PHASE I ARCHAEOLOGICAL SURVEY FOR THE McCARTY ESTATES PROJECT

SAN DIEGO, CALIFORNIA

Project No. 515157
APN 307-060-60

Submitted to:

City of San Diego
Development Services Department
1222 First Avenue, MS 501
San Diego, California 92101

Prepared for:

McCarty Family Trust
c/o Kent McCarty
3929 Arroyo Sorrento Road
San Diego, California 92130

Prepared by:

Brian F. Smith and Associates, Inc.
14010 Poway Road, Suite A
Poway, California 92064

April 3, 2017; Revised May 25, 2017

Archaeological Database Information

Author(s):	Brian F. Smith
Consulting Firm:	Brian F. Smith and Associates, Inc. 14010 Poway Road, Suite A Poway, California 92064 (858) 484-0915
Report Date:	April 3, 2017; Revised May 25, 2017
Report Title:	Phase I Archaeological Survey for the McCarty Estates Project
Prepared for:	McCarty Family Trust c/o Kent McCarty 3929 Arroyo Sorrento Road San Diego, California 92130
Submitted to:	City of San Diego Development Services Department 1222 First Avenue, MS 501 San Diego, California 92101
Submitted by:	Brian F. Smith and Associates, Inc. 14010 Poway Road, Suite A Poway, California 92064 (858) 484-0915
Lead Agency Identifier:	APN 307-060-60
USGS Quadrangle:	*Del Mar, California* (7.5 minute)
Study Area:	2.4 acres
Key Words:	USGS *Del Mar* Quadrangle (7.5 minute); 2.4 acres; archaeological survey; no cultural resources; monitoring recommended.

I. PROJECT DESCRIPTION AND LOCATION

On behalf of the project applicant for the McCarty Estates Project, Brian F. Smith and Associates, Inc. (BFSA) conducted a cultural resources study of the 2.4-acre project located directly east of the intersection of Arroyo Sorrento Road and Tierra Del Sur in the Sorrento Estates area south of Carmel Valley in the northern area of the city of San Diego, California. The project is located in the northwest quarter of Section 30 in Township 14 South, Range 3 West of the *Del Mar, California* USGS Quadrangle (Figures 1 through 3 [Appendix C]). The property is characterized as the western edge of the Del Mar Mesa, overlooking the confluence of Carmel Valley and Los Peñasquitos Lagoon. This study was conducted in accordance with City of San Diego Historical Resources Guidelines (HRG) for discretionary land development projects. The project scope of work consisted of a records search conducted at the South Coastal Information Center (SCIC) at San Diego State University (SDSU) and an archaeological survey of the entire property.

II. SETTING

Natural Environment

The project area lies in the coastal mesa region located in the Peninsular Range Geomorphic Province of southern California. The project is situated on a relatively flat mesa (the western edge of the Del Mar Mesa) consisting of sediments derived from the Lindavista Formation. The project area primarily includes sage scrub habitat (Beauchamp 1986), and is bordered to the north by low-lying foothills. The central and northern San Diego County coastline is characterized by large bays and lagoons where the major rivers empty into the sea and mesas terminate at the ocean in the form of bluffs (Beauchamp 1986). Evidence from nearby Los Peñasquitos Lagoon indicates that beginning at approximately 7,500 years before the present (YBP), rapid sedimentation occurred within Los Peñasquitos Lagoon, which closed the lagoon off to the coast and significantly altered the lagoon environment (Smith and Moriarty 1985). As sea levels rose during the middle Holocene, the lagoon filled with sediment, creating a deep-channeled inlet by 6,000 YBP, which provided a thriving shellfish population, thus attracting La Jolla Complex groups to the lagoon. Radiocarbon dates from nearby sites, such as Site W-20, indicate increased cultural activity during the period from 7,000 to 4,000 YBP, which coincides with the rise of shellfish populations in the lagoon. By 3,000 YBP, the rising sea level and the continuing siltation of the lagoon created a sand bar across the lagoon's mouth that restricted water flow and created a salinity imbalance, resulting in the rapid decline of shellfish habitat. This sedimentation process resulted in the decline of mollusk populations, which greatly reduced human activity in the area.

Native coastal sage scrub vegetation was likely common to the project area during prehistoric times (Beauchamp 1986; Randolph 1955). The coastal sage scrub and chamise chaparral plant communities comprised major food resources for prehistoric inhabitants (Bean and

Saubel 1972), as did the rocky foreshore and sand beach marine communities of the Cove region (Smith and Pierson 1996). Studies indicate that an estuarine/lagoonal habitat existed near today's La Jolla Beach and Tennis Club until the early 1900s (Moriarty 1981), and may have been a primary source of fresh water in prehistoric times.

The coastal habitats of the area did provide a rich environment capable of supporting a moderately dense prehistoric population of hunter/gatherers from the Early Archaic Period to more recent Kumeyaay populations (Smith and Moriarty 1983, 1985; Smith and Pierson 1996). Such population densities likely required considerable foraging along the shoreline and in the surrounding drainages and mesas to sustain seasonal occupations. This would have included the area currently under study as well as the adjacent mesas and shoreline.

Cultural Environment

The area of western San Diego County has a very rich and extensive record of both prehistoric and historic activity. The cultures that have been identified in the general vicinity of the project area include the Paleo Indian Period manifestation of the San Dieguito Complex, the Early Archaic Period represented by the La Jolla Complex, and the Late Prehistoric Period represented by the Kumeyaay Indians. Following the Hispanic intrusion into the region, the Presidio of San Diego, the Mission San Diego de Alcalá, and the Pueblo of San Diego were established, and the project area was possibly used in conjunction with the agricultural activities of the mission until the period of mission secularization. The pastoral activities of the Mexican Period (1822 to 1846) likely included use of the areas near the project for grazing purposes. Farming also blossomed and gradually replaced cattle ranching in many of the coastal areas. A brief discussion of the cultural elements present in the project area are provided in the following subsections.

Prehistory

In general, the prehistoric record of San Diego County has been documented in many reports and studies, several of which represent the earliest scientific works concerning the recognition and interpretation of the archaeological manifestations present in this region. Geographer Malcolm Rogers initiated the recordation of sites in the area during the 1920s and 1930s, using his field notes to construct the first cultural sequences based upon artifact assemblages and stratigraphy (Rogers 1966). Subsequent scholars expanded the information gathered by Rogers and offered more academic interpretations of the prehistoric record. Moriarty (1966, 1967, 1969), Warren (1964, 1966), and True (1958, 1966) all produced seminal works that critically defined the various prehistoric cultural phenomena present in this region (Moratto 1984). Additional studies have sought to further refine these earlier works (Cardenas 1986, 1987; Moratto 1984; Moriarty 1966, 1967; True 1970, 1980, 1986; True and Beemer 1982; True and Pankey 1985; Waugh 1986). In sharp contrast, the current trend in San Diego prehistory has also resulted in a revisionist group that rejects the established cultural historical sequence for San Diego. This

revisionist group (Warren et al. 1998) has replaced the concepts of La Jolla, San Dieguito, and all of their other manifestations with an extensive, all-encompassing, chronologically undifferentiated cultural unit that ranges from the initial occupation of southern California to around A.D. 1000 (Bull 1983, 1987; Ezell; 1983, 1987; Gallegos 1987; Kyle et al. 1990; Stropes 2007). For the present study, the prehistory of the region is divided into four major Periods: Early Man, Paleo Indian, Early Archaic, and Late Prehistoric.

Early Man Period (Prior to 8500 B.C.)

At the present time, there has been no concrete archaeological evidence to support the occupation of San Diego County prior to 10,500 YBP. Some archaeologists, such as Carter (1957, 1980) and Minshall (1976), have been proponents of Native American occupation of the region as early 100,000 YBP. However, their evidence for such claims is sparse at best and has lost much support over the years as more precise dating techniques have become available for skeletal remains thought to represent early man in San Diego. In addition, many of the "artifacts" initially identified as products of early man in the region have since been rejected as natural products of geologic activity. Some of the local proposed Early Man Period sites include Texas Street, Buchanan Canyon, and Brown, as well as Mission Valley (San Diego River Valley), Del Mar, and La Jolla (Bada et al. 1974; Carter 1957, 1980; Minshall 1976, 1989; Moriarty and Minshall 1972; Reeves 1985; Reeves et al. 1986).

Paleo Indian Period (8500 to 6000 B.C.)

For the region, it is generally accepted that the earliest identifiable culture in the archaeological record is represented by the material remains of the Paleo Indian Period San Dieguito Complex. The San Dieguito Complex was thought to represent the remains of a group of people who occupied sites in this region between 10,500 and 8,000 YBP, and who were related to or contemporaneous with groups in the Great Basin. As of yet, no absolute dates have been forthcoming to support the great age attributed to this cultural phenomenon. The artifacts recovered from San Dieguito sites duplicate the typology attributed to the Western Pluvial Lakes Tradition (Moratto 1984; Davis et al. 1969). These artifacts generally include scrapers, choppers, large bifaces, and large projectile points, with few milling tools. Tools recovered from sites of the San Dieguito Complex, along with the general pattern of their site locations, led early researchers to believe that the San Dieguito was a wandering, hunting, and gathering society (Moriarty 1969; Rogers 1966).

The San Dieguito Complex is the least understood of the cultures that have inhabited the San Diego County region. This is due to an overall lack of stratigraphic information and/or datable materials recovered from sites identified as San Dieguito. Currently, controversy exists among researchers that centers upon the relationship of the San Dieguito and the subsequent cultural manifestation in the area, the La Jolla Complex. Firm evidence has not yet been discovered to indicate whether the San Dieguito "evolved" into the La Jolla Complex, the La Jolla Complex

moved into the area and assimilated the San Dieguito people, or the San Dieguito retreated from the area due to environmental or cultural pressures.

Early Archaic Period (6000 B.C. to A.D. 0)

Based upon evidence suggesting climatic shifts and archaeologically observable changes in subsistence strategies, a new cultural pattern is believed to have emerged in the San Diego region around 6000 B.C. This Archaic Period pattern is believed by archaeologists to have evolved from or replaced the San Dieguito culture, resulting in a pattern referred to as the Encinitas Tradition. In San Diego, the Encinitas Tradition is thought to be represented by the coastal La Jolla Complex and its inland manifestation, the Pauma Complex. The La Jolla Complex is best recognized for its pattern of shell middens and grinding tools closely associated with marine resources and flexed burials (Shumway et al. 1961; Smith and Moriarty 1985). Increasing numbers of inland sites have been identified as dating to the Archaic Period and have focused on terrestrial subsistence (Cardenas 1986; Smith 1996; Raven-Jennings and Smith 1999).

The tool typology of the La Jolla Complex displays a wide range of sophistication in the lithic manufacturing techniques used to create the tools found at their sites. Scrapers, the dominant flaked tool type, were created by either splitting cobbles or by finely flaking quarried material. Evidence suggests that after about 8,200 YBP, milling tools began to appear in La Jolla sites. Inland sites of the Encinitas Tradition (Pauma Complex) exhibit a reduced quantity of marine-related food refuse and contain large quantities of milling tools and food bone. The lithic tool assemblage shifts slightly to encompass the procurement and processing of terrestrial resources, suggesting seasonal migration from the coast to the inland valleys (Smith 1996). At the present time, the transition from the Archaic Period to the Late Prehistoric Period is not well understood. Many questions remain concerning cultural transformation between periods, possibilities of ethnic replacement, and/or a possible hiatus from the western portion of the county.

Late Prehistoric Period (A.D. 0 to 1769)

The transition into the Late Prehistoric Period in the project area is primarily represented by a marked change in archaeological patterning known as the Yuman Tradition. This tradition is primarily represented by the Cuyamaca Complex, which is believed to have derived from the mountains of southern San Diego County. The people of the Cuyamaca Complex are considered as ancestral to the ethnohistoric Kumeyaay (Diegueño). Although several archaeologists consider the local Native American tribes to be latecomers, the traditional stories and histories passed down through oral tradition by the local Native American groups speak both presently and ethnographically to tribal presence in the region as being since the time of creation.

The Kumeyaay Native Americans were a seasonal hunting and gathering people, with cultural elements that were very distinct from the La Jolla Complex. Noted variations in material culture included cremation, the use of bows and arrows, and adaptation to the use of the acorn as a main food staple (Moratto 1984). Along the coast, the Kumeyaay made use of marine resources

by fishing and collecting shellfish for food. Seasonally available plant food resources (including acorns) and game were sources of nourishment for the Kumeyaay. By far the most important food resource for these people was the acorn. The acorn represented a storable surplus, which in turn allowed for seasonal sedentism and its attendant expansion of social phenomena.

History

Exploration Period (1530 to 1769)

The Historic Period around San Diego Bay began with the landing of Juan Rodríguez Cabrillo and his men in 1542 (Chapman 1921). Sixty years after the Cabrillo expeditions (1602 to 1603), Sebastian Vizcaíno led an extensive and thorough expedition and exploration of the Pacific coast. Although the voyage did not extend beyond the northern limits of the Cabrillo track, Vizcaíno had the most lasting effect on the nomenclature of the coast. Many of the names Vizcaíno gave to various places throughout the region have survived to the present time, whereas nearly every one of Cabrillo's has faded from use. For example, Cabrillo gave the name "San Miguel" to the first port at which he stopped in what is now the United States; 60 years later, Vizcaíno changed the port name to "San Diego" (Rolle 1969).

Spanish Colonial Period (1769 to 1821)

The Spanish occupation of the claimed territory of Alta California took place during the reign of King Carlos III of Spain (Engelhardt 1920). Jose de Gálvez, a representative of the king in Mexico, conceived of the plan to colonize Alta California and thereby secure the area for the Spanish Crown (Rolle 1969). The effort involved both a military and religious contingent, where the overall intent of establishing forts and missions was to gain control of the land and the native inhabitants through conversion. Actual colonization of the San Diego area began on July 16, 1769 when the first Spanish exploring party, commanded by Gaspar de Portolá (with Father Junípero Serra in charge of religious conversion of the native populations), arrived by the overland route to San Diego to secure California for the Spanish Crown (Palou 1926). The natural attraction of the harbor at San Diego and the establishment of a military presence in the area solidified the importance of San Diego to the Spanish colonization of the region and the growth of the civilian population. Missions were constructed from San Diego to the area as far north as San Francisco. The mission locations were based upon a number of important territorial, military, and religious considerations. Grants of land were made to persons who applied, but many tracts reverted back to the government for lack of use. As an extension of territorial control by the Spanish Empire, each mission was placed so as to command as much territory and as large a population as possible. While primary access to California during the Spanish Period was by sea, the route of El Camino Real served as the land route for transportation, commercial, and military activities within the colony. This route was considered to be the most direct path between the missions (Rolle 1969; Caughey 1970). As increasing numbers of Spanish and Mexican peoples, as well as the later

Americans during the Gold Rush, settled in the area, the Indian populations diminished as they were displaced or decimated by disease (Carrico and Taylor 1983).

Mexican Period (1821 to 1846)

On September 16, 1810, the priest Father Miguel Hidalgo y Costilla started a revolt against Spanish rule. He and his untrained Native American followers fought against the Spanish, but his revolt was unsuccessful and Father Hidalgo was executed. After this setback, Father Jose Morales led the revolutionaries, but also failed and was executed. These two men are still symbols of Mexican liberty and patriotism today. After the Mexican-born Spanish and the Catholic Church joined the revolution, Spain was finally defeated in 1821. Mexican Independence Day is celebrated on September 16 of each year, signifying the anniversary of the start of Father Hidalgo's revolt. The revolution had repercussions in the northern territories, and by 1834, all of the mission lands had been removed from the control of the Franciscan Order under the Acts of Secularization. Without proper maintenance, the missions quickly began to disintegrate, and after 1836, missionaries ceased to make regular visits inland to minister to the needs of the Native Americans (Engelhardt 1920). Large tracts of land continued to be granted to persons who applied for them or who had gained favor with the Mexican government. Grants of land were also made to settle government debts and the Mexican government was called upon to reaffirm some older Spanish land grants shortly before the Mexican-American War of 1846 (Moyer 1969).

Anglo-American Period (1846 to Present)

California was invaded by United States troops during the Mexican-American War of 1846 to 1848. The acquisition of strategic Pacific ports and California land was one of the principal objectives of the war (Price 1967). At the time, the inhabitants of California were practically defenseless, and they quickly surrendered to the United States Navy in July of 1847 (Bancroft 1885).

The cattle ranchers of the "counties" of southern California had prospered during the cattle boom of the early 1850s. They were able to "reap windfall profit . . . pay taxes and lawyer's bills . . . and generally live according to custom" (Pitt 1966). However, cattle ranching soon declined, contributing to the expansion of agriculture. With the passage of the "No Fence Act," San Diego's economy shifted from raising cattle to farming (Robinson 1948). The act allowed for the expansion of unfenced farms, which was crucial in an area where fencing material was practically unavailable. Five years after its passage, most of the arable lands in San Diego County had been patented as either ranchos or homesteads, and growing grain crops replaced raising cattle in many of the county's inland valleys (Blick 1976; Elliott 1965).

By 1870, farmers had learned to dry farm and were coping with some of the peculiarities of San Diego County's climate (*San Diego Union,* February 6, 1868; Van Dyke 1886). Between 1869 and 1871, the amount of cultivated acreage in the county rose from less than 5,000 to more than 20,000 acres (*San Diego Union,* January 2, 1872). Of course, droughts continued to hinder

the development of agriculture (Crouch 1915; *San Diego Union,* November 10, 1870; Shipek 1977). Large-scale farming in San Diego County was limited by a lack of water and the small size of arable valleys. The small urban population and poor roads also restricted commercial crop growing. Meanwhile, cattle continued to be grazed in parts of inland San Diego County. In the Otay Mesa area, for example, the "No Fence Act" had little effect on cattle farmers because ranches were spaced far apart and natural ridges kept the cattle out of nearby growing crops (Gordinier 1966).

During the first two decades of the twentieth century, the population of San Diego County continued to grow. The population of the inland county declined during the 1890s, but between 1900 and 1910, it rose by about 70 percent. The pioneering efforts were over, the railroads had broken the relative isolation of southern California, and life in San Diego County became similar to other communities throughout the west. After World War I, the history of San Diego County was primarily determined by the growth of San Diego Bay. In 1919, the United States Navy decided to make the bay the home base for the Pacific Fleet (Pourade 1967), and during the 1920s, the aircraft industry followed suit (Heiges 1976). The establishment of these industries led to the growth of the county as a whole; however, most of the civilian population growth occurred in the north county coastal areas, where the population almost tripled between 1920 and 1930. During this time period, the history of inland San Diego County was subsidiary to that of the city of San Diego, which had become a Navy center and industrial city (Heiges 1976). In inland San Diego County, agriculture became specialized and recreational areas were established in the mountain and desert areas. Just before World War II, urbanization began to spread to the inland parts of the county.

III. AREA OF POTENTIAL EFFECT (APE)

The APE includes the entire 2.4-acre property (Figure 4 [Appendix C]). The property is generally developed by existing uses associated with a residence and several rural sheds, horse corrals, landscaping, and roads. The majority of the vegetation on the property is non-native, but some areas of consists of coastal sage scrub exist on steeper slopes that have not been disturbed.

IV. STUDY METHODS

An archaeological records search was conducted for the project at the SCIC at SDSU on February 14, 2017 (Appendix D). The results identified 162 previous cultural resource studies conducted within a one-mile radius of the project, seven of which (Bull 1976; Smith 1992; Gallegos 1992; Gallegos and Strudwick 1992; Hix 1995; City of San Diego 1997; Gilmer and Berryman 2000) included all or portions of the APE. However, none of these reports identified any cultural resources within the current project. The records search also indicates that no cultural

resources have been previously recorded within the current APE; however, 70 cultural resources and two historic addresses have been recorded within one mile of the project APE.

The cultural resources survey was completed in accordance with the guideline protocols listed in the City of San Diego HRG. The project was surveyed using transects spaced at five- to 10-meter intervals, although the density of vegetation did force the pattern of transects to vary as necessary to allow field archaeologists to negotiate around dense stands of vegetation. Principal Investigator Brian F. Smith directed the cultural resources survey for the project and conducted the pedestrian survey with assistance from Senior Field Archaeologist Clarence Hoff. The technical report was prepared by Brian F. Smith. Kris Reinicke created the report graphics and Courtney Accardy conducted technical editing and report production. Qualifications of key personnel are provided in Appendix B.

V. RESULTS OF THE STUDY

Background Research

The Los Peñasquitos and Torrey Pines areas surrounding the project have yielded substantial cultural remains that document prehistoric occupation. For example, less than a mile to the northwest, sites such as SDI-4629 (W-20) represent multi-component occupation (Early Archaic La Jolla Complex and Late Prehistoric Kumeyaay) beginning approximately 5,000 YBP. During the Historic Period, new Native American encampments developed as the native population was displaced by European settlements (Carrico 1986). Eventually, the area of Carmel Valley supported the development of small farms and residences in the early part of the twentieth century. Directly south of the project area, multiple lithic scatter and hearth features have been recorded across multiple sites throughout the Del Mar Mesa area.

Field Reconnaissance

BFSA archaeologists performed a pedestrian survey of the project on March 15, 2017 (Plate 1). As required by City of San Diego guidelines, Native American monitor Nick Ruiz of Red Tail Monitoring & Research, Inc. accompanied BFSA during the archaeological survey. The survey was limited by the constraints of existing structures, horse corrals, greenhouses, non-native vegetation, shacks and storage sheds, roads, trails, and landscaping. In general, most of the property has been disturbed and little or no native vegetation remains except on the steeper slopes north of the existing residence. Non-native vegetation that covers most of the property includes non-native grass and weeds, eucalyptus trees, and palms. Visibility of the ground surface varied from within the property depending on the amount of clearing and the density of vegetation. Various footpaths and roads provided periodic areas of clear soil throughout the property. BFSA staff carefully inspected any exposed ground surfaces (eroded slopes, disturbed ground, and rodent burrows) to search for evidence of cultural resources. The survey did not result in the discovery of any artifacts or prehistoric sites; however, a small area of graded and eroded surfaces at the

south side of the property did contain a scatter of marine shell that may have been associated with one of the many prehistoric sites surrounding the property. Because the shell was scattered on an erosional surface directly on top of geological formational soil and was associated with fill dirt that may have been relocated to this portion of the property, it was clear that the shell was not in situ and that it has been erosionally or physically transported to this area with fill soil. This scatter of approximately 40 small fragments of shell was not identified as a prehistoric resource because the shell is not in situ and no other evidence of a prehistoric site was observed. No archaeological investigations are recommended as part of the environmental review of the development project.

Plate 1: Overview of the McCarty Estates project, facing north.

VI. RECOMMENDATIONS

No cultural resources were identified during the archaeological survey conducted for the McCarty Estates Project, nor did the records search indicate the existence of any recorded sites on the property. However, the dense and extensive ground cover, as well as the previous grading within the property, restricted ground visibility that affected the accuracy of the investigation. Given the density of the ground cover that may have masked evidence of cultural resources on the property, as well as the density of cultural resources recorded in the immediate area of this property, the

potential exists that cultural resources may exist on the property. A review of the proposed development suggests that grading will include a building pad on the north side of the property. Because of the pattern of prehistoric sites in the general vicinity of the project, and due to the possibility for buried or otherwise masked prehistoric deposits, an archaeological monitoring program is recommended. Archaeological and Native American monitoring of all grading and excavation activities attendant to the new building pad is recommended. The archaeological monitor should have the authority to halt or divert grading or excavation activity in the area of any discovery until such discovery can be characterized and its significance assessed.

VII. SOURCES CONSULTED — DATE

National Register of Historic Places ☒	Month and Year: February 2017
California Register of Historical Resources ☒	Month and Year: February 2017
City of San Diego Historical Resources Register ☒	Month and Year: February 2017
Archaeological/Historical Site Records: South Coastal Information Center ☒	Month and Year: February 2017
Other Sources Consulted: NAHC Sacred Lands File Search (Appendix E) Bibliography (Appendix A)	

VIII. CERTIFICATION

I hereby certify that the statements furnished above and in the attached exhibits present the data and information required for this archaeological report, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief, and have been compiled in accordance with CEQA criteria as defined in Section 15064.5 and City of San Diego HRG.

May 25, 2017

Brian F. Smith, M.A.
Principal Investigator

Date

IX. APPENDICES

Appendix A: Bibliography
Appendix B: Personnel Qualifications
Appendix C: Project Figures
Appendix D: Archaeological Records Search Results
Appendix E: NAHC Sacred Lands File Search Results

APPENDIX A

Bibliography

BIBLIOGRAPHY

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

Bancroft, Hubert Howe
1885 *History of California* (Vol. II); 1801-1824. The History Company, San Francisco, California.

Bean, Lowell John and Katherine Siva Saubel
1972 *Temalpakh: Cahuilla Indian Knowledge and the Use of Plants*. Malki Museum Press, Banning, California.

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

Blick, James D.
1976 Agriculture in San Diego County. In *San Diego – An Introduction to the* Area, edited by Philip J. Pryde, pp. 121-135. Kendall/Hunt Publishing Company, Dubuque, Iowa.

Brian F. Smith and Associates
Various Dates Research Library Holdings including Sanborn Maps, City Directories, Published Regional Histories, and Geologic and Paleontological References.

Bull, Charles S.
1976 An Archaeological Survey of Arroyo Sorrento. RECON. Unpublished report on file at the South Coastal Information Center, San Diego State University, San Diego, California.

1983 Shaking the Foundations: The Evidence for San Diego Prehistory. *Cultural Resource Management Casual Papers* 1(3):15-64. Department of Anthropology, San Diego State University, San Diego, California.

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

Cardenas, D. Sean
1986 Avocado Highlands: An Inland Late La Jolla and Preceramic Yuman Site from Southern San Diego County. *Cultural Resource Management Casual Papers* 2(2):59-84. Department of Anthropology, San Diego State University, San Diego, California.

Carrico, Richard L.
1986 Before the Strangers: American Indians in San Diego at the Dawn of Contact. In *The Impact of European Exploration and Settlement on Local Native Americans*, edited by the Cabrillo Historical Association, pp. 5-12. Cabrillo Historical Association, San Diego, California.

Carrico, Richard L. and Clifford V.F. Taylor
1983 Excavation of a Portion of Ystagua: A Coastal Valley Ipai Settlement. Environmental Impact Report on file at the City of San Diego, Environmental Quality Division.

Carter, George F.
1957 *Pleistocene Man at San Diego*. The Johns Hopkins Press, Baltimore, Maryland.

1980 *Earlier Than You Think: A Personal View of Man in America*. Texas A&M University Press, College Station, Texas.

Caughey, John W.
1970 *California: A Remarkable State's Life History*. 3rd ed. Prentice–Hall, Englewood Cliffs, New Jersey.

Chapman, Charles E.
1921 *A History of California: The Spanish Period*. The Macmillan Company, New York.

City of San Diego
1997 Notice of Preparation of a Draft Subsequent EIR – Neighborhood 10 Plan Amendments. Land Development Review Division. Unpublished report on file at the South Coastal Information Center, San Diego State University, San Diego, California.

Crouch, Herbert
1915 Reminiscences, 1868-1915. Unpublished manuscript on file, California Room, San Diego Public Library.

Davis, Emma Lou, Clark W. Brott, and David L. Weide
1969 *The Western Lithic Co-Tradition*. San Diego Museum Papers No. 6. San Diego Museum of Man, San Diego.

Elliott, Wallace W.
1965 *History of San Bernardino and San Diego Counties with Illustrations*. Riverside Museum Press, Riverside, California. Originally published 1883, W.W. Elliott, San Francisco, California.

Engelhardt, Zephyrin
1920 *San Diego Mission*. James M. Barry Company, San Francisco, California.

Ezell, Paul H.
1983 A New Look at the San Dieguito Culture. *Cultural Resource Management Casual Papers* 1(3):103-109. Department of Anthropology, San Diego State University, San Diego, California.

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 Archaeological Society Research Paper No. 1.

1992 Historical/Archaeological Survey and Test of Site CA-SDI-10,218 Locus B for the Loma-Sorrento Partnership. Gallegos and Associates. Unpublished report on file at the South Coastal Information Center, San Diego State University, San Diego, California.

Gallegos, Dennis R. and Ivan Strudwick
1992 Historical/Archaeological Survey and Test of Site SDI-10,218 for the Loma-Sorrento Partnership (Neighborhood 8A). Gallegos and Associates. Unpublished report on file at the South Coastal Information Center, San Diego State University, San Diego, California.

Gilmer, Jo Anne and Judy A. Berryman
2000 Cultural Resource Survey for the Bosque Del Mar Property, City of San Diego. RECON. Unpublished report on file at the South Coastal Information Center, San Diego State University, San Diego, California.

Gordinier, Jerry G.
1966 Problems of Settlement in the San Diego Foothills. Unpublished Master's thesis, San Diego State College, San Diego.

Heiges, Harvey
1976 The Economic Base of San Diego County. In *San Diego – An Introduction to the Region*, edited by Philip R. Pryde, pp. 137-148. Kendall/Hunt Publishing Company, Dubuque, Iowa.

Hix, Ann B.
1995 Neighborhood 8A Precise Plan/Del Mar Highlands Estates/Lorenz Parcel Compromise Plan and Neighborhood, An Acquisition Program. City of San Diego. Unpublished report on file at the South Coastal Information Center, San Diego State University, San Diego, California.

Kyle, Carolyn E., Adella B. Schroth, and Dennis R. Gallegos
1990 Early Period Occupation at the Kuebler Ranch Site SDI-8,654 Otay Mesa, San Diego County, California. Prepared for County of San Diego Department of Public Works by ERCE Environmental and Energy Services Co., San Diego.

Minshall, Herbert L.
1976 *The Broken Stones: The Case for Early Man in California.* Copely Books, San Diego.

1989 *Buchanan Canyon: Ancient Human Presence in the Americas.* Slawson Communications, San Marcos, California.

Moratto, Michael J.
1984 *California Archaeology.* Academic Press, New York.

Moriarty, James R., III
1966 Culture Phase Divisions Suggested by Topological Change Coordinated with Stratigraphically Controlled Radiocarbon Dating in San Diego. *Anthropological Journal of Canada* 4(4):20-30.

1967 Transitional Pre-Desert Phase in San Diego, California. *Science* 155(3762):553-556. Scripps Institution – UCSD Contribution No. 2278.

1969 The San Dieguito Complex: Suggested Environmental and Cultural Relationships. *Anthropological Journal of Canada* 7(3):2-18.

1981 Marine Geology in the Solution of Problems in a Submerged Early Prehistoric Site. In *Underwater Archaeology: The Challenge Before Us*, edited by Gordon P. Watts, Jr., pp. 276-284. Proceedings of the Twelfth Conference on Underwater Archaeology. Fathom Eight Publication No. 2, San Marino, California.

Moriarty, James R., III and Herbert L. Minshall
1972 A New Pre-Desert Site Discovered near Texas Street. *Anthropological Journal of Canada* 10(3):10-13.

Moyer, Cecil C.
1969 *Historic Ranchos of San Diego.* Edited by Richard F. Pourade. Union-Tribune Publishing Company, San Diego.

Palou, Fray Francisco
1926 *Historical Memoirs of New California.* Edited by Herbert Eugene Bolton (4 Volumes). University of California Press, Berkeley.

Pitt, Leonard
1966 *The Decline of the Californios: A Social History of the Spanish-speaking Californians, 1846-1890.* University of California Press, Los Angeles.

Pourade, Richard F.
1967 *The Rising Tide: Southern California in the Twenties and Thirties*. The History of San Diego Volume 6. Union-Tribune Publishing Company, San Diego.

Price, Glenn W.
1967 *Origins of the War with Mexico: The Polk-Stockton Intrigue*. University of Texas Press, Austin.

Randolph, Howard Stelle Fitz
1955 *La Jolla Year by Year*. Library Association of La Jolla, California.

Raven-Jennings, Shelly and Brian F. Smith
1999 Final Report for Site SDI-8330/W-240 'Scraper Hill,' Escondido, California. Unpublished report on file at the South Coastal Information Center at San Diego State University, San Diego, California.

Reeves, Brian O.K.
1985 Early Man in the Americas: Who, When, and Why. In *Woman, Poet, Scientist: Essays in New World Anthropology Honoring Dr. Emma Louise Davis*, edited by Thomas C. Blackburn, pp. 79-104. Ballena Press Anthropological Papers No. 29/Great Basin Foundation Cooperative Publication, Los Altos/San Diego, California.

Reeves, Brian O.K., John M.D. Pohl, and Jason W. Smith.
1986 The Mission Ridge Site and the Texas Street Question. In *New Evidence for the Pleistocene Peopling of the Americas*, edited by Alan Lyle Bryan, pp. 65-80. Center for the Study of Early Man, University of Maine at Orono.

Robinson, William Wilcox
1948 *Land in California: The Story of Mission Lands, Ranchos, Squatters, Mining Claims, Railroad Grants, Land Scrip, Homesteads*. University of California Press, Berkeley.

Rogers, Malcolm J.
1966 *Ancient Hunters of the Far West*. Edited by Richard F. Pourade, with contributions from Hannah Marie Wormington, Emma Lou Davis and Clark W. Brott. Union Tribune Publishing Company, San Diego.

Rolle, Andrew F.
1969 *California: A History*. 2nd ed. Thomas Y. Crowell Company, New York.

Shipek, Florence
1977 A Strategy for Change: The Luiseño of Southern California. Unpublished Ph.D. dissertation on file at the University of Hawaii.

Shumway, George, Carl L. Hubbs, and James R. Moriarty III
1961 Scripps Estates Site, San Diego, California: A La Jolla Site Dated 5,460-7,370 Years Before the Present. In *Annals of the New York Academy of Sciences* 93(3):41-131.

Smith, Brian F.

1992 Cultural Resources Constraints Survey for the Arroyo Sorrento Precise Plan: An Archaeological Constraints Survey of the 108.23-Acre Parcel, A Portion of the North City West Community Plan. Brian F. Smith and Associates, Inc. Unpublished report on file at the South Coastal Information Center, San Diego State University, San Diego, California.

1996 The Results of a Cultural Resource Study at the 4S Ranch. Unpublished report on file at the South Coastal Information Center at San Diego State University, San Diego, California.

Smith, Brian F. and James R. Moriarty, III

1983 An Archaeological Evaluation of a Drainage Channel Project at the South Sorrento Business Park. Environmental Impact Report on file at the City of San Diego.

1985 The Archaeological Excavations at Site W-20, Sierra Del Mar. Unpublished report on file at the South Coastal Information Center at San Diego State University, San Diego, California.

Smith, Brian F. and Larry J. Pierson

1996 An Archaeological Survey and Evaluation of Cultural Resources for the Coast Boulevard Park Improvement Project. Brian F. Smith and Associates. Submitted to Kawasaki, Theilacker, Veno and Associates. Unpublished report on file at the South Coastal Information Center at San Diego State University, San Diego, California.

Stropes, Tracy A.

2007 Nodule Industries of North Coastal San Diego: Understanding Change and Stasis in 10,000 Years of Lithic Technology. Unpublished Master's thesis on file at San Diego State University, San Diego, California.

True, Delbert L.

1958 An Early Complex in San Diego County, California. *American Antiquity* 23(3):255-263.

1966 Archaeological Differentiation of the Shoshonean and Yuman Speaking Groups in Southern California. Unpublished Ph.D. dissertation, University of California at Los Angeles.

1970 Investigations of a Late Prehistoric Complex in Cuyamaca Rancho State Park, San Diego County, California. *University of California, Los Angeles Archaeological Survey Monographs* 1.

1980 The Pauma Complex in Northern San Diego County. *The Journal of New World Archaeology* 3(4):1-39

1986 Molpa, a Late Prehistoric Site in Northern San Diego County: The San Luis Rey Complex, 1983. In *Symposium: A New Look at Some Old Sites*, edited by Gary S. Breschini and Trudy Haversat, pp. 29-36. Coyote Press, Salinas.

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(2):233-261.

True, Delbert L. and Rosemary Pankey
1985 Radiocarbon Dates for the Pauma Complex Component at the Pankey Site, Northern San Diego County, California. *Journal of California and Great Basin Anthropology* 7:240-244.

Van Dyke, Theodore S.
1886 *Southern California: its Valleys, Hills, and Streams; its Animals, Birds, and Fishes; its Gardens, Farms, and Climate.* Fords, Howard, and Hulbert. New York.

Warren, Claude N.
1964 Cultural Change and Continuity on the San Diego Coast. Unpublished Ph.D. dissertation on file at the University of California, Los Angeles.

1966 *The San Dieguito Type Site: Malcolm J. Rogers' 1938 Excavation on the San Dieguito River.* San Diego Museum Papers No. 6. San Diego Museum of Man.

Warren, Claude N., Gretchen Siegler, and Frank Dittner
1998 Paleoindian and Early Archaic Periods. In *Prehistoric and Historic Archaeology of Metropolitan San Diego: A Historical Properties Background Study (draft).* Prepared for and on file at ASM Affiliates, Inc., San Diego, California.

Waugh, Mary Georgie
1986 Intensification and Land-use: Archaeological Indications of Transition and Transformation in a Late Prehistoric Complex in Southern California. Unpublished Ph.D. dissertation, Department of Anthropology, University of California, Davis.

Newspapers:
San Diego Union – February 6, 1868
San Diego Union – November 10, 1870
San Diego Union – January 2, 1872

APPENDIX B

Personnel Qualifications

Brian F. Smith, MA

Owner, Principal Investigator

Brian F. Smith and Associates, Inc.
14010 Poway Road • Suite A •
Phone: (858) 679-8218 • Fax: (858) 679-9896 • E-Mail: bsmith@bfsa-ca.com

Education

Master of Arts, History, University of San Diego, California **1982**

Bachelor of Arts, History, and Anthropology, University of San Diego, California **1975**

Professional Memberships

Society for California Archaeology

Experience

Principal Investigator **1977–Present**
Brian F. Smith and Associates, Inc. **Poway, California**

Brian F. Smith is the owner and principal historical and archaeological consultant for Brian F. Smith and Associates. Over the past 32 years, he has conducted over 2,500 cultural resource studies in California, Arizona, Nevada, Montana, and Texas. These studies include every possible aspect of archaeology from literature searches and large-scale surveys to intensive data recovery excavations. Reports prepared by Mr. Smith have been submitted to all facets of local, state, and federal review agencies, including the US Army Crops of Engineers, the Bureau of Land Management, the Bureau of Reclamation, the Department of Defense, and the Department of Homeland Security. In addition, Mr. Smith has conducted studies for utility companies (Sempra Energy) and state highway departments (CalTrans).

Professional Accomplishments

These selected major professional accomplishments represent research efforts that have added significantly to the body of knowledge concerning the prehistoric life ways of cultures once present in the Southern California area and historic settlement since the late 18th century. Mr. Smith has been principal investigator on the following select projects, except where noted.

Downtown San Diego Mitigation and Monitoring Reporting Programs: Large numbers of downtown San Diego mitigation and monitoring projects submitted to the Centre City Development Corporation, some of which included Strata (2008), Hotel Indigo (2008), Lofts at 707 10th Avenue Project (2007), Breeza (2007), Bayside at the Embarcadero (2007), Aria (2007), Icon (2007), Vantage Pointe (2007), Aperture (2007), Sapphire Tower (2007), Lofts at 655 Sixth Avenue (2007), Metrowork (2007), The Legend (2006), The Mark (2006), Smart Corner (2006), Lofts at 677 7th Avenue (2005), Aloft on Cortez Hill (2005), Front and

Beech Apartments (2003), Bella Via Condominiums (2003), Acqua Vista Residential Tower (2003), Northblock Lofts (2003), Westin Park Place Hotel (2001), Parkloft Apartment Complex (2001), Renaissance Park (2001), and Laurel Bay Apartments (2001).

Archaeology at the Padres Ballpark: Involved the analysis of historic resources within a seven-block area of the "East Village" area of San Diego, where occupation spanned a period from the 1870s to the 1940s. Over a period of two years, BFSA recovered over 200,000 artifacts and hundreds of pounds of metal, construction debris, unidentified broken glass, and wood. Collectively, the Ballpark Project and the other downtown mitigation and monitoring projects represent the largest historical archaeological program anywhere in the country in the past decade (2000-2007).

4S Ranch Archaeological and Historical Cultural Resources Study: Data recovery program consisted of the excavation of over 2,000 square meters of archaeological deposits that produced over one million artifacts, containing primarily prehistoric materials. The archaeological program at 4S Ranch is the largest archaeological study ever undertaken in the San Diego County area and has produced data that has exceeded expectations regarding the resolution of long-standing research questions and regional prehistoric settlement patterns.

Charles H. Brown Site: Attracted international attention to the discovery of evidence of the antiquity of man in North America. Site located in Mission Valley, in the city of San Diego.

Del Mar Man Site: Study of the now famous Early Man Site in Del Mar, California, for the San Diego Science Foundation and the San Diego Museum of Man, under the direction of Dr. Spencer Rogers and Dr. James R. Moriarty.

Old Town State Park Projects: Consulting Historical Archaeologist. Projects completed in the Old Town State Park involved development of individual lots for commercial enterprises. The projects completed in Old Town include Archaeological and Historical Site Assessment for the Great Wall Cafe (1992), Archaeological Study for the Old Town Commercial Project (1991), and Cultural Resources Site Survey at the Old San Diego Inn (1988).

Site W-20, Del Mar, California: A two-year-long investigation of a major prehistoric site in the Del Mar area of the city of San Diego. This research effort documented the earliest practice of religious/ceremonial activities in San Diego County (circa 6,000 years ago), facilitated the projection of major non-material aspects of the La Jolla Complex, and revealed the pattern of civilization at this site over a continuous period of 5,000 years. The report for the investigation included over 600 pages, with nearly 500,000 words of text, illustrations, maps, and photographs documenting this major study.

City of San Diego Reclaimed Water Distribution System: A cultural resource study of nearly 400 miles of pipeline in the city and county of San Diego.

Master Environmental Assessment Project, City of Poway: Conducted for the City of Poway to produce a complete inventory of all recorded historic and prehistoric properties within the city. The information was used in conjunction with the City's General Plan Update to produce a map matrix of the city showing areas of high, moderate, and low potential for the presence of cultural resources. The effort also included the development of the City's Cultural Resource Guidelines, which were adopted as City policy.

Draft of the City of Carlsbad Historical and Archaeological Guidelines: Contracted by the City of Carlsbad to produce the draft of the City's historical and archaeological guidelines for use by the Planning Department of the City.

The Mid-Bayfront Project for the City of Chula Vista: Involved a large expanse of undeveloped agricultural land situated between the railroad and San Diego Bay in the northwestern portion of the city. The study included the analysis of some potentially historic features and numerous prehistoric sites.

Cultural Resources Survey and Test of Sites Within the Proposed Development of the Audie Murphy Ranch, Riverside County, California: Project manager/director of the investigation of 1,113.4 acres and 43 sites, both prehistoric and historic—included project coordination; direction of field crews; evaluation of sites for significance based on County of Riverside and CEQA guidelines; assessment of cupule, pictograph, and rock shelter sites, co-authoring of cultural resources project report. February-September 2002.

Cultural Resources Evaluation of Sites Within the Proposed Development of the Otay Ranch Village 13 Project, San Diego County, California: Project manager/director of the investigation of 1,947 acres and 76 sites, both prehistoric and historic—included project coordination and budgeting; direction of field crews; assessment of sites for significance based on County of San Diego and CEQA guidelines; co-authoring of cultural resources project report. May-November 2002.

Cultural Resources Survey for the Remote Video Surveillance Project, El Centro Sector, Imperial County: Project manager/director for a survey of 29 individual sites near the U.S./Mexico Border for proposed video surveillance camera locations associated with the San Diego Border barrier Project—project coordination and budgeting; direction of field crews; site identification and recordation; assessment of potential impacts to cultural resources; meeting and coordinating with U.S. Army Corps of Engineers, U.S. Border Patrol, and other government agencies involved; co-authoring of cultural resources project report. January, February, and July 2002.

Cultural Resources Survey and Test of Sites Within the Proposed Development of the Menifee West GPA, Riverside County, California: Project manager/director of the investigation of nine sites, both prehistoric and historic—included project coordination and budgeting; direction of field crews; assessment of sites for significance based on County of Riverside and CEQA guidelines; historic research; co-authoring of cultural resources project report. January-March 2002.

Mitigation of An Archaic Cultural Resource for the Eastlake III Woods Project for the City of Chula Vista, California: Project archaeologist/ director—included direction of field crews; development and completion of data recovery program including collection of material for specialized faunal and botanical analyses; assessment of sites for significance based on CEQA guidelines; management of artifact collections cataloging and curation; data synthesis; co-authoring of cultural resources project report, in prep. September 2001-March 2002.

Cultural Resources Survey and Test of Sites Within the Proposed French Valley Specific Plan/EIR, Riverside County, California: Project manager/director of the investigation of two prehistoric and three historic sites—included project coordination and budgeting; survey of project area; Native American consultation; direction of field crews; assessment of sites for significance based on CEQA guidelines; cultural resources project report in prep. July-August 2000.

Cultural Resources Survey and Test of Sites Within the Proposed Lawson Valley Project, San Diego County, California: Project manager/director of the investigation of 28 prehistoric and two historic sites—included project coordination; direction of field crews; assessment of sites for significance based on CEQA guidelines; cultural resources project report in prep. July-August 2000.

Cultural Resource Survey and Geotechnical Monitoring for the Mohyi Residence Project, La Jolla, California: Project manager/director of the investigation of a single-dwelling parcel—included project coordination; field survey; assessment of parcel for potentially buried cultural deposits; monitoring of geotechnichal borings; authoring of cultural resources project report. Brian F. Smith and Associates, San Diego, California. June 2000.

Enhanced Cultural Resource Survey and Evaluation for the Prewitt/Schmucker/Cavadias Project, La Jolla, California: Project manager/director of the investigation of a single-dwelling parcel—included project coordination; direction of field crews; assessment of parcel for potentially buried cultural deposits; authoring of cultural resources project report. June 2000.

Cultural Resources Survey and Test of Sites Within the Proposed Development of the Menifee Ranch, Riverside County, California: Project manager/director of the investigation of one prehistoric and five historic sites—included project coordination and budgeting; direction of field crews; feature recordation; historic structure assessments; assessment of sites for significance based on CEQA guidelines; historic research; co-authoring of cultural resources project report. February-June 2000.

Salvage Mitigation of a Portion of the San Diego Presidio Identified During Water Pipe Construction for the City of San Diego, California: Project archaeologist/director—included direction of field crews; development and completion of data recovery program; management of artifact collections cataloging and curation; data synthesis and authoring of cultural resources project report in prep. April 2000.

Enhanced Cultural Resource Survey and Evaluation for the Tyrian 3 Project, La Jolla, California: Project manager/director of the investigation of a single-dwelling parcel—included project coordination; assessment of parcel for potentially buried cultural deposits; authoring of cultural resources project report. April 2000.

Enhanced Cultural Resource Survey and Evaluation for the Lamont 5 Project, Pacific Beach, California: Project manager/director of the investigation of a single-dwelling parcel—included project coordination; assessment of parcel for potentially buried cultural deposits; authoring of cultural resources project report. April 2000.

Enhanced Cultural Resource Survey and Evaluation for the Reiss Residence Project, La Jolla, California: Project manager/director of the investigation of a single-dwelling parcel—included project coordination; assessment of parcel for potentially buried cultural deposits; authoring of cultural resources project report. March-April 2000.

Salvage Mitigation of a Portion of Site SDM-W-95 (CA-SDI-211) for the Poinsettia Shores Santalina Development Project and Caltrans, Carlsbad, California: Project achaeologist/ director—included direction of field crews; development and completion of data recovery program; management of artifact collections cataloging and curation; data synthesis and authoring of cultural resources project report in prep. December 1999-January 2000.

