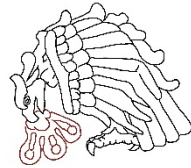


7985 Calle de la Plata Initial Archaeological Evaluation and Survey, La Jolla, CA 92037



Prepared for:

Mr. Anu Pathria

7975 Calle de la Plata

La Jolla, CA 92037

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February 2018



National Archaeological Data Base Information

Type of Study: Initial Archaeological Investigation and Cultural Resource Survey

USGS Quadrangle: La Jolla, CA 7.5'

Key Words: Village of Mut-Llehup, Intense Transect Survey, CA-SDI-39, CA-SDI-20129

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ABSTRACT

At the request of Mr. Anu Pathria, Meridian Archaeological conducted an *Initial Archaeological Investigation* and a *Cultural Resource Survey* on an occupied property located at 7985 Calle de la Plata, in the neighborhood of La Jolla Shores, on January 25, 2018. The purpose of this evaluation and survey was to identify and locate any historic or prehistoric archaeological resources that could be negatively impacted during future soil-removing operations pertaining to the development of the said property.

In order to accomplish the aforementioned tasks, however, historical and archaeological research pertaining to the said property had to be conducted *a priori* to the actual (on-site) *archaeological reconnaissance* or survey. The historical research consisted of a literary investigation of the area surrounding the Pathria residence, and of the rest of San Diego County. The archaeological research, on the other hand, consisted of a records search at the South Coastal Information Center (SCIC), located at San Diego State University (SDSU); this investigation encompassed a one-mile radius off the centroid of the said residence. In addition to these investigations, Meridian Archaeological contacted the Native American Heritage Commission (NAHC) in order to determine the potential existence of any Native American Sacred Lands – or cemeteries – within the perimeter of the parcel.

The results of the historical research and the records search are given in the second section of this technical report. The records search indicate, in fact, that the Pathria property – or Project Area – had not been previously surveyed; and, it also revealed the presence of at least sixty two (62) archaeological sites within a one-mile radius off its approximate centroid.

The survey this report is concerned with failed to identify any prehistoric or historic cultural resources; however, since the Project Area is about 200 meters east of the *Village of Mut Llehup* (a.k.a. the *Spindrift Site*, or CA-SDI-39, or SDM-W-1), and about 212 meters south of the archaeological site CA-SDI-20129 (SDM-W-2), Meridian Archaeological has no choice but to recommend a Cultural Resource Management (CRM) Program for any (and every) future soil disturbing operations – including geotechnical drilling – in the Pathria Property, according to the City of San Diego's *Historical Resource Guidelines*. In addition, due to the reasons cited above, it is the City of San Diego's policy to monitor, test, or conduct archaeological data recovery in any property located in the vicinity of the La Jolla Tennis Club without exceptions.

I. INTRODUCTION

A. Project Description

The Pathria Family property, or Project Area, is located in the western portion of San Diego County, approximately 2.37 km west of Interstate 5 and 0.71 km east of the Pacific Ocean (Figure 1). Specifically, this particular family residence is located at 7985 Calle de la Plata, in the neighborhood of La Jolla Shores, at the intersection of Calle de la Plata and El Paseo Grande in Township 15 S and Range 4 West of the La Jolla USGS Quadrangle – in an unsectioned portion of the Pueblo Lands of San Diego, CA 92037 (Figure 2).

B. Principal Investigator

Mr. José “Pepe” Aguilar served this project as Principal Investigator, surveyor, and author of this technical report. Mr. Aguilar is a qualified archaeologist under the City of San Diego’s Historical Resources Guidelines. In addition, Mr. Aguilar is an active member of the Register of Professional Archaeologists (RPA) and meets the Secretary of the Interior’s standards for qualified archaeologists. Mr. Aguilar possesses a Master’s Degree in Anthropology (with concentration in bioarchaeology) from San Diego State University, a Bachelor’s degree in anthropology (with concentration in archaeology) from the University of California San Diego, and 17 years of field experience in the Southern California region and 10 years of field experience in northern Baja California and Oaxaca, Mexico. His curriculum vita is included in Appendix C.

C. Structure of this Report

This technical report was written following the State Historic Preservation Office’s guidelines for Archaeological Resource Management Reports (ARMR). The first section, or introduction, of this report provides the reasons for this *Cultural Resource Survey*; the specific location of the Project Area, and the name and credentials of the person – or persons – who conducted it. The second section of the report describes the natural and cultural background information of San Diego County, in addition to the description of the results of previous archaeological research within a one-mile radius off the approximate centroid of the Project Area. The third section, on the other hand, describes the research design underlying the said *Cultural Resource Survey*, and the methodology employed. The 4th section describes the results; and the fifth section, subsequently, provides our recommendations. The last section lists the technical

literature cited in this technical report.

