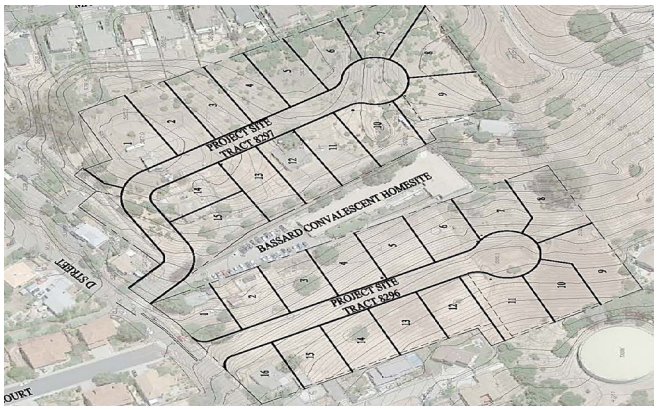
Fairview Orchards/Fairview Meadows Subdivision Project



Draft Environmental Impact Report

Technical Appendices

SCH #2016062057

Lead Agency: County of Alameda
Community Development Agency

January, 2017

LAMPHIER-GREGORY

Print Form

Appendix C

Notice of Completion & Environmental Document Transmittal

Mail to: State Clearinghouse, P.O. Box 3044, Sacramento, CA 95812-3044 (916) 445-0613
For Hand Delivery/Street Address: 1400 Tenth Street, Sacramento, CA 95814

SCH #2016062057

Project Title: Fairview Orchards & Fairview Meadows Residential Subdivision

Lead Agency: Alameda Co. Community Development Department | Contact Person: Andrew Young

Mailing Address: 224 W. Winton Ave., Suite 111 | Phone: (510) 670-6555

City: Hayward | Zip: 94544 | County: Alameda

Project Location: County: Alameda | City/Nearest Community: Hayward / Fairview

Cross Streets: D Street (east of Fairview Avenue) | Zip Code:

Longitude/Latitude (degrees, minutes and seconds): 37 ° 40 ′ 44.5 ″ N / 121 ° 02 ′ 51.1 ″ W | Total Acres: 9.78

Assessor's Parcel No.: See Attachment A | Section: N/A | Twp.: N/A | Range: N/W | Base: N/A

Within 2 Miles: State Hwy #: I-580 & SR 238 | Waterways: Sulphur Creek, San Lorenzo Creek

Airports: None | Railways: None | Schools: Fairview/East Ave. Elem.

Document Type:

CEQA: ☐ NOP ☒ Draft EIR ☐ Supplement/Subsequent EIR (Prior SCH No.) ☐ Early Cons ☐ Neg Dec ☐ Mit Neg Dec Other:

NEPA: ☐ NOI ☐ EA ☐ Draft EIS ☐ FONSI

Other: ☐ Joint Document ☐ Final Document ☐ Other:

Local Action Type:

☐ General Plan Update ☐ General Plan Amendment ☐ General Plan Element ☐ Community Plan
☐ Specific Plan ☐ Master Plan ☐ Planned Unit Development ☐ Site Plan
☐ Rezone ☐ Prezone ☐ Use Permit ☒ Land Division (Subdivision, etc.)
☐ Annexation ☐ Redevelopment ☐ Coastal Permit ☐ Other:

Development Type:

☒ Residential: Units 31 Acres 9.78
☐ Office: Sq.ft. Acres Employees
☐ Commercial: Sq.ft. Acres Employees
☐ Industrial: Sq.ft. Acres Employees
☐ Educational:
☐ Recreational:
☐ Water Facilities: Type MGD
☐ Transportation: Type
☐ Mining: Mineral
☐ Power: Type MW
☐ Waste Treatment: Type MGD
☐ Hazardous Waste: Type
☐ Other:

Project Issues Discussed In Document:

☒ Aesthetic/Visual ☐ Agricultural Land ☒ Air Quality ☒ Archeological/Historical ☒ Biological Resources ☐ Coastal Zone ☐ Drainage/Absorption ☐ Economic/Jobs
☐ Fiscal ☐ Flood Plain/Flooding ☐ Forest Land/Fire Hazard ☒ Geologic/Seismic ☐ Minerals ☒ Noise ☐ Population/Housing Balance ☒ Public Services/Facilities
☐ Recreation/Parks ☐ Schools/Universities ☐ Septic Systems ☒ Sewer Capacity ☒ Soil Erosion/Compaction/Grading ☒ Solid Waste ☐ Toxic/Hazardous ☒ Traffic/Circulation
☐ Vegetation ☒ Water Quality ☐ Water Supply/Groundwater ☐ Wetland/Riparian ☐ Growth Inducement ☒ Land Use ☐ Cumulative Effects ☐ Other:

Present Land Use/Zoning/General Plan Designation:

Rural residential or vacant/R-1-B-E Zone District (Single Family Residential, 10,000 sq. ft. min. lots)/Single Family Residential

Project Description: *(please use a separate page if necessary)*

The Project proposes to subdivide two parcels equaling 9.78 acres into 31 single-family residential lots. The lots would range in size from 10,013 square feet to 17,141 square feet. As part of the Project, each of the 31 lots would be developed with a detached, single-family home (See Attachment B).

Note: The State Clearinghouse will assign identification numbers for all new projects. If a SCH number already exists for a project (e.g. Notice of Preparation or previous draft document) please fill in.

Reviewing Agencies Checklist

Lead Agencies may recommend State Clearinghouse distribution by marking agencies below with and "X".
If you have already sent your document to the agency please denote that with an "S".

___	Air Resources Board	X	Office of Historic Preservation
___	Boating & Waterways, Department of	___	Office of Public School Construction
___	California Emergency Management Agency	___	Parks & Recreation, Department of
___	California Highway Patrol	___	Pesticide Regulation, Department of
X	Caltrans District # 4	___	Public Utilities Commission
___	Caltrans Division of Aeronautics	X	Regional WQCB # 2
___	Caltrans Planning	___	Resources Agency
___	Central Valley Flood Protection Board	___	Resources Recycling and Recovery, Department of
___	Coachella Valley Mtns. Conservancy	___	S.F. Bay Conservation & Development Comm.
___	Coastal Commission	___	San Gabriel & Lower L.A. Rivers & Mtns. Conservancy
___	Colorado River Board	___	San Joaquin River Conservancy
___	Conservation, Department of	___	Santa Monica Mtns. Conservancy
___	Corrections, Department of	___	State Lands Commission
___	Delta Protection Commission	___	SWRCB: Clean Water Grants
___	Education, Department of	___	SWRCB: Water Quality
___	Energy Commission	___	SWRCB: Water Rights
X	Fish & Game Region # 3	___	Tahoe Regional Planning Agency
___	Food & Agriculture, Department of	___	Toxic Substances Control, Department of
___	Forestry and Fire Protection, Department of	___	Water Resources, Department of
___	General Services, Department of		
___	Health Services, Department of	___	Other:
___	Housing & Community Development	___	Other:
X	Native American Heritage Commission		

Local Public Review Period (to be filled in by lead agency)

Starting Date 1-31-17 Ending Date 3-16-17

Lead Agency (Complete if applicable):

Consulting Firm: Lamphier-Gregory
Address: 1944 Embarcadero
City/State/Zip: Oakland, CA 94606
Contact: Scott Gregory
Phone: (510) 535-6690

Applicant: D Street Investments, LLC
Address: 3832 Somerset Avenue
City/State/Zip: Castro Valley, CA 94546
Phone: (510) 881-7856

Signature of Lead Agency Representative: [signature] **Date:** Jan. 27, 2017

Authority cited: Section 21083, Public Resources Code. Reference: Section 21161, Public Resources Code.

TECHNICAL APPENDICES

Table of Contents

APPENDIX A

NOTICE OF PREPARATION (NOP)

Notice of Preparation

To: State Clearinghouse
1400 Tenth Street
Sacramento, CA 95814
(Address)

From: Community Development
224 West Winton Avenue, Suite 111
Hayward, CA 94544
(Address)

Subject: Notice of Preparation of a Draft Environmental Impact Report

Alameda County will be the Lead Agency and will prepare an environmental impact report for the project identified below. We need to know the views of your agency as to the scope and content of the environmental information which is germane to your agency's statutory responsibilities in connection with the proposed project. Your agency will need to use the EIR prepared by our agency when considering your permit or other approval for the project.

The project description, location, and the potential environmental effects are contained in the attached materials. A copy of the Initial Study (☐ is ☒ is not) attached.

Due to the time limits mandated by State law, your response must be sent at the earliest possible date but not later than 30 days after receipt of this notice.

Please send your response to Mr. Andrew Young at the address shown above. We will need the name for a contact person in your agency.

Project Title: Fairview Orchards/Fairview Meadows Residential Subdivision

Project Applicant, if any: D Street Investments, LLC.

Date June 23, 2016

Signature Sandra Rennie

Title ASST DEPUTY DIR

Telephone 510.670-5400

Reference: California Code of Regulations, Title 14, (CEQA Guidelines) Sections 15082(a), 15103, 15375.

Print Form

Appendix C

Notice of Completion & Environmental Document Transmittal

Mail to: State Clearinghouse, P.O. Box 3044, Sacramento, CA 95812-3044 (916) 445-0613
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Lead Agency: Alameda Co. Community Development Department — Contact Person: Andrew Young

Mailing Address: 224 W. Winton Ave., Suite 111 — Phone: (510) 670-6555

City: Hayward — Zip: 94544 — County: Alameda

Project Location: County: Alameda — City/Nearest Community: Hayward / Fairview

Cross Streets: D Street — Zip Code: 94541

Longitude/Latitude (degrees, minutes and seconds): 37 ° 40 ′ 44.5 ″ N / 121 ° 02 ′ 51.1 ″ W Total Acres: 9.78

Assessor's Parcel No.: See Atachment A — Section: N/A Twp.: N/A Range: N/A Base: N/A

Within 2 Miles: State Hwy #: I-580 & SR 238 — Waterways: Sulphur Creek, San Lorenzo Creek

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Document Type:

CEQA: ☒ NOP ☒ Draft EIR — NEPA: ☐ NOI — Other: ☐ Joint Document
☐ Early Cons ☐ Supplement/Subsequent EIR ☐ EA ☐ Final Document
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☐ Mit Neg Dec Other: ☐ FONSI

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☐ General Plan Element ☐ Planned Unit Development ☐ Use Permit ☐ Coastal Permit
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☐ Educational:
☐ Recreational:
☐ Water Facilities: Type MGD

☐ Transportation: Type
☐ Mining: Mineral
☐ Power: Type MW
☐ Waste Treatment: Type MGD
☐ Hazardous Waste: Type
☐ Other:

Project Issues Discussed in Document:

☒ Aesthetic/Visual ☐ Fiscal ☐ Recreation/Parks ☐ Vegetation
☐ Agricultural Land ☐ Flood Plain/Flooding ☐ Schools/Universities ☒ Water Quality
☒ Air Quality ☐ Forest Land/Fire Hazard ☐ Septic Systems ☒ Water Supply/Groundwater
☒ Archeological/Historical ☐ Geologic/Seismic ☒ Sewer Capacity ☐ Wetland/Riparian
☒ Biological Resources ☐ Minerals ☒ Soil Erosion/Compaction/Grading ☐ Growth Inducement
☐ Coastal Zone ☒ Noise ☒ Solid Waste ☒ Land Use
☐ Drainage/Absorption ☐ Population/Housing Balance ☐ Toxic/Hazardous ☐ Cumulative Effects
☐ Economic/Jobs ☒ Public Services/Facilities ☒ Traffic/Circulation ☐ Other:

Present Land Use/Zoning/General Plan Designation:

Residential/Residential-1-B-E Zone/Single Family Residential

Project Description: *(please use a separate page if necessary)*

The Project proposes to subdivide two parcels equaling 9.78 acres into 31 single-family residential lots. The lots would range in size from 10,013 square feet to 17,141 square feet. As part of the Project, the 31 lots would each be developed with a detached, single-family home (See Attachment B).

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Revised 2010

Reviewing Agencies Checklist

Lead Agencies may recommend State Clearinghouse distribution by marking agencies below with and "X".
If you have already sent your document to the agency please denote that with an "S".

___	Air Resources Board	X	Office of Historic Preservation
___	Boating & Waterways, Department of	___	Office of Public School Construction
___	California Emergency Management Agency	___	Parks & Recreation, Department of
___	California Highway Patrol	___	Pesticide Regulation, Department of
X	Caltrans District # 4	___	Public Utilities Commission
___	Caltrans Division of Aeronautics	X	Regional WQCB # 2
___	Caltrans Planning	___	Resources Agency
___	Central Valley Flood Protection Board	___	Resources Recycling and Recovery, Department of
___	Coachella Valley Mtns. Conservancy	___	S.F. Bay Conservation & Development Comm.
___	Coastal Commission	___	San Gabriel & Lower L.A. Rivers & Mtns. Conservancy
___	Colorado River Board	___	San Joaquin River Conservancy
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___	Corrections, Department of	___	State Lands Commission
___	Delta Protection Commission	___	SWRCB: Clean Water Grants
___	Education, Department of	___	SWRCB: Water Quality
___	Energy Commission	___	SWRCB: Water Rights
X	Fish & Game Region # 3	___	Tahoe Regional Planning Agency
___	Food & Agriculture, Department of	___	Toxic Substances Control, Department of
___	Forestry and Fire Protection, Department of	___	Water Resources, Department of
___	General Services, Department of		
___	Health Services, Department of	___	Other:
___	Housing & Community Development	___	Other:
X	Native American Heritage Commission		

Local Public Review Period (to be filled in by lead agency)

Starting Date June 23, 2016 Ending Date July 21, 2016

Lead Agency (Complete if applicable):

Consulting Firm: Lamphier-Gregory
Address: 1944 Embarcadero
City/State/Zip: Oakland, CA. 94606
Contact: James Coniglio
Phone: (510) 535-6743

Applicant: D Street Investments, LLC
Address: 3832 Somerset Avenue
City/State/Zip: Castro Valley, CA. 94546
Phone: (510) 881-7856

Signature of Lead Agency Representative: Sandra Rennie **Date:** 6/23/16

Authority cited: Section 21083, Public Resources Code. Reference: Section 21161, Public Resources Code.

Attachment B

Project Description

Project Location and Setting

Regional Context

The Project site is located in the unincorporated Fairview area of Alameda County. Fairview is just east of the City of Hayward, along the western side of the East Bay Hills, all within the San Francisco Bay Area. The Project Area is located approximately 15 miles southeast of downtown Oakland and 25 miles north of downtown San Jose. U.S. Interstates I-580 and I-880 provide regional access to the Project site. The Project's location is illustrated in **Figure 1**.

Project Site and Vicinity

Project Site

The Project site is located on two separate but nearby tracts totaling 9.78 acres, which are made up of seven separate parcels in the unincorporated Fairview District of Alameda County in the Hayward Hills. The Project fronts D Street, approximately 900-feet to the northeast of the Maud and Fairview Avenues intersection. Access to the site is from D Street. The addressees for the Project are 3231, 3247, 3289 and 3291 D Street.

The Project has been divided into two tracts for purposes of County processing. Tract #8296 is comprised of 3 parcels (Assessor's Parcel Number (APN) 417-0240-001, 417-0250-001 and 417-0240-021) and is sometimes referred to as the western or downhill parcel. Tract #8297 is comprised of 4 parcels (APNs 417-0240-004-00, 417-0240-005-00, 417-0240-006-00 and 417-0240-012-04,) and is sometimes referred to as the eastern or uphill parcel.

The two tracts are separated by a parcel where the existing Hilltop Care Convalescent Home is located. (Note that this property was previously named Bassaro Convalescent Home and is sometimes referred to by that name in background documents and on plans.) The convalescent home will continue operations and is not a part of the Project. The convalescent home property is owned by Silvergate Investments, LLC.

Both Project tracts have two single-family dwellings with several associated outbuildings that are currently vacant. When active, the tracts were used as rural residential properties, and those areas not covered by structures contain ruderal grasses (those that grow on properties that have been disturbed from their natural state). All existing structures at the site will be demolished during the clearing stage of construction for the Project.

Existing Planning Designations

The Project site is within the jurisdiction of Alameda County and has a General Plan designation of Single-Family Residential. The property is zoned R-1-B-E (residential with minimum 10,000 square foot lot sizes).

Surrounding Development

Fairview has a population of approximately 10,000 people located along the westward edge of the East Bay Hills. The majority of the unincorporated Fairview Area is characterized by a mixture of many small older subdivisions interspersed with new subdivisions, remaining "undeveloped" large lots ranging from one to ten acres in active or passive agricultural use, and a few large institutional properties (churches, schools, various parks and open spaces, and the Lone Tree Cemetery). The easternmost area is dominated by a single very large subdivision – Five Canyons – built mostly by a single developer in the 1980s.

The Project site is surrounded to the north by the Carlson Court residential development, to the east by the older Machado Court residential development ,and to the west by another older residential development. The Five Canyons residential development is located in the general vicinity of the Project to the northeast, beyond the Machado Court residential development. D Street is located adjacent to the Project site to the north.

As the surrounding area is largely developed, the site would be considered an infill site.

Figure 1: Site Location

Proposed Project

Proposed Development

The Project proposes to subdivide two parcels equaling 9.78 acres into 31 single-family residential lots. The lots would range in size from 10,013 square feet to 17,141 square feet, as shown in **Figure 2**. As part of the Project, the 31 lots would each be developed with a detached, single-family home. Yards of varying sizes would be incorporated in the final design according to the individual aspects of each lot.

Proposed Circulation and Access

Access to the properties would be provided via construction of two new cul-de-sacs fronting D Street.

Proposed Utility Connections

All utility systems proposed for the Project would connect to existing utility lines located under D Street along with utility lines. Within the Project site, the main lines would be placed under the interior street and lateral lines would be extended to each individual home.

The Project will also include installation of an approximately 470-foot 12-inch stormdrain that will be located in D Street from the entrance of Tract 8297 and flowing to the east and connecting to an existing stormdrain system.

Proposed Grading Plan

The Project site would be graded to prepare the sloping terrain of the area of the site for development. Currently, the ground on the Project site generally slopes downward to the west away from high ground located in the eastern portion of the Project site. Off haul of grading materials is not proposed for the Project since all soil will be used on site. The grading, as shown in the figure, is also described below by tract.

Grading of Tract 8297 will include the over-excavation of fill, soft soils deposits and residual soils from lots 4 through 6. The site soils would be engineered on site and the engineered fill would then be placed on all lots in this tract to create generally flat pads with sloping back lots.

Grading of the eastern half of Tract 8296 will be generally similar to Tract 8297 described above, with over-excavation and on-site engineering of fill to be placed to create generally flat lots and sloping back lots. The lots on the downhill (western) side will be terraced and will be developed with split-level homes to span to two levels of the lots.

Additionally, a subdrain will be required and will be connected to the storm line. Subdrains are required for stability of all fill slopes. Exact locations and depths of the subdrains will be determined in the field by the soils engineer based on the soil conditions encountered during Project site grading.

Construction Schedule

Construction is expected to begin in spring of 2017 and take approximately 24 months. Initial tasks include site clearance and site grading. Once the grading is complete, the retaining walls would be

installed and the utility infrastructure would be laid. The next task, anticipated to take place at in spring of 2018, and would be the construction and completion of the model homes. Construction on the remaining houses would continue as lots are sold and completion of the Project would be anticipated April 2019.

Construction access to the Project site will be from D Street.

Requested Actions and Required Approvals

The following approvals would be required from the County to implement the Project:

- Tentative Map approval
- Design Review approval

In addition to the above requests, before development of the Project could take place, the Project would be required to obtain subsequent County permits including a Grading Permit, a Building Permit. Therefore, the "Project" as defined in this Draft EIR, is the approval of the discretionary actions itemized above, as well as subsequent associated site development, including demolition, clearing, grading, infrastructure improvements, paving, building, landscaping and all other necessary actions to develop, sell and occupy the proposed homes.

Other Agency Approvals

Discretionary approval from other agencies is not anticipated to be required for Project approvals. The Regional Water Quality Control Board is considered a trustee agency related to stormwater pollution prevention plans.

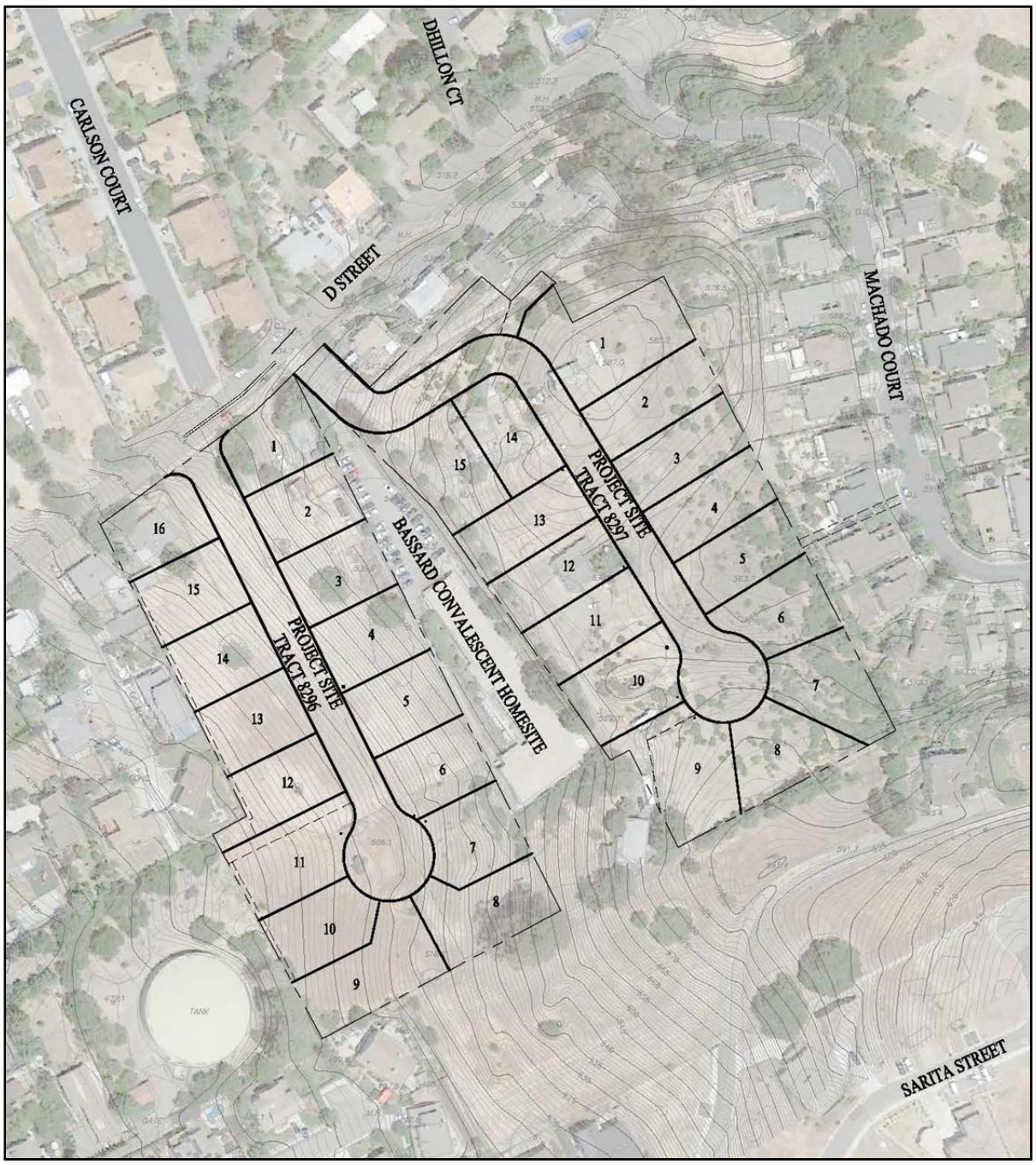

Figure 2: Project Site Plan

APPENDIX B

COMMENTS ON THE NOP AND SCOPING MEETING

Chris Higgins
23964 Madeiros Ave
Hayward, Ca 94541
March 3, 2016

Andrew Young
Alameda County Planning Department
224 W. Winton Ave, Room 111
Hayward, Ca 94544

Dear Mr. Young:

Here are my comments for the scoping requirements meeting scheduled for March 7th before the Planning Commission.

Agenda Item J 4 D STREET INVESTMENTS LLC, TRACT MAPS 8296 AND 8297, PLN2015-00180 – Preliminary and Environmental Scope

Items to be included in the scope of the EIR.

1. We prefer that the EIR look at traffic patterns that will be impacted by the vehicles resident in this development. Areas we know are trouble spots that are most likely impacted
    a. D Street, Maude, Fairview Already pretty busy and a difficult corner to navigate. The corner properties here have a tough time getting into morning traffic
    b. Maude and Kelley Already very busy. When the school went from 350 students to 700 a bad situation got much worse
    c. Kelley, center and B. This intersection was upgraded as part of the 5 Canyons development impact. it is back to pre 5 Canyon backup levels
    d. D street and 7th street. The stop sign alleviated some of the backup.
    e. D street and 4th street this has turned into a very busy intersection at rush hour with 4th being used as an alternate to the 2nd and D or 2nd and Foothill intersection for hill bound traffic
    f. D Street and 2nd. This backs up quite a bit in the morning and evening rush. Based on personal experience a 3-minute back up to get through this intersection (this is before getting stuck at the Jackson/Foothill loop) is not uncommon.
    g. Hansen/Fairview circle.
    h. Fairview from Hansen to 5 Canyons Parkway
2. D- street from the Maude/Fairview intersection to the two access roads for the development. The street is narrow. A lot more cars are being added
3. D Street from the Maude/Fairview Intersection to 7th street. This is a busy stretch of D street with very few stretches of sidewalks. The only cross walk in this entire stretch is at the entrance to San Felipe Park. It is pretty new. No sidewalks or cross walks by Sulfur Creek Park. There have been a number of pedestrian related accidents along

here. It is especially dangerous at night. Many of the street lights are blocked by trees making it a very dangerous stretch. I think the stretch near Shell has had several pedestrian related accidents.

4. Maude Ave. Fairview School is located here. The county put new sidewalks in on Maude although they failed to extend them length of Maud. There is a large stretch running along the East side of Maude that still lacks sidewalks. Has this helped as far as pedestrian related accidents go? There is a new crosswalk on Maude at Romagnolo. Is that helping any? I think I remember several pedestrian related accidents at Romagnolo.
5. Hydrology. I think we want a closer look at the storm water treatment facilities and how all runoff is collected. The developer mentioned he is splitting the drainage into its appropriate watersheds since the properties straddle two watersheds. This is good news for those of us on the North Branch of Sulfur Creek. To date water that used to drain to Don Castro has been diverted to the North branch of Sulfur Creek adding to the maintenance woes of those whose property borders the creek. Capacity will be a big issue and of course prorated maintenance costs for the facilities being used to transport this storm water that are maintained by others.

Thank you for time

Chris Higgins

PLN 2015-180

Angelo & Dorothy Costanzo
23870 Maud Ave.
Hayward, Ca. 94541

3-7-16

Alameda County Planning Department:

To whom it may concern,

We are writing this letter in response the 31 homes that have been proposed on D Street above Fairview Ave. We are concerned that the building of these homes will have an adverse effect not only on the increased traffic on our crowded and very busy streets in this section of the Fairview District, but also have a negative impact on the environment.

The increase in motor vehicle traffic will only add to the difficulty in accessing our driveway, especially during commute hours and on schooldays. Fairview Elementary School is only a few doors north of us. Every time we pass the school before school starts and when school is finished, we are impeded due to the number of vehicles in the area and the illegal stopping/parking of vehicles in the area. Drivers have no regard for other motorists. They stop in traffic to pick up and drop off, thus impeding the flow of traffic.

The increase in motor vehicle traffic will add to the exhaust fumes in our neighborhood. This has an adverse effect on not only the residents in this area, but affects our children, grandchildren and even our pets.

We hope you reconsider on the building of these 31 homes on D Street.

Angelo Costanzo
Dorothy Costanzo

Angelo & Dorothy Costanzo

Angelo & Dorothy Costanzo
23870 Maud Ave.
Hayward, Ca. 94541

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The increase in motor vehicle traffic will add to the exhaust fumes in our neighborhood. This has an adverse effect on not only the residents in this area, but affects our children, grandchildren and even our pets.

We hope you reconsider on the building of these 31 homes on D Street.

Angelo & Dorothy Costanzo

March 24, 2016

Andrew Young
C/O Alameda County Community Development Agency
224 W Winton Ave
Suite 111
Hayward, CA 94544
RE: D St Investments LLC, Tract Maps 8296 and 8297, PLN2015-00180

Hello

I have lived in the Hayward area on and off for over 40 years. I chose to invest in the rural foothills of Fairview. D St is too narrow to support the continued development of the Fairview / D St lands. Adding 31 homes will equal 400 cars. While some of those cars will park in garages, many people will use their garages for storage or housing and park off street. The number of trips up and down D St could be up to 800 per day. In addition, the development will impact Fairview School which expanded and currently causes congestion. This will only add to that traffic problem.

Legally blocking both sides of the street is illegal. This is common on D St. Cars have to take turns to go up and down the street, pedestrians, our horses that use Fairview/D St and emergency vehicles are at risk.

I reside at the corner of D St and Maud Ave. The traffic coming from 5 Canyons and D St developments is a racetrack. They speed downhill, ignore the yield sign, then pick up speed as they turn right onto Maud. Speed bumps have been denied us, and I do not see any CHP/Hayward Police presence.

I cannot get out of my driveway, nor can my neighbors, without waiting carefully for an opening, even with a yield sign, that sign is ignored by drivers barreling down Fairview and D St. It is a rare event that any car "yields" to me, maybe 1 in 5000. And if they do, I blow a kiss out my car window!

Fairview is becoming an ugly landscape of patchwork development. Some developments start and then die, leaving the land scarred by incomplete foundations (ie: Maud Ave). It is a beautiful valley, build a couple of mansions, I'm sure with Silicon Valley nearby they would sell.

Please keep Fairview safe and low-density.

Cathy Langley

Cathy Langley
23922 Maud Ave
Hayward, CA 94541

March 24, 2016

Andrew Young
C/O Alameda County Community Development Agency
224 W. Winton Ave
Suite 111
Hayward, CA 94544

RE: D Street Investments LLC, tract Maps 8296 & 8297, PLN2015-00180

Dear Mr. Young

D St is overrun now with cars resulting from a narrow street, convalescent hospital traffic, and new developments off D St. Combined with the traffic flow from the 5 Canyons development off Fairview, the traffic funneled onto Maud Ave is Freeway quality. Fairview School remodel has increased student capacity, and the traffic from school drop off and pick up causes congestion. If this 31 home development is approved the traffic will increase by at least 200 trips up and down D St/Maud Ave. We have pedestrian traffic, and well as horse traffic on D St/Maud Ave.

I had proposed to the planning department to put in speed bumps on D St, and it was declined due to "not enough population in the area to warrant the speed bumps". Yet, during the meeting at the Planning Dept. 3/7/16, one of the supervisors cited that actually it was a budget issue.

My neighbor who lives at the top of D St, on a blind curb, found she could not enter or exit her driveway on a , and finally the County painted her curb red. That shows that at least they recognize there is a problem.

I help the displaced animals in my neighborhood, resulting from the destruction of animal habitat due to development. A Eucalyptus forest behind me was cut down, and now the plans for that development have been rejected due to the property being too steep to build upon.

Therefore the forest was destroyed displacing animals for no reason. I have seen deer with a broken leg from an auto injury on D St. The cars on D St, Fairview and Maud travel with excessive speed with no regard for pedestrians or animals.

Respectfully

Suzanne Bothwell
3188 D St
Hayward, CA

Young, Andrew, CDA

From: Mike Loss <amloss@pacbell.net>
Sent: Tuesday, March 22, 2016 5:28 PM
To: Young, Andrew, CDA
Cc: Yeung, Rick
Subject: Comments on Parcel Maps 8296 and 8297

Hi Andy,

Thank you for discussing the subject developments with me yesterday. Below are my comments based on my review of the Tentative Parcel Maps 8296 and 8297.

The basic design of both developments looks good and appears to meet the Fairview Plan for minimum lot size. Based on our experience on Carlson Court, the proposed design with sidewalks and parking on both sides of the street would be quite beneficial. The lot grades seem quite reasonable and the storm drainage should be adequate.

My biggest concern is about traffic safety on D Street. Presently, with cars parked on both sides of D Street, the two-way traffic lanes become very narrow, and thus, it is quite dangerous for cars to pass each other safely at the posted 25 MPH speed limit. This situation will be made even worst with all the new traffic from these two new developments.

Thus, I would recommend that D Street be widened from the top of the hill (near Hilltop Care Center) to Fairview Avenue. I believe that the present width of D Street is only around 30 feet, which is less than today's Alameda County road standards. There appears to be plenty of right-away available to allow for widening of D Street. Another possible alternative would be restrict parking on one side of D Street.

As we discussed, I worked with Rick Yeung from Alameda County Public Works in October 2014 to restrict parking on D Street near Carlson Court for this very same reason. The County added a red curb on north side of D Street and east/east of Carlson Court. This greatly improved the traffic safety for making right turns at the Stop Sign on Carlson Court and left turns onto Carlson Court from D Street.

However, there is still concern by many Carlson Court residents about the traffic coming from Thurston and Machado Courts that is heading West at a fast rate of speed. Since the grade on D Street prevents one from seeing the cars until they crest the top of the hill near the Hilltop Care Center road, it becomes a real safety issue. There has been two accidents at Carlson Court/D Street intersection due to this problem and dozens of near misses.

We would like to see speed bumps on only the westbound lanes of D Street prior to crest of hill as well as more signage on D Street to slow these cars down to a safe speed. Both new roads from the proposed developments will be impacted by this speed / vision problem, and the chances of additional accidents would significantly increase. Also, **I would like to recommend that the County explore** placing a Stop Sign on only the westbound lane of D Street at the intersection with the new Road from Tract 8297 as a safer alternative to speed bumps.

If you have any questions about my comments, please contact me by email or cell phone.

I appreciate the opportunity to input to the Alameda County planning process.

Regards,

Michael Loss
President of Carlson Court Homeowners Association
510-432-5648 (cell)

Young, Andrew, CDA

From: sstuchlik <sassy1955@comcast.net>
Sent: Sunday, March 27, 2016 2:57 PM
To: Young, Andrew, CDA
Subject: Comments Re: Tentative Tract 8296 & 8297

Aside from the fact that residents made their concerns known, We have my own concerns. We looked at a previous initial study for 8057 for Feb. 2012. Among the impact status, there were 34 with no impact, 34 with less than significant impact and a mere 8 with somewhat significant impact. Most disconcerting was the comment that the Alameda Whipsnake was "presumed" absent. And that the Monterey Pine tree could be removed because it was not native to the area. Was Fish and Game contacted regarding the endangered species?

Our home is at 3303 D St. The road will be directly behind my yard and my neighbors yard. We are concerned about noise (peace and quit), privacy, and someone missing the turn and landing in our yard or home. What will be done about the fumes coming from the many cars traveling that road. We ask that the road be located elsewhere to enter the development. We feel it would be like living next to the freeway. The reason we chose this area was for the quietness, country feel. Why can't the road go behind the nursing home?

I look forward to your consideration and reply. We want to what solutions you can come up with.

Thank you for your time

Mr. and Mrs. Donald Stuchlik

P.S. We do not currently live there but our son and Fiancé do and we expect little ones in the very near future. So safety is a big issue.

Sent from my iPad

MINUTES OF MEETING
ALAMEDA COUNTY PLANNING COMMISSION
MARCH 7, 2016
(Approved March 21, 2016)

FIELD TRIP

Time: 2:00 p.m.
Place: 224 West Winton Avenue, Room 111, Hayward

REGULAR MEETING

CALL TO ORDER: *The Chair called the meeting to order at 6:00 p.m.*

MEMBERS PRESENT: Commissioners Dimitris Kastriotis; Jim Goff; Hal Gin; Jeff Moore; Richard Rhodes, Vice-Chair; and Larry Ratto, Chair.

OTHERS PRESENT: Rodrigo Orduña, Acting Deputy Director; Andy Young, Planner III; Linda Gardner, Housing Community Development Director; Brian Washington, County Counsel's Office; Maria Palmeri, Recording Secretary.

MEMBERS EXCUSED: Alane Loisel

There were 43 people in the audience.

PLEDGE OF ALLEGIANCE

ANNOUNCEMENTS BY THE CHAIR: *None*

OPEN FORUM: Open forum is provided for any members of the public wishing to speak on an item not listed on the agenda. Each speaker is limited to three (3) minutes. *No one requested to be heard under open forum.*

COMMITTEE REPORT: *None*

FIELD TRIP REPORT: Commissioner Gin provided a report.

MEMBERS PRESENT: Commissioners Ratto, Gin, and Goff

MEMBERS EXCUSED: Commissioners Moore, Rhodes, Kastriotis and Loisel.

1. **ROESLER, CONDITIONAL USE PERMIT, PLN2015-00020 ~** Petition to allow for an event center, an alcohol outlet and a restaurant, in the 'SD' (Sunol Downtown) District, located at 19984 Main Street, south side, immediately south of the southern terminus of Kilkare Road, Sunol area of unincorporated Alameda County, bearing Assessor's Parcel Number: 096-0140-002-01. **Staff Planner: Damien Curry**

2. **D STREET INVESTMENTS LLC, TRACT MAPS 8296 AND 8297, PLN2015-00180 –** Preliminary and Environmental Scope Review Only ~ Petition to subdivide seven parcels into thirty-one (31) single family residential lots by two separate Vesting Tentative Tract Maps (8296 and 8297), each with its own separate public street and easements for utility and access requirements, located at 3231, 3247, 3289 and 3291 D Street, south side, approximately 560 feet east of Fairview Avenue, unincorporated area of Fairview, bearing Assessor's Parcel Numbers: 417-0240-001-00; 417-0240-006-00; 417-0250-021-00; 417-0240-004-00; 417-0240-012-04; 417-0240-005-00 and 417-0250-001-00. **Staff Planner: Andrew Young**

APPROVAL OF MINUTES FROM PREVIOUS MEETINGS

3. **APPROVAL OF COMMISSION MINUTES ~** November 2, 2015 and February 1, 2016 – Member Moore moved to approve the minutes of November 2, 2015 as submitted. Member Gin seconded. Motion carried 4/2. Members Kastriotis and Goff abstained. Member Loisel was absent.

Member Moore moved to approve the minutes of February 1, 2016 as submitted. Member Gin Seconded. Motion carried 4/2. Members Kastriotis and Goff abstained. Member Loisel was absent.

CONSENT CALENDAR: *There were no items*

REGULAR CALENDAR:

4. D STREET INVESTMENTS LLC, TRACT MAPS 8296 AND 8297, PLN2015-00180 – ***Preliminary and Environmental Scope Review Only ~*** Petition to subdivide seven parcels into thirty-one (31) single family residential lots by two separate Vesting Tentative Tract Maps (8296 and 8297), each with its own separate public street and easements for utility and access requirements, located at 3231, 3247, 3289 and 3291 D Street, south side, approximately 560 feet east of Fairview Avenue, unincorporated area of Fairview, bearing Assessor's Parcel Numbers: 417-0240-001-00; 417-0240-006-00; 417-0250-021-00; 417-0240-004-00; 417-0240-012-04; 417-0240-005-00 and 417-0250-001-00. **Staff Planner: Andrew Young, *No Action Required***

Andy Young presented the staff report. Jim Coniglio, consultant with Lamphier-Gregory, provided a Power Point presentation on the project. He described the project and the various studies done on the project. The technical studies will be analyzed and they will be included in the Initial Study. He explained the sequence of events prior to finalizing the Environmental Impact Report (EIR). March 28th is the deadline for comments on the EIR. Marc Crawford spoke on the project. He said he is striving to do a project that complies with the Fairview plan and is sensitive to the community.

Public testimony was called for. A total of 12 residents from the neighborhood expressed concern with the following issues:

- Disruption to neighborhood
- Busy intersections that should be included in traffic analysis

- D Street too narrow to accommodate more cars and traffic from this project
- Public Works needs to address traffic related issues that are currently present at this location and how this project will impact local traffic
- Concern with safety of walking pedestrians and students
- 31 lots is too many, less density would be desirable
- Drainage issues in the area already; this project will increase those issues
- Project will have an impact on local wildlife, loss of open space
- Project does not conform with the Fairview Specific Plan
- Cookie cutter development
- No sidewalks

After public testimony was closed, the applicant Marc Crawford, addressed some of the issues made during public comment. He said a lot of the comments expressed here tonight he heard at the last community meeting. He said the setbacks in the staff report are wrong. He said they are putting sidewalks in front of the project, 300 to 400 linear feet. He said he will speak with Public Works on addressing traffic issues in the vicinity of the project. Drainage issues are being addressed. He said the major issue is traffic and the traffic engineers will be addressing all these issues.

Commissioner Rhodes expressed his frustration at Public Works and the delayed response to some of these issues. The Chair said Public Works needs to address upper D Street traffic issues. He said he will do his best to contact his supervisor and lobby to have him push to address the traffic issues in Fairview. Commissioner Goff commended everyone for coming out and addressing the issues related with this project. The Chair commended Mark Crawford for his efforts and that the road issues should be addressed by Public Works.

5. ROESLER, CONDITIONAL USE PERMIT, PLN2015-00020 ~ Petition to allow for an event center, an alcohol outlet and a restaurant, in the 'SD' (Sunol Downtown) District, located at 19984 Main Street, south side, immediately south of the southern terminus of Kilkare Road, Sunol area of unincorporated Alameda County, bearing Assessor's Parcel Number: 096-0140-002-01. **Staff Planner: Damien Curry**, ***Action Item***

Rodrigo Orduña presented the staff report. Commissioner Kastriotis asked the applicant if the height of the ceiling is being raised, and about the noise from music during the events. Veena Roesler, the applicant, said the ceiling height is being increased. She explained that the glass sliding doors will be open during the events only until 10:00 p.m. complying with the noise ordinance. The doors will be closed after 10:00 p.m.

Public testimony was called for. Robert Foster said he is in support of the project but felt that he needed to bring up some of his concerns related to noise, traffic and parking issues. The applicant said that working with the Pacific Locomotive Association (PLA) on the parking issues was the best option. Unfortunately, the proposed parking lot rental fee they offered was six times as high as the school lot and also had a condition that there would be no events if PLA had an event. However, PLA is still the best option. The Chair asked about the number of people that the building can accommodate. She said according to the Fire Department's calculations, 300 people. Public testimony was closed.

Commissioner Kastriotis expressed his support for the project and said that the issue is with PLA and their requests. He stated that if there is cooperation there is room for everyone to operate. Commissioner Gin expressed his concern for safety and access to the parking lot due west of the location. Discussion ensued amongst commissioners on the parking issues. They expressed concern related to number of parking spaces, location of parking areas, safety to patrons frequenting this business and the lack of a parking plan for the project. The applicant explained that she did have a parking plan but it was not included in the report. Commissioner Goff expressed his support for the project and the proposed parking as submitted.

Commissioner Moore moved to continue the project to the next meeting, March 21st, in order to have the applicant submit a better parking plan. Commissioner Kastriotis asked about having valet parking. The Chair asked that the item be number one on the agenda. Commissioner Moore asked that stop signs should be clearly shown on the exhibits, drop-off and pick-up areas, attendants' station and information on the shuttle, number of seats, number of parking spaces, and handicapped parking. Commissioner Gin seconded. Motion carried 5/1. Commissioner Goff opposed.

6. UNINCORPORATED COUNTY MOBILE HOME PARK RENT STABLIZATION ORDINANCE. Presented by Linda Gardner and Jennifer Pearce, Housing Community Development, ***Action Item***

Jennifer Pearce provided a Power Point presentation.

Public testimony was called for. Residents expressed their concern with the options of allowing rent increases of up to 5% and also the vacancy de-control which could make the sale of their homes much harder since rents then will be at the market rate. Owners of the mobile home parks expressed their concern with the proposed regulations as they are already heavily regulated by the state. They said comparing the small local mobile home parks and statistics with large mobile home parks in Fremont and other cities does not make sense. The new regulations will place undue burden on the owners of these parks and make it impossible to operate and keep up with upgrades. Public testimony was closed.

Discussion ensued on various options regarding regulations and how park owners can get compensated for upgrades done at their park. Some commissioners expressed their concern with placing too many restrictions on park owners not being able to maintain and keep parks open. Consensus was that the first option, 4% rent increase and de-control is the best option.