Survey and Testing of Two Prehistoric Cultural Resources for the Airway Truck Parking Project, Otay Mesa, California: Project archaeologist/director—included direction of field crews; development and completion of testing recovery program; assessment of site for significance based on CEQA guidelines; authoring of cultural resources project report, in prep. December 1999-January 2000.

Cultural Resources Phase I and II Investigations for the Tin Can Hill Segment of the Immigration and Naturalization Services Triple Fence Project Along the International Border, San Diego County, California: Project manager/director for a survey and testing of a prehistoric quarry site along the border—NRHP eligibility assessment; project coordination and budgeting; direction of field crews; feature recordation; meeting and coordinating with U.S. Army Corps of Engineers; co-authoring of cultural resources project report. December 1999-January 2000.

Mitigation of a Prehistoric Cultural Resource for the Westview High School Project for the City of San Diego, California: Project archaeologist/ director—included direction of field crews; development and completion of data recovery program including collection of material for specialized faunal and botanical analyses; assessment of sites for significance based on CEQA guidelines; management of artifact collections cataloging and curation; data synthesis; co-authoring of cultural resources project report, in prep. October 1999-January 2000.

Mitigation of a Prehistoric Cultural Resource for the Otay Ranch SPA-One West Project for the City of Chula Vista, California: Project archaeologist/director—included direction of field crews; development of data recovery program; management of artifact collections cataloging and curation; assessment of

site for significance based on CEQA guidelines; data synthesis; authoring of cultural resources project report, in prep. September 1999-January 2000.

Monitoring of Grading for the Herschel Place Project, La Jolla, California: Project archaeologist/ monitor—included monitoring of grading activities associated with the development of a single-dwelling parcel. September 1999.

Survey and Testing of a Historic Resource for the Osterkamp Development Project, Valley Center, California: Project archaeologist/ director—included direction of field crews; development and completion of data recovery program; budget development; assessment of site for significance based on CEQA guidelines; management of artifact collections cataloging and curation; data synthesis; authoring of cultural resources project report. July-August 1999.

Survey and Testing of a Prehistoric Cultural Resource for the Proposed College Boulevard Alignment Project, Carlsbad, California: Project manager/director —included direction of field crews; development and completion of testing recovery program; assessment of site for significance based on CEQA guidelines; management of artifact collections cataloging and curation; data synthesis; authoring of cultural resources project report, in prep. July-August 1999.

Survey and Evaluation of Cultural Resources for the Palomar Christian Conference Center Project, Palomar Mountain, California: Project archaeologist—included direction of field crews; assessment of sites for significance based on CEQA guidelines; management of artifact collections cataloging and curation; data synthesis; authoring of cultural resources project report. July-August 1999.

Survey and Evaluation of Cultural Resources at the Village 2 High School Site, Otay Ranch, City of Chula Vista, California: Project manager/director —management of artifact collections cataloging and curation; assessment of site for significance based on CEQA guidelines; data synthesis; authoring of cultural resources project report. July 1999.

Cultural Resources Phase I, II, and III Investigations for the Immigration and Naturalization Services Triple Fence Project Along the International Border, San Diego County, California: Project manager/director for the survey, testing, and mitigation of sites along border—supervision of multiple field crews, NRHP eligibility assessments, Native American consultation, contribution to Environmental Assessment document, lithic and marine shell analysis, authoring of cultural resources project report. August 1997-January 2000.

Phase I, II, and II Investigations for the Scripps Poway Parkway East Project, Poway California: Project archaeologist/project director—included recordation and assessment of multicomponent prehistoric and historic sites; direction of Phase II and III investigations; direction of laboratory analyses including prehistoric and historic collections; curation of collections; data synthesis; coauthorship of final cultural resources report. February 1994; March-September 1994; September-December 1995.

Archaeological Evaluation of Cultural Resources Within the Proposed Corridor for the San Elijo Water Reclamation System Project, San Elijo, California: Project manager/director —test excavations; direction of artifact identification and analysis; graphics production; coauthorship of final cultural resources report. December 1994-July 1995.

Evaluation of Cultural Resources for the Environmental Impact Report for the Rose Canyon Trunk Sewer Project, San Diego, California: Project manager/Director —direction of test excavations; identification and analysis of prehistoric and historic artifact collections; data synthesis; co-authorship of final cultural resources report, San Diego, California. June 1991-March 1992.

Reports/Papers

Author, coauthor, or contributor to over 2,500 cultural resources management publications, a selection of which are presented below.

2015 An Archaeological/Historical Study for the Safari Highlands Ranch Project, City of Escondido, County of San Diego.

2015 A Phase I and II Cultural Resources Assessment for the Decker Parcels II Project, Planning Case No. 36962, Riverside County, California.

2015 A Phase I and II Cultural Resources Assessment for the Decker Parcels I Project, Planning Case No. 36950, Riverside County, California.

2015 Cultural Resource Data Recovery and Mitigation Monitoring Program for Site SDI-10,237 Locus F, Everly Subdivision Project, El Cajon, California.

2015 Phase I Cultural Resource Survey for the Woodward Street Senior Housing Project, City of San Marcos, California (APN 218-120-31).

2015 An Updated Cultural Resource Survey for the Box Springs Project (TR 33410), APNs 255-230-010, 255-240-005, 255-240-006, and Portions of 257-180-004, 257-180-005, and 257-180-006.

2015 A Phase I and II Cultural Resource Report for the Lake Ranch Project, TR 36730, Riverside County, California.

2015 A Phase II Cultural Resource Assessment for the Munro Valley Solar Project, Inyo County, California.

2014 Cultural Resources Monitoring Report for the Diamond Valley Solar Project, Community of Winchester, County of Riverside.

2014 National Historic Preservation Act Section 106 Compliance for the Proposed Saddleback Estates Project, Riverside County, California.

2014 A Phase II Cultural Resource Evaluation Report for RIV-8137 at the Toscana Project, TR 36593, Riverside County, California.

2014 Cultural Resources Study for the Estates at Del Mar Project, City of Del Mar, San Diego, California (TTM 14-001).

2014 Cultural Resources Study for the Aliso Canyon Major Subdivision Project, Rancho Santa Fe, San Diego County, California.

2014 Cultural Resources Due Diligence Assessment of the Ocean Colony Project, City of Encinitas.

2014 A Phase I and Phase II Cultural Resource Assessment for the Citrus Heights II Project, TTM 36475, Riverside County, California.

2013 A Phase I Cultural Resource Assessment for the Modular Logistics Center, Moreno Valley, Riverside County, California.

2013 A Phase I Cultural Resources Survey of the Ivey Ranch Project, Thousand Palms, Riverside County, California.

2013 Cultural Resources Report for the Emerald Acres Project, Riverside County, California.

2013 A Cultural Resources Records Search and Review for the Pala Del Norte Conservation Bank Project, San Diego County, California.

2013 An Updated Phase I Cultural Resources Assessment for Tentative Tract Maps 36484 and 36485, Audie Murphy Ranch, City of Menifee, County of Riverside.

2013 El Centro Town Center Industrial Development Project (EDA Grant No. 07-01-06386); Result of Cultural Resource Monitoring.

2013 Cultural Resources Survey Report for the Renda Residence Project, 9521 La Jolla Farms Road, La Jolla, California.

2013 A Phase I Cultural Resource Study for the Ballpark Village Project, San Diego, California.

2013 Archaeological Monitoring and Mitigation Program, San Clemente Senior Housing Project, 2350 South El Camino Real, City of San Clemente, Orange County, California (CUP No. 06-065; APN-060-032-04).

2012 Mitigation Monitoring Report for the Los Peñasquitos Recycled Water Pipeline.

2012 Cultural Resources Report for Menifee Heights (Tract 32277).

2012 A Phase I Cultural Resource Study for the Altman Residence at 9696 La Jolla Farms Road, La Jolla, California 92037.

2012 Mission Ranch Project (TM 5290-1/MUP P87-036W3): Results of Cultural Resources Monitoring During Mass Grading.

2012 A Phase I Cultural Resource Study for the Payan Property Project, San Diego, California.

2012 Phase I Archaeological Survey of the Rieger Residence, 13707 Durango Drive, Del Mar, California 92014, APN 300-369-49.

2011 Mission Ranch Project (TM 5290-1/MUP P87-036W3): Results of Cultural Resources Monitoring During Mass Grading.

2011 Mitigation Monitoring Report for the 1887 Viking Way Project, La Jolla, California.

2011 Cultural Resource Monitoring Report for the Sewer Group 714 Project.

2011 Results of Archaeological Monitoring at the 10th Avenue Parking Lot Project, City of San Diego, California (APNs 534-194-02 and 03).

2011 Archaeological Survey of the Pelberg Residence for a Bulletin 560 Permit Application; 8335 Camino Del Oro; La Jolla, California 92037 APN 346-162-01-00 .

2011 A Cultural Resources Survey Update and Evaluation for the Robertson Ranch West Project and an Evaluation of National Register Eligibility of Archaeological sites for Sites for Section 106 Review (NHPA).

2011 Mitigation Monitoring Report for the 43rd and Logan Project.

2011 Mitigation Monitoring Report for the Sewer Group 682 M Project, City of San Diego Project #174116.

2011 A Phase I Cultural Resource Study for the Nooren Residence Project, 8001 Calle de la Plata, La Jolla, California, Project No. 226965.

2011 A Phase I Cultural Resource Study for the Keating Residence Project, 9633 La Jolla Farms Road, La Jolla, California 92037.

2010 Mitigation Monitoring Report for the 15th & Island Project, City of San Diego; APNs 535-365-01, 535-365-02 and 535-392-05 through 535-392-07.

2010 Archaeological Resource Report Form: Mitigation Monitoring of the Sewer and Water Group 772 Project, San Diego, California, W.O. Nos. 187861 and 178351.

2010 Pottery Canyon Site Archaeological Evaluation Project, City of San Diego, California, Contract No. H105126.

2010 Archaeological Resource Report Form: Mitigation Monitoring of the Racetrack View Drive Project, San Diego, California; Project No. 163216.

2010 A Historical Evaluation of Structures on the Butterfield Trails Property.

2010 Historic Archaeological Significance Evaluation of 1761 Haydn Drive, Encinitas, California (APN 260-276-07-00).

2010 Results of Archaeological Monitoring of the Heller/Nguyen Project, TPM 06-01, Poway, California.

2010 Cultural Resource Survey and Evaluation Program for the Sunday Drive Parcel Project, San Diego County, California, APN 189-281-14.

2010 Archaeological Resource Report Form: Mitigation Monitoring of the Emergency Garnet Avenue Storm Drain Replacement Project, San Diego, California, Project No. B10062

2010 An Archaeological Study for the 1912 Spindrift Drive Project

2009 Cultural Resource Assessment of the North Ocean Beach Gateway Project City of San Diego #64A-003A; Project #154116.

2009 Archaeological Constraints Study of the Morgan Valley Wind Assessment Project, Lake County, California.

2008 Results of an Archaeological Review of the Helen Park Lane 3.1-acre Property (APN 314-561-31), Poway, California.

2008 Archaeological Letter Report for a Phase I Archaeological Assessment of the Valley Park Condominium Project, Ramona, California; APN 282-262-75-00.

2007 Archaeology at the Ballpark. Brian F. Smith and Associates, San Diego, California. Submitted to the Centre City Development Corporation.

2007 Result of an Archaeological Survey for the Villages at Promenade Project (APNs 115-180-007-3,115-180-049-1, 115-180-042-4, 115-180-047-9) in the City of Corona, Riverside County.

2007 Monitoring Results for the Capping of Site CA-SDI-6038/SDM-W-5517 within the Katzer Jamul Center Project; P00-017.

2006 Archaeological Assessment for The Johnson Project (APN 322-011-10), Poway, California.

2005 Results of Archaeological Monitoring at the El Camino Del Teatro Accelerated Sewer Replacement Project (Bid No. K041364; WO # 177741; CIP # 46-610.6.

2005 Results of Archaeological Monitoring at the Baltazar Draper Avenue Project (Project No. 15857; APN: 351-040-09).

2004 TM 5325 ER #03-14-043 Cultural Resources.

2004 An Archaeological Survey and an Evaluation of Cultural Resources at the Salt Creek Project. Report on file at Brian F. Smith and Associates.

2003 An Archaeological Assessment for the Hidden Meadows Project, San Diego County, TM 5174, Log No. 99-08-033. Report on file at Brian F. Smith and Associates.

2003 An Archaeological Survey for the Manchester Estates Project, Coastal Development Permit #02-009, Encinitas, California. Report on file at Brian F. Smith and Associates.

2003 Archaeological Investigations at the Manchester Estates Project, Coastal Development Permit #02-009, Encinitas, California. Report on file at Brian F. Smith and Associates.

2003 Archaeological Monitoring of Geological Testing Cores at the Pacific Beach Christian Church Project. Report on file at Brian F. Smith and Associates.

2003 San Juan Creek Drilling Archaeological Monitoring. Report on file at Brian F. Smith and Associates.

2003 Evaluation of Archaeological Resources Within the Spring Canyon Biological Mitigation Area, Otay Mesa, San Diego County, California. Brian F. Smith and Associates, San Diego, California.

2002 An Archaeological/Historical Study for the Otay Ranch Village 13 Project (et al.). Brian F. Smith and Associates, San Diego, California.

2002 An Archaeological/Historical Study for the Audie Murphy Ranch Project (et al.). Brian F. Smith and Associates, San Diego, California.

2002 Results of an Archaeological Survey for the Remote Video Surveillance Project, El Centro Sector, Imperial County, California. Brian F. Smith and Associates, San Diego, California.

2002 A Cultural Resources Survey and Evaluation for the Proposed Robertson Ranch Project, City of Carlsbad. Brian F. Smith and Associates, San Diego, California.

2002 Archaeological Mitigation of Impacts to Prehistoric Site SDI-7976 for the Eastlake III Woods Project, Chula Vista, California. Brian F. Smith and Associates, San Diego, California.

2002 An Archaeological/Historical Study for Tract No. 29777, Menifee West GPA Project, Perris Valley, Riverside County. Brian F. Smith and Associates, San Diego, California.

2002 An Archaeological/Historical Study for Tract No. 29835, Menifee West GPA Project, Perris Valley, Riverside County. Brian F. Smith and Associates, San Diego, California.

2001 An Archaeological Survey and Evaluation of a Cultural Resource for the Moore Property, Poway. Brian F. Smith and Associates, San Diego, California.

2001 An Archaeological Report for the Mitigation, Monitoring, and Reporting Program at the Water and Sewer Group Job 530A, Old Town San Diego. Brian F. Smith and Associates, San Diego, California.

2001 A Cultural Resources Impact Survey for the High Desert Water District Recharge Site 6 Project, Yucca Valley. Brian F. Smith and Associates, San Diego, California.

2001 Archaeological Mitigation of Impacts to Prehistoric Site SDI-13,864 at the Otay Ranch SPA-One West Project. Brian F. Smith and Associates, San Diego, California.

2001 A Cultural Resources Survey and Site Evaluations at the Stewart Subdivision Project, Moreno Valley, County of San Diego. Brian F. Smith and Associates, San Diego, California.

2000 An Archaeological/Historical Study for the French Valley Specific Plan/EIR, French Valley, County of Riverside. Brian F. Smith and Associates, San Diego, California.

2000 Results of an Archaeological Survey and the Evaluation of Cultural Resources at The TPM#24003–Lawson Valley Project. Brian F. Smith and Associates, San Diego, California.

2000 Archaeological Mitigation of Impacts to Prehistoric Site SDI-5326 at the Westview High School Project for the Poway Unified School District. Brian F. Smith and Associates, San Diego, California.

2000 An Archaeological/Historical Study for the Menifee Ranch Project. Brian F. Smith and Associates, San Diego, California.

2000 An Archaeological Survey and Evaluation of Cultural Resources for the Bernardo Mountain Project, Escondido, California. Brian F. Smith and Associates, San Diego, California.

2000 A Cultural Resources Impact Survey for the Nextel Black Mountain Road Project, San Diego, California. Brian F. Smith and Associates, San Diego, California.

2000 A Cultural Resources Impact Survey for the Rancho Vista Project, 740 Hilltop Drive, Chula Vista, California. Brian F. Smith and Associates, San Diego, California.

2000 A Cultural Resources Impact Survey for the Poway Creek Project, Poway, California. Brian F. Smith and Associates, San Diego, California.

2000 Cultural Resource Survey and Geotechnical Monitoring for the Mohyi Residence Project. Brian F. Smith and Associates, San Diego, California.

2000 Enhanced Cultural Resource Survey and Evaluation for the Prewitt/Schmucker/ Cavadias Project. Brian F. Smith and Associates, San Diego, California.

2000 Enhanced Cultural Resource Survey and Evaluation for the Lamont 5 Project. Brian F. Smith and Associates, San Diego, California.

2000 Salvage Excavations at Site SDM-W-95 (CA-SDI-211) for the Poinsettia Shores Santalina Development Project, Carlsbad, California. Brian F. Smith and Associates, San Diego, California.

2000 Enhanced Cultural Resource Survey and Evaluation for the Reiss Residence Project, La Jolla, California. Brian F. Smith and Associates, San Diego, California.

2000 Enhanced Cultural Resource Survey and Evaluation for the Tyrian 3 Project, La Jolla, California. Brian F. Smith and Associates, San Diego, California.

2000 A Report for an Archaeological Evaluation of Cultural Resources at the Otay Ranch Village Two SPA, Chula Vista, California. Brian F. Smith and Associates, San Diego, California.

2000 An Archaeological Evaluation of Cultural Resources for the Airway Truck Parking Project, Otay Mesa, County of San Diego. Brian F. Smith and Associates, San Diego, California.

2000 Results of an Archaeological Survey and Evaluation of a Resource for the Tin Can Hill Segment of the Immigration and Naturalization and Immigration Service Border Road, Fence, and Lighting Project, San Diego County, California. Brian F. Smith and Associates, San Diego, California.

1999 An Archaeological Survey of the Home Creek Village Project, 4600 Block of Home Avenue, San Diego, California. Brian F. Smith and Associates, San Diego, California.

1999 An Archaeological Survey for the Sgobassi Lot Split, San Diego County, California. Brian F. Smith and Associates, San Diego, California.

1999 An Evaluation of Cultural Resources at the Otay Ranch Village 11 Project. Brian F. Smith and Associates, San Diego, California.

1999 An Archaeological/Historical Survey and Evaluation of a Cultural Resource for The Osterkamp Development Project, Valley Center, California. Brian F. Smith and Associates, San Diego, California.

1999 An Archaeological Survey and Evaluation of Cultural Resources for the Palomar Christian Conference Center Project, Palomar Mountain, California. Brian F. Smith and Associates, San Diego, California.

1999 An Archaeological Survey and Evaluation of a Cultural Resource for the Proposed College Boulevard Alignment Project. Brian F. Smith and Associates, San Diego, California.

1999 Results of an Archaeological Evaluation for the Anthony's Pizza Acquisition Project in Ocean Beach, City of San Diego (with L. Pierson and B. Smith). Brian F. Smith and Associates, San Diego, California.

1996 An Archaeological Testing Program for the Scripps Poway Parkway East Project. Brian F. Smith and Associates, San Diego, California.

1995 Results of a Cultural Resources Study for the 4S Ranch. Brian F. Smith and Associates, San Diego, California.

1995 Results of an Archaeological Evaluation of Cultural Resources Within the Proposed Corridor for the San Elijo Water Reclamation System. Brian F. Smith and Associates, San Diego, California.

1994 Results of the Cultural Resources Mitigation Programs at Sites SDI-11,044/H and SDI-12,038 at the Salt Creek Ranch Project . Brian F. Smith and Associates, San Diego, California.

1993 Results of an Archaeological Survey and Evaluation of Cultural Resources at the Stallion Oaks Ranch Project. Brian F. Smith and Associates, San Diego, California.

1992 Results of an Archaeological Survey and the Evaluation of Cultural Resources at the Ely Lot Split Project. Brian F. Smith and Associates, San Diego, California.

1991 The Results of an Archaeological Study for the Walton Development Group Project. Brian F. Smith and Associates, San Diego, California.

APPENDIX C

Project Figures

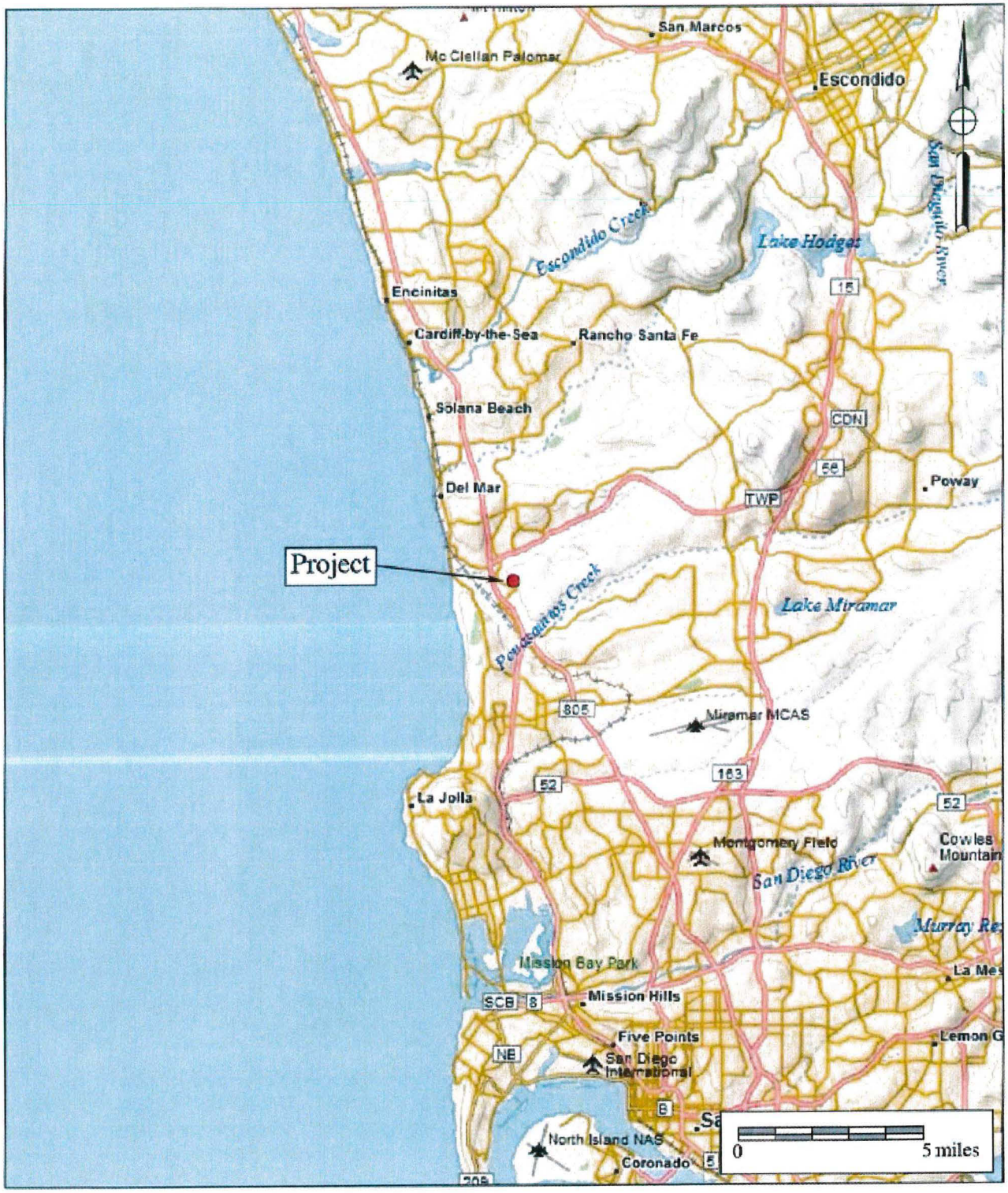


Figure 1

General Location Map

The McCarty Estates Project

DeLorme (1:250,000 series)

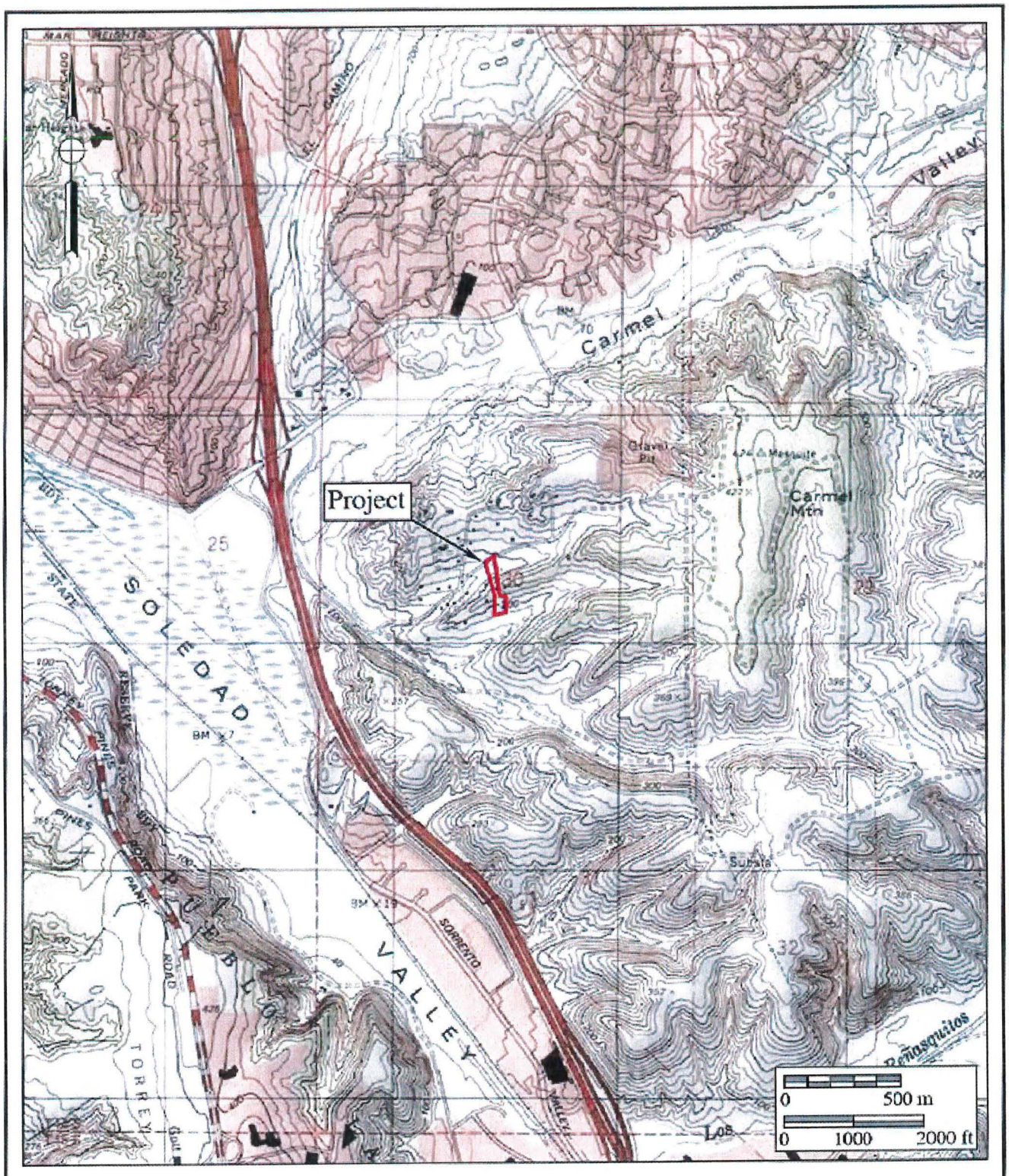


Figure 2

Project Location Map

The McCarty Estates Project

USGS *Del Mar* Quadrangle (7.5-minute series)

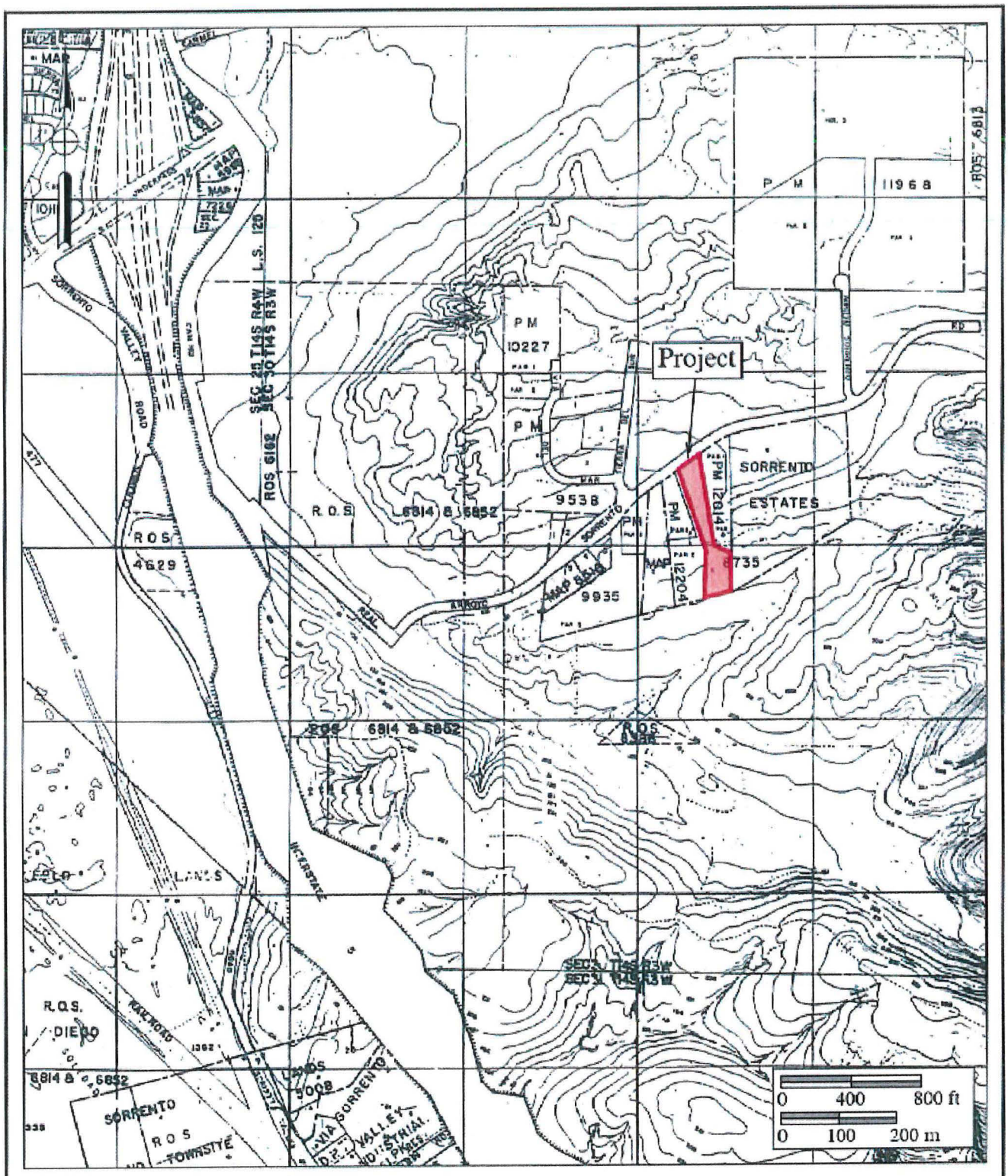


Figure 3

Project Location Map

The McCarty Estates Project

Shown on The City of San Diego 1" to 800' Scale Engineering Map

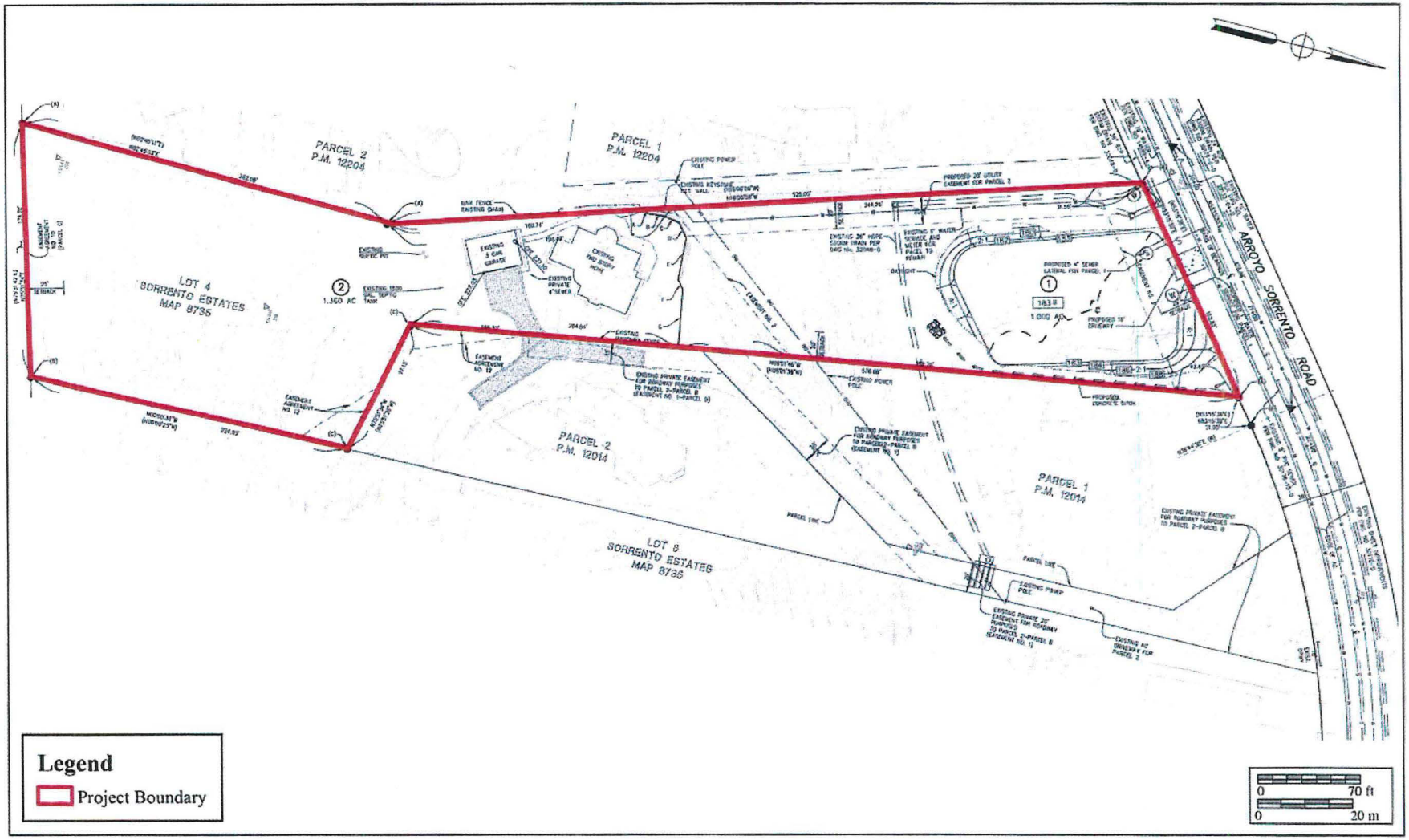


Figure 4

Project Development Map

The McCarty Estates Project

APPENDIX D

Archaeological Records Search Results

South Coastal Information Center
4283 El Cajon Blvd., Suite 250
San Diego, CA 92105
Office: (619) 594-5682
Fax: (619) 594-4483
www.scic.org
nick@scic.org

CALIFORNIA HISTORICAL RESOURCES INFORMATION SYSTEM
RECORDS SEARCH

Company: Brian F. Smith & Associates Inc

Company Representative: Kris Reinicke

Date Processed: 2/14/2017

Project Identification: The McCarty Estates Project

Search Radius: 1 mile

Historical Resources: NJD

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

Previous Survey Report Boundaries: NJD

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

Historic Addresses: NJD

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

Historic Maps: NJD

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

Summary of SHRC Approved CHRIS IC Records Search Elements

RSID:	794
RUSH:	no
Hours:	1
Spatial Features:	297
Address-Mapped Shapes:	yes
Digital Database Records:	2
Quads:	1
Aerial Photos:	0
PDFs:	Yes
PDF Pages:	709

This is not an invoice. Please pay from the monthly billing statement

APPENDIX E

NAHC Sacred Lands File Search Results

Brian F. Smith & Associates

Archaeological/Biological/Historical/Paleontological/Air/Traffic/Noise Consulting

February 14, 2017

For: Native American Heritage Commission
915 Capitol Mall, Room 364
Sacramento, California 95814

From: Kris Reinicke, M.S.
Brian F. Smith and Associates Inc.
14010 Poway Rd. Suite A
Poway, CA 92064

Re: Request for Sacred Lands File and Native American Contact List for the McCarty Estates Project, San Diego, San Diego County, California.

I would like to request a record search of the Sacred Lands File and a list of appropriate Native American contacts for the following project: McCarty Estates (Project No. 17-026). This project is a Phase I archaeological assessment requested by the County of San Diego for the development of two single family residences on a 2.36 acre lot at 3929 Arroyo Sorrento Road, San Diego, CA 92130. The project is located in Township 14 south, Range 03 west, Section 30, in the USGS *Del Mar* Quadrangle. A copy of the project map showing the project area and a 1 mile search radius buffer have been included for the processing of this request.

Sincerely,

Kris Reinicke, M.S.
Archaeologist/GIS Specialist
Billing: 14678 Ibex Court, San Diego, CA 92129
Phone: 858-484-0915
Email: kris@bfsa-ca.com

Attachments:
USGS 7.5 *Del Mar,* California, topographic maps with project area delineated.

Sacred Lands File Request Form

Sacred Lands File & Native American Contacts List Request
NATIVE AMERICAN HERITAGE COMMISSION
*915 Capitol Mall, RM 364 * Sacramento, CA 95814 * (916) 653-4082 *
(916) 657-5390 – Fax * nahc@pacbell.net

Information Below is Required for a Sacred Lands File Search

Project: The McCarty Estates Project

County: San Diego

USGS Quadrangle Name: *Del Mar*

Township: 14S Range: 03W Section: 30

Company/Firm/Agency: Brian F. Smith & Associates Inc.

Contact Person: Kris Reinicke

Street Address: 14010 Poway Road, Suite A

City: Poway Zip: 92064

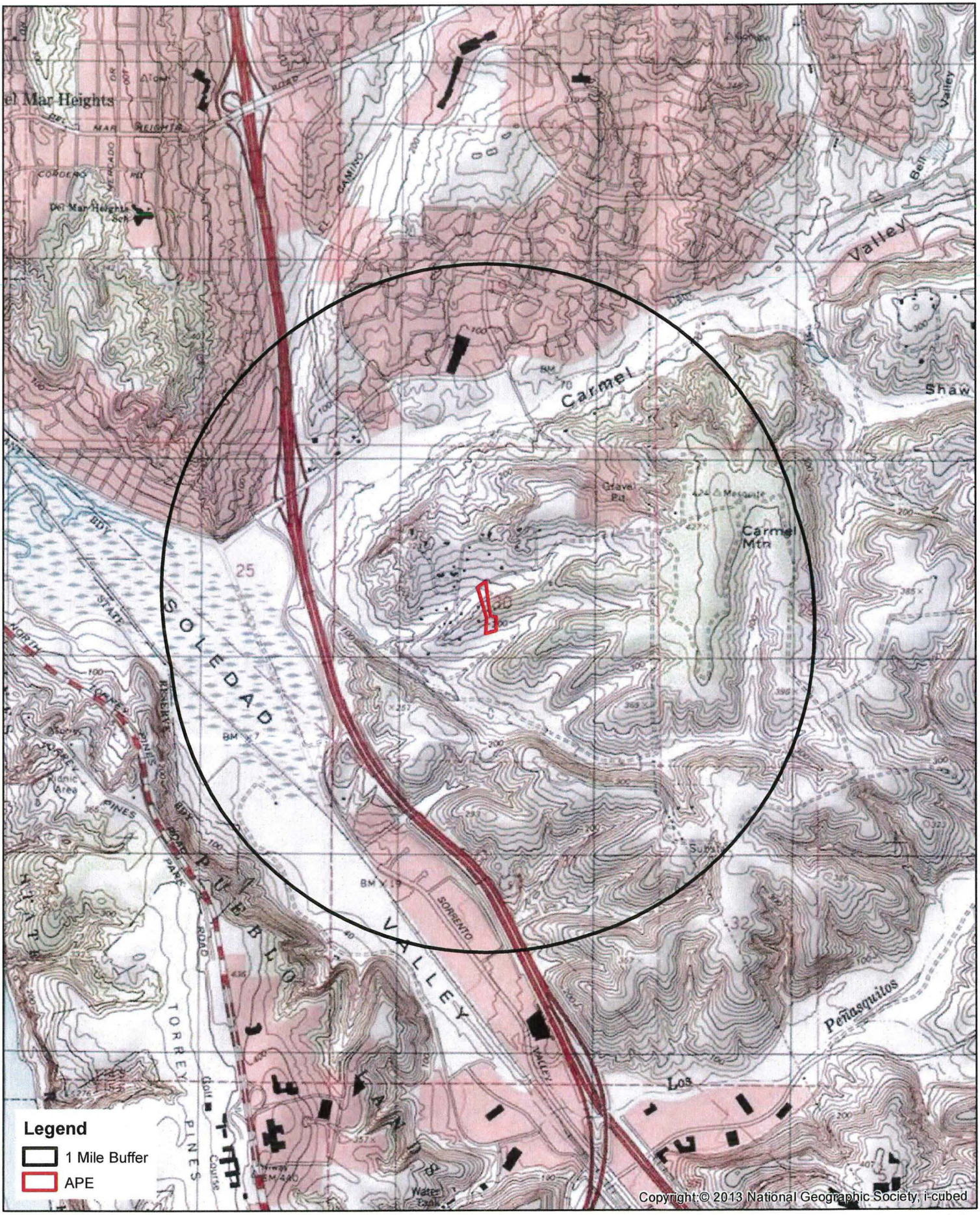
Phone: 858-484-0915

Fax: 858-679-9896

Email: kris@bfsa-ca.com

Project Description:

This records search is for my company's project: McCarty Estates (Project No. 17-026). This project is a Phase I archaeological assessment requested by the County of San Diego for the development of two single family residences on a 2.36 acre lot at 3929 Arroyo Sorrento Road, San Diego, CA 92130. The project is located in Township 14 south, Range 03 west, Section 30, in the USGS *Del Mar* Quadrangle. A copy of the project map showing the project area and a 1 mile search radius buffer have been included for the processing of this request.



0 1,000 2,000 Feet

Record Search Location Map
The McCarty Estates Project
USGS Del Mar Quadrangle (7.5-minute Series)

Kris Reinicke, BFSA 2-14-2017

STATE OF CALIFORNIA Edmund G. Brown, Jr., Governor

NATIVE AMERICAN HERITAGE COMMISSION
1550 Harbor Blvd., Suite 100
West Sacramento, CA 95691
(916) 373-3710
Fax (916) 373-5471

February 17, 2017

Kris Reinicke
Brian F. Smith and Associates

Sent by Email: kris@bfsa-ca.com

RE: Proposed McCarty Estates Project, City of San Diego; San Diego County, California

Dear Ms. Reinicke:

A record search of the Native American Heritage Commission (NAHC) *Sacred Lands File* was completed for the area of potential project effect (APE) referenced above with negative results. Please note that the absence of specific site information in the *Sacred Lands File* does not indicate the absence of Native American cultural resources in any APE.

Attached is a list of tribes culturally affiliated to the project area. I suggest you contact all of the listed Tribes. If they cannot supply information, they might recommend others with specific knowledge. The list should provide a starting place to locate areas of potential adverse impact within the APE. By contacting all those on the list, your organization will be better able to respond to claims of failure to consult. If a response has not been received within two weeks of notification, the NAHC requests that you follow-up with a telephone call to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from any of these individuals or groups, please notify me. With your assistance we are able to assure that our lists contain current information. If you have any questions or need additional information, please contact via email: gayle.totton@nahc.ca.gov.

Sincerely,

for Gayle Totton, M.A., PhD.
Associate Governmental Program Analyst

Native American Heritage Commission
Tribal Contact List
San Diego County
2/17/2017

Barona Group of the Capitan Grande
Clifford LaChappa, Chairperson
1095 Barona Road Kumeyaay
Lakeside, CA, 92040
Phone: (619) 443 - 6612
Fax: (619) 443-0681
cloyd@barona-nsn.gov

Campo Band of Mission Indians
Ralph Goff, Chairperson
36190 Church Road, Suite 1 Kumeyaay
Campo, CA, 91906
Phone: (619)478-9046
Fax: (619)478-5818
rgoff@campo-nsn.gov

Ewiiaapaayp Tribal Office
Michael Garcia, Vice Chairperson
4054 Willows Road Kumeyaay
Alpine, CA, 91901
Phone: (619) 445 - 6315
Fax: (619) 445-9126
michaelg@leaningrock.net

Ewiiaapaayp Tribal Office
Robert Pinto, Chairperson
4054 Willows Road Kumeyaay
Alpine, CA, 91901
Phone: (619)445-6315
Fax: (619)445-9126

Iipay Nation of Santa Ysabel
Clint Linton, Director of Cultural Resources
P.O. Box 507 Kumeyaay
Santa Ysabel, CA, 92070
Phone: (760) 803 - 5694
cjlinton73@aol.com

Iipay Nation of Santa Ysabel
Virgil Perez, Chairperson
P.O. Box 130 Kumeyaay
Santa Ysabel, CA, 92070
Phone: (760)765-0845
Fax: (760)765-0320

Inaja Band of Mission Indians
Rebecca Osuna, Chairperson
2005 S. Escondido Blvd. Kumeyaay
Escondido, CA, 92025
Phone: (760)737-7628
Fax: (760)747-8568

Jamul Indian Village
Erica Pinto, Chairperson
P.O. Box 612 Kumeyaay
Jamul, CA, 91935
Phone: (619)669-4785
Fax: (619)669-4817

Kwaaymii Laguna Band of Mission Indians
Carmen Lucas,
P.O. Box 775 Kumeyaay
Pine Valley, CA, 91962 Kumeyaay
Phone: (619)709-4207

La Posta Band of Mission Indians
Gwendolyn Parada, Chairperson
8 Crestwood Road Kumeyaay
Boulevard, CA, 91905
Phone: (619)478-2113
Fax: (619)478-2125
LP13boots@aol.com

La Posta Band of Mission Indians
Javaughn Miller, Tribal Administrator
8 Crestwood Road Kumeyaay
Boulevard, CA, 91905
Phone: (619) 478 - 2113
Fax: (619) 478-2125
jmiller@LPtribe.net

Manzanita Band of Kumeyaay Nation
Angela Elliott Santos, Chairperson
P.O. Box 1302 Kumeyaay
Boulevard, CA, 91905
Phone: (619) 766 - 4930
Fax: (619) 766-4957

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resource Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed McCarty Estates Project, San Diego County.