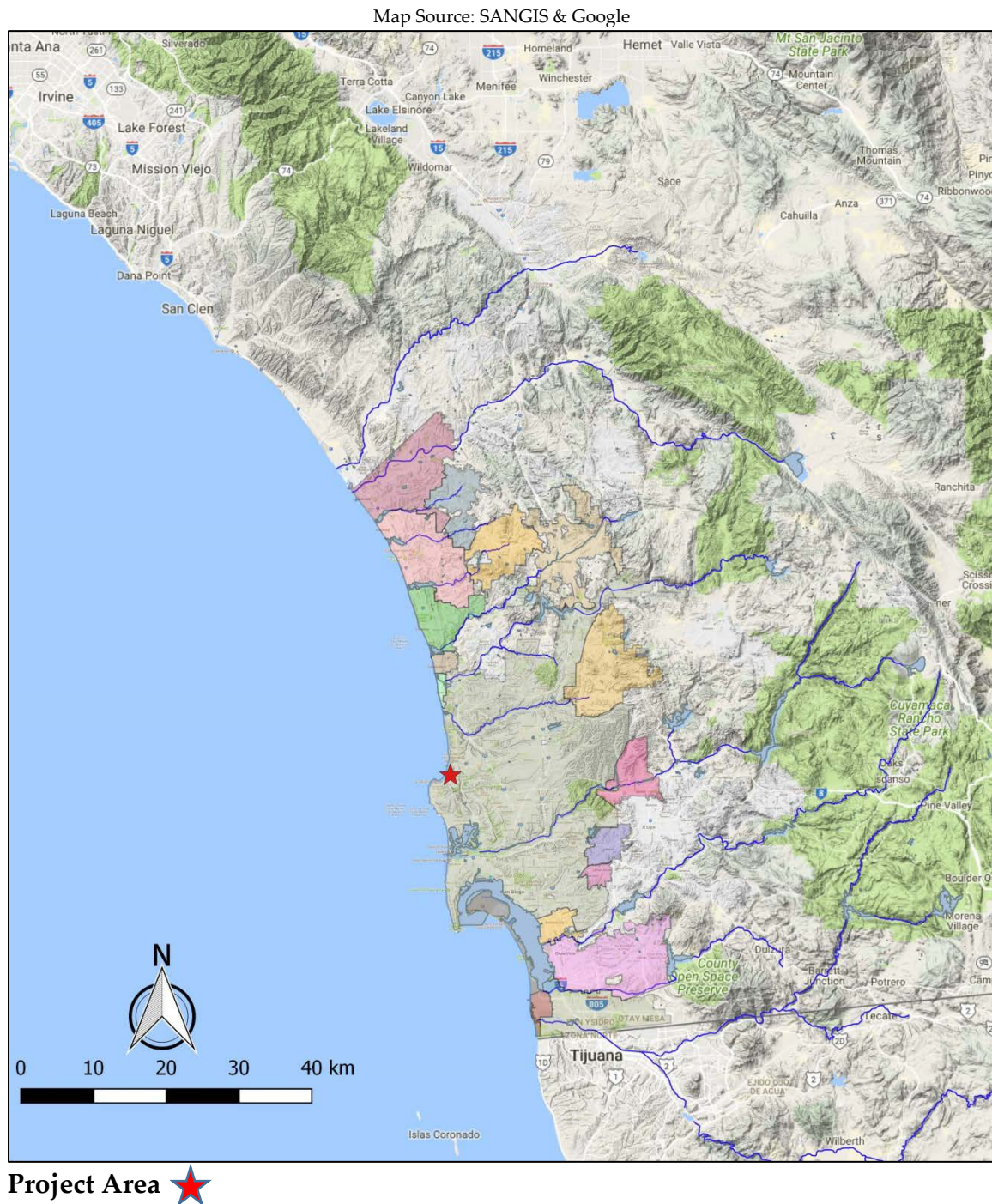


FIGURE 1
Regional Location Map

Map Sources: USGS 7.5' La Jolla Quadrangle

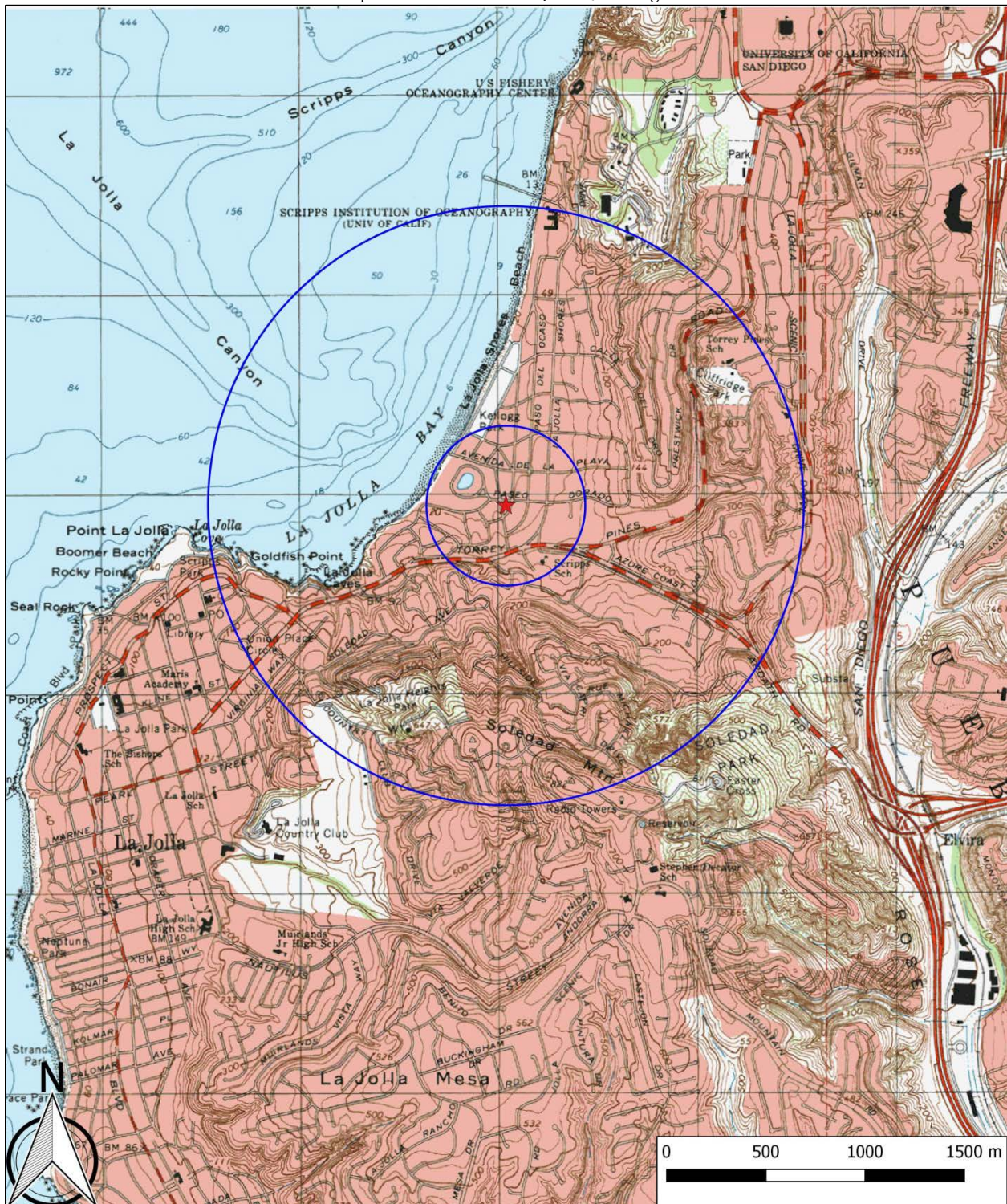


FIGURE 2
Project Area on the USGS Map

II. NATURAL AND CULTURAL SETTING

The following sections describe the environmental and cultural background of the Project Area.

A. Environmental Background

As stated in the previous section, this particular Pathria residence is located in the western portion of San Diego County, in the neighborhood of La Jolla Shores of the City of San Diego. Its approximate Universal Transverse Mercator (UTM) coordinates are 11 (S) 476038 mE; 3634951 mN, with an average elevation of 20 meters above mean sea level (masl).

The Project Area is located within a developed urban landscape with paved streets, local businesses, and developed residential lots and it's underlain by a Holocene and Late Pleistocene flood plain alluvium (Kennedy & Tan 2008) in the form of soft to medium stiff sandy and silty clay (Owen 2015). According to Aguilar & Pignuolo (2012: 7):

This material is largely derived from nearby Eocene-age formations and may contain buried soils. Just east of the property, however, the urbanized area is underlain by the Bay Point Formation, which is composed mainly of marine and non-marine, poorly consolidated, fine to medium grained, pale brown fossiliferous sandstone. The fossils located within this formation indicate a brackish water estuarine depositional environment and a Late Pleistocene age (Kennedy 1975). The Bay Point Formation dates back to the third interglacial, or Sangamon Period, of the Pleistocene epoch in North America (1.25 m.y.a. to 75,000 y.a.); it is widespread and well exposed in the western portion of San Diego County, particularly in areas adjacent to the coastline (Abbott 1999).

B. Cultural Background

Paleoindian Period

The earliest documented prehistoric sites in southern California date back to between 10,000 years Before Present, or earlier, to approximately 8,000 years (Abbott 1999; Carrico 2008; Warren 1987). This cultural timeframe, represented in San Diego County and northern Baja California by the all-encompassing misnomer of "San Dieguito Complex", is a result of post-Pleistocene environmental changes in San Diego County

(Byrd & Raab 2010). It was during this period when, according to Malcolm J. Rogers, the earliest Native Americans populated the said regions (Carrico 2008).

The tool assemblage left by these early inhabitants consisted of large metavolcanic bifacial knives, spear points, small scrapers, and tools associated with chopping and cutting. This assemblage appears to indicate the presence of nomadic, or semi-nomadic, hunters and gatherers whose subsistence economy consisted of small, medium, and large game, possibly aided by seed-grinding technology (Carrico 2008).

Paleoindian sites have been recorded near the coast, in river terraces, inland valleys, inland dry lakebeds, and in the desert. These loci of human activity are few in numbers, with the Harris Site, in Rancho Santa Fe, being the most prominent one (Byrd & Raab 2010; Neusius and Gross 2007; Rogers 1966). The most plausible explanations for the scarcity of Paleoindian Period sites in San Diego County or Northern Baja California is that they are buried very deep, thus have not been found, in addition to the fact that “the human populations that left these ancient deposits was probably highly nomadic and few in numbers” (Carrico 2008: 3).

The physical characteristics of the people that existed in Southern California during this time in its cultural history, and their mortuary practices, are completely unknown because no Paleoindian burials have been recorded thus far. There is evidence, however, indicating that the incidence of their tool assemblages begins to wane or disappear around 8,000 BP (Carrico 2008). The primary cause, or causes, for their disappearance are not understood completely, but changes in their paleoenvironment, severely affecting their food sources, could be one of the major ones.