Public testimony was called for. The following were issues expressed by the park owners:

- Mobile Home Parks are already heavily regulated by the State. Local regulation not needed.
- Renters' eviction regulated by the State. Eviction has to be specific to regulations.
- Not fair to ask park owners to subsidize rents
- Park owners can try to enforce rules, but if tenant is not able to due to financial reasons, park owners try to work with them. It is a tremendous challenge.
- Costly park upgrades, very restrictive rules make upgrades cost prohibitive

- Full vacancy de control allows park owners to keep up with upgrades
- Too many regulations will put park owners out of business and force them to sell property to developers and get rid of much needed affordable housing

Commissioner Moore moved to approve the 4% increase, full vacancy de control and administrative fee as proposed. Member Rhodes seconded the motion. The Chair said he would not be in favor of the administrative fee. Discussion ensued on administrative fee. Linda Gardner said she does not have a fee level or percentage, if the commission agrees with the fee it simply allows the County to charge a fee. Marc Crawford approached the microphone and spoke on the CVMAC's decision to vote on the administrative fee having to go thru a public process because no one knows what the fee will be. He said these are small mobile home parks, money is not enough to keep up with upgrades. Banks look at the upward curve of rental income, under vacancy control, the park owners are stuck and have no money to pay for infrastructure. Linda Gardner said the administrative fee will depend on how much work staff will spend to review, collect data, etc. She explained that the Board of Supervisors want the ability to charge an administrative fee, they might not have to charge a fee but want the option to be available. Commissioner Rhodes questioned the size of the fee. Linda Gardner said it will depend on the cost to administer the ordinance and how the Board of Supervisors wants to recoup the cost. Right now she said they do not know what it will be. Commissioner Rhodes expressed his concern on the size of the fee and cost to residents and owners. The Chair reiterated his concern with the county being able to charge a fee. He asked how long will the ordinance be in place before it is reviewed. Linda Gardner answered three years, but this commission can recommend a shorter period of time. Commissioner Goff said one year is not enough time that it needs to be a longer cycle and three years is a good number. The Chair took a vote on the motion on the floor. Motion carried 6/0. Commissioner Loisel excused.

STAFF COMMENTS & CORRESPONDENCE: *None*

CHAIRS REPORT: *None*

COMMISSION ANNOUNCEMENT, COMMENTS AND REPORTS: Commissioner Rhodes informed the chair that he would be away for the months of June and July as he will be out of the country. Member Kastriotis informed the chair that he will be out of the country from the middle of July to September. The Chair asked that the commissioners inform staff by sending an e-mail with the detail of time off.

ADJOURNMENT: *There being no further business, Commissioner Moore moved to adjourn the meeting at 10:03 p.m. Commissioner Goff seconded the motion. The motion was carried 6/0. Member Loisel absent.*

_____

ALBERT LOPEZ, SECRETARY
COUNTY PLANNING COMMISSION OF ALAMEDA COUNTY

REQUEST TO SPEAK

Date: 3/7 **PARKS, RECREATION AND HISTORICAL COMMISSION**

Complete this form and hand it to the recording secretary before the hearing, or as soon as possible after the start of the hearing. **(Please Print)**

Name: Cynthi Richardson Telephone: 510-386-2753

Address (including Zip): 3140 Atwal Ct Hayward CA 94541

Email: _____

I am speaking for: ( ) Myself (✓) My Organization: Local Residents

I wish to speak on Item # J

Instead of speaking, I wish to leave the following comments:

_____

_____

_____

REQUEST TO SPEAK

Date: _____ **PARKS, RECREATION AND HISTORICAL COMMISSION**

Complete this form and hand it to the recording secretary before the hearing, or as soon as possible after the start of the hearing. **(Please Print)**

Name: Chris Higgins Telephone: 239-64 Madeiros

Address (including Zip): 945 Cpt

Email: chris@higginsfamily.net

I am speaking for: (✓) Myself ( ) My Organization: _____

I wish to speak on Item # J-4 D-Street

Instead of speaking, I wish to leave the following comments:

_____

_____

_____

REQUEST TO SPEAK

Date: 3/7/16 **PARKS, RECREATION AND HISTORICAL COMMISSION**

Complete this form and hand it to the recording secretary before the hearing, or as soon as possible after the start of the hearing. **(Please Print)**

Name: Laura Comstock Telephone: 510 538-6526

Address (including Zip): 24544 Fairview Ave, Hayward CA 94542

Email: lauracomstock@sbcglobal.net

I am speaking for: (X) Myself ( ) My Organization: _____

I wish to speak on Item # 4 D St. Investments

Instead of speaking, I wish to leave the following comments:

_____

_____

_____

REQUEST TO SPEAK

Date: 3/7/16 **PARKS, RECREATION AND HISTORICAL COMMISSION**

Complete this form and hand it to the recording secretary before the hearing, or as soon as possible after the start of the hearing. **(Please Print)**

Name: DREW JOHNESE Telephone: 881-5797

Address (including Zip): 3201 D St. HAYWARD 94541

Email: _____

I am speaking for: (~~X~~) Myself ( ) My Organization: _____

I wish to speak on Item # 4

Instead of speaking, I wish to leave the following comments:

_____

_____

_____

REQUEST TO SPEAK

Date: 3/7/16 **PARKS, RECREATION AND HISTORICAL COMMISSION**

Complete this form and hand it to the recording secretary before the hearing, or as soon as possible after the start of the hearing. **(Please Print)**

Name: CATHY LANGLEY Telephone: 510-541-4068

Address (including Zip): 23922 MAUD AVE

Email: ~~Cathy~~ Cathy Langley@comcast.net

I am speaking for: (X) Myself ( ) My Organization:

I wish to speak on Item # 4

Instead of speaking, I wish to leave the following comments:

REQUEST TO SPEAK

Date: 3-7-2016 **PARKS, RECREATION AND HISTORICAL COMMISSION**

Complete this form and hand it to the recording secretary before the hearing, or as soon as possible after the start of the hearing. **(Please Print)**

Name: Don Stuchlik Telephone: 510 325-5442

Address (including Zip): 3303 D ST Hayward CA 94541

Email:

I am speaking for: (X) Myself ( ) My Organization:

I wish to speak on Item # ~~D St~~ D ST #4 tract maps 8256

Instead of speaking, I wish to leave the following comments:

REQUEST TO SPEAK

Date: 3/7/16 **PARKS, RECREATION AND HISTORICAL COMMISSION**

Complete this form and hand it to the recording secretary before the hearing, or as soon as possible after the start of the hearing. **(Please Print)**

Name: Dale Silva Telephone: 510 909-5625

Address (including Zip): 25633 Clover Rd. Hayward

Email: _____

I am speaking for: (X) Myself ( ) My Organization: _____

I wish to speak on Item # J 4 D St. Investments #4

Instead of speaking, I wish to leave the following comments: _____

REQUEST TO SPEAK

Date: 3/7/16 **PARKS, RECREATION AND HISTORICAL COMMISSION**

Complete this form and hand it to the recording secretary before the hearing, or as soon as possible after the start of the hearing. **(Please Print)**

Name: CATHY LANGLEY Telephone: 510-541-4068

SPEAKING FOR: 23870 MAUD AVE & 3188 D ST

Address (including Zip): _____

Email: CathyLangley@comcast.net

I am speaking for: ( ) Myself ( ) My Organization: _____

I wish to speak on Item # MY 2 NEIGHBORS #2

Instead of speaking, I wish to leave the following comments:

REQUEST TO SPEAK

Date: 3/7/16 **PARKS, RECREATION AND HISTORICAL COMMISSION**

Complete this form and hand it to the recording secretary before the hearing, or as soon as possible after the start of the hearing. **(Please Print)**

Name: Laura Nelson Telephone: 510.219-1948

Address (including Zip): 3223 D St HWD

Email: laura_nelson 517 @ yahoo.com

I am speaking for: (✓) Myself ( ) My Organization:

I wish to speak on Item # PLN2015.00180 #4

Instead of speaking, I wish to leave the following comments:

traffic, noise grading issues

REQUEST TO SPEAK

Date: **PARKS, RECREATION AND HISTORICAL COMMISSION**

Complete this form and hand it to the recording secretary before the hearing, or as soon as possible after the start of the hearing. **(Please Print)**

Name: STEPHEN SAXON Telephone: 510-882-4908

Address (including Zip):

Email: STEPHEN@SAXON.com

I am speaking for: ( ) Myself (✓) My Organization:

I wish to speak on Item # D STREET DEVEL. #4

Instead of speaking, I wish to leave the following comments: I

REQUEST TO SPEAK

Date:_____ **PARKS, RECREATION AND HISTORICAL COMMISSION**

Complete this form and hand it to the recording secretary before the hearing, or as soon as possible after the start of the hearing. **(Please Print)**

Name: Charlotte N. Williams Telephone: 925-784-0610

Address (including Zip):_____

Email: _____

I am speaking for: (X) Myself ( ) My Organization:_____

I wish to speak on Item # D ST #4

Instead of speaking, I wish to leave the following comments:

_____

_____

_____

REQUEST TO SPEAK

Date: 3-7-16 **PARKS, RECREATION AND HISTORICAL COMMISSION**

Complete this form and hand it to the recording secretary before the hearing, or as soon as possible after the start of the hearing. **(Please Print)**

Name: Ron Benoen Telephone:_____

Address (including Zip): 2628 Ranoli Way Hayward CA. 94541

Email: _____

I am speaking for: (i) Myself ( ) My Organization:_____

I wish to speak on Item # SET BACKS

Instead of speaking, I wish to leave the following comments:_____

_____

_____

APPENDIX C

SENSITIVE PLANT SURVEY, ZANDER ASSOCIATES, JULY 2016

ZANDER ASSOCIATES

Environmental Consultants

July 19, 2016

Jim Coniglio
Lamphier-Gregory
1944 Embarcadero
Oakland, CA 94606

Plant Survey Results
Fairview Meadow Project
Alameda County, California

Dear Jim:

At your direction, Zander Associates has completed a plant survey of the two parcels that comprise the Fairview Meadows Project Site; the 5.17-acre eastern parcel and the 4.61-acre western parcel. Both parcels front along D Street in the Fairview area of Alameda County. The purpose of the survey was to determine presence/absence of sensitive plant species that have been identified as potentially occurring on the site. This survey targeted four species; Loma Prieta hoita (*Hoita strobilina*), Santa Cruz tarplant (*Holocarpha macradenia*), woodland woolythreads (*Monolopia gracilens*), and Oregon polemonium (*Polemonium carneum*). These species typically bloom and are identifiable later in the season (May to October). Following is a description of the methods and results of our survey.

Methods

Zander Associates Principal Biologist, Leslie Zander, conducted a survey of the project site on July 14, 2016. The survey was performed following protocol developed by the California Department of Fish and Wildlife (2009); it was appropriately timed for the four targeted species, it was floristic in nature and conducted using systematic field techniques. Each parcel was systematically traversed and all plant species encountered were identified and recorded. A list of the species observed on each parcel during the July 14, 2016 survey and during a previous site reconnaissance on January 12, 2016 is provided on Table 1.

Results

None of the four sensitive plant species targeted in this survey was found on the project site. Both parcels are highly disturbed and the flora is dominated by non-native species (shown in red on Table 1). Horses were grazing in the eastern pasture at the time of the survey and the grassland around the existing abandoned buildings had been mowed, probably for fire abatement purposes. Grazing was also evident in the western pasture although no horses were present and the grass was not cropped close. Several deer were grazing in the western parcel when we

1569 Solano Ave. #255 *telephone: (415) 897-8781*
Berkeley, CA 94707 *fax: (415) 814-4125*

started the survey. Based on our assessment of the habitat conditions onsite, our knowledge of the habitat requirements for the four targeted species, and our survey results, we are confident that Loma Prieta hoita, Santa Cruz tarplant, woodland woolythreads, and Oregon polemonium are not present on the project site.

Should you have any questions regarding our survey results, please don't hesitate to call me.

Sincerely

Leslie Zander
Principal Biologist

Enclosure: Table 1: Plant Species Observed on the Fairview Meadows Project Site; 1/12/16 and 7/14/16

Table 1: Plant Species Observed on the Fairview Meadows Project Site; 1/12/16 and 7/14/16:

Scientific Name	Common Name	Western parcel	Eastern parcel
Aira caryophyllea	silver hairgrass	x	
Avena barbata	slender wild oats	x	x
Baccharis pilularis	Coyote brush	x	x
Brassica nigra	black mustard	x	x
Bromus diandrus	ripgut brome	x	x
Bromus hordeaceus	soft chess	x	
*Calocedrus decurrens***	incense cedar		x
Carduus pycnocephalus	Italian thistle	x	x
Cedrus deodara	deodara cedar	x	
Chenopodium rubrum	red goosefoot		x
Cichorium intybus	chicory	x	x
Cirsium vulgare	bull thistle	x	x
Conium maculatum	poison hemlock		x
Convolvulus arvensis	field bindweed	x	x
Cyperus eragrostis	tall flatsedge	x	
Digitaria cilaris	crab grass	x	
Dittrichia graveolens	stinkwort		
Ehrharta erecta	panic veldtgrass	x	
Erodium cicutarium	red-stem filaree	x	x
Eschscholzia californica	California poppy	x	x
Eucalyptus sp	eucalyptus	x	x
Frangula californica	California coffeeberry	x	x
Hedera caneriensis	canary ivy		x
Helminthotheca echioides	bristly ox-tongue	x	
Hesperocyparis sp	cypress		x
Hirschfeldia incana	short-podded mustard	x	x
Hordeum marinum	seaside barley	x	x
Hordeum murinum	foxtail barley	x	
Hypochaeris glabra	smooth cat's ears	x	x
Juglans nigra	black walnut	x	
Juglans regia	English walnut	x	
Juniperus sp	ornamental juniper		x
Lactuca seriola	prickly lettuce	x	
Lolium perenne	Italian ryegrass	x	
Malva neglecta	dwarf mallow		x
Malva parviflora	cheeseweed	x	x
Marrubium vulgare	horehound	x	x
Morus sp.	fruiting mulberry	x	

Scientific Name	Common Name	Western parcel	Eastern parcel
Myoporum laetum	lollipop tree	x	
Nerium oleander	oleander		x
Nicotiana hybrid	ornamental tobacco plant		x
Oxalis pes-caprae	sour grass	x	x
Phleum pratense	common timothy		x
Phyla nodiflora	common lippia		x
Plantago lanceolata	English plantain	x	
Prunus (plum)	plum tree	x	
Pyracantha sp	pyracantha		x
Quercus agrifolia	coast live oak	x	x
Raphanus sativus	wild radish	x	x
Robinia psuedoacacia	black locust	x	
Rubus armeniacus	Himalayan blackberry	x	x
Rumex acetosella	field sorrel	x	
Rumex pulcher	fiddle dock	x	x
Sambucus nigra	elderberry		x
Schinus molle	peppertree		x
*Sequoia sempervirens***	coast redwood	x	
Spergularia rubra	red sandspurry	x	x
Stipa pulchra	purple needlegrass	x	
Umbellularia californica	California bay	x	
Vicia sp	vetch	x	

Black type = native
** = native species, but probably planted onsite
Red type = non-native

APPENDIX D

FIELD SURVEY AND ANALYSIS OF THE HABITAT VALUE AND POTENTIAL FOR PRESENCE OF ALAMEDA WHIPSNAKE, BIOMAAS. INC., OCTOBER 2016

Alameda Striped Racer Habitat Assessment

FOR

D Street Project, Hayward,

Alameda County, California

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November 14, 2016

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INTRODUCTION

At the request of Lamphier-Gregory, BioMaAS, Inc. conducted an assessment of habitat for Alameda striped racer (ASR; *Coluber lateralis euryxanthus*; =Alameda whipsnake; *Masticophis lateralis euryxanthus*) for a proposed development (Project) located along D Street in Hayward, Alameda County, California (Figures 1). The proposed Project consists of two tracts of housing to the east and west of the Bassard Convalescent Home site (Figure 2). Tract 8296 (1.9 hectares) consists of 16 lots and is located to the west of the convalescent home (Figure 3). Tract 8297 (2.1 hectares) consists of 15 lots and is located to the east of the convalescent home (Figure 2). The term Project Area refers to both tracts.

This report summarizes the results of the field survey and provides an analysis of the habitat value and potential for presence for ASR. In addition, this report discusses regulatory strategy and provides recommendations for avoidance and measures to reduce impacts to ASR.

REGULATORY BACKGROUND

Special-status animal species include those listed as Endangered, Threatened, Rare, or as Candidates for listing by the United States Fish and Wildlife Service (USFWS, 2016) and/or California Department of Fish and Wildlife (CDFW, 2016). The California Department of Fish and Wildlife (CDFW) is the responsible agency for protecting State listed Species of Special Concern. Habitat for these species is not protected therefore no mitigation is required for projects that affect habitat; however the animal itself is protected. Section 2080 of the Fish and Game Code prohibits "take" of any species that the commission determines to be an endangered species or a threatened species. Take is defined in Section 86 of the Fish and Game Code as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." The California Endangered Species Act (CESA) allows for take incidental to otherwise lawful activity through section 2081(b) of the Fish and Game Code. For those state-listed species that are also listed under the federal Endangered Species Act, CESA allows for consistency determinations with federal incidental take statements under section 2080.1 of the Fish and Game Code.

Per the United States Fish and Wildlife Service (USFWS) - the Endangered Species Act of 1973, as amended, is Federal legislation that is intended to provide a means to conserve the ecosystems upon which endangered and threatened species depend and provide programs for the conservation of those species, thus preventing extinction of plants and animals. The law is administered by Interior Department's FWS and Commerce Department's National Oceanic and Atmospheric Administration (NOAA) Fisheries, depending on the species. Some relevant sections are:

- *Section 4.* Part of the Endangered Species Act that addresses the listing and recovery of species and designation of critical habitat.
- *Section 6.* Part of the Endangered Species Act that focuses on cooperation with the States and that authorizes USFWS and NOAA Fisheries to provide financial assistance to States that have entered into cooperative agreements supporting the conservation of endangered and threatened species.
- *Section 7.* Part of the Endangered Species Act that requires all Federal agencies, in

Project Site

Parcel

Figure 1: General Location of the Project Area

SOURCE: BioMaAs 2016, CBG 2016, ESRI Shaded Relief/Aerial Basemap 2016

D Street Development Project - Tracts 8296/8297

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N

0 150 300 Feet

Figure 2: Aerial View of the Project Area

SOURCE: BioMaAs 2016, CBG 2016, City of Hayard 2016.
TerraServer (imagery captured - 2016-06-15) 2016

D Street Development Project - Tracts 8296/8297

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OVERALL SITEPLAN

CITY OF HAYWARD ALAMEDA COUNTY CALIFORNIA

0' 100' 300' 400'

SCALE: 1" = 100' DATE: FEBRUARY 26, 2016

cbg
Carlson, Barbee & Gibson, Inc.
CIVIL ENGINEERS • SURVEYORS • PLANNERS
2633 CAMINO RAMON, SUITE 350
SAN RAMON, CALIFORNIA 94583
(925) 866-0322
www.cbandg.com

2/26/2016 2:54 PM

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- consultation with USFWS or NOAA Fisheries, to use their authorities to further the purpose of the ESA and to ensure that their actions are not likely to jeopardize the continued existence of listed species or result in destruction or adverse modification of critical habitat.
- *Section 9.* Part of the Endangered Species Act that defines prohibited actions, including the import and export, take, illegally taken possession of illegally taken species, transport, or sale of endangered or threatened species.
- *Section 10.* Part of the Endangered Species Act that lays out the guidelines under which a permit may be issued to authorize prohibited activities, such as take of endangered or threatened species. Section 10(a)(1)(A). Portion of section 10 that allows for permits for the taking of threatened or endangered species for scientific purposes or for purposes of enhancement of propagation or survival. Section 10(a)(1)(B). Portion of section 10 that allows for permits for incidental taking of threatened or endangered species.

The U.S. Army Corps of Engineers (Corps) is the agency typically involved in the Section 7 process detailed above. It exerts jurisdiction over "waters of the U.S.", including, but not limited to, all waters which are subject to the ebb and flow of tide, wetlands, lakes, rivers, streams (including intermittent or ephemeral streams), mudflats, sandflats, sloughs, prairie potholes, vernal pools, wet meadows, playa lakes, natural ponds, and tributaries of the above features.

The extent of waters of the U.S. is generally defined as that portion which falls within the limits of "ordinary high water." Field indicators of ordinary high water include clear and natural lines on opposite sides of the banks, scouring, sedimentary deposits, drift lines, exposed roots, shelving, destruction of terrestrial vegetation, and the presence of litter or debris. Typically, the width of waters corresponds to the two-year flood event.

Wetlands, including swamps, bogs, seasonal wetlands, seeps, marshes and similar areas, are defined by the Corps as "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (33 CFR 328.3 [b]; 40 CFR 230.3 [t]). Indicators of three wetland parameters (hydric soils, hydrophytic vegetation, and wetlands hydrology as determined by field investigation) must be present for a site to be classified as a wetland by the Corps (Environmental Laboratory, 1987) and Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0) (USACE, 2008).

The USFWS defines Critical Habitat as a specific geographic area(s) that contains features essential for the conservation of a threatened or endangered species and that may require special management and protection. Critical Habitat may include an area that is not currently occupied by the species but that will be needed for its recovery. When designating Critical Habitat, the Service looks at the Primary Constituent Elements[1] (PCEs) for each species.

[1] A physical or biological feature essential to the conservation of a species for which its designated or proposed critical habitat is based on, such as space for individual and population growth, and for normal behavior; food, water, air, light, minerals, or other nutritional or physiological requirements; cover or shelter; sites for breeding, reproduction, rearing of offspring, germination, or seed dispersal; and habitats that are protected from disturbance or are representative of the species historic geographic and ecological distribution.

The California Fish and Game Commission listed the ASR as a threatened species under the California Endangered Species Act on June 27, 1971. The Service listed the species as threatened on December 5, 1997. Critical habitat for the Alameda striped racer was first proposed on March 8, 2000 and a final determination for Critical Habitat was issued on October 2, 2006. A draft recovery plan was prepared in 2002 and a 5-year review was completed in 2011.

Racer Ecology

The ASR is typically associated with scrub habitat - northern coastal sage scrub and coastal sage. Occupied areas usually support a prey base of at least two lizard species, especially the western fence lizard (*Sceloporus occidentalis*) (Stebbins 1985), and whipsnake populations thrive when lizards are abundant (McGinnis 1992 in USFWS 2002). Rock outcrops are particularly important foraging habitat for the Alameda whipsnake because they support many of the species' prey (USFWS 2000).

The following is an excerpt from the USFWS Species Account for ASR dated March 21, 2005:

"Recent telemetry data indicate that, although home ranges of Alameda whipsnakes are centered on shrub communities, they venture up to 500 feet into adjacent habitats, including grassland, oak savanna, and occasionally oak-bay woodland.

Telemetry data indicate that whipsnakes remain in grasslands for periods ranging from a few hours to several weeks at a time. Grassland habitats are used by male whipsnakes most extensively during the mating season in spring. Female whipsnakes use grassland areas most extensively after mating, possibly in their search for suitable egg-laying sites.

The only evidence of Alameda whipsnake egg-laying is within a grassland community adjacent to a chaparral community. This egg-laying occurred within a few feet of scrub on ungrazed grassland interspersed with lots of scattered shrubs. At two sites, gravid females have been found in scrub.

Core areas (areas of concentrated use) of the Alameda whipsnake most commonly occur on east, south, southeast, and southwest facing slopes. However, recent information indicates that whipsnakes do make use of north facing slopes in more open stands of scrub habitat."

ASR trapping data has shown that the maximum distance between Alameda whipsnake observations and the nearest scrub is much larger, up to 4.5 mi (7.3 km), than either the home range diameter or average movements, suggesting more extensive use of grassland for either foraging or corridor movement (Swaim 2000, p. 5; Swaim 2003, Table 1; Swaim 2005b, p. 1; Alvarez 2005, p. 24).

Male home ranges varied from 1.9 to 8.7 ha (n = 4) with a high degree of overlap, while female home ranges averaged 3.4 ha (Swaim 1994). Dispersal habitats are essential for the conservation of Alameda whipsnake. Protecting the ability of Alameda whipsnake to move freely across the landscape in search of habitats is essential for: (1) Sustaining populations by providing opportunity for movement and establishment of home ranges by juvenile recruits, (2) maintaining gene flow by the movement of both juveniles and adults between subpopulations, and (3) allowing

recolonization of habitat after fires or other natural events that have resulted in local extirpations (USFWS 2006).

The PCEs of Critical Habitat for the Alameda whipsnake are the habitat components that provide:

(1) Scrub/shrub communities with a mosaic of open and closed canopy: Scrub/shrub vegetation dominated by low- to medium-stature woody shrubs with a mosaic of open and closed canopy, as characterized by the chamise, chamise-eastwood manzanita, chaparral whitethorn, and interior live oak shrub vegetation series occurring at elevations from sea level to approximately 3,850 feet (1,170 meters). Such scrub/shrub vegetation within these series form a pattern of open and closed canopy used by the Alameda whipsnake for shelter from predators; temperature regulation, because it provides sunny and shady locations; prey-viewing opportunities; and nesting habitat and substrate. These features contribute to support a prey base consisting of western fence lizards and other prey species such as skinks, frogs, snakes, and birds.

(2) Woodland or annual grassland plant communities contiguous to lands containing PCE 1: Woodland or annual grassland vegetation series comprised of one or more of the following: Blue oak, coast live oak, California bay, California buckeye, and California annual grassland vegetation series. This mosaic of vegetation supports a prey base consisting of western fence lizards and other prey species such as skinks, frogs, snakes, and birds, and provides opportunities for: Foraging, by allowing snakes to come in contact with and visualize, track, and capture prey (especially western fence lizards, along with other prey such as skinks, frogs, birds); short and long distance dispersal within, between, or adjacent to areas containing essential features (i.e. , PCE 1 or PCE 3); and contact with other Alameda whipsnakes for mating and reproduction.

(3) Lands containing rock outcrops, talus, and small mammal burrows. These areas are used for retreats (shelter), hibernacula, foraging, and dispersal, and provide additional prey population support functions.

METHODS

A preliminary desktop analysis was performed on October 7, 2016 in coordination with CDFW to obtain suppressed ASR data within the vicinity of the Project Area and also to investigate Alameda Whipsnake Connectivity Modeling for the California Bay Area Linkage Network[2]. A

[2] The primary objective of this effort is to identify lands essential to maintain or restore functional connectivity among wildlands for all species or ecological processes of interest in the California bay area and as a vital adaptation strategy to conserve biodiversity during climate change. This dataset represents potential cores and patches of breeding habitat for Alameda whipsnake. Potential breeding area is defined as a cluster of pixels that are good enough (habitat suitability score above 50) and big enough to support breeding by the focal species. The other primary input to the analysis is home range or territory size. Potential breeding habitat was classified into two size classes. A potential core was defined as a continuous area of suitable habitat large enough to sustain at least 50 individuals. Potential cores are probably capable of supporting the species for several generations (although with erosion of genetic material if isolated). A

reconnaissance survey of the Project Area was conducted by BioMaAS biologist Bill Stagnaro on October 20, 2016. The entire Project Area was surveyed on foot, and lands between the Project Area and nearest ASR occurrences were surveyed via car and foot to the extent feasible. Mr. Stagnaro has extensive ASR trapping and monitoring experience and also possesses a USFWS Recovery Permit and CDFW Scientific Collecting Permit for ASR.

RESULTS

ASR Occurrence Data and Connectivity Modeling Data

The nearest occurrence for Alameda whipsnake (AWS #136) is approximately 0.55 mile to the southeast of Tract 8297 (Figures 4a and 4b). The next nearest occurrence (AWS #41) is approximately 0.8 mile to the northeast of Tract 8297. AWS 41 is from 1991 and is listed as "Possibly Extirpated" and AWS #136 is from 1984 and is listed as "Presumed Extant". The Study Area is not within USFWS designated Critical Habitat for this species. According to the Connectivity Modeling data, the nearest core or patch habitat for ASR is approximately one mile to the east (Figures 4a and 4b).

Vegetation within the Project Area

The majority of the Project Area consists of ruderal grassland (Figure 2, Photos). Tract 8296 contained a few individual coyote brush (*Baccharis pilularis*) shrubs, a small patch of Himalayan blackberry (*Rubus armeniacus*) and a few ornamental tree species such as blue gum (*Eucalyptus globulus*). Tract 8297 also was predominantly non-native grassland but had a more developed stand of coyote brush habitat. The stand of coyote brush in Tract 8297 had an open canopy which became more mature (up to eight feet high) and closed in the southeast corner (Figure 3; Lot 7). A line of mature pine trees is planted along the southern border of the tract. This stand as well as the adjacent ornamental trees planted at the property margins create a relatively dense closed canopy. ASR typically prefer stands of scrub lower in stature with a more filtered canopy[3]. Stinkwort (*Dittrichia graveolens*), an invasive subshrub species, is prolific throughout both tracts.

Refugia

Both tracts showed little evidence of natural refugia. Some evidence (burrows) of Botta's pocket gopher (*Thomomys bottae*) were observed in the grassland. A large pile of tree rounds exists in the northeast corner of the Tract 8296 (Figure 3; Lot 3; Photos). This pile of wood was investigated to the extent feasible. California vole (*Microtus californicus*) was observed but no herpetofauna were uncovered. Soil was somewhat compact as Tract 8297 appeared recently grazed by horses and Tract 8296 is currently being grazed by horses. The foundations of the unoccupied homes and stables may also provide refugia.

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breeding patch was defined as an area of suitable habitat large enough to support successful reproduction by a pair of individuals (perhaps more if home ranges overlap greatly), but smaller than a potential core area. Patches are useful to the species if the patches are linked via dispersal to other patches and core areas. For more information about the creation and utilization of this data, please see the report "Critical Linkages: Bay Area and Beyond" at http://www.scwildlands.org/reports/Default.aspx. Updated 11/21/14.

[3] Fire suppression leads to a closed scrub canopy which tends to reduce the diversity of microhabitats that whipsnakes require (Swaim 1994).

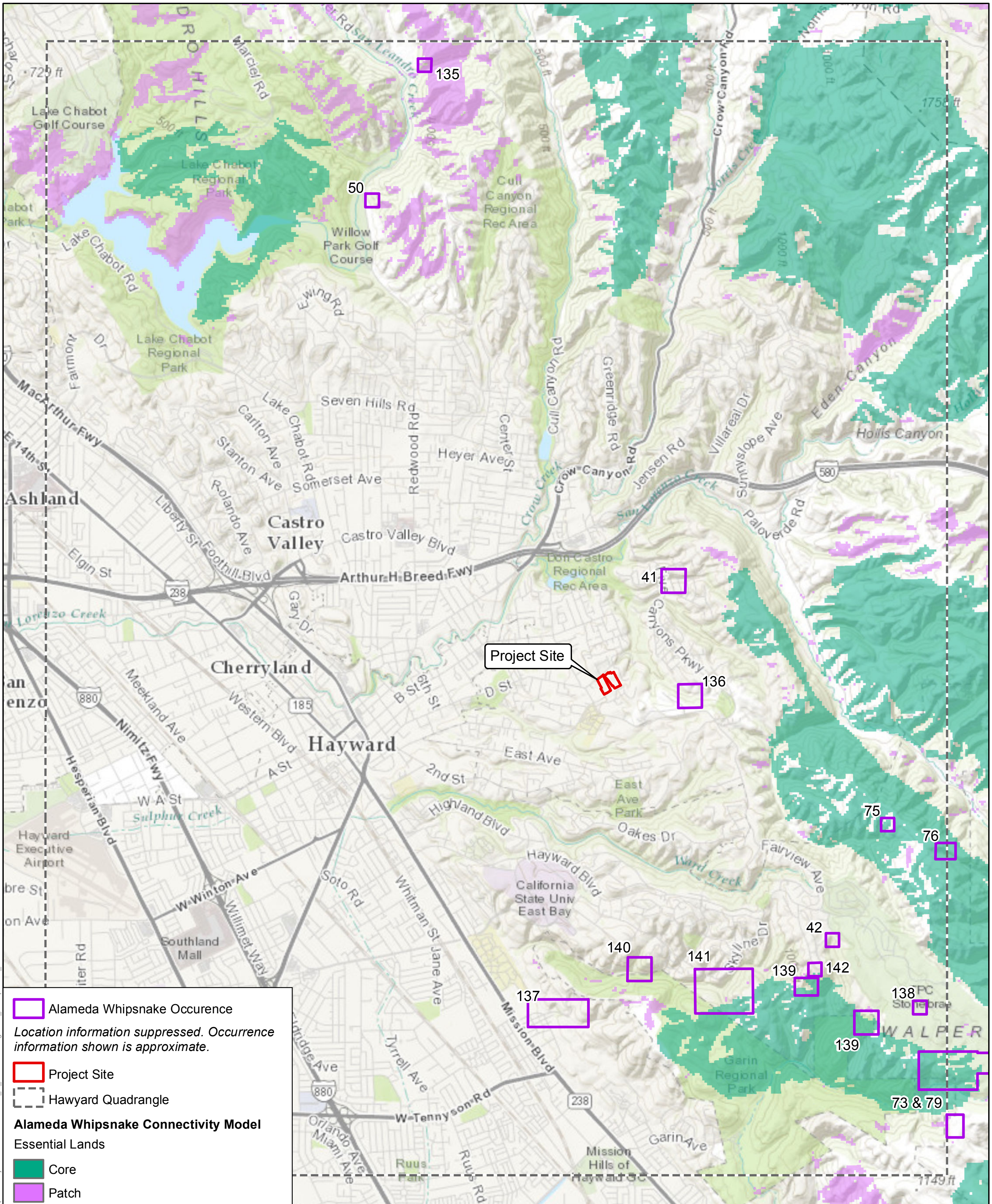

Figure 4a: Alameda Striped Racer Occurrences in the Project Vicinity

SOURCE: BioMaAs 2016, CBG 2016, CNDDB 2016, ESRI Aerial Imagery Basemap 2016

D Street Development Project - Tracts 8296/8297

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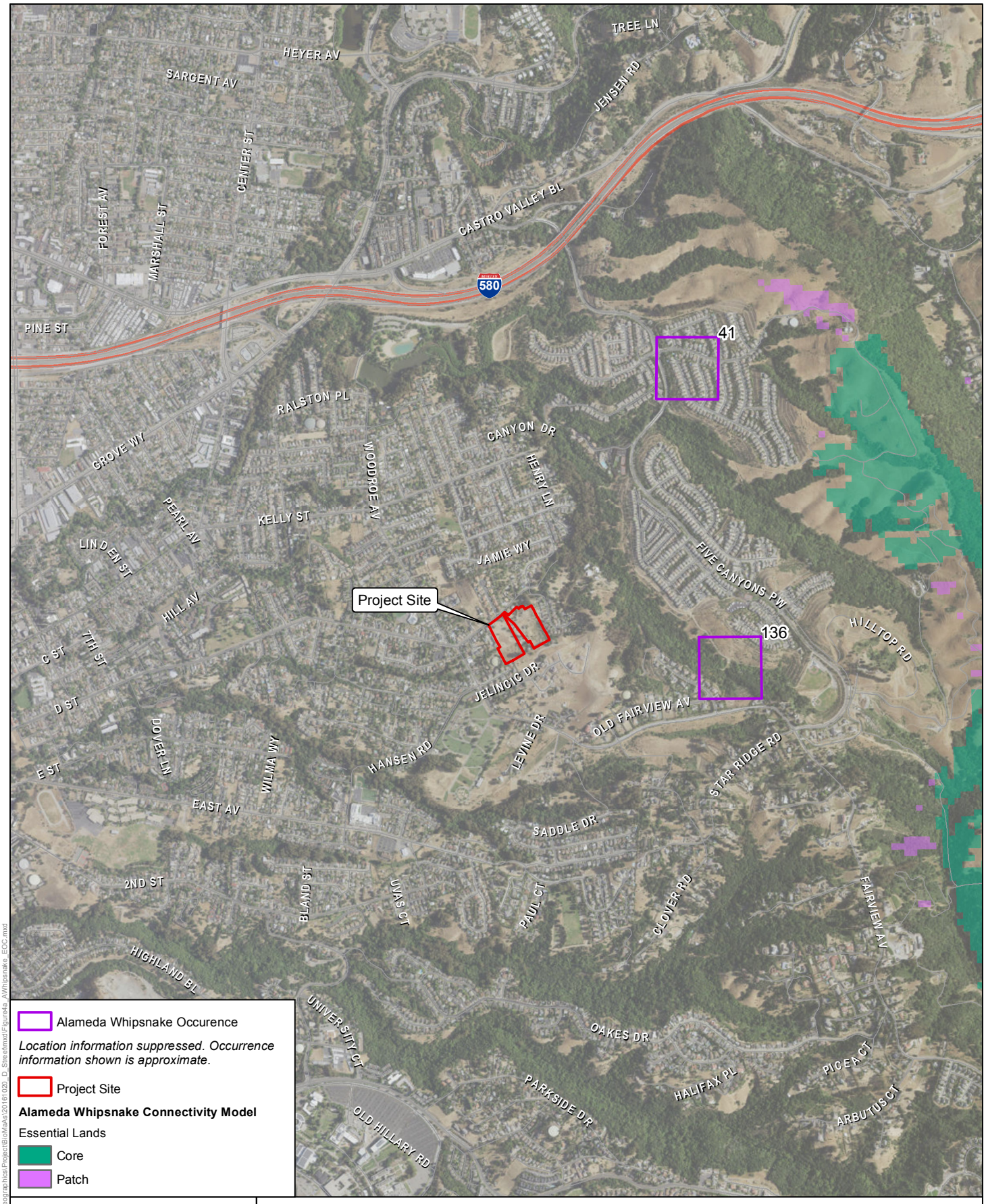

Figure 4b: Alameda Striped Racer Occurrences in the Project Vicinity

SOURCE: BioMaAs 2016, CBG 2016, ESRI Aerial Imagery Basemap 2016

D Street Development Project - Tracts 8296/8297

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Prey Base

No lizard species were observed during the site visit. The visit occurred at approximately 1500. The weather was sunny and the temperature was in the low 80s F. Weather was suitable for lizard activity, the biologist observed fence lizards in Sunol earlier that day, however, no lizard species were observed during the site visit. In addition, the biologist spent approximately 30 minutes overturning tree stumps in the Tract 8296 pile. The only potential prey observed was a California vole.

Surrounding Habitat

Residential development abuts the west, north and west sides of the Project Area. The south side of the Project Area borders a small patch (~200 feet by 700 feet) of ruderal grassland that appears to be a part of the Jelincic Drive development (APN 417-0261-061-00; Figure 2). This development consists of a number of recently built homes, a few homes under construction and a number of lots that were graded and prepared for future building (Figure 2). There was active construction of homes in this development at the time of the site visit. The aerial photo in Figure 2 captures most of this activity as it is was taken on June 15, 2016. The next properties to the south (south of Karin Court) and east (east of Karina Street) consist of ruderal grassland that is grazed by horse, cow and possibly other livestock species (APNs 417-260-4, 6 and 9; Figure 2). A small rock outcrop appears just to the east of Karina Street and appears man made. This habitat was not surveyed by foot, rather it was viewed from Karina Street. The next parcel over (APN 417-260-5; Figure 2) is more grazed ruderal grassland and oak/bay woodland slope which abuts the Blackstone Court development and an unnamed tributary to San Lorenzo Creek/Don Castro Reservoir. It is along the south side of this tributary where an ASR was observed in 1984 (CDFW 2016). This drainage is part of the Five Canyons Open Space and Deer Canyon Trail traverses the east side of the drainage, due east of the Project Area. The next drainage to the east is also a tributary to San Lorenzo Creek and has a hiking trail that intersects with Deer Canyon Trail called Shady Canyon Trail. For the purposes of this report, the drainages will be referred to as Deer Canyon and Shady Canyon. Both Canyons consist predominantly of closed canopy live oak/bay laurel woodland communities.

Disturbance

Tract 8296 has a stable at the south end and appears to have been recently and heavily grazed by horses. The east side of Tract 8297 was currently being grazed by horses. Both tracts also had unoccupied homes. Tract 8296 had one occupied home in the northwest corner and Tract 8297 had one occupied home in the southwest corner. Aerial photos show past evidence of mowing on the Tracts. Bassard Convalescent Home bisects the two Tracts. The west side of Bassard has a high retaining wall preventing west to east dispersal of most terrestrial species through this property.

Historic Aerial Photo Review

The east side of the Project Area (Tract 8297) appears to have been an orchard as far back as 1946 and up until at least 1960 (Figure 5). Aerial images were not obtained before then. The images show the tracts completely surrounded by orchards prior to development in the north and the east in the early 1950s. By 1968 aerial photos show there may be some possible scrub habitat developing in the far south end of Tract 8297. It is unclear if the scrub invaded this tract or there

Figure 5: Historic Aerial Photo of the Project Area

SOURCE: BioMaAs 2016, CBG 2016, TerraServer Imagery 2016

D Street Development Project - Tracts 8296/8297

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was a population there before conversion to orchard. The Machado Court development appears to have occurred in the 1980s. By the early 1990s grading is evident all along the Five Canyons Parkway. Figure 6 shows an image from 2016 adjacent to an image from 1946 to show the extent of recent development in the vicinity of the Project Area.

ANALYSIS

The potential for ASR to occur in the Project Area is unlikely. Vegetation, refugia and most likely prey base for ASR in the Project Area is poor. In addition, nearby occurrence information is dated and habitat has been removed or altered dramatically by development since then. That said, presence cannot be entirely ruled out do to the dispersal capabilities of the species and the barrier free connectivity to the open space (Five Canyons Open Space and Garin Regional Park) to the east and southeast. The specific components that lead to this conclusion are discussed below.

Vegetation

The vegetation in both tracts also has a history of agricultural use, mowing, grazing and residential use. Historical photo interpretation of the Project Area indicate that these tracts do not represent, and may never have represented, suitable vegetation for ASR, at least as far back as 1946. Scrub/shrub communities with a mosaic of open and closed canopy is non-existent in Tract 8296 and is maintained in an isolated patch in the southeast corner of Tract 8297 that appears to have recently (1968?) developed. The habitat value of this stand, however, is reduced due to adjacent development and its isolation from other scrub stands.

Refugia and Prey Base

The highest quality refugia observed consisted of the pile of tree stumps and the basements/foundations of the unoccupied buildings. Fossorial mammal burrows were also present as refugia, but to a lesser degree. No rock outcrops or talus was observed. These habitat features appear marginal for shelter, hibernacula, foraging, dispersal, and prey population support functions.

No lizard species were observed during the site visit although conditions were adequate for lizard activity. This is not proof of absence, lizard activity decreases this time of year and there are most likely lizard species utilizing the Project Area, however this observation may indicate this potential prey species is not abundant in the Project Area.

Historic Use of the Project Area, Disturbance and Dispersal

Historic photo interpretation shows that due to agricultural use, grazing, mowing and development, the habitat in the Project Area did not contain the quality or quantity of habitat components for ASR PCEs in its recent history (since 1946).

The development along Five Canyons Parkway is a significant barrier to east-west ASR movement and has effectively removed the open grassland and scrub habitat in between Deer Canyon and Shady Canyon. ASR attempting to access habitat in the Project Area would have to disperse through a narrow band (~200 feet; Photo 6) of grassland to the east, follow Deer Canyon to Quarry Road to D Street, or navigate the development barriers of Jelincic Drive to the south. ASR dispersing from the north and the west is highly unlikely due to development.

Project Site
Parcel

N

0 175 350 Feet

SOURCE: BioMaAs 2016, CBG 2016, TerraServer Imagery 2016

Figure 6: Project Setting (Current and Historic)

D Street Development Project - Tracts 8296/8297

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ASR may disperse through Deer Canyon and Shady Canyon, however, they most likely do not reside in these features for very long due to the closed canopy nature of the canyons and the thermoregulation requirements of the ASR. ASR are capable of dispersal into the Project Area as well, however, the Project Area is essentially a "U" shaped dead end of marginal, highly fragmented habitat. The Project Area does not appear to meet the USFWS defined function of ASR dispersal habitat:

(1) *Sustaining populations by providing opportunity for movement and establishment of home ranges by juvenile recruits.* A home range in the Project Area is unlikely due to disturbance and isolation.

(2) *Maintaining gene flow by the movement of both juveniles and adults between subpopulations.* A subpopulation in Project Area is unlikely due to its isolation. The nearest subpopulations are most likely east of Five Canyons Parkway as the diversity and quality of habitat improves.

(3) *Allowing recolonization of habitat after fires or other natural events that have resulted in local extirpations.* Past and current development have likely preclude recolonization.

DISCUSSION

Given the poor habitat components discussed above and the home range size of ASR, it is unlikely the Project Area provides a source habitat for ASR, rather, it could more accurately be labeled as a sink habitat that would have difficulty sustaining a population of ASR. Although the habitat is poor in the Project Area for ASR, there is a chance a dispersing individual could enter the Project Area via the barrier free property line to the south. Presence of ASR is unlikely, however, it is possible for this vagile species. Consultation with USFWS and CDFW is recommended in order to determine permitting options and appropriate mitigation, if necessary, for the proposed project.

If wetlands or water are disturbed as part of the proposed project, then a Corps permit may be required and the Corps could initiate consultation with USFWS as the lead agency via the Section 7 consultation process. If it is determined the proposed action is not likely to affect ASR, the proposed project may move ahead. If it appears that the proposed project may affect ASR, then a Biological Assessment is prepared to determine the project's effect on ASR and the appropriate mitigation.

Because presence of ASR cannot be ruled out, consultation with CDFW may result in the recommendation of an Incidental Take Permit (Section 2081 process) to protect the project proponent from unauthorized take of species and insure potential impacts are minimized and fully mitigated. Measures to minimize the take of ASR are presented below.

Construction Related Measures

In order to prevent ASR from entering construction areas during Project development, it is recommended a wildlife exclusion fence be placed at the property boundary at the southern end of the Project Area. The fence should be at least three feet high and should be entrenched three to six inches into the ground. It is recommended that exclusion funnels are included in the fence design so that terrestrial species are able to vacate the Project Area prior to disturbance.