Native American Heritage Commission
Tribal Contact List
San Diego County
2/17/2017

Manzanita Band of Kumeyaay Nation
Nick Elliott, Cultural Resources Coordinator
P. O. Box 1302 — Kumeyaay
Boulevard, CA, 91905
Phone: (619) 766 - 4930
Fax: (619) 766-4957
nickmepa@yahoo.com

Mesa Grande Band of Mission Indians
Virgil Oyos, Chairperson
P.O Box 270 — Kumeyaay
Santa Ysabel, CA, 92070
Phone: (760)782-3818
Fax: (760)782-9092
mesagrandeband@msn.com

San Pasqual Band of Mission Indians
John Flores, Environmental Coordinator
P. O. Box 365 — Kumeyaay
Valley Center, CA, 92082
Phone: (760) 749 - 3200
Fax: (760) 749-3876
johnf@sanpasqualtribe.org

San Pasqual Band of Mission Indians
Allen E. Lawson, Chairperson
P.O. Box 365 — Kumeyaay
Valley Center, CA, 92082
Phone: (760)749-3200
Fax: (760)749-3876
allenl@sanpasqualtribe.org

Sycuan Band of the Kumeyaay Nation
Cody J. Martinez, Chairperson
1 Kwaaypaay Court — Kumeyaay
El Cajon, CA, 92019
Phone: (619)445-2613
Fax: (619)445-1927
ssilva@sycuan-nsn.gov

Sycuan Band of the Kumeyaay Nation
Lisa Haws, Cultural Resources Manager
1 Kwaaypaay Court — Kumeyaay
El Cajon, CA, 92019
Phone: (619) 312 - 1935

Viejas Band of Kumeyaay Indians
Robert J. Welch, Chairperson
1 Viejas Grade Road — Kumeyaay
Alpine, CA, 91901
Phone: (619)445-3810
Fax: (619)445-5337
jhagen@viejas-nsn.gov

Viejas Band of Kumeyaay Indians
Julie Hagen,
1 Viejas Grade Road — Kumeyaay
Alpine, CA, 91901
Phone: (619) 445 - 3810
Fax: (619) 445-5337
jhagen@viejas-nsn.gov

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resource Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed McCarty Estates Project, San Diego County.

Pacific Southwest Biological Services, Inc.
P.O. Box 985, National City, California 91951-0985 • (619) 477-5333 • FAX (619) 477-5380

Biological Resources Report
McCarty Estates - Arroyo Sorrento
APN 307-060-60-00
Tentative Parcel Map, Site Development Permit, and
Planned Development Permit
Carmel Valley Community Plan Area (Neighborhood 8b)
Arroyo Sorrento, San Diego, California

Prepared for City of San Diego
PTS No. 515157

Project Proponent:
Kent & Jill McCarty
McCarty Family Trust
3929 Arroyo Sorrento Road, San Diego CA 92130

Project Engineer:
Jorge H. Palacios P.E., JP Engineering, Inc.
4849 Ronson Court, Suite 105, San Diego CA 92111
858 569 7377 voice; 858 569 0830 facsimile

PSBS # W435

Project Biological Consultant:
Pacific Southwest Biological Services, Inc.
Post Office Box 985, National City CA 91951

R. Mitchel Beauchamp, M. Sc., President
24 February 2017

Table of Contents

Biological Resources Report
McCarty Estates -Arroyo Sorrento
PTS No. 515157
Tentative Parcel Map Number 1815504, Site Development Permit, Planned Development Permit and Preliminary Grading Plan
24 February 2017

Management Summary / Abstract
The McCarty Estates site project is a Tentative Parcel Map, Site Development Permit, Planned Development Permit and Preliminary Grading Plan to allow for the future construction of a single-family residence on APN 307-060-60-00, located in the Torrey Hills segment of the Carmel Valley Community Plan Area (Neighborhood 8b) of the City of San Diego with a zoning designation of AR-1-2. Due to the City's overlays on the property for Sensitive Biological Resources, the City requested a Biological Report detailing the resources on the site. This report includes a resource map and an analysis of the potential impacts to sensitive biological resources. A Covenant of Easement is proposed for the Sensitive Biological Resources on the site in the form of two stands of sensitive Southern Maritime Chaparral vegetation.

Introduction
The City of San Diego planning staff has requested an environmental technical document and biological assessment of the proposed project and project site to examine the biological functions of the site and to determine compliance with Environmentally Sensitive Lands regulations. This report follows the City of San Diego format for biological reporting.

Project Description
The proposed project consists of the subdivision of a 2.36 acre site into two lots for the purpose of creation of an additional single-family lot on the subdivision of APN 307-060-60-00 (Figure 1). The site on the south side of the enclave of Arroyo Sorrento on north-facing slopes is largely developed and landscaped at the southeastern corner of the mouth of Carmel Valley, in an area known as Arroyo Sorrento of the Torrey Hills Neighborhood. The site lies among a cluster of private homes.

Methods and Survey Limitations
Pacific Southwest Biological Services Senior Biologist, R. Mitchel Beauchamp, conducted a general biological resources survey of the site. The survey area was covered on foot on 9 February 2017, from approximately 11:45 to 15:45 hours. Vegetation communities were mapped on topographic maps of the site. Wildlife observed directly (utilizing 8.5×42 binoculars) or detected from calls, tracks, scat, nests, or other signs were noted. Plant taxa observed on-site were noted and identified in the field. This later winter survey was inadequate to observe directly spring annuals. Other information sources were utilized to extrapolate their potential to be on-site, including the biologist's 45 years of experience in the field in the Torrey Pines and Del Mar areas.

SURVEY RESULTS
Location and Physical Characteristics
The site lies south along Arroyo Sorrento Road, a paved street east of El Camino Real within the

Torrey Hills neighborhood of the City of San Diego in the southeast quarter of the southwest quarter of Section 30 R3W, T 14S SBBM. Elevation of the development site ranges from 176 feet at the north western corner of the site to 230 feet at the center of the parcel. The UTM coordinates are 3,643,000mN; 478,200E, Zone 11. Latitude and longitude are: 32° 55'40" N; 117° 13' 50" W.

Setting

Geological substrate of the site is mapped as Quaternary Holocene Alluvium at the lower northern portion and middle Eocene Torrey Sandstone formation on the remainder (Kennedy and Peterson 1975). Soils mapped for the site are Loamy alluvial land-Huerhuero complex, 9-50 percent slopes, severely eroded (LvF3) on the central portion of the site and Corralitos loamy sand, 9 to 15 percent slopes (CsD) in the lower portions of the site (Bowman 1973). The site has been disturbed by prior occupancy, as well as agricultural activity.

BOTANICAL RESOURCES

Flora

Appendix 1 lists the flora species detected on the site. The flora is representative of central, coastal San Diego County. The prior, urban use on the site has substantially changed the original native chaparral vegetation and allowed inter-gradation of non-native plants into the otherwise naturally vegetated areas. A total of 70 plant taxa were identified within the project site and immediately adjacent areas. Of this total 25 (36%) are species native to coastal San Diego County and the remaining 45 species (64%) are non-native, many being escapes or persisting from cultivation on the site that was formerly used by the residence for small scale floriculture.

Habitats -Vegetation Communities

The site supports two native plant associations or communities, Southern Maritime Chaparral and Urban, Developed. Southern Maritime Chaparral vegetation is considered to be sensitive due to the limited regional extent (Figure 3).

Southern Maritime Chaparral (Holland Vegetation Classification #37910) (0.28 acre) (Tier I) The principal, functional vegetation on the site is Southern Maritime Chaparral, indicated by Coast White Lilac (*Ceanothus verrucosus*) with Chamise (*Adenostoma fasciculatum*) and Mission Manzanita (*Xylococcus bicolor*). This Tier I habitat occurs at two sites on the parcel, one at the southeastern area of the parcel and the other on a north-facing slope north of the residential area of the site. The southern site is largely a monoculture of Coast White Lilac which continues to the east on the adjacent parcel, while the northern stand is more heterogeneous, and involves invasion by several cultivated plants. The adjacent, off-site slope to the east has been cleared and planted with succulent plants.

The site has Torrey Pines (*Pinus torreyana* ssp. *torreyana*) in two areas of the lot. These were planted and do not represent a native stand. Further, the trees are not within the coverage of the Torrey Pine Trees Protection Ordinance MC 63.07, in that they do not occur within the Torrey Pines Preserve, not in Pueblo lots 1332, 1337 nor 1338, are not on City lands and have not been designated as Heritage Trees.

Urban / Developed (#12000) (2.08 acres)
The single-family dwelling unit and appurtenant structures, horse care facility and landscaping on the site constitute this land cover type.

Table 1. Land Cover Types

Type	Tier	Total Vegetation
Southern Maritime Chaparral	I	0.28 ac
Urban / Developed	IV	2.08 ac
Total		2.36ac

Zoological Resources - Fauna
Fauna observed during the field visit on 9 February 2017, from approximately 11:45 to 15:45 hours. included those species typical of a winter season, shrub/tree system in coastal central San Diego County (Unitt 2004). See Appendix 2 for a complete list of the faunal species detected.

Two reptiles were detected during the field survey, i.e., the Western Fence Lizard (*Sceloperous occidentalis*) and Side-blotched Lizard (*Uta stansburiana*). To be expected on site due to the available habitat is the Gopher Snake (*Pituophis catenifer annectens*).

Birds detected at or adjacent to the project site include the following: Mourning Dove (*Zenaida macroura*), Anna's Hummingbird (*Calypte anna*), Black Phoebe (*Sayornis nigricans*), American Crow (*Corvus brachyrhynchos*), Bushtit (*Psaltriparus minimus*), Wrentit (*Chamaea fasciata*), Northern Mockingbird (*Mimus polyglottos*), California Thrasher (*Toxostoma redivivum*). White-crown Sparrow (*Zonotrichia leucophrys*) and House Finch (*Haemorhous mexicanus).* This list is typical of almost any other tree/chaparral, urban area in coastal San Diego during the late summer months. A search of the canopies of the many Eucalyptus trees on the site and nearby did not disclos any nesting of raptors.

The only native mammal detected during the field visit was burrow activity of Valley Pocket Gopher (*Thomomys bottae*). Other mammals most probably present in this semi-rural setting are Striped Skunk (*Mephitis mephitis*), Raccoon (*Procyon lotor*), Opossum (*Didelphis virginiana*), Coyotes (*Canis latrans*) and Bobcat (*Lynx rufus*).

RARE, THREATENED, ENDANGERED, ENDEMIC and / or SENSITIVE SPECIES or MSCP-COVERED SPECIES
Special Status Species-Plants Associated with the Site or Nearby Area

Torrey Pine (*Pinus torreyana* ssp. *torreyana*)
As noted previously, the Torrey Pines on the site have been planted and are, therefore not part of a natural population. The owner's intent is that the trees be part of the on-site landscaping.

Coast White-Lilac (*Ceanothus verrucosus*)
This shrub is a conspicuous component of the chaparral vegetation. None of the shrubs occur in an area proposed for development of the additional residence or associated site improvements.

Nuttall's Scrub Oak (*Quercus dumosa*)
This shrub is also a notable component of the chaparral vegetation on the site. The occurrence of the Scrub Oak is coincidental with the distribution of the on-site Chaparral and is not plotted individually, due to their abundance. The identification of these plants, on the site and elsewhere in western San Diego County and northwestern Baja California is problematic. A conversation with Fred M. Roberts, a local botanist knowledgeable in the scrub oaks in the region, at a recent California Native Plant Society event, indicated that the scrub oaks of western San Diego County are involved with hybridization and not readily definable to either the Nuttall's Scrub Oak (*Quercus dumosa*) or California Scrub Oak (*Quercus berberidifolia*). The plants on the project site appear to be this hybrid swarm, and not "pure" representatives of the sensitive Nuttall's Scrub Oak. Nonetheless, the Southern Maritime Chaparral is a sensitive vegetation type for other reasons.

None of the City's listed Narrow Endemics*, including Shot-leaved Live-forever, occur on the site, i.e.:
Acanthomintha ilicifolia San Diego Thornmint
Agave shawii Shaw's Agave
Ambrosia pumila San Diego Ambrosia
Aphanisma blitoides Aphanisma
Astragalus tener var. titi Coastal Dunes Milk Vetch
Baccharis vanessae Encinitas Baccharis
Dudleya blochmaniae ssp. brevifolia Short-leaved Live-forever
Dudleya variegata Variegated Dudleya
Eryngium aristulatum ssp *parishii* San Diego Button Celery
Hemizonia (Deinandra) conjugens Otay Tarplant
Navarretia fossalis Prostrate Navarretia
Opuntia parryi (californica) var. serpentina Snake Cholla
Orcuttia californica Orcuttgrass
Pogogyne abramsii San Diego Mesa Mint
Pogogyne nudiuscula Otay Mesa Mint
*None of the above Narrow Endemic Plant Taxa were noted on the lot due to the lack of associated habitats. Appendix 3 further addresses the likelihood of presence / absence on the project site.

Special Status Species-Animals Associated with the Site or Nearby Area
The site and immediate vicinity are not expected to support any sensitive/special status species of wildlife because of the disturbed nature of the site vegetation and absence of habitat (particularly extensive stands of California Sagebrush and Buckwheat) to support species such as the Coastal California Gnatcatcher (*Polioptila californica californica*)

Jurisdictional Wetlands and Waterways
A routine delineation of jurisdictional waters of the U.S. including waters of the State of California and City of San Diego wetlands was conducted during the site survey. The project site has no bed and bank features, lacks any wetland vegetation and has no wetland-associated soils. The site has a subsurface drainage system that takes intercepted flows at the eastern boundary of the eastern, adjacent parcel to the west of the subject lot. There are no jurisdictional wetlands or water in the surveyed area.

Multiple Habitat Planning Area (MHPA)
The project lies outside any MHPA area. The location of the nearest MHPA is to the south of the project. The MHPA is in an area that now contains residential development and contains no features associated with biotic resources which an MHPA designation would involve. There are no issues of land adjacency due to the developed condition there.

Discussion of Site Photographs
Photograph A - B Coast White-Lilac stand at SE corner of Lot 2
Photograph C - H Panorama of S end of Lot 2, from E to W
Photograph I - J Access to lower S side of Lot 2
Photograph K View to W of lower area of Lot 1
Photograph L - O Panorama of S slope of Lot 1, E to W
Photograph P View to N of pad site of Lot 1
Photograph Q View to west boundary of Lot 1
Photograph R View of base of S slope of Lot 1
Photograph S - T Edge of slope on site and adjacent, off-site cleared slope
Photograph U Intercept of flows from E onto Lot 1
Photograph V - X View to N of top of slope of Lot 1, E to W

PROJECT IMPACT ANALYSIS
Significance of Project Impacts and Proposed Mitigation
Environmentally Sensitive Land Regulations
As defined in the City of San Diego's municipal Code (Chapter 14, Division 1), ESLs include (1) sensitive biological resources; (2) steep hillsides; (3) coastal beaches; (4) sensitive coastal bluffs; and (5) 100-year floodplains. The project area qualifies as ESL due to the presence of Tier I Southern Maritime Chaparral.

Wildlife Movement Corridors
Wildlife movement corridors are defined as areas that connect suitable wildlife habitat areas in a region otherwise fragmented by rugged terrain, changes in vegetation, or human disturbance. Natural features, such as canyon drainages, ridgelines, or areas with vegetation cover provide corridors for wildlife travel. Wildlife movement corridors are important because they provide access to mates, food, and water; allow the dispersal of individuals away from high population density areas and facilitate the exchange of genetic traits between populations.

The project area is not part of, nor does it function as part of, a major wildlife corridor. The site is isolated from significant connections to large blocks of habitat by housing on all sides. Wildlife is attracted to the site due to the presence of domestic poultry.

Project Impacts
The proposed TPM and ultimate construction of an additional single-family residence will involve removal of some of the site's Urban / Developed vegetation as quantified in Table 2 and Figure 3. The biological impacts of the project were assessed according to the City of San Diego's Significance Determination Guidelines under CEQA (2011), and the Land Development Code Biology Guidelines (2012). CEQA guidelines were used to assess impacts not covered by the MSCP. Table 2 presents

impacts at Lot 1 and Lot 2.

Table 2. Development Sites and Brush Management Zone Impacts (Biological Resources Map-Figure 2)

Table 2 below indicates the extent of impact from the proposed building pad and associated Brush Management Zone envelopes.

Type↓	Tier	Total acreage	Impacted by Project (ac)	BMZ 1 (ac) Lot 1 / Lot 2	BMZ 2 (ac) Lot 1 / Lot 2
Southern Maritime Chaparral	I	0.28	0	0.0 / 0.0	0.07 / 0
Urban / Disturbed	IV	2.08	0.43	0.10 / 0.08	0.11 / 0.18
Total→		2.36	0.43	0.10 / 0.14	0.18 / 0.18

Vegetation Community Impacts

The proposed project contains a north-facing slope south of the proposed building site. The slope is a rather gently slope and does not involve any sandstone bluff system found elsewhere in the area. The western portion of this slope supports Southern Maritime Chaparral. This north-facing slope is located outside the area proposed for grading and is not proposed for disturbance. Portions of Zone 2 Brush Management that fall within the Sensitive Biological Resources are the minimum required to comply with the City fire codes.

Table 2 above indicates the extent of impact form the proposed building pad and associated Brush Management Zones.

Wildlife Impacts

The proposed project will displace local wildlife by the future grading of the house pad by removal of equestrian and poultry husbandry on the site. This impact is considered as part of the vegetation, especially large tree removal and, therefore, is considered less that significant. Likewise, if the project brushing and grading takes place outside the typical nesting season, no nests of migratory birds protected by the Migratory Bird Treaty Act and associated California regulations would be adversely affected. The project would be in compliance with these state and federal statutes.

Sensitive Biological Resources Impacts

Sensitive Vegetation Community Impacts

Since the Southern Maritime Chaparral vegetation is largely outside the development area, a quantifiably minimal impact to sensitive vegetation will occur. Brush Management Zone 2 impacts total 0.07 acre to this chaparral community. City regulations rate this as an impact neutral effect from the project, not requiring mitigation.

Sensitive Plant Impacts

A local endemic, Coast White Lilac (*Ceanothus verrucosus*), is considered a sensitive plant on the project site. Utilization of a Covenant of Easement for the protection of small patches of the Southern Maritime Chaparral and this species is recommended due to the Sensitive Biological Resources.

Sensitive Wildlife Impacts
Since no sensitive animals were observed on the project site, impacts to these species are not likely to occur during grading. Retention of natural open space will allow the persistence of wildlife habitat.

Multi-Habitat Planning Area Impacts
Because the project area is outside any MHPA, no direct impacts to the resources of a MHPA would be impacted.

Cumulative Impacts
The major development in the region has largely abated and only infill projects, such as this, are occurring.

Mitigation Measures
Mitigation is required for impacts that are considered significant under the City's Biological Review References and the City's CEQA Significance Determination Thresholds. This includes impacts to listed species, sensitive vegetation communities and habitats, and wetlands. Mitigation is intended to reduce significant impacts to a level of less than significant. Mitigation measures typically employed include resource avoidance, on-site habitat replacement, or the off-site acquisition of habitat. The project impacts 0.07 acre of Southern Maritime Chaparral sensitive habitat by Brush Management Zone 2 action. This area of Southern Maritime Chaparral is proposed to be part of the Covenant of Easement for protection of the sensitive vegetation. The involvement of Southern Maritime Chaparral in the Brush Management Zone 2 is considered impact neutral. A second area of Southern Maritime Chaparral occurs at the southeastern area of Lot 2 and is also proposed for placement of a Covenant of Easement for protection of the sensitive vegetation.

Sensitive Wildlife Avoidance
The habitat assessment for Coastal California Gnatcatcher on the site indicated the lack of habitat for the presence of this sensitive bird. No mitigation measure for this animal is required.

Multi-Habitat Planning Area and Environmentally Sensitive Lands Adjacency Issues
The site is not adjacent to any MHPA, therefore no Land Use Adjacency Guidelines need be addressed.

MITIGATION AND MONITORING REQUIREMENTS
Mitigation measures are required to be imposed on the proposed project, in addition to those incorporated into the project design because the project, as designed would otherwise result in significant impacts to biological resources under CEQA.

The project proposes to impact 0.07 acre of Southern Maritime Chaparral in the BMZ 2 envelope on lot 1. The impact to 0.07 acre of Southern Maritime Chaparral in BMZ 2 is impact neutral.

The impact threshold under the City's Biological Review references and the City's CEQA Significance Determination Threshold is > 0.1 acre. This 0.07 acre does not exceed this threshold, therefore no mitigation is required.

Measures incorporated in the project design include the following:

A Covenant of Easement will be applied to the sensitive vegetation on lots 1 and 2 to protect the Southern Maritime Chaparral on the site.

CONCLUSIONS

The proposed project will have no significant, direct impacts to sensitive biological resources, including sensitive vegetation communities and sensitive plant species.

Implementation of the above mitigation measures will reduce the impacts of the project to biological resources to less than significant.

CERTIFICATION

Certification: I hereby certify that the statements furnished above and in the attached exhibits present the data and information required for this biological evaluation, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief.

SIGNED: _____ DATE: 24 February 2017

R. Mitchel Beauchamp-Report Author

Bibliographic References

Bowman, Roy H. 1973. Soil Survey, San Diego Area, California Soil Conservation Service and Forest Service.

CEQA Guidelines. 2011. Significance Determination Thresholds. Guidelines for Implementation of the California Environmental Quality Act. 1994, as amended.

City of San Diego. 1997. Multiple Species Conservation Program Subarea Plan.

City of San Diego. 2012. Land Development Code – Biological Guidelines.

Kennedy, Michael P & Gary L. Peterson. 1975. Geology of the San Diego Metropolitan Area, California, Section B, Eastern San Diego Metropolitan Area. Bulletin 200, California Division of Mines and Geology, Sacramento CA 95814

Unitt, P. 2004. The San Diego County Bird Atlas. San Diego Society of Natural History, Proceedings No. 39. 31 October 2004. 645pp.

Preparer and Persons/Organization Contacted

R. Mitchel Beauchamp field biologist and report preparer

CONSULTANT'S RESUME

RUBLE MITCHEL BEAUCHAMP

Born July 15, 1946, National City, California.
Married 16 November 1968 to Martha M. Gorham, having two daughters; Vanessa Beth (1976), graduated June 1998, University of California, Irvine, Magna Cum Laude, Phi Beta Kappa; EPA - STAR Fellow, Arizona State University, Tempe, PhD, Plant Biology July 2004; Riparian Scientist, U S Geological Survey, Science Center, Fort Collins CO, August 2004, Professor of Biology, Towson University, 2008-present; and Nolina Lynn (1979), graduated June 2003, University of California, Irvine as a Regents' Scholar, BA, Criminology, BA, English, Phi Beta Kappa, English teacher, Buna Park High School, August 2004-present.
Naturalized Mexican citizen 2004 retaining United States of America Citizenship by birth

EDUCATION

1983	Teaching Credential, California Emergency Secondary Credential. 1983-1985
1972-1974	Post-graduate study at City University of New York and New York Botanical Garden, NY.
1972	Lifetime Teaching Credential, California Community Colleges
1972	M.Sc., Biology, California State University, San Diego. Master's Thesis: Floral Diversity of San Diego County, California.
1968	B.Sc., Botany, San Diego State College

MILITARY EXPERIENCE

Enlisted, U.S. Naval Reserve, March to August, 1968, Newport, Rhode Island
Commissioned as an Ensign, U.S. Naval Reserve, 23 August 1968, Inactive reserve status, Lieutenant (junior grade) August 1970 to August 1974. Service aboard USS Henry W. Tucker (DD-875) Western Pacific and Viet Nam Conflict.

EMPLOYMENT HISTORY

San Diego Evening Tribune Delivery Route Carrier, 1958-1963
Southern California Exposition, Del Mar, Flower Show Assistant 1964-67, 1971-3
Pomona Fair, Flower Show Assistant 1974-5
Agricultural Inspector, County of San Diego 1975-6
Pacific Southwest Biological Services, Inc., consultant biologist and owner, 1976-present
Tierra Madre Consultants, Inc., consultant biologist and owner. 1995-present
Sweetwater River Press, author and owner. 1986-present
General Manager, Ferrocarriles Peninsulares del Noroeste, Tijuana & Tecate, Baja California 2004-2007

PROFESSIONAL EXPERIENCE

Certifications

Responsible Corporate Officer – California Landscape Contractor, C-27 License #5431247
Certified Wetlands Delineator # 1697
Previously Certified Arborist
Notary Public 2006-present

Mr. Beauchamp is the senior botanist and senior restoration consultant, as well as owner of Pacific Southwest Biological Services, Inc., Gila Biological Services, Tierra Madre Consultants, Inc. and Sweetwater River Press. He has participated in, or directed, over 2,000 biological

studies for small, medium-sized and major private enterprises, as well as for local, state and federal agencies. Mr. Beauchamp is a recognized expert in the botanical resources of the southwestern United States, and in 1986 authored *A Flora of San Diego County, California*, the leading authoritative text used throughout that county.

He is the Principal of the revegetation and restoration branch of Pacific Southwest Biological Services, Inc., and is responsible for the design, planning and implementation of upland and wetland habitat restoration projects and rare plant transplantation in Southern California and Arizona. He has a long history of involvement with and is a life member of both the International Bulb Society, and the California Native Plant Society, and a regular member of other organizations involving botanical and environmental issues.

Mr. Beauchamp from 2003-2004, was general manger, Ferrocarriles Peninsulares del Noroeste. He is the principal owner of Tren Turístico del Noroeste, s. a de c.v., and Tierra Madre Railway. He is bilingual in Spanish and English, with some fluency in German and French.

REPORTS AND PUBLICATIONS

Book

A Flora of San Diego County, California. Sweetwater River Press. 1986. 254 pp.

In-house Reports

Pacific Southwest Biological Services in-house biological impact assessment reports. Prepared or supervised production of survey reports for over 2500 private and public development projects in Southern California.

Periodical Articles

California's Wild Garden-A Living Legacy, California Department of Fish and Game & California Native Plant Society, Phyllis M. Faber, ed. 1997. Chapters on Torrey Pine Forest and Otay Mountain Metavolcanic Peaks by RMB.
Aliso 14(3):197-203. 1996. *Baccharis malibuensis* (Asteraceae): A New Species From The Santa Monica Mountains, California.
Environmental Monitor, Spring 1994. Fire: The Recycler... The Reviver.
San Diego Home/Garden 9(11): 65-127, July 1988. Special Report: Return to the Native.
San Clemente Island: Remodeling the Museum, pp. 575-8 in Conservation and Management of Rare and Endangered Plants, Proceedings for a Conference of the California Native Plant Society, Thomas S. Elias, ed. 1987. CNPS, Sacramento. 1987.
Phytologia 46(4):216-222, July 1980. "*Baccharis vanessae*, a new species from San Diego County, California."
Espinas y Flores, San Diego Cactus and Succulent Society - miscellaneous short articles. 1979
Cactus and Succulent Journal 47(1):18-19, January-February 1975. "The Northern Limit of *Bergerocactus emoryi*."
Brittonia 26(2):106-108, April-June 1974. "A new *Senecio* (Compositae) from California."
Fremontia 1(1):14-18, 1973. "California's Channel Islands."
Madroño 21(6): 404, May 1972. "New Locality for *Lavatera venosa*."
California Garden - contributing editor. 1965-1967.

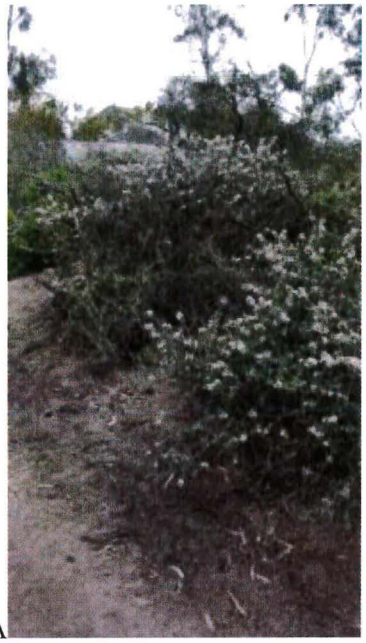
COMMUNITY PARTICIPATION

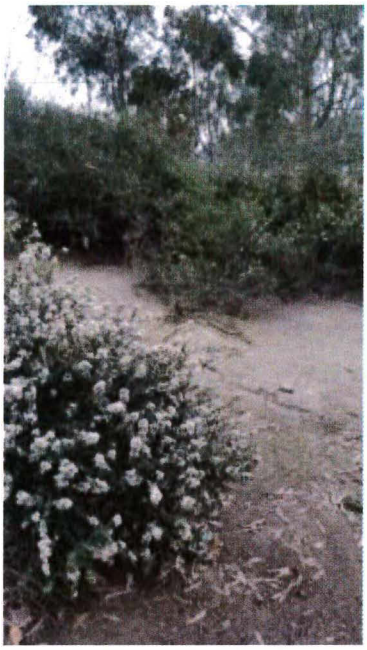
Treasurer, City of National City 2008-2012
Director, San Diego Electric Railway Association, National City CA 2006-present
Member, Technical Advisory Committee, Office of Spill Prevention and Response, Department

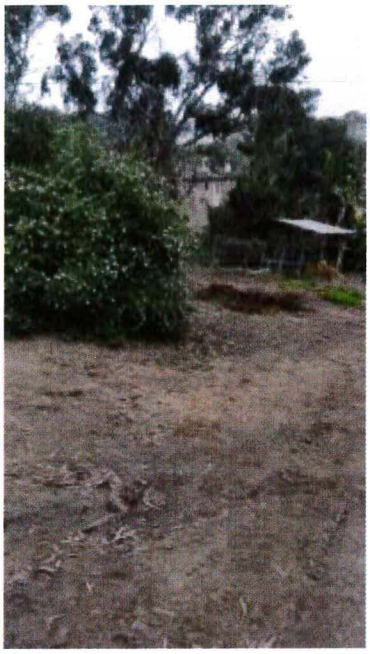
of Fish and Game, appointed by the Speaker of the Assembly. 2002-present
Honorary Board Member, Women's Transportation Seminar, San Diego Chapter. 1998-present
Director, Sweetwater Authority, appointed representative of the City of National City. 2002-2009
Councilman, City of National City, California. 1994-2002
Member, Joint Committee on Regional Transit. 1998-2002
Chairman, Member, MTDB/S D Unified Port District Metropolitan Freight Rail Committee. 1998-2002
Director, Metropolitan Transit Development Board, San Diego, California. 1995-2002
Member, Finance Committee, San Diego Trolley. 1999-2001
Sponsor, National City Girl's Amateur Softball Association Team. 1998-2002
Chairman, San Diego and Arizona Eastern Railway-MTDB Ad Hoc Committee. 1998-2000
Director, San Diego Trolley. June1998-June 2001
Rey Mago - San Diego Railroad Museum, Reyes Magos Event, Tecate, B. Cfa., Mexico. 1998-2004
Vice-Mayor, City of National City, California. 1997, 2001
Board Member, National City Community Food Bank Board of Directors. 1996-2003
Director, Futures Foundation, appointed by Supervisor Cox. 2000-2003
Member, Otay River Valley Regional Park Citizens' Adv. Comm., appointed by Supervisor Cox. 2001-2004
Chairman, Board of Trustees, First Baptist Church of National City, California. 1995-1998, 2000
Board Member, National City Living History Preserve (Stein Farm) Board of Directors. 1993-present.
Organist, First Baptist Church of N C California 1989-present and First Congregational Church, National City, 1996-present
Chairman, Planning Commission, National City, California. 1985-1988
Member, California Native Plant Advisory Committee, Department of Fish and Game. 1977-1986.
Member, Local Board, Selective Service System, South Bay, San Diego. 1977-present

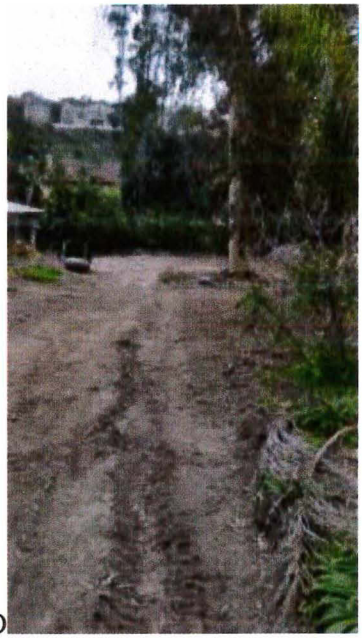
RELATED ACTIVITIES
Consulting Arborist, National Christmas Tree - Calculation of Weight of Engelmann Spruce for PCL for delivery to the White House, Christmas, 1996.
Director, Southwest Wetlands Interpretive Association. 1981-1982.
Chairman, Public Information Committee, California Native Plant Society. 1980-1982.
Editor, Association of Western Native Plant Societies Bulletin, *Hesperian*. 1979-1981.
Editor for the American Plant Life Society journal, *Herbertia*, an international botanical journal of petaloid monocots. 1977- 1989.
Editor, *Bulletin* of the California Native Plant Society. 1977-1980.
Member, San Diego County Parks Advisory Committee, 1975-1980.
Member, San Diego County Off-Road Advisory Committee, 1975-1980.
Co-founder, San Diego Chapter of the California Native Plant Society, September 1970

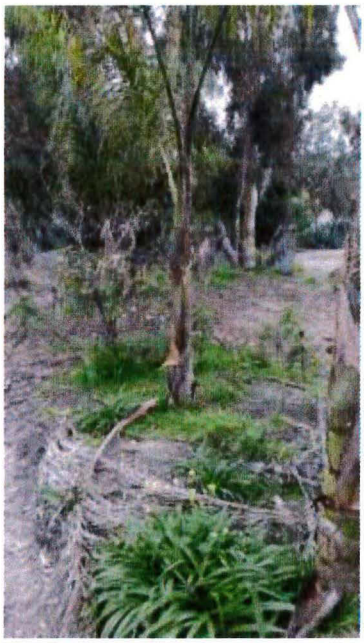
Site Photographs

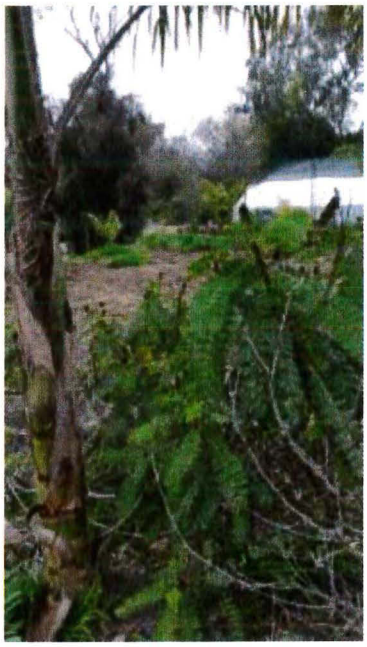
A 

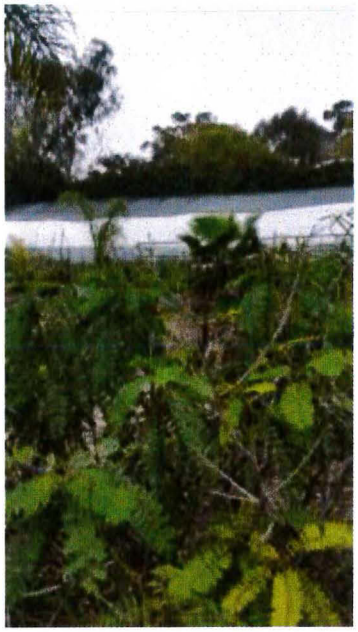
B 

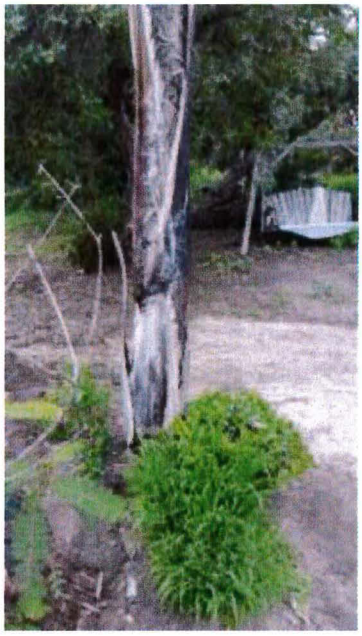
C 

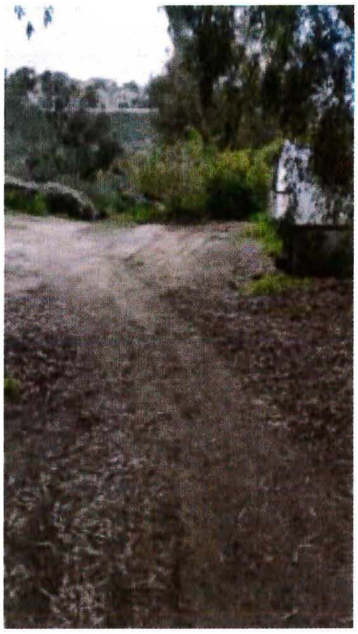
D 

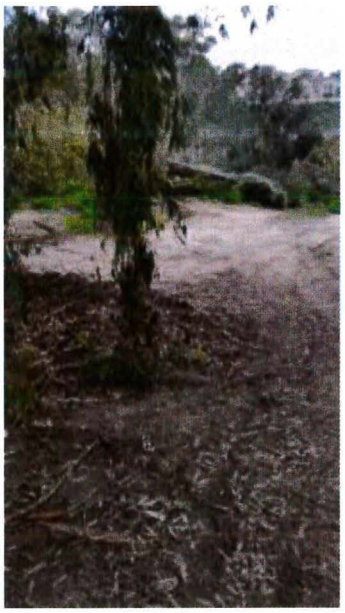
E 

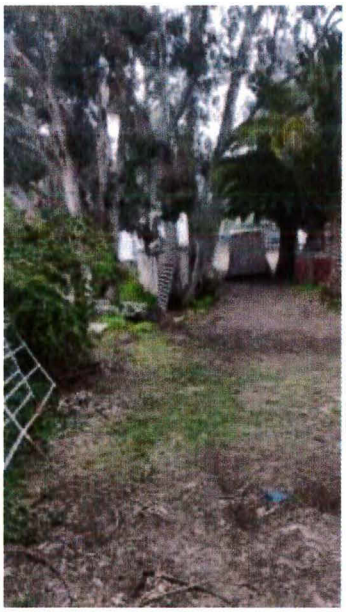
F 

G 

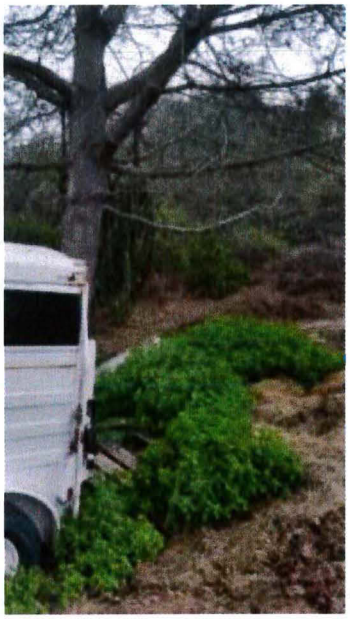
H 

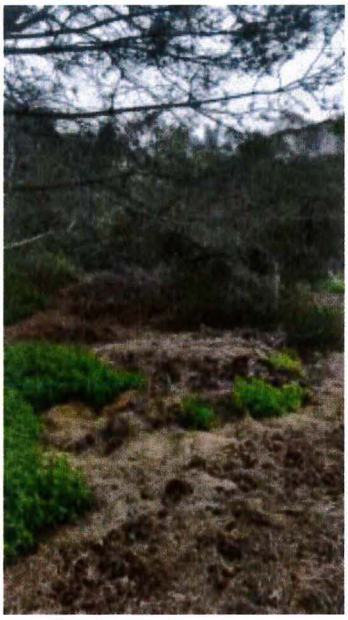
I 

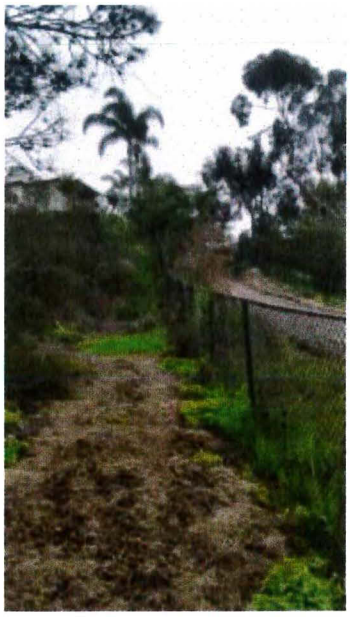
J 

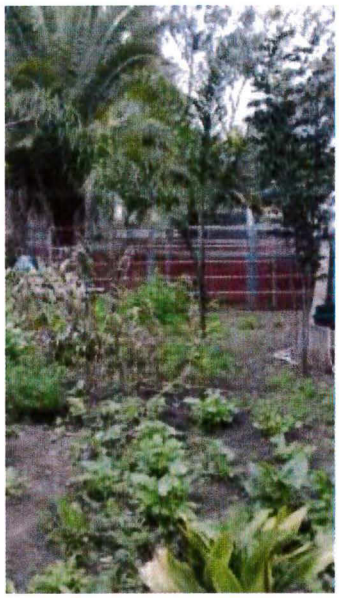
K 

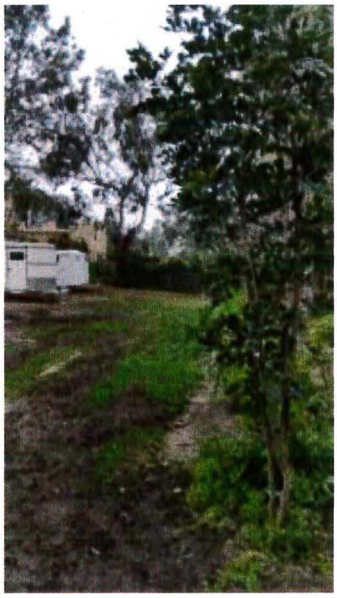
L 

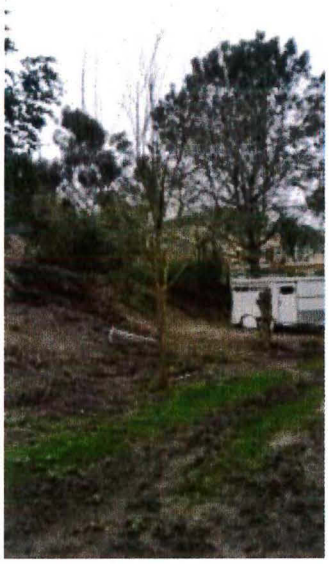
M 

N 

O 

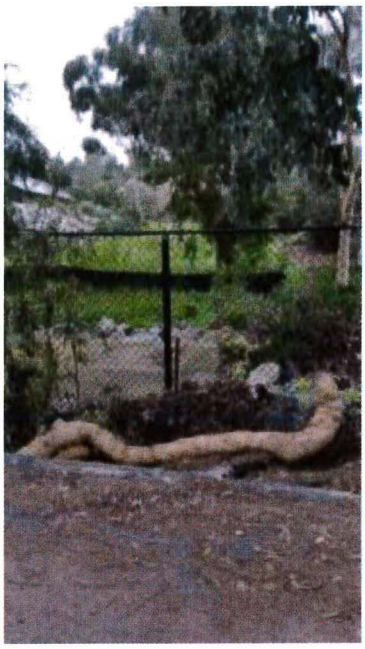
P 

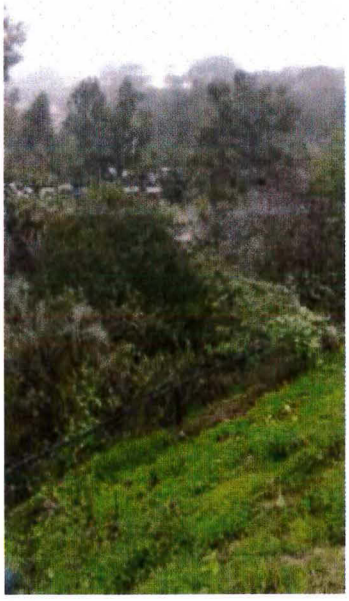
Q 

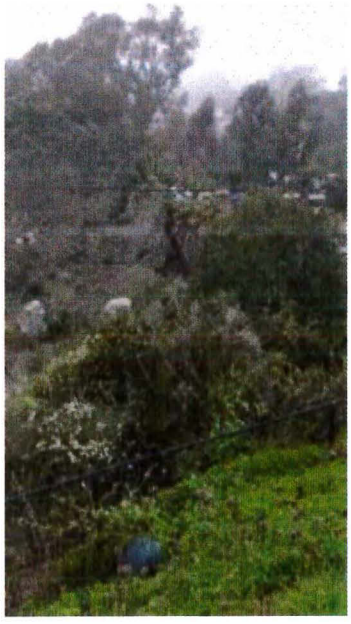
R 

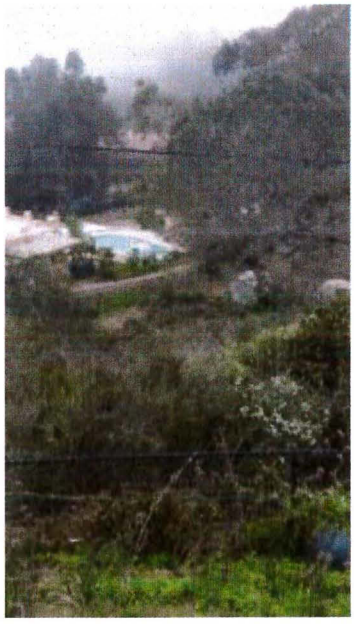
S 

T 

U 

V 

W 

X 

Appendix 1. Floral Checklist of Species Observed At Arroyo Sorrento
Habitats: C-Chaparral, U-Urban/Developed

CRYPTOGAMS
Ferns
Polypodiaceae - Polypody Family
Dryopteris arguta (Kaulf.)Watt. Coastal Woodfern C

GYMNOSPERMS
Pinaceae - Pine Family
**Pinus torreyana* Carr. ssp. *torreyana* Torrey Pine U

DICOTYLEDONS
Adoxaceae-Adoxus Family
Sambucus mexicana Presl ex DC. Elderberry C

Aizoaceae - Carpet-weed Family
**Aptenia cordifolia* (L.f.) Schwant. Red Apple Ice Plant U
**Carpobrotus edulis* (Molina) N.E. Brit. Hottentot-fig C,U

Anacardiaceae - Sumac Family
Malosma laurina (Torr. & Gray) Abrams Laurel-leaf Sumac C
Rhus integrifolia (Nutt.) Benth. & Hook. Lemonadeberry C

Asteraceae - Sunflower Family
Ambrosia psilostachya DC. Western Ragweed U
Artemisia californica Less. California Sagebrush C
Baccharis pilularis DC. Coyote Brush C
**Centaurea melitensis* L. Tocalote U
**Conyz canadensis* L. Fleabane U
**Cotula australis* (Seiber ex Spreng.) Hook. U
Eriophyllum confertiflorum (DC.) Gray var. *confertiflorum* Golden-yarrow C
**Glebionis cononarium* (L.) Cassini ex Spach Garland Chrysanthemum U
**Sonchus asper* L. Sow-thistle U
Stephanomeria diegensis Gottlieb San Diego Wreath-plant C

Bignoniaceae - Bignonioa Family
**Jacaranda acutifolia* Humb. & Bonpland U
**Tecomaria capensis* Thunb. Cape Honeysuckle U

Cactaceae-Cactus Family
**Opuntia ficus-indica* L. Indian Fig U
**Trichocereus pachanoi* Britt & Rose San Pedro Cactus U

Appendix 1. Floral Checklist of Species Observed At Arroyo Sorrento (continued)
Caprifoliaceae- Honeysuckle Family
**Lonicera subspicata* H. & A. Honeysuckle C

Chenopodiaceae - Goosefoot Family
**Atriplex semibaccata* R. Br. Australian Saltbush U

Crassulaceae - Stonecrop Family
**Crassula argentea* Thunb. Jade Plant U

Cucurbitaceae - Gourd Family
Marah macrocarpus (Greene) Greene var. *macrocarpus* Cucamonga Man-root, Wild-cucumber C, U