Early Archaic Period

The Early Archaic period in Southern California is well documented along the coast, inland valleys, coastal and inland foothills, and possibly in the eastern mountains. This period spans between approximately 8,000 and 3,000 years BP (Carrico 2008). The earliest recordation of sites pertaining to the Early Archaic Period was conducted by Malcolm J. Rogers in the 1920's after finding evidence of human occupation near La Jolla Cove, La Jolla Shores, on terraces near what is known today as Torrey Pines State Reserve, in Del Mar, and in the grounds of University of California San Diego (Neusius & Gross 2007).

Evidence gathered from coastal sites suggests that these coastal populations “gradually

adopted marine foods such as shellfish and fish, particularly after the post-Pleistocene sea level rise created estuaries and bays, the remnants of which dot the San Diego and Orange County coastlines today” (Byrd & Raab 2010: 218). Isotope analyses conducted by Pat Masters, in addition, indicate that these coastal inhabitants employed watercraft technology for fishing in the county’s deep waters (Carrico 2008).

The evidence gathered inland, on the other hand, indicates a high reliance on grinding stones (*manos*), milling stations, portable mortars, and pestles. These artifacts indicate the inhabitants’ nutritional reliance on small seeds, berries, and possibly acorns as well (Carrico 2008). Inland evidence also suggests that the Early Archaic Period populations also relied on rabbits, hares, pond turtles, and wood rats for meat (Carrico 2008). It is unclear, however, whether these Early Archaic Period Americans displaced or mixed with the Paleoindian Period cultural groups.

Late Prehistoric Period

The beginning of the Late Prehistoric Period has been generally accepted to have taken place between approximately 2,500 and 2,000 years BP, or earlier, when Yuman speakers from the Colorado River area arrived in San Diego County. Archaeological evidence, in addition to historical linguistics and glottochronology, strongly suggests that the present-day Kumeyaay on both sides of the US-Mexican Border are the direct descendants of these early Yuman speakers (Carrico 2008; Connolly 2007; Mixco 2006).

A great number of modern day Kumeyaay tribal members, however, state that they have been in San Diego County for a longer period of time than the aforementioned archaeological and linguistic evidence suggests, but this notion has been challenged by local archaeologists (Carmen Lucas, personal communication, 2006). Additional research needs to be conducted in order to legitimize these claims. As in the case of the onset of the Early Archaic Period, it is unclear whether these Yuman speakers displaced or mixed with the La Jollans.

The present-day Kumeyaay (self-identified regionally, dialectically, and culturally as Ipai, Tipai, Kwaaymii, or Diegueño) inhabited the southern region of San Diego County, the western and central portions of Imperial County, and portions of northern Baja California before the arrival of the Spanish Conquistadores (Almstedt 1982; Cline 1984; Gifford 1931; Hedges 1975; Luomala 1978; Connolly 2007; Shippek 1918; Spier 1923). It is uncertain at this point; however, due to the lack solid archaeological evidence, whether these prehistoric Yuman speakers displaced, or interbred with, the

Archaic Period inhabitants of the coastal, central, or eastern regions of southern San Diego County (Carrico 2008; Smith 1992).

The prehistoric Ipai/Tipai/Kwaaymii hegemony is characterized by the presence of cottonwood and desert side-notched projectile points, bow and arrows, Tizon Brownware ceramics (dating as early as AD 800-900), sedentary villages, temporary camps, increased population, extensive use of acorns for food production, and greater exploitation of coastal, inland, and mountain resources (Carrico 2008). In addition, mortuary evidence suggests that the early Kumeyaay cremated their dead, “a trait associated with the desert regions to the north and several cultures to the distant east” (Carrico 2008: 8). This suggestion, however, is challenged by Aguilar (2010) and Kroeber (1927) under the premise that one mortuary practice alone cannot unmistakably denote a cultural group.

Before the arrival of the Spanish Conquistadores and missionaries, the Kumeyaay “lived on *Sh’mulq* lands, with summer and winter village sites” (Connolly 2007), and their territory encompassed marine, foothill, mountain, and desert zones (Carrico 2008). The *Sh’mulqs* were independent entities and were headed by a “Chief”, whose position was usually, but not always, inherited (Luomala 1978). A Chief, “directed clan and interclan ceremonies, lectured on their significance, admonished people on behavior, advised about marriages and their dissolution, and appointed a leader for an agave expedition or a fight” (Luomala 1978: 59).

The Kumeyaay were organized by patrilineal, patrilocal lineages that claimed specific territories, but did not own the resources except for some minor plants and closely-guarded eagle nesting sites (Carrico 2008; Luomala 1978; Connolly 2007; Spier 1923). In addition, according to ethnohistorical sources in northern Baja California, the Late Prehistoric Period inhabitants, on both sides of the US-Mexican border, traveled between the coast, the mountains, and the desert to exchange marine foodstuffs, acorns, and pinion nuts as well (Josefina López Meza, Kumiai elder in northern Baja California, personal communication, 2007; Luomala 1976; Shipek 1991).

Seasonal villages, or *rancherías*, were established in the mountains and in lower elevations, usually nearby major streams, or large bodies of water. Examples of inland villages are found at Mesa Grande in Santa Ysabel, and at the Village of Pa’mu, in the Santa María Valley, just south of Ramona (Carrico 2008). Coastal *rancherías*, such as Chollas Village in National City and La Punta in south San Diego, on the other hand, were established near the eastern and southeastern shorelines of the San Diego Bay.

The end of the Late Prehistoric Period in San Diego County has been generally accepted to have occurred when Spanish missionaries and Conquistadores established the mission of San Diego de Alcalá in 1769 (Carrico 2008, Connolly 2007). Soon after, in what can be termed as the Ethnohistoric Period in San Diego County, the effects of the missionization and the enslavement by Spanish settlers at first, followed by Mexican segregation policies and Anglo-American prejudice and genocide practices helped decimate the Native American population of San Diego County.

Historic Period

The Historic Period in San Diego County is represented by the Spanish conquest (1769-1821) followed by the Mexican incorporation of San Diego County after its independence from Spain (1821-1848), and the American incursion into the said county and its forced assimilation and/or displacement of its original inhabitants (1848-present).

As stated in the previous paragraphs, the founding of the Mission of San Diego de Alcalá and the San Diego Presidio paved the way for Spanish domination over the native population of southern San Diego County. According to Zepeda-Herman (2009), the Major land use during this period was cattle grazing. At around the same time, Franciscan missionary influence undermined the religious and ideological fabric of the local inhabitants through conversion, coercion, or bribery. After the Independence from Spain in September 27th, 1821 California became part of the Mexican Republic or Estados Unidos Mexicanos.

The Franciscan mission system was abolished and secularized in 1834 and this allowed Mexican ranchers to obtain large claims of land, further dispossessing the native inhabitants of San Diego County. The Pueblo of San Diego was established in 1835 (Taggart 1869); this meant that a community of settlers would permanently settle the area and a municipal government would have to be established, and thousands of surrounding acres would become city-owned lands. These are the Pueblo Lands, so called because they belonged to the Pueblo of San Diego.

Mexican hegemony ended when Mexico was forced to cede California, along with Nevada, Utah, Arizona, New Mexico, Texas, and parts of Colorado, Kansas, and Wyoming to the United States after signing the Treaty of Guadalupe-Hidalgo on

February 2nd, 1848 ending thus the Mexican-American War of 1846-48. According to Carrico:

With the capitulation of the Mexican Government and the signing of the Treaty of Guadalupe-Hidalgo, the fate of the San Diego County Indians was sealed. From that point on they were under the authority of and stewardship of a federal government that had shown little honor or compassion in dealing with the hundreds of tribes that fell under the American flag. The new owners of California had a vision of paradise in the soon to be self-anointed Golden State, and that shimmering dream did not include the native population (2008:46).