Monofilament netting, which is commonly used in straw wattle and other erosion preventatives, should not be used on the Project Site in order to prevent possible entrapment of both common and special status terrestrial wildlife species.

Trenches should be backfilled, covered or left with an escape ramp at the end of each work day. Trenches left open overnight should be inspected each morning for trapped wildlife species.

Prior to initial ground disturbance, a qualified biologist should perform a pre-construction survey in order to insure no ASR are present. The biologist may remain on site for initial ground disturbance if suitable ASR refugia will be disturbed, e.g. small mammal burrows, foundations, large woody debris.

Prior to the initiation of work activities, the qualified biologist should also provide worker education regarding ASR. The training should cover identification of ASR and what to do should one be discovered in the Project Area.

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Photo 1: A view looking south across the Tract 8296.

Photo 2: A view looking north across the western half of Tract 8297, from the middle of the tract.

Photo 3: Looking north across Tract 8297.

Photo 4: Looking southeast across Tract 8297.

Photo 5: The stump pile in Tract 8296, Bassard retaining wall to the left.

Photo 6: Looking southeast from the Tract 8296 southern property margin across APN 417-0261-061-00.

Photo 7: Looking west from the top of Karina Street towards the Project Area.

Photo 8: Looking east from the top of Karina Street.

APPENDIX E

CULTURAL RESOURCES ASSESSMENT REPORT, WILLIAM SELF ASSOCIATES, INC., NOVEMBER 2016

CULTURAL RESOURCES ASSESSMENT REPORT
Bassard Property, D St. Project
Castro Valley, Alameda County, California

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SUBMITTED BY:

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Management Summary

WSA, Inc. (WSA) has been contracted by Lamphier-Gregory to prepare a Cultural Resources Assessment Report (CRAR) for the proposed Bassard Property Project located at 3231, 3247, 3289 and 3291 D St. (project) in Castro Valley, Alameda County, California. The project proposes to develop 31 residential lots along two new cul-de-sacs in the Fairview Specific Plan area of Alameda County.

WSA requested the Northwest Information Center (NWIC) at Sonoma State University in Rohnert Park, California to conduct a records search of the project area and a 1/4-mile radius surrounding the project area. Results indicate that no archaeological sites have been previously recorded within the records search area. WSA archaeologist Thomas Young conducted a pedestrian archaeological survey of the project area on October 14, 2015 to inspect the project ground surface for evidence of surficial or buried archaeological resources. No evidence of archaeological resources was observed in the project area.

Several historic residences have been recorded within 1/4-mile of the project area, but none of them are listed in the Office of Historic Preservation (OHP) Historic Properties Directory. WSA architectural historian Aimee Arrigoni conducted an architectural survey of the project area on October 14, 2015. During this survey, she documented eight standing historic structures within the project area that are 45 years of age or older, and evaluated their eligibility for listing in the California Register of Historical Resources (CRHR). These structures include five residences, a barn, a garage and a shed. None of the historic structures within the project area are recommended as potentially eligible for listing on the CRHR under any of the eligibility criteria.

This CRAR presents the results of research conducted to identify and evaluate cultural resources within the project area. The project will not have a significant impact on any historic properties or archaeological resources. Should any previously unknown cultural resources be discovered during construction, their significance would have to be determined in relation to the criteria for eligibility for listing in the CRHR.

1.0 Introduction

WSA, Inc. (WSA) has been contracted by Lamphier-Gregory to prepare a Cultural Resources Assessment Report (CRAR) for the proposed Bassard Property Project located at 3231, 3247, 3289 and 3291 D St. (project) in Castro Valley, Alameda County, CA. The project proposes to develop 31 residential lots along two new cul-de-sacs in the Fairview Specific Plan area of Alameda County. Construction of the residential lots will require underground excavations for utilities and storm water management infrastructure that includes storm drains and bioretention basins.

This CRAR was prepared in compliance with the California Environmental Quality Act (CEQA) to evaluate the potential significance of cultural resources within the project area in accordance with the criteria in CEQA Section 15064.5, and as a means of evaluating the project's impacts to potentially significant cultural resources.

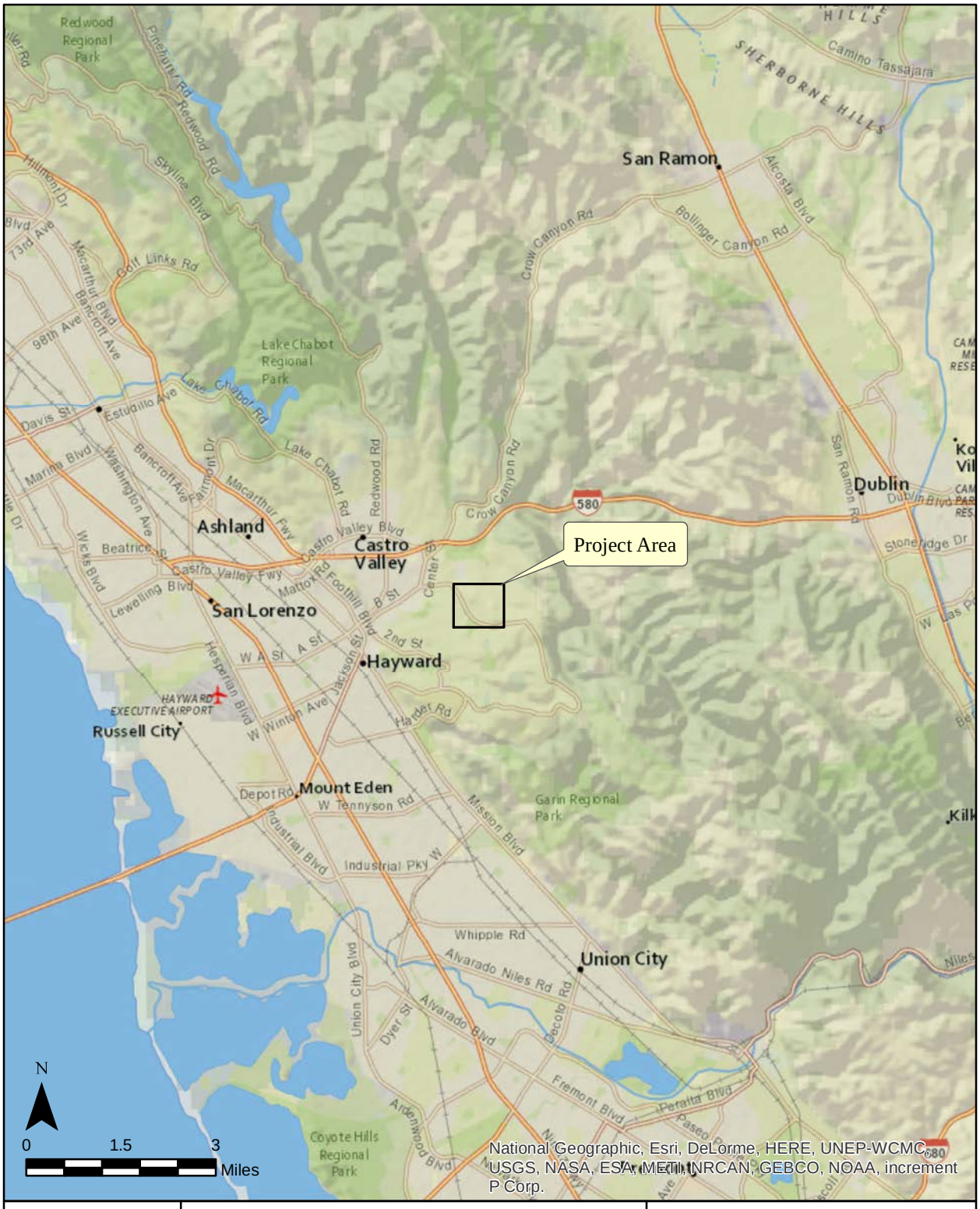
This CRAR presents the results of research conducted to identify and evaluate potential cultural resources within the project area. It defines the project area, presents the results of the records search and Native American consultation, as well as the results of the field survey and historic structure documentation and evaluation. It also provides recommendations for mitigation measures that will ensure that known cultural resources in the project area, or others that may be encountered during project construction, will not be significantly impacted by the proposed project. Should any previously unknown resources be discovered during construction, their potential significance would have to be determined in relation to the criteria for eligibility for listing in the California Register of Historical Resources (CRHR).

1.1 Project Location

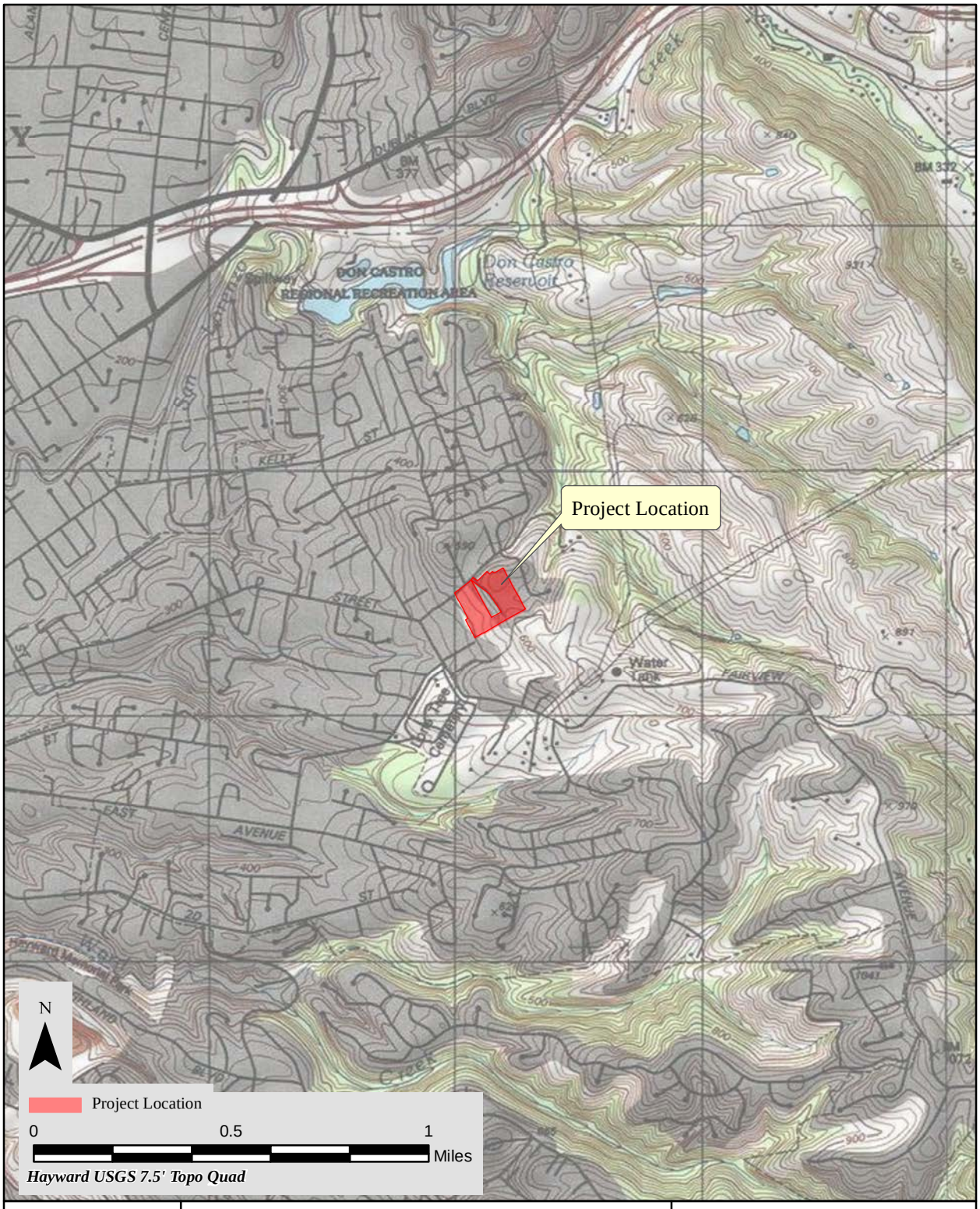
The project is located within Township 3 South, Range 2 West, Sections 11 and 14, as depicted on the 1993 Hayward U.S. Geological Survey 7.5 minute topographic quadrangle (Figures 1-3). The project area is bordered by D Street along the northern boundary, residential properties on the eastern and western boundaries, and open, mostly undeveloped private property on the southern boundary.

The project site is located on two separate but nearby tracts totaling 9.78 acres, which are made up of seven separate parcels in the unincorporated Fairview District of Alameda County in the Hayward Hills. The project fronts D Street, approximately 900-feet to the northeast of the Maud and Fairview avenues intersection. Access to the site is from D Street.

WSA	Project Vicinity Map	Figure 1 Lamphier-Gregory Bassaro Property, D St. Project Alameda County, CA



WSA	Project Area Map	Figure 2 Lamphier-Gregory Bassaro Property, D St. Project Alameda County, CA



WSA

Project Location

Figure 3
Lamphier-Gregory
Bassaro Property, D St. Project
Alameda County, CA

The addresses for the project are 3231,3247, 3289 and 3291 D Street. The project has been divided into two tracts for purposes of County processing. Three parcels (Assessor's Parcel Number (APN) 417-0240-001, 417-0250-001 and 417-0240-021) comprise Tract #8296, which is sometimes referred to as the western or downhill parcel. Four parcels (APNs 417-0240-004-00, 417-0240-005-00, 417-0240-006-00 and 417-0240-012-04) comprise Tract #8297, which is sometimes referred to as the eastern or uphill parcel.

2.0 Regulatory Context

This section describes the state regulatory setting for cultural resources.

2.1 State Regulations (CEQA)

CEQA provides appropriate measures for the evaluation and protection of cultural resources in §15064.5 of the *CEQA Guidelines*. For the purposes of CEQA, "historical resources" are those cultural resources that are: (1) listed in or eligible for listing in the CRHR; (2) listed in a local register of historical resources (as defined in Public Resources Code (PRC) 5020.1(k)); (3) identified as significant in a historical resource survey meeting the requirements of PRC 5024.1(g); or (4) determined to be a historical resource by a project's lead agency (§15064.5(a)). The subsection further states that "A project with an effect that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment" (§15064.5(b)).

A historical resource consists of:

> Any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California…Generally, a resource shall be considered by the lead agency to be 'historically significant' if the resource meets the criteria for listing on the California Register of Historical Resources (§15064.5(g)).

CEQA requires a lead agency to determine if an archaeological cultural resource meets the definition of a historical resource, a unique archaeological resource, or neither (§15064.5(c)). Prior to considering potential impacts the lead agency must determine whether an archaeological cultural resource meets the definition of a historical resource in §15064.5(a) listed above. If the archaeological cultural resource meets the definition of a historical resource, then it is treated like any other type of historical resource in accordance with §15126.4. If the archaeological cultural resource does not meet the definition of a historical resource, then the lead agency determines if it meets the definition of a unique archaeological

resource as defined at §21083.2(g). In practice, however, most archaeological sites that meet the definition of a unique archaeological resource will also meet the definition of a historical resource. Should the archaeological cultural resource meet the definition of a unique archaeological resource, then it must be treated in accordance with CEQA §21083.2. If the archaeological cultural resource does not meet the definition of a historical resource or an archaeological resource, then effects to the resource are not considered significant effects on the environment§15064.5(c)(4).

3.0 Setting

3.1 Environmental Setting

The current project area is located at the base of the Coast Range foothills on the eastern edge of Castro Valley, approximately six miles from the San Lorenzo bay shore. It is situated just west of the confluence of San Lorenzo and Crow creeks. Unlike much of the pre-contact eastern shore of the San Francisco Bay, which could be characterized as a wide alluvial floodplain, Castro Valley is situated behind a south-east tending spur of hills and is situated in a relatively broad alluvial valley. The project area lies at meeting point of an upland drainage system and the downstream floodplain environment.

The Coast Range is made up of a series of three generally parallel hill formations, known as the "front," "middle," and "back" hills. The "middle" hills surround Castro Valley on the north, east, and southwest and consist of tightly folded sandstone and shale formations of the Cretaceous age. Cretaceous bedrock of the Great Valley sequence underlies the Coast Range and Great Valley sandstone outcroppings are common throughout the Hayward-Castro Valley hills.

The climate of the project area is Mediterranean; mild, rainy winters, and hot, dry summers. Annual precipitation in the area is 15 inches, with rainfall concentrated in the fall, winter, and spring. The project's proximity to the Pacific Ocean provides for mild temperatures throughout the year. Winter temperatures vary from an average high of 57.2°F to an average low of 37.7°F; summer temperatures vary from an average high of 78.4°F to an average low of 54.4°F.

In prehistoric times, animals such as pronghorn sheep, antelope, tule elk, mule deer, black-tail deer, and grizzly bear occupied the area. Today, animal life within the region is similarly diverse but favors small, herbivorous mammals, especially voles, pocket gophers, ground squirrels, and pocket mice. The larger, open areas of the surrounding hills are home to some larger animals including deer, coyote, rabbit, skunk, opossum, raccoon, and a number of birds including red-tailed hawks and turkey vultures.

3.2 Cultural Setting

Prehistoric Archaeological Background

Research into local prehistoric cultures began when Nels C. Nelson of the University of California, Berkeley, conducted the first intensive archaeological surveys of the San Francisco Bay region from 1906 to 1908. Nelson documented hundreds of shellmounds along the shoreline of the San Francisco Bay, when much of the area was still ringed by salt marshes (Nelson 1909:322ff.). He maintained that the intensive use of shellfish – a subsistence strategy reflected in both coastal and bayshore middens – indicated a general economic unity in the region during prehistoric times, and he introduced the idea of a distinctive San Francisco Bay archaeological region (Moratto 1984:227).

The work of Nelson and Loud in the Bay Area provided the impetus for investigation into the prehistory of central California, which began in earnest in the 1920s. Stockton-area amateur archaeologists J. A. Barr and E. J. Dawson excavated a number of sites and made substantial collections in the area from 1893 through the 1930s. On the basis of artifact comparisons, Barr identified what he believed were two distinct cultural traditions. Dawson later refined his work into a series of Early, Middle, and Late sites (Ragir 1972; Schenck and Dawson 1929).

Professional or academic-sponsored archaeological investigations began in the 1930s when J. Lillard and W. Purves of Sacramento Junior College formed a field school, conducting excavations throughout the Sacramento Delta area. By seriating artifacts and mortuary traditions, they identified a three-phase sequence similar to Barr's and Dawson's, including Early, Intermediate, and Recent cultures (Lillard and Purves 1936). This scheme went through several permutations, including Early, Transitional, and Late Periods (Lillard et al. 1939) and Early, Middle, and Late Horizons (Heizer and Fenenga 1939). In 1948 and again in 1954, Richard Beardsley refined this system and extended it to include the region of San Francisco Bay. The result is referred to as the Central California Taxonomic System (CCTS) (Beardsley 1948, 1954; Moratto 1984). Subsequently the CCTS system of Early, Middle, and Late Horizons was applied widely to site dating and taxonomy throughout central California.

Inevitably, as more data were acquired through continued fieldwork, local exceptions to the CCTS were discovered. Coupled with the accumulation of these exceptions, the development of radiocarbon dating, introduced in the 1950s, and of obsidian hydration in the 1970s, opened up the possibility of dating deposits more accurately. Much of the subsequent archaeological investigation in central California focused on the creation and refinement of local versions of the CCTS.

The difficulties of creating a broadly applicable culture history are fully discussed by Bennyhoff and Fredrickson in Hughes (1994). Given the expanse of central California as well as the complex nature of cultural change over space and time, this single system is limited to providing a general framework for assigning newly found materials to existing culture chronologies. Nonetheless, a modification of the CCTS (Bennyhoff and Hughes 1987; Milliken and Bennyhoff 1993) that presents an Early, Middle, and Late Period with associated transitional periods and subperiod phases remains a useful way to assign dates or cultural periods, or both, to newly discovered features or assemblages. Complementary techniques such as obsidian hydration or radiometric measurements further increase the accuracy of these assignments.

Of some relevance for the current project is a chronological scheme developed by Bennyhoff and Hughes (1987:149). In brief and general form, this scheme includes the following periods and chronology:

- Early Period, ca. 6000–500 B.C.
- Early/Middle Period Transition, ca. 500–200 B.C.
- Middle Period, ca. 200 B.C.–A.D. 700
- Middle/Late Period Transition, ca. A.D. 700–900
- Late Period, ca. A.D. 900–1750

These periods of the CCTS are associated with patterns such as the Windmiller, Berkeley, and Augustine patterns. A pattern is

> [an] adaptive mode(s) extending across one or more regions, characterized by particular technological skills and devices, particular economic modes, including participation in trade networks and practices surrounding wealth, and by particular mortuary and ceremonial practices. (Fredrickson 1973:7–8)

The Windmiller Pattern sites are most often found in the Early Period (ca. 6000–500 B.C.), but they are known to extend into the Middle Period, possibly as late as A.D. 500 in certain areas (Moratto 1984:210). Windmiller Pattern sites are often situated in riverine, marshland, or valley floor settings, as well as atop small knolls above prehistoric seasonal floodplains, locations that provided a wide variety of plant and animal resources. Most Windmiller Pattern sites have burials with remains that are extended ventrally, oriented to the west, and that contain copious amounts of mortuary artifacts. These artifacts often include large projectile points and a variety of fishing gear such as net weights, bone hooks, and spear points. The faunal remains indicate that the inhabitants hunted a range of both large and small mammals. Stone mortars and grindstones for seed and nut processing are common

finds. Other artifacts—such as charmstones, ocher, quartz crystals, and *Olivella* shell beads and *Haliotis* shell ornaments—suggest the practice of ceremonialism and trade.

Some scholars have suggested that Windmiller Pattern sites are associated with an influx of people from outside California who introduced subsistence strategies adapted for a riverine-wetlands environment (Moratto 1984:207). Windmiller assemblages have been found to overlap in time with those of the Berkeley Pattern (Moratto 1984).

The Berkeley Pattern has been found from at least 3000 B.C. in the east San Francisco Bay (Bennyhoff 1982; Hughes 1994), with the number of sites increasing through A.D. 1 (Moratto 1984:282). The people characterized by the Berkeley Pattern expanded eastward to the Central Valley after about 500 B.C. Berkeley Pattern sites are much more common and well documented, and therefore better understood, than Windmiller Pattern sites. Berkeley sites are scattered in more diverse environmental settings, but riverine settings are prevalent.

Deeply stratified midden deposits that developed over generations of occupation are common to Berkeley Pattern sites. These middens contain numerous milling and grinding stones for food preparation. The typical body position for burials is tightly flexed, with no particular preference for orientation. Associated grave goods are much less frequent than with either the Windmiller or the Augustine pattern. Projectile points in this pattern are larger in earlier times but become progressively smaller and lighter over time, culminating in the introduction of the bow and arrow during the Late Period. Wiberg (1997:10) claims that large obsidian lanceolate projectile points or blades are unique to the Berkeley Pattern. *Olivella* shell beads include Saddle (F) and Saucer (G) types. *Haliotis* pendants and ornaments are occasionally found. Slate pendants, steatite beads, stone tubes, and ear ornaments are unique to Berkeley Pattern sites (Fredrickson 1973:125–126; Moratto 1984:278–279). As with the Windmiller Pattern sites, evidence of warfare or interpersonal violence is present, including cranial trauma, parry fractures, and embedded projectile points.

The Augustine Pattern coincides with the Late Period, ranging from as early as A.D. 700 to about A.D. 1750 and is typified by intensive fishing, hunting, and gathering (especially of acorns), a large population increase, expanded trade and exchange networks, increased ceremonialism, and the practice of cremation in addition to flexed burials. Certain artifacts are also distinctive in this pattern: bone awls used in basketry, small notched and serrated projectile points that are indicative of bow-and-arrow usage, occasional pottery, clay effigies, bone whistles, and stone pipes. *Olivella* bead and *Haliotis* ornaments increase in number of types and frequency of occurrence, sometimes numbering in the hundreds in single burials. Beginning in the latter half of the 18th century, the Augustine Pattern was disrupted by the Spanish explorers and the mission system (Moratto 1984:283).

The establishment of a chronology allows archaeologists to explore other kinds of evidence and research questions that focus on cultural responses to environmental change, settlement and subsistence strategies, trade and exchange routes, population movement, and related topics. Shifting focus from typology to adaptation in the 1970s, Fredrickson identified widespread cultural patterns on the basis of technology (artifacts and inferred skills), economic modes (inferred from processing equipment and food remains), and cultural tradition (e.g., mortuary practices) (Breschini 1983; Fredrickson 1973). Fredrickson identified Paleoindian, Archaic, and Emergent periods inspired by original work by Willey and Phillips (1958). Table 1 summarizes the taxonomic framework developed by Fredrickson (in Hughes 1994).

This scheme places subsistence, organization, and exchange patterns and strategies within a chronological framework. Projectile point types, shell bead and ornament types, and other specific artifact types can be associated with a period by virtue of the dates that may be assigned to them, but this scheme is not defined on the basis of specific types of objects, as is the scheme associated with Bennyhoff, the CCTS.

Table 1. Summary of the taxonomic framework developed by Fredrickson (1973, and in Hughes 1994).

Period and Time Range	Technology, Subsistence	Exchange	Organization
Paleoindian 8000–6000 B.C. Wet and cool; lakeside habitation	Foraging: large projectile points imply hunting with dart and atlatl; groups change habitat to find resources	Ad hoc between individuals	Extended family; little emphasis on wealth
Lower Archaic 6000–3000 B.C. Drying of pluvial lakes, habitations move to rivers, streams	Foraging: milling stones indicate plant food; dart and atlatl imply hunting also important; use of local materials	Ad hoc between individuals	Extended family; little emphasis on wealth
Middle Archaic 3000–500 B.C. Climatic amelioration; local specializations of marine, upland, riverine environments	Foraging: mortars and pestles imply acorn economy; dart and atlatl persist; hunting remains important; tool kits diversify	If changes occur, do not see in archaeological record	Extended family, sedentism begins; growth of population and expansion into diverse niches
Upper Archaic 500 B.C.–A.D. 800 Cooler climate	Foraging, but also some collecting; mortars, pestles; dart and atlatl	More complex: regular exchange between groups; ad hoc continues	Sociopolitical complexity; status distinctions imply wealth; group-oriented religious orgs.; no firm territories

Period and Time Range	Technology, Subsistence	Exchange	Organization
Lower Emergent A.D. 800–1500	Collecting dominates, some foraging; small projectile points imply use of bow and arrow; mortars and pestles persist	Regularized exchanges between groups; more materials in network; ad hoc continues	Status distinctions more pronounced; established territories
Upper Emergent A.D. 1500–1800	Collecting dominates, some foraging; bow and arrow; mortars, pestles; local specialization re: production;	Clam disk beads imply money; local specialization; exchange materials move farther distances; ad hoc continues	

Ethnographic Background

This section provides a brief summary of the ethnography of the San Francisco Bay Area and is intended to provide a general background only. More extensive reviews of Ohlone ethnography are presented in Bocek (1986), Cambra et al. (1996), Kroeber (1925), Levy (1978), Milliken (1995), and Shoup et al. (1995).

The project area lies within the region occupied by the Ohlone or Costanoan group of Native Americans at the time of historic contact with Europeans (Kroeber 1925:462-473). Although the term Costanoan is derived from the Spanish word *costaños*, or "coast people," its application as a means of identifying this population is based in linguistics. The Costanoans spoke a language now considered one of the major subdivisions of the Miwok-Costanoan, which belonged to the Utian family within the Penutian language stock (Shipley 1978:82 84). Costanoan designates a family of eight languages.

Costanoan-speaking tribal groups occupied the area from the Pacific Coast to the Diablo Range and from San Francisco to Point Sur. Modern descendants of the Costanoan prefer to be known as Ohlone. The name Ohlone is derived from the Oljon group, which occupied the San Gregorio watershed in San Mateo County (Bocek 1986:8). The two terms (Costanoan and Ohlone) are used interchangeably in much of the ethnographic literature.

On the basis of linguistic evidence, it has been suggested that the ancestors of the Ohlone arrived in the San Francisco Bay area about A.D. 500, having moved south and west from the Sacramento-San Joaquin Delta. The ancestral Ohlone displaced speakers of a Hokan language and were probably the producers of the artifact assemblages that constitute the Pattern described above (Levy 1978:486). On the basis of archaeological evidence, Milliken

et al. (2007:99) dates the arrival of the Ohlone earlier, to about 2550 B.C. This three thousand year difference in interpretations remains to be resolved.

Although linguistically linked as a family, the eight Costanoan languages comprised a continuum in which neighboring groups could probably understand each other. However, beyond neighborhood boundaries, each group's language was reportedly unrecognizable to the other. Each of the eight language groups was subdivided into smaller village complexes or tribal groups. The groups were independent political entities, each occupying specific territories defined by physiographic features. Each group controlled access to the natural resources of their territories, which also included one or more permanent villages and numerous smaller campsites used as needed during a seasonal round of resource exploitation.

The vestiges of many village sites within the San Francisco Bay Area have been found in numerous locations around the Bay shoreline in the form of shell mounds—large accumulations of shell, ash, artifacts, and occasionally human remains. With the influx of European settlers in the mid-19th century, most of these sites were destroyed or buried (Alvarez 1992:4-22).

Extended families lived in domed structures thatched with tule, grass, wild alfalfa, or ferns (Levy 1978:492). Semisubterranean sweathouses were built into pits excavated in stream banks and covered with a structure against the bank. The tule raft, propelled by double-bladed paddles, was used to navigate across San Francisco Bay (Kroeber 1925:468).

Mussels were an important staple in the Ohlone diet, as were acorns of the coast live oak, valley oak, tanbark oak and California black oak. Seeds and berries, roots and grasses, and the meat of deer, elk, grizzly, rabbit, and squirrel formed the Ohlone diet. Careful management of the land through controlled burning served to ensure a plentiful, reliable source of all these foods (Levy 1978:491).

In the more recent prehistoric times through European contact and the early historic period, the Ohlone usually cremated a corpse immediately upon death, but if there were no relatives to gather wood for the funeral pyre, interment occurred. Mortuary goods comprised most of the personal belongings of the deceased (Levy 1978:490).

The arrival of the Spanish in 1775 led to a rapid and major reduction in native California populations. Diseases, declining birth rates, and the effects of the mission system served to disrupt aboriginal life ways (which are currently experiencing resurgence among Ohlone descendants). Brought into the missions, the surviving Ohlone, along with the Esselen, Yokuts, and Miwok, were transformed from freely moving hunters and gatherers, into

agricultural laborers tethered to the mission locale (Levy, 1978; Shoup et al. 1995). With Mexican independence in 1821 and the subsequent abandonment of the mission system, numerous ranchos were established. Many former mission Indians disbursed, and those who remained were then forced by necessity to work on the ranchos.

In the 1990s, some Ohlone groups (e.g., the Muwekma, Amah, and Esselen further south) submitted petitions for federal recognition (Esselen Nation 2007; Muwekma Ohlone Tribe 2007). Many Ohlone are active in preserving and reviving elements of their traditional culture and actively consult on archaeological investigations.

Historical Background

Spanish Exploration and Colonization

The Spanish Period in the Bay Area began in 1775 when Captain Juan Manuel Ayala's expedition entered the area and ventured up the Sacramento and San Joaquin rivers in search of a suitable mission site. The first mission in the region, Mission San Francisco de Asis (Mission Dolores), situated near the shores of San Francisco Bay, was established the following year. Mission Santa Clara de Asis, located forty miles south of San Francisco, was established just a year later. Mission San Jose, located in modern Fremont, would not be established for another twenty years. Mission lands were used primarily for the cultivation of wheat, corn, peas, beans, hemp, flax, and linseed, and for grazing cattle, horses, sheep, pigs, goats, and mules. In addition, mission lands were used for growing garden vegetables and orchard trees such as peaches, apricots, apples, pears, and figs. Cattle from Mission San Jose were grazed over the Project vicinity.

The missions relied on the Native American population both as their source of Christian converts and their primary source of labor. Though some Indians gave up their traditional way of life by choice, many were coerced and forced into the missions. Soldiers stationed at the Presidio were called upon to both punish those Indian people the priests could not control through more diplomatic means, as well as to retrieve people who attempted to return to their native villages. By the mid 1790s, traditional Ohlone lifeways had been significantly disrupted, and diseases introduced by the early expeditions and missionaries, and the contagions associated with the forced communal life at the missions, resulted in the death of a large number of local peoples. Cook (1943) estimates that by 1832, the Ohlone population had been reduced from a high of over 10,000 in 1770 to less than 2,000.

Mexican Rule and Secularization of the Mission System

Following Mexican independence from Spain in 1821, control of Spain's North American colonial outposts was ceded to the Republic of Mexico. Alta California became a province of the new republic and under Mexican rule Californians could now trade with foreigners and, further, foreigners could own property once they had been naturalized and converted to Catholicism. These new regulations made California more attractive to permanent settlers and, not surprisingly, the numbers of Mexican and non-Mexican born immigrants continued to increase during this period.

Despite this, life remained difficult for Indian people within the mission system. Locally, tensions mounted in the summer of 1829 when Indians of the San Jose and Santa Clara missions rebelled under the leadership of an Indian chieftain, Estanislao, and his companion, Cipriano (Shoup et al 1995:83). The confrontations that took place that summer resulted in casualties for both the Indian rebels and the soldiers serving the mission (Shoup et al. 1995:86). Difficulties like these on the local level, as well as the larger issues of administering such a widespread institution, and the desire of the Mexican government to remove the missions' vast land holdings from the control of Franciscan priests, resulted in the secularization of the mission system. By 1829, areas within this portion of what was to become Alameda County were occupied by Native Americans who had formerly lived at Mission San Jose (Baker 1914:32).

The process of secularization began in California in 1834. Very few Indian people received land as a result of secularization. In the end, former mission lands were parceled out in large land grants, and just as they had done in the missions, Native Americans served as a source of labor for the new landowners. Fifty-eight percent of land grants were made to Mexican citizens, while forty-two percent were made to non-Mexicans who had become naturalized and baptized, gaining access to property in the process (Beck and Haase 1988:24). Prior to secularization, 51 grants had been made in Alta California. "Of the 813 grants ultimately claimed, 453 were filed between 1841 and 1846, 277 from 1844 to 1846, and 87 in the last few months before United States occupation" (Beck and Haase 1988:24).

Throughout the state this meant that the agricultural economy that was once limited to the missions and pueblos quickly encompassed a growing number of cattle ranches run by men interested primarily in the hide and tallow trade. The project area was situated within the Rancho San Lorenzo. Don Guillermo Castro was granted Rancho San Lorenzo in 1841 by Governor Alvarado and in 1843 by Governor Micheltorena, and chose to settle near a spring on the western edge of San Lorenzo Creek canyon, in the area that would become downtown

Hayward. Castro's adobe house was located on Mission Boulevard between C and D streets. His former land holdings include Hayward and Castro Valley.

The Mexican-American War and the Gold Rush Lead to Statehood

As overland migration of American settlers from the east into Alta California became more common in the 1840s, relations between the United States and Mexico became strained, with Mexico fearing American encroachment into their territories. The political situation continued to deteriorate and twice Mexico rejected an American offer to purchase California. In 1836, a revolution in Texas drove out the Mexican government and created an independent republic. This republic was annexed to the United States in 1845, causing a rift in the diplomatic relations of the two nations. The following year Mexico and the United States were at war. American attempts to seize control of California quickly ensued, and within two months, the United States had conquered California. Skirmishes between the two sides continued until California was officially annexed to the United States in 1848 (Kyle 1990:xiii-xiv).

Shortly after the signing of the Treaty of Guadalupe Hidalgo, the discovery of gold in the Sierra Nevada ignited a major population increase in the northern half of California as immigrants poured into the territory seeking gold or the opportunities inherent in producing goods or services for miners. Prior to the Gold Rush, San Francisco was a small settlement with an approximate population of 800 inhabitants. With the discovery of gold and the sudden influx of thousands of optimistic gold seekers, a city of canvas and wood sprang up as men and goods streamed into the once isolated outpost.

California statehood and the end of Mexican rule ushered in yet another body of laws that governed life in this rapidly changing landscape. Of particular importance to both the people who had established themselves in California during the Mexican era and to those recent immigrants who hoped to settle in California after the gold rush, were the laws governing property ownership. Although Mexican citizens had been assured of their property rights after annexation, the frenzy of the gold rush made northern California's vast rancho lands irresistible to new arrivals, who often squatted on property that they did not own. In 1851 the U.S. government established a land commission to bring order to the increasingly chaotic situation. The three-member commission was assigned the formidable task of authenticating land titles granted by the Mexican government, placing the burden of proof on the property owners themselves. Long-time residents spent much of the next two decades trying to gain clear title to their land, often gaining title only to have to use the land itself to pay the legal bills that had accumulated during the process.

The Final Decades of the 19th Century

Miners returning from the goldfields and newly arrived immigrants began settling in southern Alameda County in the 1850s. The first man to purchase property from Guillermo Castro was Zachariah Hughes, who settled in the area in 1852. He was followed by men like William Maddox, John Proctor, and Daniel Luce, who had all purchased portions of Castro's property by 1855.

With a toll road in place between Dublin and Hayward, the area that would become Castro Valley served as a stopping point for travelers and grew into a small community. The Exchange, likely Castro Valley's first business establishment, was located on the corner of Grove Way and Redwood Road. Henry Thomford provided refreshments for both the men and the horses traveling the old Dublin Road that connected San Francisco and the East Bay to the Livermore Valley. Horses were watered at the trough while their drivers enjoyed a cool beer along with one of the German sausages made by Thomford's wife (Lorge et al. 2005). As families continued to settle in the area, several schools were built. The first public school opened in 1854 and was located on the Hughes property north of Grove Way. The school building was eventually moved to Hayward to accommodate students there, but several additional schools were constructed in Castro Valley soon thereafter.

William Hayward purchased land from Castro and opened a store housed in a tent near Castro's adobe. In the fall of 1852 he built a home and then a hotel/tavern. The site would soon be home to the well-known Hayward's Hotel (Baker 1914:450; Grossinger and Brewster 2003:13). The hotel was located north of A Street on the east side of Mission Boulevard. It was eventually destroyed by fire in 1923 (Kyle 1990:16). In 1854, Castro platted the town which he called San Lorenzo, and, with some changes he made two years later, established the basic layout of the modern city of Hayward. In 1856, Hayward was appointed the town's first postmaster and his hotel functioned as the first post office. As a result, the town was nicknamed "Haywards" and shortly thereafter a petition was sent to Washington D.C. requesting the name be officially changed to Haywards. The post office would not allow towns to be named after living persons, and so the town was renamed Haywood. The name "Hayward" would not be decided on until 1911 (Grossinger and Brewster 2003:14; Hayward Area Historical Society 2010). The name San Lorenzo was taken by the current city of San Lorenzo in 1854, before which it had been known as "squatterville" (Stock and Corbett 2000:7).

Hayward's location as a stage stop between Oakland and San Jose, as well as the development of the short-lived local rail line between Alameda and Hayward in 1865, spurred early growth near the the project area in Hayward (Grossinger and Brewster

2003:16). Though the local rail line did not last long and the area experienced severe structural damage during the earthquake of 1868, the location continued to attract settlement.

By 1869, the transcontinental railroad had been built through the region and transporting goods by rail soon surpassed in importance the previous method of shipping by water. The 1878 Thompson & West map (Figure 4), depicts the alignments of the Central Pacific and Southern Pacific railroads in the vicinity of the project area, routes that continue to be heavily travelled today. The location of stations along the Central Pacific line had spurred the growth of downtown Hayward (two miles west of the project area) as well as the towns of San Lorenzo and San Leandro to the northwest. While parcels near the town centers were relatively small, the area remained agricultural and parcels along the rail line continued to be several hundred acres in size. East of the rail line, a quarter mile from the project area, the Lone Tree Cemetery had been established. It is the resting place of many area pioneers, including William Hayward.

The 1878 Thompson & West map depicts the project area on one of many parcels owned by Faxon Dean Atherton a well-connected friend of Thomas Larkin and large-scale land speculator who amassed a fortune importing and exporting goods during the Gold Rush. One of the most prominent landowners of the 19th-century, Atherton purchased a total of $400,000 worth of Guillermo Castro's rancho land throughout modern-day Castro Valley. Although he lived for a while on the former rancho, his stay was only temporary. He soon set up land agents to sell off the land in smaller parcels while he concerned himself with other projects (Sandoval 1991:137).

In the 1890s, a book produced by then California Governor Henry Markham described the project vicinity in the following way: "From East Oakland to Mission San José is one series of vegetable gardens" and "From East Oakland to Niles, Sunol, and Livermore is an almost uninterrupted series of orchards of deciduous fruits, vineyards and berry gardens" (Markham 1893:6). Peas, potatoes, cabbages, cauliflower, celery, squash, onions, beets and cucumbers were all grown. Apricots were the most common fruit cultivated, followed by prunes, cherries, plums, pears, almonds, apples, nectarines, peaches, olives, English walnuts and figs. Raspberries, strawberries, gooseberries and currants were also grown in large numbers. San Leandro, Hayward, and Livermore were small country towns at this time, "quiet, healthful, progressive, with banks, newspapers and first-class hotels." The land between these towns was "lined with residences of business men from the city, engaged in fruit culture, or seeking rest, pure air, and tranquility in their suburban homes" (Markham 1893:5, 6). By the early 1900s, the project vicinity was one of the country's largest producers of peas, rhubarb, apricots and tomatoes (Willard 1988:29).

WSA

Project Location on the
1878 Thompson and West Map

Figure 4
Lamphier-Gregory
Bassaro Property, D St. Project
Alameda County, CA

20th Century Expansion

The turn-of-the-century ushered in a new era for Castro Valley farmers, as chicken ranches joined the Valley's orchards. The enterprise dominated local agriculture. Though the small community continued to grow, and thoroughfares like Castro Valley Boulevard began to fill with businesses, the area maintained its largely rural character during the early 20th-century (Figure 5).

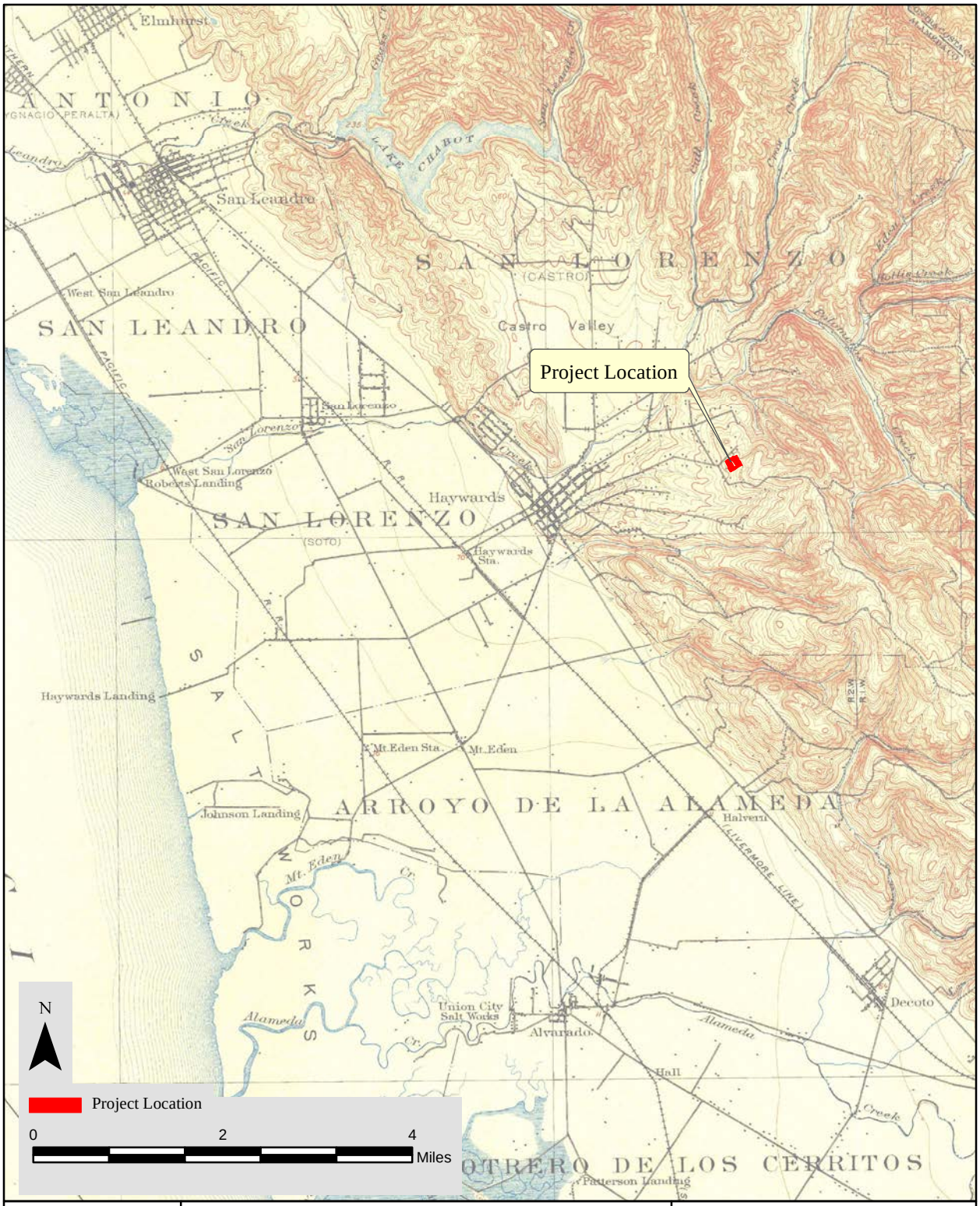
World War II, however, brought profound change to the Bay Area, as shipyards, food processing and packing plants, and other industries mobilized to support the war effort. Wartime workers and those hoping to become a part of the booming economy poured into the area, and the East Bay's population increased by half a million people between 1941 and 1945 (Willard 1988:80).