Ericaceae - Heath Family
Xylococcus bicolor Nutt. Mission Manzanita C

Euphorbiaceae-Spurge Family
**Euphorbia pepulus* L. U

Fabaceae - Legume Family
**Acacia latifolia* Benth. Golden Wattle U
Acmispon glabra (Vogel) Broulette Coastal Deerweed C
**Albezia lebbeck* (L.) Benth. Lekkeck Tree U
**Cassia bicapsularis* L. U

Fagaceae - Oak Family
Quercus berberidifolia Liebm. California Scrub Oak C

Lamiaceae - Mint Family
**Leonotis leonurus* (L.) R. Br. Lion's-ear U
Salvia mellifera Greene Black Sage C

Malvaceae - Mallow Family
**Malva parviflora* L. Cheeseweed, Little Mallow U

Moraceae-Fig Family
**Ficus benjamina* L. U

Myoporaceae- Myoporum Family
**Myoporum laetum* G. Forst. U

Myrtaceae - Myrtle Family
**Eucalyptus camaldulensis* Dehnhardt Murray Red Gum U
**Psidium guajava* L. Common Guava U
**Psidium littorale* L. Strawberry Guava U

Appendix 1. Floral Checklist of Species Observed At Arroyo Sorrento (continued)
Oxalidaceae - Oxalis Family
**Oxalis pes-caprae* L. Bermuda Butter-cup U

Phyrmaceae
Mimulus aurantiacus Curtis forma "*puniceus*" San Diego Red Monkeyflower C

Polygonaceae - Buckwheat Family
**Rumex crispus* L. U

Rhamnaceae - Buckthorn Family
Ceanothus verrucosus Torr. & Gray Wart-stemmed Ceanothus, Coast White Lilac C

Rosaceae - Rose Family
Adenostoma fasciculatum Hook & Arn. Chamise C
**Eriobotrya japonica* Thunb. Loquat U
Heteromeles arbutifolia (Ait.) M. Roem. Toyon C

Rubiaceae - Madder Family
Galium angustifolium Nutt. ex Torr. & Gray ssp. *angustifolium* Narrow-leaf Bedstraw C

Rutaceae - Rue Family
**Citrus sinensis* L. Blood Orange U
Cneoridium dumosum (Nutt.) Hook. F. Bushrue C

Sapindaceae - Sapindus Family
**Cupaniopsis anacardioides* (A. Rich.)Radlk Carrotwood Tree U
**Koelruteria paniculata* Laxm. Golden Rain Tree U

Scrophulariaceae - Figwort Family
Scrophularia californica Cham. & Schldl.ssp.*floribunda*(Greene)Shaw. California Figwort, Bee Plant C

Solanaceae - Nightshade Family
**Nicotiana glauca* Grah. Tree Tobacco U
Solanum parishii Heller Parish's Nightshade C

Urticaceae - Nettle Family
**Urtica urens* L. Stinging Nettle U

Verbenaceae- Verbena Family
**Duranta repens* L. Skyflower U
**Lantana camara* L. Lantana U

Appendix 1. Floral Checklist of Species Observed At Arroyo Sorrento (continued)
MONOCOTYLEDONS
Agavaceae- Agave Family
**Agave attenuata* Salm-Dyck U

Amaryllidaceae-Amaryllis Family
**Amaryllis belladonna* L. Naked Lady U

Aracaceae-Palm Family
**Arecastrum romanzoffianum* (Cham.) Becc. U
**Phoenix canariensis* Chaub. Canary Island Date Palm U
**Washingtonia robusta* H. Wendel. Mexican Fan Pam U

Liliaceae - Lily Family
Yucca schidigera Ortgies Mojave Yucca C

Musaceae
**Strelitzia nicolai* Regel & Körn. Giant Bird of Paradise U

Poaceae - Grass Family
**Agrostis capilaris* L. Colonial Bent
**Avena barbata* Link Slender Wild Oat U
**Bromus diandrus* Roth Ripgut Grass U
**Bromus madritensis* L. ssp. *rubens* (L.) Husnot Red Brome U
Lymus condensatus (C. Presl) A. Löve Giant Rye C
**Vulpia myuros* (L.) Gmelin var. *hirsuta* (Hacketl) Asch & Graetoner Foxtail Fescue U

* - Denotes non-native plant taxa

Appendix 2. Observed or detected Species List – Fauna

REPTILES

Western Fence Lizard	*Sceloperous occidentalis*
Gopher Snake	*Pituophis catenifer annectens*

BIRDS

Mourning Dove	*Zenaida macroura*
Anna's Hummingbird	*Calypte anna*
Black Phoebe	*Sayornis nigricans*
Western Scrub-Jay	*Aphelocoma californica*
American Crow	*Corvus brachyrhynchos*
Bewick's Wren	*Thryomanes bewickii*
Northern Mockingbird	*Mimus polyglottos*
California Thrasher	*Toxostoma redivivum*
Wrentit	*Chamaea fasciata*
California Towhee	*Pipilo crissalis*
House Finch	*Haemorhous mexicanus*

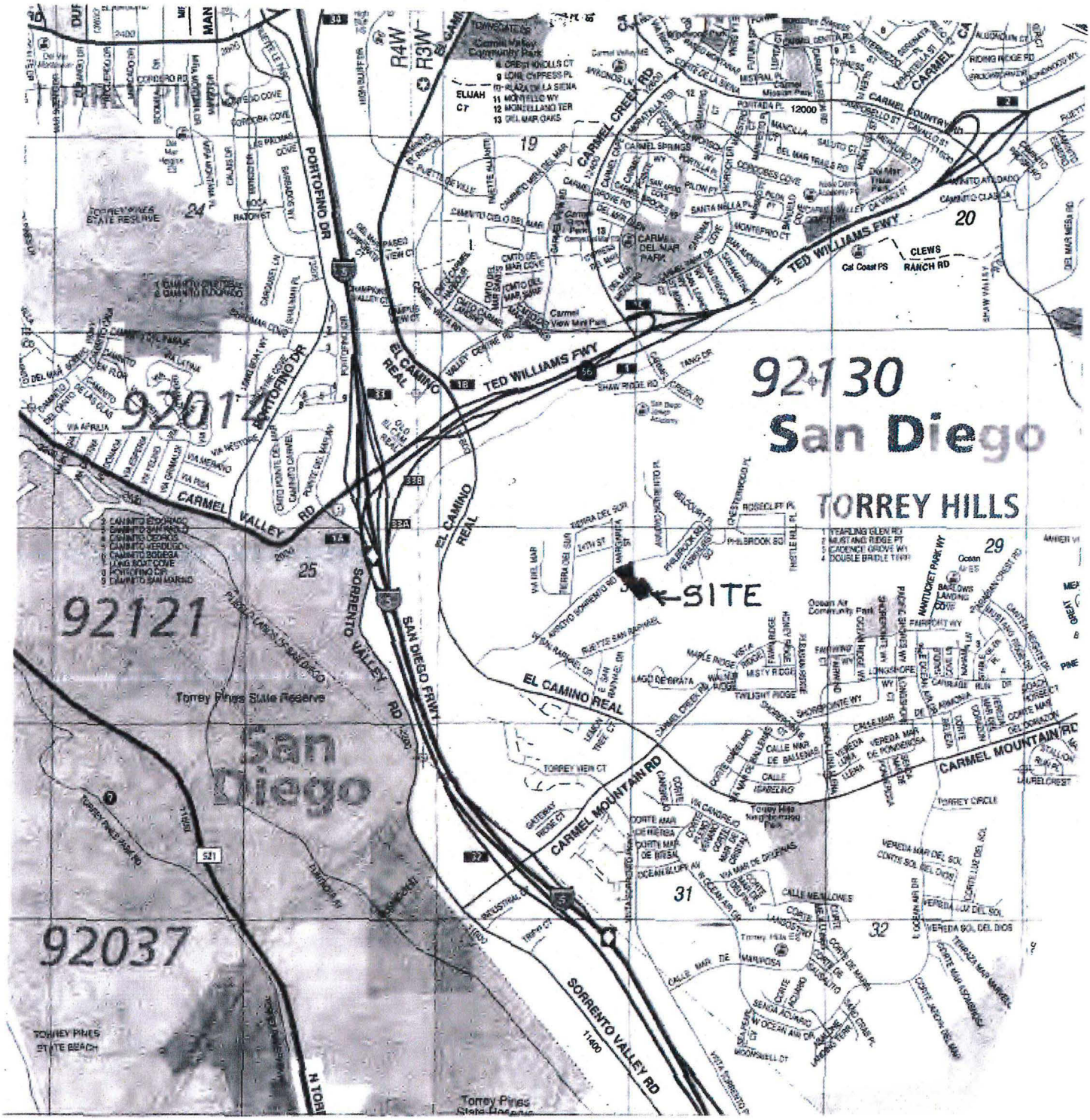
MAMMALS

California Mouse	*Peromyscus californicus*
House Mouse	*Mus musculus*
Valley Pocket Gopher	*Thomomys bottae*
Opossum	*Didelphis virginiana*
Striped Skunk	*Mephitis mephitis*
Raccoon	*Procyon lotor*
Bobcat	*Lynx rufus*
Coyote	*Canis latrans*

Appendix 3. Sensitive Flora and Fauna -as Separate Excel files

Figure 1. Regional Location

Figure 2. Vicinity Site Map



VEGETATION TYPE	TIER	TOTAL VEGETATION (ACRES)
		A
SOUTHERN MARITIME CHAPARRAL (SMC)	I	0.28
URBAN / DEVELOPED (U/D)	IV	2.08
TOTAL		0.28

FIGURE 3

EXISTING BIOLOGICAL RESOURCES AND LIMITS OF DEVELOPMENT

U/D

SMC (4258 SQ. FT.)

SMC (7951 SQ. FT.)

65' BMZ 2

35' BMZ 1

EXISTING 1500 GAL. SEPTIC TANK

1.360 AC.

1.000 AC.

PROPOSED 4" SEWER LATERAL FOR PARCEL 1

PROPOSED 16' DRIVEWAY

PROPOSED CONCRETE DITCH

LIMITS OF DEVELOPMENT

MHPA BOUNDARY

PROPOSED COVENANT OF EASEMENT FOR PROTECTION OF SENSITIVE BIOLOGICAL RESOURCES

PROPOSED COVENANT OF EASEMENT OF PROTECTION OF SENSITIVE BIOLOGICAL RESOURCES

EXISTING PRIVATE EASEMENT FOR ROADWAY PURPOSES TO PARCEL 2-PARCEL B

EXISTING AC DRIVEWAY FOR PARCEL 2

EXISTING BOWER POLE

PARCEL 2 P.M. 12014

LOT 16 LOMA SORRENTO MAP NO. 13876

SORRENTO ESTATES MAP 8735

LEGEND

- SMC — SOUTHERN MARITIME CHAPARRAL
- U/D — URBAN /DEVELOPED
- LIMITS OF DEVELOPMENT IMPACTS (INCLUDES BMZ 1)
- LIMITS OF BMZ 2
- PROPOSED COVENANT OF EASEMENT FOR PROTECTION OF SENSITIVE BIOLOGICAL RESOURCES
- MHPA BOUNDARY
- PROPERTY LINE

0 15 30 60 120

SCALE: 1"=60'

MHPA NOTE:

THE PROJECT IS OUTSIDE THE MHPA AREA. THE LOCATION OF THE MHPA ADJACENCY, IN THE SOUTH PORTION OF THE PROJECT SITE, IS IN AN AREA THAT CONTAINS EXISTING CONDITIONS AND NOT AN AREA FOR PROPOSED DEVELOPMENT.

FIGURE 3

PROJECT EXISTING BIOLOGICAL RESOURCES AND LIMITS OF DEVELOPMENT

Mapping prepared by Pacific Southwest Biological Services, Inc. & Exhibit by JP Engineering, Inc., FEBRUARY 24, 2017

PACIFIC SOUTHWEST
BIOLOGICAL SERVICES, INC.
P.O. BOX 985
NATIONAL CITY, CA 91951

Appendix 3. Potential Sensitive Species Table-Flora

Scientific and Common Name	Sensitivity Code & Status (Federal, State, Local, other)	Habitat Preferences/ Requirements	Verified On Site Yes/No (Direct/ Indirect Evidence)	Probability of Occurence (L-M-H)	Factual Basis for Determination of Occurrence Potential
Acanthomintha ilicifolia San Diego Thorn-mint	FT/SE/1B (2-3-2)	Chaparral, coastal scrub, valley & foothill grassland, vernal pools, endemic to active vertisol clay soils of mesas & valleys, usu on clay lenses within grassland or chaparral communities, 10-935 m.	No	No	Site lacks clayey soil that this species requires.
Adolphia californica California Adolphia	None/None/2 (1-3-1)	Chaparral, coastal sage scrub, valley & foothill grassland, from sandy/gravelly to clay soils within grassland, coastal sage scrub, or chaparral; various exposures, 15-300 m.	No	No	Site lacks clay soils
Agave shawii Shaw's Agave	None/None/2 (3-3-1)	Coastal bluff scrub, coastal scrub; elevation 10-75 m.	No	No	Site too far from north of known range. Planted at Torrey Pines State Reserve.
Ambrosia chenopodifolia San Diego Bur-sage	None/None/2 (3-3-1)	Coastal scrub; elevation 55-155 m.	No	No	Site too far from north of known range.
Ambrosia (Hymenoclea) monogyra Singlewhorl Burrobush	None/None/2.2	Coastal ephemeral drainages to 400m	No	No	Site lacks drainages that would support this shrub.
Ambrosia pumila San Diego Ambrosia	FENone/1B (3-3-2)	Coastal sage scrub & upper riverine benches of grassland, near the immediate coast, SD and Riverside Cos.	No	No	Site lacks detailed habitat requirements this species depends upon.
Aphanisma blitoides Aphanisma	None/None/1B (2-2-2)	Coastal bluff scrub, coastal dunes, coastal shrub/ sandy, 1-305m	No	No	Site lacks detailed habitat requirements this species depends upon.
Arctostaphylos glandulosa ssp. *crassifolia* Del Mar Manzanita	FE / (3-3-2)	Sandy coastal bluffs	No	High	Site lacks on sandstone bluff formation
Artemisia palmeri San Diego Sagewort	None/None/2 (2-2-1)	Chaparral, coastal sage scrub, riparian scrub & woodland/sandy, mesic, 15-915 m.	No	No	Site lacks drainages that would support this shrub.
Astragalus tener var. *titi* Titus Locoweed	None/None/1B(3-3-3)	Coastal sand dunes	No	No	Site lacks dune habitat.

Note: Species limited to immediate coast excluded

Appendix 3. Potential Sensitive Species Table-Flora

Scientific and Common Name	Sensitivity Code & Status (Federal, State, Local, other)	Habitat Preferences/ Requirements	Verified On Site Yes/No (Direct/ Indirect Evidence)	Probability of Occurence (L-M-H)	Factual Basis for Determination of Occurrence Potential
Atriplex coulteri Coulter's Saltbush	None/None/1B(2-2-2)	Coastal bluff scrub, coastal dunes, coastal scrub, valley & foothill grassland, esp. on ocean bluffs, ridge tops, alkaline low places, 10-440 m.	No	No	Site lacks alkaline soils that supports this species.
Atriplex pacifica Smooth Coast Saltscale	FSC/None/1B (3-2-2)	Coastal scrub, coastal bluff scrub, playas, chenopod scrub, esp. in alkali soils, 1-500 m.	No	No	Site lacks alkaline soils that supports this species.
Baccharis vanessae Encinitas Baccharis	FE/SE/ 1B(2-3-3)	Chaparral on sandstone and steelp, open rocky areas 60-720m	No	Low	Searched for but not found in site chaparral habitat where this species is typically found.
Bergerocactus emoryi Golden-spined Cereus	None/None/2 (2-2-1)	Coastal sage scrub & grassland, near the immediate coast, s SD Co.	No	No	Searched for but not found. Planted at Torrey Pines State Reserve.
Brodiaea orcuttii Orcutt's Brodiaea	FSC/None/1B (1-3-2)	Vernal pools, valley & foothill grassland, closed-cone conif forest, cismontane woodland, chaparral, meadows, esp mesic, clay habitats, occ serpentine, in vernal pools & small drainages, 30-1615 m.	No	No	Site lacks clayey soil that this species requires.
California macrophylla *Round-leaved filaree*	None/None/1B.1	Open bare soil	No	No	Site lacks calcareous soils that would support this annual.
Calochortus dunnii Dunn's Mariposa Lily	None/Rare/1B (2-2-2)	Closed-cone conif forest, chaparral, esp. on gabbro or metavolcanic soils; also known from sandstone, oft assoc w/chaparral, 375-1830 m.	No	No	Site lacks gabbro or metavolcanic soils that typically supports this species.
Ceanothus cyaneus Lakeside Ceanothus	FSC/None/1B (3-2-2)	Closed-cone conif forest, chaparral. In CA, known only fr RIV & SD Cos., 100-1515 m.	No	No	Site lacks specific acid-igneous soils that typically supports this species.
Ceanothus verrucosus Coast White Lilac	FSC/None/2 (2-2-1)	Chaparral. In CA, known only fr SD Co., 1-380 m.	Present	High	Occurs as a major component of site chaparral.
Chaenactis glabriuscula var. *orcuttiana* Orcutt's Pincushion	None/None/1B (2-3-2)	Coastal bluff scrub, coastal dunes, sandy sites, 3-100 m.	No	No	Searched for but not found in sandy soils on site that typically support this species.

Note: Species limited to immediate coast excluded

Appendix 3. Potential Sensitive Species Table-Flora

Scientific and Common Name	Sensitivity Code & Status (Federal, State, Local, other)	Habitat Preferences/ Requirements	Verified On Site Yes/No (Direct/ Indirect Evidence)	Probability of Occurence (L-M-H)	Factual Basis for Determination of Occurrence Potential
Comarostaphylos diversifolia ssp. *diversifolia* Summer-Holly	FSC/None/1B (2-2-2)	Chaparral, oft in mixed chaparral in CA, sometimes post-burn, 30-550 m.	No	Low	Searched for but not found in chaparral.
Cordylanthus orcuttianus Orcutt's Bird's-beak	None/None/2 (3-3-1)	Coastal scrub. In CA, known only fr SD Co.; also in Baja. Found in coastal scrub assoc on slopes, also reported fr intermittent moist swales, & in washes, 100-200 m.	No	No	Site lacks calcareous soils that would support this annual.
Coreopsis maritima Sea Dahlia	None/None/2 (2-2-1)	Coastal scrub, coastal bluff scrub, occurs on variety of soil types, incl sandstone, 5-150 m.	No	Low	Searched for but not found. Occurs at base of sandstone buffs 1 mile northwest of site
Corethrogyne filaginifolia var. *incana* San Diego Sand Aster	None/None/1B (3-3-2)	Coastal scrub, coastal bluff scrub, chaparral. In CA, known only fr/SD Co.; also in Baja. Most sites dist.; poss. in dist. sites & ecotones, 3-115 m.	No	No	Site is north of known range.
Corethrogyne filaginifolia var. linifolia Del Mar Mesa Sand Aster	None/None/1B (3-3-3)	Coastal scrub, coastal bluff scrub, chaparral. Endemic to Del Mar-Carmel Mountain region, 3-115 m.	No	High	Site distrubance to extensive in sandy areas
Cupressus (Hesperocyparis) forbesii Tecate Cypress	FSC/None/1B (3-3-2)	Closed-cone conif forest, chaparral, esp. on north-facing slopes, groves oft assoc w/chaparral, 250-1500 m.	No	No	Site lacks coniferous forest habitats and chaparral community that typically supports this species.
Deinandra [Hemizonia] conjugens Otay Tarplant	FT/SE/1B (3-3-2)	Coastal scrub, valley & foothill grassland. In CA, known only fr SD Co. Coastal plains, mesas, river bottoms, oft in open dist	No	No	Site lacks clayey soil that this species requires.
Dudleya attenuata ssp. *orcutti* Orcutt's Dudleya	None/None/1B (3-3-1)	Coastal scrub, coastal bluff scrub, chaparral. Known only fr SD Co. & adj Baja. Rocky mesas, cyns, & ridges, 3-50 m.	No	No	North of known range of species. Not recognized by CNPS

Note: Species limited to immediate coast excluded

Appendix 3. Potential Sensitive Species Table-Flora

Scientific and Common Name	Sensitivity Code & Status (Federal, State, Local, other)	Habitat Preferences/ Requirements	Verified On Site Yes/No (Direct/ Indirect Evidence)	Probability of Occurence (L-M-H)	Factual Basis for Determination of Occurrence Potential
Dudleya blochmaniae ssp. *blochmaniae* Blochman's Dudleya	FSC?orNone/None/1B(2-3-2)	Coastal scrub, coastal bluff scrub, valley & foothill grassland. Open, rocky slopes; often in shallow clays over serpentine or in rocky areas w/little soil, 5-450 m.	No	No	Site lacks clayey, serpentine or rocky soils that typically support this species.
Dudleya blochmaniae ssp. *brevifolia* Short-leaf Hasseanthus	FSC/ None/ None/ /1B (2-3-2)	Coastal scrub, coastal bluff scrub, valley and foothill grassland.	No	Low	Searched for but not found on sandstone formation of site.
Dudleya variegata Variegated Dudleya	FT/SE/1B(3-3-2)	Chaparral, coastal scrub, cismontane woodland, valley & foothill grassland, vernal pools. In CA, known only fr SD Co. Rocky or clay soils, vernal pool margins, 3-550 m.	No	No	Site lacks clayey or rocky soils that typically support this species.
Ericameria palmeri ssp. *palmeri* Palmer's Goldenbush	None/None/1B (3-2-1)	Coastal scrub, chaparral, granitic soils, steep hillsides, mesic areas; 100-600 m.	No	No	Site lacks granitic soils that typically supports this species.
Eryngium aristulatum var. *parishii* San Diego Button-celery	FE/SE/1B (2-3-2)	Vernal pools, coastal scrub, valley & foothill grassland, esp in SD mesa hardpan & claypan vernal pools & southern interior basalt flow vernal pools; usu surr by scrub, 15-620 m	No	No	Site lacks clayey soil that this species requires.
Euphorbia misera Cliff Spurge	None/None/2 (2-2-1)	Coastal bluff scrub, coastal scrub. In so CA, Baja, Guadalupe I. Rocky sites, 10-500 m.	No	No	Searched for but not found.
Ferocactus viridescens San Diego Barrel Cactus	FSC/None/2 (1-3-1)	Chaparral, Diegan coastal scrub, valley & foothill grassland, oft on exposed, level or s-facing sloping areas; oft in coastal scrub near crest of slopes, 3-485 m.	No	No	Searched for but not encountered.
Frankenia palmeri Palmer's Frankenia	None/None/2 (3-3-1)	Coastal dunes, marshes, swamps (coastal salt), playas, 0-10 m.	No	No	Site lacks saline habitats that typically support this species.

Note: Species limited to immediate coast excluded

Appendix 3. Potential Sensitive Species Table-Flora

Scientific and Common Name	Sensitivity Code & Status (Federal, State, Local, other)	Habitat Preferences/ Requirements	Verified On Site Yes/No (Direct/ Indirect Evidence)	Probability of Occurence (L-M-H)	Factual Basis for Determination of Occurrence Potential
Fremontodendron mexicanum Mexican Flannelbush	FE/Rare/1B (3-3-2)	Closed-cone conif forest, chaparral, cismontane woodland. Usu scattered along borders of creeks or in dry cyns; sometimes on gabbro soils, 10-490 m.	No	No	Site is north of known range.
Harpagonella palmeri Palmer's Grapplinghook	None/None/4 (1-2-1)	Chaparral, coastal scrub, valley & foothill grassland, esp clay soils, open grassy areas, 15-830 m.	No	No	Site lacks clayey soil that this species requires.
Iva hayesiana San Diego Marsh-elder	FSC/None/2 (2-2-1)	Marshes & swamps, playas, esp in riverwashes, 10-500 m.	No	No	Site lacks riverine soils that typically support this species.
Lasthenia glabrata ssp. *coulteri* Coulter's Goldfields	FSC/None/1B (2-3-2)	Coastal salt marshes, playas, valley & foothill grassland, vernal pools, usu in alkaline soils in playas, sinks, grassland, 1-1400 m.	No	No	Site lacks alkaline soils that typically support this species. Ccur in Peñasquitos Marsh to the west.
Lepechinia ganderi Gander's Pitcher Sage	None/None/1B (3-1-2)	Closed-cone conif forest, chaparral, coastal scrub, valley & foothill grassland/gabbroic or metavolcanic. SD Co., Baja. Known in CA fr fewer than 10 occurs, 305-1005 m.	No	No	Site lacks metavolcanic-derived soils that typically support this species.
Lepidium virginicum var. *robinsonii* Robinson's Pepper-grass	None/None/1B (3-2-2)	Alkaline sites on the coastal sides of the main mountain ranges, below 800 m..	No	No	Site lacks alkaline soils that typically support this species
Lotus nuttallianus Nuttall's Lotus	FSC/None/1B (3-3-2)	Coastal dunes, coastal scrub, only from SD Co. & Baja; on sand dunes, 0-10 m.	No	No	Site lacks sandy soils that typically support this species
Monardella stoneana Jennifer's Monardella	None/None/1B.2	Coastal sage scrub and chaparral of rocky metavolcanic or volcanic soils	No	No	Site lacks metavolcanic-derived soils that typically support this species
Muilla clevelandii San Diego Goldenstar	FSC/None/1B (2-2-2)	Chaparral, coastal scrub, valley & foothill grassland, vernal pools, esp. mesa grasslands, scrub edges; under 50 m.	No	No	Site lacks clayey soils that typically support this species.

Note: Species limited to immediate coast excluded

Appendix 3. Potential Sensitive Species Table-Flora

Scientific and Common Name	Sensitivity Code & Status (Federal, State, Local, other)	Habitat Preferences/ Requirements	Verified On Site Yes/No (Direct/ Indirect Evidence)	Probability of Occurence (L-M-H)	Factual Basis for Determination of Occurrence Potential
Myosurus minimus ssp. *apus* Little Mousetail	FSC/None/3 (2-3-2)	Vernal pools. This ssp. has taxonomic probs. Distinguishing betw this and *M. sessilis* is difficult. Hybrid? Alkaline soils, 20-640 m.	No	No	Site lacks clayey soils that typically support this species.
Navarretia fossalis Spreading Navarretia	FT/None/1B (2-3-2)	Vernal pools, chenopod scrub, marshes & swamps, playas, esp in SD hardpan & SD claypan vernal pools, in swales & vernal pools, often surr . by other habitat types, 30-1300 m.	No	No	Site lacks clayey soils that typically support this species.
Nemacaulis denudata var. *denudata* Coast Woolly-heads	None/None/1B (2-2-2)	Coastal dunes, 0-100 m.	No	No	Site lacks coastal dunes that typically support this species.
Nemacaulis denudata var. *gracilis* Slender Woolly-heads	None/None/2 (2-2-1)	Coastal dunes, desert dunes, Sonoran desert scrub, 50-400 m.	No	No	Site lacks sandy soils that typically support this species.
Opuntia california var *california* Snake Cholla	None/None/1B (3-3-2)	Chaparral, coastal scrub, 30-150 m.	No	No	Site is north of known range of this species.
Orcuttia californica California Orcutt Grass	FE/SE/1B (3-3-2)	Vernal pools, 15-660 m.	No	No	Site lacks clayey soils that typically support this species.
Orobanche parishii ssp. *brachyloba* Short-lobed Broom-rape	FSC/None/1B (2-2-2)	Coastal bluff scrub, coastal dunes, coastal scrub/sandy, parasitic on shrubs such as *Isocoma*	No	No	Site lacks sandy soils that typically support this species.
Phacelia stellaris Brand's Phacelia	None/None/1B (3-3-2)	Coastal dunes, coastal scrub, 5-400 m. Known fr/fewer than 5 occurs.	No	No	Site lacks sandy soils that typically support this species.
Pogogyne abramsii San Diego Mesa Mint	FE/SE/1B (2-3-3)	Vernal pools, 90-200m, north of Otay Mesa	No	No	No vernal pools are found on the site that this species requires.
Quercus dumosa Nuttall's Scrub Oak	FSC/None/1B (2-3-2)	Closed-cone conif. forest, chaparral, coastal scrub, gen. On sandy soils near coast, occ. on clay loam, 15-400 m.	No	No	Scrub oaks on site are hybrids, lacking diagnostic ventral leaf pubesence of typical species.

Note: Species limited to immediate coast excluded

Appendix 3. Potential Sensitive Species Table-Flora

Scientific and Common Name	Sensitivity Code & Status (Federal, State, Local, other)	Habitat Preferences/ Requirements	Verified On Site Yes/No (Direct/ Indirect Evidence)	Probability of Occurence (L-M-H)	Factual Basis for Determination of Occurrence Potential
Ribes viburnifolium Santa Catalina Island Currant	None/None/1B (0.2	Coastal canyons	No	No	Site is north of known range. Planted in San Clemente Canyon to the south.
Senecio aphanactis Rayless Ragwort	None/None/2 (3-2-1)	Chaparral, cismontane woodland, coastal scrub/alkaline, 15-800 m. Rare in LA, OR, & RIV Cos.	No	No	Site lacks alkaline soils that typically support this species.
Stemodia durantifolia Purple Stemodia	None/None/2 (3-3-1)	Sonoran desert scrub (often mesic, sandy), 180-300 m.	No	No	Site lacks riverine soils that typically support this species.
Tetracoccus dioicus Parry's Tetracoccus	FSC/None/1B (3-2-2)	Chaparral, coastal scrub, esp stony fine sandy decomposed gabbro soil, 165-1000 m.	No	No	Site lacks gabbro or metavolcanic soils that typically supports this species.

Note: Species limited to immediate coast excluded

Appendix 4. Potential Sensitive Species Table-Fauna

Common and Scientific Name	Sensitivity Code & Status (Federal, State, Local, other)	Habitat Preferences/ Requirements	Verified On Site Yes/No (Direct/ Indirect Evidence)	Potential to Occur On Site	Factual Basis for Determination of Occurrence Potential
Riverside Fairy Shrimp *Streptocephalus woottoni*	FE/None/SSC	Endemic to western RIV and SD Cos, in area of tectonic swales, earth slump basins, in grassland & coastal sage scrub; esp. in habitats seasonally astatic pools, filled by winter/spring rains; hatch in warm water later in the season.	No	No	Site lacks vernal pools that support this species
San Diego Fairy Shrimp *Branchinecta sandiegonensis*	FE/None/None	Vernal pools	No	No	Site lacks vernal pools that support this species
Quino Checkerspot Butterfly *Euphydryas editha quino*	FE/None/None	Sunny openings in chaparral & coastal sage shrublands in parts of RIV & SD Cos; esp on hills & mesas near coast, w/high densities of host plants *Plantago erecta, P. insularis, Orthocarpus purpurescens.*	No	No	Site lacks sufficient density of larval host plants this species requires
Thorne's Hairstreak Butterfly *Mitoura thornei*	FSC/None/None	Endemic to San Diego County, where host plant, Tecate Cypress occurs, including Otay Mountain (Little Cedar Canyon)	No	No	Site lacks larval host plants this species requires
Western Spadefoot *Spea hammondii*	FSC/None/SSC	Grassland habitats, valley & foothill woodlands, requires vernal pools for breeding	No	No	Site lacks vernal pools that support this species
San Diego Horned Lizard *Phrynosoma coronatum blainvillii*	FSC/None/SSC	Coastal sage scrub, chaparral in arid and semi-arid climate, esp. friable, rocky, or shallow sandy soils	No	No	Site lacks adequeate density of ant prey base that this species requires.
Coronado Skink *Eumeces skiltonianus interparietalis*	FSC/None/SSC/None	Grassland, chaparral, piñon-juniper sage woodland, pine-oak & pine forests in coastal ranges in so. CA, esp prefers early successional stages or open areas, found in rocky areas close to streams & on dry hillsides	No	No	Site lacks good quality sage scrub or chaparral with sandy or rocky soils that this species requires
Belding's Orange-throated Whiptail *Aspidoscelis [Cnemidophorus] hyperythrus beldingi*	FSC/None/SSC	Coastal scrub (low elev.), chaparral, valley & foothill hardwood, esp washes & sandy areas w/patches of brush & rocks	No	No	Searched for but not found.

Note: Species limited to immediate coast excluded

Appendix 4. Potential Sensitive Species Table-Fauna

Common and Scientific Name	Sensitivity Code & Status (Federal, State, Local, other)	Habitat Preferences/ Requirements	Verified On Site Yes/No (Direct/ Indirect Evidence)	Potential to Occur On Site	Factual Basis for Determination of Occurrence Potential
Coastal Whiptail *Aspidoscelis [Cnemidophorus] tigris stejnegeri*	FSC/None/None	Deserts & semiarid areas w. sparse vegetation & open areas, also in woodland & riparian areas, esp. where ground may be firm soil, sandy, or rocky	No	No	Searched for but not found.
Silvery Legless Lizard *Anniella pulchra pulchra*	FSC/None/SSC	Sparse vegetation of chaparral and riparian, loose soil for burrowing.	No	No	Searched for but not found.
Coastal Rosy Boa *Charina trivirgata*	FSC/None/Protected	Desert & chaparral from coast to Mojave & Colorado Deserts, esp in moderate to dense vegetation & rocky cover; habitats w/mix of brushy cover & rocky soil like coastal canyons & hillsides, desert canyons, washes & mountains	No	No	Site lacks rocky outcrops and dense brush cover that supports this species
Coast Patch-nosed Snake *Salvadora hexalepis virgultea*	FSC/None/SSC	Brushy or shrubby vegetation in coastal so. CA, esp. uses small mammal burrows for refuge	No	No	Site lacks intact shrub habitat this species requires
Two-striped Gartersnake *Thamnophis hammondii*	FSC/None/SSC	Coastal CA., fr/ Salinas to NW Baja, fr/sea level to approx. 7000 ft ; esp. highly aquatic, found in or near permanent fresh water, often along streams w/rocky beds & riparian growths	No	No	Site lacks riparian habitat that typically support this species
Northern Red Diamond Rattlesnake *Crotalus [exsul] ruber ruber*	FSC/None/SSC	Chaparral, woodland, grassland & desert areas, esp in rocky areas & dense vegetation	No	No	Site lacks adequate cover.
Northern Harrier *Circus cyaneus* (nesting)	None/None/SSC	Coastal salt marsh & fresh-water marsh, nest and forage in grasslands and farmlands	No	No	Site lacks open grassland or marshlands that typically support this species
Cooper's Hawk *Accipiter cooperi*	None/None/SSC	Woodland, usu. open, interrupted or marginal type, nests mainly in riparian areas	No	Low	This species could utilize site for foraging and roosting
Burrowing Owl *Athene [Speotyto] cunicularia* (burrow sites)	FSC/None/SSC	Open dry annual or perennial grasslands, desert & scrublands w/low growing vegetation, uses ground squirrel burrows for nesting	No	No	Site lacks open grassland or marshlands that typically support this species

Note: Species limited to immediate coast excluded

Appendix 4. Potential Sensitive Species Table-Fauna

Common and Scientific Name	Sensitivity Code & Status (Federal, State, Local, other)	Habitat Preferences/ Requirements	Verified On Site Yes/No (Direct/ Indirect Evidence)	Potential to Occur On Site	Factual Basis for Determination of Occurrence Potential
Least Bell's Vireo *Vireo bellii pusillus*	FE/SE/None	Summer resident in So. Cal., inhabits low riparian growth in vic. of water or in dry river bottoms, below 2000 ft, usu. willow, baccharis, mesquite	No	No	Site lacks riparian habitat that typically support this species
California Horned Lark *Eremophila alpestris actia*	None/None/SSC	Barren ground with short grass or scattered bushes.	No	No	Site lacks open grassland or marshlands that typically support this species
Coastal Cactus Wren *Campylorhynchus brunneicapillus couesi*	None/None/SSC	So. Cal. coastal sage scrub, esp w/tall *Opuntia* cactus for nesting	No	No	Site lacks extensive cactus stands that this species requires
Coastal California Gnatcatcher *Polioptila californica californica*	FT/None/SSC	Coastal sage scrub, below 2,500 ft in So. Cal., esp low coastal scrub in arid washes, mesas & slopes	No	No	Searched for but not found. Site appears to lack intact, dense shrub habitat this species requires
Yellow-breasted Chat *Icteria virens*	None/None/SSC	Summer resident in riparian thickets of willow & other brushy tangles near watercourses, nests in low, dense riparian habitat.	No	No	Site lacks riparian habitat that typically support this species
Southern California Rufous-crowned Sparrow *Aimophila ruficeps canescens*	FSC/None/SSC	Coastal sage scrub, sparse chaparral, esp rel. steep, often rocky hillsides w/grass & forb patches	No	No	Site lacks intact shrub habitat this species requires
Mexican Long-tongued Bat *Choeronycteris mexicana*	None/None/None	Occasionally found in SD Co., which is on periphery of range. Feeds on nectar & pollen of night-blooming succulents. Roosts in relatively well-lit caves, & in & around bldgs.	No	Low	Site lacks appropriate foraging or roosting habitats for this species
Yuma Myotis *Myotis yumanensis*	FSC/None/SSC	Open forest & woodlands. Closely tied to bodies of water.	No	Low	Site lacks appropriate foraging or roosting habitats for this species
Small-footed Myotis *Myotis ciliolabrum*	FSC/None/SSC	Cliffs, rock crevices, possibly in caves & mines. Variety of habitats from sea level to 8900 ft	No	Low	Site lacks appropriate foraging or roosting habitats for this species
Western Red Bat *Lasiurus blossevillii*	None/None/None	Trees along or near waterways with open foraging areas. Feeds over grasslands, shrublands, woodlands & forests.	No	Low	Site lacks appropriate foraging or roosting habitats for this species

Note: Species limited to immediate coast excluded

DEFINITIONS OF SENSITIVITY RATINGS

California Native Plant Society (CNPS)

List Status

List 1A	Plants presumed extinct in California. CEQA consideration mandatory
List 1B	Plants rare, threatened, or endangered in California and elsewhere. CEQA consideration mandatory
List 2	Plants rare, threatened, or endangered in California, but more common elsewhere. CEQA consideration mandatory
List 3	Plants about which we need more information - a review list. CEQA consideration strongly recommended
List 4	Plants of limited distribution - a watch list. CEQA consideration strongly recommended

CNPS Threat Code Extensions & Meanings

.1	Seriously endangered in California
.2	Fairly endangered in California
.3	Not very endangered in California

State-Listed/Designated Plants and Animals

SE	State-listed, endangered
ST	State-listed, threatened
SR	State-listed, rare
SCE	Candidate for State listing
SSC	California Special Concern Species (Department of Fish and Game)
SFP	California Fully Protected

Federally-Listed/Designated Plants and Animals

FE	Federally-listed, endangered
FT	Federally-listed, threatened
PE	Federally-proposed, endangered
PT	Federally-proposed, threatened
FC	Candidate for Federal listing
FSC	Federal Special Concern Species
C2*	Threat and/or distribution data are insufficient to support federal listing, but the plant is presumed extinct
C3c	Too widespread and/or not threatened
USFWS 2002 List	U. S. Fish & Wildlife Service Birds of Conservation Concern 2002 List within jurisdiction of Carlsbad FWO "...to identify species, subspecies, and populations of migratory and non-migratory birds in need of additional conservation actions."

National Audubon Society Watch List

Red List	Identified by BirdLife International as Threatened or Near-threatened at the global level and by Partners in Flight as Extremely High Priority at the national level
Yellow List	Identified by Partners in Flight at the national level as of Moderately High Priority or Moderate Priority

CLIMATE ACTION PLAN CONSISTENCY CHECKLIST INTRODUCTION

In December 2015, the City adopted a Climate Action Plan (CAP) that outlines the actions that City will undertake to achieve its proportional share of State greenhouse gas (GHG) emission reductions. The purpose of the Climate Action Plan Consistency Checklist (Checklist) is to, in conjunction with the CAP, provide a streamlined review process for proposed new development projects that are subject to discretionary review and trigger environmental review pursuant to the California Environmental Quality Act (CEQA).[1]

Analysis of GHG emissions and potential climate change impacts from new development is required under CEQA. The CAP is a plan for the reduction of GHG emissions in accordance with CEQA Guidelines Section 15183.5. Pursuant to CEQA Guidelines Sections 15064(h)(3), 15130(d), and 15183(b), a project's incremental contribution to a cumulative GHG emissions effect may be determined not to be cumulatively considerable if it complies with the requirements of the CAP.

This Checklist is part of the CAP and contains measures that are required to be implemented on a project-by-project basis to ensure that the specified emissions targets identified in the CAP are achieved. Implementation of these measures would ensure that new development is consistent with the CAP's assumptions for relevant CAP strategies toward achieving the identified GHG reduction targets. Projects that are consistent with the CAP as determined through the use of this Checklist may rely on the CAP for the cumulative impacts analysis of GHG emissions. Projects that are not consistent with the CAP must prepare a comprehensive project-specific analysis of GHG emissions, including quantification of existing and projected GHG emissions and incorporation of the measures in this Checklist to the extent feasible. Cumulative GHG impacts would be significant for any project that is not consistent with the CAP.

The Checklist may be updated to incorporate new GHG reduction techniques or to comply with later amendments to the CAP or local, State, or federal law.

[1] Certain projects seeking ministerial approval may be required to complete the Checklist. For example, projects in a Community Plan Implementation Overlay Zone may be required to use the Checklist to qualify for ministerial level review. See Supplemental Development Regulations in the project's community plan to determine applicability.

This page intentionally left blank

CAP CONSISTENCY CHECKLIST SUBMITTAL APPLICATION

- The Checklist is required only for projects subject to CEQA review.[2]
- If required, the Checklist must be included in the project submittal package. Application submittal procedures can be found in Chapter 11: Land Development Procedures of the City's Municipal Code.
- The requirements in the Checklist will be included in the project's conditions of approval.
- The applicant must provide an explanation of how the proposed project will implement the requirements described herein to the satisfaction of the Planning Department.

Application Information

Contact Information

Project No./Name: McCarty Estates, PTS No. 515157

Property Address: 3929 Arroyo Sorrento Road, San Diego, CA 92130

Applicant Name/Co.: Kent McCarty

Contact Phone: (858) 967-1249 Contact Email: kent@1fpi.com

Was a consultant retained to complete this checklist? ■ Yes ☐ No If Yes, complete the following

Consultant Name: Jorge H. Palacios Contact Phone: (858) 569-7377

Company Name: JP Engineering, Inc. Contact Email: jp@jpeng.com

Project Information

1. What is the size of the project (acres)? 2.36 Acres
2. Identify all applicable proposed land uses:
   - ■ Residential (indicate # of single-family units): 2
   - ☐ Residential (indicate # of multi-family units):
   - ☐ Commercial (total square footage):
   - ☐ Industrial (total square footage):
   - ☐ Other (describe):
3. Is the project or a portion of the project located in a Transit Priority Area? ☐ Yes ■ No
4. Provide a brief description of the project proposed:

Approval of a Tentative Parcel Map, Planned Development Permit, Site Development Permit and Preliminary Grading Plan for the construction of an additional single family home.

[2] Certain projects seeking ministerial approval may be required to complete the Checklist. For example, projects in a Community Plan Implementation Overlay Zone may be required to use the Checklist to qualify for ministerial level review. See Supplemental Development Regulations in the project's community plan to determine applicability.

CAP CONSISTENCY CHECKLIST QUESTIONS

Step 1: Land Use Consistency

The first step in determining CAP consistency for discretionary development projects is to assess the project's consistency with the growth projections used in the development of the CAP. This section allows the City to determine a project's consistency with the land use assumptions used in the CAP.

Step 1: Land Use Consistency		
Checklist Item (Check the appropriate box and provide explanation and supporting documentation for your answer)	Yes	No
A. Is the proposed project consistent with the existing General Plan and Community Plan land use and zoning designations?;[3] OR,		
B. If the proposed project is not consistent with the existing land use plan and zoning designations, and includes a land use plan and/or zoning designation amendment, would the proposed amendment result in an increased density within a Transit Priority Area (TPA)[4] and implement CAP Strategy 3 actions, as determined in Step 3 to the satisfaction of the Development Services Department?; OR,	☑	☐
C. If the proposed project is not consistent with the existing land use plan and zoning designations, does the project include a land use plan and/or zoning designation amendment that would result in an equivalent or less GHG-intensive project when compared to the existing designations?		

If "***Yes***," proceed to Step 2 of the Checklist. For question B above, complete Step 3. For question C above, provide estimated project emissions under both existing and proposed designation(s) for comparison. Compare the maximum buildout of the existing designation and the maximum buildout of the proposed designation.

If "***No***," in accordance with the City's Significance Determination Thresholds, the project's GHG impact is significant. The project must nonetheless incorporate each of the measures identified in Step 2 to mitigate cumulative GHG emissions impacts unless the decision maker finds that a measure is infeasible in accordance with CEQA Guidelines Section 15091. Proceed and complete Step 2 of the Checklist.

The project is consistent with the City's General Land Use Designation (Rural Residential);

The Carmel Valley Community Plan Neighborhood 8b designates this site for rural residential with a maximum density of 1 DU/ACRE. The project proposes two residential units, one of the units having already been built and which will remain, for a density of 1 DU/ACRE and therefore conforms to the prescribed land use and density. The AR-1-2 Zone implements the land use designation and the project is consistent with zoning designation.

[3] This question may also be answered in the affirmative if the project is consistent with SANDAG Series 12 growth projections, which were used to determine the CAP projections, as determined by the Planning Department.

[4] This category applies to all projects that answered in the affirmative to question 3 on the previous page: Is the project or a portion of the project located in a transit priority area.

Step 2: CAP Strategies Consistency

The second step of the CAP consistency review is to review and evaluate a project's consistency with the applicable strategies and actions of the CAP. Step 2 only applies to development projects that involve permits that would require a certificate of occupancy from the Building Official or projects comprised of one and two family dwellings or townhouses as defined in the California Residential Code and their accessory structures.[5] All other development projects that would not require a certificate of occupancy from the Building Official shall implement Best Management Practices for construction activities as set forth in the Greenbook (for public projects).

Step 2: CAP Strategies Consistency			
Checklist Item (Check the appropriate box and provide explanation for your answer)	Yes	No	N/A
Strategy 1: Energy & Water Efficient Buildings			
1. *Cool/Green Roofs.* • Would the project include roofing materials with a minimum 3-year aged solar reflection and thermal emittance or solar reflection index equal to or greater than the values specified in the voluntary measures under California Green Building Standards Code (Attachment A)?; OR • Would the project roof construction have a thermal mass over the roof membrane, including areas of vegetated (green) roofs, weighing at least 25 pounds per square foot as specified in the voluntary measures under California Green Building Standards Code?; OR • Would the project include a combination of the above two options? Check "N/A" only if the project does not include a roof component. Strategy 1: Energy & Water Efficient Buildings This project will include roofing materials with a minimum 3-year age solar reflection and thermal emittance or solar reflection index equal or greater than the values specified in the voluntary measures under California Green Building Standards.	☑	☐	☐

[5] Actions that are not subject to Step 2 would include, for example: 1) discretionary map actions that do not propose specific development, 2) permits allowing wireless communication facilities, 3) special events permits, 4) use permits or other permits that do not result in the expansion or enlargement of a building (e.g., decks, garages, etc.), and 5) non-building infrastructure projects such as roads and pipelines. Because such actions would not result in new occupancy buildings from which GHG emissions reductions could be achieved, the items contained in Step 2 would not be applicable.

