where seasonal exploitation of acorns and piñon nuts were common, resulting in permanent milling stations on bedrock outcrops.

The Late Prehistoric period is represented in the northern part of San Diego County by the San Luis Rey complex (Meighan 1954; True et al. 1974), and by the Cuyamaca complex in the southern portion of the county (True 1970). The San Luis Rey complex is the archaeological manifestation of the Shoshonean predecessors of the ethnohistoric Luiseño, while the Cuyamaca complex reflects the material culture of the Yuman ancestors of the Kumeyaay (also known as Diegueño).

The San Luis Rey complex is typically divided into two phases: San Luis Rey I and II. San Luis Rey I is a pre-ceramic phase dating from approximately 2000 B.P. to 500 B.P. (True et al. 1974). The material culture of this phase includes small triangular pressure-flaked projectile points, manos, portable metates, *Olivella* spp. shell beads, drilled stone ornaments, and mortars and pestles. The San Luis Rey II phase differs only in the addition of ceramics and pictographs. Firm dates for the introduction of ceramics have not been satisfactorily documented, but a date of between ca. A.D. 800 and A.D. 1300 is generally accepted. Evidence compiled by Griset (1986) indicates that the introduction and/or diffusion of ceramic technology throughout San Diego is more complex than previously thought.

According to True and others (1974), the Cuyamaca complex, while similar to the San Luis Rey complex, is differentiated by its greater frequencies of side-notched points, flaked stone tools, ceramics, and milling stone implements, a wider range of ceramic forms, a steatite industry, and cremations placed in urns. Assigning significance to these patterns should be done with caution, however, since it is obvious that seasonal camps in upland areas would reflect a different economic focus and would involve a slightly different set of trade relations than would be expected for populations on the seaboard. Thus a good deal of the variation in artifact form might be attributable to functional differences or point of origin. Gross and others (1989) have suggested that these differences may not serve as indicators of cultural affiliation, and some may be due to different levels of organization. In regard to site structure, we might also expect occupational spans to differ between coastal and inland camps given the shorter summers at higher elevations.

Ethnohistoric and Historic Periods

In general, the term Kumeyaay has come into common usage to identify the Yuman-speaking people living in the central and southern part of San Diego County at the time of Spanish contact, although some descendents of these people consider themselves Diegueño or Ipai. The Kumeyaay people established a rich cultural heritage that is described in detail in Waterman (1910), Spier (1923), and others. The Kumeyaay were organized into large groups with base camps and an extensive territory exploited for specific resources. Based on ethnohistoric and ethnographic information, a large number of village sites have been identified throughout San Diego County. Given the general ethnohistoric accounts of the Kumeyaay, groups residing along the San Diego River and Bay could have utilized several ecological niches varying by altitude. Review of the ethnographic and ethnohistoric record indicates that most groups moved to different areas on a seasonal basis to capitalize on particular crops such as acorns or agave, and were not wholly dependent on any one resource.

The Spanish were the first Europeans to make contact with Native Southern Californians, beginning their colonization of Alta California with the establishment of the San Diego Mission de Alcalá in A.D. 1769 (Schaefer and Van Wormer 1998). By 1821, Mexico gained independence from Spain, and San Diego came under Mexican rule. The war between Mexico and the United States for control of the western territories erupted in 1846, and San Diego soon fell to the U.S. Army, with California becoming a sovereign state in 1850 (Schaefer and Van Wormer 1998). Between 1845 and 1870 San Diego County experienced a Frontier Period, transforming the region from a "feudal-like society to an aggressive capitalist economy" (Schaefer and Van Wormer 1993: VI-6). Urban development between 1870 and 1930 established the City of San Diego.

III. AREA OF POTENTIAL EFFECT (APE)

The project area is a portion of access road and water/erosion control features covering approximately 1.3 acres located within Assessor's Parcel Number 312-292-04, which is owned by the City of San Diego and is located in the Black Mountain Open Space Park. The City of San Diego has identified the APE for an historical resource assessment. It can be referenced on the U.S. Geological Survey 7.5' Del Mar, California Quadrangle Map in Section 6, Township 14 South, Range 2 West of the San Bernardino Base and Meridian.

The project area crosses the San Diego County Water Authority (SDCWA) 130-ft. wide aqueduct easement. The SDCWA easement includes three pipeline alignments: Pipeline 3 a 69-in. welded steel (WSP); Pipeline 4 a 96-in. pre-stressed concrete cylinder pipe (PCCP); and Pipeline 5, a 108-in. WSP. Pipeline 3 was constructed between 1957 and 1960 and Pipeline 4 was constructed between 1968 and 1971 as part of the Second San Diego Aqueduct.

The pipelines are located between 5 and 12 ft. below proposed ground disturbance. Although the project Area of Potential Effect (APE) crosses the easement for the SDCWA aqueduct, ground disturbance associated with the project will not occur at depths such that the pipelines would be affected.

The portion of the APE overlaying the SDCWA pipelines has been previously disturbed during their installation and the subsequent addition of gravel access roads. The proposed rock channel down slope from the access road largely follows existing erosion control features but will include modification and realignment of this channel. This portion of the APE may contain native soils and/or disturbed soils from the construction of Black Mountain and Carmel Valley Roads, and the SDCWA pipelines. The planned construction endeavors to minimize excavation and associated potential impacts from moving native soils.

IV. STUDY METHODS

RECORDS SEARCH

A records search at SCIC was conducted on March 2, 2014. The records search encompassed a search radius of 1 mi. around the project area (APN 312-292-04). It included plotting of all resources recorded on CHRIS trinomial and primary number maps and making copies of the record forms for the recorded resources, plotting of previous archaeological project boundaries and copying the National Archaeological Database (NADB) citations for reports addressing those projects, copying historic maps on file at the SCIC, and copying a map and database of historic addresses (formerly Geofinder).

NATIVE AMERICAN COORDINATION

The Native American Heritage Commission (NAHC) conducted a search of its Sacred Lands File (SLF) on March 3, 2014. The SLF search did not indicate the presence of Natural American cultural resources in the immediate project area. Native American Monitor Justin Linton from Red Tail participated in the field survey on March 6, 2014.

ARCHAEOLOGICAL SURVEY

An archaeological survey of the project area was conducted on March 5, 2014. The survey consisted of walking systematic transects at 15-m intervals A substantial portion of the parcel lacked effective visibility because of extremely thick vegetation. Cultural resources such as small lithic, shell, or historic trash scatters were not anticipated to be visible on the surface due to erosion and a combination of alluvial and colluvial deposition from Black Mountain and the associated reservoir, but evidence of buried features could have been exposed and washed into erosion channels. Numerous prehistoric and historic rock features have previously been recorded within the Black Mountain Open Space Park (Manley and Van Wormer 2007).

Portions of the Second San Diego Aqueduct, a likely California Register of Historic Resources (CRHR)-eligible historical resource lie underground beneath the project area. The depth of this resource lie below the project area and anticipated impacts associated with the proposed repairs. No evidence of either the pipes described by the water authority as associated with the aqueduct, or access facilities to these pipes were observed during the survey.

LITERATURE REVIEW

A review of previous research in and/or within a one-mile radius of the APE was conducted at the San Diego History Center. This included a review of unpublished historical resource reports, unpublished primary source materials, published studies, and aerial photos of the area.

V. RESULTS OF STUDY

RECORDS SEARCH

The SCIC records searches identified 45 previous cultural resources reports in NADBD that addressed locations within the project's 1-mi. study buffer (Table 1).