Modernization of area transportation systems soon began in order to meet the needs of the growing population. The Hayward-San Mateo Bridge was built in 1929, I-580 was constructed in the area in the 1960s, and planning for the Bay Area Rapid Transit (BART) system began soon after I-580 was completed.

In addition, many long-standing communities that had not yet incorporated chose to do so at this time (Willard 1988:82). Between 1955 and 1959 the cities of Newark, Fremont, and Union City were incorporated. They were created from the districts formerly known as Mission San Jose, Niles, Centerville, Irvington, Warm Springs, Alvarado, and Decoto (Willard 1988:82). Castro Valley and San Lorenzo opted to remain unincorporated, and Castro Valley continues to be one of the largest unincorporated communities within California today.

Project Area History

At the time Thompson & West's 1878 atlas of Alameda County was published, the project area was part of an undeveloped and unsectioned tract of hilly land owned by F. D. Atherton, bounded on the east by Palomares Creek and the north by San Lorenzo Creek. The nearest populated areas bordered Dublin Road, which loosely followed the channel of San Lorenzo Creek between about a quarter mile and a half mile to the north. By 1899, the USGS 15' topographic quadrangle for Hayward, Calif. included one building at the approximate location of the main house at 3289 D Street, at the time one of only three houses on the short stretch of road extending northeast from Fairview Avenue. Assessor's map books from 1898 and 1901, in the collection of the Hayward Area Historical Society, show that the undivided 20 acre parcel encompassing the project area, with its northwest corner at Quarry Street and Cemetery Avenue was owned by F. E. Garcia.



WSA

Project Location on the
1901 Hayward 15'
USGS Topographic Map

Figure 5
Lamphier-Gregory
Bassaro Property, D St. Project
Alameda County, CA

The Garcia name was held by families in Eden Township who were first and second generation Portuguese immigrants from the Azores, and the landowner might have been among these residents.

The 1915 15' USGS topographic quadrangle shows the same arrangement of buildings, with only one structure depicted in the project area. Though street addresses for the area are not listed in the 1920 United States Census for the vicinity, as most residents are recorded as living on farms, it is possible to ascertain the character of settlement around the project area at this time. Resident families along Fairview Avenue between Maud Avenue and Cemetery Road and in the Fairview Precinct were headed by first-generation Californians or immigrants from the Azores, Norway, Germany, or Italy. Many operated fruit and poultry farms, while other residents had vocations including automobile mechanic, plumber, electrician, and one "inheritance law" attorney.The majority owned, rather than rented, their homes.

The 1930 census shows a similar general pattern of residents along Fairview Avenue, and includes a listing for Theodore W. and Delia Lakin at Box 438B. The Lakin family lived at what would become 3291 Quarry Road (Thomas Brothers 1938), or D Street between 1930 and 1948, and the Kansas-born Theodore's listed occupation changed from poultryy farmer in 1930 to engineer beginning in 1936. A ca. 1956-1957 Assessor's parcel map shows that Theodore Lakin still owned the property at this time. The parcel included what is now Lot 5 and part of the narrow adjacent Lot 6, which provided the access road to his residence at 3291 D Street. The 1957 Southern Alameda County Telephone Directory lists a Priscilla O. Lakin at the address, now 3291 D Street rather than Quarry.

Poultry farmer Chancie E. Quinn and Chancie A. Quinn (likely father and son) registered to vote in 1934 as residents of 3247 Quarry Road. By 1940, Mrs. Alma and Ray Gish, both born in the United States, and their 6 year old daughter Patricia Ann lived at 3247 Quarry Road, neighboring the Lakins. Though poultry farms still populated Fairview Ave. in 1940, Ray Gish listed his occupation as Foundry Moulder. By 1942 the Gish family had left 3247 Quarry Road, and the property was occupied by the family of fire engine operator Joseph Fracisco and his wife, Winifred.

After the Second World War, increased demand for housing in the East Bay reached to the hills overlooking Hayward, and the 1947 USGS 7.5' quadrangle for Hayward and a 1947 aerial photo taken as part of a survey set for transit planning both show growing suburban housing developments encroaching on former orchard lands in the vicinity. The project area at this time was still more irregularly settled, with buildings at the current locations of the main houses at 3247, 3289, and 3291 D Street. The aerial photo shows regular rows of an orchard stretching across the parcels of 3289 and 3291 from D Street.

A ca. 1956-1957 set of Assessor's maps assembled into a Real Estate Atlas of Alameda County lists Harry R. and Helen A. Pringle as the owners of the parcel at 3289 D Street, as well as the narrow property to the west including 3265-3269 D Street. Helen Pringle, who worked at a hair salon in Hayward, moved to 3289 Quarry/D Street around 1947, and lived there until at least 1965. J. P. and W. L. Frascisco owned the parcel at 3247 D Street (which at the time had the same dimensions as today). The name "F. Rasisco" is listed in the householder's directory of the 1951 Polk's Hayward City Directory at this address, likely a typographic error. Seamstress Mrs. H.K. Fitzpatrick and Mary E. Card lived at 3231 Quarry Avenue in 1948, and Fitzpatrick is listed as the home's owner in a 1951 directory. The parcel was owned in the mid 1950s by Peter W. and Mary J. Diederich.

4.0 Results of the Records Search

On September 17, 2015, WSA conducted a records search for the project at the Northwest Information Center at Sonoma State University (NWIC) (File No. 15-0404). The records search included a review of cultural resource and excavation reports and recorded cultural resources within a 1/4-mile radius of the project area. The records search also included a review of the Office of Historic Preservation's Directory of Historic Property Data File for Alameda County and the CA Inventory of Historic Resources (1976).

A total of three cultural resources studies have been conducted within 1/4 mile of the project area, but none within the project area itself (Table 2).

Table 2. Cultural resource studies within 1/4 mile of the project area

Survey #	Date	Author	Title
S-016900	1990	James C. Bard and John Yelding-Sloan	William J. Lyon Company's Rancho Palomares Development, Archaeological Monitoring Services (letter report)
S-036538	2009	Jeanette A. McKenna	An Assessment of the Cultural Resources Sensitivity for the Fairview Elementary School Property in Hayward, Alameda County, California
S-037016/	2009	Colin I. Busby/Ward Hill	Historic Resources Evaluation Report, Proposed Roadway and Streetscape Improvements Along Maud Avenue, Unincorporated Community of Fairview, Alameda County, SRTSL-5933 (090), FHWA091103B

Survey #	Date	Author	Title
S-037106a	2009	Colin I. Busby/Ward Hill	Historic Resources Evaluation Report Proposed Roadway and Streetscape Improvements Along Maud Avenue, Unincorporated Community of Fairview, Alameda County

The records search indicated that no previously recorded cultural resources are within the project area. Eight previously recorded resources are located within ¼-mile of the project area (Table 3). Seven of the resources are single-family homes dating from the 1920s to the 1950s, one resource is a historic-era rock quarry. No archaeological resources have been recorded in the project area or within 1/4 mile of the project area.

Table 3. Cultural resources within ¼-mile of the project area

Primary Number	Trinomial	Site Description	Recording Events
P-01-002138	CA-ALA-000532H	Rock quarry/Palomares-3	1990 (Robert Harmon, John Yelding-Sloan, Basin Research Associates)
P-01-010969	None	Single family home/ 23330 Maud Avenue	2009 (Ward M. Hill, Marjorie Dobkin, Basin Research Assocites, Inc.)
P-01-010971	None	Single family home/ 23418 Maud Avenue	2009 (Ward M. Hill, Marjorie Dobkin, Basin Research Associates, Inc.)
P-01-010972	None	Single family home/ 23484 Maud Avenue	2009 (Ward M. Hill, Marjorie Dobkin, Basin Research Associates, Inc.)
P-01-010973	None	Single family home/ 23572 Maud Avenue	2009 (Ward M. Hill, Marjorie Dobkin, Basin Research Associates, Inc.)
P-01-010974	None	Single family home/ 23742 Maud Avenue	2009 (Ward M. Hill, Marjorie Dobkin, Basin Research Associates, Inc.)
P-01-010975	None	Single family home/ 23756 Maud Avenue	2009 (Ward M. Hill, Marjorie Dobkin, Basin Research Associates, Inc.)
P-01-010976	None	Single family home/ 23790 Maud Avenue	2009 (Ward M. Hill, Marjorie Dobkin, Basin Research Associates, Inc.)

5.0 Native American Consultation

WSA contacted the Native American Heritage Commission (NAHC) by email on September 14, 2015, requesting information on sacred lands and a contact list of local tribal representatives. A response was received from the NAHC on September 22, 2015 noting, "A record search of the sacred land file has failed to indicate the presence of Native American cultural resources in the immediate project area." A list of Native American contacts was included in the response (Jakki Kehl; Irene Zwierlein, Amah/Mutsun Tribal Band; Katherine Erolinda Perez; Michelle Zimmer, Amah Mutsun Tribal Band of Mission San Juan Bautista; Mr. Tony Cerda, Coastanoan Rumsen Carmel Tribe; Linda G. Yamane; Ann Marie Sayers, Indian Canyon Mutsun Band of Costanoan; Rosemary Cambra, Muwekma Ohlone Indian Tribe of the SF Bay Area; Andrew Galvan, The Ohlone Indian Tribe; and Ramona Garibay, Trina Marine Ruano Family). WSA contacted the Native American representatives by letter, on September 30, 2015, informing them of the project. Follow-up phone calls to the Native American representatives were placed on October 14, 2015. No comments or recommendations were received. A record of the Native American consultation can be found in Appendix A.

6.0 Archaeological and Architectural Survey Methods

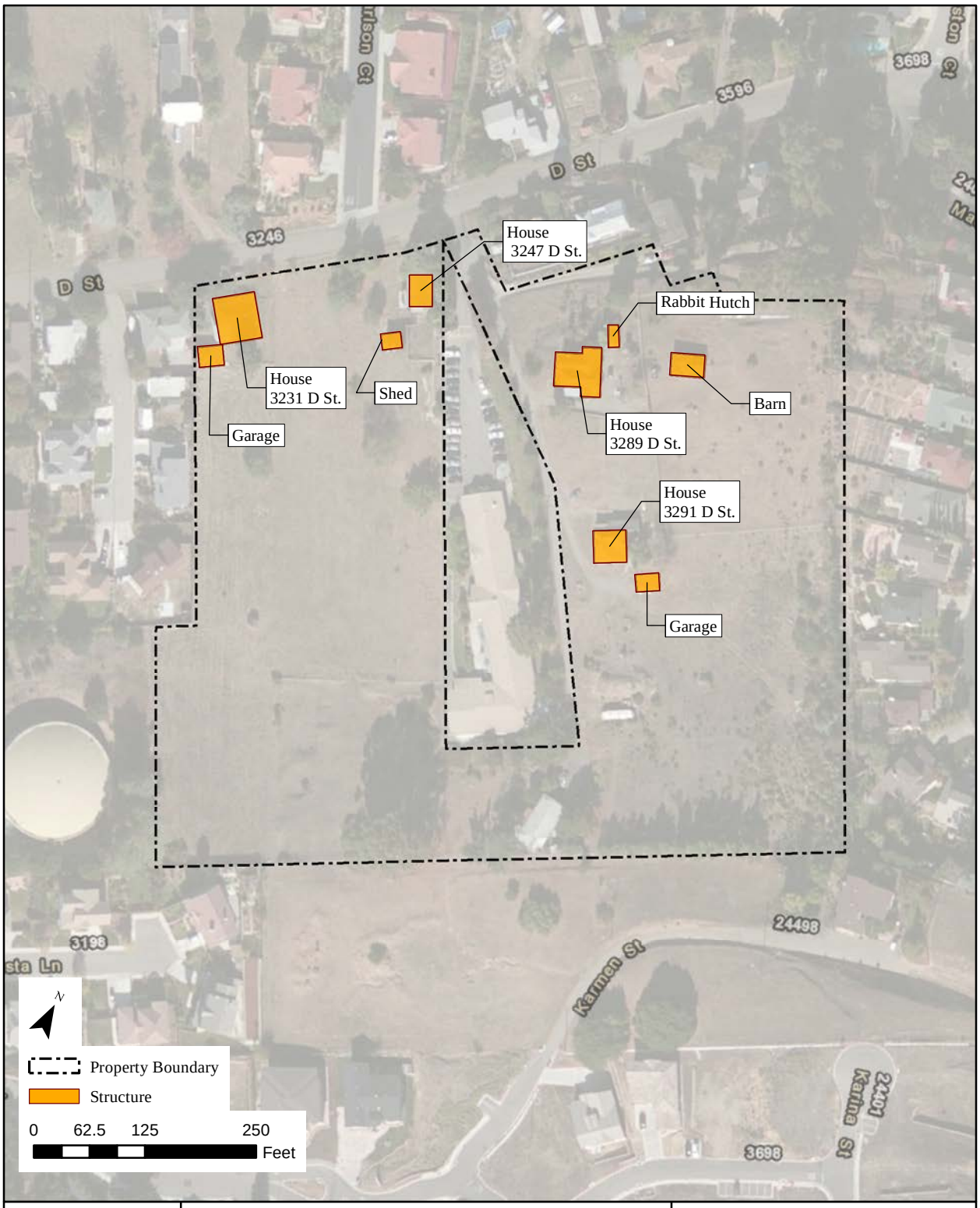
A pedestrian archaeological reconnaissance survey was conducted using transect intervals of not more than 30 m (98 ft.). The project area was recorded with digital photographs for use in the report. Photographs included general views of the topography and vegetation density, structures, and other relevant images. A photo log was maintained that included photo number, date, orientation, photo description, comments and WSA's name. All survey photographs are included in Appendix B.

One hundred percent of all exposed ground surface within the project area was examined for the presence of historic or prehistoric site indicators. Historic site indicators include, but are not limited to foundations, fence lines, ditches, standing buildings, objects or structures such as sheds, or concentrations of materials at least 50 years in age, such as domestic refuse (glass bottles, ceramics, toys, buttons or leather shoes), or refuse from other pursuits such as agriculture (e.g., metal tanks, farm machinery parts, horse shoes) or structural materials (e.g., nails, glass window panes, corrugated metal, wood posts or planks, metal pipes and fittings, etc.). Prehistoric site indicators include, but are not limited to areas of darker soil with concentrations of ash, charcoal, bits of animal bone (burned or unburned), shell, flaked stone, ground stone, or even human bone.

7.0 Results of the Archaeological Survey

WSA Staff Archaeologist Thomas Young conducted the field reconnaissance of the proposed project area on October 14, 2015 (Figure 6). The easternmost parcels (3289 and 3291 D St.) included two houses with a stable and a garage associated with one of the houses. The land surrounding the houses was surveyed for archaeological resources. The stable area and surrounding land were well trampled by the horses fenced in this area. Ground visibility here was nearly 100%, except for around the edges were there was some vegetation (Photo 1). The terrain was generally flat and sloped down to the west. Sparse vegetation included oak trees, eucalyptus trees, pepper trees, scrub brush and dried grasses. Vegetation was thicker in the southeast corner of the property. Rodent holes were prevalent, and there were signs of rabbits and other wildlife, including deer. The land has been modified in the form of rock retaining walls that have been built at 3289 D St. At the rear of the lot behind 3291 D St. there is a dirt berm formed around a pull-out space off the driveway, and next to that is a concrete pad, measuring 17 ft.-x-11 ft. There was no construction material or anything else nearby to indicate its purpose (Photo 2). No cultural resources were observed during the survey.

The westernmost parcel (3231 and 3247 D St.) is occupied by two houses, each with an associated garage or shed. The house in the northeast corner (3247 D St.) and the house in the northwestern corner (3231 D St.) both have fenced-in yards. The land surrounding these houses was surveyed for archaeological resources. The terrain here is also generally flat and sloping down to the west. The vegetation here is even sparser than the easternmost parcel, with scrub brush and some planted trees (Photo 3). Ground visibility was about 70 %. In the southeast corner is a row of large eucalyptus trees. There is a fence-line that runs east-west in the rear third of the parcel. Near this fence-line are four railroad ties on the ground, in various stages of decay, with metal spikes protruding from them. On the south side of parcels, the land has a steeper slope, with alternating wide-terraced areas. A trench has been partially dug at the foot of one of these terraces, and the soil is silty shale. At the highest terrace, in the southeast corner, is a plywood-sided shed with an overhanging roof over a cement pad. There is a spigot attached to the side of the structure, and there are two parallel bars installed in the ground nearby (Photo 4). No cultural resources were observed during the survey.



WSA

Archaeological and Architectural Survey Map

Figure 6
Lamphier-Gregory
Bassaro Property, D St. Project
Alameda County, CA

8.0 Architectural Survey and Documentation

WSA architectural historian Aimee Arrigoni conducted the architectural survey and assessment of the project area on October 14, 2015. She documented eight standing historic structures on four properties within the project area that are 45 years of age or older. These include five residences, a barn, a garage and a shed.

Ms. Arrigoni evaluated their eligibility for listing in the CRHR. Department of Parks and Recreation forms were filled out for the structures on the four properties and are appended to this report in Appendix C.

8.1 3289 D Street - Residence and Barn (Photos 5-8; APN 417-240-12-4, 2.09 acre parcel)

The two-story residence at 3289 D Street was likely originally built in the early 20th century, although it has been so heavily modified since its date of construction that the original building is virtually unrecognizable. The west elevation, or facade of the home, incorporates gabled, hipped, and shed style rooflines, all remnants of various additions. Exterior finishes include faux stone veneer, brick, and two styles and colors of metal siding (white lapped and green board and batten). The exterior chimney and brick veneer on the north side of the home may be remnants of the original structure. The roof is finished in composite shingles, and window awnings have been constructed out of unpainted corrugated metal and appear to be homemade. Like the awnings, the addition on the south side of the home does not appear to have been constructed by a professional. It combines green plastic corrugated sheets (often used on carport roofs) and strips of glass as structural material to form what may have been a greenhouse or sunroom on the second floor. Both the handrail on the concrete side porch (north "side) and the support column at the covered front porch have been expediently constructed out of metal pipe. Corrugated plastic sheets also shade the north side entry. Entrance doors are covered with security doors. Windows include a combination of fixed multi-pane wood windows, opaque amber glass windows, and modern aluminum sliders. A basement underlies the first floor and the floorboards of the first story are flush with the windowsill visible at the right of Photo 6 (Appendix B). A low, covered wood-frame shade structure, possibly used for chickens or rabbits, is located at the rear of the home and is no longer structurally sound. The rock retaining walls along the driveway to the south of the home as well as the rock retaining walls that terrace the yard at the rear of the home are likely remnants of early landscaping efforts.

The barn to the northeast of the residence at 3289 D Street is accessed via the driveway that runs along the south side of the home. While they are located on the same parcel, the barn is

separated from the residence by a chain link fence. At the time of the survey, horse feed was being stored in the barn and four horses had access to both a portion of the barn and the open pasture within the project area to the south. The small barn is side gabled and rectangular in plan. Rafters are exposed along the two long sides and closed along the gabled ends. The barn is wood-framed and covered with horizontal wood planks (1-x-4 in.), which, in turn, are covered with a composite material that mimics a brick pattern. The composite has deteriorated in many locations, leaving the wood exposed. An internal wall divides the barn. The south side of the roof is covered with various colors of composite shingles and the north side is covered with corrugated sheet metal. There is one working door on the facade (south elevation), while one opening is covered with plywood and the other is secured with a single section of chain link fence. Vertical trim under the gable and a three-lite wood window characterize the west elevation. The doors and window on the north elevation have been patched or covered over with makeshift materials, although there is a working door made of plywood on the east side.

8.2 3291 D Street - Residence and Garage Renovation (Photos 9-14; APN 417-240-5, 1.77 acre parcel)

The original portion of 3291 D Street was likely built in the early 20th century and appears to have been a single-story residence with a rectangular plan and a dormer on at least one side of the hipped roof (today only the dormer on the west side survives). Since that time, it has been heavily modified and no longer reflects its original form or design elements. The residence was originally finished with horizontal grooved wood plank siding. Portions of the siding are visible on three sides of the home. The main entry is accessed via three concrete steps. The most prominent addition to the building since the original construction occupies much of the north elevation (facade) and is covered with a shed style roof. The addition on the north side is covered with various types of wood plank siding, including plywood sheets that mimic vertical siding. Both the hipped and shed style portions of the roof are now covered in composite shingles. On the facade, entry doors and window trim are painted a faded red. On other portions of the residence, the façade is painted brown. The body of the home is painted light beige. Virtually all windows (with the exception of the surviving window in the dormer) have been replaced with black metal sliders. There is a small raised wood deck along the east side at the entry door. Two small additions with shed style roofs have been constructed at the southeast corner of the home. A basement underlies the residence.

A second structure has been constructed at the rear of the main residence. Originally permitted as a garage, it was ultimately finished as an expediently constructed rental unit. It is two-stories and finished in stucco (painted tan) with no trim around the window and door

openings. The entry door is a modern wood door with decorative leaded glass and the secondary entry door is a hollow metal door. The building is front gabled with a shed extension to the north. All windows are modern metal sliders. The interior is unfinished (plywood floors). Like the main residence at 3291 D Street, the quality of craftsmanship is extremely low (the handrail of an enclosed staircase partially protrudes through an exterior wall, etc.). The date of construction on the unpermitted residence is not known, but appears to have been relatively recent.

8.3 3247 D Street - Residence and Shed (Photos 15-18; APN 417-240-1, 3 acre parcel)

The single-story house at 3247 D Street was built in the California Bungalow style, a builder's simplification of the Craftsman bungalow that was popular between ca. 1905 and 1925. It embraced basic Craftsman forms like the covered porch and gently pitched broad gables, but was built with a simpler level of detail. The residence retains many original features, such as its rectangular plan, the gabled roof above the porch that mimics the primary roof, the square columns at the corners of the porch, the small porch railing, and the three-part windows that flank the front entry door. Today the front entry is covered with a security door, the house is painted light turquoise with a darker turquoise trim, and the roof is covered in composite shingles. The wood steps that access the raised porch have replaced the original staircase. Below the wood staircase, however, are several low stone steps that lead to the road. They are consistent with stones used in the front of the home to define planting areas. The exterior is covered in lapped horizontal wood siding and the rafters are enclosed on the gabled ends and exposed on the long sides of the residence. A small addition with a shed style roof has been added to the south side (rear) of the residence. A brick chimney pierces the roofline near the rear of the home. A basement underlies the residence and the foundation has been compromised in the southwest corner where the slope has given way and the concrete footing has been undermined. There is a small brick patio at the rear entry and wood retaining walls in the sloped backyard.

A wood-framed shed covered in corrugated metal has been built behind the residence. It has metal windows and the portion of the shed not supported by the sloping ground beneath it has been braced with modern pressure treated lumber.

8.4 3231 D Street - Residence and Garage (Photos 19-21; APN 417-250-1, .8 acre parcel)

The residence at 3231 D Street appears to have been built in the mid 20th century and has some of the characteristics of Ranch style architecture that was popular at the time, but in general lacks the design elements that really characterized the style. The single-story

residence is built on a slope and has a partial basement. The main body of the residence is finished in stucco and painted light tan. The exterior of the basement is finished with a combination of plywood and horizontal wood plank siding. All windows are modern vinyl (some are trimmed in wood painted brown, while others have no trim). The hipped roof is covered in composite shingles and a brick chimney is evident in the central portion of the home. The facade (north elevation) has a large three-part window near the entry door and a shed style overhang supported by wood posts extends across the facade (posts painted to match window trim). The entry is accessed via a concrete path and a wrought iron gate mounted on a masonry brick wall defines the front edge of the yard. The enclosed side entry (west elevation) is accessed via eight wood steps and is covered with a shed style roof that extends from the primary roof.

A detached wood garage with a hipped roof is located at the end of the driveway located along the west edge of the residence. The garage is painted white and is finished with horizontal plank siding. It has a large wood garage door and several small additions have been made on the east side.

9.0 Impact Assessment and Recommendations Regarding Discoveries during Construction

9.1 CRHR Criteria for Evaluation

Under the California Environment Quality Act (CEQA) both public and private projects with financing or approval from a public agency must assess the project's effects on cultural resources (Public Resources Code Section 21082, 21083.2 and 21084 and California Code of Regulations 10564.5).

Cultural resources are buildings, sites, humanly modified landscapes, traditional cultural properties, structures, or objects that may have historical, architectural, cultural, or scientific importance. CEQA states that if a project will have a significant impact on important cultural resources, then project alternatives and mitigation measures must be considered. However, only significant cultural resources need to be considered in the mitigation plans.

CEQA defines significant historical resources as "resources listed or eligible for listing in the California Register of Historical Resources (CRHR)" (Public Resources Code Section 5024.1). A property may be considered historically significant if it meets the following criteria for listing on the CRHR:

1. It is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
2. It is associated with the lives of persons important to California's past;
3. It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
4. It has yielded or is likely to yield information important in prehistory or history (Public Resources Code Section 5024.1).

Integrity

In addition to meeting one or more of the four specific criteria listed above, a historic property or historic resource must possess "integrity" to qualify for listing in the CRHR. Integrity is generally evaluated with reference to qualities including location, design (i.e., site structure), materials, workmanship, setting, feeling, and association. A potentially eligible site must retain the integrity of the values that would make it significant. Typically, integrity is indicated by evidence of the preservation of the contextual association of artifacts, ecofacts, and features within the archaeological matrix (as would be required under Criterion 4) or the retention of the features that maintain contextual association with historical developments or personages that render them significant (Criteria 1, 2, or 3). Evidence of the preservation of this context is typically determined by stratigraphic analysis and analysis of diagnostic artifacts and other temporal data (e.g., obsidian hydration, radiocarbon assay) to ascertain depositional integrity or by the level of preservation of historic and architectural features that associate a property with significant events, personages, or styles.

Integrity refers both to the authenticity of a property's historic identity, as shown by the survival of physical characteristics that existed during its historic period, and to the ability of the property to convey its significance. This is often not an all-or-nothing scenario (determinations can be subjective); however, the final judgment must be based on the relationship between a property's features and its significance.

9.2 Assessment and Recommendations

WSA conducted the archaeological survey of the project area on October 14, 2014. The archaeological survey of the project area did not identify any evidence of previously unrecorded archaeological resources and the records search results indicated that no previously recorded archaeological resources were located on the property. WSA recommends no further action regarding prehistoric or historic-era archaeological resources.

WSA conducted the architectural survey of the project area on October 14, 2014. Eight standing historic structures within the project area that include five residences, a barn, a garage and a shed were evaluated for their eligibility for listing in the CRHR.

Assessment of 3289 D Street - Residence and Barn

Criterion 1. Neither the residence nor the barn at 3289 D Street is associated with events that have made a significant contribution to the broad patterns of California's history. They are loosely associated with the early 20th century development of Alameda County, but do not have an important association with this broad pattern. As a result, WSA recommends that neither the residence nor barn are eligible for listing in the CRHR under Criterion 1, as they are not associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.

Criterion 2. Based on the results of archival research discussed above, WSA found that neither the residence nor the barn is associated with the lives of people considered important to California's past. As a result, WSA recommends that neither the residence nor barn is eligible for listing in the CRHR under Criterion 2.

Criterion 3. Neither the residence nor barn embody the distinctive characteristics of a type, period, region, or method of construction, nor do they represent the work of an important creative individual or possess high artistic values. The house has been expediently remodeled over time and the barn is simply constructed and lacks architectural detail. They do not reflect a specific aesthetic and the builder used available building materials. As a result, WSA recommends that neither the residence nor barn is eligible for listing in the CRHR under Criterion 3.

Criterion 4. Criterion 4 is not typically applied to built resources, and is not considered in relation to the potential eligibility of the residence and barn at 3289 D Street.

Integrity

As discussed above, in order to be eligible for the CRHR, a resource must meet one or more of the criteria and must also possess "integrity," which includes consideration of the resource's location, design (i.e., site structure), materials, workmanship, setting, feeling, and association. The residence and barn at 3289 D Street do not meet any of the criteria discussed above and any further discussion of integrity is not warranted. WSA recommends that neither the residence nor barn at 3289 D Street is eligible for listing in the CRHR.

Assessment of 3291 D Street - Residence and Garage Renovation

Criterion 1. Neither the residence nor rear unit at 3291 D Street is associated with events that have made a significant contribution to the broad patterns of California's history. The main residence is loosely associated with the early 20th century development of Alameda County, but does not have an important association with this broad pattern. As a result, WSA recommends that neither the residence nor the rear unit are eligible for listing in the CRHR under Criterion 1, as they are not associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.

Criterion 2. Based on the results of archival research discussed above, WSA found that neither the residence nor the rear unit at 3291 D Street are associated with the lives of people considered important to California's past. As a result, WSA recommends that neither the residence nor rear unit is eligible for listing in the CRHR under Criterion 2.

Criterion 3. Neither the residence nor the rear unit embody the distinctive characteristics of a type, period, region, or method of construction, nor do they represent the work of an important creative individual or possess high artistic values. The house has been expediently remodeled over time and the rear unit incorporates modern materials and lacks architectural detail. As a result, WSA recommends that neither the residence nor the rear unit are eligible for listing in the CRHR under Criterion 3.

Criterion 4. Criterion 4 is not typically applied to built resources, and is not considered in relation to the potential eligibility of the residence and rear unit at 3291 D Street.

Integrity

As discussed above, in order to be eligible for the CRHR, a resource must meet one or more of the criteria and must also possess "integrity," which includes consideration of the resource's location, design (i.e., site structure), materials, workmanship, setting, feeling, and association. The residence and rear unit at 3291 D Street do not meet any of the criteria discussed above and any further discussion of integrity is not warranted. WSA recommends that neither the residence nor rear unit at 3291 D Street is eligible for listing in the CRHR.

Assessment of 3247 D Street - Residence and Shed

Criterion 1. Neither the residence nor shed at 3247 D Street is associated with events that have made a significant contribution to the broad patterns of California's history. The main residence is loosely associated with the early 20th century development of Alameda County, but does not have an important association with this broad pattern. As a result, WSA

recommends that neither the residence nor the rear unit are eligible for listing in the CRHR under Criterion 1, as they are not associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.

Criterion 2. Based on the results of archival research discussed above, WSA found that neither the residence nor the rear unit at 3247 D Street are associated with the lives of people considered important to California's past. As a result, WSA recommends that neither the residence nor rear unit is eligible for listing in the CRHR under Criterion 2.

Criterion 3. Neither the residence nor the rear unit embody the distinctive characteristics of a type, period, region, or method of construction, nor do they represent the work of an important creative individual or possess high artistic values. The house has been expediently remodeled over time and the rear unit incorporates modern materials and lacks architectural detail. As a result, WSA recommends that neither the residence nor the rear unit is eligible for listing in the CRHR under Criterion 3.

Criterion 4. Criterion 4 is not typically applied to built resources, and is not considered in relation to the potential eligibility of the residence and rear unit at 3247 D Street.

Integrity

As discussed above, in order to be eligible for the CRHR, a resource must meet one or more of the criteria and must also possess "integrity," which includes consideration of the resource's location, design (i.e., site structure), materials, workmanship, setting, feeling, and association. The residence and rear unit at 3247 D Street do not meet any of the criteria discussed above and any further discussion of integrity is not warranted. WSA recommends that neither the residence nor rear unit at 3247 D Street is eligible for listing in the CRHR.

Assessment of 3231 D Street - Residence and Garage

Criterion 1. Neither the residence nor garage at 3231 D Street is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage. As a result, WSA recommends that neither the residence nor the garage is eligible for listing in the CRHR under Criterion 1.

Criterion 2. Based on the results of archival research discussed above, WSA found that neither the residence nor garage at 3231 D Street is associated with the lives of people considered important to California's past. As a result, WSA recommends that neither the residence nor garage is eligible for listing in the CRHR under Criterion 2.

Criterion 3. Neither the residence nor the garage embody the distinctive characteristics of a type, period, region, or method of construction, nor do they represent the work of an important creative individual or possess high artistic values. As a result, WSA recommends that neither the residence nor the garage is eligible for listing in the CRHR under Criterion 3.

Criterion 4. Criterion 4 is not typically applied to built resources, and is not considered in relation to the potential eligibility of the residence and garage at 3231 D Street.

Integrity

As discussed above, in order to be eligible for the CRHR, a resource must meet one or more of the criteria and must also possess "integrity," which includes consideration of the resource's location, design (i.e., site structure), materials, workmanship, setting, feeling, and association. The residence and garage at 3231 D Street do not meet any of the criteria discussed above and any further discussion of integrity is not warranted. WSA recommends that neither the residence nor garage at 3231 D Street is eligible for listing in the CRHR.

Since none of the historic built resources are being recommended as eligible for listing in the CRHR, the project will have no significant impact on historic built resources. WSA recommends no further action regarding historic-era built resources.

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Additional Information

California Native Americans
Cultural Resources
Strategic Plan
Commissioners
Federal Laws and Codes
State Laws and Codes
Local Ordinances and Codes
Additional Information
Return to CNAHC Home Page

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: Bassaro Property 3257 D Street

County Alameda

USGS Quadrangle

Name 7.5' Hayward 1993

Township 3S Range 2W Section(s) 11

Company/Firm/Agency:
William Self Associates, Inc.

Contact Person: Allen Estes

Street Address: 61d Avenida de Orinda

City: Orinda, CA Zip: 94563

Phone: (925) 253-9070

Fax: (925) 254-3553

Email: aestes@williamself.com

Project Description:

The proposed project will include residential development of 16 homes in Castro Valley.

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

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

September 22, 2015

Allen Estes
William Self Associates, Inc.
61D Avenida De Orinda
Orinda, CA 94563

Via E-mail: aestes@williamself.com
Number of Pages: 2

RE: Bassaro Property 3257 D Street Project, Alameda County

Dear Mr. Estes,

A record search of the sacred land file has failed to indicate the presence of Native American cultural resources in the immediate project area. The absence of specific site information in the sacred lands file does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Enclosed is a list of Native Americans individuals/organizations who may have knowledge of cultural resources in the project area. The Commission makes no recommendation or preference of a single individual, or group over another. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated, if they cannot supply information, they might recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe or group. If a response has not been received within two weeks of notification, the Commission 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 me at dpt_nahc@pacbell.net.

Sincerely,

for Debbie Pilas-Treadway
Environmental Specialist III

Native American Contact
Alameda County
September 22, 2015

Jakki Kehl
720 North 2nd Street
Patterson , CA 95363
jakkikehl@gmail.com
510-701-3975
Ohlone/Costanoan

Coastanoan Rumsen Carmel Tribe
Tony Cerda, Chairperson
240 E. 1st Street
Pomona , CA 91766
rumsen@aol.com
(909) 524-8041 Cell
(909) 629-6081
Ohlone/Costanoan

Katherine Erolinda Perez
P.O. Box 717
Linden , CA 95236
canutes@verizon.net
(209) 887-3415
Ohlone/Costanoan
Northern Valley Yokuts
Bay Miwok

Indian Canyon Mutsun Band of Costanoan
Ann Marie Sayers, Chairperson
P.O. Box 28
Hollister , CA 95024
ams@indiancanyon.org
(831) 637-4238
Ohlone/Costanoan

Linda G. Yamane
1585 Mira Mar Ave
Seaside , CA 93955
rumsien123@yahoo.com
(831) 394-5915
Ohlone/Costanaon

Muwekma Ohlone Indian Tribe of the SF Bay Area
Rosemary Cambra, Chairperson
P.O. Box 360791
Milpitas , CA 95036
muwekma@muwekma.org
(408) 205-9714
(510) 581-5194
Ohlone / Costanoan

Amah MutsunTribal Band of Mission San Juan Bautista
Irenne Zwierlein, Chairperson
789 Canada Road
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amahmutsuntribal@gmail.com
(650) 400-4806 Cell

(650) 332-1526 Fax
Ohlone/Costanoan

The Ohlone Indian Tribe
Andrew Galvan
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Fremont , CA 94539
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(510) 687-9393 Fax
Ohlone/Costanoan
Bay Miwok
Plains Miwok
Patwin

Amah MutsunTribal Band of Mission San Juan Bautista
Michelle Zimmer
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(650) 851-7747 Home

(650) 332-1526 Fax
Ohlone/Costanoan

Trina Marine Ruano Family
Ramona Garibay, Representative
30940 Watkins Street
Union City , CA 94587
soaprootmo@comcast.net
(510) 972-0645
Ohlone/Costanoan
Bay Miwok
Plains Miwok
Patwin

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 for the proposed Bassaro Property 3257 D Street project, Alameda County

September 30, 2015

Ms. Jakki Kehl
720 North 2nd Street
Patterson, CA 95363

RE: Bassaro Property - 3257 D Street, Castro Valley, CA

Dear Ms. Kehl,

William Self Associates, Inc. (WSA) has been contracted by Bassaro Properties to complete a cultural resource assessment for a new residential development of 16 homes, located in Township 3 South, Range 2 West, Section 11 of the 1993 Hayward 7.5' USGS Quadrangle at the site of 3257 D Street in Castro Valley, California.

We would appreciate receiving any comments you may have regarding cultural resources or sacred sites issues within the immediate project area. If you could provide your comments in writing to the address at the bottom of this letter, or call me, we will make sure the comments are provided to our client as part of this project. We would appreciate a response, at your earliest convenience, should you have information relative to this request. Should you have any questions, I can be reached at (925) 253-9070.

Sincerely,

James M Allan

James Allan, Ph.D., RPA
Principal

Attachment: Project Location Map

P.O. Box 2192
61d Avenida de Orinda
Orinda CA 94563

William Self Associates, Inc.

Phone: 925-253-9070
Fax: 925-254-3553
Email:jallan@williamself.com

Photo 1: View south. Survey area trampled by horses, to the east of 3289 D St..

Photo 2: View northwest. The concrete pad and berm at the rear of 3291 D St.

Photo 3: View north. Looking down slope toward D St., showing sparse vegetation.

Photo 4: View northwest, showing plywood shed and parallel bars in southeast corner of parcel.

Photo 5: View northeast of facade of 3289 D Street.

Photo 6: View southeast of facade of 3289 D Street.

Photo 7: View west of rear of 3289 D Street. Rock retaining walls evident.

Photo 8: View northeast of small barn behind 3289 D Street.

Photo 9: View south of facade of 3291 D Street.

Photo 10: View northeast of west elevation of 3291 D Street.

Photo 11. View west of east elevation of 3291 D Street.

Photo 12. View east of facade of renovated garage (now a residence) at 3291 D Street.

Photo 13. View northwest of renovated garage at 3291 D Street.

Photo 14. View southeast of renovated garage at 3291 D Street. Enclosed stairway evident.

Photo 15. View south of facade of 3247 D Street.

Photo 16. View northeast of 3247 D Street. Undermined foundation on west side evident.

Photo 17. View north of rear of residence at 3247 D Street.

Photo 18. View southeast of shed behind 3247 D Street.

Photo 19. View southeast of facade of 3231 D Street.

Photo 20. View southeast with residence at 3231 D Street at left of photo and garage at right.

Photo 21. View north of back of garage and residence at 3231 D Street.

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

PRIMARY RECORD

Primary # _____
HRI # _____
Trinomial _____
NRHP Status Code _____

Other Listings
Review code _____ Reviewer _____ Date _____

*Resource Name or #: (Assigned by recorder): 3231 D Street

P1. Other Identifier: _____

***P2.** Location: ☐ Not for Publication ☒ Unrestricted
and (P2b and P2c or P2d. Attach a Location Map as necessary.)

*a. County: Alameda

***b. USGS 7.5' Quad** Hayward **Date** 1993 **T** 3S ; **R** 2 W ; **Sec.** 11 **B.M.**

c. Address 3231 D Street City Hayward Zip 94541

d. UTM: (Give more than one for large and/or linear resources) Zone __, __ mE/ __ mN

e. Other Locational Data (e.g., parcel #, legal description, directions to resource, elevation, etc., as appropriate): APN 417-250-1

***P3a.** Description: (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries):
The residence at 3231 D Street appears to have been built in the mid 20th century and has some of the characteristics of Ranch style architecture that was popular at the time, but in general lacks the design elements that really characterized the style. The single-story residence is built on a slope and has a partial basement. The main body of the residence is finished in stucco and painted light tan. The exterior of the basement is finished with a combination of plywood and horizontal wood plank siding. (see continuation sheet)

***P3b.** Resource Attributes: (List attributes and codes): HP2 (Single Family Residence).

***P4.** Resources Present: ☒ Building ☐ Structure ☐ Object Site ☐ District ☐ Element of District ☐ Other (Isolates, etc).

P5. Photo or Drawing (Photo required for buildings, structures, and objects.)

***P5b**. Description of Photo (view, date, accession #) View southeast of facade of 3231 D Street.

***P6.** Date Constructed/Age and Sources: ☒ Historic ☐ Prehistoric ☐ Both

***P7.** Owner and Address:

***P8.** Recorded by (Name, affiliation, and address): Aimee Arrigoni of William Self Associates, Inc., 61d Avenida de Orinda, Orinda, CA

***P9.** Date Recorded: October 14, 2015

***P10.** Survey Type: Pedestrian

***P11.** Report Citation (Cite survey report and other sources, or enter "none."):

***Attachments:** ☐NONE ☒Location Map ☐Sketch Map ☒Continuation Sheet ☒Building, Structure, and Object Record ☐ Archaeological Record ☐District Record ☐Linear Resource Record ☐Milling Station Record ☐Rock Art Record ☐Artifact Record ☐Photograph Record ☐Other (List):

B1. Historic Name:_____
B2. Common Name: 3231D Street
B3. Original Use: Single family residence B4. Present Use: Single family residence
***B5. Architectural Style:** Ranch style (modified).
***B6. Construction History:** (Construction date, alterations, and date of alterations)
The residence at 3231 D Street appears to have been built in the mid 20th century and has some of the characteristics of Ranch style architecture that was popular at the time, but in general lacks the design elements that really characterized the style. The single-story residence is built on a slope and has a partial basement. The main body of the residence is finished in stucco and painted light tan.

***B7: Moved?** ☒ **No** ☐ **Yes** ☐ **Unknown Date:**_____ **Original Location:** _____
***B8. Related Features:** Garage
B9a. Architect: Unknown b. Builder: Unknown
***B10. Significance: Theme** n/a **Area** n/a
Period of Significance **n/a** **Property Type** n/a **Applicable Criteria** n/a
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographical scope. Also address integrity.)

The property at 3231 D Street does not appear to meet the criteria for listing in the National Register of Historic Places (NRHP) or the California Register of Historical Resources (CRHR) because it does not appear to have historical significance. This property has been evaluated in accordance with Section 15064.5(a)(2)-(3) of the CEQA Guidelines, using the criteria outlined in Section 5024.1 of the California Public Resources Code, and does not appear to be a historical resource for the purposes of CEQA.

(See Continuation Sheet)

B11. Additional Resource Attributes: (List attributes and codes)

***B12. References:**

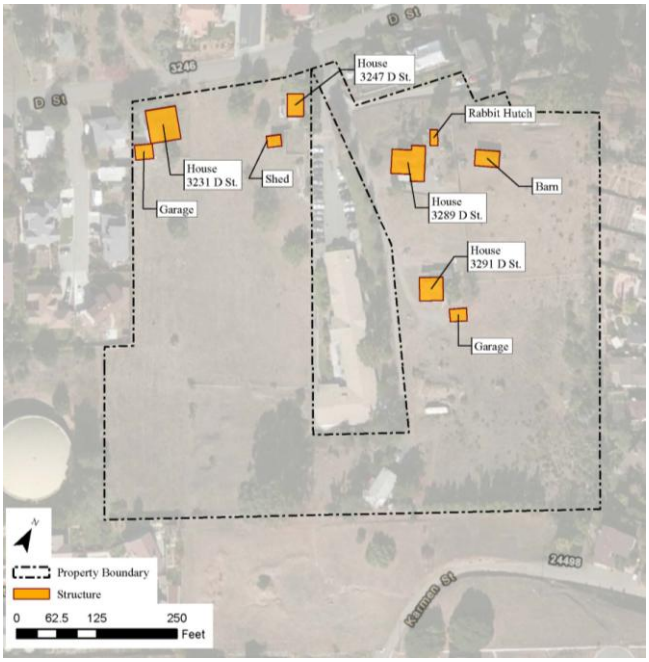
B13. Remarks:

***B14. Evaluator:** Aimee Arrigoni

***Date of Evaluation:** October 2015

(This space reserved for official comments.)

(Sketch Map with north arrow required.)