C. Prior Research

The *Cultural Resource Survey* in the Project Area included a *Records Search* at the South Coastal Information Center (SCIC), located at San Diego State University. In addition to this search a historical review and description of the cultural history of the geographical region surrounding the said area had to be conducted as well. The result of this historical review was reported in the previous section. The records search investigation encompassed a one-mile radius off the approximate centroid of the Project Area and resulted in the identification of at least eleven (62) *previously documented* prehistoric archaeological resources within the said one-mile radius; each one is described briefly in the following table:

Table 1
Recorded Cultural Resources within a One-Mile Radius of the Project Area

Site	Type	Authors
CA-SDI-000039	Village of MUT-LLEHUP	Pigniolo A. 2009
CA-SDI-12989	Shell and Lithic Scatter	Swanson & Whitehouse 1992
CA-SDI-12990H	Prehistoric lithics and historic glass, metal, and bone	Swanson & Whitehouse 1992
CA-SDI-12991H	Lithics, 1 core, 1 chopper, 11 g of shell, and < 1g of glass	Shultz R. D. 1992
CA-SDI-14281	Marine shell, 130+ debitage & flakes, scraper planes, 1 mano & hammerstones	BFS&A 1996
CA-SDI-17373	SD II & Lit. II occupational debris & a shell midden	Unknown
CA-SDI-17374	Lit. I midden	Unknown

Table 1 (Cont.)
Recorded Cultural Resources within a One-Mile Radius of the Project Area

CA-SDI-17377	11 mortars and 12 grooved stones	Morin M. 1974
CA-SDI-17550	Early 20 th Century trash deposit	Case R. 2004
CA-SDI-18740	Secondary soil with cultural material	Pignuolo & Aguilar 2008
CA-SDI-19056	1 lithic flake and 13 g of marine shell	Clowery-Moreno S. 1996
CA-SDI-19057	Previously undocumented fill soils, marine shell, ground stone, debitage, faunal bone, & historic material	Giletti, A. 2008
CA-SDI-19235	Prehistoric subsurface deposit consisting of shell concentration with a lithic debitage	Clowery-Moreno S. 2008
CA-SDI-20129	Archaeological site SDM-W-199	Pignuolo A. 2009
CA-SDI-20130	Debitage, Fire-Affected Rock and marine shell (possibly part of site SDM-W-2)	Pignuolo A. 2013
CA-SDI-20151	Light density scatter and a hearth	Rochester, S. 2010
CA-SDI-20159	Historical refuse deposit	Stropes T. 2010
CA-SDI-20840	A porphyritic volcanic chopper, a possible quartzite core, and Fire-Affected Rock	McFarland P. 2012
CA-SDI-20842	Cobble procurement site with 2 test cores and 2 volcanic flakes	Pignuolo A. 2013
CA-SDI-20843	Cobble procurement site with two flaking stations and black porphyritic debitage	Pignuolo A. 2013
CA-SDI-21620	Wood-fired potter kiln in a state of disrepair	Tift L. 2014
CA-SDI-21745	22 marine shell fragments	Stropes T. 2015
CA-SDI-21950	Historic-age domestic refuse and septic pit	Serr C. 2016
P-37-000001	Underwater archaeological site	Baumhoff 1955
P-37-000002	Underwater archaeological site	Baumhoff 1955
P-37-013773	Marine shell fragments	Cheever D. 1994
P-37-016278	1928 historic bridge	Lortie, F. 1996

Table 1 (Cont.)
Recorded Cultural Resources within a One-Mile Radius of the Project Area

P-37-016719	~1950 historic residence	Alter R. 1998
P-37-017063	1915 historic residence	Pierson L.J. 1999
P-37-017085	1937 historic residence	Bradbury E. 1998
P-37-017086	1937 historic residence	Moomian & Brandes 1999
P-37-017156	~1917 historic residence	Alter R. 1999
P-37-018267	Cave Store & Prof. Shultz' Tunnel	Bishop P. 1999
P-37-018367	1910 historic residence	Moomian & Brandes 1999
P-37-018377	1921 historic residence	Alter R. 1999
P-37-018406	1949 historic residence	Alter R. 2000
P-37-018661	1952 historic residence	Alter R. 2000
P-37-018792	~1925 historic residence	Alter R. 2000
P-37-019001	Violetta Lee Horton Spec House #1	Bishop P. 2000
P-37-019204	1952 historic residence	Alter R. 2000
P-37-019875	1895 historic residence	Schaelchlin P. 1977
P-37-023770	Coast Walk Trail	City of San Diego n.d.
P-37-026102	1894 historic residence	Donaldson M.W. 2001
P-37-027459	A milk bottle from Dairy Mart Farms in San Ysidro, CA & an earthenware ceramic bowl fragment	Giletti A. 2005

III. RESEARCH DESIGN AND METHODOLOGY

The purpose of this *Cultural Resource Initial Evaluation and Survey* was to locate and identify any historic or prehistoric cultural resources within the perimeter of 7985 Calle de la Plata, in the neighborhood of La Jolla Shores, that could be negatively affected by future soil-removing operations. In order to be as effective as possible the survey had to follow concise research design guidelines conducted, in turn, under a sound methodology. Both the research design guidelines and the methodology are described below:

A. Cultural Resource Survey's Research Design

The research design this entire *Initial Archaeological Evaluation and Cultural Resource Survey* was conducted under was formulated by Meridian Archaeological's Principal Investigator, Mr. José "Pepe" Aguilar, in accordance to the *Instructions for Recording Historical Resources* and the *Guidelines for Archaeological Research Designs* of the California Office of Historic Preservation (OHP), in addition to the City of San Diego's *Mitigation Monitoring Coordination Guidelines* and *Historical Resources Guidelines*.

The Research Design needed for the said program had to address several core elements inherent to the *Scientific Method*. In this case, these elements included the reconstruction and understanding of the cultural context of the area surrounding the Project Area, and the methodological framework employed during this particular archaeological survey or reconnaissance. The first element of the research design has been described *ad nauseam* in the previous section of this technical report, and the second is described in the following subsection.

B. Survey Methodology

Mr. Jose Aguilar and Mr. Dennis "Bobo" Linton conducted the Cultural Resource Survey this report is concerned with on January 18, 2018. The parcel in question, APN: 346-502-01-00, consisting *approximately* of 0.205 acres, was surveyed in 5 meters transect intervals in a north-south direction where possible. In addition to the 5 meter transects, a good number of digital photographs and notes were taken while surveying; these are to be used in the writing of this technical report and will be stored at Meridian Archaeological Services & Research's home office, located at 1104 Imperial Beach, CA 91932.

IV. SURVEY RESULTS

The resource survey failed to identify any prehistoric or historic archaeological material.

V. RECOMMENDATIONS

Due to the close proximity of the Project Area to the Village of Mut-Llehup (a.k.a. The Spindrift Site, or CA-SDI-39, or SDM-W-1); concomitant to its proximity of the site CA-SDI-20129 (SDM-W-2), and the fact that the said area is surrounded by at least 62 more archaeological sources, Meridian Archaeological has no choice but to recommend a full Cultural Resource Management (CRM) Monitoring Program for any (and every) future soil disturbing operations in the Pathria Property, according to the City of San Diego's *Historical Resource Guidelines*. This recommendation also applies to any exploratory geotechnical drilling.