Table 1. Previous Cultural Resources Reports

NADB #	SHPO ID	Report
1120002	Davis04	CULTURAL RESOURCE TESTING AT FAIRBANKS HIGHLANDS, CITY OF SAN DIEGO. By McMillan Davis. 1989 RECON.
1120222	Carrico32	Archaeological Survey of the Penasquitos Bluff Project. By, Richard Carrico and John Cook. 1975 WESTEC Services, Inc.
1120511	Cupples52	An Archaeological Survey Report of Project: 11-SD-80515 P.M. 28.3-28.9 130.4-36.3. By, Sue Ann Cupples. 1974, CALTRANS
1121295	Norwood15	The Cultural Resources of Penasquitos East. By, Richard H. Norwood. 1978 RECON
1121671	WalkerC07	Review of Cultural Resources in the La Jolla Valley Region of San Diego, California. By, Carol J. Walker, Sean Cardenas, and Charles S. Bull. 1981 RECON
1122001	SD20	Draft Environmental Impact Report Fairbanks Highland. City of San Diego 1989
1122122	CitySD21	DRAFT ENVIRONMENTAL IMPACT REPORT: FAIRBANKS HIGHLAND. CITY OF SAN DIEGO 1989

NADB #	SHPO ID	Report
1122552	Wade47	CULTURAL RESOURCES RECONNAISSANCE FOR THREE OFF-SITE IMPROVEMENT AREAS, MONTANA MIRADOR PRD DEP #87-0925. By Sue Wade. 1992 RECON
1122740	Pigniolo29	NATIONAL ARCHAEOLOGICAL DATA BASE (NADB) INFORMATION SHEET CULTURAL RESOURCES CONTRAINTS ANALYSIS AND SURVEY FOR THE DEL MAR HEIGHTS ROAD ALIGNMENT, SAN DIEGO CALIFORNIA. By, Andrew Pigniolo et al. 1993 OGDEN.
1122764	Gellego01	CULTURAL RESOURCE LITERATURE REVIEW FOR THE SAN DIEGUITO RIVER VALLEY REGIONAL OPEN SPACE PARK FOCUSED PLANNING AREA, SAN DEIGO COUNTY, CALIFORNIA. By, Dennis Gallegos et al. 1993 GALLEGOS & ASSOCIATES.
1122772	CitySD49	MONTANA MIRADOR GENERAL PLAN AND COMMUNITY PLAN ADMENDMENTS, VESTING, TENTATIVE MAP DEP NO. 87-0925. CITY OF SAN DIEGO 1992
1122978	CookJ41	APPENDIX C: CULTURAL RESOURCES SIGNIFICANCE EVALUATION PROGRAM FOR THE PROPOSED FAIRBANKS HIGHLANDS PROJECT, SAN DIEGO, CALIFORNIA. DEP NO.88-1041. By, John R. Cook 1995 ASM AFFILIATES, INC
1123311	Schaefer14	CULTURAL RESOURCE SURVEY AND EVALUATION OF THE DONAKER DEVELOPMENT PROPERTY. By, Jerry Schaefer 1998 ASM AFFILIATES.
1123396	CitySD96	Errata for Draft Tiered EIR for Black Mountain Ranch Subarea I Plan in the North City Future Urbanizing Area. City of San Diego1998
1123401	Cheever55	Cultural Survey of 514 Acres of Perimeter Properties Adjacent to the Black Mountain Ranch Specific Plan Area (Subarea I). By, Dayle Cheever 1993 RECON
1123415	CitySD93	Draft Tiered EIR for Black Mountain Ranch Subarea Plan in the North City Future Urbanizing Area. City of San Diego.1998
1123718	Eighmey11	FINAL HISTORICAL/ARCHAEOLOGICAL SURVEY REPORT FOR THE TORREY HIGHLANDS SUBAREA IV FUTURE URBANIZING AREA SAN DIEGO, CALIFORNIA. By, James D. Eighmey, Roxana L. Phillips, Ivan H. Strudwick, Carolyn Kyle, and Dennis R. Gallegos 1996 LETTIERI-MCINTYRE AND ASSOCIATES.
1123747	Wade70	AN ARCHAEOLGICAL EVALUATION OF TWENTY REPORTED CULTURAL RESOURCE LOCATIONS ON BLACK MOUNTAIN RANCH, CITY OF SAN DIEGO, CALIFORNIA (DEP NOS. 90-0332 AND 91-0315. By, Sue A. Wade 1992 POTOMAC INVESTMENT ASSOCIATES
1123837	CitySD121	CULTURAL RESOURCE INVENTORY FOR LAND ACQUISITION FOR THE BLACK MOUNTAIN WATER TREATMENT PLANT, SAN DIEGO, CALIFORNIA LDR NO. 98-0389. 2000 KEA ENVIRONMENTAL, INC
1124126	CitySD26	Notice of Preparation of a Draft Environmental Impact Report Black Mountain Ranch North and South. City of San Diego 1991
1124127	CitySD38	Environmental Impact Report for Black Mountain Ranch North and South. City of San Diego 1992
1124153	Ritz03	An Intensive Prehistoric and Historic Survey of the Black Mountain Ranch North San Diego, California. By, Frank Ritz 1990 RECON
1124323	Carrico196	ARCHAEOLOGICAL SURVEY OF THE PENASQUITOS BLUFF PROJECT. By, Richard Carrico and John R. Cook 1975 WESTEC
1124516	Monser42	PUBLIC NOTICE OF DRAFT ENVIRONMENTAL IMPACT REPORT TORREY HIGHLANDS SUBAREA IV AMENDMENT TO THE NCFUA FRAMEWORK PLAN. CITY OF SAN DIEGO 1996
1124717	Forstadt01	BLACK MOUNTAIN RANCHER: CULTURAL RESOURCES REPORT (APPENDIX E). By, Michael Forstadt 1992 RECON
1124771	Cheever68	RESULTS OF AN ARCHAEOLOGICAL DATA RECOVERY AT CA-SDI-4832/4833/4942 AND CA-SDI-11982, BLACK MOUNTAIN RANCH, CITY OF SAN DIEGO, CA. By, Charles Bull, Dayle Cheever, and Russ Collett 1998 RECON
1125096	Wahoff04	CULTURAL RESOURCE INVENTORY FOR LAND ACQUISITION FOR THE BLACK MOUNTAIN WATER TREATMENT PLANT, SAN DIEGO, CA. By, Tanya Wahoff 2000 KEA ENVIROMENTAL
1125220	Eighmey15	Historical/ Archaeological Survey Report for the Torrey Highlands Subarea IV Future Urbanizing Area S.D., Calif. By, James Eighmey 1996 GALLEGOS & ASSOC
1125254	Cheever85	ARCHAEOLOGICAL TREATMENT PLAN FOR DATA RECOVERY AT CA-SDI-5103 AT BLACK MOUNTAIN RANCH SAN DIEGO, CALIFORNIA. By, Dayle Cheever 2001