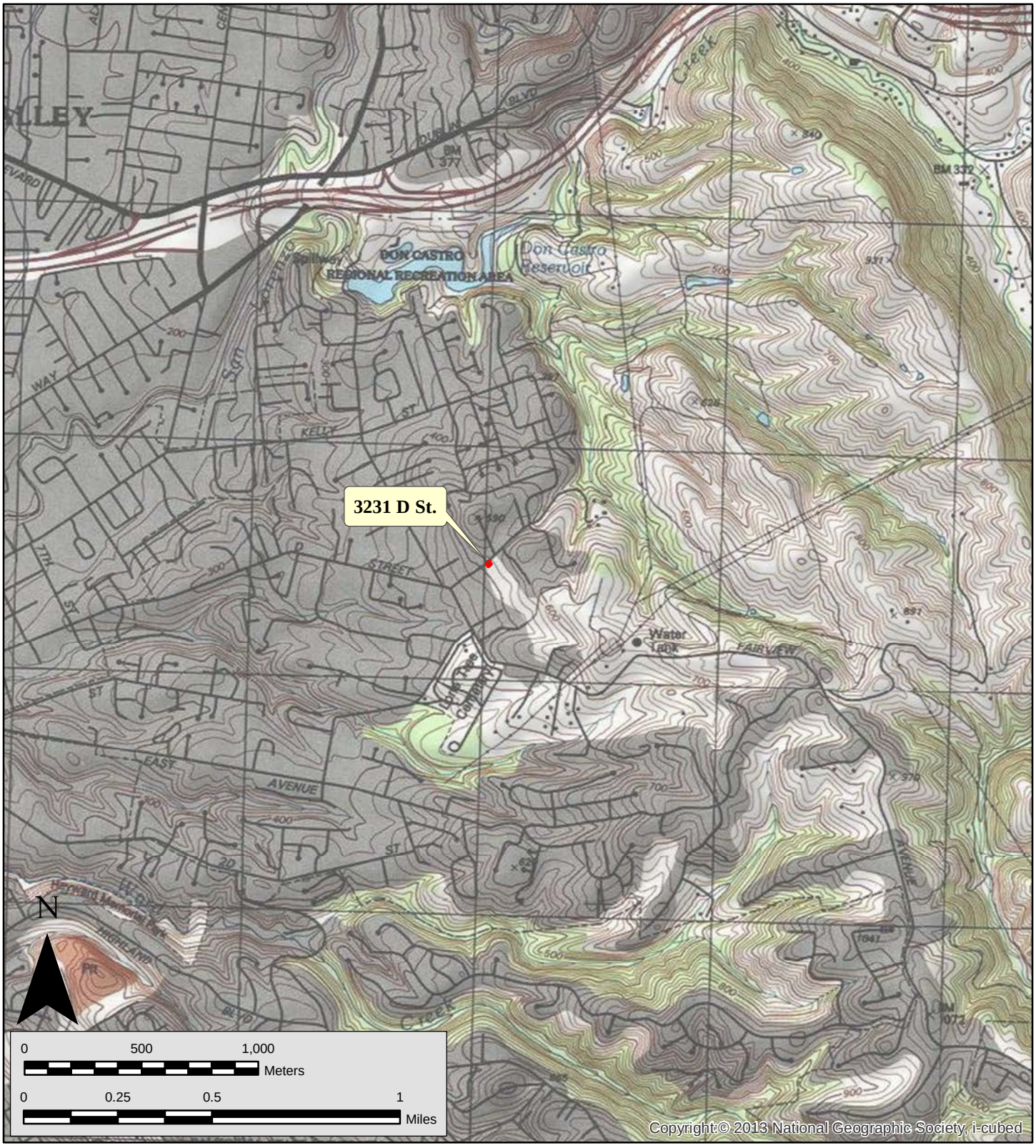
State of California - The Resources Agency **Primary #** _____

DEPARTMENT OF PARKS AND RECREATION **HRI #** _____

LOCATION MAP **Trinomial:**

Resource Name or # (Assigned by Recorder) 3231 D St.

*Map Name: Hayward *Scale: 1:24000 *Date of MAP: 1993



DPR 523J (1/95) ***Required Information**

***P3a.** Description (continued):
The exterior of the basement is finished with a combination of plywood and horizontal wood plank siding. All windows are modern vinyl (some are trimmed in wood painted brown, while others have no trim). The hipped roof is covered in composite shingles and a brick chimney is evident in the central portion of the home. The facade (north elevation) has a large three-part window near the entry door and a shed style overhang supported by wood posts extends across the facade (posts painted to match window trim). The entry is accessed via a concrete path and a wrought iron gate mounted on a masonry brick wall defines the front edge of the yard. The side entry (west elevation) is accessed via eight wood steps and the enclosed side entry is covered with a shed style roof that extends from the primary roof.

A detached wood garage with a hipped roof is located at the end of the driveway located along that the west edge of the residence (Photo 1). The garage is painted white and is finished with horizontal plank siding. It has a large wood garage door and several small additions have been made on the east side.

***B10.**Significance (continued):
Evaluation:
Criterion 1. Neither the residence nor garage at 3231 D Street is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage. As a result, WSA recommends that neither the residence nor the garage are eligible for listing in the CRHR under Criterion 1.

Criterion 2. Neither the residence nor garage at 3231 D Street appear to be associated with the lives of people considered important to California's past. As a result, WSA recommends that neither the residence nor garage are eligible for listing in the CRHR under Criterion 2.

Criterion 3. Neither the residence nor the garage embody the distinctive characteristics of a type, period, region, or method of construction, nor do they represent the work of an important creative individual or possess high artistic values. As a result, WSA recommends that neither the residence nor the garage are eligible for listing in the CRHR under Criterion 3.

Integrity
As discussed above, in order to be eligible for the CRHR, a resource must meet one or more of the criteria and must also possess "integrity," which includes consideration of the resource's location, design (i.e., site structure), materials, workmanship, setting, feeling, and association. The residence and garage at 3231 D Street do not meet any of the criteria discussed above and any further discussion of integrity is not warranted. WSA recommends that neither the residence nor garage at 3231 D Street is eligible for listing in the CRHR.

Photo 1. View north of back of garage and residence at 3231 D Street.

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

PRIMARY RECORD

Primary # _____
HRI # _____
Trinomial _____
NRHP Status Code _____

Other Listings
Review code _____ Reviewer_____ Date_____

*Resource Name or #: (Assigned by recorder): 3247 D Street

P1. Other Identifier: _____

***P2.** Location: ☐ Not for Publication ☒ Unrestricted
and (P2b and P2c or P2d. Attach a Location Map as necessary.)

*a. County: Alameda

***b. USGS 7.5' Quad** Hayward **Date** 1993 **T** 3S ; **R** 2 W ; **Sec.** 11 **B.M.**

c. Address 3247 D Street City Hayward Zip 94541

d. UTM: (Give more than one for large and/or linear resources) Zone __, __ mE/ __ mN

e. Other Locational Data (e.g., parcel #, legal description, directions to resource, elevation, etc., as appropriate): APN 417-240-1

***P3a.** Description: (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries):
The single-story house at 3247 D Street was built in the California Bungalow style, a builder's simplification of the Craftsman bungalow that was popular between ca. 1905 and 1925. It embraced basic Craftsman forms like the covered porch and gently pitched broad gables, but was built with a simpler level of detail. The residence retains many original features, such as its rectangular plan, the gabled roof above the porch that mimics the primary roof, the square columns at the corners of the porch, the small porch railing, and the three-part windows that flank the front entry door. (see continuation sheet)

***P3b.** Resource Attributes: (List attributes and codes): HP2 (Single Family Residence).

***P4.** Resources Present: ☒ Building ☐ Structure ☐ Object Site ☐ District ☐Element of District ☐ Other (Isolates, etc).

P5. Photo or Drawing (Photo required for buildings, structures, and objects.)

***P5b**. Description of Photo (view, date, accession #) View south of facade of 3247 D Street.

***P6.** Date Constructed/Age and Sources: ☒ Historic ☐ Prehistoric ☐ Both

***P7.** Owner and Address:

***P8.** Recorded by (Name, affiliation, and address): Aimee Arrigoni of William Self Associates, Inc., 61d Avenida de Orinda, Orinda, CA

***P9.** Date Recorded: October 14, 2015

***P10.** Survey Type: Pedestrian

***P11.** Report Citation (Cite survey report and other sources, or enter "none."):

***Attachments:** ☐NONE ☒Location Map ☐Sketch Map ☒Continuation Sheet ☒Building, Structure, and Object Record ☐ Archaeological Record ☐District Record ☐Linear Resource Record ☐Milling Station Record ☐Rock Art Record ☐Artifact Record ☐Photograph Record ☐Other (List):

BUILDING, STRUCTURE, AND OBJECT RECORD

***NRHP Status Code:** 6z
***Resource Name or #** 3247 D Street

B1. Historic Name:_____
B2. Common Name: 3247 D Street
B3. Original Use: Single family residence B4. Present Use: Single family residence
***B5. Architectural Style:** California Bungalow.
***B6. Construction History:** (Construction date, alterations, and date of alterations)
The single-story house was built in the California Bungalow style, a builder's simplification of the Craftsman bungalow that was popular between ca. 1905 and 1925. It embraced basic Craftsman forms like the covered porch and gently pitched broad gables, but was built with a simpler level of detail. The residence retains many original features, such as its rectangular plan, the gabled roof above the porch that mimics the primary roof, the square columns at the corners of the porch, the small porch railing, and the three-part windows that flank the front entry door.

***B7: Moved?** ☒ **No** ☐ **Yes** ☐ **Unknown Date:**_____ **Original Location:** _____
***B8. Related Features:** Shed
B9a. Architect: Unknown b. Builder: Unknown
***B10. Significance: Theme** n/a **Area** n/a
Period of Significance **n/a** **Property Type** n/a **Applicable Criteria** n/a
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographical scope. Also address integrity.)

The property at 3247 D Street does not appear to meet the criteria for listing in the National Register of Historic Places (NRHP) or the California Register of Historical Resources (CRHR) because it does not appear to have historical significance. This property has been evaluated in accordance with Section 15064.5(a)(2)-(3) of the CEQA Guidelines, using the criteria outlined in Section 5024.1 of the California Public Resources Code, and does not appear to be a historical resource for the purposes of CEQA.

(See Continuation Sheet)

B11. Additional Resource Attributes: (List attributes and codes)

***B12. References:**

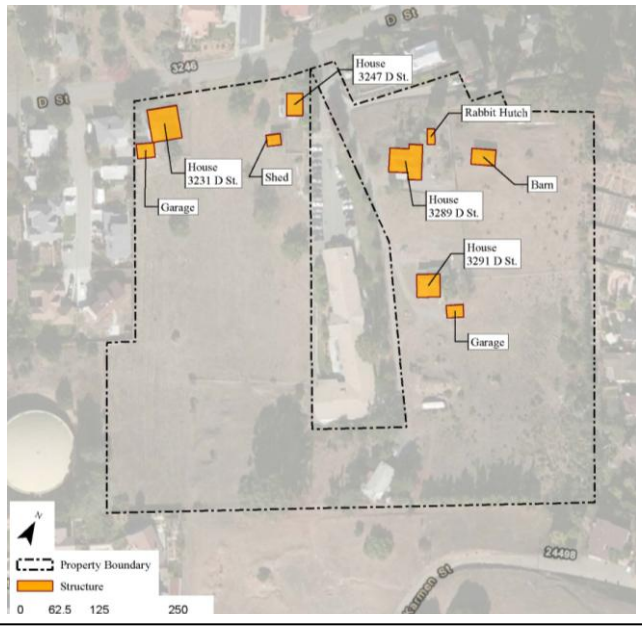
B13. Remarks:

***B14. Evaluator:** Aimee Arrigoni

***Date of Evaluation:** October 2015

(This space reserved for official comments.)

(Sketch Map with north arrow required.)



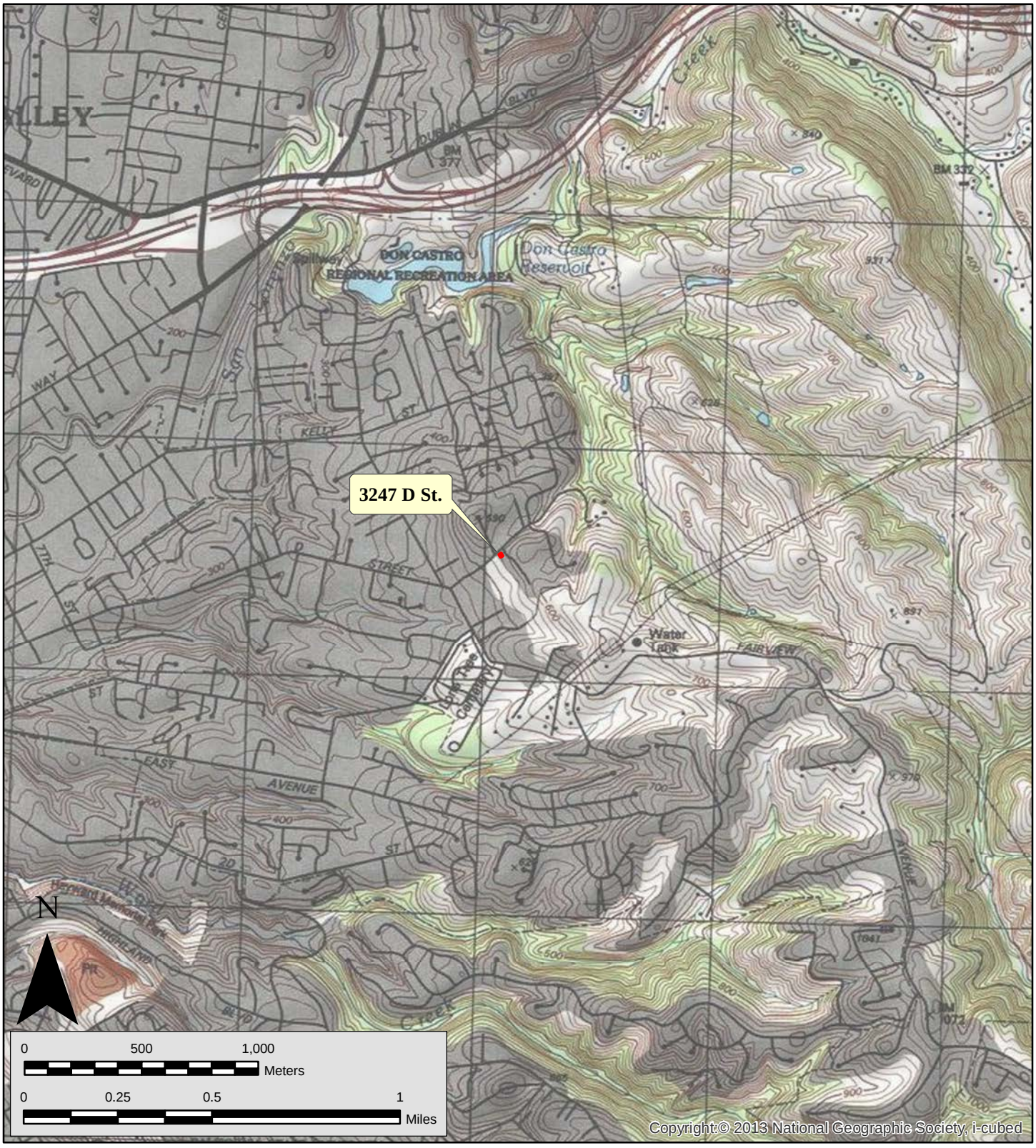
State of California - The Resources Agency **Primary #** _____

DEPARTMENT OF PARKS AND RECREATION **HRI #** _____

LOCATION MAP **Trinomial:**

Resource Name or # (Assigned by Recorder) 3247 D St.

*Map Name: Hayward *Scale: 1:24000 *Date of MAP: 1993



DPR 523J (1/95) ***Required Information**

***P3a.** Description (continued):

Today the front entry is covered with a security door, the house is painted light turquoise with a darker turquoise trim, and the roof is covered in composite shingles. The wood steps that access the raised porch have replaced the original staircase. Below the wood staircase, however, are several low stone steps that lead to the road. They are consistent with stones used in the front of the home to define planting areas. The exterior is covered in lapped horizontal wood siding and the rafters are enclosed on the gabled ends and exposed on the long sides of the residence. A small addition with a shed style roof has been added to the south side (rear) of the residence. A brick chimney pierces the roofline near the rear of the home. A basement underlies the residence and the foundation has been compromised in the southwest corner where the slope has given way and the concrete footing has been undermined. There is a small brick patio at the rear entry and wood retaining walls in the sloped backyard.

A wood-framed shed covered in corrugated metal has been built behind the residence (Photo 1). It has metal windows and the portion of the shed not supported by the sloping ground beneath it has been braced with modern pressure treated lumber.

***B10.**Significance (continued):

Evaluation:

Criterion 1. Neither the residence nor shed at 3247 D Street is associated with events that have made a significant contribution to the broad patterns of California's history. The main residence is loosely associated with the early 20th century development of Alameda County, but does not have an important association with this broad pattern. As a result, WSA recommends that neither the residence nor the rear unit are eligible for listing in the CRHR under Criterion 1, as they are not associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.

Criterion 2. Neither the residence nor the rear unit at 3247 D Street appear to be associated with the lives of people considered important to California's past. As a result, WSA recommends that neither the residence nor rear unit are eligible for listing in the CRHR under Criterion 2.

Criterion 3. Neither the residence nor the rear unit embody the distinctive characteristics of a type, period, region, or method of construction, nor do they represent the work of an important creative individual or possess high artistic values. The house has been expediently remodeled over time and the rear unit incorporates modern materials and lacks architectural detail. As a result, WSA recommends that neither the residence nor the rear unit are eligible for listing in the CRHR under Criterion 3.

Integrity

As discussed above, in order to be eligible for the CRHR, a resource must meet one or more of the criteria and must also possess "integrity," which includes consideration of the resource's location, design (i.e., site structure), materials, workmanship, setting, feeling, and association. The residence and rear unit at 3247 D Street do not meet any of the criteria discussed above and any further discussion of integrity is not warranted. WSA recommends that neither the residence nor rear unit at 3247 D Street is eligible for listing in the CRHR.

Photo 1. View southeast of shed behind 3247 D Street.

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

Primary # _____
HRI # _____
Trinomial _____
NRHP Status Code _____

Other Listings
Review code _____ Reviewer_____ Date_____

*Resource Name or #: (Assigned by recorder): 3289 D Street

P1. Other Identifier: _____

***P2.** Location: ☐ Not for Publication ☒ Unrestricted
and (P2b and P2c or P2d. Attach a Location Map as necessary.)

*a. County: Alameda

***b. USGS 7.5' Quad** Hayward **Date** 1993 **T** 3S ; **R** 2 W ; **Sec.** 11 **B.M.**

c. Address 3289 D Street City Hayward Zip 94541

d. UTM: (Give more than one for large and/or linear resources) Zone __, __ mE/ __ mN

e. Other Locational Data (e.g., parcel #, legal description, directions to resource, elevation, etc., as appropriate): APN 417-240-12-4

***P3a.** Description: (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries):
The two-story residence at 3289 D Street was likely originally built in the early 20th century, although it has been so heavily modified since it's date of construction that the original building is virtually unrecognizable. The west elevation, or facade of the home, incorporates gabled, hipped, and shed style rooflines, all remnants of various additions. Exterior finishes include faux stone veneer, brick, and two styles and colors of metal siding (white lapped and green board and batten). The exterior chimney and brick veneer on the north side of the home may be remnants of the original structure.

***P3b.** Resource Attributes: (List attributes and codes): HP2 (Single Family Residence).

***P4.** Resources Present: ☒ Building ☐ Structure ☐ Object Site ☐ District ☐Element of District ☐ Other (Isolates, etc).

P5. Photo or Drawing (Photo required for buildings, structures, and objects.)

***P5b**. Description of Photo (view, date, accession #) View of front of structure, facing northeast.

***P6.** Date Constructed/Age and Sources: ☒ Historic ☐ Prehistoric ☐ Both

***P7.** Owner and Address:

***P8.** Recorded by (Name, affiliation, and address): Aimee Arrigoni of William Self Associates, Inc., 61d Avenida de Orinda, Orinda, CA

***P9.** Date Recorded: October 14, 2015

***P10.** Survey Type: Pedestrian

***P11.** Report Citation (Cite survey report and other sources, or enter "none."):

***Attachments:** ☐NONE ☒Location Map ☐Sketch Map ☒Continuation Sheet ☒Building, Structure, and Object Record ☐ Archaeological Record ☐District Record ☐Linear Resource Record ☐Milling Station Record ☐Rock Art Record ☐Artifact Record ☐Photograph Record ☐Other (List):

BUILDING, STRUCTURE, AND OBJECT RECORD

***NRHP Status Code:** 6z
***Resource Name or #** 3289 D Street

B1. Historic Name:_____
B2. Common Name: 3289 D Street
B3. Original Use: Single family residence B4. Present Use: Single family residence
***B5. Architectural Style:** Undetermined.
***B6. Construction History:** (Construction date, alterations, and date of alterations)
Built in early 20th century. The two-story structure has been so heavily modified since it's date of construction so that the original building is virtually unrecognizable.

***B7: Moved?** ☒ **No** ☐ **Yes** ☐ **Unknown Date:**_____ **Original Location:** _____
***B8. Related Features:** Barn
B9a. Architect: Unknown b. Builder: Unknown
***B10. Significance: Theme** n/a **Area** n/a
Period of Significance **n/a** **Property Type** n/a **Applicable Criteria** n/a
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographical scope. Also address integrity.)

The property at 3289 D Street does not appear to meet the criteria for listing in the National Register of Historic Places (NRHP) or the California Register of Historical Resources (CRHR) because it does not appear to have historical significance. This property has been evaluated in accordance with Section 15064.5(a)(2)-(3) of the CEQA Guidelines, using the criteria outlined in Section 5024.1 of the California Public Resources Code, and does not appear to be a historical resource for the purposes of CEQA.

(See Continuation Sheet)

B11. Additional Resource Attributes: (List attributes and codes)

***B12. References:**

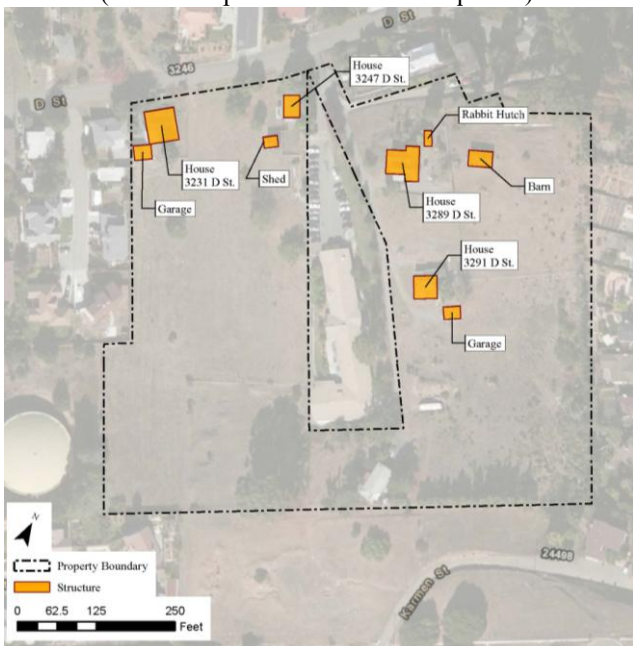
B13. Remarks:

***B14. Evaluator:** Aimee Arrigoni

***Date of Evaluation:** October 2015

(This space reserved for official comments.)

(Sketch Map with north arrow required.)



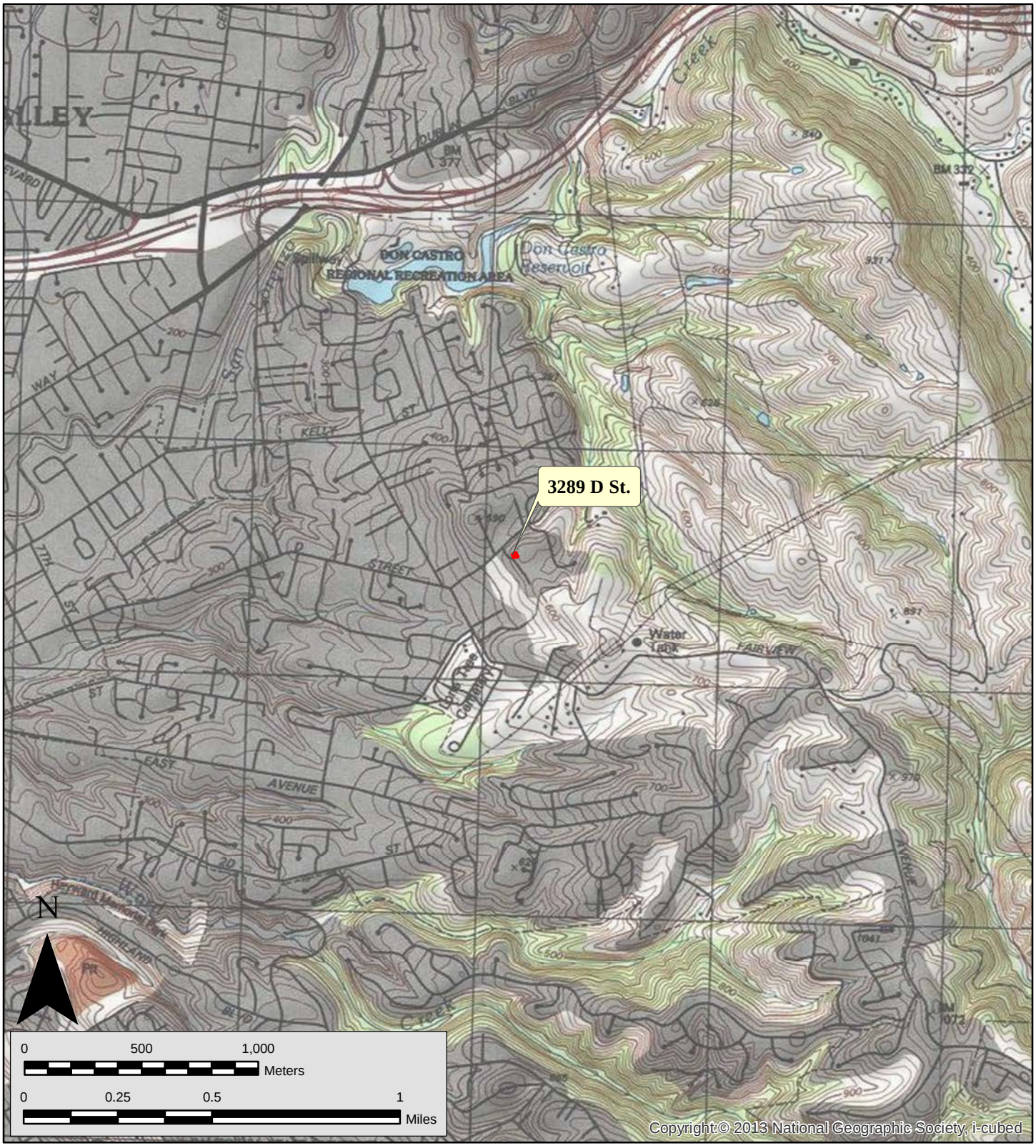
State of California - The Resources Agency **Primary #** _____

DEPARTMENT OF PARKS AND RECREATION **HRI #** _____

LOCATION MAP **Trinomial:**

Resource Name or # (Assigned by Recorder) 3289 D St.

*Map Name: Hayward *Scale: 1:24000 *Date of MAP: 1993



*Required Information

*P3a. Description (continued):
The roof is finished in composite shingles and the window awnings that appear to be homemade have been constructed out of unpainted corrugated metal. Like the awnings, the addition on the south side of the home does not appear to have been constructed by a professional. It combines green plastic corrugated sheets (often used on carport roofs) and strips of glass as structural material to form what may have been used as a greenhouse or sunroom on the second floor. Both the handrail on the concrete side porch (north side) and the support column at the covered front porch have been expediently constructed out of metal pipe. The north side entry is also shaded by corrugated plastic sheets. Entrance doors are covered with security doors. Windows include a combination of fixed multi-pane wood windows, opaque amber glass windows, and modern aluminum sliders. A basement underlies the first floor and the floorboards of the first story are flush with the windowsill visible. A low, covered wood-frame shade structure, possibly used for chickens or rabbits, is located at the rear of the home and is no longer structurally sound. The rock retaining walls along the driveway to the south of the home as well as the rock retaining walls that terrace the yard at the rear of the home are likely remnants of early landscaping efforts.

The barn to the northeast of the residence at 3289 D Street is accessed via the driveway that runs along the south side of the home (Photo 1). While they are located on the same parcel, the barn is separated from the residence by a chain link fence. At the time of the survey, horse feed was being stored in the barn and four horses had access to both a portion of the barn and the open pasture within the Project area to the south. The small barn is side gabled and rectangular in plan. Rafters are exposed along the two long sides and closed along the gabled ends. The barn is wood-framed and covered with horizontal wood planks (1x4 in.), which, in turn, are covered with a composite material that mimics a brick pattern. The composite has deteriorated in many locations, leaving the wood exposed. An internal wall divides the barn. The south side of the roof is covered with various colors of composite shingles and the north side is covered with corrugated sheet metal. There is one working door on the facade (south elevation), while one opening is covered with plywood and the other is secured with a single section of chain link fence. Vertical trim under the gable and a 3-lite wood window characterize the west elevation. The doors and window on the north elevation have been patched or covered over with makeshift materials, although there is a working door made of plywood on the east side.

***B10.** Significance (continued):
Evaluation:
Criterion 1. Neither the residence nor the barn at 3289 D Street is associated with events that have made a significant contribution to the broad patterns of California's history. They are loosely associated with the early 20th century development of Alameda County, but do not have an important association with this broad pattern. As a result, WSA recommends that neither the residence nor barn are eligible for listing in the CRHR under Criterion 1, as they are not associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.

Criterion 2. Neither the residence nor the barn appear to be associated with the lives of people considered important to California's past. As a result, WSA recommends that neither the residence nor barn are eligible for listing in the CRHR under Criterion 2.

Criterion 3. Neither the residence nor barn embody the distinctive characteristics of a type, period, region, or method of construction, nor do they represent the work of an important creative individual or possess high artistic values. The house has been expediently remodeled over time and the barn is simply constructed and lacks architectural detail. They do not reflect a specific aesthetic and the builder used available building materials. As a result, WSA recommends that neither the residence nor barn are eligible for listing in the CRHR under Criterion 3.

Integrity
As discussed above, in order to be eligible for the CRHR, a resource must meet one or more of the criteria and must also possess "integrity," which includes consideration of the resource's location, design (i.e., site structure), materials, workmanship, setting, feeling, and association. The residence and barn at 3289 D Street do not meet any of the criteria discussed above and any further discussion of integrity is not warranted. WSA recommends that neither the residence nor barn at 3289 D Street is eligible for listing in the CRHR.

Photo 1. View northeast of small barn behind 3289 D Street.

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

PRIMARY RECORD

Primary # _____
HRI # _____
Trinomial _____
NRHP Status Code _____

Other Listings
Review code _____ Reviewer_____ Date_____

*Resource Name or #: (Assigned by recorder): 3291 D Street

P1. Other Identifier: _____

***P2.** Location: ☐ Not for Publication ☒ Unrestricted
and (P2b and P2c or P2d. Attach a Location Map as necessary.)

*a. County: Alameda

***b. USGS 7.5' Quad** Hayward **Date** 1993 **T** 3S ; **R** 2 W ; **Sec.** 11 **B.M.**

c. Address 3291 D Street City Hayward Zip 94541

d. UTM: (Give more than one for large and/or linear resources) Zone __, __ mE/ __ mN

e. Other Locational Data (e.g., parcel #, legal description, directions to resource, elevation, etc., as appropriate): APN 417-240-5

***P3a.** Description: (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries):
The original portion of 3291 D Street was likely built in the early 20th century and appears to have been a single-story residence with a rectangular plan and a dormer on at least one side of the hipped roof (today only the dormer on the west side survives). Since that time, it has been heavily modified and no longer reflects its original form or design elements. The residence was originally finished with horizontal grooved wood plank siding. Portions of the siding are visible on three sides of the home. The main entry is accessed via three concrete steps. The most prominent addition to the building since the original construction occupies much of the north elevation (facade) and is covered with a shed style roof. (See continuation sheet)

***P3b.** Resource Attributes: (List attributes and codes): HP2 (Single Family Residence).

***P4.** Resources Present: ☒ Building ☐ Structure ☐ Object Site ☐ District ☐Element of District ☐ Other (Isolates, etc).

P5. Photo or Drawing (Photo required for buildings, structures, and objects.)

***P5b**. Description of Photo (view, date, accession #) View south of facade of 3291 D Street.

***P6.** Date Constructed/Age and Sources: ☒ Historic ☐ Prehistoric ☐ Both

***P7.** Owner and Address:

***P8.** Recorded by (Name, affiliation, and address): Aimee Arrigoni of William Self Associates, Inc., 61d Avenida de Orinda, Orinda, CA

***P9.** Date Recorded: October 14, 2015

***P10.** Survey Type: Pedestrian

***P11.** Report Citation (Cite survey report and other sources, or enter "none."):

***Attachments:** ☐NONE ☒Location Map ☐Sketch Map ☒Continuation Sheet ☒Building, Structure, and Object Record ☐ Archaeological Record ☐District Record ☐Linear Resource Record ☐Milling Station Record ☐Rock Art Record ☐Artifact Record ☐Photograph Record ☐Other (List):

BUILDING, STRUCTURE, AND OBJECT RECORD

***NRHP Status Code:** 6z
***Resource Name or #** 3291 D Street

B1. Historic Name:_____
B2. Common Name: 3291 D Street
B3. Original Use: Single family residence B4. Present Use: Single family residence
***B5. Architectural Style:** Undetermined.
***B6. Construction History:** (Construction date, alterations, and date of alterations)
Built in early 20th century. The single-story structure appears to originally have had a rectangular plan and a dormer on at least one side of the hipped roof (today only the dormer on the west side survives). Since that time, it has been heavily modified and no longer reflects its original form or design elements.

***B7: Moved?** ☒ **No** ☐ **Yes** ☐ **Unknown Date:**_____ **Original Location:** _____
***B8. Related Features:** Garage
B9a. Architect: Unknown b. Builder: Unknown
***B10. Significance: Theme** n/a **Area** n/a
Period of Significance **n/a** **Property Type** n/a **Applicable Criteria** n/a
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographical scope. Also address integrity.)

The property at 3291 D Street does not appear to meet the criteria for listing in the National Register of Historic Places (NRHP) or the California Register of Historical Resources (CRHR) because it does not appear to have historical significance. This property has been evaluated in accordance with Section 15064.5(a)(2)-(3) of the CEQA Guidelines, using the criteria outlined in Section 5024.1 of the California Public Resources Code, and does not appear to be a historical resource for the purposes of CEQA.

(See Continuation Sheet)

B11. Additional Resource Attributes: (List attributes and codes)

***B12. References:**

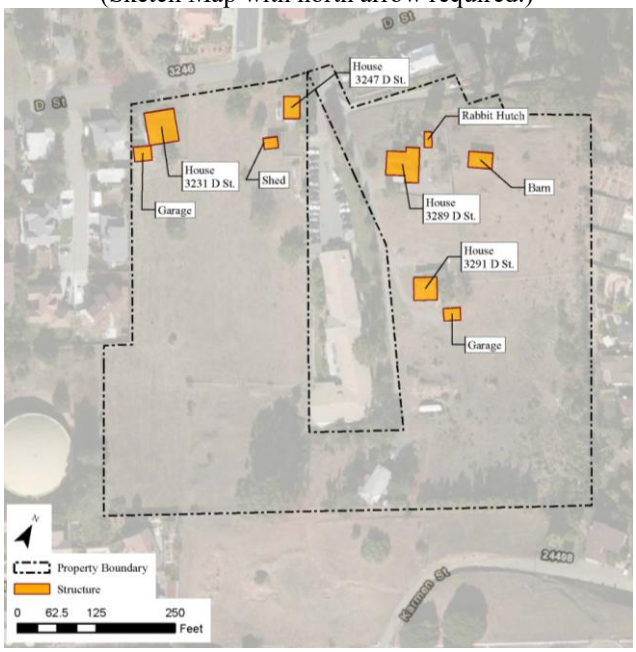
B13. Remarks:

***B14. Evaluator:** Aimee Arrigoni

***Date of Evaluation:** October 2015

(This space reserved for official comments.)

(Sketch Map with north arrow required.)



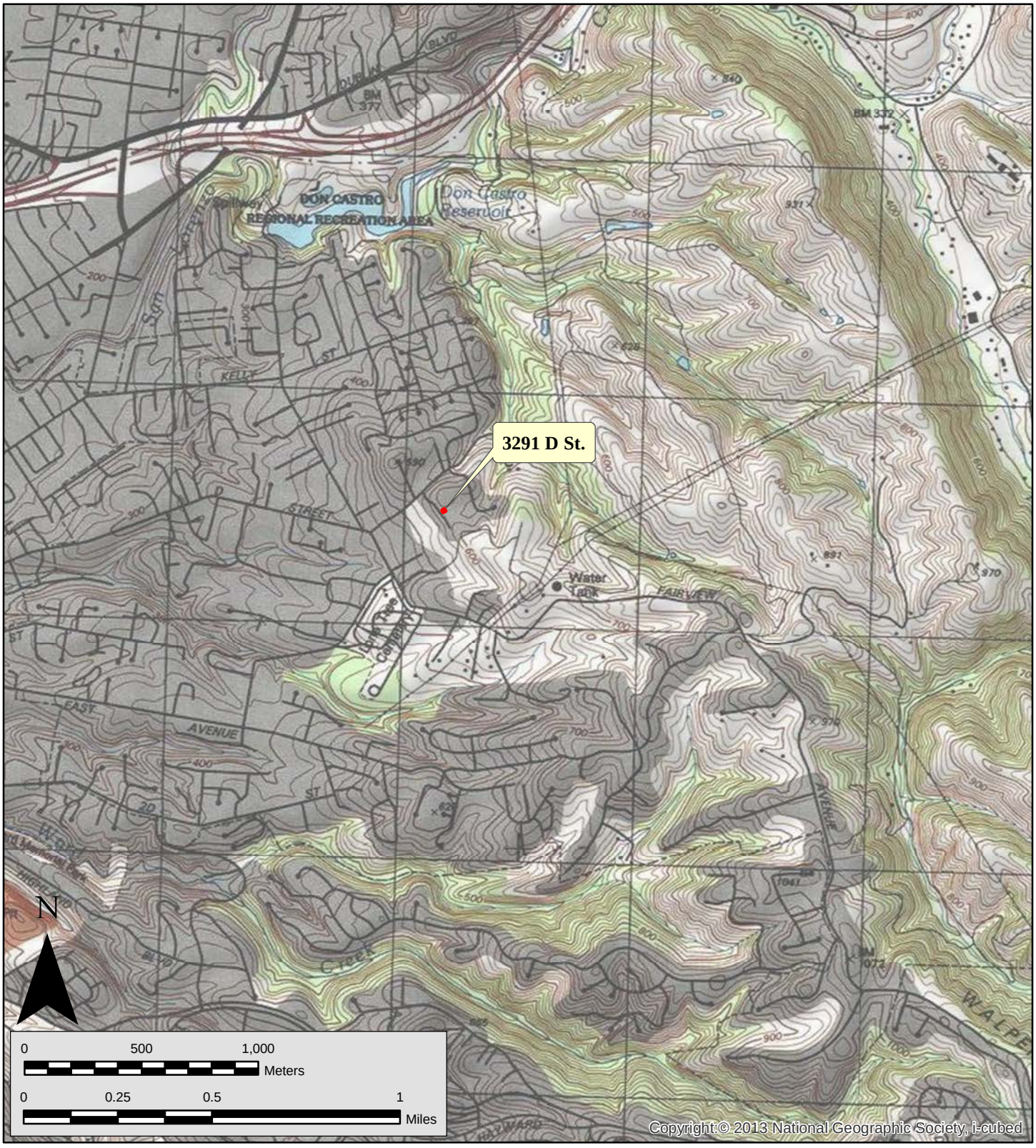
State of California - The Resources Agency **Primary #** _____

DEPARTMENT OF PARKS AND RECREATION **HRI #** _____

LOCATION MAP **Trinomial:**

Resource Name or # (Assigned by Recorder) 3291 D St.

*Map Name: Hayward *Scale: 1:24000 *Date of MAP: 1993



DPR 523J (1/95) ***Required Information**

*P3a. Description (continued):
The residence was originally finished with horizontal grooved wood plank siding. Portions of the siding are visible on three sides of the home. The main entry is accessed via three concrete steps. The most prominent addition to the building since the original construction occupies much of the north elevation (facade) and is covered with a shed style roof. The addition on the north side is covered with various types of wood plank siding, including plywood sheets that mimic vertical siding. Both the hipped and shed style portions of the roof are now covered in composite shingles. On the facade, entry doors and window trim are painted a faded red. On other portions of the residence it is painted brown. The body of the home is painted light beige. Virtually all windows (with the exception of the surviving window in the dormer) have been replaced with black metal sliders. There is a small raised wood deck along the east side at the entry door. Two small additions with shed style roofs have been constructed at the southeast corner of the home. A basement underlies the residence.

A second structure has been constructed at the rear of the main residence (Photo 1). Originally permitted as a garage, it was ultimately finished as an expediently constructed rental unit. It is two-stories and finished in stucco (painted tan) with no trim around the window and door openings. The entry door is a modern wood door with decorative leaded glass and the secondary entry door is a hollow metal door. The building is front gabled with a shed extension to the north. All windows are modern metal sliders. The interior is unfinished (plywood floors). Like the main residence at 3291 D Street, the quality of craftsmanship is extremely low (the handrail of an enclosed staircase partially protrudes through an exterior wall, etc.). The date of construction on the unpermitted residence is not known, but appears to have been relatively recent.

***B10.** Significance (continued):
Evaluation:
Criterion 1. Neither the residence nor rear unit at 3291 D Street is associated with events that have made a significant contribution to the broad patterns of California's history. The main residence is loosely associated with the early 20th century development of Alameda County, but does not have an important association with this broad pattern. As a result, WSA recommends that neither the residence nor the rear unit are eligible for listing in the CRHR under Criterion 1, as they are not associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.

Criterion 2. Neither the residence nor the rear unit at 3291 D Street appear to be associated with the lives of people considered important to California's past. As a result, WSA recommends that neither the residence nor rear unit are eligible for listing in the CRHR under Criterion 2.

Criterion 3. Neither the residence nor the rear unit embody the distinctive characteristics of a type, period, region, or method of construction, nor do they represent the work of an important creative individual or possess high artistic values. The house has been expediently remodeled over time and the rear unit incorporates modern materials and lacks architectural detail. As a result, WSA recommends that neither the residence nor the rear unit are eligible for listing in the CRHR under Criterion 3.

Integrity
As discussed above, in order to be eligible for the CRHR, a resource must meet one or more of the criteria and must also possess "integrity," which includes consideration of the resource's location, design (i.e., site structure), materials, workmanship, setting, feeling, and association. The residence and rear unit at 3291 D Street do not meet any of the criteria discussed above and any further discussion of integrity is not warranted. WSA recommends that neither the residence nor rear unit at 3291 D Street is eligible for listing in the CRHR.

Photo 1. View east of facade of renovated garage (now a residence) at 3291 D Street.

APPENDIX F

DRAFT SUMMARY OF PRELIMINARY STORMWATER INFRASTRUCTURE SIZING FOR THE D STREET PROPERTIES, BALANCE HYDROLOGICS, INC., SEPTEMBER 2015

Balance Hydrologics, Inc.®

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September 16, 2015

Mr. Greg Miller, P.E.
Carlson, Barbee & Gibson, Inc.
2633 Camino Ramon, Suite 350
San Ramon, CA 94583

RE: DRAFT - Summary of Preliminary Stormwater Infrastructure Sizing for the D Street Properties (Tracts 8296 and 8297), Alameda County, California

Dear Mr. Miller:

Balance Hydrologics has completed analyses for the preliminary sizing of a stormwater management infrastructure for Tracts 8296 and 8297, also known as the D Street properties. This letter summarizes our design methodology, hydrologic model parameters, and results.

The project proposes to develop 31 residential lots along two new cul-de-sacs in the Fairview Specific Plan area of Alameda County. An existing developed lot (not part of the project) is located between the proposed roadways and splits the project site into two parts, herein referred to as the West Side and the East Side. Under pre-project conditions, the West Side sheet flows to the west, toward existing residential developments, and eventually drains to Sulphur Creek. The East Side is situated on a ridge, and under existing conditions roughly half of the runoff sheet flows toward D Street and the remainder sheet flows toward the Machado Court neighborhood, and eventually to San Lorenzo Creek[1]. Changes to the hydrology of the project site are evaluated in terms of flows at three analysis points, which are the outfalls of the existing watersheds for the project site shown in the attached pre-project watersheds map (Appendix A).

Development of the properties requires construction of stormwater management infrastructure that meets a range of regulatory requirements including providing runoff water-quality treatment consistent with the C.3 requirements of the Municipal Regional Permit, flow-duration control to avoid hydromodification impacts, and peak flow control to avoid flood control impacts.

Under post-project conditions all of the residential lots will have individual bioretention basins to treat runoff from impervious surfaces within each lots. Most of the lot bioretention basins will be sized to treat the required water quality volume originating from the lots only (i.e. the roofs and driveways), with the exception of the south half of the East Side, which is also sized to treat roadway runoff (described below). Sizes for lot bioretention basins will vary depending on the final architectural plans, but as an example, a

[1] The portion of the East Side draining toward D Street may actually flow to Sulphur Creek; Analysis Point E1 is situated on a high point along D Street which is the divide for the Sulphur Creek and San Lorenzo Creek watersheds. Field verification is needed to confirm which direction this portion of the project drains.