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APPENDIX A

Proof of Records Search



South Coastal Information Center
San Diego State University
5500 Campanile Drive
San Diego, CA 92182-5320
Office: (619) 594-5682
www.scic.org
scic@mail.sdsu.edu

CALIFORNIA HISTORICAL RESOURCES INFORMATION SYSTEM CLIENT IN-HOUSE RECORDS SEARCH

Company: Meridian
Company Representative: Pepe Aguilar
Date: 1/24/2018
Project Identification: Calle de la Plata

Search Radius: within designated boundaries

Historical Resources:

SELF

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:

SELF

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:

SELF

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

Historic Maps:

SELF

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

Copies: 371

Hours: 1

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

APPENDIX B

Proof of Sacred Lands Search

NATIVE AMERICAN HERITAGE COMMISSION

Cultural and Environmental Department
1550 Harbor Blvd., Suite 100
West Sacramento, CA 95691
(916) 373-3710



January 29, 2018

Jose Aguilar
Meridian Archaeological

Sent by E-mail: meridianarch@hotmail.com

RE: Proposed 7975 Calle de la Plata Cultural Resource Evaluation and Survey Project, City of La Jolla; La Jolla USGS Quadrangle, San Diego County, California

Dear Mr. Aguilar:

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,

A handwritten signature in blue ink that reads 'Gayle Totton'.

Gayle Totton, M.A., PhD.
Associate Governmental Program Analyst
(916) 373-3714

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APPENDIX C

Principal Investigator's Curriculum Vita



COFFEY ENGINEERING, INC.

Drainage Study Pathria Residence

7975 Calle de la Plata

La Jolla, CA 92037

APN: 346-502-02

PTS No. 566727

Prepared For:

**Anu Pathria
and
The City of San Diego**



August 9, 2018

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- Drainage Map A – Existing Drainage Conditions
- Drainage Map B – Proposed Drainage Conditions

Appendix B – Calculations/Evaluations

- Table A – Drainage Manage Areas and Runoff Coefficients
- Table B - Pre Construction Flow Characteristics
- Table C - Post Construction Flow Characteristics

Appendix C – Drainage Design Manual References

- Table 2 – Runoff Coefficients
- Intensity-Duration-Frequency Curves
- Nomograph for the Determination of Time of Concentration or Travel Time for Natural Watersheds

1. Project Description

The 0.17 acre site is located at 7975 Calle de la Plata in the city of La Jolla. Currently the lot houses a single family residence with a footprint of approximately 2,600 ft² with a concrete patio, concrete driveway and pool. Proposed is the demolition of the existing home and hardscape and the construction of a new 2,600 ft² house, concrete patios and spa. The driveway apron will be shifted approximately 8.5' northerly.

2. Drainage Patterns

The site shares its northerly property boundary with one other single family residential lot. All other sides of the subject property are bordered by the fronting streets, El Paseo Grande to the east and Calle de La Plata to the west. Runoff discharges from the site via sheet flow to the curb & gutter of both fronting streets. The site does not receive run-on from any direction nor does the site discharge runoff to the single adjacent private property to the north. Runoff from the site travels along the fully improved streets northwesterly, ultimately entering the public storm drain system near the intersection of Calle de la Plata & Avenida de la Playa, approximately 700' from the site. Refer to Drainage Map 'A.1' included in Appendix B of this report for the existing conditions.

Runoff from the proposed project will maintain the existing drainage pattern. Refer to Drainage Map 'B.1' included in Appendix B of this report for the proposed conditions.

3. Purpose and Scope of Report

The purpose of this report is to evaluate the drainage conditions of the existing site as well as the proposed conditions and to also size drainage system components (if any) accordingly. A 100-year storm was used in the calculations of site runoff.

4. Method of Calculations

The Rational Method, as defined by the *City of San Diego Drainage Design Manual* (2017), will be used to calculate storm water flow rates. Where noted, the following calculations were used to determine flow properties:

Rainfall Characteristics

$Q = C * I * A$, where

Q = Flow rate (ft³/sec)
C = Runoff coefficient
I = Rainfall intensity (in/hr)
A = Area (acres)

$I = 7.44 * P_6 * D^{-0.645}$, where

I = Rainfall intensity (in/hr)
P₆ = Adjusted 6-hour precipitation (inches)
D = Storm duration (min), equal to T_c for time-of-concentration storms
T_c = T_i+T_t+T_p (time-of-concentration), where
T_i=Over land initial time.
T_t=Travel time on natural watersheds.
T_p=Travel time on drainage structures (pipes, brow ditch, gutter etc.)

$T_i = 1.8(1.1-C) D^{0.50} / (s^{0.33})$ (Overland initial time of concentration formula), where

D= Watercourse Distance (feet)(see table 3-2 for the max. overland flow length)
s = Slope (%)
C= Runoff Coefficient
T_i=Initial time of concentration (min.)

$T_t = (11.9 * L^3 / \Delta H)^{0.385}$ (formula for travel time for natural watersheds), where

T_c = Time of Concentration or Travel time (hours)
L = Length of watercourse (miles)
ΔH = Change in effective slope height (ft)

Pipe and Open Channel Flow Characteristics

$V = 1/n * R^{2/3} * S^{1/2}$ (from Manning), where

V = Average cross-sectional velocity (ft/sec)

n = Manning roughness coefficient

R = Hydraulic radius (ft)

S = Slope of water surface (ft height/ft length)

$p/\gamma + V^2/2g + z_1 + h_L = p/\gamma + V^2/2g + z_2$ (from Bernoulli), where

p = pressure (lbs/ft²)

γ = density (lbs/ft³)

V = velocity (ft/sec)

g = gravity (ft/sec/sec)

z = height of fluid (ft)

h_L = head loss (ft)


5. Results and Conclusions:

Due to the land use remaining the same (single family residential) and with only a slight increase in impervious area, the calculated runoff discharging from the proposed project will not increase and no adverse effects downstream are anticipated. The calculated runoff from the site is 0.40 cfs. The proposed project will only discharge to the hardened conveyance of the curb & gutter of the existing street and will not flow through any erodible surfaces prior to entering the storm drain system. Therefore erosion will not be a concern. Complete runoff calculations as well as the tabulated areas of each surface type (i.e. impervious, pervious, etc.) for both the existing and proposed site conditions are included in Appendix B of this report.

6. Declaration of Responsible Charge

I hereby declare that I am the Civil 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 design.

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.