NADB #	SHPO ID	Report
1125545	BerryJ53	OPEN SPACE BOUNDARY TEST DETERMINATIONS AT CA-SDI-5094 AND CA-SDI-11981 BLACK MOUNTAIN RANCH, CITY OF SAN DIEGO, CALIFORNIA. By, Judy Berryman 2000 RECON
1125642	CitySD246	DEIR TORREY HIGHLANDS-SUBAREA IV. CITY OF SAN DIEGO 1993
1125754	Hix8	BLACK MOUNTAIN RANCH 2 RESERVED VESTING TENTATIVE MAP, PLANNED RESIDENTIAL DEVELOPMENT PERMIT, RESOURCE PROTECTION PERMIT AND DEVELOPMENT AGREEMENT. By, Ann Hix 1995 CITY OF SAN DIEGO.
1125992	Gallegos251	ACHAEOLOGICAL RECORDS FOR THE CAMINO RUIZ ROADWAY PROJECT, SAN DIEGO, CALIFORNIA. By, Dennis Gallegos 2000
1126310	Schaefer36	REVISED CULTURAL SURVEY AND EVALUATION OF THE LI-COLLINS PROPERTY DEVELOPMENT PROJECT. By, Jerry Schaefer 1998 ASM Affiliates, Inc.
1126399	CitySD427	DEIR FOR BLACK MOUNTAIN RANCH II. CITY OF SAN DIEGO 1995
1126919	CitySD608	PUBLIC NOTICE OF PROPOSED MITIGATED NEGATIVE DECLARATION TORREY BROOKE. CITY OF SAN DIEGO. 1999
1127115	Carrico250	ARCHAEOLOGICAL SURVEY OF THE PENASQUITOS BLUFF PROJECT. By, Richard Carrico and John R. Cook 1975 WESTEC
1127149	CitySD737	PUBLIC NOTICE OF PROPOSED MITIGATED NEGATIVE DECLARATION GARDEN COMMUNITIES. CITY OF SAN DIEGO 2000
1127338	Carrillo9	ARCHAEOLOGICAL STUDY FOR PENASQUITOS BLUFF EAST. By, Charles Carrillo 1980
1128010	Recon36	EIR: Penasquitos Bluffs East. 1979 RECON
1128531	Forstadt02	ARCHAEOLOGICAL TESTING AT BLACK MOUNTAIN RANCH, SAN DIEGO, CA. By, Michael Forstadt, Tirzo Gonzalez, Jerry W. Forstadt, and Stanley R. Berryman 1992 ADVANCED SCIENCES, INC.
1129516	Caterino01	The Cemeteries and Gravestones of San Diego County: An Archaeological Study. By, David Caterino 2005
1131623	Hector194	SAN DIEGUITO RIVER VALLEY INVENTORY OF ARCHAEOLOGICAL RESOURCES. By, Susan Hector and Alice Brewster 2002 ASM AFFILIATES
1131823	KickM01	CULTURAL RESOURCES TECHNICAL REPORT FOR THE SAN DIEGO VEGETATION MANGEMENT PROJECT. By, Maureen S. Kick 2007 URS.
1132086	PriceH24	REVIEW OF PREVIOUS CULTURAL RESOURCES WORK FOR THE NORTH VILLAGES VESTING TENTATIVE MAP, PLANNED DEVELOPMENT PERMIT; RESULTS OF A CULTURAL RESOURCE SURVEY FOR THE NORTH VILLAGE FIRE STATION 48 MHPA TRADE PARCEL AND ARCHIVAL SEARCH. By, Harry J. Price 2008 RECON

Thirty previously recorded cultural resources were recorded within the project's 1-mi. study buffer (Table 2). None of the resources were recorded within the project area.

SURVEY

The archaeological survey did not identify any cultural resources within the project's parcel.

Table 3. Previously Recorded Cultural Resources

Designation	Relation to APE	Site Type	Recorded by, Date
CA-SDI-5110	Outside	AP2. Lithic Scatter, AP16. Shell Scatter	Cardenas and Walker, 1980
CA-SDI-5223	Outside	AP2. Lithic Scatter, AP16. Shell Scatter	Bull, 1977

Designation	Relation to APE	Site Type	Recorded by, Date
CA-SDI-5386	Outside	AP2. Lithic Scatter	Norwood, 1977
CA-SDI-5388	Outside	AP4. Bedrock Milling	Norwood, 1977
CA-SDI-5390	Outside	AP4. Bedrock Milling	Norwood, 1977
CA-SDI-5391	Outside	AP15. Habitation Debris	Norwood, 1977
CA-SDI-6672	Outside	AP2. Lithic Scatter	May, 1974
CA-SDI-6673	Outside	AP2. Lithic Scatter	Walker and May. 1980
CA-SDI-6674	Outside	AP2. Lithic Scatter	Walker and Cardenas, 1980
CA-SDI-6675	Outside	AP15. Habitation Debris	May, 1974
CA-SDI-9286	Outside	AP4. Bedrock Milling	Bull and Hector, 1982
CA-SDI-10822	Outside	AP15. Habitation Debris	Smith, 1987
CA-SDI-11738	Outside	AP4. Bedrock Milling	Ritz, Collett et al., 1990
CA-SDI-11742	Outside	AP15. Habitation Debris	Ritz, Collett, et al., 1990
CA-SDI-11743	Outside	AP2. Lithic Scatter	Ritz, Collett, et al., 1990
CA-SDI-11747	Outside	AP2. Lithic Scatter	Ritz, Collett, et al., 1990
CA-SDI-11979	Outside	AP2. Lithic Scatter	Ritz and Hanna, 1990
CA-SDI-11980	Outside	AP15. Habitation Debris	Ritz, 1990
CA-SDI-11981	Outside	AP2. Lithic Scatter, AP16. Shell Scatter	Ritz and Hanna, 1990
CA-SDI-12931	Outside	AP2. Lithic Scatter, AP16. Shell Scatter, AH4. Trash Scatter	Cardenas, n.d.
CA-SDI-12932	Outside	AP2. Lithic Scatter, AH11. Walls	Pigniolo, Campbell, and Mealey, 1992
CA-SDI-12933	Outside	AP2. Lithic Scatter, AH4. Trash Scatter	Pigniolo, Campbell, and Mealey, 1992
CA-SDI-18278	Outside	AP2. Lithic Scatter, AP4. Bedrock Milling	ASM Affiliates, 2005
P-37-013867	Outside	AP2. Lithic Scatter	Del and Pigniolo, 1994
P-37-015000	Outside	AP2. Lithic Scatter	Ritz, 1990
P-37-015218	Outside	AP2. Lithic Scatter	Pigniolo, Campbell, and Mealey, 1992
P-37-016575	Outside	AH4. Trash Scatter	Wahoff, 1998
P-37-016576	Outside	AH4. Trash Scatter	Wahoff, 1998
P-37-016577	Outside	AH4. Trash Scatter	Wahoff, 1998
P-37-030186	Outside	AH2. Foundations	Mock and Thomson, 2007

LITERATURE REVIEW

From historic aerials it appears that the service access road was constructed with gravel between 1989 and 2003, probably to curb erosion as well as for access. Black Mountain Road was built before 1901 and has been visible along its current path since that time. USGS maps and later historical aerials (1953+) don't indicate anything significant at the access road.

The project area crosses the San Diego County Water Authority (SDCWA) 130-ft. wide aqueduct easement. The SDCWA easement includes three pipeline alignments: Pipeline 3 a 69-in. welded

steel (WSP); Pipeline 4 a 96-in. pre-stressed concrete cylinder pipe (PCCP); and Pipeline 5, a 108-in. WSP. Pipeline 3 was constructed between 1957 and 1960 and Pipeline 4 was constructed between 1968 and 1971 as part of the Second San Diego Aqueduct. The First San Diego Aqueduct (not in the project area), has been evaluated by the Army Corp of Engineers and recommended eligible to the NRHP. The Second San Diego Aqueduct would likely be eligible as well.