10,000 ft^2 lot having a 3,000 ft^2 building footprint and a 500 ft^2 driveway will require a 166 ft^2 bioretention basin. Lot bioretention basins will drain the water quality volume via underdrains; the underdrains for individual lots will be connected in series and routed to underground detention facilities for flood and hydromodification control. Additional details of the proposed stormwater system and drainage patterns for the East and West Sides are described as follows:

- *East Side, D Street Portion (Analysis Point E1)*: Three of the East Side post-project watersheds (Pr-E-Ex, Pr-E-Rd, and Pr-Res1) will drain toward D Street (see Appendix B for post-project watersheds map). Runoff originating from the portion of east street having frontage with Lots 1, 2, 3, 13, and 14 (and overflow from lots themselves in large events) will be directed toward a bioretention facility (Bio-A) and then into an underground 80-foot long, 6-foot diameter pipe for hydromodification and flood control. Runoff originating from the lower portion of east street (in front of Lot 15 and downhill to D Street) will drain toward a combination water quality-hydromodification-flood control basin. After passing through the required water quality and flow controls, all runoff will combine with drainage from the existing developed area between the east and west sides, and be conveyed off-site by a new storm main following D Street connecting with the existing storm drain system downslope.

- *East Side, Machado Portion (Analysis Point E2)*: The other two East Side post-project watersheds (Pr-E-Res2a and Pr-E-Res2b) will drain toward Machado Court. Runoff from the end of east street will be collected and treated by a series of bioretention features, located along the frontage of east street with Lots 4 through 12. The bioretention features for this portion of the project are not designed to overflow into the street when the water quality volume is exceeded (except for emergency overflow in the event of an outlet structure failure). Instead, runoff in bioretention features beyond the required water-quality volume will enter an outlet control structure, where it will be routed to an underground 260-foot long, 6-foot diameter detention pipe. The pipe will be outfitted with an outlet control structure to meet hydromodification and flood control requirements. From there, flow will be routed via a new storm drain line to the existing storm drain system in the Machado Court neighborhood. All of east street will be graded toward D Street for positive overland drainage release.

- *West Side (Analysis Point W1)*: The proposed storm drain system for the West Side will connect to an existing storm drain line located along the west property line. Runoff from west street will drain toward a water-quality basin (Bio-E) located between Lots 8 and 9 (the basin is also sized to treat runoff from Lots 8 and 9 themselves). The remaining lots (1 to 7 and 11 to 16) will have individual bioretention basins on each lot. When the water-quality volume is exceeded, the individual lot bioretention basins will overflow into west street, where runoff will be routed toward Bio-E. This basin will have an outlet control structure that directs runoff in excess of the water quality volume to an underground 250-foot long, 6-foot diameter detention pipe for hydromodification and flood controls. From there, runoff will exit the site through the existing storm drain to the west. A small portion of the West Side will be graded, but not developed; this strip of land along the western perimeter is considered self-treating.

Bioretention basins were sized for water-quality treatment with the combination flow and volume method described in the Clean Water Program Alameda County C.3 Technical Guidance. All sizing is based on a site mean annual precipitation (MAP) of 22.0 inches (per Appendix D of the Alameda County C.3 Technical Guidance Manual). Water quality parameters are summarized below and the complete calculation worksheets are attached (Appendix C).

Bioretention Basin ID	Effective Impervious Area *(sq ft)*	Required Capture Volume *(cu ft)*	Required Surface Area *(sq ft)*	Modeled Surface Area *(sq ft)*	Modeled Ponded Depth *(in)*
Bio-A[1]	37,947	2,540	1,138	1,154	6.3
Bio-B	6,790	455	204	325	0.0
Bio-C[1]	25,870	1,732	776	933	2.2
Bio-D[1]	27,416	822	822	980	2.4
Bio-E[2]	39,446	2,640	1,183	1,202	6.3

1. Modeled as one large basin for this preliminary analysis.
2. Sized to treat west street and Lots 8 and 9 only; the associated effective impervious area is for west street and Lots 8 and 9 only. The remainder of new impervious area in the West Side will be treated by lot bioretention basins.

Hydromodification controls were sized using the Bay Area Hydrology Model (BAHM) and the hydrologic data embedded in the BAHM software, along with a stage-storage-discharge tables developed in Excel (used to simulate the outlet control structure for the respective stormwater basins and/or detention pipes). Model parameters were estimated in ArcGIS based on the land plan in the tentative map provided by Carlson, Barbee & Gibson, lead civil engineers for the project. A BAHM model summary is attached (Appendix D), which includes input parameters, the stage-storage-discharge table, and the results showing the basin meets hydromodification requirements.

All flood control modeling was completed in conformance with the guidelines of the Alameda County Flood Control and Water Conservation District (ACFC). These guidelines require the SCS unit hydrograph method be used whenever the volume of a design storm is needed to design flood control facilities (e.g. detention basins). Design storm depths for the 10- and 100-year events were estimated as 3.5 and 5.3 inches, respectively, based on the MAP for the project site and unit values developed by the County. The Alameda County Type I storm distribution was used to transform the storm depths to a 24-hour accumulated rainfall distribution. The design storms were input to HEC-HMS, and the pre- and post- project subbasins were parameterized as follows:

		Watershed Area *(sq mi)*	Curve Number[1]	Percent Impervious *(%)*	Lag Time *(min)*
Pre-project:	Ex-E1	3.5	84.5	33.7	4.0
	Ex-E2	2.2	80.2	1.3	7.5
	Ex-W	5.1	80.8	4.3	3.4
Post-project:	Pr-E-Ex	1.1	90.4	68.9	7.5
	Pr-E-Rd	0.2	93.2	73.3	5.6
	Pr-E-Res1	2.1	86.2	34.3	6.6
	Pr-E-Res2a	1.2	87.6	42.0	7.2
	Pr-E-Res2b	1.5	86.3	36.4	7.2
	Pr-W	4.9	87.1	39.5	7.6

1. Curve numbers are for hydrologic soil group D.

Pre- and post-project hydrographs are attached (Appendix E), and model results for peak flows at each analysis point are summarized as follows:

Analysis Point	Pre-Project Peak Runoff		Post-Project Peak Runoff	
	10-Year *(cfs)*	100-Year *(cfs)*	10-Year *(cfs)*	100-Year *(cfs)*
E1	2.4	3.9	2.4	3.6
E2	1.2	2.1	1.1	2.0
W1	2.8	5.0	2.7	5.0

The same stage-storage-discharge table used for the hydromodification analysis was used in HEC-HMS to model flood control capabilities of the stormwater basin for large storms. Iterations were run for the hydromodification and flood control models with different basin sizes and outlet configurations (as represented by the stage-storage-discharge table) until all stormwater treatment, hydromodification treatment, and flood control criteria were met. For the purposes of hydromodification and flood control modeling, the only surface storage areas included in the models are the bioretention areas shown in the attached post-project watershed map (Appendix B). There will be additional storage volume from the individual lot bioretention basins, and therefore, the results are conservative from a peak flow control perspective.

The preceding discussion describes a stormwater system that meets the pertinent requirements for stormwater treatment, hydromodification management, and flood control. At this preliminary stage in planning, a final land plan that includes all impervious surfaces (roofs and driveways in particular) was not available. For this reason, we could not precisely size the individual lot bioretention basins that will ultimately contribute to the total available storage volume for the project site. In the interim, this analysis assumed a building footprint of 3,000 ft^2 and a driveway of 500 ft^2 for each lot, and directed runoff to representative aggregated-area bioretention basins. By lumping all of the required storage volume and surface area for water-quality treatment into the representative bioretention basins, the analyses demonstrate that the proposed stormwater system can meet the regulatory requirements within the spatial constraints of the project site. Of course, once a more advanced land plan is available, additional levels of detail will need to be added to the preliminary models to demonstrate that the final proposed system meets all pertinent regulatory requirements.

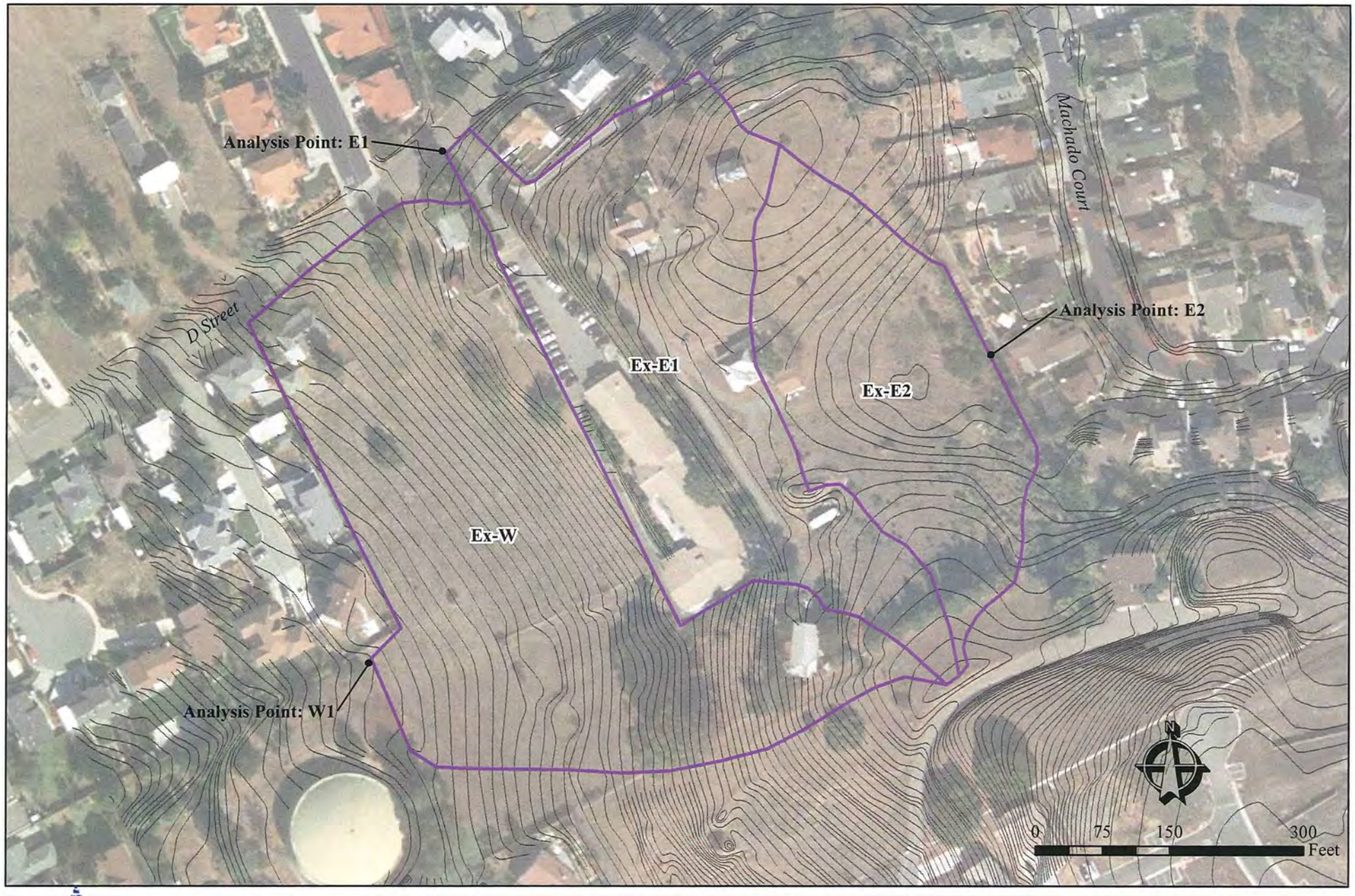
Thank you for the opportunity to participate in this project. Please do not hesitate to contact Balance Hydrologics should you have any questions on what has been presented herein.

Sincerely,

BALANCE HYDROLOGICS, Inc.

Peter Kulchawik, P.E.
Civil Engineer/Hydrologist

Enclosures: Appendix A: Pre-project watershed map
Appendix B: Post-project watershed map
Appendix C: Worksheets for calculating the combination flow and volume method
Appendix D: BAHM model summary report
Appendix E: Pre- and post-project hydrographs (HEC-HMS output)



Balance Hydrologics, Inc.

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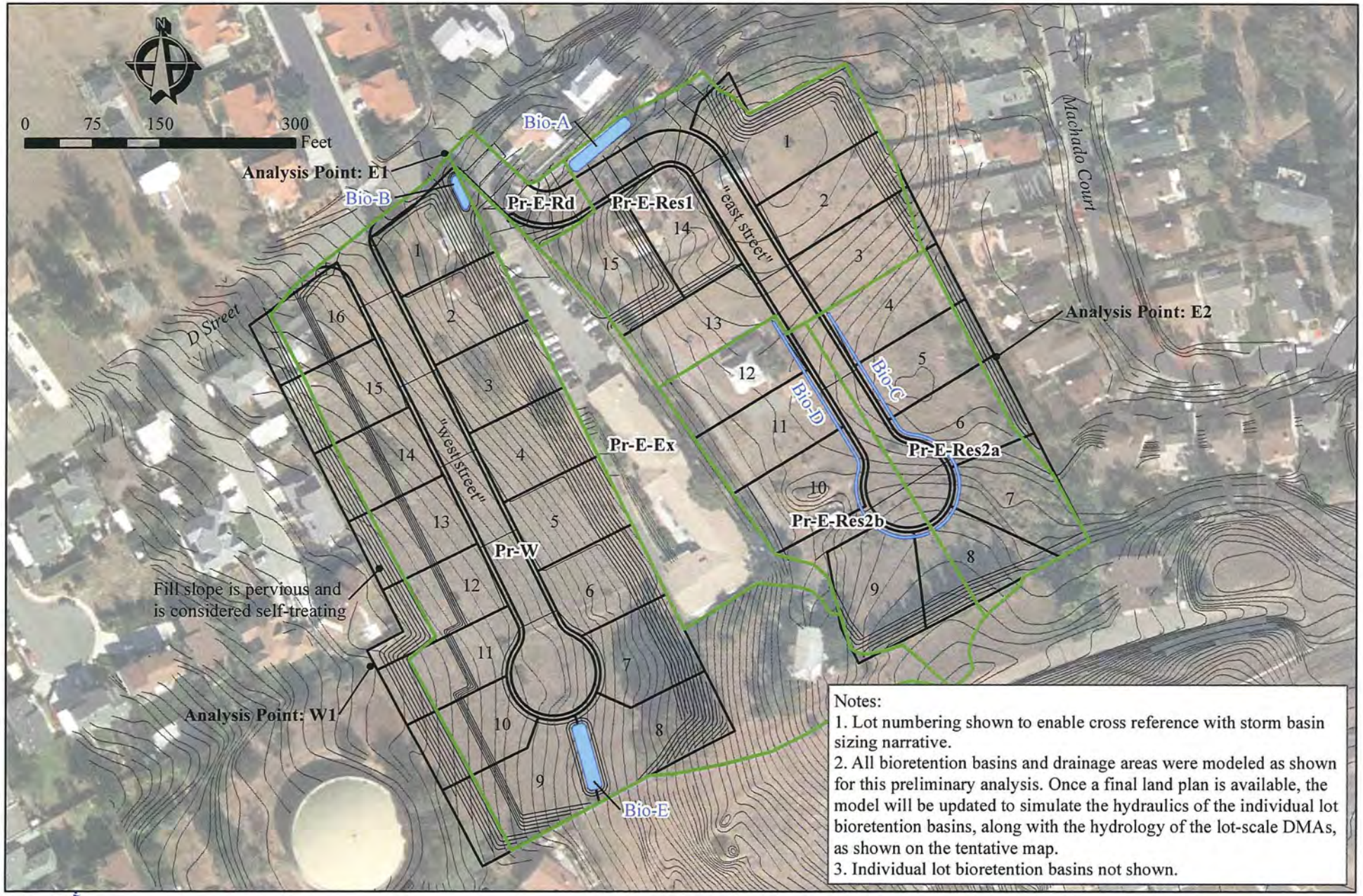
Appendix A. Pre-Project Watershed Map, D Street Project, Alameda County, California

Source: CB&G (contour data); Esri, DigitalGlobe, GeoEye, USGS, and the GIS User Community



Notes:
1. Lot numbering shown to enable cross reference with storm basin sizing narrative.
2. All bioretention basins and drainage areas were modeled as shown for this preliminary analysis. Once a final land plan is available, the model will be updated to simulate the hydraulics of the individual lot bioretention basins, along with the hydrology of the lot-scale DMAs, as shown on the tentative map.
3. Individual lot bioretention basins not shown.

Balance Hydrologics, Inc.

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Appendix B. Post-Project Watershed Map, D Street Project, Alameda County, California

Source: CB&G (contour data); Esri, DigitalGlobe, GeoEye, USGS, and the GIS User Community

Worksheet for Calculating the Combination Flow and Volume Method

Instructions: After completing Section 1, make a copy of this Excel file for each Drainage Management Area within the project. Enter information specific to the project and DMA in the cells shaded in yellow. Cells shaded in light blue contain formulas and values that will be automatically calculated.

1.0 Project Information

1-1	Project Name:	D Street	
1-2	City application ID:		
1-3	Site Address or APN:		
1-4	Tract or Parcel Map No:	Tract 8297	
1-5	Site Mean Annual Precip. (MAP)[1]	22.0	Inches

The calculations presented here are based on the **combination flow and volume hydraulic sizing method** provided in the Clean Water Program Alameda County C.3 Technical Guidance, Version 4.0. The steps presented below are explained in Chapter 5, Section 5.1 of the guidance manual, applicable portions of which are included in this file, in the tab called "Guidance from Chapter 5".

Refer to the Mean Annual Precipitation Map in Appendix D of the C.3 Technical Guidance to determine the MAP, in inches, for the site. Click here for map

1-6	Applicable Rain Gauge[2]	Oakland	

Enter "Oakland Airport" if the site MAP is 16.4 inches or greater. Enter "San Jose" if the site MAP is less than 16.4 inches.

MAP adjustment factor is automatically calculated as: 1.20

(The "Site Mean Annual Precipitation (MAP)" is divided by the MAP for the applicable rain gauge, shown in Table 5.2, below.)

2.0 Calculate Percentage of Impervious Surface for Drainage Management Area (DMA)

2-1 Name of DMA: Pr-E-Rd

For items 2-2 and 2-3, enter the areas in square feet for each type of surface within the DMA.

	Type of Surface	Area of surface type within DMA (Sq. Ft)	Adjust Pervious Surface	Effective Impervious Area
2-2	Impervious surface	6,551	1.0	6,551
2-3	Pervious service	2,388	0.1	239
	Total DMA Area (square feet) =	8,939		

2-4 ***Total Effective Impervious Area (EIA)*** 6,790 **Square feet**

3.0 Calculate Unit Basin Storage Volume in Inches

Table 5-2: Unit Basin Storage Volumes (in inches) for 80 Percent Capture Using 48-Hour Drawdowns

		Unit Basin Storage Volume (in) for Applicable Runoff Coefficients
Applicable Rain Gauge	**Mean Annual Precipitation (in)**	**Coefficient of 1.00**
Oakland Airport	18.35	0.67
San Jose	14.4	0.56

3-1 ***Unit basin storage volume from Table 5.2:*** 0.67 **Inches**

(The coefficient for this method is 1.00, due to the conversion of any landscaping to effective impervious area)

3-2 ***Adjusted unit basin storage volume:*** 0.80 **Inches**

(The unit basin storage volume is adjusted by applying the MAP adjustment factor.)

3-3 ***Required Capture Volume (in cubic feet):*** 455 **Cubic feet**

(The adjusted unit basin sizing volume [inches] is multiplied by the size of the DMA and converted to feet)

4.0 Calculate the Duration of the Rain Event

4-1	Rainfall intensity	0.2	Inches per hour
4-2	Divide Item 3-2 by Item 4-1	4.02	Hours of Rain Event Duration

5.0 Preliminary Estimate of Surface Area of Treatment Measure

5-1	4% of DMA impervious surface	272	Square feet
5-2	Area 25% smaller than item 5-1	204	Square feet
5-3	Volume of treated runoff for area in Item 5-2	341	Cubic feet (Item 5-2 * 5 inches per hour * 1/12 * Item 4-2)

6.0 Initial Adjustment of Depth of Surface Ponding Area

6-1	Subtract Item 5-3 from Item 3-3	114	Cubic feet (Amount of runoff to be stored in ponding area)
6-2	Divide Item 6-1 by Item 5-2	0.6	Feet (Depth of stored runoff in surface ponding area)
6-3	Convert Item 6-2 from ft to inches	6.7	Inches (Depth of stored runoff in surface ponding area)

6-4 If ponding depth in Item 6-3 meets your target depth, skip to Item 8-1. If not, continue to Step 7-1.

7.0 Optimize Size of Treatment Measure

7-1	Enter an area larger or smaller than Item 5-2	325	Sq.ft. (enter larger area if you need less ponding depth; smaller for more depth.)
7-2	Volume of treated runoff for area in Item 7-1	544	Cubic feet (Item 7-1 * 5 inches per hour * 1/12 * Item 4-2)
7-3	Subtract Item 7-2 from Item 3-3	(89)	Cubic feet (Amount of runoff to be stored in ponding area)
7-4	Divide Item 7-3 by Item 7-1	-0.28	Feet (Depth of stored runoff in surface ponding area)
7-5	Convert Item 7-4 from feet to inches	-3.30	Inches (Depth of stored runoff in surface ponding area)

7-6 If the ponding depth in Item 7-5 meets target, stop here. If not, repeat Steps 7-1 through 7-5 until you obtain target depth

8.0 Surface Area of Treatment Measure for DMA

8-1	Final surface area of treatment*	325	Square feet (Either Item 5-2 or final amount in Item 7-1)

**Note: Check with the local jurisdiction as to its policy regarding the minimum biotreatment surface area allowed.*

Worksheet for Calculating the Combination Flow and Volume Method

Instructions: After completing Section 1, make a copy of this Excel file for each Drainage Management Area within the project. Enter information specific to the project and DMA in the cells shaded in yellow. Cells shaded in light blue contain formulas and values that will be automatically calculated.

1.0 Project Information

1-1	Project Name:	D Street	
1-2	City application ID:		
1-3	Site Address or APN:		
1-4	Tract or Parcel Map No:	Tract 8297	
1-5	Site Mean Annual Precip. (MAP)[1]	22.0	Inches

The calculations presented here are based on the **combination flow and volume hydraulic sizing method** provided in the Clean Water Program Alameda County C.3 Technical Guidance, Version 4.0. The steps presented below are explained in Chapter 5, Section 5.1 of the guidance manual, applicable portions of which are included in this file, in the tab called "Guidance from Chapter 5".

Refer to the Mean Annual Precipitation Map in Appendix D of the C.3 Technical Guidance to determine the MAP, in inches, for the site. Click here for map

1-6	Applicable Rain Gauge[2]	Oakland	

Enter "Oakland Airport" if the site MAP is 16.4 inches or greater. Enter "San Jose" if the site MAP is less than 16.4 inches.

MAP adjustment factor is automatically calculated as: 1.20

(The "Site Mean Annual Precipitation (MAP)" is divided by the MAP for the applicable rain gauge, showin in Table 5.2, below.)

2.0 Calculate Percentage of Impervious Surface for Drainage Management Area (DMA)

2-1 Name of DMA: Pr-E-Res1

For items 2-2 and 2-3, enter the areas in square feet for each type of surface within the DMA.

	Type of Surface	Area of surface type within DMA (Sq. Ft)	Adjust Pervious Surface	Effective Impervious Area
2-2	Impervious surface	31,841	1.0	31,841
2-3	Pervious service	61,056	0.1	6,106
	Total DMA Area (square feet) =	92,897		

2-4 ***Total Effective Impervious Area (EIA)*** 37,947 **Square feet**

3.0 Calculate Unit Basin Storage Volume in Inches

Table 5-2: Unit Basin Storage Volumes (in inches) for 80 Percent Capture Using 48-Hour Drawdowns

		Unit Basin Storage Volume (in) for Applicable Runoff Coefficients
Applicable Rain Gauge	**Mean Annual Precipitation (in)**	**Coefficient of 1.00**
Oakland Airport	18.35	0.67
San Jose	14.4	0.56

3-1 ***Unit basin storage volume from Table 5.2:*** 0.67 **Inches**

(The coefficient for this method is 1.00, due to the conversion of any landscaping to effective impervious area)

3-2 ***Adjusted unit basin storage volume:*** 0.80 **Inches**

(The unit basin storage volume is adjusted by applying the MAP adjustment factor.)

3-3 ***Required Capture Volume (in cubic feet):*** 2,540 **Cubic feet**

(The adjusted unit basin sizing volume [inches] is multiplied by the size of the DMA and converted to feet)

4.0 Calculate the Duration of the Rain Event

4-1	Rainfall intensity	0.2	Inches per hour
4-2	Divide Item 3-2 by Item 4-1	4.02	Hours of Rain Event Duration

5.0 Preliminary Estimate of Surface Area of Treatment Measure

5-1	4% of DMA impervious surface	1,518	Square feet
5-2	Area 25% smaller than item 5-1	1,138	Square feet
5-3	Volume of treated runoff for area in Item 5-2	1,905	Cubic feet (Item 5-2 * 5 inches per hour * 1/12 * Item 4-2)

6.0 Initial Adjustment of Depth of Surface Ponding Area

6-1	Subtract Item 5-3 from Item 3-3	635	Cubic feet (Amount of runoff to be stored in ponding area)
6-2	Divide Item 6-1 by Item 5-2	0.6	Feet (Depth of stored runoff in surface ponding area)
6-3	Convert Item 6-2 from ft to inches	6.7	Inches (Depth of stored runoff in surface ponding area)

6-4 If ponding depth in Item 6-3 meets your target depth, skip to Item 8-1. If not, continue to Step 7-1.

7.0 Optimize Size of Treatment Measure

7-1	Enter an area larger or smaller than Item 5-2	1154	Sq.ft. (enter larger area if you need less ponding depth; smaller for more depth.)
7-2	Volume of treated runoff for area in Item 7-1	1,931	Cubic feet (Item 7-1 * 5 inches per hour * 1/12 * Item 4-2)
7-3	Subtract Item 7-2 from Item 3-3	609	Cubic feet (Amount of runoff to be stored in ponding area)
7-4	Divide Item 7-3 by Item 7-1	0.53	Feet (Depth of stored runoff in surface ponding area)
7-5	Convert Item 7-4 from feet to inches	6.33	Inches (Depth of stored runoff in surface ponding area)

7-6 If the ponding depth in Item 7-5 meets target, stop here. If not, repeat Steps 7-1 through 7-5 until you obtain target depth

8.0 Surface Area of Treatment Measure for DMA

8-1	Final surface area of treatment*	1,154	Square feet (Either Item 5-2 or final amount in Item 7-1)

**Note: Check with the local jurisdiction as to its policy regarding the minimum biotreatment surface area allowed.*

Worksheet for Calculating the Combination Flow and Volume Method

Instructions: After completing Section 1, make a copy of this Excel file for each Drainage Management Area within the project. Enter information specific to the project and DMA in the cells shaded in yellow. Cells shaded in light blue contain formulas and values that will be automatically calculated.

1.0 Project Information

1-1	Project Name:	D Street	
1-2	City application ID:		
1-3	Site Address or APN:		
1-4	Tract or Parcel Map No:	Tract 8297	
1-5	Site Mean Annual Precip. (MAP)[1]	22.0	Inches

The calculations presented here are based on the **combination flow and volume hydraulic sizing method** provided in the Clean Water Program Alameda County C.3 Technical Guidance, Version 4.0. The steps presented below are explained in Chapter 5, Section 5.1 of the guidance manual, applicable portions of which are included in this file, in the tab called "Guidance from Chapter 5".

Refer to the Mean Annual Precipitation Map in Appendix D of the C.3 Technical Guidance to determine the MAP, in inches, for the site. Click here for map

1-6	Applicable Rain Gauge[2]	Oakland	

Enter "Oakland Airport" if the site MAP is 16.4 inches or greater. Enter "San Jose" if the site MAP is less than 16.4 inches.

MAP adjustment factor is automatically calculated as: 1.20

(The "Site Mean Annual Precipitation (MAP)" is divided by the MAP for the applicable rain gauge, showin in Table 5.2, below.)

2.0 Calculate Percentage of Impervious Surface for Drainage Management Area (DMA)

2-1 Name of DMA: Pr-E-Res2a

For items 2-2 and 2-3, enter the areas in square feet for each type of surface within the DMA.

	Type of Surface	Area of surface type within DMA (Sq. Ft)	Adjust Pervious Surface	Effective Impervious Area
2-2	Impervious surface	22,733	1.0	22,733
2-3	Pervious service	31,365	0.1	3,137
	Total DMA Area (square feet) =	54,098		

2-4 ***Total Effective Impervious Area (EIA)*** 25,870 **Square feet**

3.0 Calculate Unit Basin Storage Volume in Inches

Table 5-2: Unit Basin Storage Volumes (in inches) for 80 Percent Capture Using 48-Hour Drawdowns

		Unit Basin Storage Volume (in) for Applicable Runoff Coefficients
Applicable Rain Gauge	**Mean Annual Precipitation (in)**	**Coefficient of 1.00**
Oakland Airport	18.35	0.67
San Jose	14.4	0.56

3-1 ***Unit basin storage volume from Table 5.2:*** 0.67 **Inches**

(The coefficient for this method is 1.00, due to the conversion of any landscaping to effective impervious area)

3-2 ***Adjusted unit basin storage volume:*** 0.80 **Inches**

(The unit basin storage volume is adjusted by applying the MAP adjustment factor.)

3-3 ***Required Capture Volume (in cubic feet):*** 1,732 **Cubic feet**

(The adjusted unit basin sizing volume [inches] is multiplied by the size of the DMA and converted to feet)

4.0 Calculate the Duration of the Rain Event

4-1	Rainfall intensity	0.2	Inches per hour
4-2	Divide Item 3-2 by Item 4-1	4.02	Hours of Rain Event Duration

5.0 Preliminary Estimate of Surface Area of Treatment Measure

5-1	4% of DMA impervious surface	1,035	Square feet
5-2	Area 25% smaller than item 5-1	776	Square feet
5-3	Volume of treated runoff for area in Item 5-2	1,299	Cubic feet (Item 5-2 * 5 inches per hour * 1/12 * Item 4-2)

6.0 Initial Adjustment of Depth of Surface Ponding Area

6-1	Subtract Item 5-3 from Item 3-3	433	Cubic feet (Amount of runoff to be stored in ponding area)
6-2	Divide Item 6-1 by Item 5-2	0.6	Feet (Depth of stored runoff in surface ponding area)
6-3	Convert Item 6-2 from ft to inches	6.7	Inches (Depth of stored runoff in surface ponding area)

6-4 If ponding depth in Item 6-3 meets your target depth, skip to Item 8-1. If not, continue to Step 7-1.

7.0 Optimize Size of Treatment Measure

7-1	Enter an area larger or smaller than Item 5-2	933	Sq.ft. (enter larger area if you need less ponding depth; smaller for more depth.)
7-2	Volume of treated runoff for area in Item 7-1	1,561	Cubic feet (Item 7-1 * 5 inches per hour * 1/12 * Item 4-2)
7-3	Subtract Item 7-2 from Item 3-3	170	Cubic feet (Amount of runoff to be stored in ponding area)
7-4	Divide Item 7-3 by Item 7-1	0.18	Feet (Depth of stored runoff in surface ponding area)
7-5	Convert Item 7-4 from feet to inches	2.19	Inches (Depth of stored runoff in surface ponding area)

7-6 If the ponding depth in Item 7-5 meets target, stop here. If not, repeat Steps 7-1 through 7-5 until you obtain target depth

8.0 Surface Area of Treatment Measure for DMA

8-1 Final surface area of treatment* 933 **Square feet** (Either Item 5-2 or final amount in Item 7-1)

**Note: Check with the local jurisdiction as to its policy regarding the minimum biotreatment surface area allowed.*

Worksheet for Calculating the Combination Flow and Volume Method

Instructions: After completing Section 1, make a copy of this Excel file for each Drainage Management Area within the project. Enter information specific to the project and DMA in the cells shaded in yellow. Cells shaded in light blue contain formulas and values that will be automatically calculated.

1.0 Project Information

1-1	Project Name:	D Street	
1-2	City application ID:		
1-3	Site Address or APN:		
1-4	Tract or Parcel Map No:	Tract 8297	
1-5	Site Mean Annual Precip. (MAP)[1]	22.0	Inches

The calculations presented here are based on the **combination flow and volume hydraulic sizing method** provided in the Clean Water Program Alameda County C.3 Technical Guidance, Version 4.0. The steps presented below are explained in Chapter 5, Section 5.1 of the guidance manual, applicable portions of which are included in this file, in the tab called "Guidance from Chapter 5".

Refer to the Mean Annual Precipitation Map in Appendix D of the C.3 Technical Guidance to determine the MAP, in inches, for the site. Click here for map

1-6 Applicable Rain Gauge[2]: Oakland

Enter "Oakland Airport" if the site MAP is 16.4 inches or greater. Enter "San Jose" if the site MAP is less than 16.4 inches.

MAP adjustment factor is automatically calculated as: 1.20

(The "Site Mean Annual Precipitation (MAP)" is divided by the MAP for the applicable rain gauge, showin in Table 5.2, below.)

2.0 Calculate Percentage of Impervious Surface for Drainage Management Area (DMA)

2-1 Name of DMA: Pr-E-Res2b

For items 2-2 and 2-3, enter the areas in square feet for each type of surface within the DMA.

	Type of Surface	Area of surface type within DMA (Sq. Ft)	Adjust Pervious Surface	Effective Impervious Area
2-2	Impervious surface	23,335	1.0	23,335
2-3	Pervious service	40,814	0.1	4,081
	Total DMA Area (square feet) =	64,149		

2-4 ***Total Effective Impervious Area (EIA)*** 27,416 **Square feet**

3.0 Calculate Unit Basin Storage Volume in Inches

Table 5-2: Unit Basin Storage Volumes (in inches) for 80 Percent Capture Using 48-Hour Drawdowns

		Unit Basin Storage Volume (in) for Applicable Runoff Coefficients
Applicable Rain Gauge	**Mean Annual Precipitation (in)**	**Coefficient of 1.00**
Oakland Airport	18.35	0.67
San Jose	14.4	0.56

3-1 ***Unit basin storage volume from Table 5.2:*** 0.67 **Inches**

(The coefficient for this method is 1.00, due to the conversion of any landscaping to effective impervious area)

3-2 ***Adjusted unit basin storage volume:*** 0.80 **Inches**

(The unit basin storage volume is adjusted by applying the MAP adjustment factor.)

3-3 ***Required Capture Volume (in cubic feet):*** 1,835 **Cubic feet**

(The adjusted unit basin sizing volume [inches] is multiplied by the size of the DMA and converted to feet)

4.0 Calculate the Duration of the Rain Event

4-1	Rainfall intensity	0.2	Inches per hour
4-2	Divide Item 3-2 by Item 4-1	4.02	Hours of Rain Event Duration

5.0 Preliminary Estimate of Surface Area of Treatment Measure

5-1	4% of DMA impervious surface	1,097	Square feet
5-2	Area 25% smaller than item 5-1	822	Square feet
5-3	Volume of treated runoff for area in Item 5-2	1,376	Cubic feet (Item 5-2 * 5 inches per hour * 1/12 * Item 4-2)

6.0 Initial Adjustment of Depth of Surface Ponding Area

6-1	Subtract Item 5-3 from Item 3-3	459	Cubic feet (Amount of runoff to be stored in ponding area)
6-2	Divide Item 6-1 by Item 5-2	0.6	Feet (Depth of stored runoff in surface ponding area)
6-3	Convert Item 6-2 from ft to inches	6.7	Inches (Depth of stored runoff in surface ponding area)

6-4 If ponding depth in Item 6-3 meets your target depth, skip to Item 8-1. If not, continue to Step 7-1.

7.0 Optimize Size of Treatment Measure

7-1	Enter an area larger or smaller than Item 5-2	980	Sq.ft. (enter larger area if you need less ponding depth; smaller for more depth.)
7-2	Volume of treated runoff for area in Item 7-1	1,640	Cubic feet (Item 7-1 * 5 inches per hour * 1/12 * Item 4-2)
7-3	Subtract Item 7-2 from Item 3-3	195	Cubic feet (Amount of runoff to be stored in ponding area)
7-4	Divide Item 7-3 by Item 7-1	0.20	Feet (Depth of stored runoff in surface ponding area)
7-5	Convert Item 7-4 from feet to inches	2.39	Inches (Depth of stored runoff in surface ponding area)

7-6 If the ponding depth in Item 7-5 meets target, stop here. If not, repeat Steps 7-1 through 7-5 until you obtain target depth

8.0 Surface Area of Treatment Measure for DMA

8-1 Final surface area of treatment* 980 **Square feet** (Either Item 5-2 or final amount in Item 7-1)

**Note: Check with the local jurisdiction as to its policy regarding the minimum biotreatment surface area allowed.*

Worksheet for Calculating the Combination Flow and Volume Method

Instructions: After completing Section 1, make a copy of this Excel file for each Drainage Management Area within the project. Enter information specific to the project and DMA in the cells shaded in yellow. Cells shaded in light blue contain formulas and values that will be automatically calculated.

1.0 Project Information

1-1	Project Name:	D Street	
1-2	City application ID:		
1-3	Site Address or APN:		
1-4	Tract or Parcel Map No:	Tract 8296	
1-5	Site Mean Annual Precip. (MAP)[1]	22.0	Inches

The calculations presented here are based on the **combination flow and volume hydraulic sizing method** provided in the Clean Water Program Alameda County C.3 Technical Guidance, Version 4.0. The steps presented below are explained in Chapter 5, Section 5.1 of the guidance manual, applicable portions of which are included in this file, in the tab called "Guidance from Chapter 5".

Refer to the Mean Annual Precipitation Map in Appendix D of the C.3 Technical Guidance to determine the MAP, in inches, for the site. Click here for map

1-6 Applicable Rain Gauge[2]: Oakland

Enter "Oakland Airport" if the site MAP is 16.4 inches or greater. Enter "San Jose" if the site MAP is less than 16.4 inches.

MAP adjustment factor is automatically calculated as: 1.20

(The "Site Mean Annual Precipitation (MAP)" is divided by the MAP for the applicable rain gauge, showin in Table 5.2, below.)

2.0 Calculate Percentage of Impervious Surface for Drainage Management Area (DMA)

2-1 Name of DMA: Pr-W (Street B and Lots 8/9 only)

For items 2-2 and 2-3, enter the areas in square feet for each type of surface within the DMA.

	Type of Surface	Area of surface type within DMA (Sq. Ft)	Adjust Pervious Surface	Effective Impervious Area
2-2	Impervious surface	37,596	1.0	37,596
2-3	Pervious service	18,500	0.1	1,850
	Total DMA Area (square feet) =	56,096		

2-4 ***Total Effective Impervious Area (EIA)*** 39,446 **Square feet**

3.0 Calculate Unit Basin Storage Volume in Inches

Table 5-2: Unit Basin Storage Volumes (in inches) for 80 Percent Capture Using 48-Hour Drawdowns

		Unit Basin Storage Volume (in) for Applicable Runoff Coefficients
Applicable Rain Gauge	**Mean Annual Precipitation (in)**	**Coefficient of 1.00**
Oakland Airport	18.35	0.67
San Jose	14.4	0.56

3-1 ***Unit basin storage volume from Table 5.2:*** 0.67 **Inches**

(The coefficient for this method is 1.00, due to the conversion of any landscaping to effective impervious area)

3-2 ***Adjusted unit basin storage volume:*** 0.80 **Inches**

(The unit basin storage volume is adjusted by applying the MAP adjustment factor.)

3-3 ***Required Capture Volume (in cubic feet):*** 2,640 **Cubic feet**

(The adjusted unit basin sizing volume [inches] is multiplied by the size of the DMA and converted to feet)

4.0 Calculate the Duration of the Rain Event

4-1	Rainfall intensity	0.2	Inches per hour
4-2	Divide Item 3-2 by Item 4-1	4.02	Hours of Rain Event Duration

5.0 Preliminary Estimate of Surface Area of Treatment Measure

5-1	4% of DMA impervious surface	1,578	Square feet
5-2	Area 25% smaller than item 5-1	1,183	Square feet
5-3	Volume of treated runoff for area in Item 5-2	1,980	Cubic feet (Item 5-2 * 5 inches per hour * 1/12 * Item 4-2)

6.0 Initial Adjustment of Depth of Surface Ponding Area

6-1	Subtract Item 5-3 from Item 3-3	660	Cubic feet (Amount of runoff to be stored in ponding area)
6-2	Divide Item 6-1 by Item 5-2	0.6	Feet (Depth of stored runoff in surface ponding area)
6-3	Convert Item 6-2 from ft to inches	6.7	Inches (Depth of stored runoff in surface ponding area)

6-4 If ponding depth in Item 6-3 meets your target depth, skip to Item 8-1. If not, continue to Step 7-1.

7.0 Optimize Size of Treatment Measure

7-1	Enter an area larger or smaller than Item 5-2	1202	Sq.ft. (enter larger area if you need less ponding depth; smaller for more depth.)
7-2	Volume of treated runoff for area in Item 7-1	2,012	Cubic feet (Item 7-1 * 5 inches per hour * 1/12 * Item 4-2)
7-3	Subtract Item 7-2 from Item 3-3	629	Cubic feet (Amount of runoff to be stored in ponding area)
7-4	Divide Item 7-3 by Item 7-1	0.52	Feet (Depth of stored runoff in surface ponding area)
7-5	Convert Item 7-4 from feet to inches	6.28	Inches (Depth of stored runoff in surface ponding area)

7-6 If the ponding depth in Item 7-5 meets target, stop here. If not, repeat Steps 7-1 through 7-5 until you obtain target depth

8.0 Surface Area of Treatment Measure for DMA

8-1 Final surface area of treatment* 1,202 **Square feet** (Either Item 5-2 or final amount in Item 7-1)

**Note: Check with the local jurisdiction as to its policy regarding the minimum biotreatment surface area allowed.*

BAHM2013
PROJECT REPORT

Project Name: 215130 D Street
Site Name: D Street
Site Address:
City :
Report Date: 9/14/2015
Gage : NRWARK
Data Start : 1959/10/01 00:00
Data End : 2003/09/30 00:00
Precip Scale: 1.62
Version : 2015/03/18

Low Flow Threshold for POC 1 : 10 Percent of the 2 Year

High Flow Threshold for POC 1: 10 year

Low Flow Threshold for POC 2 : 10 Percent of the 2 Year

High Flow Threshold for POC 2: 10 year

Low Flow Threshold for POC 3 : 10 Percent of the 2 Year

High Flow Threshold for POC 3: 10 year

Low Flow Threshold for POC 4 : 10 Percent of the 2 Year

High Flow Threshold for POC 4: 10 year

PREDEVELOPED LAND USE

Name : Ex-West
Bypass: No

GroundWater: No

Pervious Land Use	Acres
C D,Grass,Flat(0-5%)	.043074
C D,Grass,Mod(5-10%)	.38744
C D,Grass,Ste(10-20)	2.830043
C D,Grass,Very(>20%)	1.608424
Pervious Total	4.868981

Impervious Land Use	Acres
Roof Area	0.192659

Driveways,Flat(0-5%)	0.005789
Driveways,Mod(5-10%)	0.006431
Driveways,St(10-20%)	0.010251
Driveways,Very(>20%)	0.002216
Impervious Total	0.217346
Basin Total	5.086327

Element Flows To:
Surface Interflow Groundwater

Name : Ex-East1
Bypass: No

GroundWater: No

Pervious Land Use	Acres
C D,Grass,Flat(0-5%)	.174485
C D,Grass,Mod(5-10%)	.539523
C D,Grass,Ste(10-20)	.623973
C D,Grass,Very(>20%)	.524886
C D,Forest,Flat(0-5)	.001302
C D,Forest,Mod(5-10)	.041788
C D,Forest,St(10-20)	.113575
C D,Forest,Very(>20)	.295524
Pervious Total	2.315056

Impervious Land Use	Acres
Roof Area	0.479421
Driveways,Flat(0-5%)	0.057996
Driveways,Mod(5-10%)	0.178546
Driveways,St(10-20%)	0.359686
Driveways,Very(>20%)	0.102217
Impervious Total	1.177866
Basin Total	3.492922

Element Flows To:
Surface Interflow Groundwater

Name : Ex-East2
Bypass: No

GroundWater: No

Pervious Land Use	Acres
C D,Grass,Flat(0-5%)	.407375
C D,Grass,Mod(5-10%)	.866617
C D,Grass,Ste(10-20)	.832756
C D,Grass,Very(>20%)	.094943
Pervious Total	2.201691

Impervious Land Use	Acres
Roof Area	0.028344
Impervious Total	0.028344
Basin Total	2.230035

Element Flows To:

Surface	Interflow	Groundwater

MITIGATED LAND USE

Name : Pr-West
Bypass: No

GroundWater: No

Pervious Land Use	Acres
C D,Grass,Flat(0-5%)	1.453533
C D,Grass,Mod(5-10%)	.037545
C D,Grass,Ste(10-20)	.110873
C D,Grass,Very(>20%)	1.351083
Pervious Total	2.953034

Impervious Land Use	Acres
Roads,Flat(0-5%)	0.572409
Roads,VeryStee(>20%)	0.001897
Roof Area	1.150007
Driveways,Flat(0-5%)	0.189063
Driveways,Mod(5-10%)	0.006067
Driveways,St(10-20%)	0.007739
Driveways,Very(>20%)	0.00077
Impervious Total	1.927952
Basin Total	4.880986

Element Flows To:

Surface	Interflow	Groundwater
West WQ Basin		

Name : Pr-East-Res1
Bypass: Yes

GroundWater: No

Pervious Land Use	Acres
C D,Grass,Flat(0-5%)	.902913
C D,Grass,Mod(5-10%)	.029444
C D,Grass,Ste(10-20)	.053064
C D,Grass,Very(>20%)	.416223
Pervious Total	1.401644

Impervious Land Use	Acres
Roads,Flat(0-5%)	0.235096
Roads,Mod(5-10%)	0.066116
Roof Area	0.344355
Driveways,Flat(0-5%)	0.068699
Driveways,Mod(5-10%)	0.008415
Driveways,St(10-20%)	0.003569
Driveways,Very(>20%)	0.004729
Impervious Total	0.730979
Basin Total	2.132623

Element Flows To:

Surface	Interflow	Groundwater
WQ Basin East1		

Name : West WQ Basin
Depth: 4.5 ft.