2. *Plumbing fixtures and fittings* With respect to plumbing fixtures or fittings provided as part of the project, would those low-flow fixtures/appliances be consistent with each of the following: Residential buildings: • Kitchen faucets: maximum flow rate not to exceed 1.5 gallons per minute at 60 psi; • Standard dishwashers: 4.25 gallons per cycle; • Compact dishwashers: 3.5 gallons per cycle; and • Clothes washers: water factor of 6 gallons per cubic feet of drum capacity? Nonresidential buildings: • Plumbing fixtures and fittings that do not exceed the maximum flow rate specified in Table A5.303.2.3.1 (voluntary measures) of the California Green Building Standards Code (See Attachment A); and • Appliances and fixtures for commercial applications that meet the provisions of Section A5.303.3 (voluntary measures) of the California Green Building Standards Code (See Attachment A)? Check "N/A" only if the project does not include any plumbing fixtures or fittings. With respect to pluming fixtures and fittings provided as part of this project, the low-flow fixture/appliances will be consistent with each of the following: -Kitchen faucets: Maximum flow rate not to exceed 1.5 gallons per minute at 60 psi -Standard dishwashers: 4.25 gallons per cycle -Compact dishwashers: 3.5 gallons per cycle -Clothes washers: water factor of 6 gallons per cubic feet of drum capacity	☑	☐	☐

Strategy 3: Bicycling, Walking, Transit & Land Use			
3. *Electric Vehicle Charging* • Multiple-family projects of 17 dwelling units or less: Would 3% of the total parking spaces required, or a minimum of one space, whichever is greater, be provided with a listed cabinet, box or enclosure connected to a conduit linking the parking spaces with the electrical service, in a manner approved by the building and safety official, to allow for the future installation of electric vehicle supply equipment to provide electric vehicle charging stations at such time as it is needed for use by residents? • Multiple-family projects of more than 17 dwelling units: Of the total required listed cabinets, boxes or enclosures, would 50% have the necessary electric vehicle supply equipment installed to provide active electric vehicle charging stations ready for use by residents? • Non-residential projects: Of the total required listed cabinets, boxes or enclosures, would 50% have the necessary electric vehicle supply equipment installed to provide active electric vehicle charging stations ready for use? Check "N/A" only if the project is a single-family project or would not require the provision of listed cabinets, boxes, or enclosures connected to a conduit linking the parking spaces with electrical service, e.g., projects requiring fewer than 10 parking spaces. Exempt, the project is a residential project.	☐	☐	☑
Strategy 3: Bicycling, Walking, Transit & Land Use (Complete this section if project includes non-residential or mixed uses)			
4. *Bicycle Parking Spaces* Would the project provide more short- and long-term bicycle parking spaces than required in the City's Municipal Code (Chapter 14, Article 2, Division 5)?[6] Check "N/A" only if the project is a residential project. Exempt, the project is a residential project.	☐	☐	☑

[6] Non-portable bicycle corrals within 600 feet of project frontage can be counted towards the project's bicycle parking requirements.

5. *Shower facilities*

If the project includes nonresidential development that would accommodate over 10 tenant occupants (employees), would the project include changing/shower facilities in accordance with the voluntary measures under the California Green Building Standards Code as shown in the table below?

Number of Tenant Occupants (Employees)	Shower/Changing Facilities Required	Two-Tier (12" X 15" X 72") Personal Effects Lockers Required
0-10	0	0
11-50	1 shower stall	2
51-100	1 shower stall	3
101-200	1 shower stall	4
Over 200	1 shower stall plus 1 additional shower stall for each 200 additional tenant-occupants	1 two-tier locker plus 1 two-tier locker for each 50 additional tenant-occupants

☐ ☐ ☑

Check "N/A" only if the project is a residential project, or if it does not include nonresidential development that would accommodate over 10 tenant occupants (employees).

Exempt, the project is a residential project.

6. *Designated Parking Spaces*

If the project includes a nonresidential use in a TPA, would the project provide designated parking for a combination of low-emitting, fuel-efficient, and carpool/vanpool vehicles in accordance with the following table?

Number of Required Parking Spaces	Number of Designated Parking Spaces
0-9	0
10-25	2
26-50	4
51-75	6
76-100	9
101-150	11
151-200	18
201 and over	At least 10% of total

This measure does not cover electric vehicles. See Question 4 for electric vehicle parking requirements.

Note: Vehicles bearing Clean Air Vehicle stickers from expired HOV lane programs may be considered eligible for designated parking spaces. The required designated parking spaces are to be provided within the overall minimum parking requirement, not in addition to it.

Check "N/A" only if the project is a residential project, or if it does not include nonresidential use in a TPA.

Exempt, the project is a residential project.

☐ ☐ ☑

7. *Transportation Demand Management Program* If the project would accommodate over 50 tenant-occupants (employees), would it include a transportation demand management program that would be applicable to existing tenants and future tenants that includes: At least one of the following components: • Parking cash out program • Parking management plan that includes charging employees market-rate for single-occupancy vehicle parking and providing reserved, discounted, or free spaces for registered carpools or vanpools • Unbundled parking whereby parking spaces would be leased or sold separately from the rental or purchase fees for the development for the life of the development And at least three of the following components: • Commitment to maintaining an employer network in the SANDAG iCommute program and promoting its RideMatcher service to tenants/employees • On-site carsharing vehicle(s) or bikesharing • Flexible or alternative work hours • Telework program • Transit, carpool, and vanpool subsidies • Pre-tax deduction for transit or vanpool fares and bicycle commute costs • Access to services that reduce the need to drive, such as cafes, commercial stores, banks, post offices, restaurants, gyms, or childcare, either onsite or within 1,320 feet (1/4 mile) of the structure/use? Check "N/A" only if the project is a residential project or if it would not accommodate over 50 tenant-occupants (employees). Exempt, the project is a residential project.	☐	☐	☑

Step 3: Project CAP Conformance Evaluation (if applicable)

The third step of the CAP consistency review only applies if Step 1 is answered in the affirmative under option B. The purpose of this step is to determine whether a project that is located in a TPA but that includes a land use plan and/or zoning designation amendment is nevertheless consistent with the assumptions in the CAP because it would implement CAP Strategy 3 actions. In general, a project that would result in a reduction in density inside a TPA would not be consistent with Strategy 3.The following questions must each be answered in the affirmative and fully explained.

1. **Would the proposed project implement the General Plan's City of Villages strategy in an identified Transit Priority Area (TPA) that will result in an increase in the capacity for transit-supportive residential and/or employment densities?**
   Considerations for this question:
   - Does the proposed land use and zoning designation associated with the project provide capacity for transit-supportive residential densities within the TPA?
   - Is the project site suitable to accommodate mixed-use village development, as defined in the General Plan, within the TPA?
   - Does the land use and zoning associated with the project increase the capacity for transit-supportive employment intensities within the TPA?

2. **Would the proposed project implement the General Plan's Mobility Element in Transit Priority Areas to increase the use of transit?**
   Considerations for this question:
   - Does the proposed project support/incorporate identified transit routes and stops/stations?
   - Does the project include transit priority measures?

3. **Would the proposed project implement pedestrian improvements in Transit Priority Areas to increase walking opportunities?**
   Considerations for this question:
   - Does the proposed project circulation system provide multiple and direct pedestrian connections and accessibility to local activity centers (such as transit stations, schools, shopping centers, and libraries)?
   - Does the proposed project urban design include features for walkability to promote a transit supportive environment?

4. **Would the proposed project implement the City of San Diego's Bicycle Master Plan to increase bicycling opportunities?**
   Considerations for this question:
   - Does the proposed project circulation system include bicycle improvements consistent with the Bicycle Master Plan?
   - Does the overall project circulation system provide a balanced, multimodal, "complete streets" approach to accommodate mobility needs of all users?

5. **Would the proposed project incorporate implementation mechanisms that support Transit Oriented Development?**
   Considerations for this question:
   - Does the proposed project include new or expanded urban public spaces such as plazas, pocket parks, or urban greens in the TPA?
   - Does the land use and zoning associated with the proposed project increase the potential for jobs within the TPA?
   - Do the zoning/implementing regulations associated with the proposed project support the efficient use of parking through mechanisms such as: shared parking, parking districts, unbundled parking, reduced parking, paid or time-limited parking, etc.?

6. **Would the proposed project implement the Urban Forest Management Plan to increase urban tree canopy coverage?**
   Considerations for this question:
   - Does the proposed project provide at least three different species for the primary, secondary and accent trees in order to accommodate varying parkway widths?
   - Does the proposed project include policies or strategies for preserving existing trees?
   - Does the proposed project incorporate tree planting that will contribute to the City's 20% urban canopy tree coverage goal?

CLIMATE ACTION PLAN CONSISTENCY CHECKLIST
ATTACHMENT A

This attachment provides performance standards for applicable Climate Action Pan (CAP) Consistency Checklist measures.

Table 1 Roof Design Values for Question 1: Cool/Green Roofs supporting Strategy 1: Energy & Water Efficient Buildings of the Climate Action Plan

Land Use Type	Roof Slope	Minimum 3-Year Aged Solar Reflectance	Thermal Emittance	Solar Reflective Index
Low-Rise Residential	≤2:12	0.55	0.75	64
	>2:12	0.20	0.75	16
High-Rise Residential Buildings, Hotels and Motels	≤2:12	0.55	0.75	64
	>2:12	0.20	0.75	16
Non-Residential	≤2:12	0.55	0.75	64
	>2:12	0.20	0.75	16

Source: Adapted from the California Green Building Standards Code (CALGreen) Tier 1 residential and non-residential voluntary measures shown in Tables A4.106.5.1 and A5.106.11.2.2, respectively. Roof installation and verification shall occur in accordance with the CALGreen Code.

CALGreen does not include recommended values for low-rise residential buildings with roof slopes of ≤ 2:12 for San Diego's climate zones (7 and 10). Therefore, the values for climate zone 15 that covers Imperial County are adapted here.

Solar Reflectance Index (SRI) equal to or greater than the values specified in this table may be used as an alternative to compliance with the aged solar reflectance values and thermal emittance.

Table 2	Fixture Flow Rates for Non-Residential Buildings related to Question 2: Plumbing Fixtures and Fittings supporting Strategy 1: Energy & Water Efficient Buildings of the Climate Action Plan
Fixture Type	**Maximum Flow Rate**
Showerheads	1.8 gpm @ 80 psi
Lavatory Faucets	0.35 gpm @60 psi
Kitchen Faucets	1.6 gpm @ 60 psi
Wash Fountains	1.6 [rim space(in.)/20 gpm @ 60 psi]
Metering Faucets	0.18 gallons/cycle
Metering Faucets for Wash Fountains	0.18 [rim space(in.)/20 gpm @ 60 psi]
Gravity Tank-type Water Closets	1.12 gallons/flush
Flushometer Tank Water Closets	1.12 gallons/flush
Flushometer Valve Water Closets	1.12 gallons/flush
Electromechanical Hydraulic Water Closets	1.12 gallons/flush
Urinals	0.5 gallons/flush

Source: Adapted from the California Green Building Standards Code (CALGreen) Tier 1 non-residential voluntary measures shown in Tables A5.303.2.3.1 and A5.106.11.2.2, respectively. See the California Plumbing Code for definitions of each fixture type.

Where complying faucets are unavailable, aerators rated at 0.35 gpm or other means may be used to achieve reduction.

Acronyms:
gpm = gallons per minute
psi = pounds per square inch (unit of pressure)
in. = inch

Table 3	**Standards for Appliances and Fixtures for Commercial Application related to Question 2: Plumbing Fixtures and Fittings supporting Strategy 1: Energy & Water Efficient Buildings of the Climate Action Plan**	
Appliance/Fixture Type	**Standard**	
Clothes Washers	Maximum Water Factor (WF) that will reduce the use of water by 10 percent below the California Energy Commissions' WF standards for commercial clothes washers located in Title 20 of the *California Code of Regulations.*	
Conveyor-type Dishwashers	0.70 maximum gallons per rack (2.6 L) (High-Temperature)	0.62 maximum gallons per rack (4.4 L) (Chemical)
Door-type Dishwashers	0.95 maximum gallons per rack (3.6 L) (High-Temperature)	1.16 maximum gallons per rack (2.6 L) (Chemical)
Undercounter-type Dishwashers	0.90 maximum gallons per rack (3.4 L) (High-Temperature)	0.98 maximum gallons per rack (3.7 L) (Chemical)
Combination Ovens	Consume no more than 10 gallons per hour (38 L/h) in the full operational mode.	
Commercial Pre-rinse Spray Valves (manufactured on or after January 1, 2006)	Function at equal to or less than 1.6 gallons per minute (0.10 L/s) at 60 psi (414 kPa) and • Be capable of cleaning 60 plates in an average time of not more than 30 seconds per plate. • Be equipped with an integral automatic shutoff. • Operate at static pressure of at least 30 psi (207 kPa) when designed for a flow rate of 1.3 gallons per minute (0.08 L/s) or less.	

Source: Adapted from the California Green Building Standards Code (CALGreen) Tier 1 non-residential voluntary measures shown in Section A5.303.3. See the California Plumbing Code for definitions of each appliance/fixture type.

Acronyms:
L = liter
L/h = liters per hour
L/s = liters per second
psi = pounds per square inch (unit of pressure)
kPa = kilopascal (unit of pressure)

CHRISTIAN WHEELER
ENGINEERING

REPORT OF PRELIMINARY GEOTECHNICAL INVESTIGATION

McCARTY ESTATES
3929 ARROYO SORRENTO ROAD
SAN DIEGO, CALIFORNIA

PREPARED FOR

McCARTY FAMILY TRUST
3929 ARROYO SORRENTO ROAD
SAN DIEGO, CALIFORNIA 92130

PREPARED BY

CHRISTIAN WHEELER ENGINEERING
3980 HOME AVENUE
SAN DIEGO, CALIFORNIA 92105

CHRISTIAN WHEELER
ENGINEERING

April 5, 2017

McCarty Family Trust
3929 Arroyo Sorrento Road
San Diego, California 92130
Attention: Kent McCarty

CWE 2170119.01

Subject: **Report of Preliminary Geotechnical Investigation**
McCarty Estates, 3929 Arroyo Sorrento Road, San Diego, California

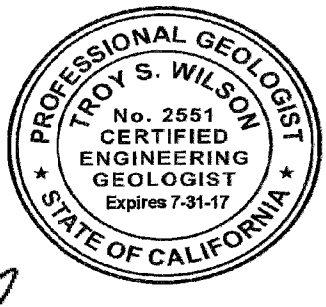
Ladies and Gentlemen:

In accordance with your request and our proposal dated February 9, 2017, we have completed a geotechnical investigation for the subject project. We are presenting herewith a report of our findings and recommendations.

It is our professional opinion and judgment that no geotechnical conditions exist on the subject property that would preclude the construction of the proposed residence provided the recommendations presented herein are followed.

If you have questions after reviewing this report, please do not hesitate to contact our office. This opportunity to be of professional service is sincerely appreciated.

Respectfully submitted,
CHRISTIAN WHEELER ENGINEERING



Daniel B. Adler, RCE # 36037

Troy S. Wilson, CEG #2551

DBA:tsw
ec: kent@a1fpi.com
jp@jpeng.com

TABLE OF CONTENTS

ATTACHMENTS

TABLES

FIGURES

PLATES

APPENDICES

CHRISTIAN WHEELER
ENGINEERING

PRELIMINARY GEOTECHNICAL INVESTIGATION

McCARTY ESTATES
3929 ARROYO SORRENTO ROAD
SAN DIEGO, CALIFORNIA

INTRODUCTION AND PROJECT DESCRIPTION

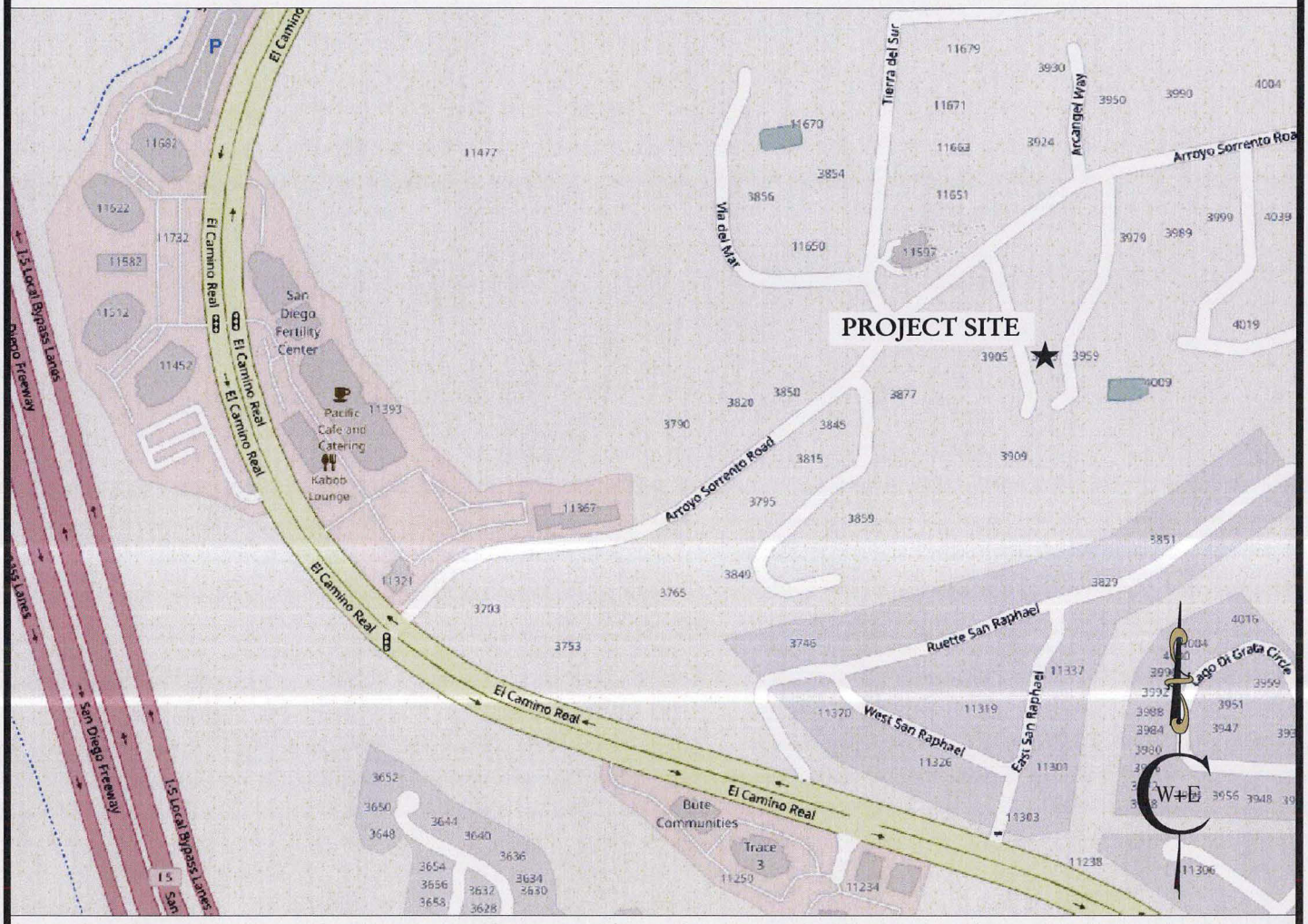
This report presents the results of a preliminary geotechnical investigation performed for a proposed residential project to be located at 3929 Arroyo Sorrento Road, San Diego, California. The following Figure No. 1 presents a vicinity map showing the location of the property.

We understand that it is proposed to split the property into two lots. The southern lot will encompass the existing improvements. The northern lot will cover about one acre and will be graded to receive a single family residence. It is assumed that the structure will be one-and/or two-stories high and of wood-frame construction. Shallow foundations and conventional concrete slab-on-grade floor systems are anticipated. Grading will consist of cuts and fills up to about 7 feet and 3 feet from existing grade, respectively.

To assist in the preparation of this report, we were provided with a set of miscellaneous plans prepared by JP Engineering, dated January 25, 2017. A copy of the tentative parcel map included in the set was used as a base map for our Site Plan and Geologic Map, and is included herein as Plate No. 1. A geologic cross section is included herein as Plate No. 2.

This report has been prepared for the exclusive use of McCarty Family Trust, and its design consultants, for specific application to the project described herein. Should the project be modified, the conclusions and recommendations presented in this report should be reviewed by Christian Wheeler Engineering for conformance with our recommendations and to determine whether any additional subsurface investigation, laboratory testing and/or recommendations are necessary. Our professional services have been performed, our findings obtained and our recommendations prepared in accordance

SITE VICINITY



MCCARTY ESTATES 3929 ARROYO SORRENTO ROAD SAN DIEGO, CALIFORNIA			CHRISTIAN WHEELER ENGINEERING
DATE: APRIL 2017		JOB NO.: 2170119.01	
BY: SRD		FIGURE NO.: 1	

with generally accepted engineering principles and practices. This warranty is in lieu of all other warranties, expressed or implied.

SCOPE OF SERVICES

Our preliminary geotechnical investigation consisted of surface reconnaissance, subsurface exploration, obtaining representative soil samples, laboratory testing, analysis of the field and laboratory data, and review of relevant geologic literature. Our scope of service did not include assessment of hazardous substance contamination, recommendations to prevent floor slab moisture intrusion or the formation of mold within the structures, evaluation or design of storm water infiltration facilities, or any other services not specifically described in the scope of services presented below.

More specifically, the intent of our proposed investigation was to:

- Drill three small-diameter borings and excavate one hand-dug test pit to explore the subsurface conditions of the site and to obtain samples for laboratory testing.
- Backfill the boring holes using a grout or a grout/bentonite mix as required by the County of San Diego Department of Environmental Health.
- Backfill the test pit with the removed soil. It should be noted that the soil was not compacted and will have to be removed and replaced as compacted fill during the planned construction.
- Evaluate, by laboratory tests and our past experience with similar soil types, the engineering properties of the various soil strata that may influence the proposed construction, including bearing capacities, expansive characteristics and settlement potential.
- Describe the general geology at the site including possible geologic hazards that could have an effect on the proposed construction, and provide the seismic design parameters as required by the 2016 edition of the California Building Code. Our scope of work does not include an evaluation of existing cut slopes at the property.
- Address potential construction difficulties that may be encountered due to soil conditions, groundwater or geologic hazards, and provide geotechnical recommendations to deal with these difficulties.
- Provide site preparation and grading recommendations, as necessary, for the anticipated work.
- Provide foundation recommendations for the type of construction anticipated and develop soil engineering design criteria for the recommended foundation designs.

- Provide earth retaining wall design recommendations.
- Provide a preliminary geotechnical report that presents the results of our investigation which includes a plot plan showing the location of our subsurface explorations, excavation logs, laboratory test results, and our conclusions and recommendations for the proposed project.

Although a test for the presence of soluble sulfates within the soils that may be in contact with reinforced concrete was performed as part of the scope of our services, it should be understood Christian Wheeler Engineering does not practice corrosion engineering. If a corrosivity analysis is considered necessary, we recommend that the client retain an engineering firm that specializes in this field to consult with them on this matter. The results of our sulfate testing should only be used as a guideline to determine if additional testing and analysis is necessary.

FINDINGS

SITE DESCRIPTION

The subject site is an irregular-shaped parcel located 3929 Arroyo Sorrento Road, San Diego, California. The southern portion of the property presently supports a residential structure, a detached garage, and associated improvements. The northern portion of the property is the subject of this proposal. This area supports some auxiliary structures and horse corrals. The site is bounded on the north by Arroyo Sorrento Road, and is otherwise bounded by residential developments. Topographically, the northern portion of the property slopes gently to the southwest. Elevations range from about 190 feet at the northeastern corner of the property to about 180 feet at the southern edge of the proposed development area.

GENERAL GEOLOGY AND SUBSURFACE CONDITIONS

GEOLOGIC SETTING AND SOIL DESCRIPTION: The subject site is located in the Coastal Plains Physiographic Province of San Diego County. Based upon the findings of our subsurface explorations and review of readily available, pertinent geologic and geotechnical literature, it was determined that the project area is generally underlain by artificial fill, alluvium and Torrey Sandstone. These materials are described below:

ARTIFICIAL FILL (Qaf): Artificial fill was encountered at the approximate center portion of the proposed building pad. As encountered in boring B-2, the artificial fill extended a depth of about 3½ feet from existing grade. Deeper fill soils may exist in areas of the site not investigated. The fill materials generally consisted of light brown, medium dense to dense, moist, silty sand (SM). The artificial fill was judged to have a very low expansion potential (EI < 20).

ALLUVIUM (Qal): Alluvial soils were encountered underlying the proposed building pad. The alluvium exceeded the maximum exploration depth of 30 feet in borings B-1 and B-2. In boring B-3 and test pit P-1, the alluvium extended to a depth of about 15½ feet and 1 foot from existing grade, respectively. The alluvium generally consisted of light brown, brown, yellowish-brown, and grayish-brown, medium dense, damp to very moist, silty sand (SM). In test pit P-1 the alluvium was loose. The alluvium was judged to have a very low expansion potential (EI < 20).

TORERY SANDSTONE (Tt): Tertiary-age Torrey Sandstone deposits were encountered underlying the alluvium in boring B-3 and test pit P-1, and is anticipated to underlie the alluvium throughout the site. These soils generally consisted of white yellowish-brown, moist, very dense, well graded sand with silty (SW/SM). The formational soils were judged to have a very low expansion potential (EI < 20).

GROUNDWATER: In general, no free groundwater was encountered in our subsurface explorations. However, very moist soils were encountered in boring B-3 at the contact with Torrey Sandstone. It is our opinion that water may perch and move along the contact between the alluvium and the less permeable Torrey Sandstone. We do not expect any significant groundwater related conditions during or after the proposed construction. However, it should be recognized that minor groundwater seepage problems might occur after construction and landscaping are completed, even at a site where none were present before construction. These are usually minor phenomena and are often the result of an alteration in drainage patterns and/or an increase in irrigation water. Based on the anticipated construction and the permeability of the on-site soils, it is our opinion that any seepage problems that may occur will be minor in extent. It is further our opinion that these problems can be most effectively corrected on an individual basis if and when they occur.

TECTONIC SETTING: It should be noted that much of Southern California, including the San Diego County area, is characterized by a series of Quaternary-age fault zones that consist of several individual, en echelon faults that generally strike in a northerly to northwesterly direction. Some of these fault zones (and the individual faults within the zone) are classified as active while others are classified as only potentially active according to the criteria of the California Division of Mines and Geology. Active fault zones are those which have shown conclusive evidence of faulting during the Holocene Epoch (the most recent 11,000 years) while potentially active fault zones have demonstrated movement during the Pleistocene Epoch (11,000 to 1.6 million years before the present) but no movement during Holocene time. Inactive faults are those faults that can be demonstrated to have no movement in the past 1.6 million years.

It should be recognized that the active Rose Canyon Fault Zone is located approximately 5½ miles southwest of the site. Other active fault zones in the region that could possibly affect the site include the Coronado Bank, San Diego Trough, and San Clemente Fault Zones to the west, the Palos Verdes and Newport Inglewood Fault to the northwest, and the Elsinore, Earthquake Valley, San Jacinto, and San Andreas Fault Zones to the northeast. A small, unnamed fault is located approximately 800 feet southwest of the site. The northwest projection of this fault would extend within approximately 80 feet west of the subject site. Based upon the previous fault trenching on the subject site located three parcels south of the site (CWE 2140414.02), it is our professional opinion that this unnamed fault does not traverse the subject site.

GENERAL GEOLOGIC HAZARDS

GENERAL: A review of the City of San Diego Seismic Safety Study (Sheet 38) indicated that the site is located in Geologic Area 53. Hazard Category 53 is assigned to level or sloping terrain with unfavorable geologic structure and low to moderate risk.

SURFACE RUPTURE: There are no known active faults that traverse the subject site; therefore, the risk for surface rupture at the subject site is considered low.

SLOPE STABILITY: As part of this investigation we reviewed the publication, "Landslide Hazards in the Southern Part of the San Diego Metropolitan Area" by Tan and Giffen, 1995. This reference is a

comprehensive study that classifies San Diego County into areas of relative landslide susceptibility. The subject site is located in Area 3-1, which is considered to be "generally susceptible" to slope failures. However, based on our findings, the topography of the site and adjacent areas, and the proposed construction, it is our opinion that the likelihood of slope stability related problems at the site is very low at the subject site. It is our professional opinion that the site will have a factor-of-safety of 1.5 or greater for both gross and surficial stability following the project completion as currently designed. Any adjustments to existing slope configurations from the current design should be reviewed by our firm.

LIQUEFACTION: The earth materials underlying the site are not considered subject to liquefaction due to such factors as soil density, grain-size distribution, the absence of shallow groundwater conditions.

FLOODING: As delineated on the Flood Insurance Rate Map (FIRM) prepared by the Federal Emergency Management Agency, the site is not located within either the 100-year flood zone or the 500-year flood zone.

TSUNAMIS: Tsunamis are great sea waves produced by submarine earthquakes or volcanic eruptions. Due to the site's setback from the ocean and elevation, it will not be affected by a tsunami.

SEICHES: Seiches are periodic oscillations in large bodies of water such as lakes, harbors, bays or reservoirs. Due to the site's location, it will not be affected by seiches.

CONCLUSIONS

In general, it is our professional opinion and judgment that the subject property is suitable for the construction of the proposed residential structure provided the recommendations presented herein are implemented. The main geotechnical conditions affecting the proposed project consist of potentially compressible surficial soils and a cut/fill transition. These conditions are discussed hereinafter.

The central portion of the proposed building pad is underlain by potentially compressible artificial fill. As encountered in our subsurface explorations this material extends to a maximum depth of about 3½

feet from existing site grade. Deeper fill soils may exist in areas of the site not investigated. In addition, it is assumed that the surficial alluvial soils are also potentially compressible. The potentially compressible are considered unsuitable, in their present condition, for the support of settlement sensitive improvements. It is recommended that these materials be removed and replaced as compacted fill as recommended hereinafter.

The proposed grading of the site will result in a cut/fill transition. This configuration may result in differential settlements due to the potential of fill soils and native soils to settle differently. In order to mitigate this condition, it is recommended that the cut portion of the pad be undercut. It is anticipated that the site preparation recommendations provided hereinafter will mitigate this condition.

The site is located in an area that is relatively free of geologic hazards that will have a significant effect on the proposed construction. The most likely geologic hazard that could affect the site is ground shaking due to seismic activity along one of the regional active faults. However, construction in accordance with the requirements of the most recent edition of the California Building Code and the local governmental agencies should provide a level of life-safety suitable for the type of development proposed.

RECOMMENDATIONS

GRADING AND EARTHWORK

GENERAL: All grading should conform to the guidelines presented in the current edition of the California Building Code, the minimum requirements of the City of San Diego, and the recommended Grading Specifications and Special Provisions attached hereto, except where specifically superseded in the text of this report.

PREGRADE MEETING: It is recommended that a pregrade meeting including the grading contractor, the client, and a representative from Christian Wheeler Engineering be performed, to discuss the recommendations of this report and address any issues that may affect grading operations.

OBSERVATION OF GRADING: Continuous observation by the Geotechnical Consultant is essential during the grading operation to confirm conditions anticipated by our investigation, to allow adjustments in design criteria to reflect actual field conditions exposed, and to determine that the grading proceeds in general accordance with the recommendations contained herein.

CLEARING AND GRUBBING: Site preparation should begin with the removal of existing improvements slated for demolition. The resulting debris and any existing vegetation and other deleterious materials in areas to receive proposed improvements or new fill soils should be removed from the site.

SITE PREPARATION: It is recommended that existing fill soils underlying the proposed structure, associated improvements and new fills should be removed in their entirety. Based on our findings, the maximum removal depth is about 3½ feet below existing grade. In addition, existing alluvial deposits should be removed to a minimum depth of 4 feet below existing or proposed grade, whichever is more. Deeper removals may be necessary in areas of the site not investigated or due to unforeseen conditions. Lateral removals limits should extend at least 5 feet from the perimeter of the proposed structure, associated improvements and new fills or equal to removal depth, whichever is more. No removals are recommended beyond property lines. All excavated areas should be approved by the geotechnical engineer or his representative prior to replacing any of the excavated soils. The excavated materials can be replaced as properly compacted fill in accordance with the recommendations presented in the "Compaction and Method of Filling" section of this report.

TEST PIT BACKFILL: Backfill associated with our subsurface exploration underlying settlement-sensitive improvements not removed as part of site preparation operations should be removed and replaced as compacted fill.

PROCESSING OF FILL AREAS: Prior to placing any new fill soils or constructing any new improvements in areas that have been cleaned out to receive fill, the exposed soils should be scarified to a depth of 12 inches, watered thoroughly, and compacted to at least 90 percent relative compaction. In areas to support fill slopes, keys should be cut into the competent supporting materials. The keys should be at least 10 feet wide, and be sloped back into the hillside at least 2 percent. The keys should extend at least 1 foot into the competent supporting materials. Where the existing ground has a slope

of 5:1 (horizontal to vertical) or steeper, it should be benched into as the fill extends upward from the keyway.

COMPACTION AND METHOD OF FILLING: In general, all structural fill placed at the site should be compacted to a relative compaction of at least 90 percent of its maximum laboratory dry density as determined by ASTM Laboratory Test D1557. Fills should be placed at or slightly above optimum moisture content, in lifts 6 to 8 inches thick, with each lift compacted by mechanical means. Fills should consist of approved earth material, free of trash or debris, roots, vegetation, or other materials determined to be unsuitable by the Geotechnical Consultant. Fill material should be free of rocks or lumps of soil in excess of 3 inches in maximum dimension.

Utility trench backfill within 5 feet of the proposed structure and beneath all concrete flatwork or pavements should be compacted to a minimum of 90 percent of its maximum dry density.

SURFACE DRAINAGE: The drainage around the proposed improvements should be designed to collect and direct surface water away from proposed improvements toward appropriate drainage facilities. Rain gutters with downspouts that discharge runoff away from the structure and the top of slopes into controlled drainage devices are recommended.

The ground around the proposed improvements should be graded so that surface water flows rapidly away from the improvements without ponding. In general, we recommend that the ground adjacent to structure slope away at a gradient of at least 5 percent for a minimum distance of 10 feet. If the minimum distance of 10 feet cannot be achieved, an alternative method of drainage runoff away from the building at the termination of the 5 percent slope will need to be used. Swales and impervious surfaces that are located within 10 feet of the building should have a minimum slope of 2 percent.

Drainage patterns provided at the time of construction should be maintained throughout the life of the proposed improvements. Site irrigation should be limited to the minimum necessary to sustain landscape growth. Over watering should be avoided. Should excessive irrigation, impaired drainage, or unusually high rainfall occur, zones of wet or saturated soil may develop.

FOUNDATIONS

GENERAL: Based on our findings and engineering judgment, the proposed structure and associated improvements may be supported by conventional shallow continuous and isolated spread footings. The following recommendations are considered the minimum based on the anticipated soil conditions, and are not intended to be lieu of structural considerations. All foundations should be designed by a qualified engineer.

DIMENSIONS: Spread footings supporting the proposed structure should be embedded at least 18 inches below lowest adjacent finish pad grade. Spread footings supporting the proposed light exterior improvements should be embedded at least 12 inches below lowest adjacent finish pad grade. Continuous and isolated footings should have a minimum width of 12 inches and 24 inches, respectively. Retaining wall footings should be at least 18 inches deep and 24 inches wide. Footings located adjacent or within slopes should be extended to a depth such that a minimum horizontal distance of 10 feet exists between the bottom of the footing and the face of the slope.

BEARING CAPACITY: Spread footings supporting the proposed structure may be designed for an allowable soil bearing pressure of 2,000 pounds per square foot (psf). This value may be increased by 600 pounds per square foot for each additional foot of embedment and 400 pounds per square foot for each additional foot of width up to a maximum of 4,000 pounds per square foot. Spread footings supporting the proposed light exterior improvements may be designed for an allowable soil bearing pressure of 2,000 pounds per square foot (psf). These values may be increased by one-third for combinations of temporary loads such as those due to wind or seismic loads.

FOOTING REINFORCING: Reinforcement requirements for foundations should be provided by the structural designer. However, based on the expected soil conditions, we recommend that the minimum reinforcing for continuous footings consist of at least 2 No. 5 bars positioned near the bottom of the footing and 2 No. 5 bars positioned near the top of the footing.

LATERAL LOAD RESISTANCE: Lateral loads against foundations may be resisted by friction between the bottom of the footing and the supporting soil, and by the passive pressure against the footing. The coefficient of friction between concrete and soil may be considered to be 0.30. The passive

resistance may be considered to be equal to an equivalent fluid weight of 300 pounds per cubic foot. These values are based on the assumption that the footings are poured tight against undisturbed soil. If a combination of the passive pressure and friction is used, the friction value should be reduced by one-third.

FOUNDATION EXCAVATION OBSERVATION: All footing excavations should be observed by Christian Wheeler Engineering prior to placing of forms and reinforcing steel to determine whether the foundation recommendations presented herein are followed and that the foundation soils are as anticipated in the preparation of this report. All footing excavations should be excavated neat, level, and square. All loose or unsuitable material should be removed prior to the placement of concrete.

SETTLEMENT CHARACTERISTICS: The anticipated total and differential settlement is expected to be less than about 1 inch and 1 inch over 40 feet, respectively, provided the recommendations presented in this report are followed. It should be recognized that minor cracks normally occur in concrete slabs and foundations due to concrete shrinkage during curing or redistribution of stresses, therefore some cracks should be anticipated. Such cracks are not necessarily an indication of excessive vertical movements. .

EXPANSIVE CHARACTERISTICS: The prevailing foundation soils are assumed to have a very low expansive potential (EI < 20). The recommendations within this report reflect these conditions.

FOUNDATION PLAN REVIEW: The final foundation plan and accompanying details and notes should be submitted to this office for review. The intent of our review will be to verify that the plans used for construction reflect the minimum dimensioning and reinforcing criteria presented in this section and that no additional criteria are required due to changes in the foundation type or layout. It is not our intent to review structural plans, notes, details, or calculations to verify that the design engineer has correctly applied the geotechnical design values. It is the responsibility of the design engineer to properly design/specify the foundations and other structural elements based on the requirements of the structure and considering the information presented in this report.

SEISMIC DESIGN FACTORS

The seismic design factors applicable to the subject site are provided below. The seismic design factors were determined in accordance with the 2016 California Building Code. The site coefficients and adjusted maximum considered earthquake spectral response acceleration parameters are presented in the following Table I.

TABLE I: SEISMIC DESIGN FACTORS

Site Coordinates: Latitude Longitude	32.928° -117.237°
Site Class	D
Site Coefficient F_a	1.048
Site Coefficient F_v	1.564
Spectral Response Acceleration at Short Periods S_s	1.130 g
Spectral Response Acceleration at 1 Second Period S_1	0.436 g
$S_{MS}=F_aS_s$	1.184 g
$S_{M1}=F_vS_1$	0.682 g
$S_{DS}=2/3*S_{MS}$	0.790 g
$S_{D1}=2/3*S_{M1}$	0.455 g

Probable ground shaking levels at the site could range from slight to moderate, depending on such factors as the magnitude of the seismic event and the distance to the epicenter. It is likely that the site will experience the effects of at least one moderate to large earthquake during the life of the proposed improvements.

ON-GRADE SLABS

GENERAL: It is assumed that the floor system of the proposed structure will consist of a concrete slab. The following recommendations are considered the minimum slab requirements based on the soil conditions and are not intended in lieu of structural considerations. These recommendations assume that the site preparation recommendations contained in this report are implemented.

INTERIOR FLOOR SLABS: The minimum slab thickness should be 5 inches (actual) and the slab should be reinforced with at least No. 4 bars spaced at 18 inches on center each way. Slab reinforcement should be supported on chairs such that the reinforcing bars are positioned at mid-

height in the floor slab. The slab reinforcement should extend down into the perimeter footings at least 6 inches.

UNDER-SLAB VAPOR RETARDERS: Steps should be taken to minimize the transmission of moisture vapor from the subsoil through the interior slabs where it can potentially damage the interior floor coverings. Local industry standards typically include the placement of a vapor retarder, such as plastic, in a layer of coarse sand placed directly beneath the concrete slab. Two inches of sand are typically used above and below the plastic. The vapor retarder should be at least 15-mil Stegowrap® or similar material with sealed seams and should extend at least 12 inches down the sides of the interior and perimeter footings. The sand should have a sand equivalent of at least 30, and contain less than 10% passing the Number 100 sieve and less than 5% passing the Number 200 sieve. It is suggested that pea gravel be used in lieu of sand underneath the southern addition. Filter fabric should be placed between the gravel and the soil. The membrane should be placed in accordance with the recommendation and consideration of ACI 302, "Guide for Concrete Floor and Slab Construction" and ASTM E1643, "Standards Practice for Installation of Water Vapor Retarder Used in Contact with Earth or Granular Fill Under Concrete Slabs." It is the flooring contractor's responsibility to place floor coverings in accordance with the flooring manufacturer specifications.

EXTERIOR CONCRETE FLATWORK: Exterior concrete slabs on grade should have a minimum thickness of 4 inches and be reinforced with at least No. 3 bars placed at 18 inches on center each way (ocew). Driveway slabs should have a minimum thickness of 5 inches and be reinforced with at least No. 4 bars placed at 12 inches ocew. Driveway slabs should be provided with a thickened edge a least 12 inches deep and 6 inches wide. All slabs should be provided with weakened plane joints in accordance with the American Concrete Institute (ACI) guidelines. Special attention should be paid to the method of concrete curing to reduce the potential for excessive shrinkage cracking. It should be recognized that minor cracks occur normally in concrete slabs due to shrinkage. Some shrinkage cracks should be expected and are not necessarily an indication of excessive movement or structural distress.

EARTH RETAINING WALLS

FOUNDATIONS: Foundations for any proposed retaining walls should be constructed in accordance with the foundation recommendations presented previously in this report.

PASSIVE PRESSURE: The passive pressure for the anticipated foundation soils may be considered to be 300 pounds per square foot per foot of depth. The upper foot of embedment should be neglected when calculating passive pressures, unless the foundation abuts a hard surface such as a concrete slab. The passive pressure may be increased by one-third for seismic loading. The coefficient of friction for concrete to soil may be assumed to be 0.30 for the resistance to lateral movement. When combining frictional and passive resistance, the friction should be reduced by one-third.

ACTIVE PRESSURE: The active soil pressure for the design of "unrestrained" and "restrained" earth retaining structures with level backfill may be assumed to be equivalent to the pressure of a fluid weighing 43 and 64 pounds per cubic foot, respectively. These pressures do not consider any other surcharge. If any are anticipated, this office should be contacted for the necessary increase in soil pressure. These values are based on a drained backfill condition.

Seismic lateral earth pressures may be assumed to equal an inverted triangle starting at the bottom of the wall with the maximum pressure equal to 9H pounds per square foot (where H = wall height in feet) occurring at the top of the wall

WATERPROOFING AND WALL DRAINAGE SYSTEMS: The need for waterproofing should be evaluated by others. If required, the project architect should provide (or coordinate) waterproofing details for the retaining walls. The design values presented above are based on a drained backfill condition and do not consider hydrostatic pressures. Unless hydrostatic pressures are incorporated into the design, the retaining wall designer should provide a detail for a wall drainage system. Typical retaining wall drain system details are presented as Plate No. 3 of this report for informational purposes. Additionally, outlets points for the retaining wall drain system should be coordinated with the project civil engineer.

BACKFILL: Retaining wall backfill soils should be compacted to at least 90 percent relative compaction. Expansive or clayey soils should not be used for backfill material. The wall should not be backfilled until the masonry has reached an adequate strength.

LIMITATIONS

REVIEW, OBSERVATION AND TESTING

The recommendations presented in this report are contingent upon our review of final plans and specifications. Such plans and specifications should be made available to the geotechnical engineer and engineering geologist so that they may review and verify their compliance with this report and with the California Building Code.

It is recommended that Christian Wheeler Engineering be retained to provide continuous soil engineering services during the earthwork operations. This is to verify compliance with the design concepts, specifications or recommendations and to allow design changes in the event that subsurface conditions differ from those anticipated prior to start of construction.

UNIFORMITY OF CONDITIONS

The recommendations and opinions expressed in this report reflect our best estimate of the project requirements based on an evaluation of the subsurface soil conditions encountered at the subsurface exploration locations and on the assumption that the soil conditions do not deviate appreciably from those encountered. It should be recognized that the performance of the foundations and/or cut and fill slopes may be influenced by undisclosed or unforeseen variations in the soil conditions that may occur in the intermediate and unexplored areas. Any unusual conditions not covered in this report that may be encountered during site development should be brought to the attention of the geotechnical engineer so that he may make modifications if necessary.

CHANGE IN SCOPE

This office should be advised of any changes in the project scope or proposed site grading so that we may determine if the recommendations contained herein are appropriate. This should be verified in writing or modified by a written addendum.

TIME LIMITATIONS

The findings of this report are valid as of this date. Changes in the condition of a property can, however, occur with the passage of time, whether they be due to natural processes or the work of man on this or adjacent properties. In addition, changes in the Standards-of-Practice and/or Government Codes may occur. Due to such changes, the findings of this report may be invalidated wholly or in part by changes beyond our control. Therefore, this report should not be relied upon after a period of two years without a review by us verifying the suitability of the conclusions and recommendations.

PROFESSIONAL STANDARD

In the performance of our professional services, we comply with that level of care and skill ordinarily exercised by members of our profession currently practicing under similar conditions and in the same locality. The client recognizes that subsurface conditions may vary from those encountered at the locations where our borings, surveys, and explorations are made, and that our data, interpretations, and recommendations be based solely on the information obtained by us. We will be responsible for those data, interpretations, and recommendations, but shall not be responsible for the interpretations by others of the information developed. Our services consist of professional consultation and observation only, and no warranty of any kind whatsoever, express or implied, is made or intended in connection with the work performed or to be performed by us, or by our proposal for consulting or other services, or by our furnishing of oral or written reports or findings.

CLIENT'S RESPONSIBILITY

It is the responsibility of the Clients, or his representatives, to ensure that the information and recommendations contained herein are brought to the attention of the structural engineer and

architect for the project and incorporated into the project's plans and specifications. It is further their responsibility to take the necessary measures to insure that the contractor and his subcontractors carry out such recommendations during construction.