The pipelines are located between 5 and 12 ft. below proposed ground disturbance. Consequently, the proposed project will not result in impacts to historical resources.

VI. RECOMMENDATIONS

No further consideration of cultural resources appears to be warranted in connection with the Black Mountain Access Road Repair Project. The portion of the project area within the limits of proposed repair is unlikely to contain surface deposits of prehistoric or historic resources due to deposition from colluvial and alluvial sources related to Black Mountain and associated reservoirs. Surveying for the project was monitored by Native American Monitor Justin Linton. No cultural resources were identified by ASM and Red Tail during the archaeological survey, and no recommendations were received from the monitor concerning further work or monitoring.

The project area crosses the easement for a portion of the Second San Diego Aqueduct, a likely CRHR-eligible resource; however, this resource will not be affected by the project as ground disturbance associated with the project will not extend to the depth of the existing pipelines. As no direct impacts to the resource are anticipated, construction monitoring and/or historical evaluation of the resource are not recommended.

The City's *Historical Resource Guidelines* state that "Monitoring may be required when significant resources are known or suspected to be present on the project site" (p. 31). No basis for suspecting that significant resources may be presently impacted at this location has been identified archaeologically. However, if the City determines on this basis that significant resources are likely to be impacted, then archaeological monitoring of ground-disturbing activity would be appropriate.

VII. SOURCES CONSULTED

Archaeological/Historical Site Records:

South Coastal Information Center	March 2014
Native American Heritage Commission	March 2014
San Diego History Center	March 2014

VIII. CERTIFICATION

Preparer: Ian Scharlotta, Ph.D., RPA
Title: Principal Investigator
Signature:
Date: March 17, 2014

Ian Scharlotta

IX. ATTACHMENTS

1. National Archaeological Data Base Information
2. Bibliography
3. Maps and Photographs
    - Figure 1. Project vicinity map
    - Figure 2. City of San Diego 800' Scale
    - Figure 3. USGS 7.5' Del Mar Quadrangle

ATTACHMENT 1
NATIONAL ARCHAEOLOGICAL DATA BASE INFORMATION

Author:	Ian Scharlotta, Ph.D., RPA Principal Investigator ASM Affiliates, Inc. 2034 Corte Del Nogal, Carlsbad, CA 92011 (760) 804-5757; Fax (760) 804-5755
Report Date:	March 2014
Report Title:	Negative Cultural Survey Report Form (Appendix D) for Black Mountain Access Road Repair Project, San Diego, California
Submitted to:	Mitigation Monitoring Coordination (MMC) City of San Diego Development Services Department Land Development Review (LDR) Division 9601 Ridgehaven Ct, Suite 220 MS1102B San Diego, California 92123
Submitted for:	Sandra Pentney Atkins North America, Inc. 3570 Carmel Mountain Road, Suite 300 San Diego, CA 92130
USGS quadrangle:	Del Mar (7.5-minute series)

Keywords: survey; San Diego; Black Mountain Open Space Park; San Diego Aqueduct

ATTACHMENT 2
BIBLIOGRAPHY

Bada, Jeffrey, Roy Schroeder, and George Carter
1974 New Evidence for the Antiquity of Man in North America Deduced from Aspartic Acid Racemization. *Science* 184:791-793.

Bayham, Frank, and Donald Morris
1986 Episodic Use of a Marginal Environment: A Synthesis. In *Prehistoric Hunter-Gatherers of South Central Arizona: The Picacho Reservoir Archaic Project*, edited by Frank Bayham, Donald Morris, and M. Steven Shackley, pp. 359-382. Anthropological Field Studies No. 13, Arizona State University, Tempe.

Beauchamp, R. M.
1986 *A Flora of San Diego County, California.* Sweetwater River Press, National City, California.

Bowman, Roy H.
1973 *Soil Survey of the San Diego Area, California,* Part I. U.S. Department of Agriculture, Soil Conservation Service and Forest Service, in cooperation with the University of California Agricultural Experiment Station, the U.S. Department of the Interior, Bureau of Indian Affairs, the Department of the Navy, United States Marine ACOE, the Department of Housing and Urban Development, and the County of San Diego Planning Department.

Bull, Charles S.
1987 A New Proposal: Some Suggestions for San Diego Prehistory. In *San Dieguito–La Jolla: Chronology and Controversy*, edited by Dennis R. Gallegos, pp. 35-42. San Diego County Archaeological Society Research Paper No. 1.

Byrd, Brian F., and L. Mark Raab
2007 Prehistory of the Southern Bight: Models for a New Millennium. In *California Prehistory: Colonization, Culture, and Complexity*, Terry L. Jones and Kathryn A. Klar, eds., pp. 215-227. AltaMira Press, Lanham, Maryland.

California Division of Mines and Geology
1975 *Geology of the San Diego Metropolitan Area, California. Bulletin 200.* Sacramento, California.

Cardenas, D. Sean, and Stephen Van Wormer
1984 *Archaeological Investigations of SDI-4648 and SDM-W-348.* RBR & Associates, San Diego.

Carter, George
1980 *Earlier Than You Think: A Personal View of Man in the Americas*. Texas A&M University, College Station.

City of San Diego
1993 *Black Mountain Park Master Plan.* Prepared by the City of San Diego Planning Department.
2004 *Draft Black Mountain Open Space Park Natural Resource Management Plan. February 2004.* Prepared by the City of San Diego Planning Department Multiple Species Conservation Program in conjunction with City of San Diego Department of Park and Recreation.

Erlandson, Jon M., and Roger H. Colten
1991 An Archaeological Context for Early Holocene Studies on the California Coast. In *Hunter-Gatherers of Early Holocene Coastal California*, edited by Jon M. Erlandson and Roger H. Colten, pp. 1-10. Perspectives in California Archaeology, Vol. 1, Institute of Archaeology, University of California, Los Angeles.

Ezell, Paul H.
1983 A New Look at the San Dieguito Culture. *San Diego State University Cultural Resource Management Casual Papers* 1(3):103-109.
1987 The Harris Site: An Atypical San Dieguito Site or Am I Beating a Dead Horse? In *San Dieguito–La Jolla: Chronology and Controversy*, edited by Dennis R. Gallegos, pp. 15-22. San Diego County Archaeological Society Research Paper No. 1.

Gallegos, Dennis R.
1987 A Review and Synthesis of Environmental and Cultural Material for the Batiquitos Lagoon Region. In *San Dieguito–La Jolla: Chronology and Controversy*, edited by Dennis R. Gallegos, pp. 23-34. San Diego County Archaeological Society Research Paper No. 1.

Gardner, Jill K.
2009 Records Search Results for the Tijuana River Pilot Channel Maintenance Dredging Project. Prepared by ASM Affiliates, Inc. Prepared for Dudek & Associates.

Gross, G. Timothy, M. Steven Shackley, and Constance Cameron
1989 *Archaeological Investigations at CA-ORA-910A: A Late Prehistoric Hunting Field Camp in Southern Orange County, California.* Report on file at Brian F. Mooney Associates, San Diego.

Jones, Terry L.
1992 Settlement Trends Along the California Coast. In *Essays on the Prehistory of Maritime California*, edited by Terry L. Jones, pp.1-38. Center for Archaeological Research at Davis No. 10.

Manley, William and Stephen Van Wormer
2007 *Black Mountain Open Space Park Cultural and Historic Resource Survey*. Prepared for the City of San Diego Park Planning and Development Department. ASM Affiliates, Inc

Meighan, Clement
1954 A Late Complex in Southern California Prehistory. *Southwestern Journal of Anthropology* 10:215-227.
1959 California Cultures and the Concept of an Archaic Stage. *American Antiquity* 24:289-305.