Daniel Valdez
RCE 76074
Exp. 6-30-20

8/9/18

Date

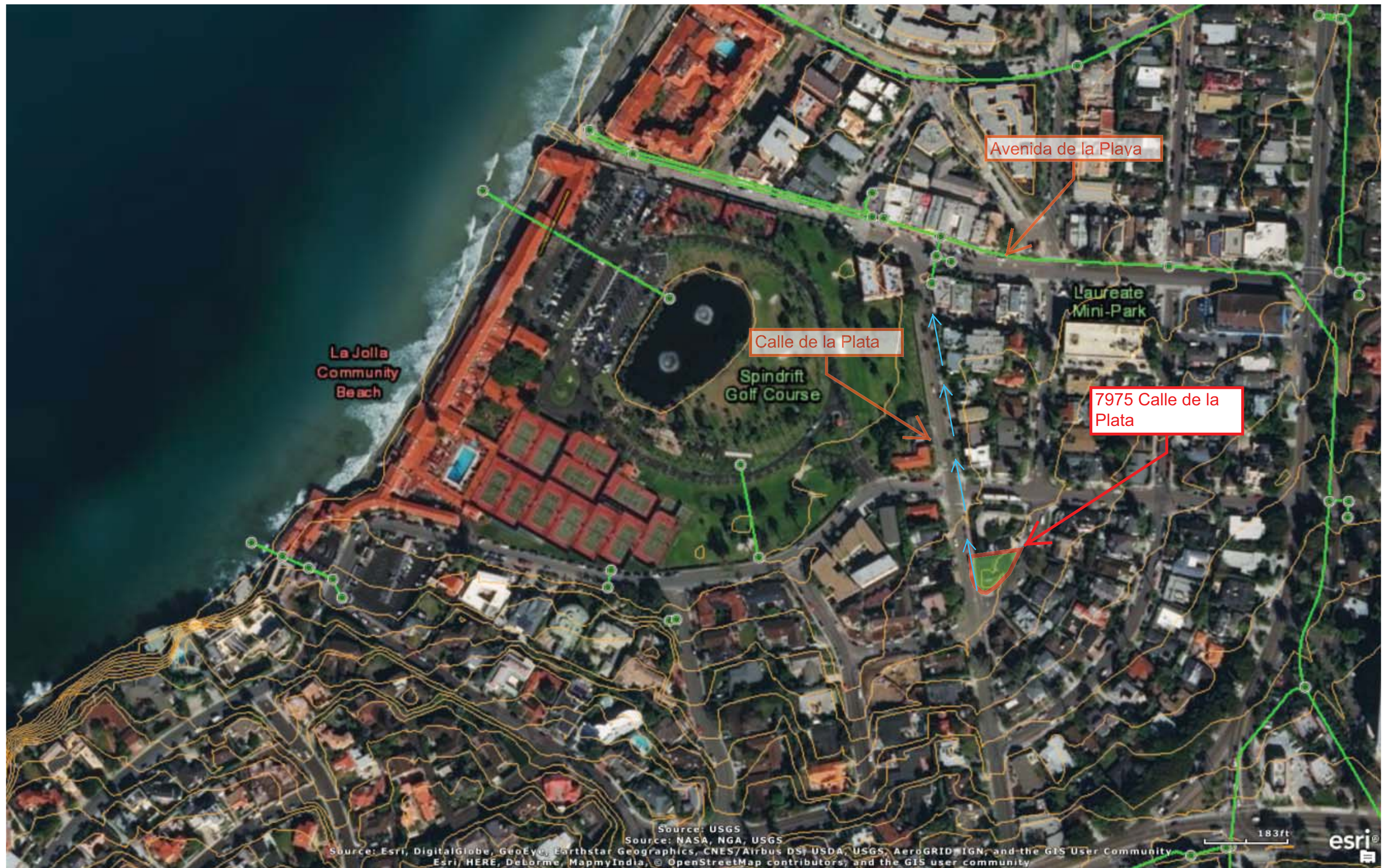


Bibliography

- City of San Diego. 2017. *Drainage Design Manual*.
<http://www.sandiego.gov/publicworks/edocref/index.shtml>

Appendix A –Reference Maps







7975 Calle de la Plata - 5' Topography w/Storm Drainage



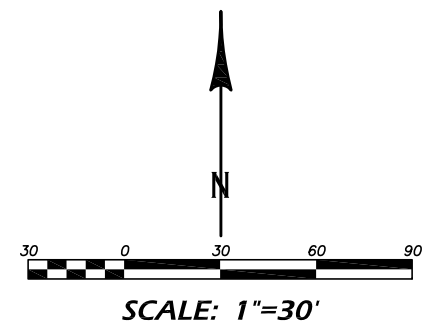
PATHRIA RESIDENCE - DRAINAGE MAP A.1
EXISTING CONDITIONS



LEGEND

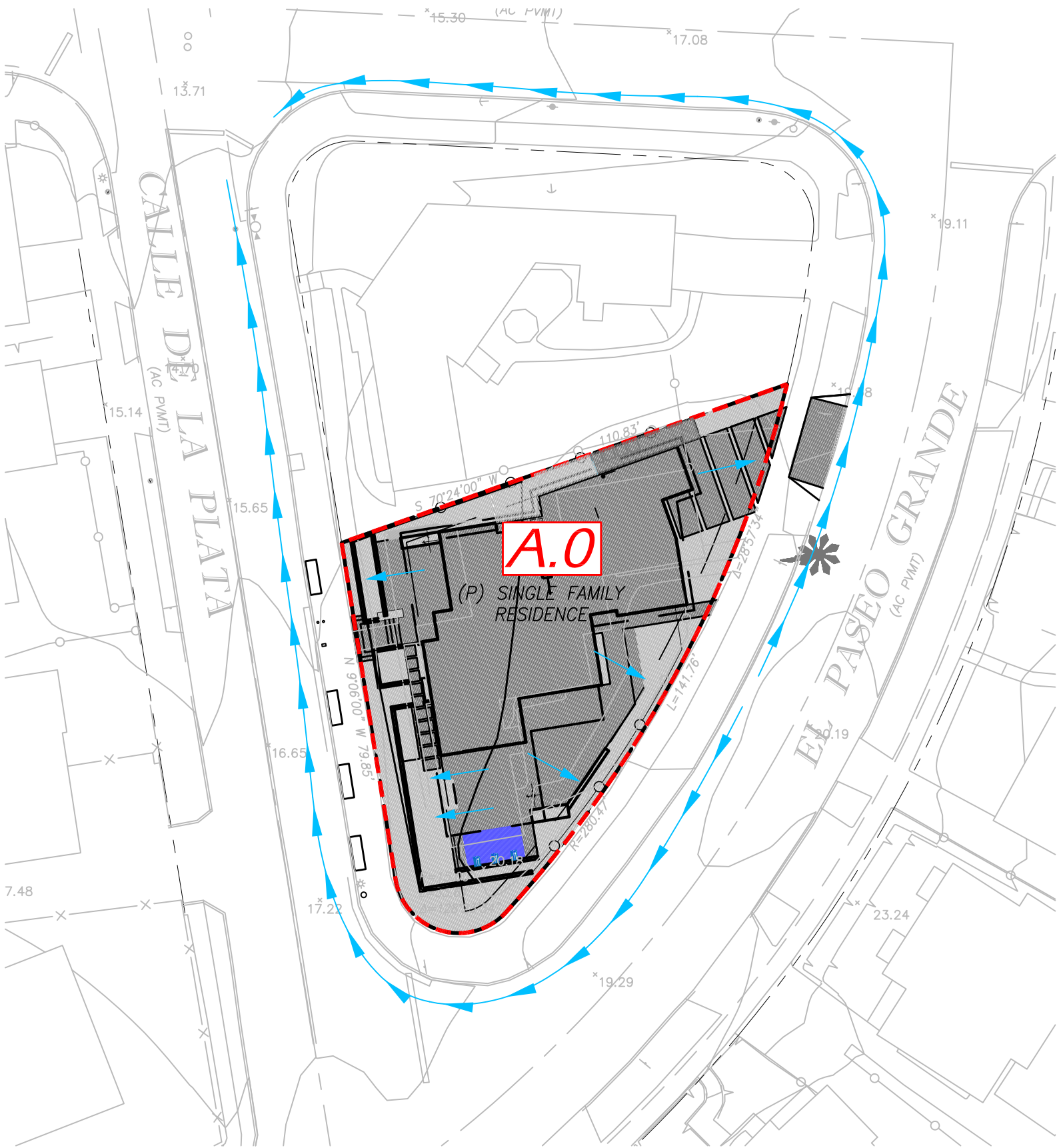
<u>DESCRIPTION</u>	<u>SYMBOL</u>
PROPERTY LINE	
EXISTING CONTOUR	
BASIN LIMITS	
DIRECTION OF FLOW	
IMPERVIOUS AREA	
PERVIOUS AREA	

DMA ID → **X.1**



DMA	Impervious Area	Pervious Area	Pool/Water Feature	Total (SF)	Total (AC)	C-Value	Percent Impervious
X.1 (Existing Condition)	4,031	3,175		7,206	0.17	0.55	55.94%

PATHRIA RESIDENCE - DRAINAGE MAP B.1
PROPOSED CONDITIONS

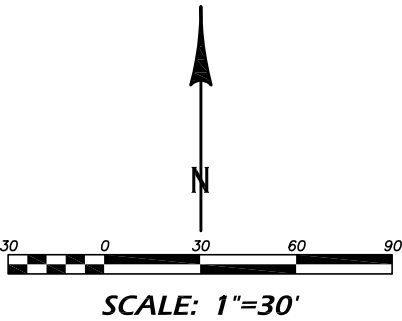


LEGEND

DESCRIPTION	SYMBOL
PROPERTY LINE	\overline{P} N45°45'45"W
EXISTING CONTOUR	90
PROPOSED CONTOUR	90
Basin Limits	---
DIRECTION OF FLOW	→
IMPERVIOUS AREA	[Hatched Box]
PERVIOUS AREA	[Solid Grey Box]
WATER FEATURE	[Blue Box]