FIELD EXPLORATIONS

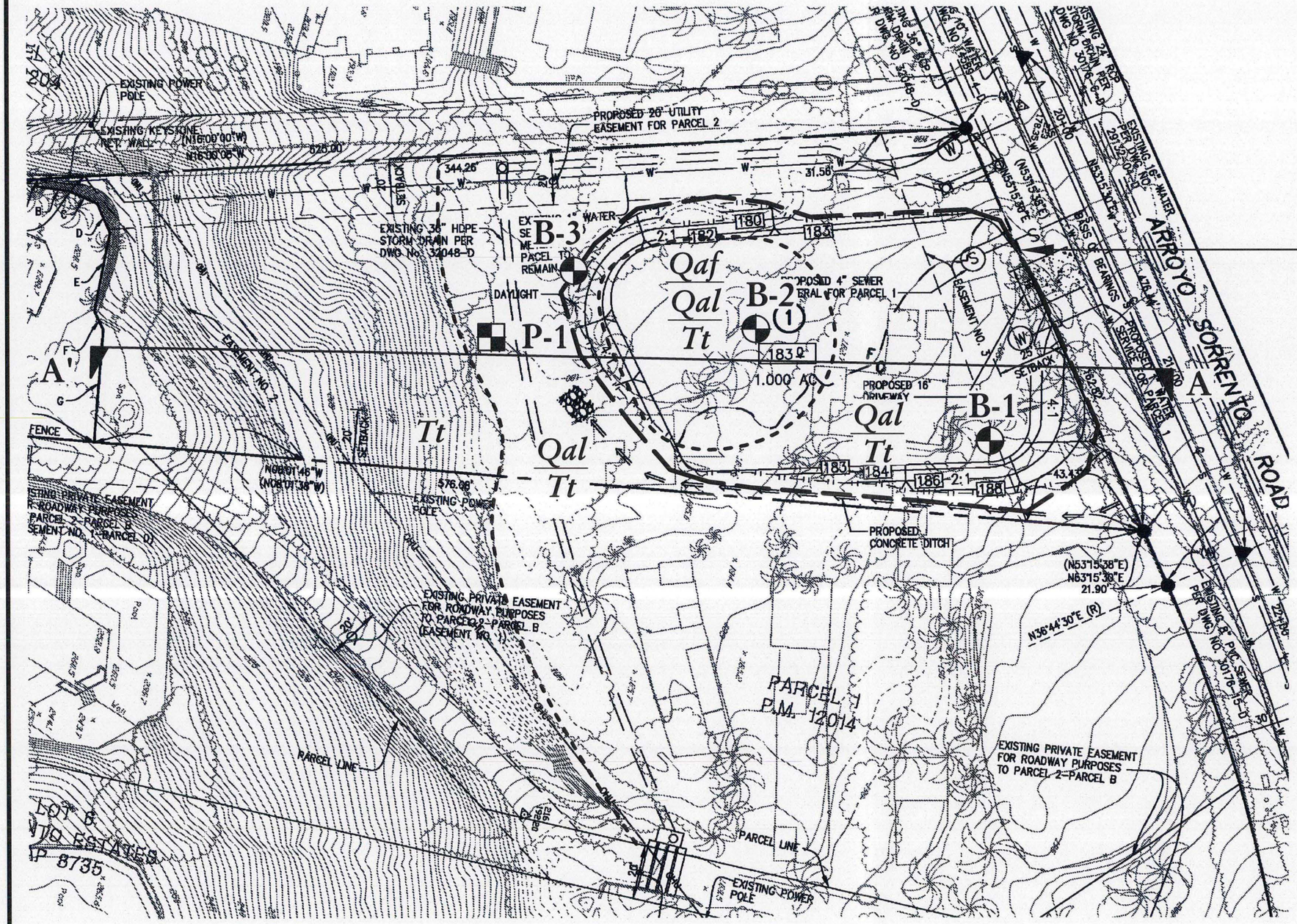
Four subsurface explorations were made on March 1, 2017 at the locations indicated on the Site Plan and Geotechnical Map included herewith as Plate No. 1. These explorations consisted of three borings drilled with a John Deere 319E Skid Steer with auger attachment and one hand-dug test pit. The fieldwork was conducted under the observation and direction of our engineering geology personnel.

The explorations were carefully logged when made. The test pit logs are presented on Appendix A. The soils are described in accordance with the Unified Soils Classification. In addition, a verbal textural description, the wet color, the apparent moisture, and the density or consistency is provided. The density of granular soils is given as very loose, loose, medium dense, dense or very dense. The consistency of silts or clays is given as either very soft, soft, medium stiff, stiff, very stiff, or hard.

Relatively undisturbed drive samples were collected using a modified California sampler. The sampler, with an external diameter of 3.0 inches, is lined with 1-inch long, thin, brass rings with inside diameters of approximately 2.4 inches. The sample barrel was driven into the ground with the weight of a 140-pound hammer falling 30 inches in general accordance with ASTM D 3550-84. The driving weight is permitted to fall freely. The number of blows per foot of driving, or as indicated, are presented on the boring logs as an index to the relative resistance of the sampled materials. The samples were removed from the sample barrel in the brass rings, and sealed. Bulk samples of the earth materials encountered were also collected. Samples were transported to our laboratory for testing.

LABORATORY TESTING

Laboratory tests were performed in accordance with the generally accepted American Society for Testing and Materials (ASTM) test methods or suggested procedures. A brief description of the tests performed and the subsequent results are presented in Appendix B.



CWE LEGEND	
P-1	TEST PIT LOCATION
B-3	BORING LOCATION
	GEOLOGIC CROSS SECTION
- - - -	GEOLOGIC CONTACT
Qaf / Qal / Tt	ARTIFICIAL FILL OVER ALLUVIUM OVER TORREY SANDSTONE
Qal / Tt	ALLUVIUM OVER TORREY SANDSTONE
Tt	TORREY SANDSTONE

BY: JORGE H. PALACIOS R.C.E. 33031 DATE 01-25-17

DESIGNED JHP
DRAWN DMH
CHECKED JHP
DATE 01-25-17

SHEET TITLE: TENTATIVE PARCEL MAP NO. PDP, SDP AND PRELIMINARY GRADING PLAN
PROJECT NAME: 3929 ARROYO SORRENTO ROAD
A.P.N. 307-060-60-00

SHEET 2 OF 8

Project No. 1059-16

NO. DATE BY

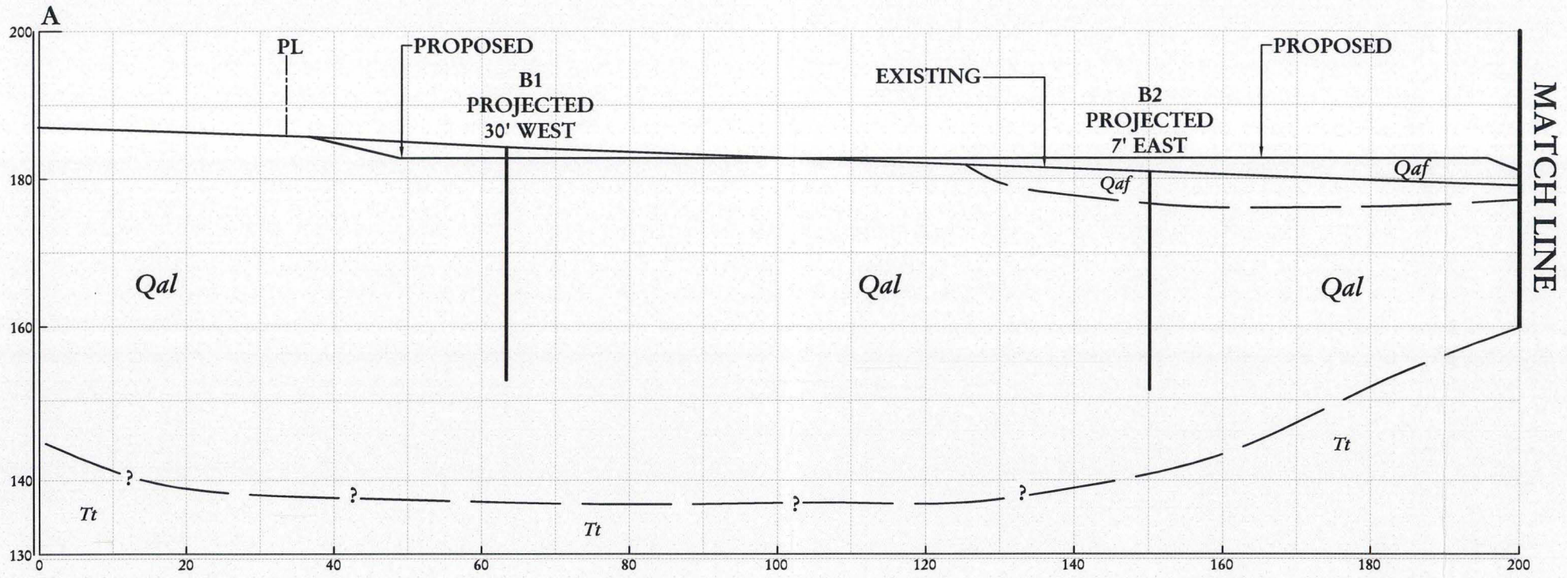
CIVIL ENGINEERING • LAND PLANNING • SURVEYING • 4948 RONSON COURT, SUITE 105, SAN DIEGO, CA 92111 • (858)569-7377 FAX (858)569-0830

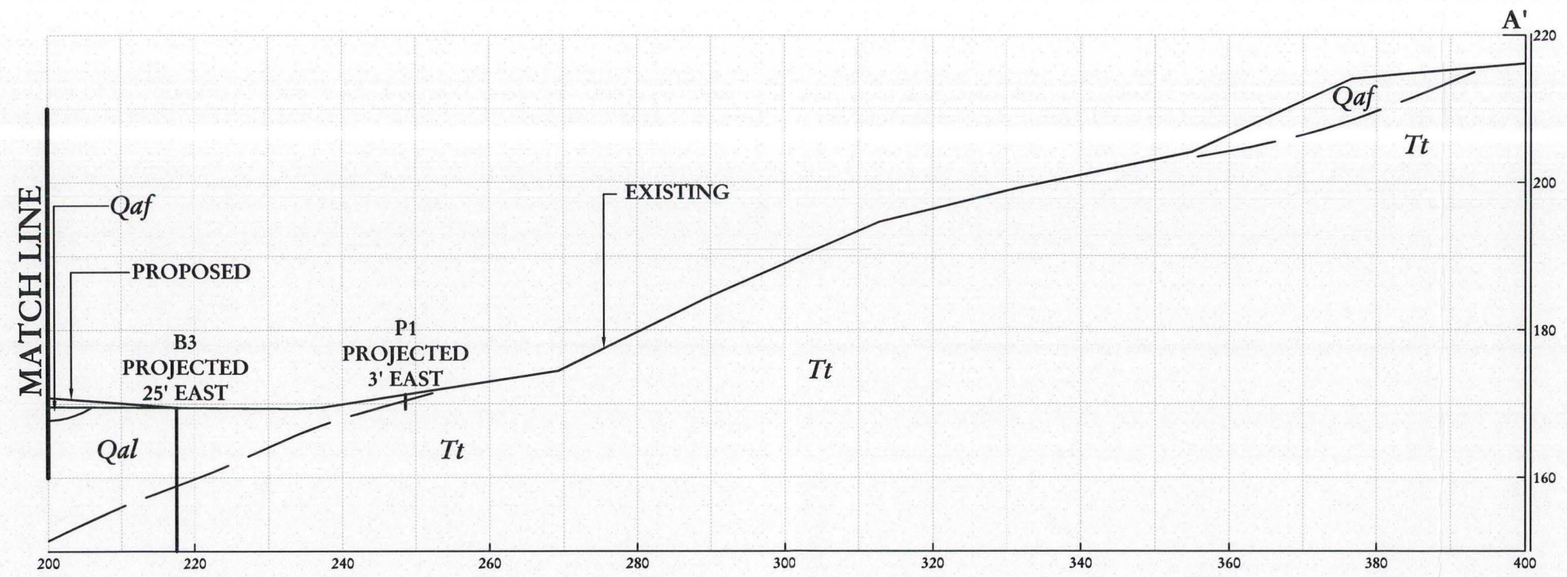
SITE PLAN AND GEOTECHNICAL MAP

MCCARTY ESTATES
3929 ARROYO SORRENTO ROAD
SAN DIEGO, CALIFORNIA

DATE:	MARCH 2017	JOB NO.:	2170119.01
BY:	SD	PLATE NO.:	1

CHRISTIAN WHEELER ENGINEERING





0 20' 40'

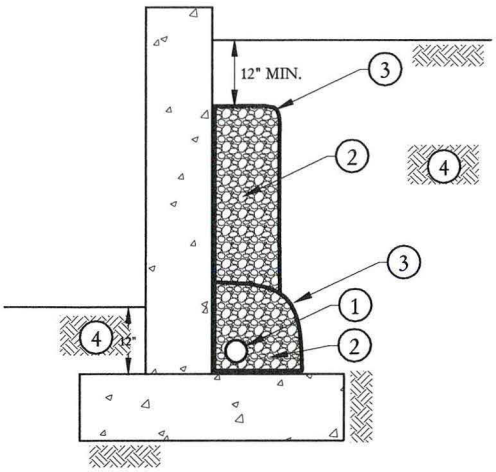
SCALE: 1" = 20'

GEOLOGIC CROSS SECTION A-A'

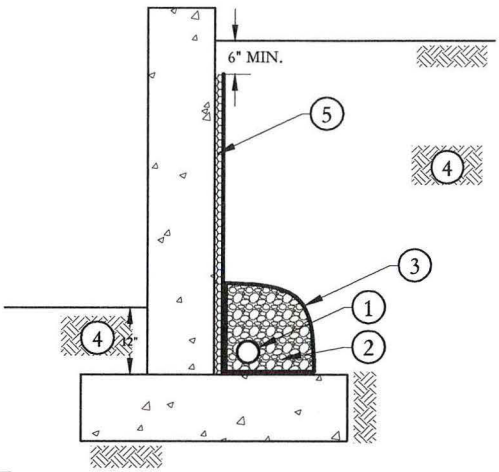
MCCARTY ESTATES
3929 ARROYO SORRENTO ROAD
SAN DIEGO, CALIFORNIA

DATE:	APRIL 2017	JOB NO.:	2170119.01
BY:	SD	PLATE NO.:	2

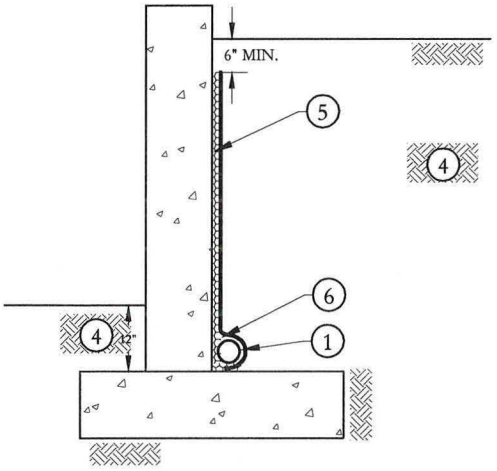
CHRISTIAN WHEELER
ENGINEERING



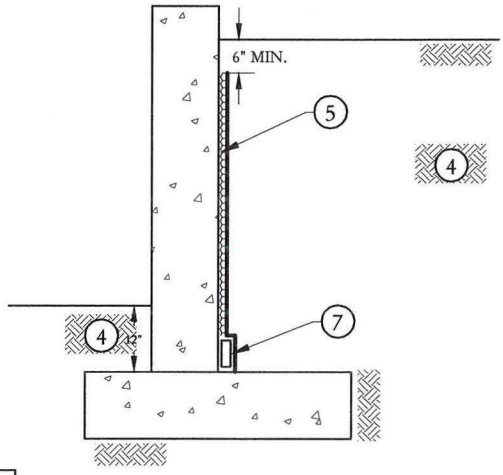
1 DETAIL



2 DETAIL



3 DETAIL



4 DETAIL

NOTES AND DETAILS

GENERAL NOTES:

1) THE NEED FOR WATERPROOFING SHOULD BE EVALUATED BY OTHERS.
2) WATERPROOFING TO BE DESIGNED BY OTHERS (CWE CAN PROVIDE A DESIGN IF REQUESTED).
3) EXTEND DRAIN TO SUITABLE DISCHARGE POINT PER CIVIL ENGINEER.
4) DO NOT CONNECT SURFACE DRAINS TO SUBDRAIN SYSTEM.

DETAILS:

1. 4-INCH PERFORATED PVC PIPE ON TOP OF FOOTING, HOLES POSITIONED DOWNWARD (SDR 35, SCHEDULE 40, OR EQUIVALENT).
2. ¾ INCH OPEN-GRADED CRUSHED AGGREGATE.
3. GEOFARBRIC WRAPPED COMPLETELY AROUND ROCK.
4. PROPERLY COMPACTED BACKFILL SOIL.
5. WALL DRAINAGE PANELS (MIRADRAIN OR EQUIVALENT) PLACED PER MANUFACTURER'S REC'S.
6. UNDERLAY SUBDRAIN WITH AND CUT FABRIC BACK FROM DRAINAGE PANELS AND WRAP FABRIC AROUND PIPE.
7. COLLECTION DRAIN (TOTAL DRAIN OR EQUIVALENT) LOCATED AT BASE OF WALL DRAINAGE PANEL PER MANUFACTURER'S RECOMMENDATIONS.

CANTILEVER RETAINING WALL DRAINAGE SYSTEMS

McCARTY ESTATES
3929 ARROYO SORRENTO ROAD
SAN DIEGO, CALIFORNIA

DATE:	APRIL 2017	JOB NO.:	2170119.01
BY:	SRD	PLATE NO.:	3

CHRISTIAN WHEELER
ENGINEERING

Appendix A

Subsurface Explorations

LOG OF TEST PIT P-1

Date Logged:	3/1/17	Equipment:	Hand Tools
Logged By:	DJF	Auger Type:	N/A
Existing Elevation:	180.0 feet	Drive Type:	N/A
Finish Elevation:	180.0 feet	Depth to Water:	N/A

Sample Type and Laboratory Test Legend

Cal	Modified California Sampler	CK	Chunk
SPT	Standard Penetration Test	DR	Drive Ring
ST	Shelby Tube		
MD	Max Density	DS	Direct Shear
SO4	Soluble Sulfates	Con	Consolidation
SA	Sieve Analysis	EI	Expansion Index
HA	Hydrometer	R-Val	Resistance Value
SE	Sand Equivalent	Chl	Soluble Chlorides
PI	Plasticity Index	Res	pH & Resistivity
CP	Collapse Potential	SD	Sample Density

DEPTH (ft)	ELEVATION (ft)	GRAPHIC LOG	USCS SYMBOL	SUMMARY OF SUBSURFACE CONDITIONS (based on Unified Soil Classification System)	PENETRATION (blows per foot)	SAMPLE TYPE	BULK	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	RELATIVE COMPACTION (%)	LABORATORY TESTS
0 – 1			SM	**Alluvium (Qal):** Brown, moist, loose, fine- to medium-grained, SILTY SAND.							
1 – 2			SW/ SM	**Torrey Sandstone (Tt):** White-light yellowish-brown, moist, very dense, fine- to medium-grained, WELL-GRADED SAND with silt.							
2 – 7.5				Test pit terminated at 2 feet. No groundwater or seepage encountered.							

Notes:

Symbol Legend

- ▽ Groundwater Level During Drilling
- ▼ Groundwater Level After Drilling
- ⁘ Apparent Seepage
- * No Sample Recovery
- ** Non-Representative Blow Count (rocks present)

MCCARTY ESTATES
3929 ARROYO SORRENTO ROAD
SAN DIEGO, CALIFORNIA

DATE:	APRIL 2017	JOB NO.:	2170119.01
BY:	SRD	FIGURE NO.:	A-1

CHRISTIAN WHEELER ENGINEERING

LOG OF TEST BORING B-1

Date Logged:	3/1/17	Equipment:	Deere 319E Skidsteer
Logged By:	DJF	Auger Type:	Auger Attachment
Existing Elevation:	187.0 feet	Drive Type:	140lbs/30 inches
Proposed Elevation:	187.0 feet	Depth to Water:	Unknown

Sample Type and Laboratory Test Legend

Cal	Modified California Sampler	CK	Chunk
SPT	Standard Penetration Test	DR	Drive Ring
ST	Shelby Tube		
MD	Max Density	DS	Direct Shear
SO4	Soluble Sulfates	Con	Consolidation
SA	Sieve Analysis	EI	Expansion Index
HA	Hydrometer	R-Val	Resistance Value
SE	Sand Equivalent	Chl	Soluble Chlorides
PI	Plasticity Index	Res	pH & Resistivity
CP	Collapse Potential	SD	Sample Density

DEPTH (ft)	ELEVATION (ft)	GRAPHIC LOG	USCS SYMBOL	SUMMARY OF SUBSURFACE CONDITIONS (based on Unified Soil Classification System)	PENETRATION (blows per foot)	SAMPLE TYPE	BULK	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	RELATIVE COMPACTION (%)	LABORATORY TESTS
0			SM	**Alluvium (Qal):** Light brown, damp to moist, loose to medium dense, very fine- to medium-grained, SLIGHTLY SILTY SAND, slightly mottled with trace roots, upper 18 inches disturbed.							SA
				Medium dense.	17	Cal					
5					24	Cal		3.7	99.9		CP
				Light brown to brown, moist, very fine- to medium-grained, SILTY SAND.							
10					31	Cal		5.6	103.2		
15					20	Cal		6.0	108.3		SA
20					26	Cal		10.5	113.3		
25					15	SPT					
31.5					14	Cal					
				Terminated at 31.5 feet. No groundwater or seepage encountered.							

Notes:

Symbol Legend

- ▽ Groundwater Level During Drilling
- ▼ Groundwater Level After Drilling
- ⁋ Apparent Seepage
- * No Sample Recovery
- ** Non-Representative Blow Count (rocks present)

MCCARTY ESTATES
3929 ARROYO SORRENTO ROAD
SAN DIEGO, CALIFORNIA

DATE:	APRIL 2017	JOB NO.:	2170119.01
BY:	SRD	FIGURE NO.:	A-2

CHRISTIAN WHEELER ENGINEERING

LOG OF TEST BORING B-2

Date Logged:	3/1/17	Equipment:	Deere 319E Skidsteer
Logged By:	DJF	Auger Type:	Auger Attachment
Existing Elevation:	182.0 feet	Drive Type:	140lbs/30 inches
Proposed Elevation:	182.0 feet	Depth to Water:	Unknown

Sample Type and Laboratory Test Legend

Cal	Modified California Sampler	CK	Chunk
SPT	Standard Penetration Test	DR	Drive Ring
ST	Shelby Tube		
MD	Max Density	DS	Direct Shear
SO4	Soluble Sulfates	Con	Consolidation
SA	Sieve Analysis	EI	Expansion Index
HA	Hydrometer	R-Val	Resistance Value
SE	Sand Equivalent	Chl	Soluble Chlorides
PI	Plasticity Index	Res	pH & Resistivity
CP	Collapse Potential	SD	Sample Density

DEPTH (ft)	USCS SYMBOL	SUMMARY OF SUBSURFACE CONDITIONS (based on Unified Soil Classification System)	PENETRATION (blows per foot)	SAMPLE TYPE	BULK	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	RELATIVE COMPACTION (%)	LABORATORY TESTS
0	SM	**Artificial Fill (Qaf):** Light brown, damp to moist, medium dense to dense, fine- to medium-grained, SILTY SAND, trace gravel and metal debris.	36	Cal		3.7	101.1		SA SO4 DS
5	SM	**Alluvium (Qal):** Yellowish-brown, damp to moist, medium dense, fine- to medium-grained, SILTY SAND.	25	Cal		2.7	100.7		CP
10		Brown, dense, increase in fine content.	38	Cal		2.8	103.3		
15			41	Cal					
20		Brown, medium dense, decrease in fines.	31	Cal		3.5	104.2		
25		Fines increase. 1 inch thick CLAYEY SAND lenses with black organic fragments.	14	SPT					
			16	SPT					
30		Terminated at 29.5 feet. No groundwater or seepage encountered.							

Notes:

Symbol Legend

- ▽ Groundwater Level During Drilling
- ▼ Groundwater Level After Drilling
- ⁘ Apparent Seepage
- * No Sample Recovery
- ** Non-Representative Blow Count (rocks present)

MCCARTY ESTATES
3929 ARROYO SORRENTO ROAD
SAN DIEGO, CALIFORNIA

DATE:	APRIL 2017	JOB NO.:	2170119.01
BY:	SRD	FIGURE NO.:	A-3

CHRISTIAN WHEELER ENGINEERING

LOG OF TEST BORING B-3

Date Logged:	3/1/17	Equipment:	Deere 319E Skidsteer
Logged By:	DJF	Auger Type:	Auger Attachment
Existing Elevation:	180.0 feet	Drive Type:	140lbs/30 inches
Proposed Elevation:	183.0 feet	Depth to Water:	Unknown

Sample Type and Laboratory Test Legend

Cal	Modified California Sampler	CK	Chunk
SPT	Standard Penetration Test	DR	Drive Ring
ST	Shelby Tube		
MD	Max Density	DS	Direct Shear
SO4	Soluble Sulfates	Con	Consolidation
SA	Sieve Analysis	EI	Expansion Index
HA	Hydrometer	R-Val	Resistance Value
SE	Sand Equivalent	Chl	Soluble Chlorides
PI	Plasticity Index	Res	pH & Resistivity
CP	Collapse Potential	SD	Sample Density

DEPTH (ft)	ELEVATION (ft)	GRAPHIC LOG	USCS SYMBOL	SUMMARY OF SUBSURFACE CONDITIONS (based on Unified Soil Classification System)	PENETRATION (blows per foot)	SAMPLE TYPE	BULK	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	RELATIVE COMPACTION (%)	LABORATORY TESTS
0			SM	**Alluvium (Qal):** Brown, moist, medium dense, fine- to medium-grained, SILTY SAND, trace roots.							
					17	Cal		11.6	97.8		CP
5				Grayish-brown, SILTY SAND with clay, rootlets, mottled.							
					24	Cal		17.6	107.2		CP
10				Decrease in fines.							
					14	Cal		8.4	108.1		
15				Very moist.							
			SW/ SM	**Torrey Sandstone (Tt):** White-yellowish-brown, moist, very dense, fine- to coarse-grained, WELL-GRADED SAND with silt.	50/4"	Cal		7.7	107.2		
20					50/4"	SPT					
				Terminated at 21 feet. No groundwater or seepage encountered.							
25											
30											

Notes:

Symbol Legend

- ▽ Groundwater Level During Drilling
- ▼ Groundwater Level After Drilling
- ⁹⁹ Apparent Seepage
- * No Sample Recovery
- ** Non-Representative Blow Count (rocks present)

MCCARTY ESTATES
3929 ARROYO SORRENTO ROAD
SAN DIEGO, CALIFORNIA

DATE:	APRIL 2017	JOB NO.:	2170119.01
BY:	SRD	FIGURE NO.:	A-4

CHRISTIAN WHEELER ENGINEERING

Appendix B

Laboratory Test Results

Laboratory tests were performed in accordance with the generally accepted American Society for Testing and Materials (ASTM) test methods or suggested procedures. Brief descriptions of the tests performed are presented below:

a) **CLASSIFICATION:** Field classifications were verified in the laboratory by visual examination. The final soil classifications are in accordance with the Unified Soil Classification System and are presented on the exploration logs in Appendix A.

b) **MOISTURE-DENSITY: MOISTURE-DENSITY:** In-place moisture contents and dry densities were determined for selected soil samples in accordance with ATM D 1188. The results are summarized in the boring and test pit logs presented in Appendix A.

c) **MAXIMUM DRY DENSITY AND OPTIUM MOISTURE CONTENT TEST:** The maximum dry density and optimum moisture content of a selected soil sample were determined in the laboratory in accordance with ASTM D 1557, Method A.

d) **DIRECT SHEAR:** A direct shear test was performed on a selected sample of the on-site soils in accordance with ASTM D 3080.

e) **GRAIN SIZE DISTRIBUTION:** The grain size distribution of selected samples was determined in accordance with ASTM C136 and/or ASTM D 422.

f) **COLLAPSE POTENTIAL:** Collapse potential test were performed on selected undisturbed soil samples in accordance with ASTM D 5333.

g) **SOLUBLE SULFATES:** The soluble sulfate content of a selected soil sample was determined in accordance with California Test Method 417.

LABORATORY TEST RESULTS

MCCARTY ESTATES

3929 ARROYO SORRENTO ROAD

SAN DIEGO, CALIFORNIA

MAXIMUM DRY DENSITY AND OPTIMUM MOISTURE CONTENT (ASTM D1557)

Sample Location	**Boring B2 @ 0-3½'**
Sample Description	Light Brown Silt Sand(SM)
Maximum Density	126.5 pcf
Optimum Moisture	8.6 %

DIRECT SHEAR (ASTM D3080)

Sample Location	**Boring B2 @ 0-3½'**
Sample Type	Remolded to 90 %
Friction Angle	30°
Cohesion	200 psf

GRAIN SIZE DISTRIBUTION (ASTM D422)

Sample Location	**Boring B1 @ 0-5'**	**Boring B1 @ 15'**	**Boring B2 @ 0-3½'**
Sieve Size	*Percent Passing*	*Percent Passing*	*Percent Passing*
¾"	100		100
½"	99		99
⅜	93		98
#4	91	100	97
#8	90	99	96
#16	88	97	94
#30	81	87	87
#50	49	55	53
#100	24	31	29
#200	15	22	20

COLLAPSE POTENTIAL (ASTM D 5333)

Sample Location	**Boring B1 @ 5'**	**Boring B2 @ 6½'**	**Boring B3 @ 2½'**
Initial Moisture Content	3.7 %	2.7 %	11.6 %
Initial Density	99.9 pcf	100.7 pcf	97.8 pcf
Consolidation Before Water Added	2.5 %	1.9 %	2.1 %
Consolidation After Water Added	3.6%	2.2 %	2.3 %
Final Moisture	18.3 %	18.4 %	19.1 %

Sample Location	**Boring B3 @ 6½'**
Initial Moisture Content	17.6 %
Initial Density	107.2 pcf
Consolidation Before Water Added	5.8 %
Consolidation After Water Added	5.8%
Final Moisture	17.8 %

LABORATORY TEST RESULTS (CONT)

SOLUBLE SULFATES (CALIFORNIA TEST 417)

Sample Location	**Boring B2 @ 0-3½'**
Soluble Sulfate	0.015 % (SO_4)

Appendix C

References

REFERENCES

Bryant, W. A. (compiler), 2005, Digital Database of Quaternary and Younger Faults from the Fault Activity Map of California, version 2.0: California Geological Survey Web Page, http://www.consrv.ca.gov/CGS/information/publications/QuaternaryFaults_ver2.htm

California Division of Mines and Geology, 1997, Guidelines for Evaluating and Mitigating Seismic Hazards in California, Special Publication 117

California Mining and Geology Board, 1996, Guidelines for Evaluating the Hazard of Surface Fault Rupture, adopted May 9, 1996

California Division of Mines and Geology, 1998, Maps of Known Active Fault Near Source-Zones in California and Adjacent Portions of Nevada

City of San Diego, 2008, Seismic Safety Study, Sheet 38

Christian Wheeler Engineering, 2014, Report of Geologic Reconnaissance, Proposed Arroyo Sorrento Estates, 3859 Arroyo Sorrento Road, San Diego, California, Project No. 2140414.01, dated September 30, 2014

Christian Wheeler Engineering, 2015, Preliminary Geotechnical Investigation and Fault Study, Proposed Arroyo Sorrento Estates, 3859 Arroyo Sorrento Road, San Diego, California, Project No. 2140414.02, dated September 29, 2015

Christian Wheeler Engineering, 2003, Report for Preliminary Geotechnical Investigation, Proposed Residential Development, The Estates at Costa Del Mar, San Diego, California, Project No. 203.449.1, dated October 3, 2003

Evans, James R., CEG 974, 1999, Engineering Geologic Investigation, Casa Vista Del Mar, City of San Diego, dated October 25, 1999

Hart, E. W. and Bryant, W. A., 1997, Fault-Rupture Hazard Zones in California; California Division of Mines and Geology Special Publication 42

Hetherington Engineering, 1996, Geotechnical Investigation, Proposed New Single Family Residence, 11650 Tierra Del Sur, San Diego, California, Project No. 1408.1, Log No. 2287, dated June 4, 1996

Jennings, C.W. and Bryant, W. A., 2010, Fault Activity Map, California Geological Survey, Geologic Data Map No. 6, http://www.quake.ca.gov/gmaps/FAM/faultactivitymap.html

Kennedy, M.P. and Peterson, G.L., 1975, Geology of the San Diego Metropolitan Area, California, California Division of Mines and Geology Bulletin 200

Kennedy, Michael P. and Tan, Siang S., 2008, Geologic Map of the San Diego 30'x60' Quadrangle, California, California Geologic Survey, Map No. 3.

Kern, P., 1989, Earthquakes and Faults in San Diego County, Pickle Press, 73 pp.

PSI, 2001, Geotechnical Engineering Services and Fault Trenching Study, Bosque Del Mar, VTN 40-0334, NEC Arroyo Sorrento Road & Tierra Del Sur, San Diego, California, Project No. 062-15034, dated June 29, 2001

PSI, 2000, Geologic Reconnaissance of 7.99 Acre Proposed Bosque Del Mar, Northeast Corner of Arroyo Sorrento Road & Tierra Del Sur, San Diego, California, Project No. 062-15110, dated November 24, 2000

Soils Southwest Inc., 1999, Report of Feasibility Study-Soils and Foundation Evaluations, Proposed Single Family Dwelling with Subterranean and Detached Guest House, Casa Vista Del Mar, Parcel 1 & 2, P.M. 10227, APN 307-060-68 & 69, Via Del Mar, San Diego, California, Project No. 99143-F, dated October 22, 1999

Tan, S.S., 1995, Landslide Hazards in the Southern Part of the San Diego Metropolitan Area, San Diego County, California, California Division of Mines and Geology Open-File Report 95-03.

URS Greiner Woodward Clyde, 1999, Geotechnical Investigation Torrey reserve Wets-SDG&E Parcel, San Diego, California, URSGWC Project No. 58-9751051W.00-0SI02, dated May 13, 1998, revised April 22, 1999

URS, Geotechnical Study, Sorrento Pointe, San Diego, California, URS Project No. 27669035.10000, dated December 21, 2007, revised April 28, 2010

U.S. Geological Survey, U.S. Seismic Design Maps Web Application, http://geohazards.usgs.gov/designmaps/us/application.php

U.S. Geological Survey, Quaternary Faults in Google Earth, http://earthquake.usgs.gov/hazards/qfaults/google.php

PLANS AND TOPOGRAPHIC MAPS

City of San Diego, 1959, Topographic Map Sheet 278-1695; Scale: 1 inch = 200 feet

City of San Diego, 1977, Ortho-Topographic Map Sheet 278-1695; Scale: 1 inch = 200 feet

JP Engineering, 2013, Tentative Parcel Map No PCP, SDP and Preliminary Grading Plan, 3929 Arroyo Sorrento Road, APN 307-060-60-00, Project No. 1009-16, dated January 25, 2017

United States Geological Survey, 1953, Del Mar Quadrangle; Scale 1 inch = 2000 feet

United States Geological Survey, 1967, Del Mar Quadrangle; Scale 1 inch = 2000 feet

United States Geological Survey, 1975, Del Mar Quadrangle; Scale 1 inch = 2000 feet

AERIAL PHOTOGRAPHS

NETROnline, 1953, Scale: 1 inch = 300 feet (approximate)

NETROnline, 1964, Scale: 1 inch = 300 feet (approximate)

NETROnline, 1980, Scale: 1 inch = 300 feet (approximate)

NETROnline, 1990, Scale: 1 inch = 300 feet (approximate)

NETROnline, 2003, Scale: 1 inch = 300 feet (approximate)

NETROnline, 2005, Scale: 1 inch = 300 feet (approximate)

San Diego County, 1928, Flights 45A and 45B; Scale: 1 inch = 1000 feet (approximate)

San Diego County, 1970, Flight 5, Photographs 14 and 15; Scale: 1 inch = 2000 feet (approximate)

San Diego County, 1973, Flight 30, Photographs 26 and 27; Scale: 1 inch = 1000 feet (approximate)

San Diego County, 1978, Flight 18B, Photographs 37 through 39; Scale: 1 inch = 1000 feet (approximate)

San Diego County, 1983, Photographs 615 and 616; Scale: 1 inch = 2000 feet (approximate)

San Diego County, 1989, Photographs 1-167 and 1-205; Scale: 1 inch = 2640 feet (approximate)

Appendix D

Recommended Grading Specifications – General Provisions

RECOMMENDED GRADING SPECIFICATIONS - GENERAL PROVISIONS

McCARTY ESTATES
3929 ARROYO SORRENTO ROAD
SAN DIEGO, CALIFORNIA

GENERAL INTENT

The intent of these specifications is to establish procedures for clearing, compacting natural ground, preparing areas to be filled, and placing and compacting fill soils to the lines and grades shown on the accepted plans. The recommendations contained in the preliminary geotechnical investigation report and/or the attached Special Provisions are a part of the Recommended Grading Specifications and shall supersede the provisions contained hereinafter in the case of conflict. These specifications shall only be used in conjunction with the geotechnical report for which they are a part. No deviation from these specifications will be allowed, except where specified in the geotechnical report or in other written communication signed by the Geotechnical Engineer.

OBSERVATION AND TESTING

Christian Wheeler Engineering shall be retained as the Geotechnical Engineer to observe and test the earthwork in accordance with these specifications. It will be necessary that the Geotechnical Engineer or his representative provide adequate observation so that he may provide his opinion as to whether or not the work was accomplished as specified. It shall be the responsibility of the contractor to assist the Geotechnical Engineer and to keep him appraised of work schedules, changes and new information and data so that he may provide these opinions. In the event that any unusual conditions not covered by the special provisions or preliminary geotechnical report are encountered during the grading operations, the Geotechnical Engineer shall be contacted for further recommendations.

If, in the opinion of the Geotechnical Engineer, substandard conditions are encountered, such as questionable or unsuitable soil, unacceptable moisture content, inadequate compaction, adverse weather, etc., construction should be stopped until the conditions are remedied or corrected or he shall recommend rejection of this work.

Tests used to determine the degree of compaction should be performed in accordance with the following American Society for Testing and Materials test methods:

Maximum Density & Optimum Moisture Content - ASTM D1557
Density of Soil In-Place - ASTM D1556 or ASTM D6938

All densities shall be expressed in terms of Relative Compaction as determined by the foregoing ASTM testing procedures.

PREPARATION OF AREAS TO RECEIVE FILL

All vegetation, brush and debris derived from clearing operations shall be removed, and legally disposed of. All areas disturbed by site grading should be left in a neat and finished appearance, free from unsightly debris.

After clearing or benching the natural ground, the areas to be filled shall be scarified to a depth of 6 inches, brought to the proper moisture content, compacted and tested for the specified minimum degree of compaction. All loose soils in excess of 6 inches thick should be removed to firm natural ground which is defined as natural soil which possesses an in-situ density of at least 90 percent of its maximum dry density.

When the slope of the natural ground receiving fill exceeds 20 percent (5 horizontal units to 1 vertical unit), the original ground shall be stepped or benched. Benches shall be cut to a firm competent formational soil. The lower bench shall be at least 10 feet wide or 1-1/2 times the equipment width, whichever is greater, and shall be sloped back into the hillside at a gradient of not less than two (2) percent. All other benches should be at least 6 feet wide. The horizontal portion of each bench shall be compacted prior to receiving fill as specified herein for compacted natural ground. Ground slopes flatter than 20 percent shall be benched when considered necessary by the Geotechnical Engineer.

Any abandoned buried structures encountered during grading operations must be totally removed. All underground utilities to be abandoned beneath any proposed structure should be removed from within 10 feet of the structure and properly capped off. The resulting depressions from the above

described procedure should be backfilled with acceptable soil that is compacted to the requirements of the Geotechnical Engineer. This includes, but is not limited to, septic tanks, fuel tanks, sewer lines or leach lines, storm drains and water lines. Any buried structures or utilities not to be abandoned should be brought to the attention of the Geotechnical Engineer so that he may determine if any special recommendation will be necessary.

All water wells which will be abandoned should be backfilled and capped in accordance to the requirements set forth by the Geotechnical Engineer. The top of the cap should be at least 4 feet below finish grade or 3 feet below the bottom of footing whichever is greater. The type of cap will depend on the diameter of the well and should be determined by the Geotechnical Engineer and/or a qualified Structural Engineer.

FILL MATERIAL

Materials to be placed in the fill shall be approved by the Geotechnical Engineer and shall be free of vegetable matter and other deleterious substances. Granular soil shall contain sufficient fine material to fill the voids. The definition and disposition of oversized rocks and expansive or detrimental soils are covered in the geotechnical report or Special Provisions. Expansive soils, soils of poor gradation, or soils with low strength characteristics may be thoroughly mixed with other soils to provide satisfactory fill material, but only with the explicit consent of the Geotechnical Engineer. Any import material shall be approved by the Geotechnical Engineer before being brought to the site.

PLACING AND COMPACTION OF FILL

Approved fill material shall be placed in areas prepared to receive fill in layers not to exceed 6 inches in compacted thickness. Each layer shall have a uniform moisture content in the range that will allow the compaction effort to be efficiently applied to achieve the specified degree of compaction. Each layer shall be uniformly compacted to the specified minimum degree of compaction with equipment of adequate size to economically compact the layer. Compaction equipment should either be specifically designed for soil compaction or of proven reliability. The minimum degree of compaction to be achieved is specified in either the Special Provisions or the recommendations contained in the preliminary geotechnical investigation report.

When the structural fill material includes rocks, no rocks will be allowed to nest and all voids must be carefully filled with soil such that the minimum degree of compaction recommended in the Special Provisions is achieved. The maximum size and spacing of rock permitted in structural fills and in non-structural fills is discussed in the geotechnical report, when applicable.

Field observation and compaction tests to estimate the degree of compaction of the fill will be taken by the Geotechnical Engineer or his representative. The location and frequency of the tests shall be at the Geotechnical Engineer's discretion. When the compaction test indicates that a particular layer is at less than the required degree of compaction, the layer shall be reworked to the satisfaction of the Geotechnical Engineer and until the desired relative compaction has been obtained.

Fill slopes shall be compacted by means of sheepsfoot rollers or other suitable equipment. Compaction by sheepsfoot roller shall be at vertical intervals of not greater than four feet. In addition, fill slopes at a ratio of two horizontal to one vertical or flatter, should be trackrolled. Steeper fill slopes shall be over-built and cut-back to finish contours after the slope has been constructed. Slope compaction operations shall result in all fill material six or more inches inward from the finished face of the slope having a relative compaction of at least 90 percent of maximum dry density or the degree of compaction specified in the Special Provisions section of this specification. The compaction operation on the slopes shall be continued until the Geotechnical Engineer is of the opinion that the slopes will be surficially stable.

Density tests in the slopes will be made by the Geotechnical Engineer during construction of the slopes to determine if the required compaction is being achieved. Where failing tests occur or other field problems arise, the Contractor will be notified that day of such conditions by written communication from the Geotechnical Engineer or his representative in the form of a daily field report.

If the method of achieving the required slope compaction selected by the Contractor fails to produce the necessary results, the Contractor shall rework or rebuild such slopes until the required degree of compaction is obtained, at no cost to the Owner or Geotechnical Engineer.

CUT SLOPES

The Engineering Geologist shall inspect cut slopes excavated in rock or lithified formational material during the grading operations at intervals determined at his discretion. If any conditions not anticipated in the preliminary report such as perched water, seepage, lenticular or confined strata of a potentially adverse nature, unfavorably inclined bedding, joints or fault planes are encountered during grading, these conditions shall be analyzed by the Engineering Geologist and Geotechnical Engineer to determine if mitigating measures are necessary.

Unless otherwise specified in the geotechnical report, no cut slopes shall be excavated higher or steeper than that allowed by the ordinances of the controlling governmental agency.

ENGINEERING OBSERVATION

Field observation by the Geotechnical Engineer or his representative shall be made during the filling and compaction operations so that he can express his opinion regarding the conformance of the grading with acceptable standards of practice. Neither the presence of the Geotechnical Engineer or his representative or the observation and testing shall release the Grading Contractor from his duty to compact all fill material to the specified degree of compaction.

SEASON LIMITS

Fill shall not be placed during unfavorable weather conditions. When work is interrupted by heavy rain, filling operations shall not be resumed until the proper moisture content and density of the fill materials can be achieved. Damaged site conditions resulting from weather or acts of God shall be repaired before acceptance of work.

RECOMMENDED GRADING SPECIFICATIONS - SPECIAL PROVISIONS

RELATIVE COMPACTION: The minimum degree of compaction to be obtained in compacted natural ground, compacted fill, and compacted backfill shall be at least 90 percent. For street and

parking lot subgrade, the upper six inches should be compacted to at least 95 percent relative compaction.

EXPANSIVE SOILS: Detrimentally expansive soil is defined as clayey soil which has an expansion index of 50 or greater when tested in accordance with the Uniform Building Code Standard 29-2.

OVERSIZED MATERIAL: Oversized fill material is generally defined herein as rocks or lumps of soil over 6 inches in diameter. Oversized materials should not be placed in fill unless recommendations of placement of such material are provided by the Geotechnical Engineer. At least 40 percent of the fill soils shall pass through a No. 4 U.S. Standard Sieve.

TRANSITION LOTS: Where transitions between cut and fill occur within the proposed building pad, the cut portion should be undercut a minimum of one foot below the base of the proposed footings and recompacted as structural backfill. In certain cases that would be addressed in the geotechnical report, special footing reinforcement or a combination of special footing reinforcement and undercutting may be required.

JP ENGINEERING
- CIVIL ENGINEERING
- LAND PLANNING
- SURVEYING

4849 Ronson Court
Suite No. 105
San Diego, CA 92111
Tel 858.569.7377
Fax 858.569.0830
Web www.jpeng.com
Email jp@jpeng.com

HYDROLOGY

AND

DRAINAGE CALCULATIONS

FOR

PLANNED DEVELOPMENT PERMIT

AT

3929 ARROYO SORRENTO ROAD

SAN DIEGO

P.T.S. #515157

PROJECT NO. 1009-16

J H Palacios

Jorge H. Palacios, RCE 32031

12-15-17

Date

G:\project docs\1009-16\Hydro and Drainage Calcs\Title Page HDCR wpd

MEMBER ASCE

TABLE OF CONTENTS

ATTACHMENTS - Drainage Plan

- **Exhibit 'A'**
- **Exhibit 'B'**
- **Exhibit 'C'**
- **Exhibit 'D'**

SCOPE OF STUDY

McCarty Estates is a 2.36 acre infill residential subdivision within the Carmel Valley Neighborhood 8 in the City of San Diego. The project consists of 2 single family residential lots, which range in size from 1.00 acre to 1.36 acres.

The property is bordered on the north by Arroyo Sorrento Road, a paved and fully improved public street. Existing development to the south, east and west consists of single family homes within lots that range in size from 1.0 acre to 3.31 acres. The southerly portion (1.69 acres) of the site sheet flows to an existing concrete ditch and storm drain system constructed by the Loma Sorrento Subdivision, TM 96-7929, Map No. 13870. The remainder of the property (2.72 acres) surface drains towards the existing 24"x24" grated catch basin adjacent to the westerly property line and into an existing 36" HDPE storm drain pipe that drains north and was constructed by City of San Diego Dwg. No. 32048-2-D and west towards the public 42" R.C.P. storm drain in Arroyo Sorrento Road that was constructed by the City of San Diego Dwg. No. 30176-6-D. Drainage for the property will follow the same pattern.

The southerly portion of the property is already developed (Lot 2) and the runoff coefficient of 0.55 is used for the runoff calculations. The remainder of the property (Lot 1 and easterly property) will drain onto the existing 24"x24" grated catch basin and the runoff coefficient of 0.55 is used for future development.

The runoff coefficient for the undeveloped site that has been used for the runoff calculations is 0.45. Runoff Calculations are based on the requirements outlined in the City of San Diego's Drainage Design Manual, January 2017 Edition.

Rational Method runoff calculations were performed using the Rational Method. The method calculates times of concentration and runoff volumes using the criteria specified in the City of San Diego's Drainage Design Manual, January 2017 Edition.

To comply with the California Water Quality Control requirements, Order No. 2001-01, we are proposing vegetated slopes and vegetated swales. The project is a Standard Development Project that will comply with site Design, Source Control and Structural Control BMP requirements.

The pre-development and post-development runoff summaries are as follows:

For:	A (Acres)	Q_{pre} (cfs) C=0.45	Q_{post} (cfs) C=0.55	Q_{diff} (cfs)
50-Year Storm	4.41	4.81	4.91	+0.10

Conclusion

The southeast portion of the site will remain the same for the 50-year runoff of 1.14 C.F.S. The northerly portion of the site will only increase the 50-year runoff by 0.10 C.F.S. The runoff will discharge to the existing 36" HDPE storm drain along the westerly property line per City of San Diego Drawing No. 32048-2-D with a 100-year runoff capacity of 51.46 C.F.S. The increase by the Q_{50} of 0.10 C.F.S. is minimal. Therefore, no adverse impacts are being caused to neighboring and downstream properties.