Moratto, Michael
1984 *California Archaeology*. Academic Press, Orlando, Florida.

Moriarty, James
1966 Cultural Phase Divisions Suggested by Typological Change Coordinated with Stratigraphically Controlled Radiocarbon Dating at San Diego. *Anthropological Journal of Canada* 4:20-30.

Rogers, Spencer
1974 An Ancient Human Skeleton Found at Del Mar, California. *San Diego Museum Papers*, No. 7, San Diego Museum of Man.

Rogers, Malcolm
1939 Early Lithic Industries of the Lower Basin of the Colorado River and Adjacent Desert Areas. *San Diego Museum Papers*, No. 3. San Diego Museum of Man.
1945 An Outline of Yuman Prehistory. *Southwestern Journal of Anthropology* 1:167-198.
1966 *Ancient Hunters of the Far West*. Union-Tribune Publishing, San Diego.

Sayles, Edwin B.
1983 *The Cochise Cultural Sequence in Southeastern Arizona*. Anthropological Papers of the University of Arizona No. 42. Tucson.

Sayles, Edwin B., and Ernst Antevs
1941 *The Cochise Culture*. Medallion Papers No. 29. Gila Pueblo, Arizona.

Schaefer, Jerry, and Stephen R. Van Wormer
2008 Historic Period. In *Prehistoric and Historic Archaeology of Metropolitan San Diego: A Historic Properties Background Study*. ASM Affiliates, Inc., Carlsbad, California. Prepared for City of San Diego Metropolitan Wastewater Department.

Spier, Leslie
1923 Southern Diegueno Customs. *University of California Publications in American Archaeology and Ethnology* 20:295-358.

Strand, R. G.
1962 *Geologic Map of California: San Diego-El Centro Sheet, Scale 1:250000*. California Division of Mines and Geology, Sacramento.

Taylor, R. Ervin, Louis A. Payen, Christina A. Prior, Peter J. Slota, Richard Gillespie, John A. J. Gowlett, Robert E. M. Hedges, A. J. Timothy Jull, T. H. Zabel, D. J. Donahue, and Rainer Berger
1985 Major Revisions in the Pleistocene Age Assignments for North American Human Skeletons by C-14 Accelerator Mass Spectrometry: None Older Than 11,000 C-14 Years B.P. *American Antiquity* 50:136-140.

True, Delbert
1958 An Early Complex in San Diego County, California. *American Antiquity* 23:255-263.
1966 *Archaeological Differentiation of Shoshonean and Yuman Speaking Groups in Southern California*. Unpublished Ph.D. dissertation, Department of Anthropology, University of California, Los Angeles.
1970 *Investigation of a Late Prehistoric Complex in Cuyamaca Rancho State Park, San Diego County, California*. Archaeological Survey Monographs No. 1. University of California, Los Angeles.

True, Delbert L., and Eleanor Beemer
1982 Two Milling Stone Inventories from Northern San Diego County, California. *Journal of California and Great Basin Anthropology* 4:233-261.

True, Delbert L., Clement W. Meighan, and Harvey Crew
1974 *Archaeological Investigations at Molpa, San Diego County, California.* University of California Publications in Anthropology No. 11. Berkeley.

Wade, Sue A.
1986 *Archaeological Testing Program at SDi-10185, Loci A-C, and SDi-10186, Otay Mesa, City of San Diego, California*. Report on file at RECON, San Diego.

Wallace, William
1978 *Trial Excavations at Two Prehistoric Sites in the Saratoga Area, Death Valley National Monument, California*. Submitted to National Park Services, Tucson, Arizona.

Warren, Claude
1964 *Cultural Change and Continuity on the San Diego Coast*. Unpublished Ph.D. dissertation, Department of Anthropology, University of California, Los Angeles.
1966 The San Dieguito Type Site: M. J. Rogers' 1938 Excavation on the San Dieguito River, San Diego. *San Diego Museum Papers*, No. 5. San Diego Museum of Man.
1967 The San Dieguito Complex: Review and Hypothesis. *American Antiquity* 32:168-185.
1987 The San Dieguito and La Jolla: Some Comments. In *San Dieguito–La Jolla: Chronology and Controversy*, edited by Dennis R. Gallegos, pp. 73-85. San Diego County Archaeological Society Research Paper No. 1.

Warren, Claude, Gretchen Siegler, and Frank Dittmer
2008 Paleo-Indian and Early Archaic Periods. In *Prehistoric and Historic Archaeology of Metropolitan San Diego: A Historic Properties Background Study*. ASM Affiliates, Inc., Carlsbad, California. Prepared for City of San Diego Metropolitan Wastewater Department.

Waterman, Thomas
1910 The Religious Practices of the Diegueno Indians. *University of California Publications in American Archaeology and Ethnology* 8:271-358.