Element Flows To:

Outlet 1	Outlet 2
UG Pipe West	

SSD Table Hydraulic Table

Stage (ft)	Area (ac)	Volume (ac-ft)	Manual	NotUsed	NotUsed	NotUsed	NotUsed
0.000	1202	0.000	0.000	0.000	0.000	0.000	0.000
0.250	1202	0.003	0.000	0.000	0.000	0.000	0.000

0.500	1202	0.006	0.000	0.000	0.000	0.000	0.000
0.750	1202	0.008	0.000	0.000	0.000	0.000	0.000
1.000	1202	0.011	0.000	0.000	0.000	0.000	0.000
1.250	1202	0.013	0.055	0.000	0.000	0.000	0.000
1.500	1202	0.014	0.086	0.000	0.000	0.000	0.000
1.750	1202	0.016	0.109	0.000	0.000	0.000	0.000
2.000	1202	0.018	0.128	0.000	0.000	0.000	0.000
2.250	1202	0.020	0.145	0.000	0.000	0.000	0.000
2.500	1202	0.021	0.159	0.000	0.000	0.000	0.000
2.750	1341.5	0.030	0.173	0.000	0.000	0.000	0.000
3.000	1481	0.038	0.185	0.000	0.000	0.000	0.000
3.250	1620.5	0.047	0.197	0.000	0.000	0.000	0.000
3.500	1760	0.055	0.208	0.000	0.000	0.000	0.000
3.750	1913.5	0.067	0.218	0.000	0.000	0.000	0.000
4.000	2067	0.079	0.229	0.000	0.000	0.000	0.000
4.250	2220.5	0.091	2.563	0.000	0.000	0.000	0.000

Name : UG Pipe West
Depth: 6 ft.

Element Flows To:
Outlet 1 **Outlet 2**

SSD Table Hydraulic Table

Stage (ft)	Area (ac)	Volume (ac-ft)	Manual	NotUsed	NotUsed	NotUsed	NotUsed
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.250	0.014	0.003	0.250	0.000	0.000	0.000	0.000
0.500	0.020	0.007	0.706	0.000	0.000	0.000	0.000
0.750	0.024	0.013	1.021	0.000	0.000	0.000	0.000
1.000	0.027	0.018	1.251	0.000	0.000	0.000	0.000
1.250	0.029	0.026	1.444	0.000	0.000	0.000	0.000
1.500	0.031	0.033	1.615	0.000	0.000	0.000	0.000
1.750	0.033	0.041	1.769	0.000	0.000	0.000	0.000
2.000	0.034	0.049	1.911	0.000	0.000	0.000	0.000
2.250	0.035	0.058	2.043	0.000	0.000	0.000	0.000
2.500	0.035	0.067	2.167	0.000	0.000	0.000	0.000
2.750	0.035	0.075	2.284	0.000	0.000	0.000	0.000
3.000	0.035	0.084	2.395	0.000	0.000	0.000	0.000
3.250	0.035	0.093	2.502	0.000	0.000	0.000	0.000
3.500	0.035	0.102	2.604	0.000	0.000	0.000	0.000
3.750	0.035	0.111	3.075	0.000	0.000	0.000	0.000
4.000	0.035	0.120	3.406	0.000	0.000	0.000	0.000
4.250	0.035	0.128	3.665	0.000	0.000	0.000	0.000
4.500	0.035	0.136	3.891	0.000	0.000	0.000	0.000
4.750	0.035	0.143	4.097	0.000	0.000	0.000	0.000
5.000	0.035	0.150	4.288	0.000	0.000	0.000	0.000
5.250	0.035	0.156	4.467	0.000	0.000	0.000	0.000
5.500	0.035	0.162	4.637	0.000	0.000	0.000	0.000
5.750	0.035	0.165	4.800	0.000	0.000	0.000	0.000
6.000	0.035	0.169	6.204	0.000	0.000	0.000	0.000

Name : Pr-East-Ex
Bypass: Yes

GroundWater: No

Pervious Land Use	Acres
C D,Forest,Flat(0-5)	.005729
C D,Forest,Mod(5-10)	.040282
C D,Forest,St(10-20)	.036176
C D,Forest,Very(>20)	.136953
C D,Grass,Mod(5-10%)	.014889
C D,Grass,Ste(10-20)	.051723
C D,Grass,Very(>20%)	.053387
Pervious Total	0.339139

Impervious Land Use	Acres
Roof Area	0.375994
Driveways,Flat(0-5%)	0.03671
Driveways,Mod(5-10%)	0.07591
Driveways,St(10-20%)	0.180822
Driveways,Very(>20%)	0.080831
Impervious Total	0.750267
Basin Total	1.089406

Element Flows To:
Surface Interflow Groundwater

Name : Pr-East-Rd
Bypass: No

GroundWater: No

Pervious Land Use	Acres
C D,Grass,Mod(5-10%)	.036383
C D,Grass,Ste(10-20)	.018371
C D,Grass,Very(>20%)	.000056
Pervious Total	0.05481

Impervious Land Use	Acres
Roads,Mod(5-10%)	0.15037
Driveways,Very(>20%)	0.000019
Impervious Total	0.150389
Basin Total	0.205199

Element Flows To:

Surface	Interflow	Groundwater
East-Mini Basin		

Name : UG Pipe East 1
Depth: 6 ft.

Element Flows To:

Outlet 1	Outlet 2

SSD Table Hydraulic Table

Stage (ft)	Area (ac)	Volume (ac-ft)	Manual	NotUsed	NotUsed	NotUsed	NotUsed
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.250	0.004	0.001	0.208	0.000	0.000	0.000	0.000
0.500	0.006	0.002	0.589	0.000	0.000	0.000	0.000
0.750	0.007	0.004	0.851	0.000	0.000	0.000	0.000
1.000	0.008	0.006	1.042	0.000	0.000	0.000	0.000
1.250	0.009	0.008	1.204	0.000	0.000	0.000	0.000
1.500	0.010	0.010	1.346	0.000	0.000	0.000	0.000
1.750	0.010	0.013	1.474	0.000	0.000	0.000	0.000
2.000	0.010	0.015	1.592	0.000	0.000	0.000	0.000
2.250	0.011	0.018	1.702	0.000	0.000	0.000	0.000
2.500	0.011	0.020	1.806	0.000	0.000	0.000	0.000
2.750	0.011	0.023	1.903	0.000	0.000	0.000	0.000
3.000	0.011	0.026	1.996	0.000	0.000	0.000	0.000
3.250	0.011	0.029	2.085	0.000	0.000	0.000	0.000
3.500	0.011	0.031	2.170	0.000	0.000	0.000	0.000
3.750	0.011	0.034	2.252	0.000	0.000	0.000	0.000
4.000	0.011	0.037	2.331	0.000	0.000	0.000	0.000
4.250	0.011	0.039	2.407	0.000	0.000	0.000	0.000
4.500	0.011	0.042	2.482	0.000	0.000	0.000	0.000
4.750	0.011	0.044	2.554	0.000	0.000	0.000	0.000
5.000	0.011	0.046	2.623	0.000	0.000	0.000	0.000
5.250	0.011	0.048	2.692	0.000	0.000	0.000	0.000
5.500	0.011	0.050	2.758	0.000	0.000	0.000	0.000
5.750	0.011	0.051	3.239	0.000	0.000	0.000	0.000

Name : East-Mini Basin
Depth: 3.5 ft.

Element Flows To:

Outlet 1	Outlet 2

SSD Table Hydraulic Table

Stage (ft)	Area (ac)	Volume (ac-ft)	Manual	NotUsed	NotUsed	NotUsed	NotUsed
0.000	325.0	0.000	0.000	0.000	0.000	0.000	0.000
0.250	325.0	0.001	0.000	0.000	0.000	0.000	0.000
0.500	325.0	0.001	0.000	0.000	0.000	0.000	0.000
0.750	325.0	0.002	0.000	0.000	0.000	0.000	0.000
1.000	325.0	0.003	0.000	0.000	0.000	0.000	0.000
1.250	325.0	0.003	0.055	0.000	0.000	0.000	0.000
1.500	325.0	0.004	0.086	0.000	0.000	0.000	0.000
1.750	325.0	0.004	0.109	0.000	0.000	0.000	0.000
2.000	325.0	0.005	0.128	0.000	0.000	0.000	0.000
2.250	325.0	0.005	0.145	0.000	0.000	0.000	0.000
2.500	325.0	0.006	0.159	0.000	0.000	0.000	0.000
2.750	372.3	0.008	0.173	0.000	0.000	0.000	0.000
3.000	419.5	0.011	0.185	0.000	0.000	0.000	0.000
3.250	466.8	0.013	2.522	0.000	0.000	0.000	0.000

Name : Pr-East-Res2a
Bypass: No

GroundWater: No

Pervious Land Use	Acres
C D,Grass,Flat(0-5%)	.672038
C D,Grass,Mod(5-10%)	.011532
C D,Grass,Ste(10-20)	.002526
C D,Grass,Very(>20%)	.033951
Pervious Total	0.720047

Impervious Land Use	Acres
Roads,Flat(0-5%)	0.14991
Roof Area	0.314568
Driveways,Flat(0-5%)	0.05739
Impervious Total	0.521868
Basin Total	1.241915

Element Flows To:

Surface	Interflow	Groundwater
WQ Basin 2a		

Name : UG Pipe East 2
Depth: 6 ft.

Element Flows To:

Outlet 1	Outlet 2

SSD Table Hydraulic Table

Stage (ft)	Area (ac)	Volume (ac-ft)	Manual	NotUsed	NotUsed	NotUsed	NotUsed
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.250	0.014	0.003	0.137	0.000	0.000	0.000	0.000
0.500	0.019	0.006	0.389	0.000	0.000	0.000	0.000
0.750	0.023	0.012	0.562	0.000	0.000	0.000	0.000
1.000	0.026	0.018	0.688	0.000	0.000	0.000	0.000
1.250	0.028	0.025	0.794	0.000	0.000	0.000	0.000
1.500	0.030	0.032	0.888	0.000	0.000	0.000	0.000
1.750	0.031	0.040	0.973	0.000	0.000	0.000	0.000
2.000	0.032	0.047	1.051	0.000	0.000	0.000	0.000
2.250	0.033	0.056	1.124	0.000	0.000	0.000	0.000
2.500	0.034	0.064	1.192	0.000	0.000	0.000	0.000
2.750	0.034	0.073	1.256	0.000	0.000	0.000	0.000
3.000	0.034	0.081	1.317	0.000	0.000	0.000	0.000
3.250	0.034	0.090	1.376	0.000	0.000	0.000	0.000
3.500	0.034	0.098	1.432	0.000	0.000	0.000	0.000
3.750	0.034	0.107	1.486	0.000	0.000	0.000	0.000
4.000	0.034	0.115	1.538	0.000	0.000	0.000	0.000
4.250	0.034	0.123	1.589	0.000	0.000	0.000	0.000
4.500	0.034	0.131	1.638	0.000	0.000	0.000	0.000
4.750	0.034	0.138	1.789	0.000	0.000	0.000	0.000
5.000	0.034	0.144	1.916	0.000	0.000	0.000	0.000
5.250	0.034	0.150	2.014	0.000	0.000	0.000	0.000
5.500	0.034	0.156	2.102	0.000	0.000	0.000	0.000
5.750	0.034	0.159	2.182	0.000	0.000	0.000	0.000
6.000	0.034	0.162	2.258	0.000	0.000	0.000	0.000

Name : WQ Basin East1
Depth: 4.5 ft.

Element Flows To:
Outlet 1 **Outlet 2**
UG Pipe East 1

SSD Table Hydraulic Table

Stage (ft)	Area (ac)	Volume (ac-ft)	Manual	NotUsed	NotUsed	NotUsed	NotUsed
0.000	1154	0.000	0.000	0.000	0.000	0.000	0.000
0.250	1154	0.003	0.000	0.000	0.000	0.000	0.000
0.500	1154	0.005	0.000	0.000	0.000	0.000	0.000
0.750	1154	0.008	0.000	0.000	0.000	0.000	0.000
1.000	1154	0.011	0.000	0.000	0.000	0.000	0.000
1.250	1154	0.012	0.022	0.000	0.000	0.000	0.000
1.500	1154	0.014	0.032	0.000	0.000	0.000	0.000
1.750	1154	0.016	0.040	0.000	0.000	0.000	0.000
2.000	1154	0.017	0.047	0.000	0.000	0.000	0.000
2.250	1154	0.019	0.053	0.000	0.000	0.000	0.000

2.500	1154	0.021	0.058	0.000	0.000	0.000	0.000
2.750	1250.75	0.028	0.063	0.000	0.000	0.000	0.000
3.000	1347.5	0.036	0.067	0.000	0.000	0.000	0.000
3.250	1444.25	0.044	0.071	0.000	0.000	0.000	0.000
3.500	1541	0.051	0.283	0.000	0.000	0.000	0.000
3.750	1644	0.061	0.668	0.000	0.000	0.000	0.000
4.000	1747	0.072	0.934	0.000	0.000	0.000	0.000
4.250	1850	0.082	1.710	0.000	0.000	0.000	0.000

Name : Pr-East-Res2b
Bypass: No

GroundWater: No

Pervious Land Use	Acres
C D,Forest,Flat(0-5)	.034604
C D,Forest,Mod(5-10)	.000004
C D,Forest,Very(>20)	.000883
C D,Grass,Flat(0-5%)	.642173
C D,Grass,Mod(5-10%)	.079196
C D,Grass,Ste(10-20)	.010666
C D,Grass,Very(>20%)	.169438
Pervious Total	0.936964

Impervious Land Use	Acres
Roads,Flat(0-5%)	0.149405
Roof Area	0.305271
Driveways,Flat(0-5%)	0.079539
Driveways,Mod(5-10%)	0.000461
Driveways,St(10-20%)	0.000362
Driveways,Very(>20%)	0.000665
Impervious Total	0.535703
Basin Total	1.472667

Element Flows To:

Surface	Interflow	Groundwater
WQ Basin 2b		

Name : WQ Basin 2a
Depth: 4.5 ft.

Element Flows To:

Outlet 1	Outlet 2
UG Pipe East 2	

SSD Table Hydraulic Table

Stage (ft)	Area (ac)	Volume (ac-ft)	Manual	NotUsed	NotUsed	NotUsed	NotUsed
0.000	933.0	0.000	0.000	0.000	0.000	0.000	0.000
0.250	933.0	0.002	0.000	0.000	0.000	0.000	0.000
0.500	933.0	0.004	0.000	0.000	0.000	0.000	0.000
0.750	933.0	0.006	0.000	0.000	0.000	0.000	0.000
1.000	933.0	0.009	0.000	0.000	0.000	0.000	0.000
1.250	933.0	0.010	0.014	0.000	0.000	0.000	0.000
1.500	933.0	0.011	0.021	0.000	0.000	0.000	0.000
1.750	933.0	0.013	0.026	0.000	0.000	0.000	0.000
2.000	933.0	0.014	0.030	0.000	0.000	0.000	0.000
2.250	933.0	0.015	0.034	0.000	0.000	0.000	0.000
2.500	933.0	0.017	0.037	0.000	0.000	0.000	0.000
2.750	1250.75	0.026	0.040	0.000	0.000	0.000	0.000
3.000	1568.5	0.035	0.043	0.000	0.000	0.000	0.000
3.250	1886.25	0.044	0.120	0.000	0.000	0.000	0.000
3.500	2204	0.053	0.170	0.000	0.000	0.000	0.000
3.750	2530	0.069	0.206	0.000	0.000	0.000	0.000
4.000	2856	0.085	0.236	0.000	0.000	0.000	0.000
4.250	3182	0.102	1.037	0.000	0.000	0.000	0.000

Name : WQ Basin 2b
Depth: 4.5 ft.

Element Flows To:
Outlet 1 **Outlet 2**
UG Pipe East 2

SSD Table Hydraulic Table

Stage (ft)	Area (ac)	Volume (ac-ft)	Manual	NotUsed	NotUsed	NotUsed	NotUsed
0.000	977.0	0.000	0.000	0.000	0.000	0.000	0.000
0.250	977.0	0.002	0.000	0.000	0.000	0.000	0.000
0.500	977.0	0.004	0.000	0.000	0.000	0.000	0.000
0.750	977.0	0.007	0.000	0.000	0.000	0.000	0.000
1.000	977.0	0.009	0.000	0.000	0.000	0.000	0.000
1.250	977.0	0.010	0.014	0.000	0.000	0.000	0.000
1.500	977.0	0.012	0.021	0.000	0.000	0.000	0.000
1.750	977.0	0.013	0.026	0.000	0.000	0.000	0.000
2.000	977.0	0.015	0.030	0.000	0.000	0.000	0.000
2.250	977.0	0.016	0.034	0.000	0.000	0.000	0.000
2.500	977.0	0.017	0.037	0.000	0.000	0.000	0.000
2.750	1309.75	0.027	0.040	0.000	0.000	0.000	0.000
3.000	1642.5	0.036	0.043	0.000	0.000	0.000	0.000
3.250	1975.25	0.046	0.120	0.000	0.000	0.000	0.000
3.500	2308	0.055	0.170	0.000	0.000	0.000	0.000
3.750	2648.75	0.072	0.206	0.000	0.000	0.000	0.000
4.000	2989.5	0.089	0.236	0.000	0.000	0.000	0.000
4.250	3330.25	0.107	1.037	0.000	0.000	0.000	0.000

ANALYSIS RESULTS

Predeveloped Landuse Totals for POC #1
Total Pervious Area:4.868981
Total Impervious Area:0.217346

Mitigated Landuse Totals for POC #1
Total Pervious Area:2.953034
Total Impervious Area:1.927952

Flow Frequency Return Periods for Predeveloped. POC #1

Return Period	Flow(cfs)
2 year	2.62349
5 year	3.94256
10 year	5.159038
25 year	8.443929

Flow Frequency Return Periods for Mitigated. POC #1

Return Period	Flow(cfs)
2 year	2.06105
5 year	2.97927
10 year	4.158154
25 year	6.827254

Annual Peaks for Predeveloped and Mitigated. POC #1

Year	Predeveloped	Mitigated
1960	3.392	2.122
1961	3.471	3.120
1962	4.866	3.234
1963	7.148	6.812
1964	3.873	2.890
1965	1.646	1.169
1966	3.090	1.994
1967	8.360	6.504
1968	2.593	2.003
1969	4.339	4.151
1970	1.823	1.695
1971	3.164	2.821
1972	0.841	0.451
1973	5.170	4.167
1974	2.655	2.341
1975	4.446	2.979
1976	0.231	0.321
1977	0.603	0.706
1978	3.212	2.898
1979	3.372	2.267
1980	2.525	2.124
1981	1.319	1.143
1982	5.151	3.254
1983	2.807	2.287
1984	3.112	2.139

1985	1.746	1.495
1986	1.942	1.598
1987	1.550	1.486
1988	2.001	1.642
1989	1.402	1.353
1990	1.396	1.159
1991	1.823	1.463
1992	3.943	2.936
1993	2.678	2.284
1994	1.208	1.130
1995	9.113	6.949
1996	1.966	1.668
1997	2.668	2.370
1998	3.079	2.598
1999	1.581	1.327
2000	1.779	1.743
2001	1.438	0.994
2002	1.371	1.332
2003	2.982	2.293

Ranked Annual Peaks for Predeveloped and Mitigated. POC #1

Rank	Predeveloped	Mitigated
1	9.1126	6.9487
2	8.3603	6.8121
3	7.1479	6.5035
4	5.1696	4.1669
5	5.1506	4.1512
6	4.8663	3.2541
7	4.4462	3.2343
8	4.3388	3.1202
9	3.9426	2.9793
10	3.8728	2.9365
11	3.4708	2.8977
12	3.3924	2.8899
13	3.3716	2.8208
14	3.2120	2.5982
15	3.1643	2.3705
16	3.1124	2.3411
17	3.0900	2.2927
18	3.0790	2.2870
19	2.9822	2.2844
20	2.8075	2.2672
21	2.6777	2.1387
22	2.6679	2.1238
23	2.6555	2.1222
24	2.5929	2.0025
25	2.5254	1.9945
26	2.0006	1.7433
27	1.9661	1.6949
28	1.9423	1.6683
29	1.8227	1.6422
30	1.8226	1.5985
31	1.7795	1.4949
32	1.7458	1.4864
33	1.6459	1.4635
34	1.5811	1.3532

35	1.5495	1.3317
36	1.4380	1.3270
37	1.4021	1.1691
38	1.3957	1.1592
39	1.3711	1.1431
40	1.3188	1.1299
41	1.2075	0.9936
42	0.8411	0.7057
43	0.6031	0.4514
44	0.2306	0.3211

POC #1
The Facility PASSED

The Facility PASSED.

Flow(cfs)	Predev	Mit	Percentage	Pass/Fail
0.2623	2259	1717	76	Pass
0.3113	2000	1488	74	Pass
0.3603	1780	1331	74	Pass
0.4092	1563	1210	77	Pass
0.4582	1390	1088	78	Pass
0.5072	1251	986	78	Pass
0.5561	1119	889	79	Pass
0.6051	1000	801	80	Pass
0.6540	900	718	79	Pass
0.7030	812	653	80	Pass
0.7520	721	592	82	Pass
0.8009	646	547	84	Pass
0.8499	590	497	84	Pass
0.8989	540	453	83	Pass
0.9478	498	410	82	Pass
0.9968	466	366	78	Pass
1.0457	431	335	77	Pass
1.0947	395	303	76	Pass
1.1437	358	273	76	Pass
1.1926	319	239	74	Pass
1.2416	292	217	74	Pass
1.2906	259	200	77	Pass
1.3395	239	185	77	Pass
1.3885	224	167	74	Pass
1.4374	209	156	74	Pass
1.4864	195	147	75	Pass
1.5354	183	130	71	Pass
1.5843	168	123	73	Pass
1.6333	152	117	76	Pass
1.6823	146	110	75	Pass
1.7312	138	104	75	Pass
1.7802	128	94	73	Pass
1.8291	115	90	78	Pass
1.8781	106	86	81	Pass
1.9271	97	80	82	Pass
1.9760	91	78	85	Pass
2.0250	87	71	81	Pass
2.0739	84	65	77	Pass
2.1229	81	58	71	Pass

2.1719	78	54	69	Pass
2.2208	74	51	68	Pass
2.2698	68	46	67	Pass
2.3188	67	42	62	Pass
2.3677	64	38	59	Pass
2.4167	60	35	58	Pass
2.4656	58	34	58	Pass
2.5146	55	29	52	Pass
2.5636	53	29	54	Pass
2.6125	48	26	54	Pass
2.6615	46	26	56	Pass
2.7105	41	25	60	Pass
2.7594	40	22	55	Pass
2.8084	39	20	51	Pass
2.8573	38	19	50	Pass
2.9063	36	17	47	Pass
2.9553	34	15	44	Pass
3.0042	33	14	42	Pass
3.0532	32	14	43	Pass
3.1022	29	14	48	Pass
3.1511	26	13	50	Pass
3.2001	25	13	52	Pass
3.2490	24	12	50	Pass
3.2980	24	11	45	Pass
3.3470	23	11	47	Pass
3.3959	21	11	52	Pass
3.4449	21	10	47	Pass
3.4938	19	9	47	Pass
3.5428	18	9	50	Pass
3.5918	18	9	50	Pass
3.6407	16	9	56	Pass
3.6897	16	9	56	Pass
3.7387	16	9	56	Pass
3.7876	16	9	56	Pass
3.8366	16	9	56	Pass
3.8855	14	8	57	Pass
3.9345	13	8	61	Pass
3.9835	11	8	72	Pass
4.0324	11	8	72	Pass
4.0814	11	8	72	Pass
4.1304	11	8	72	Pass
4.1793	10	6	60	Pass
4.2283	10	6	60	Pass
4.2772	9	6	66	Pass
4.3262	9	6	66	Pass
4.3752	8	6	75	Pass
4.4241	8	6	75	Pass
4.4731	7	6	85	Pass
4.5221	7	6	85	Pass
4.5710	7	6	85	Pass
4.6200	7	6	85	Pass
4.6689	7	6	85	Pass
4.7179	7	6	85	Pass
4.7669	7	6	85	Pass
4.8158	7	6	85	Pass
4.8648	7	6	85	Pass
4.9138	6	6	100	Pass

4.9627	6	6	100	Pass
5.0117	6	6	100	Pass
5.0606	6	6	100	Pass
5.1096	6	6	100	Pass

Drawdown Time Results

Predeveloped Landuse Totals for POC #2
Total Pervious Area:2.315056
Total Impervious Area:1.177866

Mitigated Landuse Totals for POC #2
Total Pervious Area:1.795593
Total Impervious Area:1.631635

Flow Frequency Return Periods for Predeveloped. POC #2

Return Period	Flow(cfs)
2 year	1.849142
5 year	2.81068
10 year	3.590362
25 year	6.265316

Flow Frequency Return Periods for Mitigated. POC #2

Return Period	Flow(cfs)
2 year	1.404358
5 year	2.26552
10 year	3.009737
25 year	4.589057

Annual Peaks for Predeveloped and Mitigated. POC #2

Year	Predeveloped	Mitigated
1960	2.448	1.466
1961	2.455	2.266
1962	3.383	2.526
1963	5.076	4.537
1964	2.710	2.154
1965	1.201	0.676
1966	2.243	1.331
1967	6.257	4.367
1968	1.856	1.403
1969	2.988	2.985
1970	1.266	1.162
1971	2.206	2.135
1972	0.697	0.400
1973	3.582	3.041
1974	1.873	1.718
1975	3.423	2.321
1976	0.333	0.293

1977	0.501	0.479
1978	2.234	2.158
1979	2.403	1.427
1980	1.776	1.447
1981	0.944	0.744
1982	3.600	2.439
1983	1.946	1.799
1984	2.251	1.406
1985	1.256	0.965
1986	1.395	1.078
1987	1.084	1.064
1988	1.401	1.085
1989	1.009	0.754
1990	1.043	0.881
1991	1.391	0.905
1992	2.811	2.047
1993	1.925	1.669
1994	0.878	0.787
1995	6.328	5.005
1996	1.399	1.060
1997	1.843	1.798
1998	2.131	1.908
1999	1.151	0.817
2000	1.245	1.216
2001	1.067	0.722
2002	1.051	0.719
2003	2.071	1.861

Ranked Annual Peaks for Predeveloped and Mitigated. POC #2

Rank	Predeveloped	Mitigated
1	6.3282	5.0048
2	6.2575	4.5371
3	5.0764	4.3674
4	3.6004	3.0408
5	3.5823	2.9849
6	3.4229	2.5258
7	3.3828	2.4387
8	2.9884	2.3207
9	2.8107	2.2655
10	2.7105	2.1577
11	2.4554	2.1539
12	2.4483	2.1347
13	2.4027	2.0470
14	2.2505	1.9079
15	2.2432	1.8611
16	2.2339	1.7993
17	2.2063	1.7977
18	2.1306	1.7177
19	2.0712	1.6693
20	1.9463	1.4655
21	1.9245	1.4475
22	1.8729	1.4267
23	1.8557	1.4063
24	1.8429	1.4025
25	1.7761	1.3307
26	1.4010	1.2157

27	1.3991	1.1617
28	1.3953	1.0854
29	1.3907	1.0785
30	1.2662	1.0638
31	1.2558	1.0603
32	1.2446	0.9653
33	1.2012	0.9048
34	1.1510	0.8814
35	1.0845	0.8171
36	1.0674	0.7867
37	1.0508	0.7536
38	1.0430	0.7444
39	1.0088	0.7222
40	0.9442	0.7191
41	0.8783	0.6764
42	0.6969	0.4791
43	0.5010	0.4003
44	0.3327	0.2932

POC #2
The Facility PASSED

The Facility PASSED.

Flow(cfs)	Predev	Mit	Percentage	Pass/Fail
0.1849	2904	2550	87	Pass
0.2352	2470	2033	82	Pass
0.2854	2144	1660	77	Pass
0.3356	1898	1381	72	Pass
0.3859	1661	1161	69	Pass
0.4361	1475	1048	71	Pass
0.4864	1299	936	72	Pass
0.5366	1169	815	69	Pass
0.5869	1041	714	68	Pass
0.6371	931	634	68	Pass
0.6874	820	573	69	Pass
0.7376	729	511	70	Pass
0.7878	666	471	70	Pass
0.8381	596	433	72	Pass
0.8883	549	396	72	Pass
0.9386	513	360	70	Pass
0.9888	477	321	67	Pass
1.0391	429	284	66	Pass
1.0893	402	256	63	Pass
1.1395	365	229	62	Pass
1.1898	332	204	61	Pass
1.2400	290	191	65	Pass
1.2903	261	170	65	Pass
1.3405	245	161	65	Pass
1.3908	225	147	65	Pass
1.4410	214	135	63	Pass
1.4912	196	129	65	Pass
1.5415	184	117	63	Pass
1.5917	169	107	63	Pass
1.6420	158	99	62	Pass
1.6922	150	89	59	Pass

1.7425	140	87	62	Pass
1.7927	127	82	64	Pass
1.8430	117	76	64	Pass
1.8932	107	69	64	Pass
1.9434	103	66	64	Pass
1.9937	91	63	69	Pass
2.0439	87	60	68	Pass
2.0942	84	56	66	Pass
2.1444	82	55	67	Pass
2.1947	77	53	68	Pass
2.2449	73	50	68	Pass
2.2951	71	46	64	Pass
2.3454	70	46	65	Pass
2.3956	63	45	71	Pass
2.4459	59	44	74	Pass
2.4961	57	40	70	Pass
2.5464	53	38	71	Pass
2.5966	53	34	64	Pass
2.6469	48	34	70	Pass
2.6971	46	28	60	Pass
2.7473	43	27	62	Pass
2.7976	40	26	65	Pass
2.8478	40	26	65	Pass
2.8981	37	25	67	Pass
2.9483	34	24	70	Pass
2.9986	33	22	66	Pass
3.0488	32	21	65	Pass
3.0990	30	17	56	Pass
3.1493	29	16	55	Pass
3.1995	27	16	59	Pass
3.2498	24	15	62	Pass
3.3000	23	13	56	Pass
3.3503	23	12	52	Pass
3.4005	23	12	52	Pass
3.4508	23	12	52	Pass
3.5010	21	12	57	Pass
3.5512	19	10	52	Pass
3.6015	18	10	55	Pass
3.6517	17	9	52	Pass
3.7020	17	9	52	Pass
3.7522	17	9	52	Pass
3.8025	16	9	56	Pass
3.8527	16	9	56	Pass
3.9029	16	9	56	Pass
3.9532	15	9	60	Pass
4.0034	15	9	60	Pass
4.0537	14	9	64	Pass
4.1039	12	9	75	Pass
4.1542	12	9	75	Pass
4.2044	11	9	81	Pass
4.2547	10	9	90	Pass
4.3049	10	8	80	Pass
4.3551	9	7	77	Pass
4.4054	9	6	66	Pass
4.4556	9	6	66	Pass
4.5059	9	6	66	Pass
4.5561	9	6	66	Pass

4.6064	9	6	66	Pass
4.6566	9	6	66	Pass
4.7068	9	6	66	Pass
4.7571	9	6	66	Pass
4.8073	9	6	66	Pass
4.8576	9	6	66	Pass
4.9078	7	6	85	Pass
4.9581	7	6	85	Pass
5.0083	6	6	100	Pass
5.0586	6	6	100	Pass
5.1088	6	6	100	Pass
5.1590	6	6	100	Pass

Drawdown Time Results

Predeveloped Landuse Totals for POC #3
Total Pervious Area:2.201691
Total Impervious Area:0.028344

Mitigated Landuse Totals for POC #3
Total Pervious Area:1.657011
Total Impervious Area:1.057571

Flow Frequency Return Periods for Predeveloped. POC #3

Return Period	Flow(cfs)
2 year	1.050908
5 year	1.56222
10 year	2.109034
25 year	3.287781

Flow Frequency Return Periods for Mitigated. POC #3

Return Period	Flow(cfs)
2 year	0.483543
5 year	1.16494
10 year	1.476106
25 year	2.72572

Annual Peaks for Predeveloped and Mitigated. POC #3

Year	Predeveloped	Mitigated
1960	1.331	0.500
1961	1.289	1.146
1962	2.037	1.165
1963	2.863	2.879
1964	1.474	1.037
1965	0.633	0.229
1966	1.191	0.385
1967	3.218	2.068
1968	1.028	0.614

1969	1.883	1.476
1970	0.748	0.468
1971	1.345	1.249
1972	0.227	0.107
1973	2.199	1.477
1974	1.075	0.901
1975	1.649	0.667
1976	0.028	0.084
1977	0.115	0.214
1978	1.364	1.322
1979	1.328	0.422
1980	0.994	0.707
1981	0.488	0.358
1982	1.871	0.831
1983	1.203	1.064
1984	1.226	0.440
1985	0.660	0.357
1986	0.748	0.429
1987	0.623	0.408
1988	0.792	0.383
1989	0.570	0.334
1990	0.530	0.326
1991	0.569	0.373
1992	1.562	0.992
1993	1.090	0.657
1994	0.483	0.378
1995	3.846	2.707
1996	0.772	0.435
1997	1.145	0.848
1998	1.318	1.321
1999	0.598	0.357
2000	0.755	0.591
2001	0.461	0.227
2002	0.545	0.354
2003	1.243	0.893

Ranked Annual Peaks for Predeveloped and Mitigated. POC #3

Rank	Predeveloped	Mitigated
1	3.8464	2.8786
2	3.2180	2.7066
3	2.8629	2.0680
4	2.1990	1.4765
5	2.0370	1.4758
6	1.8826	1.3217
7	1.8713	1.3212
8	1.6491	1.2494
9	1.5622	1.1649
10	1.4743	1.1463
11	1.3636	1.0636
12	1.3454	1.0370
13	1.3311	0.9921
14	1.3281	0.9006
15	1.3180	0.8931
16	1.2889	0.8478
17	1.2429	0.8306
18	1.2263	0.7070

19	1.2032	0.6670
20	1.1910	0.6571
21	1.1454	0.6139
22	1.0904	0.5911
23	1.0747	0.4996
24	1.0281	0.4681
25	0.9936	0.4398
26	0.7920	0.4354
27	0.7718	0.4285
28	0.7550	0.4222
29	0.7484	0.4077
30	0.7477	0.3846
31	0.6602	0.3826
32	0.6333	0.3782
33	0.6227	0.3731
34	0.5978	0.3576
35	0.5698	0.3567
36	0.5686	0.3567
37	0.5446	0.3538
38	0.5295	0.3338
39	0.4881	0.3257
40	0.4830	0.2287
41	0.4606	0.2268
42	0.2269	0.2140
43	0.1155	0.1072
44	0.0285	0.0837

POC #3
The Facility PASSED

The Facility PASSED.

Flow(cfs)	Predev	Mit	Percentage	Pass/Fail
0.1051	2094	2118	101	Pass
0.1253	1823	1791	98	Pass
0.1456	1593	1546	97	Pass
0.1658	1434	1363	95	Pass
0.1861	1261	1190	94	Pass
0.2063	1128	1052	93	Pass
0.2265	1019	936	91	Pass
0.2468	904	838	92	Pass
0.2670	829	745	89	Pass
0.2873	737	673	91	Pass
0.3075	660	592	89	Pass
0.3278	598	506	84	Pass
0.3480	538	434	80	Pass
0.3682	502	351	69	Pass
0.3885	473	278	58	Pass
0.4087	430	228	53	Pass
0.4290	387	194	50	Pass
0.4492	351	173	49	Pass
0.4694	325	158	48	Pass
0.4897	296	147	49	Pass
0.5099	272	129	47	Pass
0.5302	240	120	50	Pass
0.5504	216	111	51	Pass

0.5707	200	109	54	Pass
0.5909	189	100	52	Pass
0.6111	172	96	55	Pass
0.6314	161	91	56	Pass
0.6516	154	86	55	Pass
0.6719	144	83	57	Pass
0.6921	138	76	55	Pass
0.7123	128	73	57	Pass
0.7326	124	70	56	Pass
0.7528	110	70	63	Pass
0.7731	102	68	66	Pass
0.7933	93	62	66	Pass
0.8136	89	61	68	Pass
0.8338	82	59	71	Pass
0.8540	81	55	67	Pass
0.8743	79	51	64	Pass
0.8945	77	49	63	Pass
0.9148	71	46	64	Pass
0.9350	69	44	63	Pass
0.9552	67	44	65	Pass
0.9755	64	40	62	Pass
0.9957	61	39	63	Pass
1.0160	60	37	61	Pass
1.0362	54	37	68	Pass
1.0565	49	35	71	Pass
1.0767	47	32	68	Pass
1.0969	44	30	68	Pass
1.1172	43	30	69	Pass
1.1374	41	28	68	Pass
1.1577	38	26	68	Pass
1.1779	38	24	63	Pass
1.1982	36	23	63	Pass
1.2184	34	21	61	Pass
1.2386	32	20	62	Pass
1.2589	31	19	61	Pass
1.2791	28	17	60	Pass
1.2994	26	14	53	Pass
1.3196	25	14	56	Pass
1.3398	23	12	52	Pass
1.3601	22	12	54	Pass
1.3803	20	12	60	Pass
1.4006	19	11	57	Pass
1.4208	18	11	61	Pass
1.4411	17	10	58	Pass
1.4613	17	10	58	Pass
1.4815	16	8	50	Pass
1.5018	16	8	50	Pass
1.5220	15	8	53	Pass
1.5423	14	8	57	Pass
1.5625	13	8	61	Pass
1.5827	12	8	66	Pass
1.6030	12	8	66	Pass
1.6232	12	8	66	Pass
1.6435	11	7	63	Pass
1.6637	10	7	70	Pass
1.6840	10	7	70	Pass
1.7042	10	7	70	Pass

1.7244	10	7	70	Pass
1.7447	9	7	77	Pass
1.7649	9	7	77	Pass
1.7852	9	7	77	Pass
1.8054	9	7	77	Pass
1.8256	9	6	66	Pass
1.8459	9	6	66	Pass
1.8661	9	6	66	Pass
1.8864	6	6	100	Pass
1.9066	6	5	83	Pass
1.9269	6	5	83	Pass
1.9471	6	5	83	Pass
1.9673	6	5	83	Pass
1.9876	6	5	83	Pass
2.0078	6	5	83	Pass
2.0281	6	5	83	Pass
2.0483	5	5	100	Pass
2.0686	5	5	100	Pass
2.0888	5	4	80	Pass
2.1090	5	4	80	Pass

Drawdown Time Results

Predeveloped Landuse Totals for POC #4
Total Pervious Area:0
Total Impervious Area:0

Mitigated Landuse Totals for POC #4
Total Pervious Area:0
Total Impervious Area:0

Flow Frequency Return Periods for Predeveloped. POC #4

Return Period	Flow(cfs)
2 year	0
5 year	0
10 year	0
25 year	0

Flow Frequency Return Periods for Mitigated. POC #4

Return Period	Flow(cfs)
2 year	0
5 year	0
10 year	0
25 year	0

Annual Peaks for Predeveloped and Mitigated. POC #4

Year	Predeveloped	Mitigated

Ranked Annual Peaks for Predeveloped and Mitigated. POC #4
Rank Predeveloped Mitigated

POC #4
The Facility PASSED

The Facility PASSED.