DRAINAGE AREA ID

A.0



Drainage Area	Impervious Area	Pervious Area	Pool/Water Feature	Total (SF)	Total (AC)	Percent Impervious
A.0	4,580	2,516	110	7,206	0.17	63.56%

Appendix B – Calculations/Evaluations

Table A - Area Tabulations & Runoff Coefficients ('C')

	Drainage Area	Impervious Area	Pervious Area	Permeable Paving	Biofiltration Area	Pool/Water Feature	Total (SF)	Total (AC)	C-Value	Percent Impervious
Existing Conditions	X.1 (Existing Conc	4,031	3,175				7,206	0.17	0.55	55.94%
Proposed Conditions	A.0	4,580	2,516			110	7,206	0.17	0.55	63.56%

Table B - Pre Construction Flow Characteristics																				
		Natural Watercourse (per Fig. 3-4)					Urban Overland (Sheet) Flow (per Fig. 3-3)						Pipe/Channel Flow			Summary				
Flow ID (Basin)	Element & Dwelling Unit/Acre	Watercourse distance, L (ft)	Elev. 1	Elev. 2	Change in Elevation, H (ft)	Natural watercourse duration, D _n (min)	Urban watercourse distance, T _i (ft) (≤ LM)	Maximum Overland Flow Length	Watercourse slope, s (%)	Runoff Coefficient, C	Initial Ttime of Concentration (per Fig. 3-2)	Overland Flow Time, T _t (min)	Pipe Length, L _p (ft)	Average velocity, V (fps)	Pipe travel time, T _p (min)	(5 min minimum) Total time-of-concentration, T _c (min)	Runoff Coefficient, C	Rainfall Intensity, I (in/hr)	Basin Area, A (acres)	Q (cfs) = C*I*A
X.1 (Existing	LDR - 2				0	0.00	40	0	1.00	0.55	0.00	0.79	0	0.0	0.00	5.00	0.55	4.40	0.17	0.40

Table C - Post Construction Flow Characteristics																				
		Natural Watercourse (per Fig. 3-4)					Urban Overland (Sheet) Flow (per Fig. 3-3)						Pipe/Channel Flow			Summary				
Flow ID (Basin)	Element & Dwelling Unit/Acre	Watercourse distance, L (ft)	Elev. 1	Elev. 2	Change in Elevation, H (ft)	Natural watercourse duration, D _n (min)	Urban watercourse distance, T _i (ft) (≤ LM)	Maximum Overland Flow Length	Watercourse slope, s (%)	Runoff Coefficient, C	Initial Ttime of Concentration (per Fig. 3-2)	Overland Flow Time, T _t (min)	Pipe Length, L _p (ft)	Average velocity, V (fps)	Pipe travel time, T _p (min)	(5 min minimum) Total time-of-concentration, T _c (min)	Runoff Coefficient, C	Rainfall Intensity, I (in/hr)	Basin Area, A (acres)	Q (cfs) = C*I*A
A.0	LDR - 2				0	0.00	40	0	1.00	0.55	0.00	0.79	0	0.0	0.00	5.00	0.55	4.40	0.17	0.40

Appendix C – Reference Tables & Figures (City of San Diego Drainage Design Manual, 2017)

APPENDIX A: RATIONAL METHOD AND MODIFIED RATIONAL METHOD

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 1/2 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.

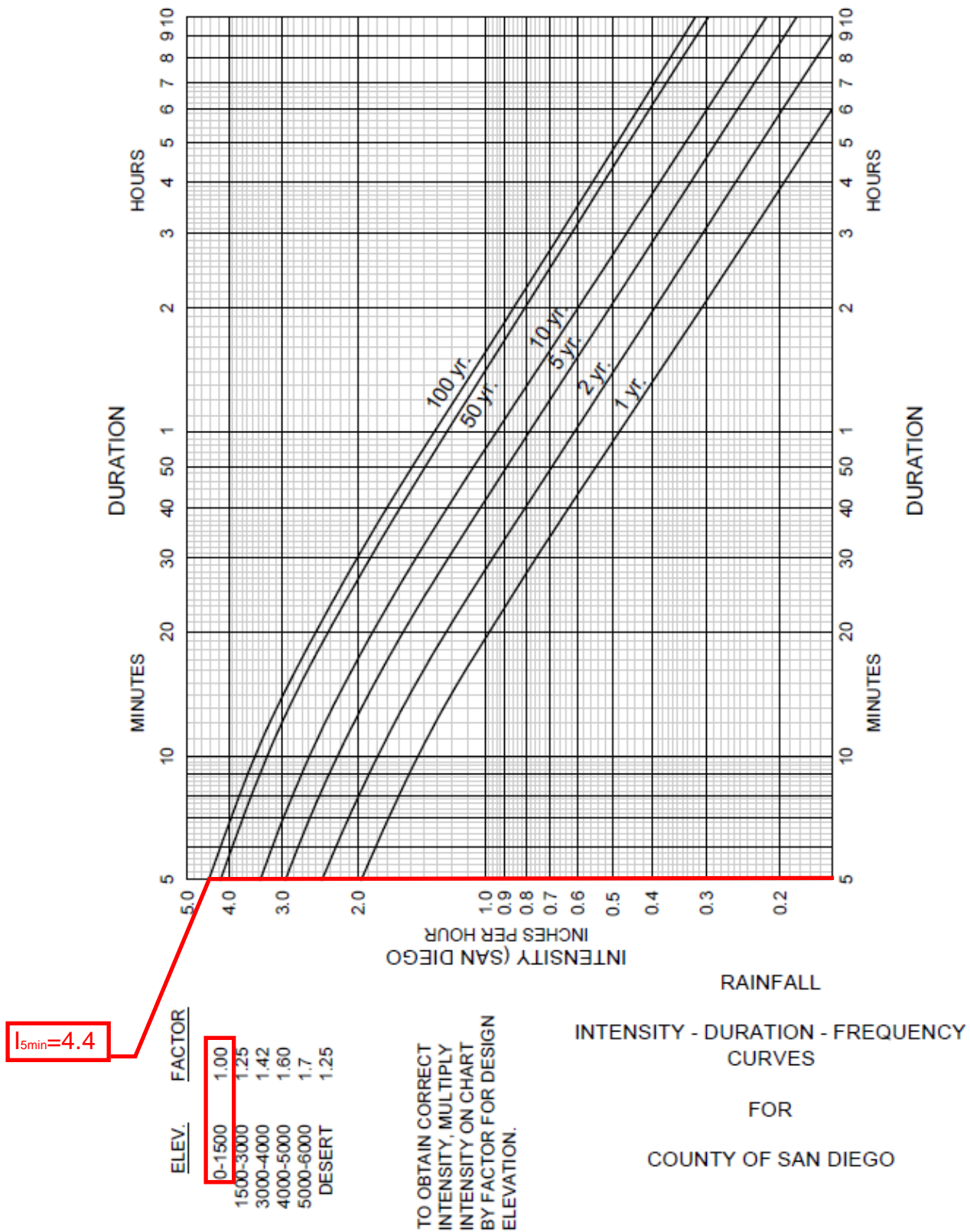
$$\begin{array}{rcl}
 \text{Actual imperviousness} & = & 50\% \\
 \text{Tabulated imperviousness} & = & 80\% \\
 \text{Revised C} & = & (50/80) \times 0.85 = 0.53
 \end{array}$$

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).