ATTACHMENT 3
MAPS

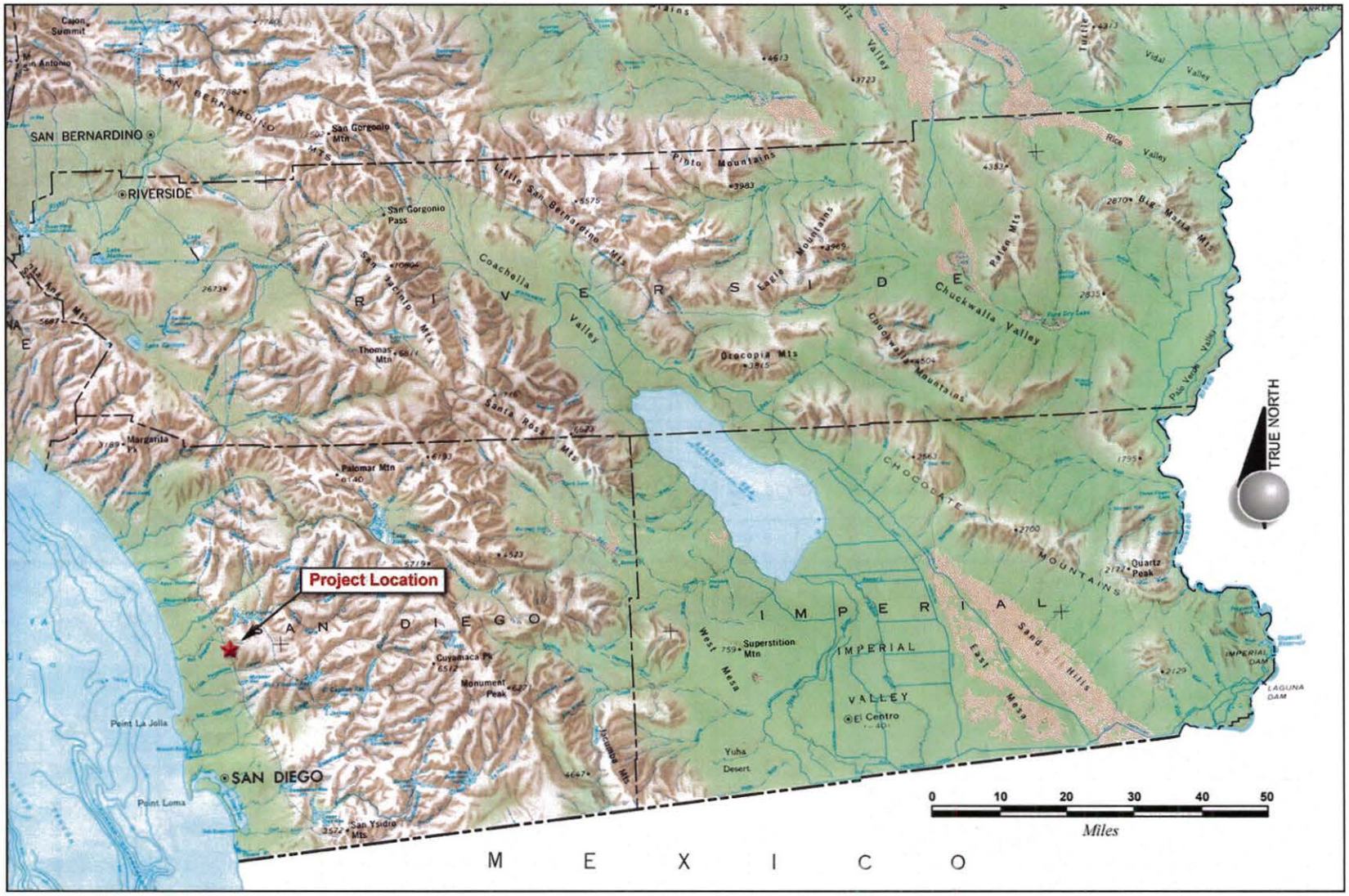


Figure 1. Project vicinity map

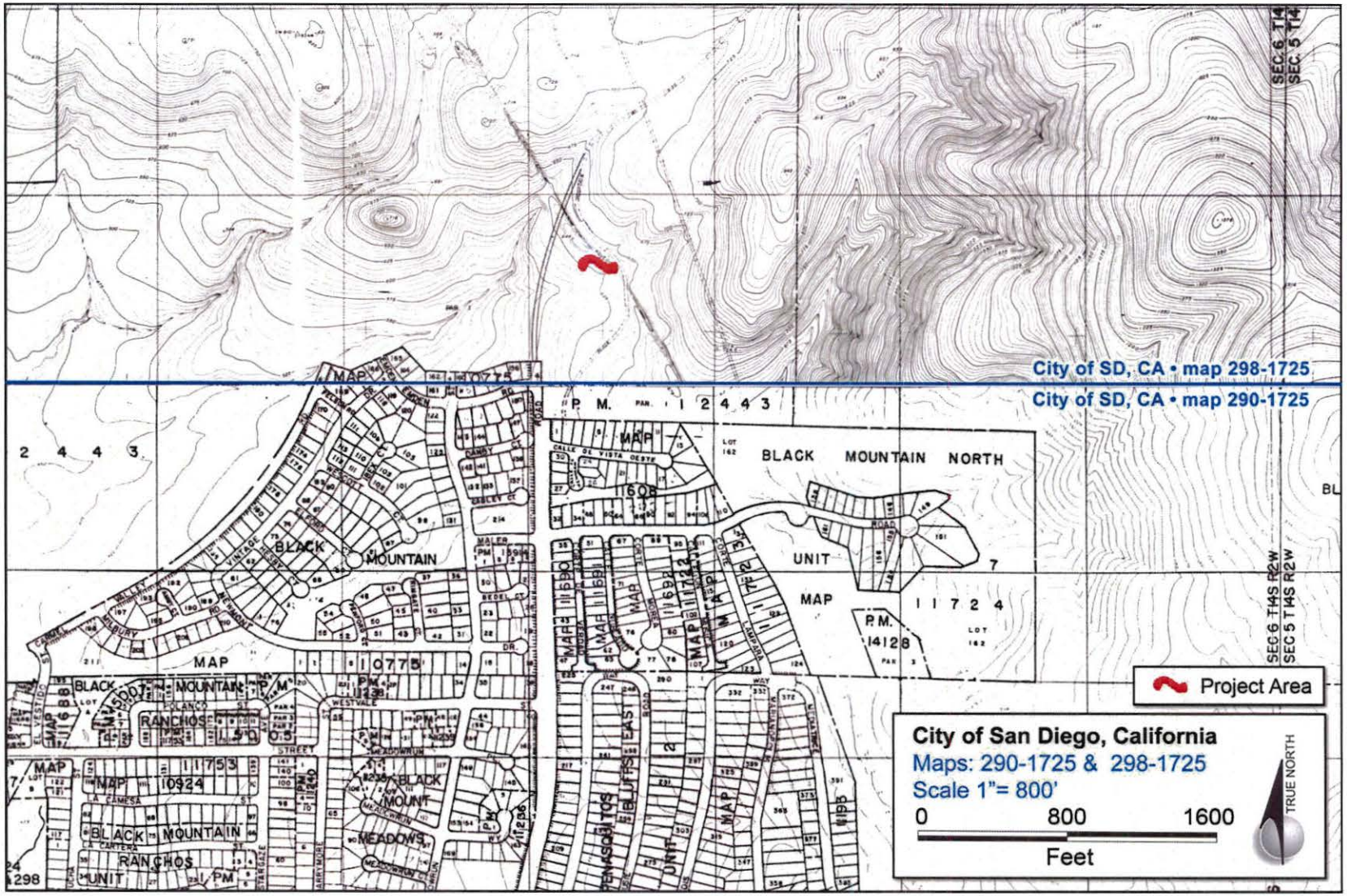


Figure 2. City of San Diego 800' Scale