See Exhibit C of City Drawing Nos. 32048-2-D and 30176-6-D in the attachments of this report. See also Exhibit D for Drainage Report for City Drawing No. 32048-2-D.

DECLARATION OF RESPONSIBLE CHARGE

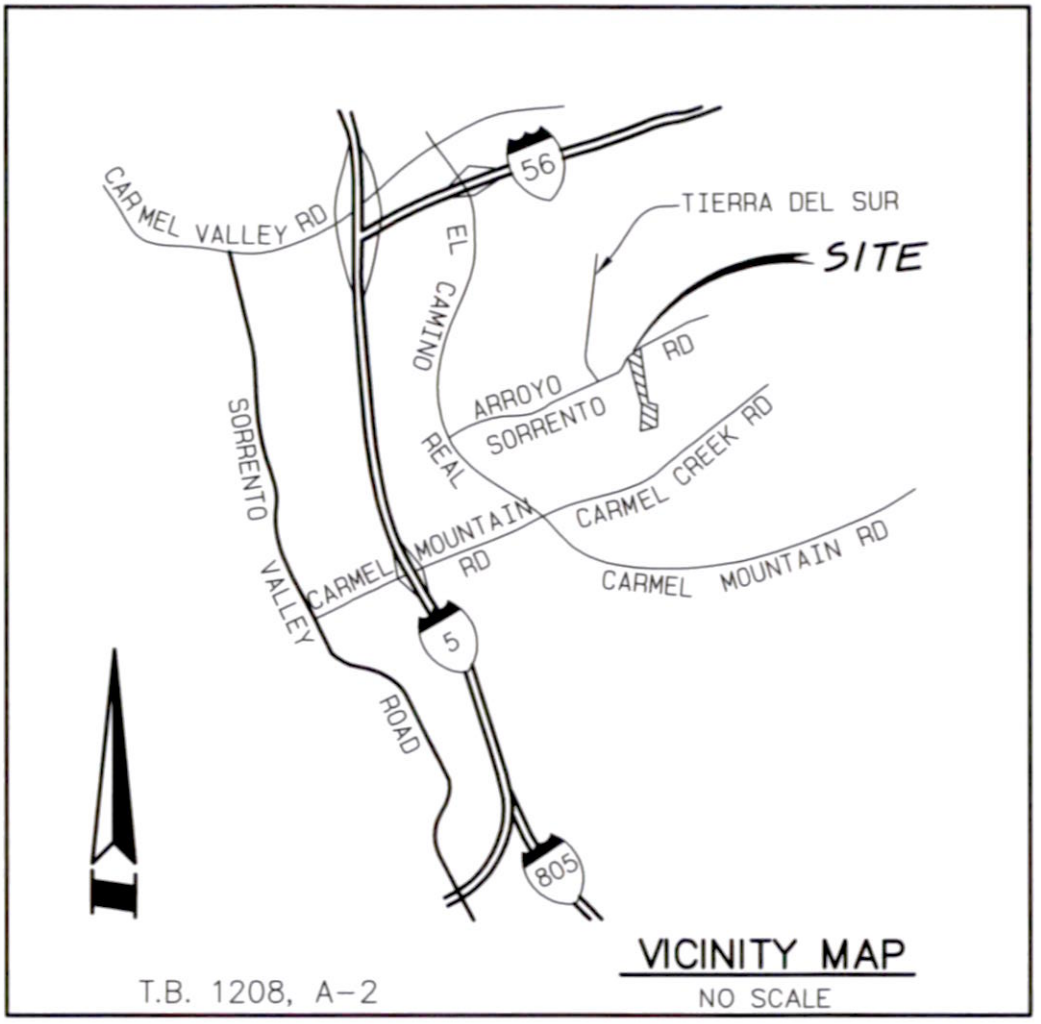
I HEREBY DECLARE THAT I AM THE ENGINEER OF WORK FOR THIS PROJECT, THAT I HAVE EXERCISED RESPONSIBLE CHARGE OVER THE DESIGN OF THE PROJECT AS DEFINED IN SECTION 6703 OF THE BUSINESS AND PROFESSIONS CODE, AND THAT THE DESIGN IS CONSISTENT WITH CURRENT STANDARDS.

I UNDERSTAND THAT THE CHECK OF PROJECT DRAWINGS AND SPECIFICATIONS BY THE CITY OF SAN DIEGO IS CONFINED TO A REVIEW ONLY AND DOES NOT RELIEVE ME, AS ENGINEER OF WORK, OF MY RESPONSIBILITIES FOR PROJECT DESIGN.

JP ENGINEERING, INC.
4849 RONSON COURT, SUITE 105
SAN DIEGO, CA 92111
(858) 569-7377

BY: _____ DATE: 12-15-17

JORGE H. PALACIOS
R.C.E. 32031, EXP. 12-31-18


CARMEL VALLEY RD
56
EL CAMINO
TIERRA DEL SUR
SITE
RD
ARROYO
SORRENTO
REAL
SORRENTO
VALLEY
ROAD
CARMEL MOUNTAIN
RD
CARMEL CREEK RD
CARMEL MOUNTAIN RD
5
805
T.B. 1208, A-2
VICINITY MAP
NO SCALE

50-YEAR STORM

PRE-DEVELOPMENT

AND

POST-DEVELOPMENT

JP ENGINEERING, INC.
4849 Ronson Court, Suite 105
San Diego, CA 92111
(858) 569-7377 Fax: (858) 569-0830

RATIONAL METHOD STUDY

SEE ATTACHED EXHIBITS "A" and "B"

CITY OF SAN DIEGO DRAINAGE MANUAL	STUDY NAME: McCarty Estates 50 YR. STORM RATIONAL METHOD STUDY	CALCULATED BY: JHP DATE: 12-04-17 CHECKED BY: DATE:	JOB NO. 1009-16 SHEET NO. 1 OF 2

A			B			C						
CONCEN-TRATION POINT ☐	AREA (ACRES)	REMARKS	RUNOFF COEFF. C	FLOW PATH LENGTH (FT)	FLOW PATH HEIGHT (FT)	TC (Min)	I in/hr	Q (cfs)	SIZE AND TYPE OF INLET	PIPE SIZE AND MATERIAL	SLOPE (%)	NOTES
1	2.72		0.45	450	30	12.5	3	3.67			6.7%	PRE-DEVELOPMENT
2	1.69		0.55	400	50	12.5	3	1.14			12.5%	PRE-DEVELOPMENT
TOTAL	4.41						TOTAL	4.81				

JP ENGINEERING, INC.
4849 Ronson Court, Suite 105
San Diego, CA 92111
(858) 569-7377 Fax: (858) 569-0830

RATIONAL METHOD STUDY **SEE ATTACHED EXHIBITS "A" and "B"**

CITY OF SAN DIEGO DRAINAGE MANUAL	STUDY NAME: McCarty Estates 50 YR. STORM RATIONAL METHOD STUDY	CALCULATED BY: JHP DATE: 12-04-17 CHECKED BY: DATE:	JOB NO. 1009-16 SHEET NO. 2 OF 2

A			B			C						
CONCEN-TRATION POINT ☐	AREA (ACRES)	REMARKS	RUNOFF COEFF. C	FLOW PATH LENGTH (FT)	FLOW PATH HEIGHT (FT)	TC (Min)	I in/hr	Q (cfs)	SIZE AND TYPE OF INLET	PIPE SIZE AND MATERIAL	SLOPE (%)	NOTES
3	2.4		0.45	450	30	12.5	3	3.24			6.7%	POST-DEVELOPMENT
4	0.32		0.55	350	10	12.5	3	0.53			3.0%	POST-DEVELOPMENT
5	1.69		0.55	400	50	12.5	3	1.14			12.5%	POST-DEVELOPMENT
TOTAL	**4.41**						**TOTAL**	**4.91**				

Q_{50} post - Q_{50} pre = 4.91-4.81 = +0.10 cfs

CIRCULAR CHANNEL

AND

TRAPEZOIDAL CHANNEL

ANALYSIS

JP ENGINEERING, INC.
4849 Ronson Court, Suite 105
San Diego, CA 92111
(858) 569-7377 Fax: (858) 569-0830

SEE ATTACHED EXHIBIT 'A'

RATIONAL METHOD STUDY

SAN DIEGO COUNTY HYDROLOGY MANUAL	STUDY NAME: McCarty Estates (POST-DEVELOPMENT) 50-YEAR STORM RATIONAL METHOD STUDY	CALCULATED BY: JHP DATE: 12/04/2017 CHECKED BY: DATE:	JOB NO. 1009-16 SHEET NO. 1 OF 1

CONCEN-TRATION POINT ☐	REMARKS	Q (cfs)	SIZE AND TYPE OF INLET	PIPE SIZE AND MATERIAL	SLOPE (%)	NOTES
P-1		3.67	24" X 24" C.B.	12" HDPE PIPE	2.0% MIN.	DN= 0.63', V= 7.00 fps
P-2		3.77	24" X 24" C.B.	12" HDPE PIPE	2.0% MIN.	DN= 0.65', V= 7.03 fps

CIRCULAR CHANNEL ANALYSIS
NORMAL DEPTH COMPUTATION

December 4, 2017

PROGRAM INPUT DATA

DESCRIPTION	VALUE
Flow Rate (cfs)	3.67
Channel Bottom Slope (ft/ft)	0.02
Manning's Roughness Coefficient (n-value)	0.013
Channel Diameter (ft)	1.0

COMPUTATION RESULTS

DESCRIPTION	VALUE
Normal Depth (ft)	0.63
Flow Velocity (fps)	7.0
Froude Number	1.673
Velocity Head (ft)	0.76
Energy Head (ft)	1.39
Cross-Sectional Area of Flow (sq ft)	0.52
Top Width of Flow (ft)	0.96

P-1

CIRCULAR CHANNEL ANALYSIS
NORMAL DEPTH COMPUTATION

December 4, 2017

PROGRAM INPUT DATA

DESCRIPTION	VALUE
Flow Rate (cfs)	3.77
Channel Bottom Slope (ft/ft)	0.02
Manning's Roughness Coefficient (n-value)	0.013
Channel Diameter (ft)	1.0

COMPUTATION RESULTS

DESCRIPTION	VALUE
Normal Depth (ft)	0.65
Flow Velocity (fps)	7.03
Froude Number	1.656
Velocity Head (ft)	0.77
Energy Head (ft)	1.41
Cross-Sectional Area of Flow (sq ft)	0.54
Top Width of Flow (ft)	0.96

P-2

HYDRAULIC REFERENCES

AND

GRAPHS

Table A-1. Runoff Coefficients for Rational Method

Land Use	Runoff Coefficient (C) Soil Type [1]
Residential:	
Single Family	0.55
Multi-Units	0.70
Mobile Homes	0.65
Rural (lots greater than ½ acre)	0.45
Commercial [2]	
80% Impervious	0.85
Industrial [2]	
90% Impervious	0.95

Note:
[1] Type D soil to be used for all areas.
[2] Where actual conditions deviate significantly from the tabulated imperviousness values of 80% or 90%, the values given for coefficient C, may be revised by multiplying 80% or 90% by the ratio of actual imperviousness to the tabulated imperviousness. However, in case shall the final coefficient be less than 0.50. For example: Consider commercial property on D soil.

Actual imperviousness = 50%
Tabulated imperviousness = 80%
Revised C = (50/80) x 0.85 = 0.53

The values in Table A–1 are typical for urban areas. However, if the basin contains rural or agricultural land use, parks, golf courses, or other types of nonurban land use that are expected to be permanent, the appropriate value should be selected based upon the soil and cover and approved by the City.

A.1.3. Rainfall Intensity

The rainfall intensity (I) is the rainfall in inches per hour (in/hr.) for a duration equal to the T_c for a selected storm frequency. Once a particular storm frequency has been selected for design and a T_c calculated for the drainage area, the rainfall intensity can be determined from the Intensity-Duration-Frequency Design Chart (Figure A-1).

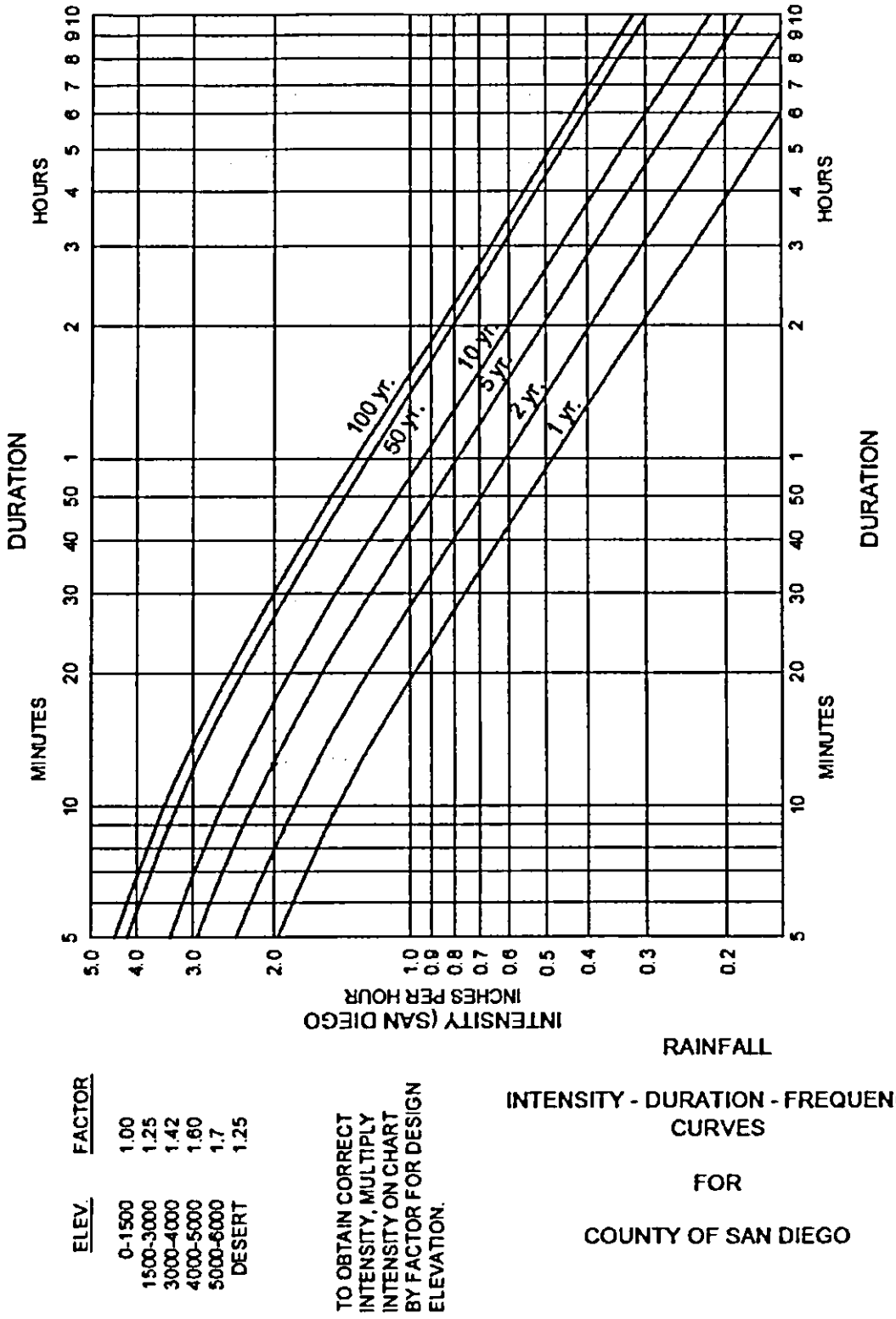


Figure A-1. Intensity-Duration-Frequency Design Chart

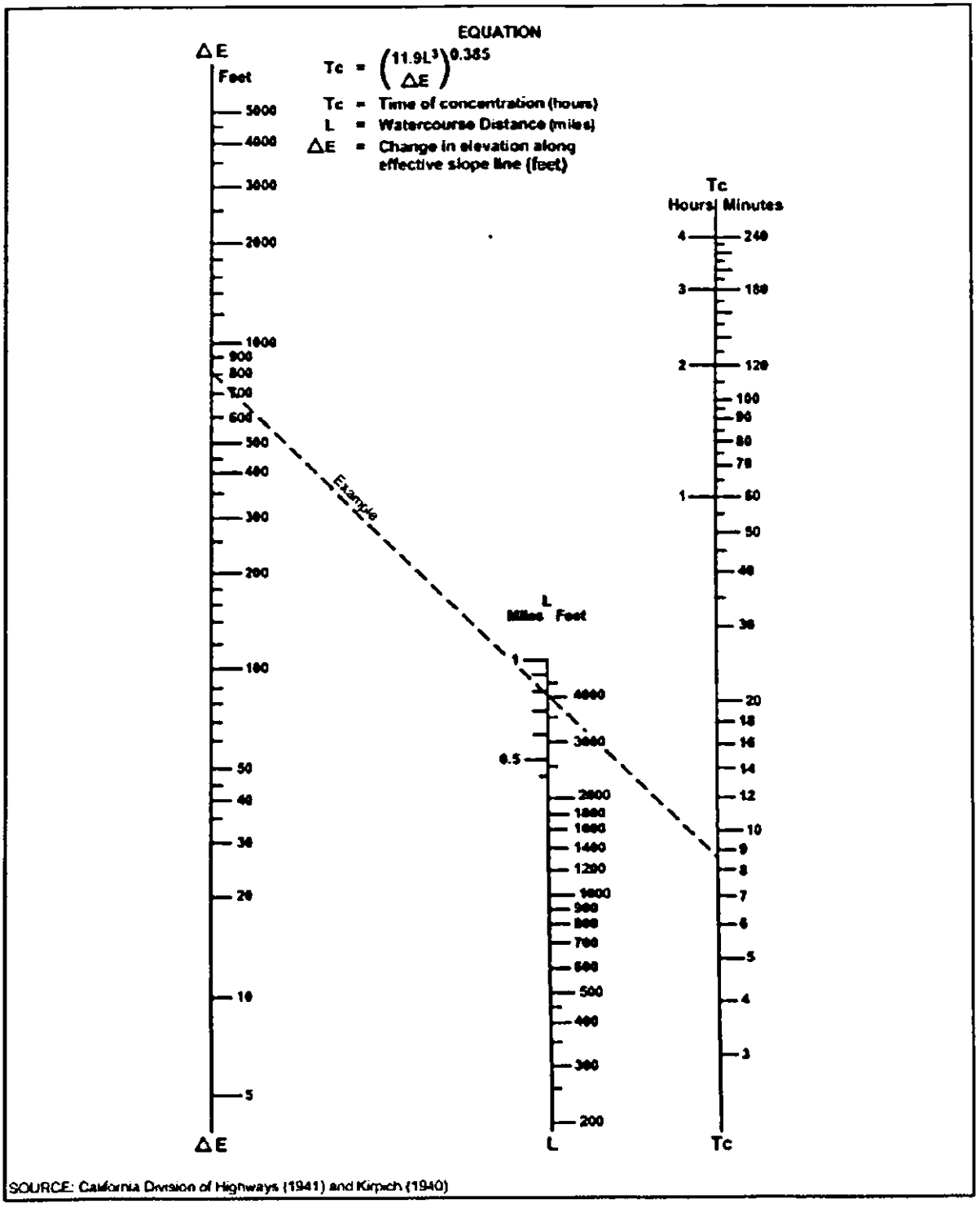


Figure A-2. Nomograph for Determination of T_c for Natural Watersheds

Note: Add ten minutes to the computed time of concentration from Figure A-2.

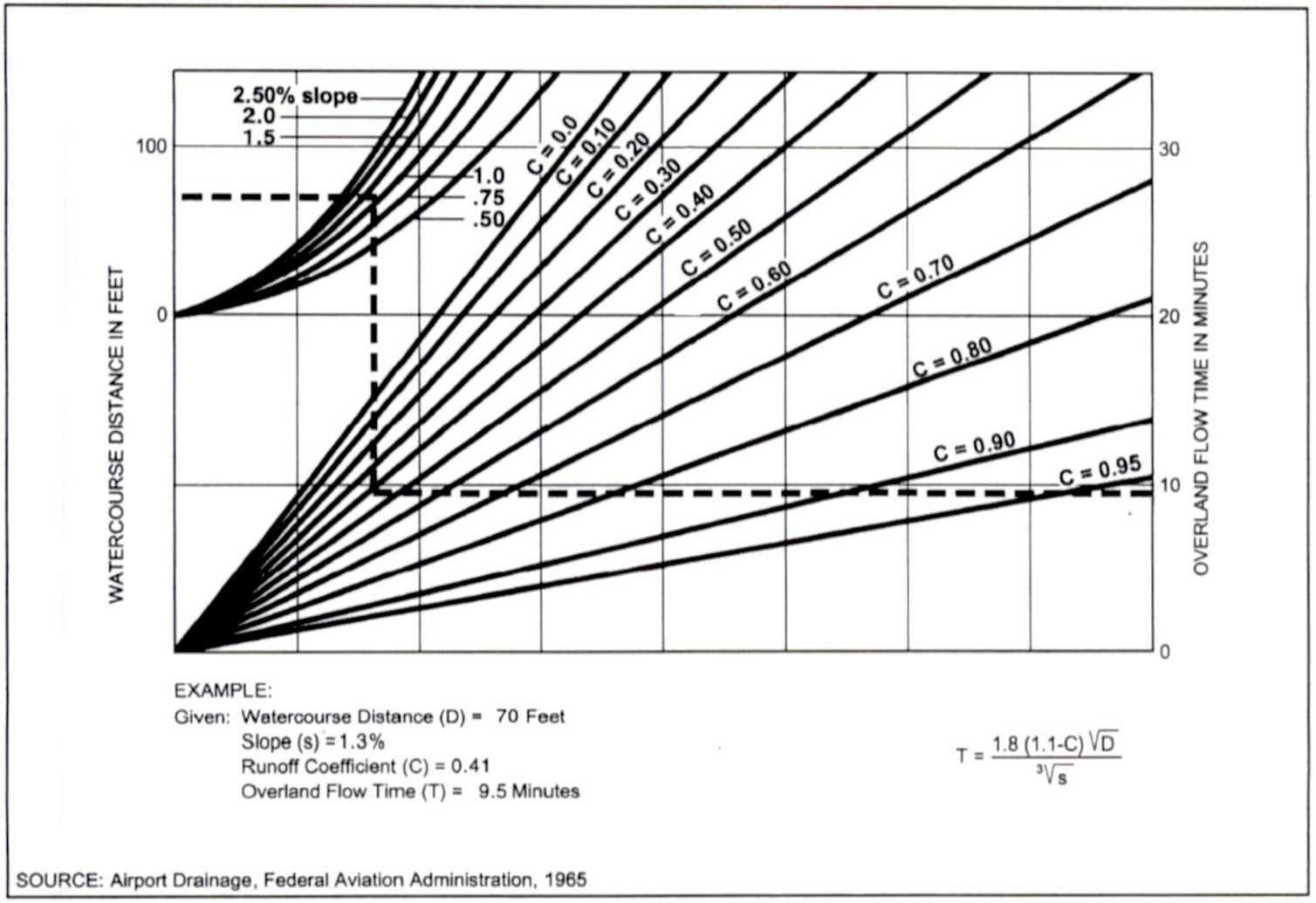


Figure A-4. Rational Formula – Overland Time of Flow Nomograph

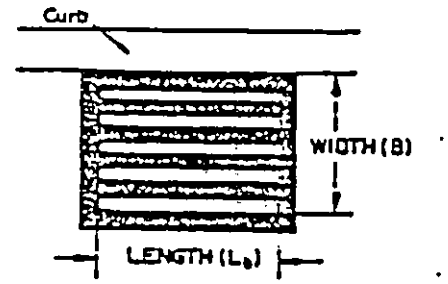
Note: Use formula for watercourse distances in excess of 100 feet.

Table C-2. Average Manning Roughness Coefficients for Closed Conduits [1]

Conduit	Manning Roughness Coefficient (n)
Reinforced Concrete Pipe (RCP)	0.013
Corrugated Metal Pipe and Pipe Arch	
2-3/8 x ½ inch Corrugations	
Unlined	0.024
Half Lined	
Full Flow	0.018
d/D>=0.60	0.016
d/D<0.60	0.013
Fully Lined	0.013
3x1 inch Corrugations	0.027
6x2 inch Corrugations	0.032
Spiral Rib Pipe	0.013
Helically Wound Pipe	
18-inch	0.015
24-inch	0.017
30-inch	0.019
36-inch	0.021
42-inch	0.022
48-inch	0.023
Plastic Pipe (HPDE and PVC)	
Smooth	0.013
Corrugated	0.024
Vitrified Clay Pipe	0.014
Cast-Iron Pipe (Uncoated)	0.013
Steel Pipe	0.011
Brick	0.017
Cast-In-Place Concrete Pipe	
Rough Wood Forms	0.017
Smooth Wood or Steel Forms	0.014

[1] Based on materials and workmanship required by standard specifications.

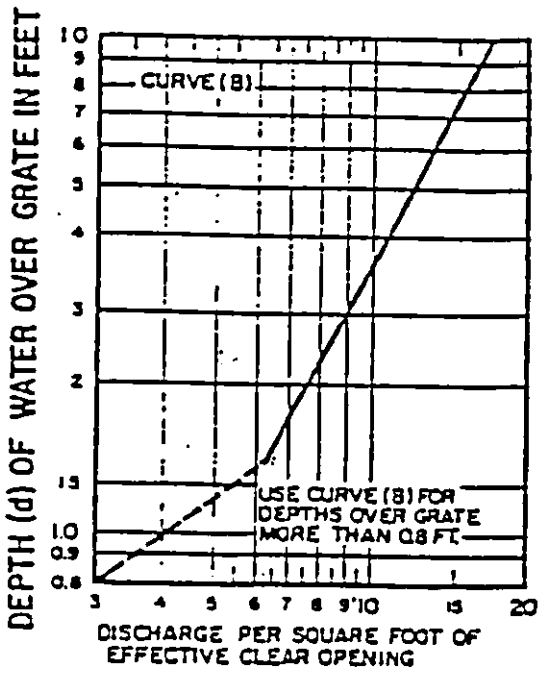
CHART 3

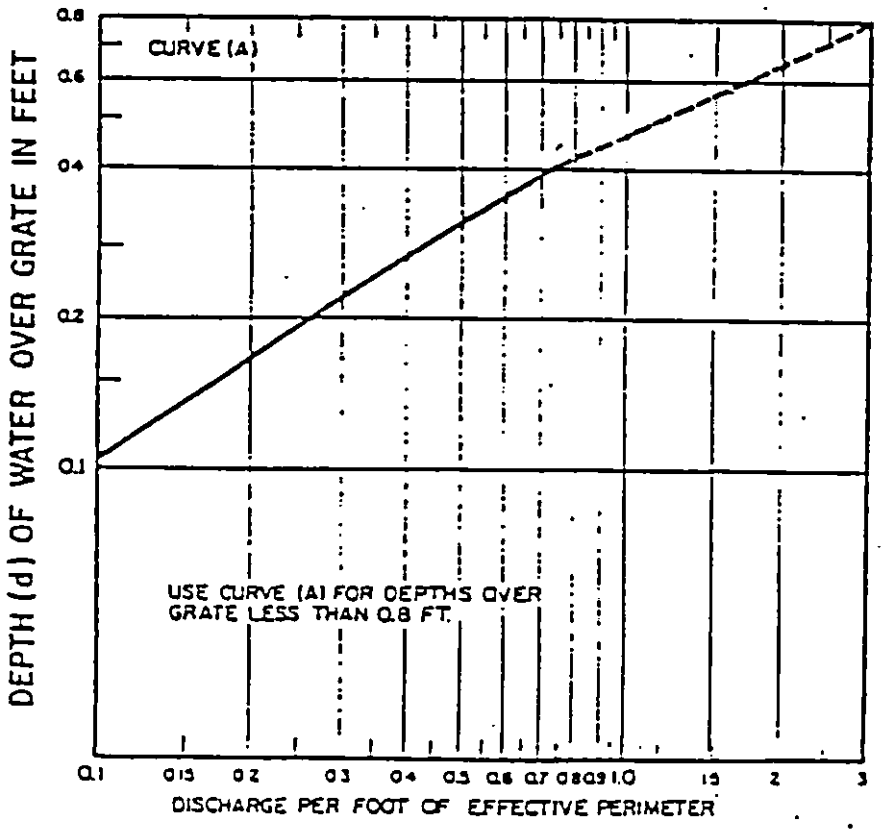


$P = 2B + L_b$

A = AREA OF CLEAR OPENING IN GRATE TO ALLOW FOR CLOGGING DIVIDE P OR A BY 2 BEFORE OBTAINING d.

WITHOUT CURB $P = 2(B + L_b)$





BUREAU OF PUBLIC ROADS
REV. AUG. 1958

HYDRAULIC CAPACITY OF GRATE INLET IN SUMP

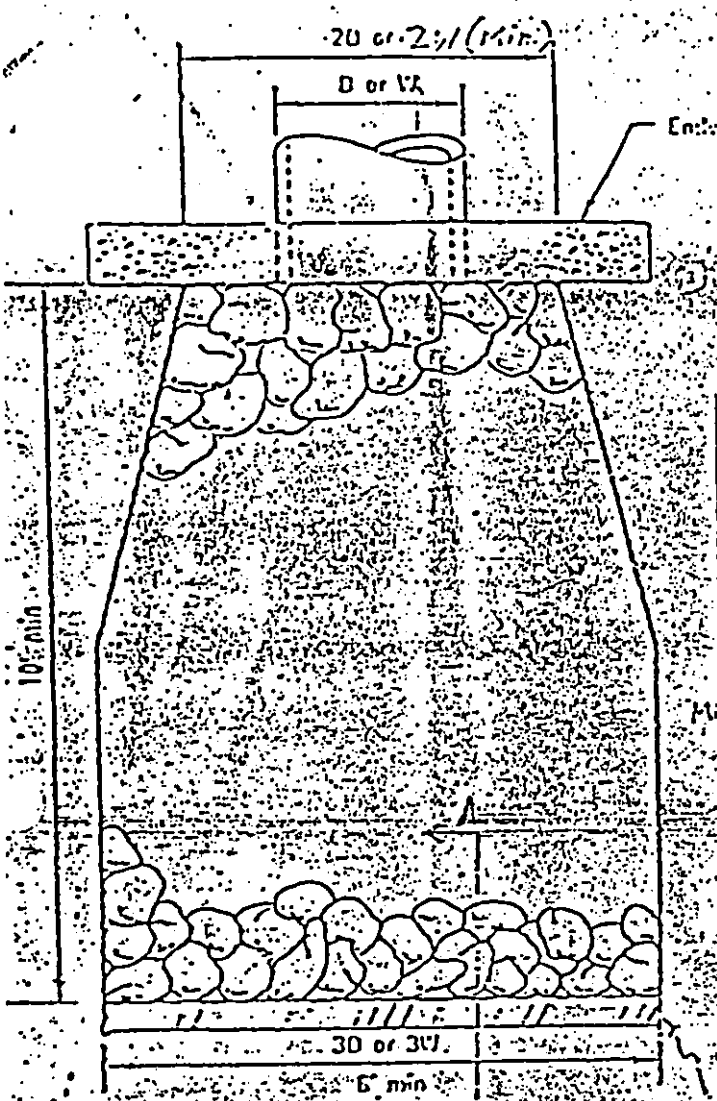
Type 1 - With Sill

Type 2 - Without sill

T = Thickness of Riprap

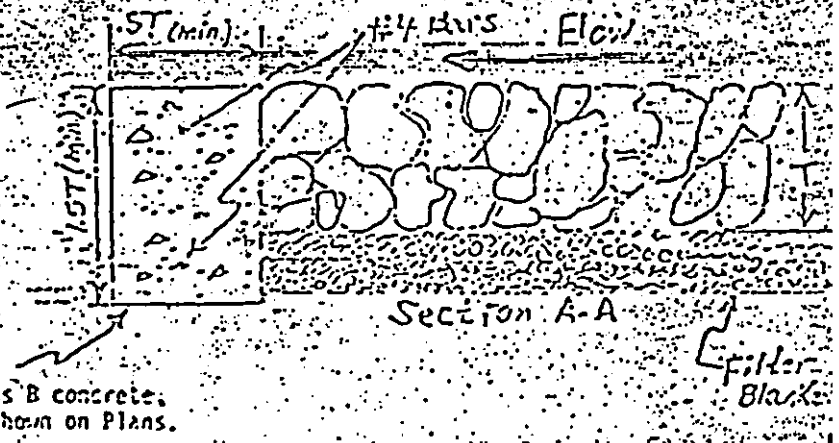
D = Pipe Diameter

B = Bottom Width of Concrete Channel

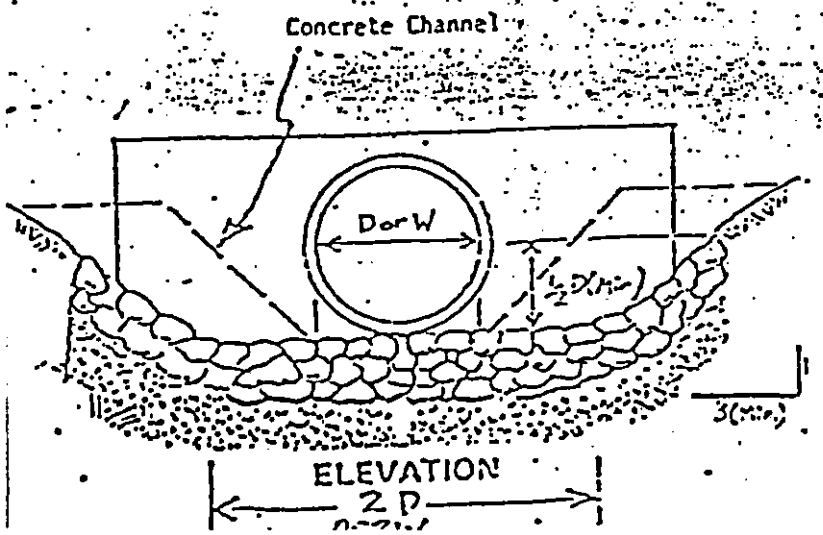


SELECTION OF RIPRAP AND FILTER				
Velocity Ft/Sec.	Rock Classification	Riprap Thickness (T) Ft.	Filter Blanket #	
			Upper Layer Sec. 200	Lower Layer Sec. 400
6-7	No. 3 Backing	.6	3/16"	C2
7-8	No. 2 Backing	1.0	1/4"	B3
8-10	Facing	1.4	3/8"	–
10-12	Light	2.0	1/2"	–
12-14	1/4 Ton	2.7	3/4"	– Sand
14-16	1/2 Ton	3.6	1"	– Sand
16-18	1 Ton	4.3	1-1/2"	– Sand
18-20	2 Ton	5.4	2"	– Sand

Min. Filter Blanket Thickness = 1 foot or T



Sill
Class B concrete,
if shown on Plans.



NOTES:

1. Type of riprap
   a. Regular Quarry Stone.
   b. Broken Concrete if shown on Plans.
   c. Cobbles not acceptable.
2. Gradation and Placement as specified in Regional Standards Comm. Std. Spec. Prov. Sec. 200-1.6.
3. Riprap is to be placed over a filter blanket which may be granular material or plastic cloth.
   a. Granular material specs. in Table above.
   b. Plastic cloth specs. in Reg. Stds. Comm. Std. Spec. Prov. Sec. 200-1.6

* Standard Specifications for Public Works

0 15 30 60 120

SCALE: 1"=60'

REGISTERED PROFESSIONAL ENGINEER
JORGE H. PALACIOS
No. 32031
12/31/18
CIVIL
STATE OF CALIFORNIA

LEGEND	SYMBOL
LIMITS OF DRAINAGE AREA	▬ ▬ ▬
DIRECTION OF SURFACE RUNOFF	→ →
DRAINAGE AREA	1
ACRES	AC
PARCEL NUMBER	(1)

EXHIBIT 'B'

PRE-DEVELOPMENT

SHEET 1 OF 2

Project No. 1009-16

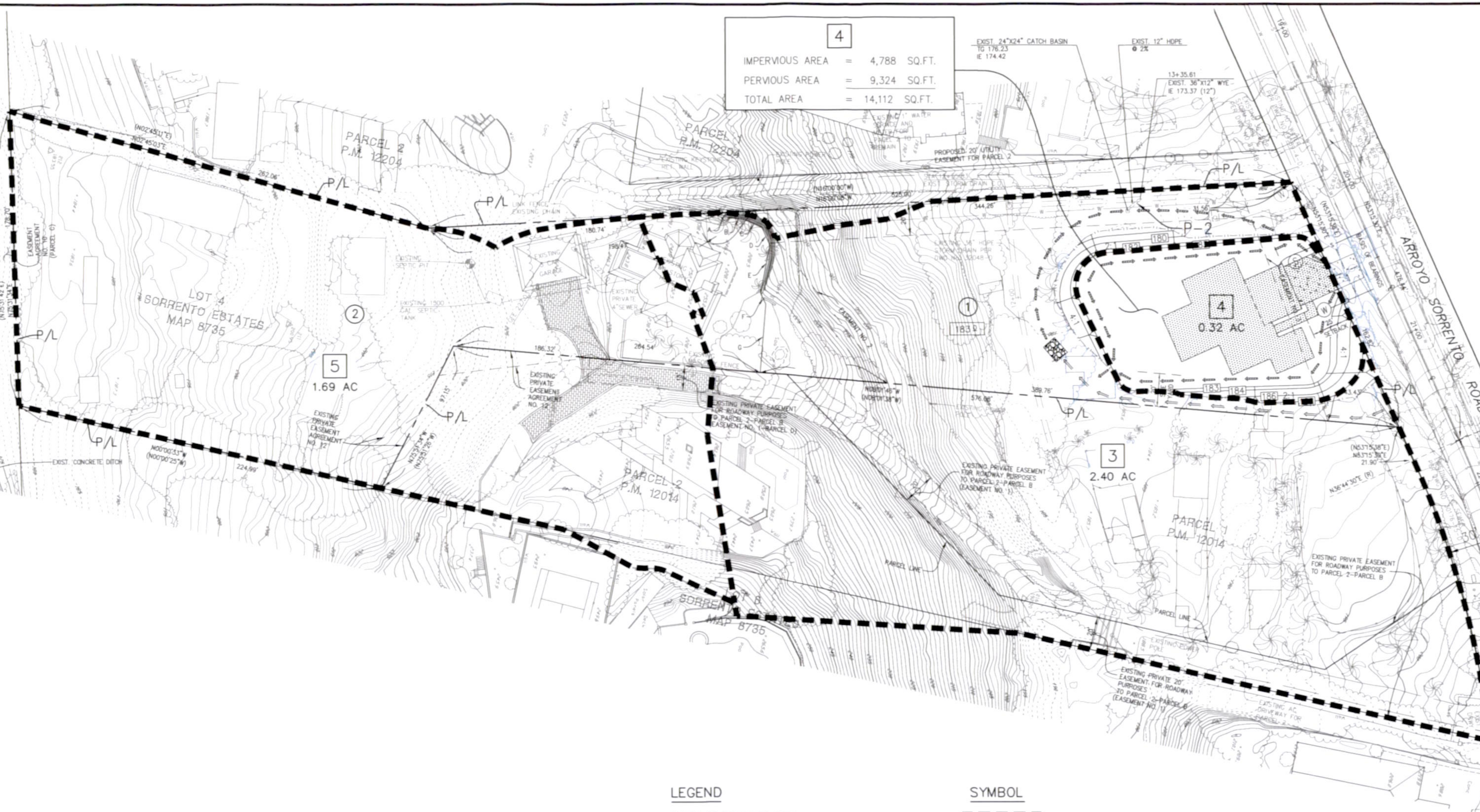
SHEET TITLE: DRAINAGE PLAN EXHIBIT 'B'

PROJECT NAME: 3929 ARROYO SORRENTO ROAD
A.P.N. 307-060-60-00

DESIGNER DHN | DRAWN SP | CHECKED JHP | DATE 12-15-17

JORGE H. PALACIOS R.C.E. 32031 DATE: 12-15-17

CIVIL ENGINEERING • LAND PLANNING • SURVEYING • 4849 RONSON COURT, SUITE 105, SAN DIEGO, CA 92111 • (858)569-7377 FAX (858)569-0830



0 15 30 60 120

SCALE: 1"=60'

REGISTERED PROFESSIONAL ENGINEER
JORGE H. PALACIOS
No. 32031
12/31/18
CIVIL
STATE OF CALIFORNIA

LEGEND

LEGEND	SYMBOL
LIMITS OF DRAINAGE AREA	■ ■ ■ ■
DIRECTION OF SURFACE RUNOFF	→ →
DRAINAGE AREA	3
ACRES	AC
PARCEL NUMBER	①
PROPOSED PRIVATE VEGETATED SWALE	⇨ ⇨ ⇨
PROPOSED PRIVATE RIP RAP	[rip rap hatch]
PROPOSED PRIVATE CONCRETE DITCH	⇒ ⇒ ⇒
PROPOSED IMPERVIOUS AREA	[stippled box]

EXHIBIT 'A'

POST-DEVELOPMENT

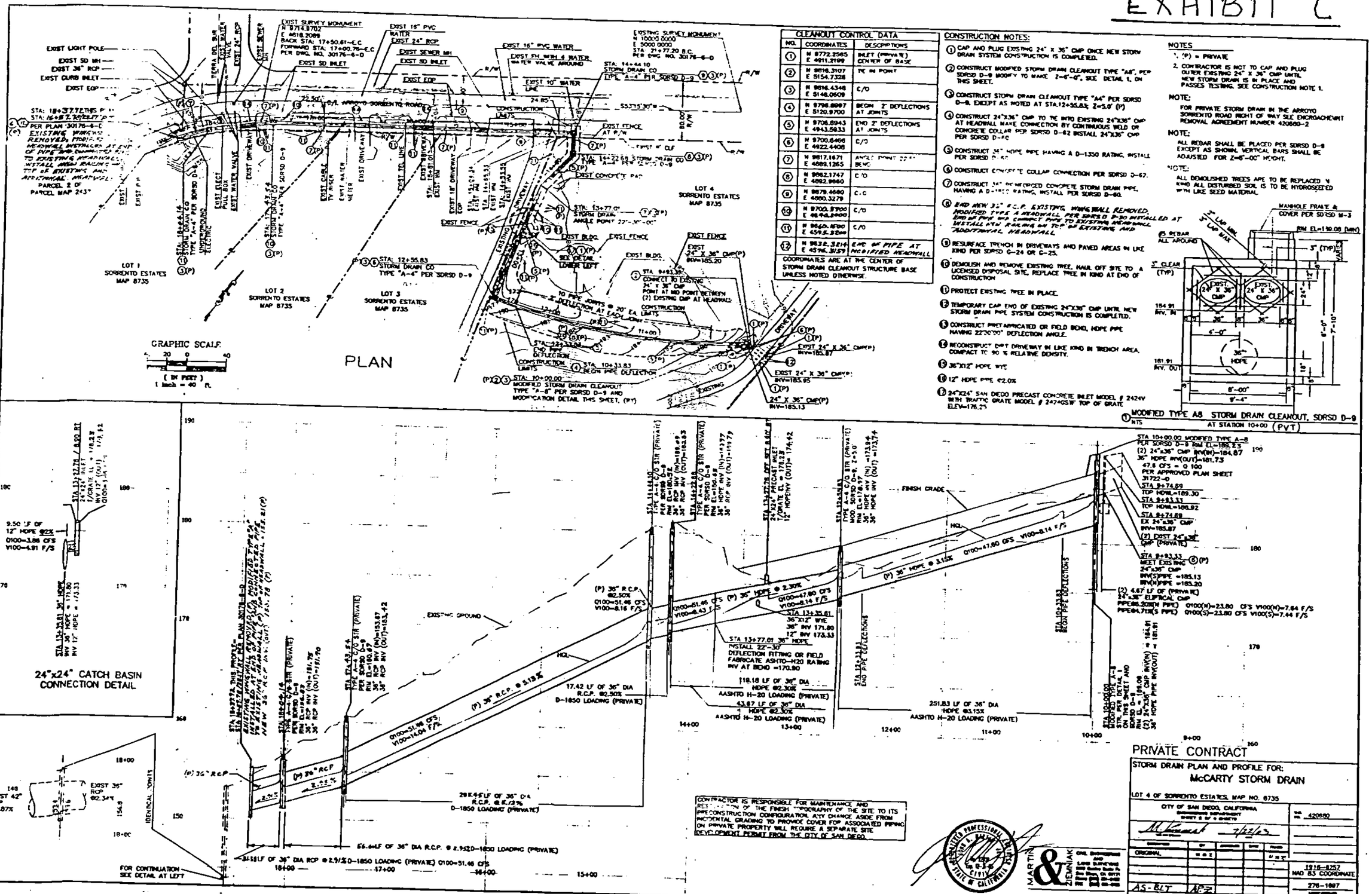
SHEET TITLE: DRAINAGE PLAN EXHIBIT 'A'
PROJECT NAME: 3929 ARROYO SORRENTO ROAD
A.P.N. 307-060-60-00
SHEET 2 OF 2
Project No. 1009-16
DESIGNER DHN
DRAWN SP
CHECKED JHP
DATE 12-15-17
JORGE H. PALACIOS
R.C.E. 32031
DATE: 12-15-17

NO.	DATE	BY	NO.	DATE	BY

CIVIL ENGINEERING • LAND PLANNING • SURVEYING • 4849 RONSON COURT, SUITE 105, SAN DIEGO, CA 92111 • (858)569-7377 FAX (858)569-0830

F:\PROJECT\1009\1009-POST-DEV-EXH-A.dwg, 12/15/2017 3:27:00 PM

EXHIBIT 'C'



CLEANOUT CONTROL DATA		
NO.	COORDINATES	DESCRIPTIONS
1	N 8772.2565 E 4911.2199	INLET (PRIVATE) CENTER OF BASE
2	N 8816.3107 E 5154.7328	TIE IN POINT
3	N 8816.4348 E 5148.0609	C/O
4	N 9798.8987 E 5120.9700	BEGIN 2° DEFLECTIONS AT JOINTS
5	N 9706.8943 E 4943.5933	END 2° DEFLECTIONS AT JOINTS
6	N 9700.6466 E 4922.4408	C/O
7	N 9817.1671 E 4889.1265	ANGLE POINT 22°-30" BEND
8	N 9882.1747 E 4982.9860	C/O
9	N 9879.4680 E 4980.3278	C.O
10	N 9700.5900 E 4844.9400	C/O
11	N 9860.4580 E 4595.5200	C/O
12	N 9838.3814 E 4596.3059	END OF PIPE AT MODIFIED HEADWALL

COORDINATES ARE AT THE CENTER OF STORM DRAIN CLEANOUT STRUCTURE BASE UNLESS NOTED OTHERWISE.