APPENDIX A: RATIONAL METHOD AND MODIFIED RATIONAL METHOD



APPENDIX A: RATIONAL METHOD AND MODIFIED RATIONAL METHOD

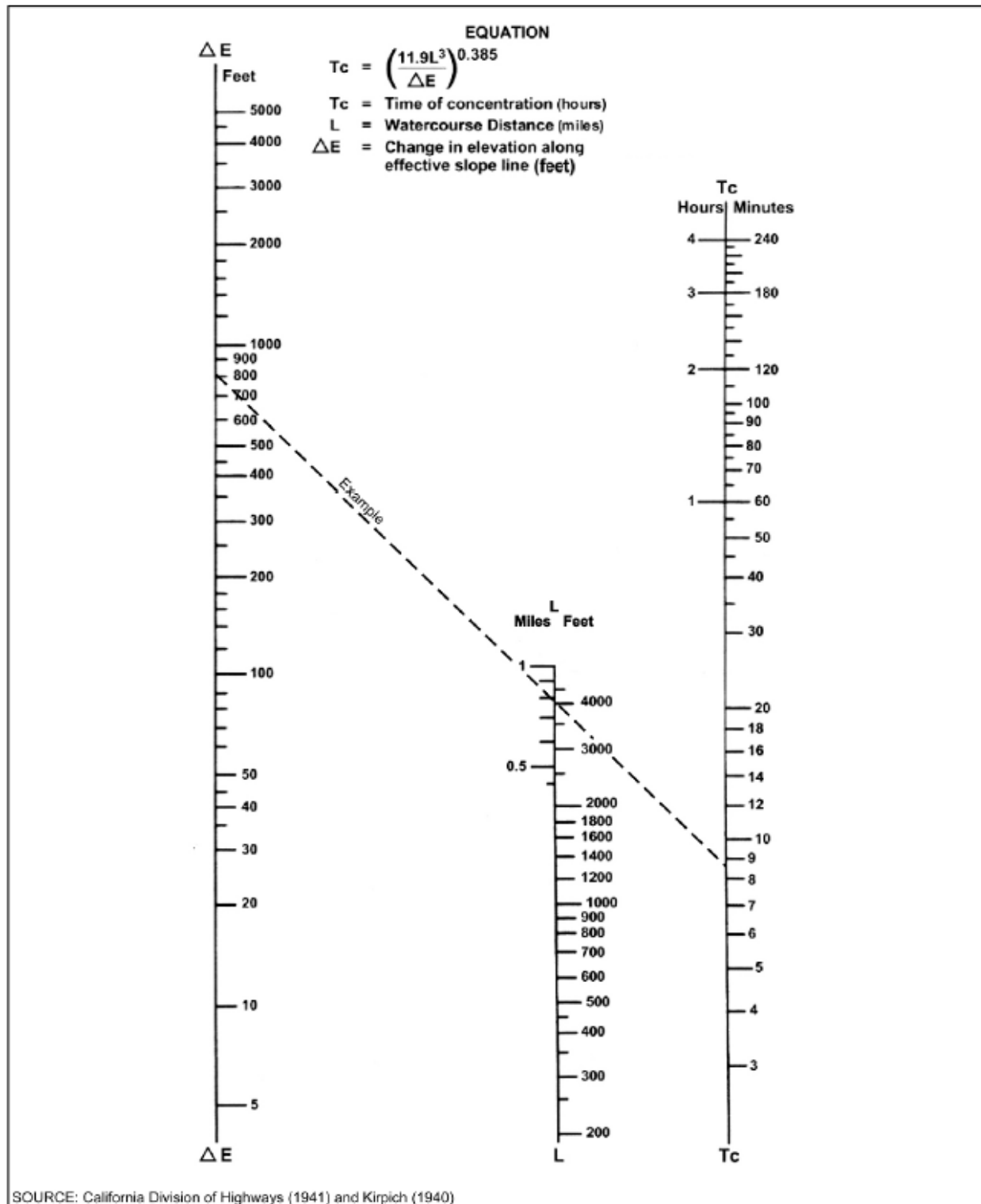


Figure A-2. Nomograph for Determination of T_c for Natural Watersheds

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

APPENDIX A: RATIONAL METHOD AND MODIFIED RATIONAL METHOD

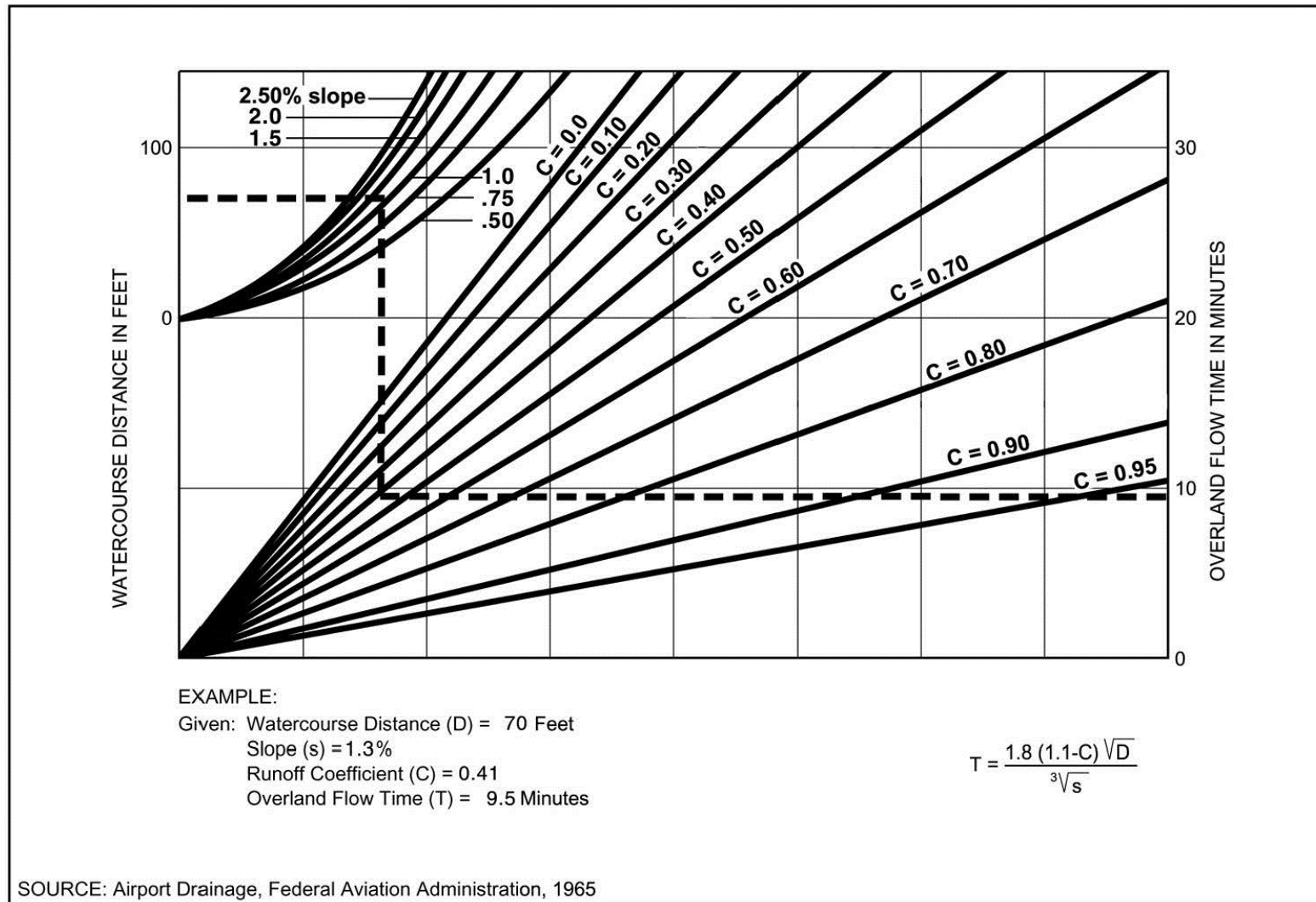


Figure A-4. Rational Formula - Overland Time of Flow Nomograph

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