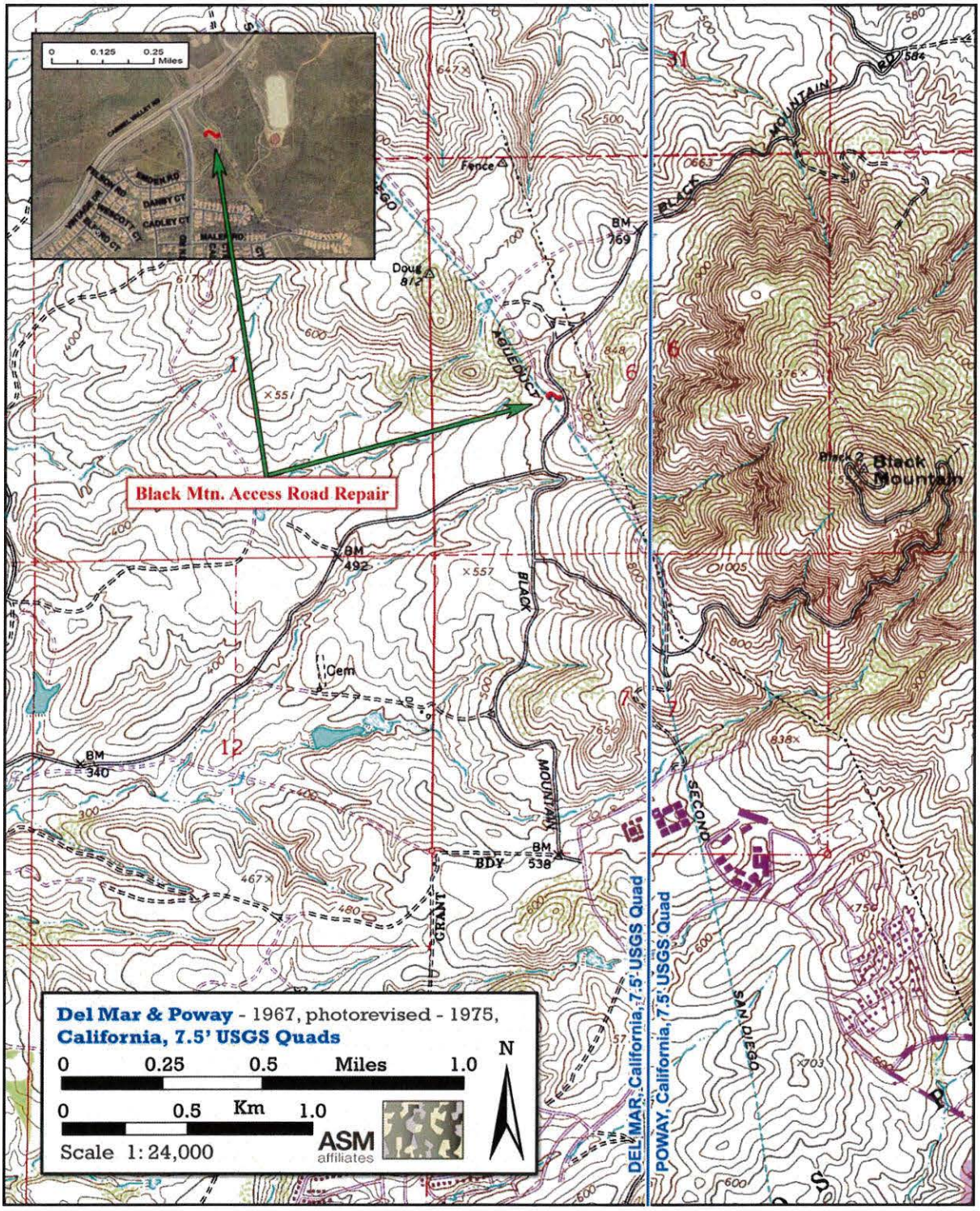


Figure 3. 7.5'USGS quadrangle (Del Mar, California) showing project area.

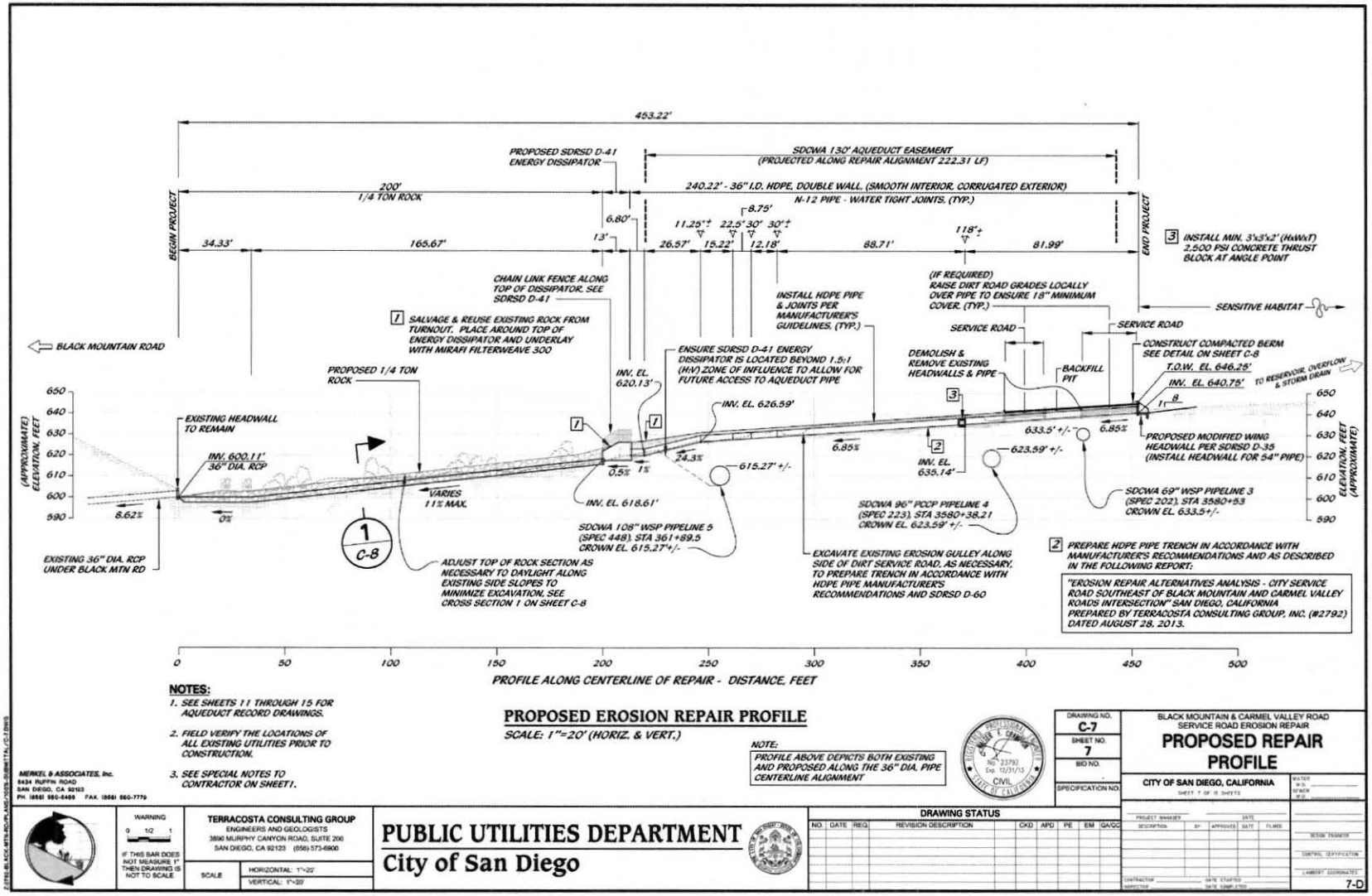
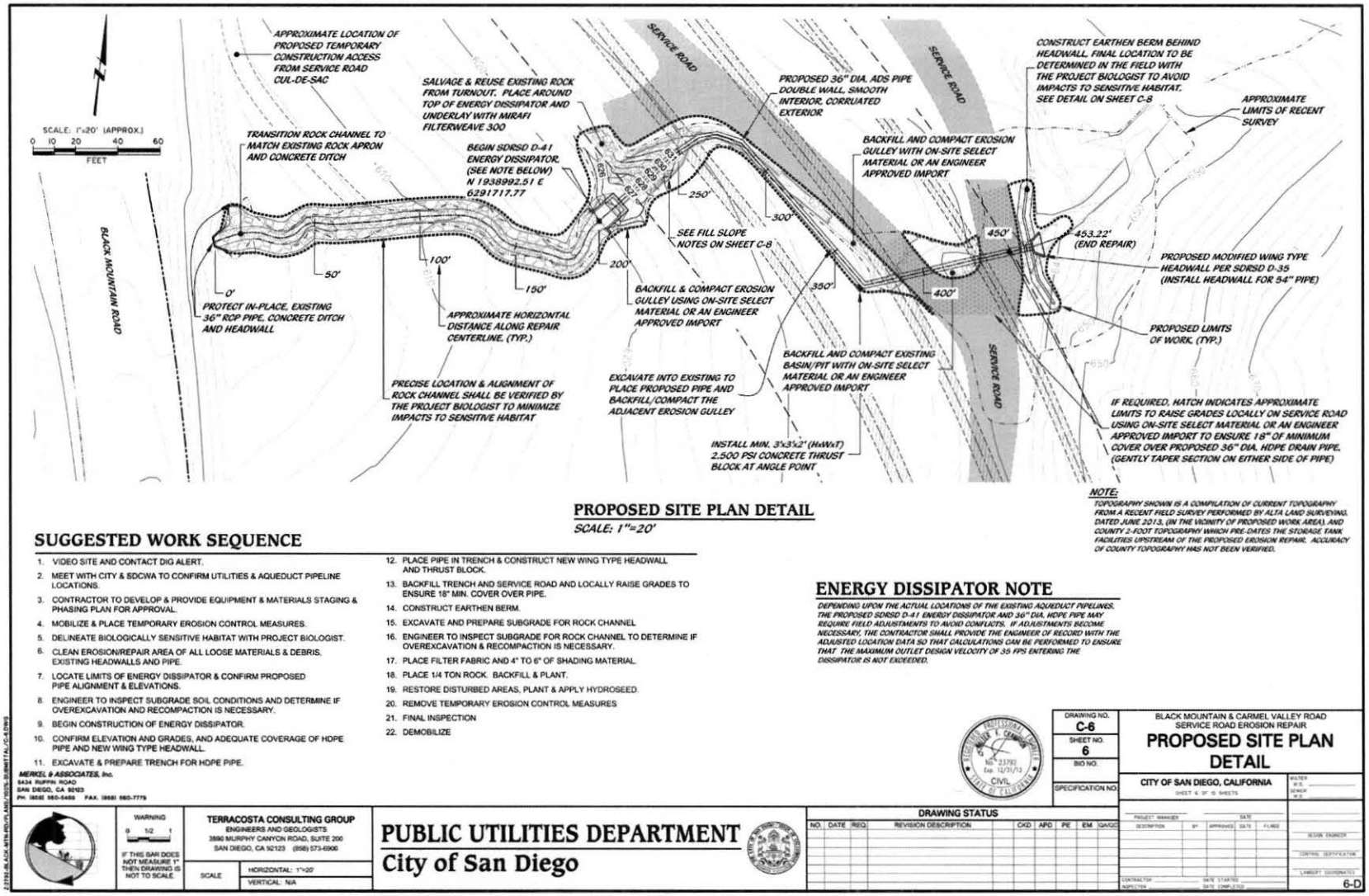