CONSTRUCTION NOTES:

1. CAP AND PLUG EXISTING 24" X 36" CMP ONCE NEW STORM DRAIN SYSTEM CONSTRUCTION IS COMPLETED.
2. CONSTRUCT MODIFIED STORM DRAIN CLEANOUT TYPE "A8", PER SDRSD D-9 MODIFY TO MAKE 2~6"~0", SEE DETAIL 1, ON THIS SHEET.
3. CONSTRUCT STORM DRAIN CLEANOUT TYPE "A4" PER SDRSD D-9, EXCEPT AS NOTED AT STA.12+55.83; Z=5.0' (P)
4. CONSTRUCT 24"X36" CMP TO TIE INTO EXISTING 24"X36" CMP AT HEADWALL MAKE CONNECTION BY CONTINUOUS WELD OR CONCRETE COLLAR PER SDRSD D-62 INSTALL 24"X36" CMP PER SDRSD D-46
5. CONSTRUCT 36" HDPE PIPE HAVING A D-1350 RATING, INSTALL PER SDRSD D-46
6. CONSTRUCT CONCRETE COLLAR CONNECTION PER SDRSD D-67.
7. CONSTRUCT 36" REINFORCED CONCRETE STORM DRAIN PIPE, HAVING A D-1850 RATING, INSTALL PER SDRSD D-80.
8. END NEW 36" R.C.P. EXISTING WING WALL REMOVED, MODIFIED TYPE A HEADWALL PER SDRSD D-30 INSTALLED AT END OF PIPE AND CONNECT PIPE TO EXISTING HEADWALL, INSTALL NEW RAILING ON TOP OF EXISTING AND ADDITIONAL HEADWALL
9. RESURFACE TRENCH IN DRIVEWAYS AND PAVED AREAS IN LIKE KIND PER SDRSD G-24 OR G-25.
10. DEMOLISH AND REMOVE EXISTING TREE, HAUL OFF SITE TO A LICENSED DISPOSAL SITE, REPLACE TREE IN KIND AT END OF CONSTRUCTION
11. PROTECT EXISTING TREE IN PLACE.
12. TEMPORARY CAP END OF EXISTING 24"X36" CMP UNTIL NEW STORM DRAIN PIPE SYSTEM CONSTRUCTION IS COMPLETED.
13. CONSTRUCT PREFABRICATED OR FIELD BEND, HDPE PIPE HAVING 22°30'00" DEFLECTION ANGLE.
14. RECONSTRUCT DRIVEWAY IN LIKE KIND IN TRENCH AREA, COMPACT TO 90 % RELATIVE DENSITY.
15. 36"X12" HDPE WYE
16. 12" HDPE PIPE @2.0%
17. 24"X24" SAN DIEGO PRECAST CONCRETE INLET MODEL # 2424V WITH TRAFFIC GRATE MODEL # 2424GSIF TOP OF GRATE ELEV=176.25

NOTES

1. (P) = PRIVATE
2. CONTRACTOR IS NOT TO CAP AND PLUG OUTER EXISTING 24" X 36" CMP UNTIL NEW STORM DRAIN IS IN PLACE AND PASSES TESTING, SEE CONSTRUCTION NOTE 1.

NOTE:
FOR PRIVATE STORM DRAIN IN THE ARROYO SORRENTO ROAD RIGHT OF WAY SEE ENCROACHMENT REMOVAL AGREEMENT NUMBER 420660-2

NOTE:
ALL REBAR SHALL BE PLACED PER SDRSD D-9 EXCEPT AS SHOWN, VERTICAL BARS SHALL BE ADJUSTED FOR Z=6"~0" HEIGHT.

NOTE:
ALL DEMOLISHED TREES ARE TO BE REPLACED IN KIND ALL DISTURBED SOIL IS TO BE HYDROSEEDED WITH LIKE SEED MATERIAL

① MODIFIED TYPE A8 STORM DRAIN CLEANOUT, SDRSD D-9
NTS AT STATION 10+00 (PVT)

CONTRACTOR IS RESPONSIBLE FOR MAINTENANCE AND RESTORATION OF THE FINISH TOPOGRAPHY OF THE SITE TO ITS PRE-CONSTRUCTION CONFIGURATION. ANY CHANGE ASIDE FROM INCIDENTAL GRADING TO PROVIDE COVER FOR ASSOCIATED PIPING ON PRIVATE PROPERTY WILL REQUIRE A SEPARATE SITE DEVELOPMENT PERMIT FROM THE CITY OF SAN DIEGO.

REGISTERED PROFESSIONAL ENGINEER JOHN A. MARTIN No. 43126 CIVIL STATE OF CALIFORNIA
7-17-03

MARTIN & ZIEMNIAK CIVIL ENGINEERS LAND SURVEYORS

PRIVATE CONTRACT

STORM DRAIN PLAN AND PROFILE FOR:
McCARTY STORM DRAIN
LOT 4 OF SORRENTO ESTATES, MAP NO. 8735
CITY OF SAN DIEGO, CALIFORNIA
ENGINEERING DEPARTMENT
SHEET 2 OF 4 SHEETS
DRAWING NO. 420660

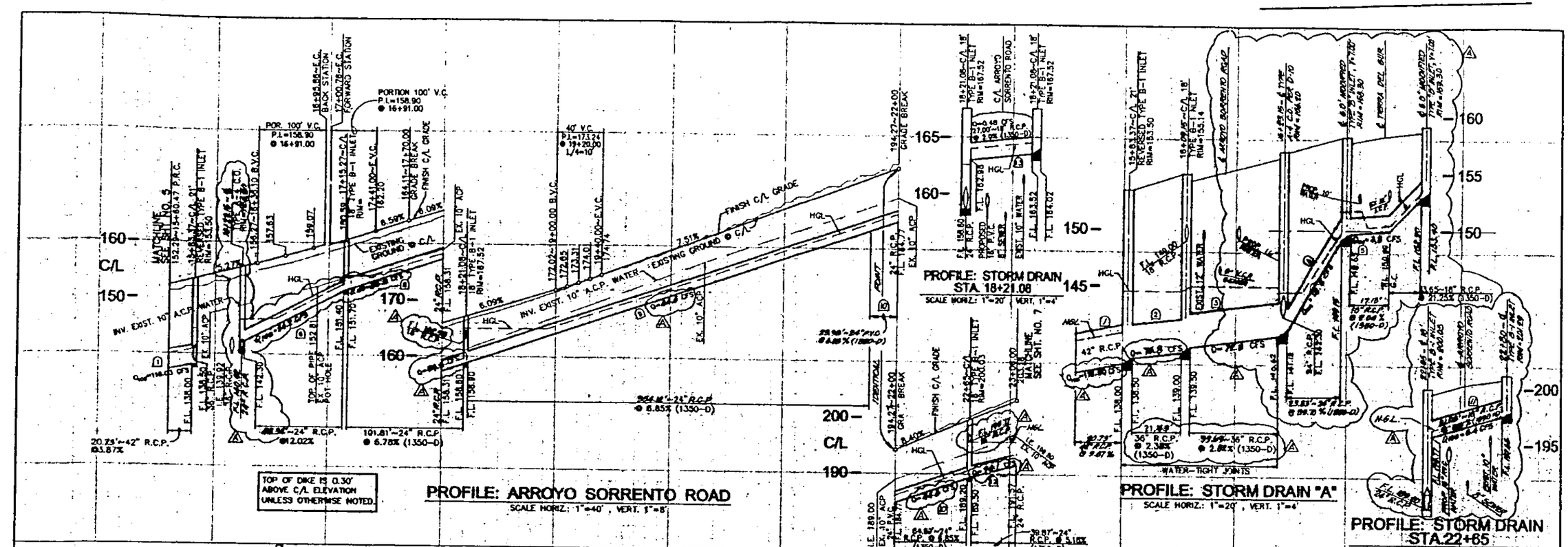
	BY	APPROVED	DATE	FILMED
ORIGINAL	W.O.I.			W.O.I.
AS-BUILT	MZ			

1916-8257 NAD 83 COORDINATE
276-1997
2-06-03
2-11-04
32048-2-D

Z:\Civil\Land Projects 3\202142\dwg\SHEETS\C3DD-HC.dwg 07/17/2003 03:40:57 PM PDT

AS-BUILT

EXHIBIT 'C'



AS-BUILT

EXHIBIT D

DRAINAGE REPORT

FOR

CITY OF SAN DIEGO

DRAWING NO. 42068-D

DRAINAGE REPORT

FOR

McCARTY STORM DRAIN

W.O. 420680

Drawing 32048-D

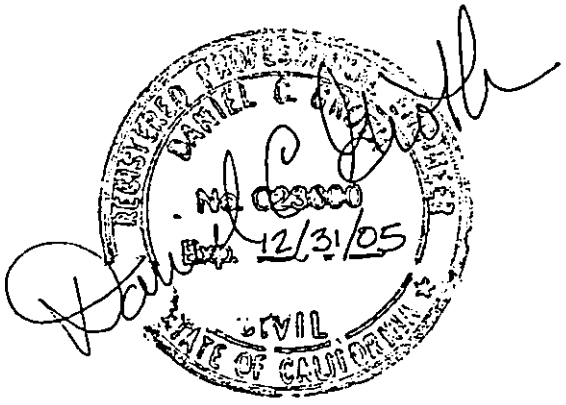
ARROYO SORRENTO ROAD AT TIERRA DEL SUR
CITY OF SAN DIEGO

January 9, 2003

By:

MARTIN & ZIEMNIAK
9180 Camino Santa Fe
San Diego, CA 92121

(858)831-9420



MARTIN & ZIEMNIAK
CIVIL ENGINEERING
AND
LAND SURVEYING

Introduction and Purpose:

The subject study area is located southeast of the intersection of Arroyo Sorrento Road and Tierra Del Sur in the Sorrento Mesa area of the City of San Diego (See enclosed vicinity map.). The project proponent owns property within the study area and desires to mitigate concentrated surface flow that interferes with their organic agricultural use of their land. The purpose of this report is to substantiate the design of a proposed private storm drain extension that satisfies this objective.

Existing Condition:

Flow tributary to the proposed storm drain system is concentrated in an existing open channel per the Torrey View Estate subdivision (W.O. 420094, Drawing 31722-D). This flow (47.6 cubic feet per second (CFS)) currently crosses the project proponents' existing driveway at the upstream project boundary via four 24"x36" CSPA culverts and continues westerly in an unlined swale to a Type B inlet in the Arroyo Sorrento Road right of way at the intersection of Tierra Del Sur, compromising organic agricultural operations and periodically depositing silt in an existing pool in property downstream of the project proponents'.

Project Description:

Upstream flow is attenuated into the storm drain at the upstream edge of the upstream driveway by plugging two of the four culverts and combining the flow of the remaining two through a modified cleanout structure to form the entrance to the proposed storm drain line. The drain line continues beyond the project site to connect to an existing storm drain in Arroyo Sorrento Road, significantly reducing concentrated surface flow into the Type B inlet there. It includes one private inlet that intercepts surface flow at the downstream edge of the project proponents' property.

Methodology:

1. Design flow tributary to the intermediate inlet was calculated per the rational formula. Time of concentration was determined using the Kirpitch formula per the exhibit on page 84 of the City of San Diego *Drainage Design Manual* (Exhibit A).

2. The drain line and its single inlet was modeled for the design flow using Haestad StormCad software to calculate and tabulate the hydraulic grade line (HGL) throughout the full reach of the drain system. For simplicity, the peak inlet flow was added to the peak pipe flow without confluence considerations for the differences in peak flow times. This is conservative, as the larger pipe flow intuitively has the longer time of concentration.

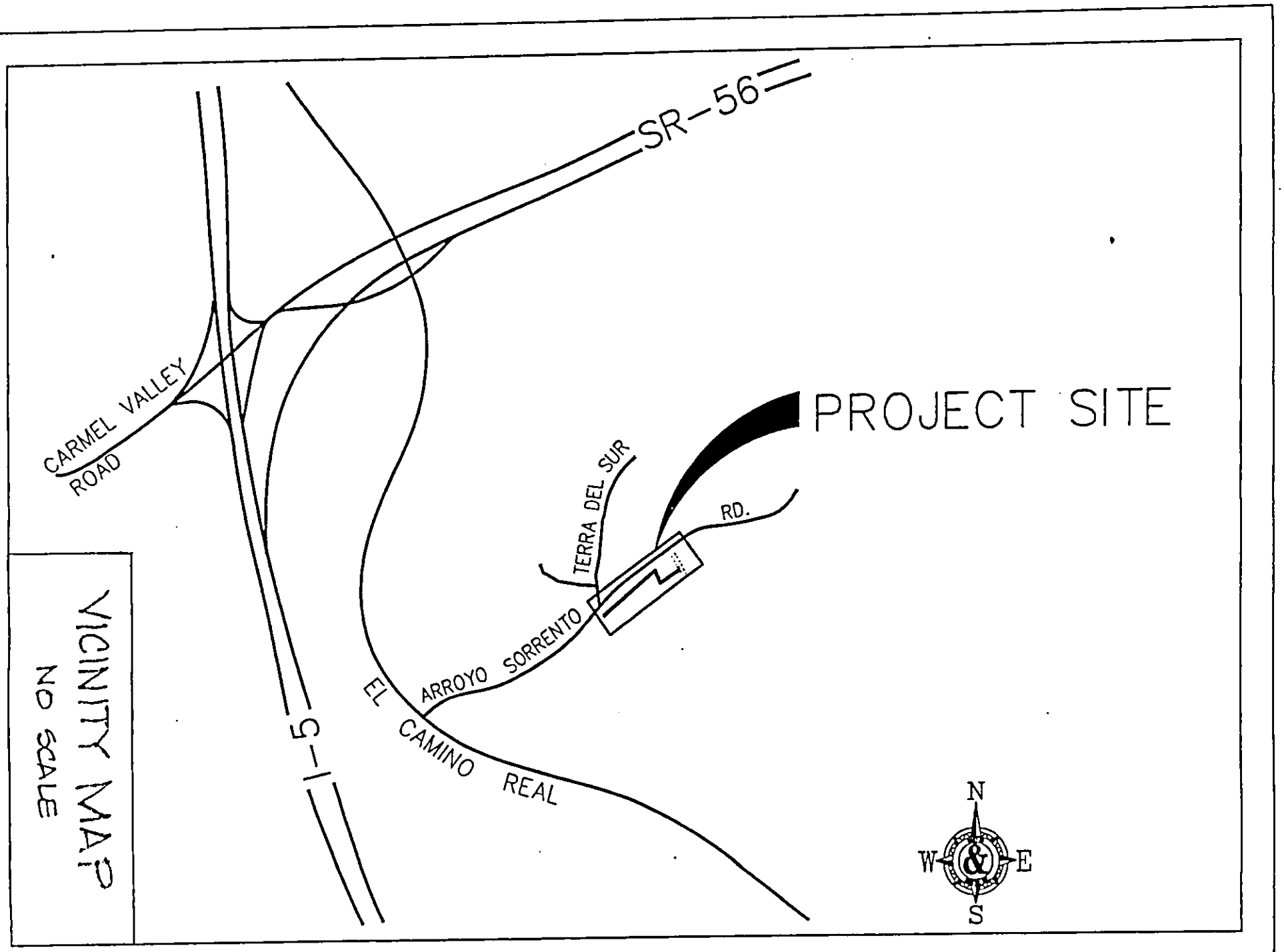
3. The inlet hydrology map, charts and exhibits from the Drainage Design Manual, and StormCad output tables and profile are enclosed herein as Exhibits A through H.

Conclusions:

1. The proposed private storm drain system does not operate under downstream control, because the existing HGL at the outlet point is well below the calculated HGL at the end of the downstream proposed pipe.

2. The proposed private storm drain system has the capacity to carry the 100-year design flow with the HGL below the pipe soffit (water surface elevation less than or equal to the pipe diameter).

3. The remaining two culvert openings at the upstream edge of the upstream driveway have the capacity to accept the design flow.



VICINITY MAP

NO SCALE

N

SCALE: 1" = 40'

ELEV 175
LOWER NODE
(J10 PER EXHIBIT F)

ARROYO SORRENTO

FLOW CALCULATION

$Q_{100} = C i_{100} A$

$C = 0.45$ PER EXHIBIT B

$t_c = 12.5$ min PER EXHIBIT C

$i_{100} = 3.15$ PER EXHIBIT D

$Q_{100} = (0.45)(3.15)(2.72\,Ac.)$

$= 3.86$ CFS

$Q_{100} = 3.86$ CFS

L = 450'

A = 2.72 Ac.

HILLSIDE REVIEW ZONE

LOT 4

PARCEL MAP NO. 12014 PARCEL 1

PARCEL 2

LOT 6

WATER METER LOCATION

WATER LINE

CRIB WALL

0.75 PCC TRASH DITCH

DRIVEWAY - EASEMENT ON FILE

ELEV 207
UPPER NODE

$Q_{100} = 47.2$ CFS
PER EXHIBIT E

RECORDED AS DOC # [illegible] MAP # 8735

HYDROLOGY MAP
EXHIBIT A

TABLE 2

RUNOFF COEFFICIENTS (RATIONAL METHOD)

DEVELOPED AREAS (URBAN)

Land Use	Coefficient, C Soil Type (1)
	D
Residential:	
Single Family	.55
Multi-Units	.70
Mobile Homes	.65
Rural (lots greater than 1/2 acre)	.45
Commercial (2) 80% Impervious	.85
Industrial (2) 90% Impervious	.95

NOTES:

(1) Type D soil to be used for all areas.

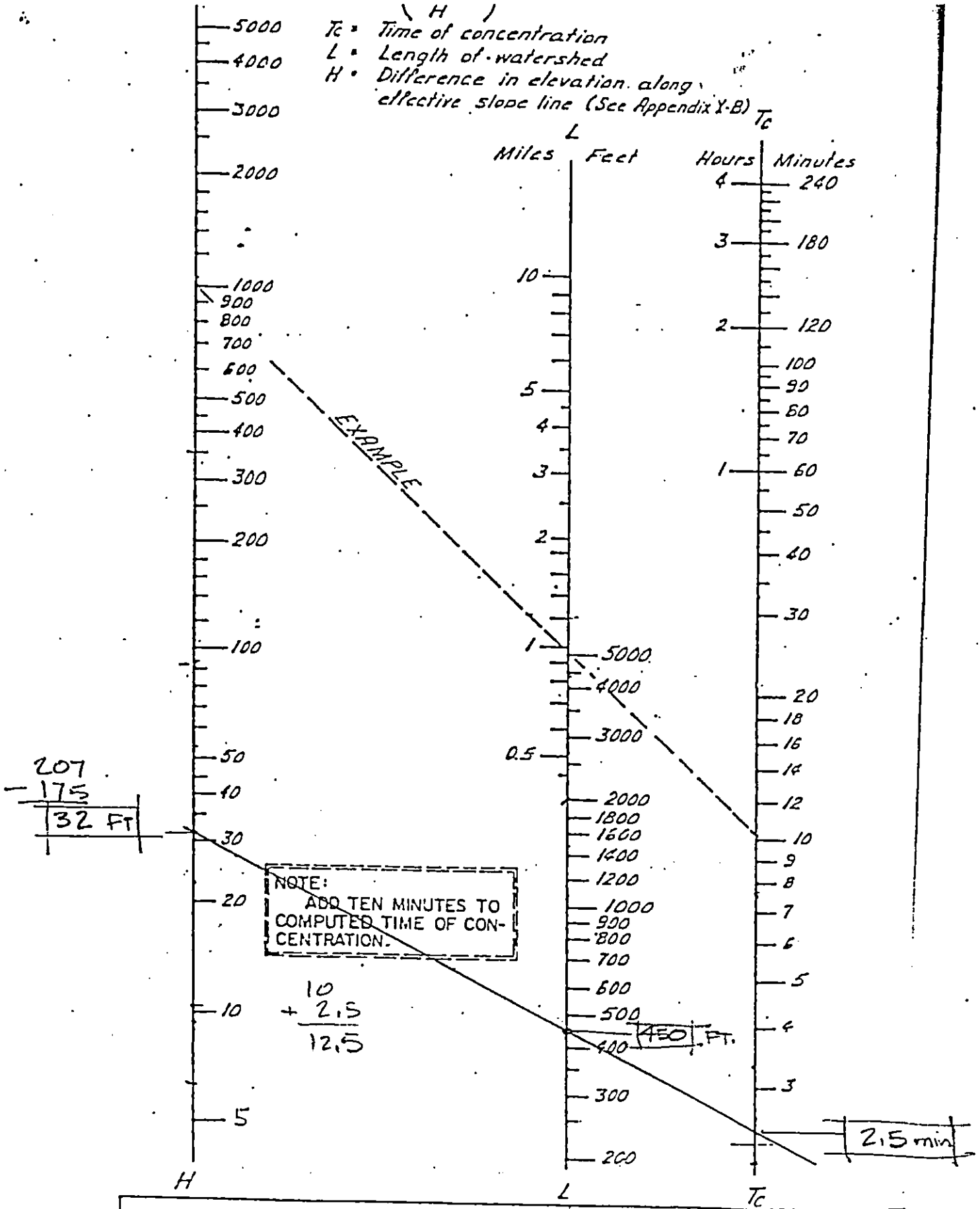
(2) Where actual conditions deviate significantly from the tabulated imperviousness values of 80% or 90%, the values given for coefficient C, may be revised by multiplying 80% or 90% by the ratio of actual imperviousness to the tabulated imperviousness. However, in no case shall the final coefficient be less than 0.50. For example: Consider commercial property on D soil.

Actual imperviousness = 50%

Tabulated imperviousness = 80%

Revised C = $\frac{50}{80}$ x 0.85 = 0.53

EXHIBIT B



SAN DIEGO COUNTY
DEPARTMENT OF SPECIAL DISTRICT SERVICES
DESIGN MANUAL
APPROVED

NOMOGRAPH FOR DETERMINA OF TIME OF CONCENTRATION FOR NATURAL WATERSHED

DATE

APPEND

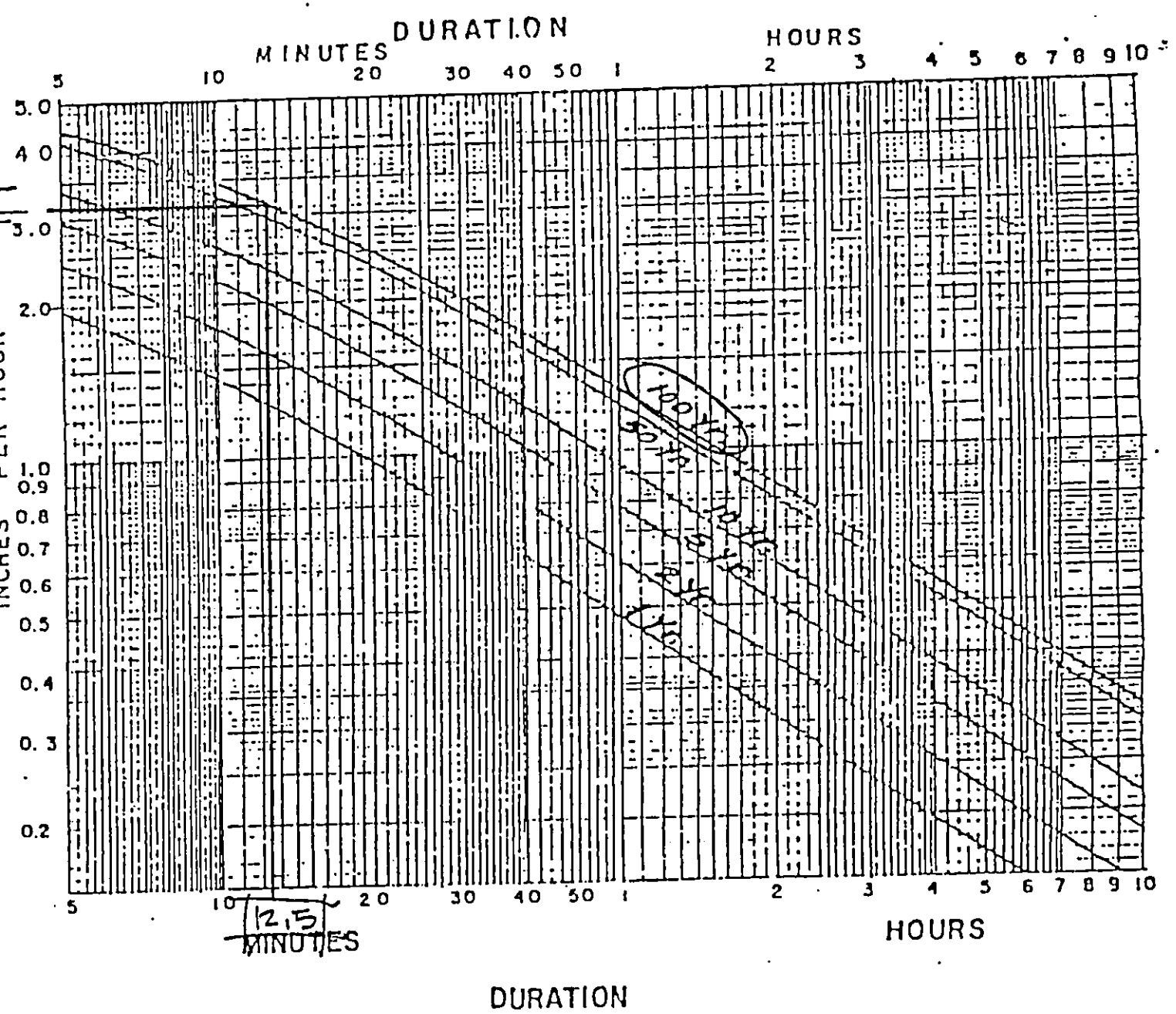
EXHIBIT A

APPENDIX

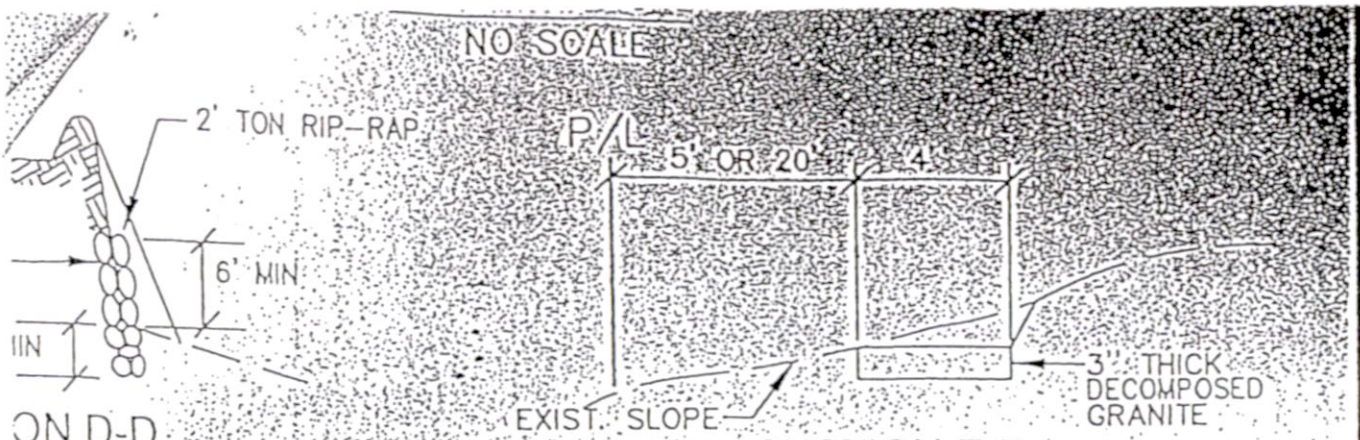
RAINFALL INTENSITY - DURATION - FREQUENCY CURVES for COUNTY OF SAN DIEGO

ELEV.	FACTOR
0–1500	1.00
1500–3000	1.25
3000–4000	1.42
4000–5000	1.60
5000–6000	1.70
DESERT	1.25

To obtain correct intensity, multiply intensity on chart by factor for design elevation.



NO SCALE



ON D-D

PE PROTECTION
CALE

SECTION E-E
4-FOOT WALKING PATH
NO SCALE

NOTES:

1. WHEN DAYLIGHT IS UNDER A BUILDING, OVEREXCAVATE AND RECOMPACT A MINIMUM OF 3' UNDER BUILDING FOUNDATIONS. SEE GEOTECHNICAL INVESTIGATION REPORT.
2. SEE PROFILES OF RETAINING WALL SHEET 5.
3. ALL ONSITE, PRIVATE IMPROVEMENTS SHOWN ON THIS DRAWING ARE FOR INFORMATION ONLY. THE CITY ENGINEER'S APPROVAL OF THIS DRAWING, IN NO WAY CONSTITUTE AN APPROVAL OF SAID PRIVATE IMPROVEMENTS. A SEPARATE PERMIT FOR SUCH IMPROVEMENTS MAY BE REQUIRED.
4. GRASS-LINED SWALES AND D-75 DITCHES SHALL HAVE A 1.0% MINIMUM SLOPE.

PRIVATE CONTRACT

GRADING PLAN FOR

TORREY VIEW ESTATE
LOT 6 OF MAP 8735

CITY OF SAN DIEGO, CALIFORNIA
ENGINEERING DEPARTMENT
SHEET 2 OF 14 SHEETS

W.O. NO. 420094

FOR CITY ENGINEER _____ DATE _____

DESCRIPTION	BY	APPROVED	DATE	FILMED
ORIGINAL	CEA			

1916-6257
NAD 83 COORD.

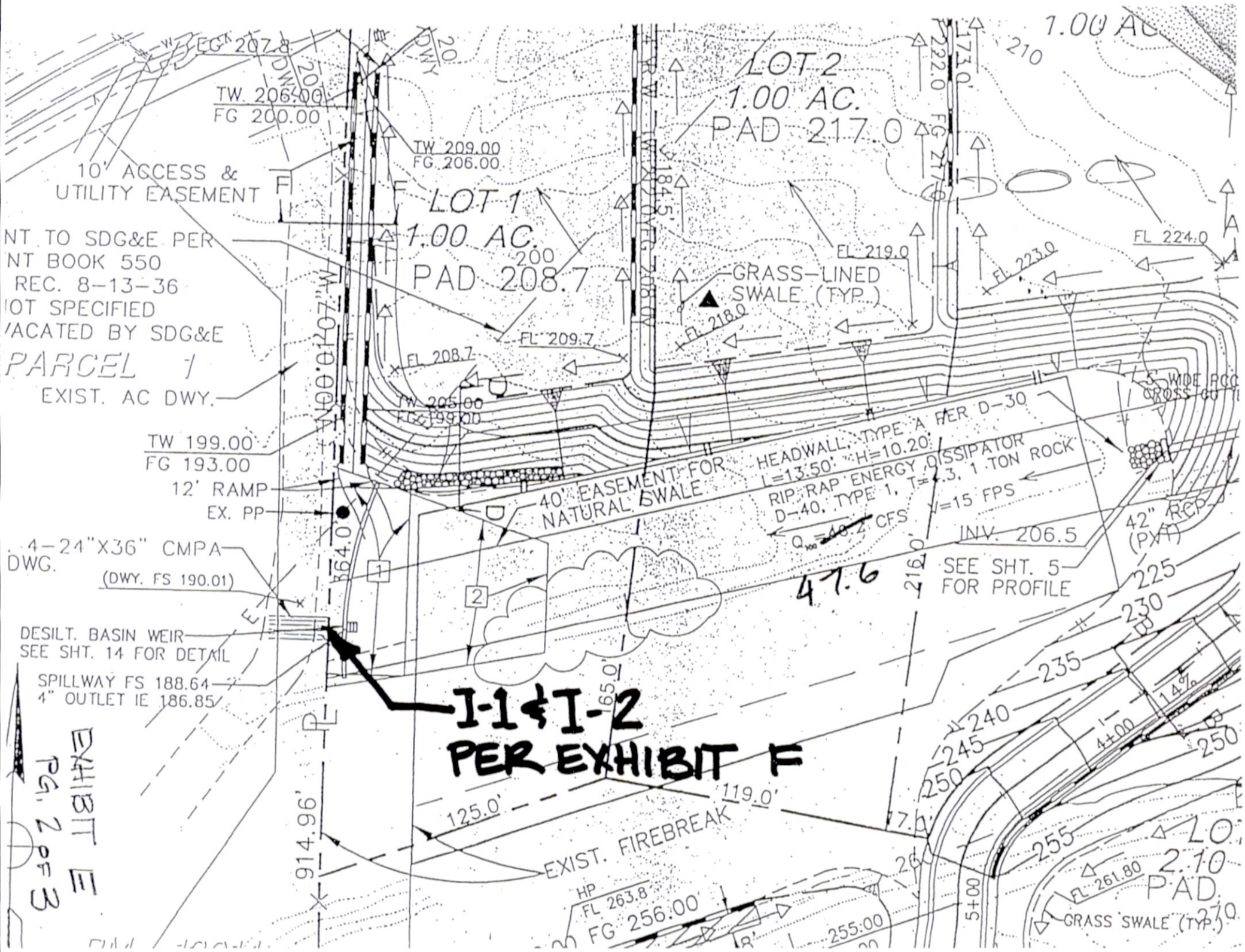
276-1697
LAMBERT COORDINATES

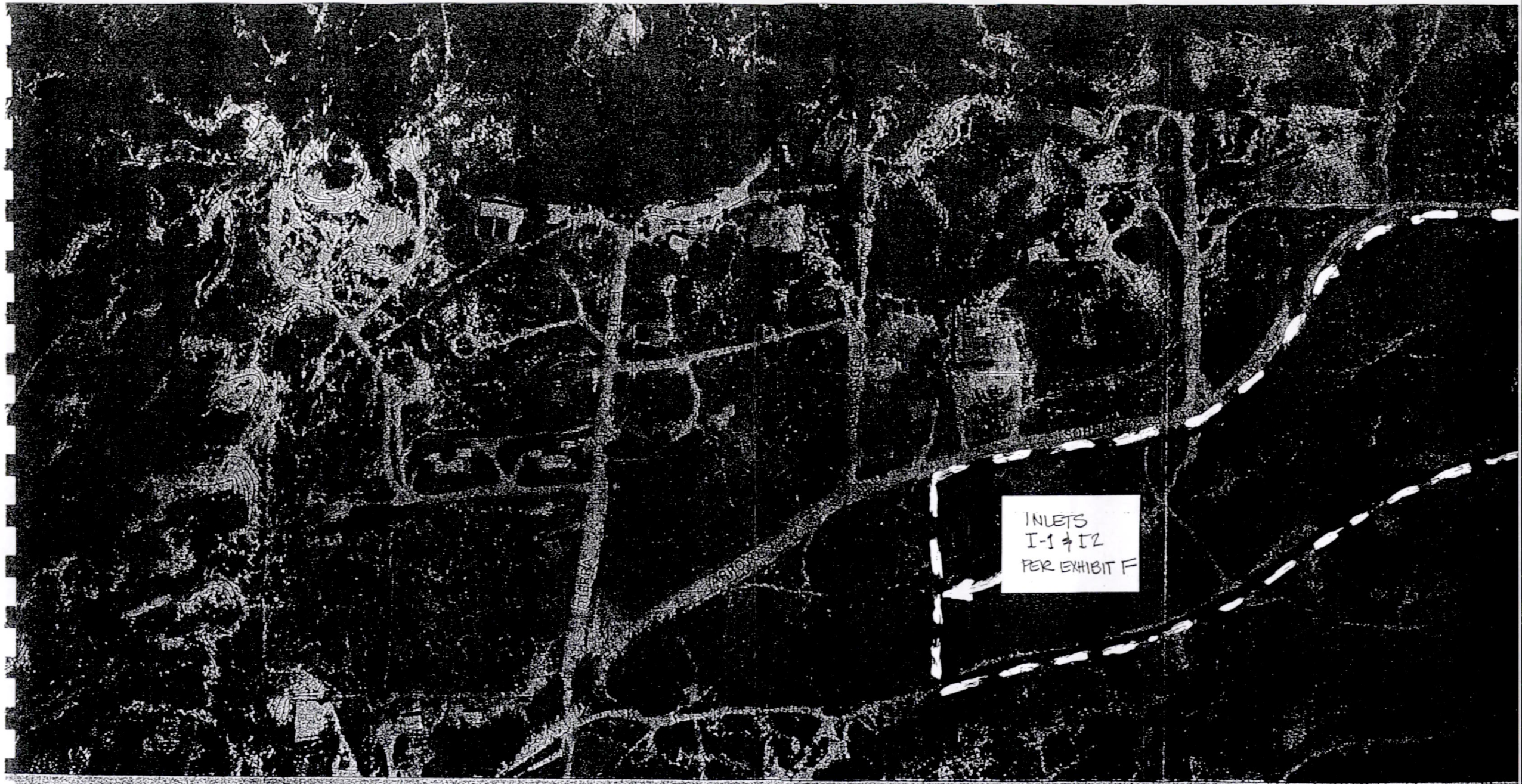
CONTRACTOR _____ DATE STARTED _____
INSPECTOR _____ DATE COMPLETED _____

31722 - 2 - D

03/25/02

EXHIBIT E PG. 1 OF 3


LOT 2
1.00 AC.
PAD 217.0
LOT 1
1.00 AC.
PAD 208.7
10' ACCESS & UTILITY EASEMENT
PARCEL 1
EXIST. AC DWY.
TW 206.00
FG 200.00
TW 209.00
FG 206.00
TW 199.00
FG 193.00
12' RAMP
EX. PP
4-24"X36" CMPA
DWG.
(DWY. FS 190.01)
DESILT. BASIN WEIR
SEE SHT. 14 FOR DETAIL
SPILLWAY FS 188.64
4" OUTLET IE 186.85
40' EASEMENT FOR NATURAL SWALE
GRASS-LINED SWALE (TYP.)
HEADWALL: TYPE 'A' PER D-30
L=13.50' H=10.20'
RIP RAP ENERGY DISSIPATOR
D-40, TYPE 1, T=1.3, 1 TON ROCK
Q_{100}=40.2 CFS V=15 FPS
INV. 206.5
42" RCP (PVT)
SEE SHT. 5 FOR PROFILE
I-1 & I-2
PER EXHIBIT F
EXHIBIT E
Pg. 2 of 3
EXIST. FIREBREAK
914.96'
125.0'
119.0'
65.0'
216.0'
47.6
364.0'
N 00°07'40" W
FL 209.7
FL 208.7
FL 218.0
FL 219.0
FL 223.0
FL 224.0
FL 261.80
FL 263.8
FG 256.00
GRASS SWALE (TYP.)
1.00 AC
PAD 270
5' WIDE RCC CROSS GU



1699E

EXHIBIT E PG 3 OF

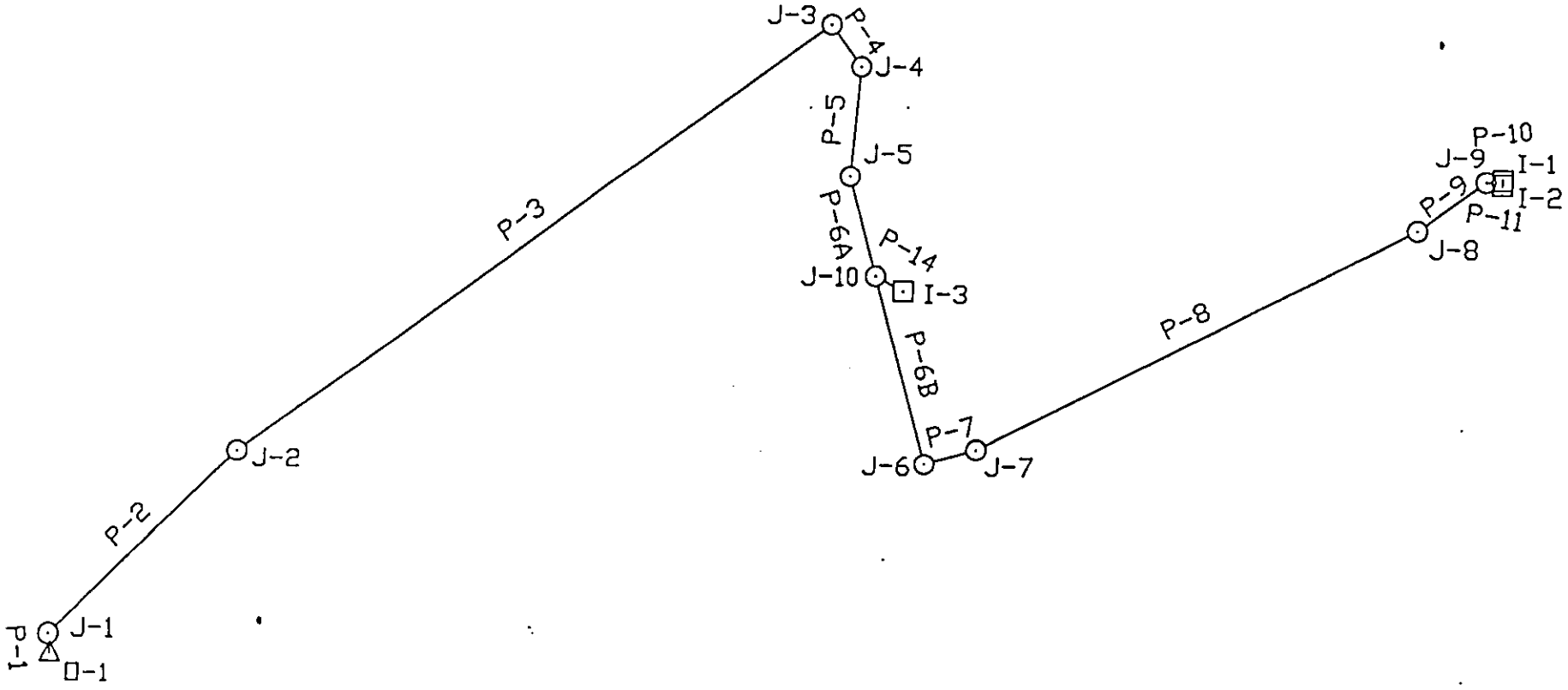
INDEX TO ADJOINING SHEETS

282-1689	282-1695	282-1701
278-1689	278-1695	278-1701
274-1689	274-1695	274-1701

SAN DIEGO COUNT
CALIFORNI

SHEET NO. 278-169

Scenario: Base



Title: McCarty SD Improvement Project
z:\civil\land projects 3\202142\stormcad\sd1.stm
01/09/03 09:10:51 AM

 Martin & Martin 37 Brookside Road Waterbury, CT 06708 USA +1-203-755-1666

Project Engineer: Stephen C. Ott
StormCAD v4.1 [428]

EXHIBIT F

Profile
Scenario: Base

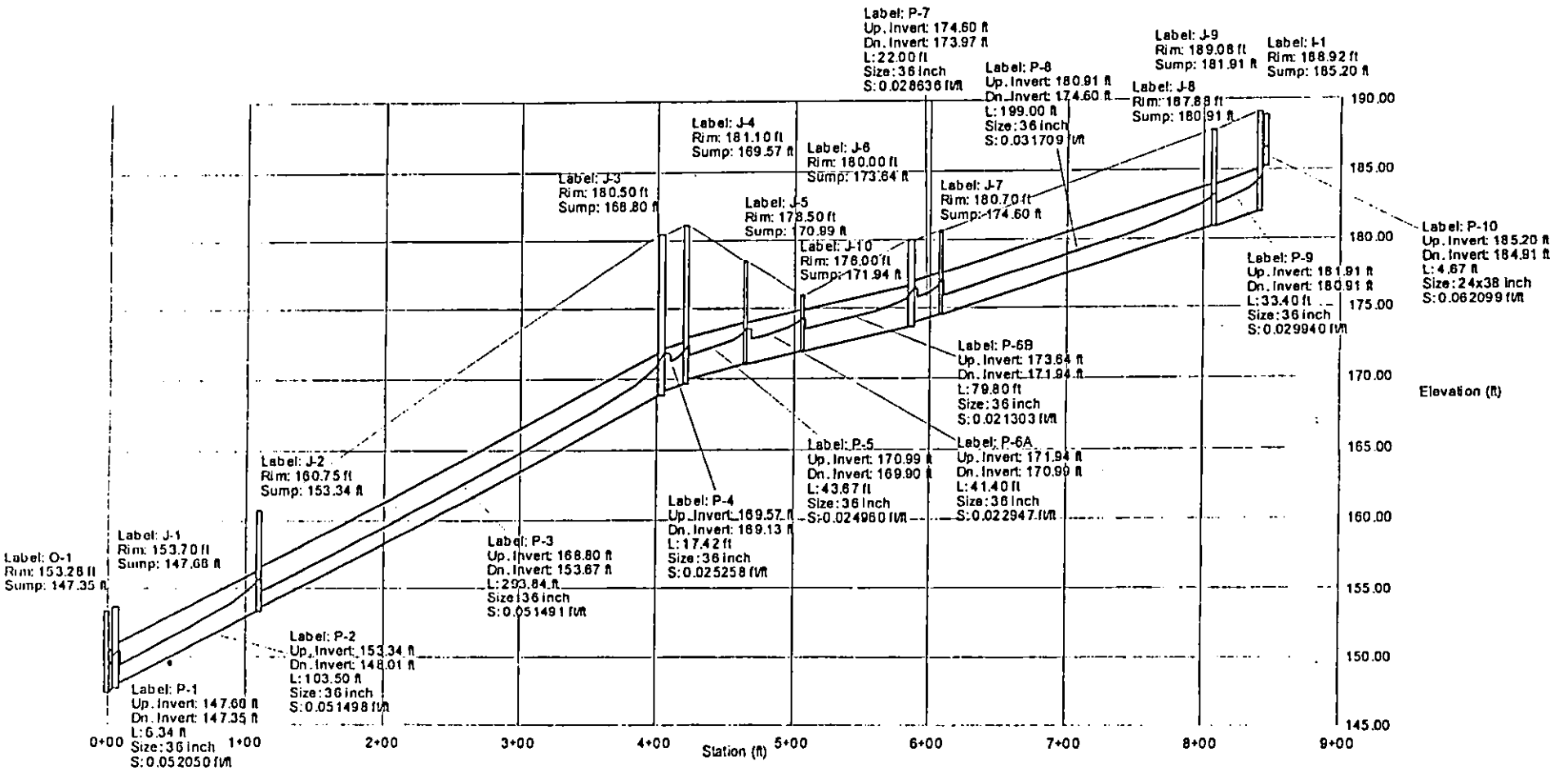


EXHIBIT G

Scenario: Base

Combined Pipe\Node Report

Label	Section Size	Length (ft)	Upstream Node	Upstream Invert Elevation (ft)	Downstream Node	Downstream Invert Elevation (ft)	Constructed Slope (ft/ft)	Average Velocity (ft/s)	Hydraulic Grade Line In (ft)	Hydraulic Grade Line Out (ft)	Total System Flow (cfs)
P-1	36 inch	6.34	J-1	147.68	O-1	147.35	0.052050	9.88	150.00	149.21	51.06
P-2	36 inch	03.50	J-2	153.34	J-1	148.01	0.051498	8.29	155.66	150.59	51.06
P-3	36 inch	93.84	J-3	168.80	J-2	153.67	0.051491	14.00	171.12	154.87	51.06
P-4	36 inch	17.42	J-4	169.57	J-3	169.13	0.025258	8.12	171.89	171.86	51.06
P-5	36 inch	43.67	J-5	170.99	J-4	169.90	0.024960	8.40	173.31	172.40	51.06
P-6A	36 inch	41.40	J-10	171.94	J-5	170.99	0.022947	8.26	174.26	173.60	51.06
P-6B	36 inch	79.80	J-6	173.64	J-10	171.94	0.021303	8.11	175.88	174.32	47.20
P-7	36 inch	22.00	J-7	174.60	J-6	173.97	0.028636	7.83	176.84	176.54	47.20
P-8	36 inch	99.00	J-8	180.91	J-7	174.60	0.031709	8.07	183.15	177.00	47.20
P-9	36 inch	33.40	J-9	181.91	J-8	180.91	0.029940	8.11	184.15	183.28	47.20
P-10	24x38 inch	4.67	I-1	185.20	J-9	184.91	0.062099	7.62	186.55	185.92	23.60
P-11	24x38 inch	4.67	I-2	185.20	J-9	184.91	0.062099	7.62	186.55	185.92	23.60
P-14	12 inch	11.17	I-3	173.16	J-10	172.94	0.019696	4.91	174.90	174.79	3.86

EXHIBIT H