Figure 4: Profile of proposed repair activities



PROPOSED SITE PLAN DETAIL
SCALE: 1"=20'

NOTE:
TOPOGRAPHY SHOWN IS A COMPILATION OF CURRENT TOPOGRAPHY FROM A RECENT FIELD SURVEY PERFORMED BY ALTA LAND SURVEYING, DATED JUNE 2013, (IN THE VICINITY OF PROPOSED WORK AREA), AND COUNTY 2-FOOT TOPOGRAPHY WHICH PRE-DATES THE STORAGE TANK FACILITIES UPSTREAM OF THE PROPOSED EROSION REPAIR. ACCURACY OF COUNTY TOPOGRAPHY HAS NOT BEEN VERIFIED.

SUGGESTED WORK SEQUENCE

1. VIDEO SITE AND CONTACT DIG ALERT.
2. MEET WITH CITY & SDCWA TO CONFIRM UTILITIES & AQUEDUCT PIPELINE LOCATIONS.
3. CONTRACTOR TO DEVELOP & PROVIDE EQUIPMENT & MATERIALS STAGING & PHASING PLAN FOR APPROVAL.
4. MOBILIZE & PLACE TEMPORARY EROSION CONTROL MEASURES.
5. DELINEATE BIOLOGICALLY SENSITIVE HABITAT WITH PROJECT BIOLOGIST.
6. CLEAN EROSION/REPAIR AREA OF ALL LOOSE MATERIALS & DEBRIS. EXISTING HEADWALLS AND PIPE.
7. LOCATE LIMITS OF ENERGY DISSIPATOR & CONFIRM PROPOSED PIPE ALIGNMENT & ELEVATIONS.
8. ENGINEER TO INSPECT SUBGRADE SOIL CONDITIONS AND DETERMINE IF OVEREXCAVATION AND RECOMPACTION IS NECESSARY.
9. BEGIN CONSTRUCTION OF ENERGY DISSIPATOR.
10. CONFIRM ELEVATION AND GRADES, AND ADEQUATE COVERAGE OF HDPE PIPE AND NEW WING TYPE HEADWALL.
11. EXCAVATE & PREPARE TRENCH FOR HDPE PIPE.
12. PLACE PIPE IN TRENCH & CONSTRUCT NEW WING TYPE HEADWALL AND THRUST BLOCK.
13. BACKFILL TRENCH AND SERVICE ROAD AND LOCALLY RAISE GRADES TO ENSURE 18" MIN. COVER OVER PIPE.
14. CONSTRUCT EARTHEN BERM.
15. EXCAVATE AND PREPARE SUBGRADE FOR ROCK CHANNEL
16. ENGINEER TO INSPECT SUBGRADE FOR ROCK CHANNEL TO DETERMINE IF OVEREXCAVATION & RECOMPACTION IS NECESSARY.
17. PLACE FILTER FABRIC AND 4" TO 6" OF SHADING MATERIAL.
18. PLACE 1/4 TON ROCK. BACKFILL & PLANT.
19. RESTORE DISTURBED AREAS, PLANT & APPLY HYDROSEED.
20. REMOVE TEMPORARY EROSION CONTROL MEASURES
21. FINAL INSPECTION
22. DEMOBILIZE

ENERGY DISSIPATOR NOTE

DEPENDING UPON THE ACTUAL LOCATIONS OF THE EXISTING AQUEDUCT PIPELINES, THE PROPOSED SDRSD D-41 ENERGY DISSIPATOR AND 36" DIA. HDPE PIPE MAY REQUIRE FIELD ADJUSTMENTS TO AVOID CONFLICTS. IF ADJUSTMENTS BECOME NECESSARY, THE CONTRACTOR SHALL PROVIDE THE ENGINEER OF RECORD WITH THE ADJUSTED LOCATION DATA SO THAT CALCULATIONS CAN BE PERFORMED TO ENSURE THAT THE MAXIMUM OUTLET DESIGN VELOCITY OF 35 FPS ENTERING THE DISSIPATOR IS NOT EXCEEDED.

MERKEL & ASSOCIATES, Inc.
5434 RUFFIN ROAD
SAN DIEGO, CA 92123
PH: (858) 560-5465 FAX: (858) 560-7779

DRAWING NO.	C-6
SHEET NO.	6
BID NO.	
SPECIFICATION NO.	

BLACK MOUNTAIN & CARMEL VALLEY ROAD
SERVICE ROAD EROSION REPAIR

PROPOSED SITE PLAN DETAIL

CITY OF SAN DIEGO, CALIFORNIA
SHEET 6 OF 6 SHEETS

WARNING
0 1/2 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

TERRACOSTA CONSULTING GROUP
ENGINEERS AND GEOLOGISTS
3890 MURPHY CANYON ROAD, SUITE 200
SAN DIEGO, CA 92123 (858) 573-6906

SCALE: HORIZONTAL: 1"=20' VERTICAL: N/A

PUBLIC UTILITIES DEPARTMENT
City of San Diego

DRAWING STATUS

NO.	DATE	REQ.	REVISION DESCRIPTION	CKD	APD	PE	EM	GA/GC

6-D

Figure 5: Map of proposed repair activities

Figure 6: Headwall and drain located along Black Mountain Road, at the base of the slope

Figure 7: Reinforced headwall located along the access road that are to be replaced

Figure 8: Erosion gully located adjacent to access road, to be replaced