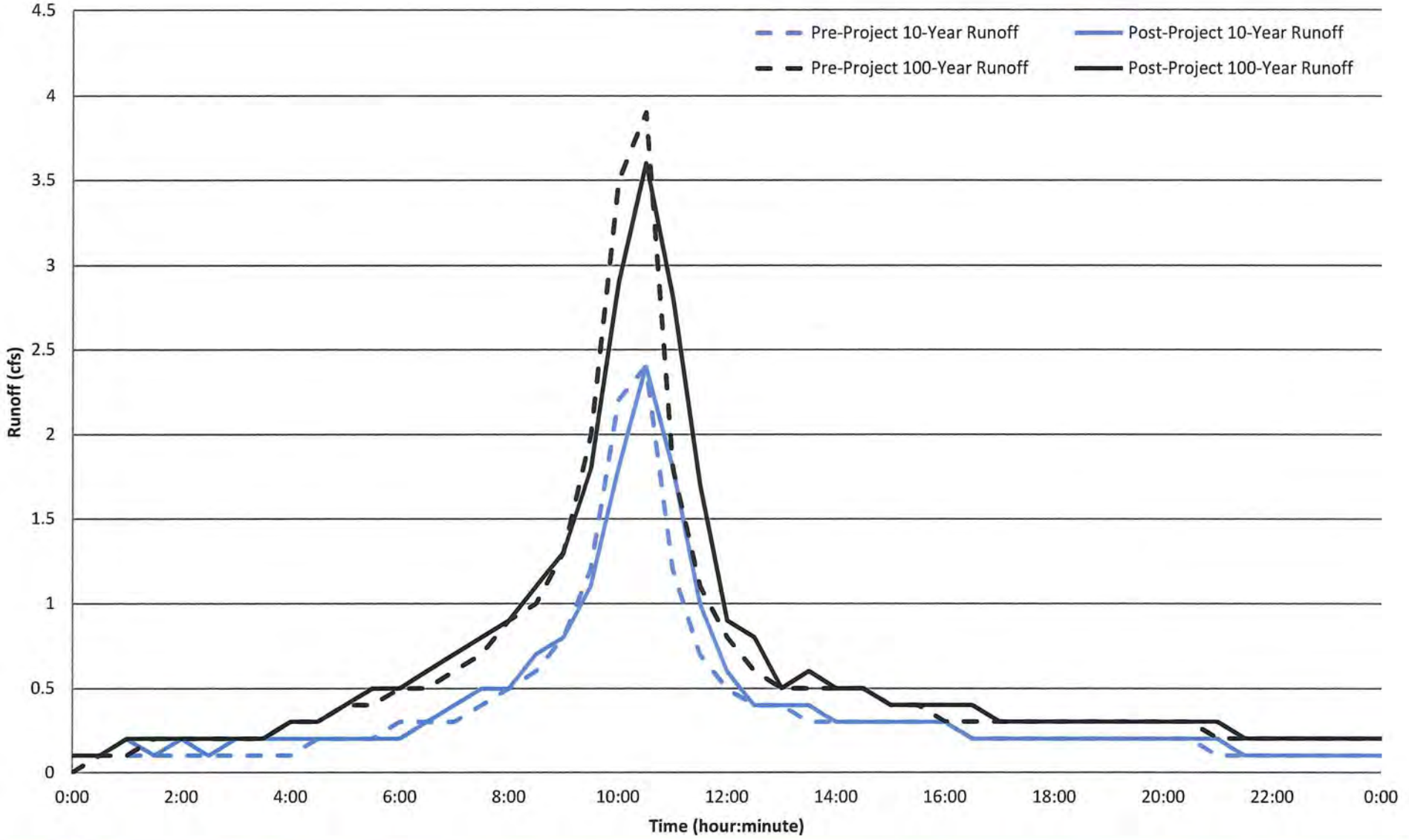
Flow(cfs)	Predev	Mit	Percentage	Pass/Fail
0.0000	0	0	0	Pass
0.0521	0	0	0	Pass
0.1042	0	0	0	Pass
0.1563	0	0	0	Pass
0.2084	0	0	0	Pass
0.2606	0	0	0	Pass
0.3127	0	0	0	Pass
0.3648	0	0	0	Pass
0.4169	0	0	0	Pass
0.4690	0	0	0	Pass
0.5211	0	0	0	Pass
0.5732	0	0	0	Pass
0.6253	0	0	0	Pass
0.6774	0	0	0	Pass
0.7296	0	0	0	Pass
0.7817	0	0	0	Pass
0.8338	0	0	0	Pass
0.8859	0	0	0	Pass
0.9380	0	0	0	Pass
0.9901	0	0	0	Pass
1.0422	0	0	0	Pass
1.0943	0	0	0	Pass
1.1465	0	0	0	Pass
1.1986	0	0	0	Pass
1.2507	0	0	0	Pass
1.3028	0	0	0	Pass
1.3549	0	0	0	Pass
1.4070	0	0	0	Pass
1.4591	0	0	0	Pass
1.5112	0	0	0	Pass
1.5633	0	0	0	Pass
1.6155	0	0	0	Pass
1.6676	0	0	0	Pass
1.7197	0	0	0	Pass
1.7718	0	0	0	Pass
1.8239	0	0	0	Pass
1.8760	0	0	0	Pass
1.9281	0	0	0	Pass
1.9802	0	0	0	Pass
2.0323	0	0	0	Pass
2.0845	0	0	0	Pass
2.1366	0	0	0	Pass
2.1887	0	0	0	Pass
2.2408	0	0	0	Pass
2.2929	0	0	0	Pass
2.3450	0	0	0	Pass

2.3971	0	0	0	Pass
2.4492	0	0	0	Pass
2.5014	0	0	0	Pass
2.5535	0	0	0	Pass
2.6056	0	0	0	Pass
2.6577	0	0	0	Pass
2.7098	0	0	0	Pass
2.7619	0	0	0	Pass
2.8140	0	0	0	Pass
2.8661	0	0	0	Pass
2.9182	0	0	0	Pass
2.9704	0	0	0	Pass
3.0225	0	0	0	Pass
3.0746	0	0	0	Pass
3.1267	0	0	0	Pass
3.1788	0	0	0	Pass
3.2309	0	0	0	Pass
3.2830	0	0	0	Pass
3.3351	0	0	0	Pass
3.3872	0	0	0	Pass
3.4394	0	0	0	Pass
3.4915	0	0	0	Pass
3.5436	0	0	0	Pass
3.5957	0	0	0	Pass
3.6478	0	0	0	Pass
3.6999	0	0	0	Pass
3.7520	0	0	0	Pass
3.8041	0	0	0	Pass
3.8563	0	0	0	Pass
3.9084	0	0	0	Pass
3.9605	0	0	0	Pass
4.0126	0	0	0	Pass
4.0647	0	0	0	Pass
4.1168	0	0	0	Pass
4.1689	0	0	0	Pass
4.2210	0	0	0	Pass
4.2731	0	0	0	Pass
4.3253	0	0	0	Pass
4.3774	0	0	0	Pass
4.4295	0	0	0	Pass
4.4816	0	0	0	Pass
4.5337	0	0	0	Pass
4.5858	0	0	0	Pass
4.6379	0	0	0	Pass
4.6900	0	0	0	Pass
4.7421	0	0	0	Pass
4.7943	0	0	0	Pass
4.8464	0	0	0	Pass
4.8985	0	0	0	Pass
4.9506	0	0	0	Pass
5.0027	0	0	0	Pass
5.0548	0	0	0	Pass
5.1069	0	0	0	Pass
5.1590	0	0	0	Pass

Drawdown Time Results

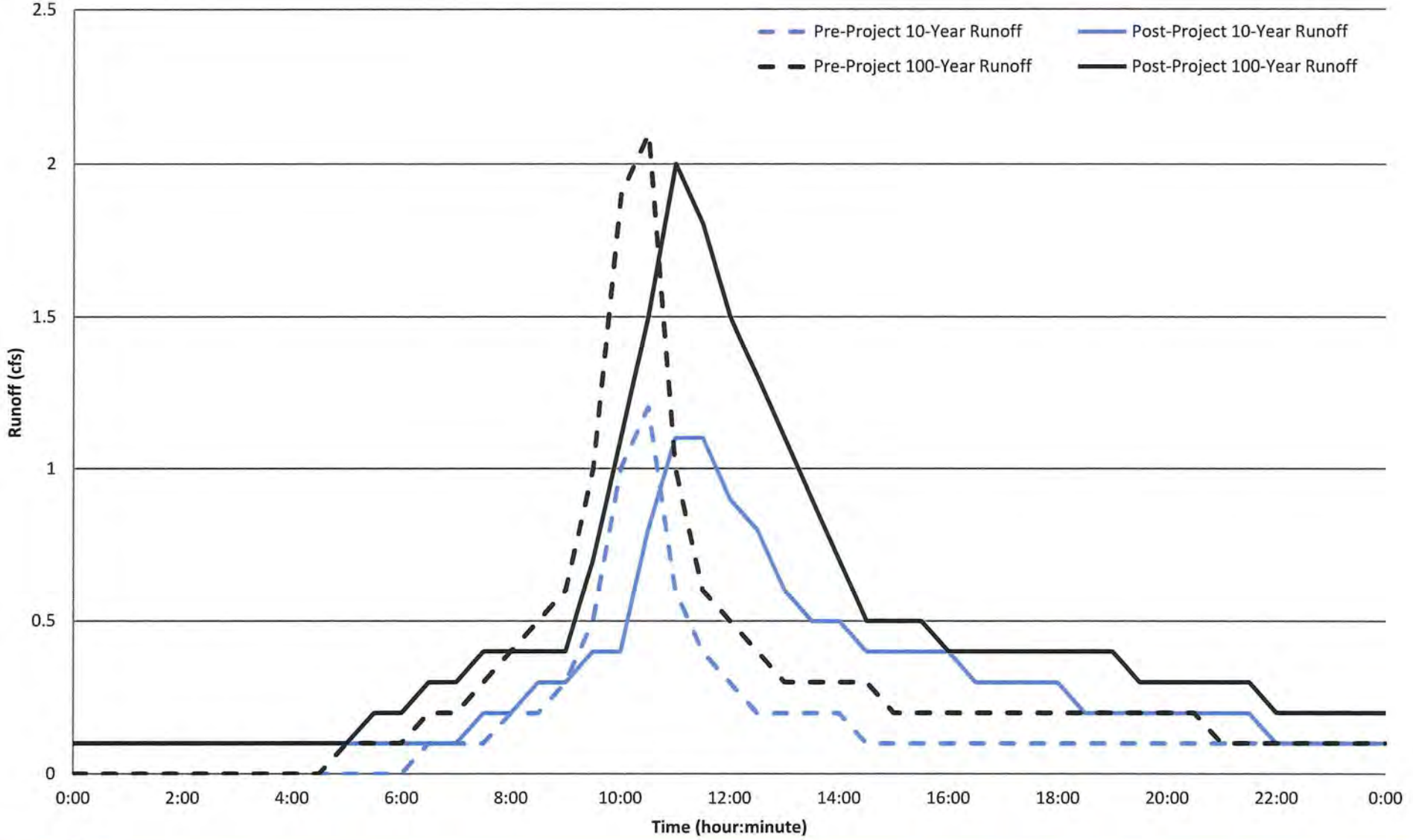
Perlnd and Implnd Changes

No changes have been made.



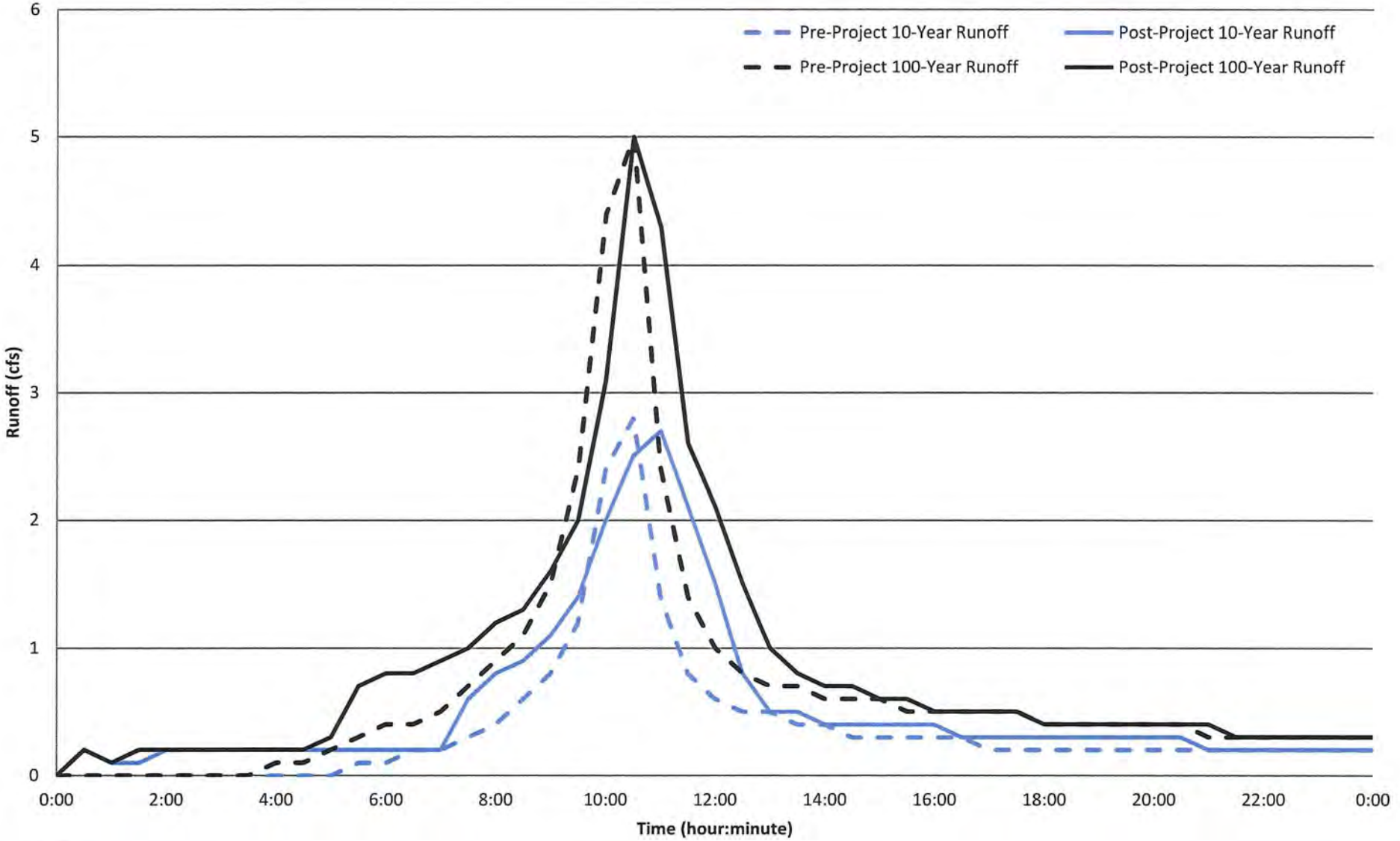
Balance Hydrologics, Inc.

Hydrographs for Analysis Point E1, D Street Project
Fairview, Alameda County, California



Balance Hydrologics, Inc.

Hydrographs for Analysis Point E2, D Street Project
Fairview, Alameda County, California



Balance Hydrologics, Inc.

Hydrographs for Analysis Point W1, D Street Project
Fairview, Alameda County, California

APPENDIX G

GEOTECHNICAL INVESTIGATION REPORT AND UPDATES, HENRY JUSTINIANO & ASSOCIATES, AUGUST 10, 2015

HENRY JUSTINIANO & ASSOCIATES
GEOTECHNICAL ENGINEERING

August 10, 2015
Project No. C-149-03

Crawford Development Inc.
ATTN: Mr. Mark Crawford
P.O. Box 2151
Castro Valley, CA 94546

SUBJECT: GEOTECHNICAL INVESTIGATION REPORT
AND UPDATES
Proposed 31 Single Family Residences
3231 & 3247 D Street, Tract 8296
3289 & 3291 D Street, Tract 8297
Hayward, California

Dear Mr. Crawford:

As requested, we present herein the results of our site explorations and the review of published geologic maps, as well as the review of previous geotechnical reports prepared by Geotechnical Engineering Inc., (GEI) and United Soil Engineering, Inc., (USE), along with peer review comments from Engeo Inc., that addressed an earlier development concept for Tact No. 8297. As such, this report includes updates to the previous geotechnical reports prepared by GEI and expands the study area to incorporate Tact No. 8296. In addition, this report presents our recommendations for street improvements, house foundation and retaining wall designs, as well as other earthwork related elements for the development of the two subject Tracts.

In our opinion, the properties are suitable for the proposed residential development, provided the recommendations presented in this report are incorporated into the design and adhered to during construction.

If you should have any questions or need further assistance, please do not hesitate to contact this office.

Respectfully Submitted,

HENRY JUSTINIANO & ASSOCIATES

REGISTERED PROFESSIONAL ENGINEER
HENRY JUSTINIANO
No. C 42347
CIVIL
STATE OF CALIFORNIA

Henry Justiniano, P.E.
Calif. No. C-42347
Exp. 3/31/2016

Reviewed by: Donn Ristau, Ph.D., C.E.G. 1155
Enclosures

P.O. Box 2338 * San Ramon, CA 94583
(925) 831-9092 * e-mail - justapiano@sbcglobal.net

August 10, 2015
Project No. C-149-03

TABLE OF CONTENTS

1.0 INTRODUCTION

1.1 PURPOSE

This report presents the results of our investigation of the subject properties, along with the review of the published geological data pertaining to the general area and site specific geotechnical reports.

General engineering design and geotechnical recommendations are provided, based upon the physical and strength characteristics of the subsurface materials, and take into consideration the proposed project's requisites.

1.2 SITE LOCATION

The subject properties are located in a section of the Hayward Hills that corresponds to the unincorporated Fairview District, of Alameda County. Specifically, the sites lie along the southern side of "D" Street, approximately 900-feet to the northeast of its intersection with Maud and Fairview Avenues. The approximate location is illustrated on the site location map, Figure 1.

1.3 SITE CHARACTERIZATION

The subject two Tracts have their layout partitioned near the center of the project, by a wedge-like shaped property that serves as a care facility (see Figures 1 and 2).

The eastern section of the project is designated Tract No. 8297 (Figure 3). It has an approximate area of 5.25 acres, with a higher elevation relative to Tract No. 8296 and hosts two older single family dwellings.

The western side of the project is designated Tract No. 8296 (Figure 4). It has an approximate area of 5 acres and at the time of our explorations, was mostly vacant with short natural grasses.

Topographically, the upper Tract (8297) offers a ridge-crest environment with a faint saddle-like feature near its center. From the saddle area, a broad swale projects downward to the east, with a slight increase in vegetation and somewhat hummocky appearance. Further eastward, there are single family residences belonging to a neighboring subdivision. To the west, the ridge is abruptly interrupted by a steep slope that is supported at the base, by a 5 to 12-feet high retaining wall.

The lower Tract (8296) is smoothly contoured, gently sloping to the southeast with a gradient of approximately 6 horizontal to 1 vertical.

1.4 SCOPE

The scope of our work included a literature research and review of available and applicable geological and geotechnical data, exploratory test pits, sample collection, laboratory testing and logging of the foundation soils encountered during the field investigation. The soil data compiled was analyzed in support of the recommendations presented herein.

1.5 PROPOSED IMPROVEMENTS

In accordance with the information furnished to this office, it is proposed to perform mass grading, establish street improvements and construct thirty one, wood-framed, single family dwellings.

1.6 SUMMARY OF RESULTS

Based upon the results of our evaluations, we conclude that there are no geotechnical nor geologic considerations that would preclude the proposed residential improvements. Information from our review of geological maps and exploration program, indicates that the desired building locations are within stable terrain and that the site would be feasible to receive the proposed thirty one residences, provided that the recommendations presented herein are incorporated into the design, and adhered to during the construction phases of the project.

2.0 GEOLOGY

2.1 SITE GEOLOGY

Previous mapping by Graymer (2000, Figure 5) depicts the site as being within a unit of Late Cretaceous sedimentary rocks described as the Oakland Conglomerate. This unit is shown to be in thrust-faulted with un-named sandstone, conglomerate and shale of the Castro Valley area. To the southeast, the Oakland Conglomerate is shown to be in depositional contact with the Joaquin Miller Formation. During our subsurface exploration, the bedrock unit that was frequently encountered consisted of a yellow/brown, weak to moderately strong, sandstone. Rocks characteristic of conglomerate, were not encountered. This is consistent with previous geologic investigations that have been performed on the property. The sandstone did not display obvious bedding and in only one Test Pit was a prominent fracture orientation noted. Structural orientations shown on Graymer's map to the south, indicate variable strike with dips ranging from 25 to 60 degrees. The orientations suggest that the folds are folded.

2.2 LANDSLIDING / SLOPE STABILITY

Nilsen (1975, Figure 6) mapped a series of colluvial and/or alluvial fan deposits within the lower slopes of the southwest portion of the project site. This appears consistent with the subsurface conditions encountered in Test Pits 2, 5, 7 and 8 where the depth to rock or deeply weathered rock (residual soil) was substantially deeper than in other portions upslope of these areas. Landslides have not been mapped previously within the site. However, a large swale within the northeastern portion of the site, where previous subsurface explorations were performed, apparently contains deep soil deposits (13-14 feet) and the topography appears irregular and possibly may contain old slide deposits. Areas where clayey sands were encountered in the test pits were moist and may be subject to creep (a gradual, downslope soil movement).

2.3 FAULTING/SEISMICITY

The site is not within a current Earthquake Hazard Zone (formerly Alquist - Priolo Special Studies Zone) and during our reconnaissance, we did not observe geomorphic evidence suggestive of active faulting within the site. However, the subject area is assigned a high seismic rating, due to its proximity to several faults . . . in particular, the Hayward Fault.

Table I below presents an assessment of the faults that contribute the most significant ground-motion hazard to the site. Included in the Table is the shortest distance between the site and each fault (as measured in kilometers from the surface trace projection of the fault) and the maximum moment magnitude (Mw) for the Upper Bound Earthquake (UBE) estimated for each fault.

TABLE 1
FAULT DISTANCE - MAGNITUDE

Fault System	Distance		Upper Bounds Magnitude (Mw)
	Miles	Kilometers	
Calaveras	6.3	10.1	6.8
Concord-Green Valley	14.6	23.5	6.9
Hayward	1.4	2.3	7.1
San Andreas (Northern)	19.9	32.0	7.9

(Mw): Estimated Moment Magnitude from CDMG (1996) Open File Report 96-08.

The Design Basis Earthquake (DBE) ground motion is defined to have a 10% chance of exceedance in 50 years (475 year return period). Development of the DBE ground motion value requires a site specific Probabilistic Seismic Hazard Analysis (PSHA). A peak ground acceleration (PGA) estimate of 0.685, for the Design Basis Earthquake (10% probability of exceedance in 50 years) is presented in the California Geological Survey's web site for a Probabilistic Seismic Hazards Assessment for the site (Figure 7).

2.4 GEOLOGICAL HAZARDS

Mapping by the California Geological Survey (2012, Figure 8) for the State of California Earthquake Zones of Required Investigation, does not include the subject site within an area labeled as potentially susceptible to earthquake induced landsliding.

Based on the relatively shallow depth to rock and limited soil cover, we consider the risk of slope

instability affecting the project site to be low and specific mitigation measures do not appear to be warranted.

Other risks related to the potential for strong seismic shaking include liquefaction, densification, lateral spreading, lurching and seismically induced slope failure. Based on the hillside building envelope locations and the bedrock lithologies the risks of liquefaction and densification are considered to be insignificant. Likewise, there are no steep, unsupported banks that potentially could be influenced by lurching or lateral spreading. Seismically-induced slope failure may occur in hillside areas, especially when sites are in close proximity to earthquake epicenters. Based on the relatively gentle nature of the site topography and shallow depth to relatively strong rock, we consider that this risk would be insignificant and far below the range of acceptability that would commonly be associated with hillside construction in the Hayward Hills area.

3.0 FIELD INVESTIGATION AND LABORATORY TESTING

3.1 FIELD INVESTIGATION

On July 10, 2015, our Certified Engineering Geologist explored the subsurface conditions in the western Tract with eight test pits and one test pit on the eastern Tract. The test pits were excavated with a track mounted excavator to a maximum depth of 7.3-feet, at the approximate location shown on Figure 2. The test pit locations were established by our Consulting Engineering Geologist, who logged the exposed conditions. Our explorations also served to complement/confirm the conditions reported in previous geotechnical investigations, performed by others.

The logs of the test pits performed by this office, are presented on Figures 9 thru 11. The logs of test pits and borings performed by GEI, are provided in Appendix A, at the back of this report. Soils are described in accordance with the Unified Soil Classification System, and bedrock descriptions in Engineering Geology, Rock Terms. Our test pit log show our interpretation of subsurface conditions at the date and locations indicated. Conditions may vary at other locations and times.

3.2 LABORATORY TESTING

Laboratory testing was performed on selected samples, in order to identify some of their engineering properties. Testing was conducted to establish Atterberg limits and sieve analyses for soil classification.

The determination of Atterberg limits is used to correlate consistency changes with moisture variation, which is indicative of the expansion and creep potential of the soil (ASTM D-4943). Atterberg limits testing was performed on a representative near surface samples of the soils. The testing yielded a liquid limits of 32 and 42 with a plasticity indexes of 19 and 27, which corresponds to moderate to highly expansive and creep susceptible clays.

Sieve analyses were conducted to obtain grain size distribution and to classify the encountered stratigraphic layers (Figure 12). In general, the grain size distribution curves, combined with Atterberg limits, classify the near surface soils as silty clays.

4.0 SUMMARY OF DATA FROM PREVIOUS GEOTECHNICAL STUDIES AND PEER REVIEWS (TRACT 8297)

4.1 REPORTS BY GEI Inc.

An "Updated Report, Preliminary Soil Investigation" (2006) and "Final Report - Additional Investigation Including Incorporation of Subsurface Data From Preliminary Investigation" (2007), prepared by GEI, for the eastern, Tract 8297, were available for our review. The report documents seven borings and three test pits, along with some laboratory tests results. Their findings are summarized as "merely from a geotechnical standpoint the site would be suitable for construction of the planned residence." It then goes on to recommend that the fill encountered in the easterly projecting swale be "subexcavated, keyed into underlying competent rock, backfilled and properly compacted." It also recommends the use of pier and grade beam foundations. The maximum recommended slope gradient for cut and fill slopes is 2 horizontal:1 vertical.

4.2 REPORTS BY USE Inc.

In a "Geotechnical Clarifications" letter dated November 17, 2008, United Soil Engineering, Inc. refers to a September 2008, submittal to Alameda County, of a Geotechnical Engineering of Record affirmation, for the previous project. In addition, USE proposes the use of piers to support a retaining wall and minimize the impacts and stability of the slope and existing retaining wall, along the western property boundary, in consideration of an existing 5 to 12 feet high retaining wall on the adjacent property. Subsequently, in November 2008, USE presents a "Grading and Drainage Plan Review of Tentative Tract Map 7303." In February 2009, USE presents a "Geotechnical Clarifications" report that presents the results of stability analysis computations for the proposed improvements along the western property boundary.

4.3 PEER REVIEW COMMENTS

In their first "Geotechnical Review," Engeo Inc., presents comments that relate, primarily to existing and proposed fills, drainage and stability of slopes. In their second review, most of the items remain unresolved. In the third review, most items remain unresolved and some input from USE is mentioned. The fourth review, Engeo expresses concern that a USE stability analysis is incomplete and additional keyways

and subdrains are warranted. On the fifth review of March 2009, Engeo acknowledges their review of pressure diagrams provided by USE and other miscellaneous items that were pending and approves the project.

4.4 SUMMARY OF PEER REVIEW PROCESS AND IMPACTS ON CURRENT PROJECT

The previous project presented complications with regard to the designation of fill to the top of a rather steep configuration along the western property boundary that is common with the neighboring care facility. The care facility's buildings are very close to a retaining wall with a height of 5 to 12 feet that is followed by a relatively steep slope. The current project does not propose fill or any other disturbance to this area (Figure 3).

A minor fill and relatively soft soils in a swale area located in the east-central area of the Tract, will require sub-excavation, keyways and subdrains, prior to fill placement to achieve the proposed pad grades. The required subdrain outflow presented complications due to its depth. Following discussions and design revisions, it was determined that the subdrain could be connected to the storm system. The current project proposes less but similar depth of fill to establish building pads with similar elevations to the previous design, hence, there will be a need to find an appropriate solution to this subdrain outflow.

According to a Plate labeled G1, prepared by GEI, other minor fills are present on the site. Nevertheless, the new design (Figure 3) shows relatively deep cuts to considerable portions of the site, including the areas that have been documented as having "undocumented" fills. It is therefore safe, to assume that all existing fills will be removed.

5.0 CONCLUSIONS AND RECOMMENDATIONS

5.1 GENERAL

Our investigation and the data gathered for the project site, indicate that stable bedrock materials can be accounted for at relatively shallow depths. No geological hazards were disclosed and the California Geological Survey (CGS) mapping does not assign the site as having a risk of earthquake induced landslide hazard. From a geotechnical engineering viewpoint the following items are the main considerations for the development of the project:

1. The is a need to over-excavate fill, soft soils deposits and residual soils from the area of Lots 4 thru 6, in Tract 8297. Subsequently, a subdrain will be required as delineated in Figure 3 and extended to daylight. The design elevations are similar to the previous development's conceptual plan and the subdrain was connected to a storm line. Engineered fill would then be placed to accomplish the pads for Lots 4 thru 6.

2. The excavations along the property boundary common to the care facility, for a proposed 5-feet high retaining wall that is designated to the top of a cut slope, along the rear of Lots 1 thru 3, or east side of Tract 8296 (Figure 4), could destabilize the existing retaining walls immediately above. In addition, due to the overall height of the retained soil and the steepness of the ground in front of the proposed new wall, the design of these walls will require that the combined pressure from the two walls be considered as being transmitted to large diameter and relatively deep piers.

3. Mechanically Stabilized Earth Wall systems (MSE Walls) should be considered for the retaining walls proposed to the base of up to 20 feet of fill, along the western side of Tract 8296, designated Lots 10 thru 15. The system will no doubt prove cost efficient, esthetically pleasing and allow for continuation of the planned fill placement above the walls.

4. As proposed, a majority of the building pads will be excavated to a significant depth, such that we can anticipate that they will expose the underlying sandstone at the pad surface. However, some will be established by a significant fill thickness. As such, we believe that it is appropriate to have two different foundation systems to support the proposed residences. The cut pads exposing bedrock at the surface, would be adept to conventional footing foundations, while the fill pads should implement cast-in-place concrete piers, integrated with grade beams.

Generally, grading is most economically performed during the summer months when on-site soils are usually dry of optimum moisture content. Delays should be anticipated in site grading performed during the rainy season or early spring, due to excessive moisture in on-site soils. Special and relatively expensive construction procedures should be anticipated if grading must be completed during the winter and early

spring.

In order to avoid saturation of foundation bearing soils resulting from surface flows, the drainage at each Lot must be planned so that the foundations are not allowed to saturate, and no ponding of water takes place near the foundation.

Detailed recommendations regarding grading, foundation design criteria and other pertinent considerations, are presented in the following sections of this report.

The recommendations presented in this report are for the soil conditions encountered in our exploration. Should other soil or rock conditions be uncovered during construction, due to non-uniformity of the geological formations, we should be contacted to evaluate the need for revision of the recommendations presented herein.

Based on the available geologic maps, it is our opinion that the subject site is not located astride an active fault. It must be understood by the owners, that all risk of geologic hazards cannot be eliminated, due to uncertainties of geologic conditions and unpredictability of seismic activity in the Bay Area. The structural design should incorporate current seismic code requirements. Seismically induced ground shaking with possible structural damage, should be expected to occur within the economic life of the structure. Nevertheless, the hazard of seismic shaking is shared throughout the region.

5.2 SEISMIC DESIGN

Based on the results of our investigation, we recommend that the following seismic design criteria be implemented in accordance with the California Building Code (2013):

Site Class	B
S_{ds}	1.428
S_{d1}	0.588

5.3 GRADING RECOMMENDATIONS

The initial site preparations should commence with stripping of root and organically contaminated soil from the areas designated to be developed. The stripped materials may be stockpiled for beneficial use during landscaping, or hauled off the site.

Subdrain placement will constitute an essential factor in the stability of any fill slope. The precise

locations, extent, and depths of subdrains should be determined in the field, by the soils engineer, based upon the materials encountered and the configuration of the excavations. A conceptual subdrain location is depicted in the attached Figure 3.

In Tract 8297, grading procedures should commence with an over-excavation of fill, soft soils deposits and residual soils from the area of Lots 4 thru 6. The excavation is anticipated to be approximately 12-feet deep and should penetrate into and expose a uniform surface of firm non-yielding materials, as interpreted in the field by the Engineer. Subsequently, a subdrain pipe should be provided at the heel-base of the excavation or in a trench that is excavated through approved compacted fill and into the bedrock. The subdrain should consist of a 4-inch minimum diameter (rigid wall SDR 35 or equivalent), perforated pipe that is covered by Class II permeable rock that adheres to Caltrans specifications. A clean-out riser should be provided at a minimum, at one of the terminus of each subdrain that traverses a fill. The subdrain outlets should be provided at the low point, and may be daylighted on slope surfaces, since only minor volume of water effluent is anticipated.

As the fill materials are placed commencing the fill prism upslope, a continuous benching should be established into the hillside. The fill and cut slopes should not exceed a 2 horizontal:1vertical gradient.

The engineered fill materials should be placed in thin, moisture conditioned lifts not exceeding 8-inches in uncompacted thickness, prior to receiving compaction efforts to accomplish a minimum 90 percent relative compaction, based on ASTM Test Procedure D1557. If the fill material contains rocks or rubble, no rocks larger than 6-inches in their greatest dimension should be allowed. On-site materials are suitable for fill provided that they are free from organic matter or other deleterious substances. All disturbed slope areas should be track-walked, and seeded, to mitigate erosion.

All grading operations must be under the supervision of the Engineer, in addition to the compaction testing procedures conducted by a Field Technician.

5.4 FOUNDATIONS

5.4.1 Foundations in Cut Pads

In excavated, level building pads that expose bedrock materials at the surface, geotechnical conditions would be acceptable for implementation of conventional strip footing foundations that are structurally integrated to slab-on-grade floors. All footings should be at least 12-inches in width, and should have their bases located no less than 18-inches below the lowest adjacent finished subgrade. Footings constructed to the given criteria, may be designed for an allowable bearing capacity of 2,000 psf for dead load, and 2,500 psf for dead load plus live load condition. These values may be increased by one-third to accommodate short

duration seismic or wind loading conditions.

The footings should contain steel reinforcement over their entire length, with reinforcement as directed by the project Structural Engineer. In no case, however, should the exterior footing contain less than two No. 5 reinforcing bars, both top and bottom.

All slabs should be a minimum thickness as set forth by the Structural Engineer, but should not be less than 5-inches thick, and reinforced by a minimum of No. 4 bars, spaced at 18-inches each way, and centered within the entire slab.

5.4.2 Foundations in Fill Pads

It is recommended that where level building pad grades have been established by the placement of fill, a foundation system that employs drilled, cast-in-place reinforced concrete piers that extend into the underlying bedrock materials, be utilized. Structural loads should determine pier spacing.

The piers should contain steel reinforcement over their entire length, with reinforcement as directed by the project Structural Engineer. The following table summarizes our recommended criteria for foundation design:

FOUNDATION DESIGN CRITERIA

Pier Diameter	Minimum 12-inches.
Pier Depth	Minimum of 10-feet, or as determined in the field by a representative from this office, during drilling.
Bearing Capacity	Maximum friction value of 600 psf commencing 1-foot below the existing grade. These values may be increased by 1/3 for wind and seismic loads.
Grade Beams	Minimum reinforcement of two No. 5 bars, both top and bottom.

5.5 CONCRETE SLAB-ON-GRADE

Concrete slabs-on-grade will provide satisfactory floor area for the garage and patio areas. In order to reduce the potential for slab cracking, the following recommendations are presented:

1. Scarify the subgrade surface to a minimum of 6-inches, to properly moisture condition the soil to near the optimum moisture content, and compact it to a minimum of 90 percent of maximum dry density.

2. The slabs should consist of a floating type of slab system. Complete isolation of the floor, from bearing walls, columns, nonbearing partitions, stairs, and utilities, should be provided, to allow the slab to move with minimum damage to the structural integrity of the building. A flexible felt joint should be provided between the grade beam and the slab, to fill the void and prevent moisture infiltration.

3. Provide the necessary gradient to prevent the ponding of water.

4. Concrete slabs should include crack control joints for normal lineal shrinkage of the concrete materials. Where large areas of concrete slab are placed, with irregular projections or inserts within the slab area, stress concentrations will result, causing uncontrolled crack patterns. Where possible, crack control joints should be placed at stress locations where projections from a main slab or where inserts occur, in order to control the resultant crack pattern.

5. All slabs should be a minimum thickness as set forth by the Structural Engineer, but should not be less than 5-inches in total thickness when placed.

6. All concrete slabs-on-grade should be underlain by a 4-inch thick capillary break of "pea gravel" or clean crushed rock (no fines). It is recommended that Class 2 baserock not be employed as the capillary break material. If vapor transmission is undesirable, it is recommended that an impermeable membrane of 10-mil minimum thickness be placed upon the capillary break material, and overlain by 2 inches of clean sand, to assist in proper curing of the slab. The specified 4-inch thickness of the capillary break cannot be reduced, because of the use of sand.

7. Reinforcement of the concrete slabs shall be as directed by the project Structural Engineer, but in no event should it consist of less than No. 3 bars at 18-inches each way, centered within the slab.

5.6 RETAINING WALLS

According to preliminary plans (Figures 3 and 4), retaining walls are proposed at:

1. The base of a deep cut into the hillside and thus, into sandstone bedrock on Lots7, 8 and 9, on Tract 8297

2. Along the top of a cut slope and below an existing retaining wall, on Lots 1, 2 and 3, on Tract 8296

3. The base of a 15 to 20-foot thick, sliver fill, along Lots 10 thru 15, on Tract 8296.

4. Structural retaining walls at the split level transition in pads 9 through 16, on Tract 8296.

The above described four distinct conditions for the materials and configurations that are to be retained, require specific design parameters for each condition, as appropriate.

We recommend that all retaining walls have a drain blanket consisting of Class II Permeable material (conforming to Caltrans specifications) of minimum 12-inches in width or a Geo-composite drain, extending for the full height of the wall, except for 18-inches of compacted soil cover at the surface. A 4-inch perforated subdrain line (SDR 35) should be provided near the base of the drain blanket, with a suitable discharge location away from all structural improvements.

Where the retaining wall is used as part of a living structure, and in order to reduce the potential for moisture transmission through the retaining wall, it is recommended that the stem wall be waterproofed, in accordance with manufacturer's specifications. This should include the heel of the footing and down face of the heel. A "can't strip" or equivalent, should be provided on the exterior of the walls, at the joint between the retaining wall footing and the stem (wall).

5.6.1 RETAINING WALLS AT THE BASE OF CUT AT REAR OF LOTS 7, 8 AND 9, TRACT 8297

A retaining wall designated to the base of a cut into the hillside that would expose bedrock, may be designed for a drained condition and to resist lateral pressures exerted from soils having an equivalent fluid weight of 40 pcf. The active lateral force may be resisted by a conventional footing with shear key, or piers. For conventional walls that extend to a minimum depth of 4 feet below current existing grades, a maximum toe bearing pressure of 2,500 psf combined with a passive force equal to the resistance provided by an equivalent fluid weight of 450 pcf, may be implemented. Additional lateral resistance may be provided by a friction factor of 0.45 between the bottom of the footing and the soil.

5.6.2 RETAINING WALL AT TOP OF CUT AND BELOW EXISTING RETAINING WALL ON LOTS 1, 2 AND 3, TRACT 8296

There are three important issues to consider with this retaining wall:

1. The potential for the excavations to accommodate the proposed wall to undermine the existing wall

2. The additional (surcharge) pressures being transmitted to the proposed wall from the existing wall above

3. The limited support to the wall foundation, due to the sloping terrain in front of the wall

As such, we recommend that a "soldier beam wall" option be selected for this application, as it is able to be constructed in phases. This would avoid the undermining of the wall above and the drilled pier support can be designed neglecting the upper portion of pier embedment. The wall construction can begin with the excavations of slots, to accommodate the drilling of the piers and installation of steel beam supports. Subsequently, additional excavations can be undertaken to place the perforated pipe, lagging and drain rock, on individual segments, prior to proceeding to the next segment. With the foregoing, we present the following recommendations for the design of "soldier beam wall":

The wall should be designed to resist lateral pressures exerted from soils having an equivalent fluid weight of 60 pcf, plus a 200 psf uniform surcharge to account for the upper wall loads. Retaining wall support should be derived from piers that are designed assuming that a passive force equivalent to that caused by a fluid weighing 400 pcf commences 4-feet below the bottom of the wall. The passive force can be assumed to have a tributary horizontal width equal to 2 pier diameters.

5.6.3 MSE (MECHANICALLY STABILIZED EARTH) RETAINING WALLS AT THE BASE OF FILL, LOTS 10 THRU 15, TRACT 8296

Modular Concrete Units Walls with Geogrid Reinforced Backfill (i.e., Keystone, Allan Block, etc.) are purposely omitted, due to the current phase of planning has not yet reached that level of details. This type of wall should be designed by the Soils Engineer of Record, for the project. This office can provide this service expeditiously, upon the client's request.

5.6.4 STRUCTURAL RETAINING WALLS AT THE SPLIT LEVEL TRANSITION IN PADS 9 THROUGH 16, TRACT 8296.

Wall in the interior foundation footprint, used to retain a vertical configuration in the step between upper and lower pads, on Lots 9 through 16, on Tract 8296, should be designed for a drained condition and to resist lateral pressures exerted from soils having an equivalent fluid weight of 55 pcf. The active lateral force may be resisted by a passive force commencing a minimum of one foot below the lowest adjacent grade in front of the wall, equal to the resistance provided by an equivalent fluid weight of 350 pcf.

For conventional walls, a maximum toe bearing pressure of 2,000 psf may be implemented for dead load plus live load criteria. This value may be increased by one-third for seismic loading. Additional lateral resistance may be provided by a friction factor of 0.3 between the bottom of the footing and the soil.

5.7 DRAINAGE

It is important to direct surface runoff away from the foundation perimeters, concrete flat work, or any other improvement that is founded near the surface. Downspouts should be connected to conduits that will transport their effluent to a discharge point away from structural element-bearing soils. Area drains should be provided to capture, collect and transport surface waters around the dwelling.

5.8 STREET PAVEMENTS

Based on the nature of the subgrade soil, in conjunction with the anticipated traffic along the private driveway, we recommend a minimum pavement section consisting of 2.5-inches of Asphaltic Concrete over 8-inches of Class II Aggregate Baserock.

The performance of the final pavement will depend upon the quality of workmanship and materials. The following summarizes the recommended construction procedure to be followed:

1. Scarify the subgrade surface to a minimum of 1-foot, to properly moisture condition the soil to near the optimum moisture content, and compact it to a minimum 95 percent of maximum dry density.

2. Provide the necessary gradient to prevent the ponding of water.

3. Place the baserock in lifts that are within the compaction capabilities of the compaction equipment, and compact to 95 percent of maximum density.

4. Place the Asphaltic Concrete during fair weather only, and at a temperature within its' prescribed limits.

5.9 UTILITY TRENCHES

Utility trenches parallel to the sides of the grade beams should be placed so that they do not extend below a line sloped down and away at a 2:1 (horizontal:vertical) slope from the bottom outside edge of the grade beam.

All trenches should be backfilled with native materials compacted uniformly to a 90% relative compaction. If local building codes require the use of sand or other permeable trench backfill, all utility trenches entering the building must be provided with an impervious seal of either cohesive soil or lean concrete, where the trench passes under the building perimeter. The impervious plug should extend 4 feet into, and out of, the building perimeter.

Jetting of trench backfill should be avoided as it may result in an unsatisfactory degree of compaction.

6.0 GENERAL CONDITIONS

6.1 PLAN REVIEW

Prior to the submission of design drawings and construction documents for approval by the appropriate local agency, copies of these documents should be reviewed by our firm to evaluate whether or not the recommendations contained in this report have been effectively incorporated into the design of the project.

6.2 CONSTRUCTION OBSERVATIONS

A representative of this firm must be present during grading of the site. This item is necessary to properly evaluate the quality of the materials and their relative compaction. Foundation excavations must be inspected by a representative of this firm, in order to make the necessary adjustments as a result of localized irregularities.

At the completion of the earthwork related construction, a report will be submitted summarizing our observations, including the results of the compaction testing program.

To allow for proper scheduling, we request a minimum of 48 hours notice prior to the commencement of earthwork operations requiring our presence.

6.3 LIMITATIONS

This report has been prepared by HENRY JUSTINIANO & ASSOCIATES for the exclusive use of Mr. Mark Crawford and his representatives, for consideration of the proposed improvements to the property described in this report.

The interpretations and recommendations presented in this report are professional judgements, and are based on our evaluations of the technical information obtained during this investigation, on our understanding of the characteristics of the planned improvements to the structure, and on our general experience with similar subsurface conditions in other areas. We do not guarantee the performance of this project in any respect, only that our engineering work and judgements meet the standards of care normally exercised by our profession.

It is assumed that the borings are representative of the subsurface conditions throughout the areas designated to receive improvements. Unanticipated soil conditions are commonly encountered and cannot be fully determined by performing exploratory borings. If, during construction, subsurface conditions

different from those indicated in this report, are encountered or appear to be present beneath excavations, HENRY JUSTINIANO & ASSOCIATES should be advised at once so we can review these conditions and reconsider our recommendations, when necessary.

If more than 18 months have elapsed between the submission of this report and the start of work at the site, or if conditions have changed because of natural causes or construction operations at or adjacent to the site, we recommend that this report be reviewed to determine the applicability of the conclusions and recommendations, considering the time lapse or changed conditions.

The scope of our services did not include an environmental assessment, or an investigation of the presence or absence of hazardous, toxic or corrosive materials in the soil, surface water, groundwater, or air, on, below, or around this site.

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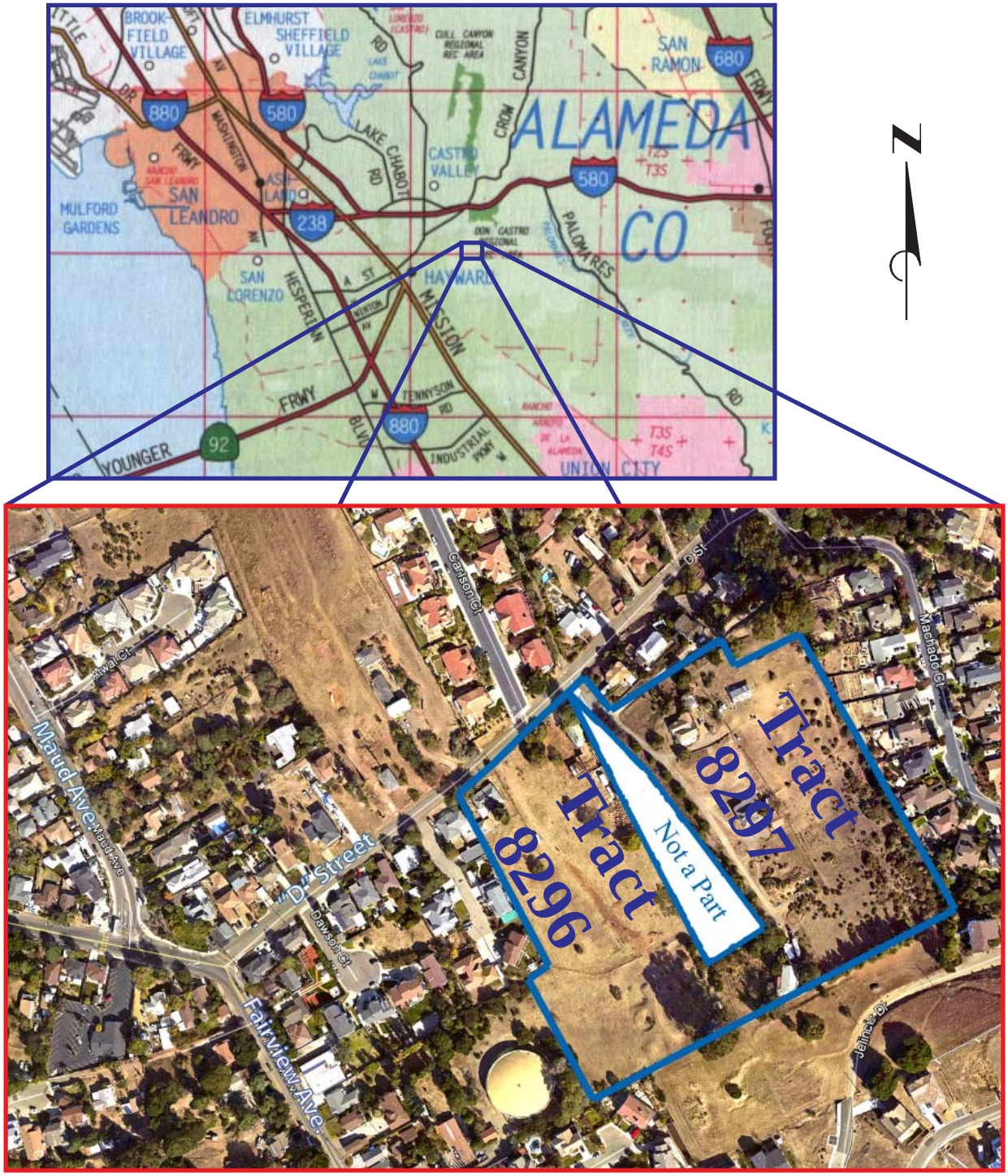


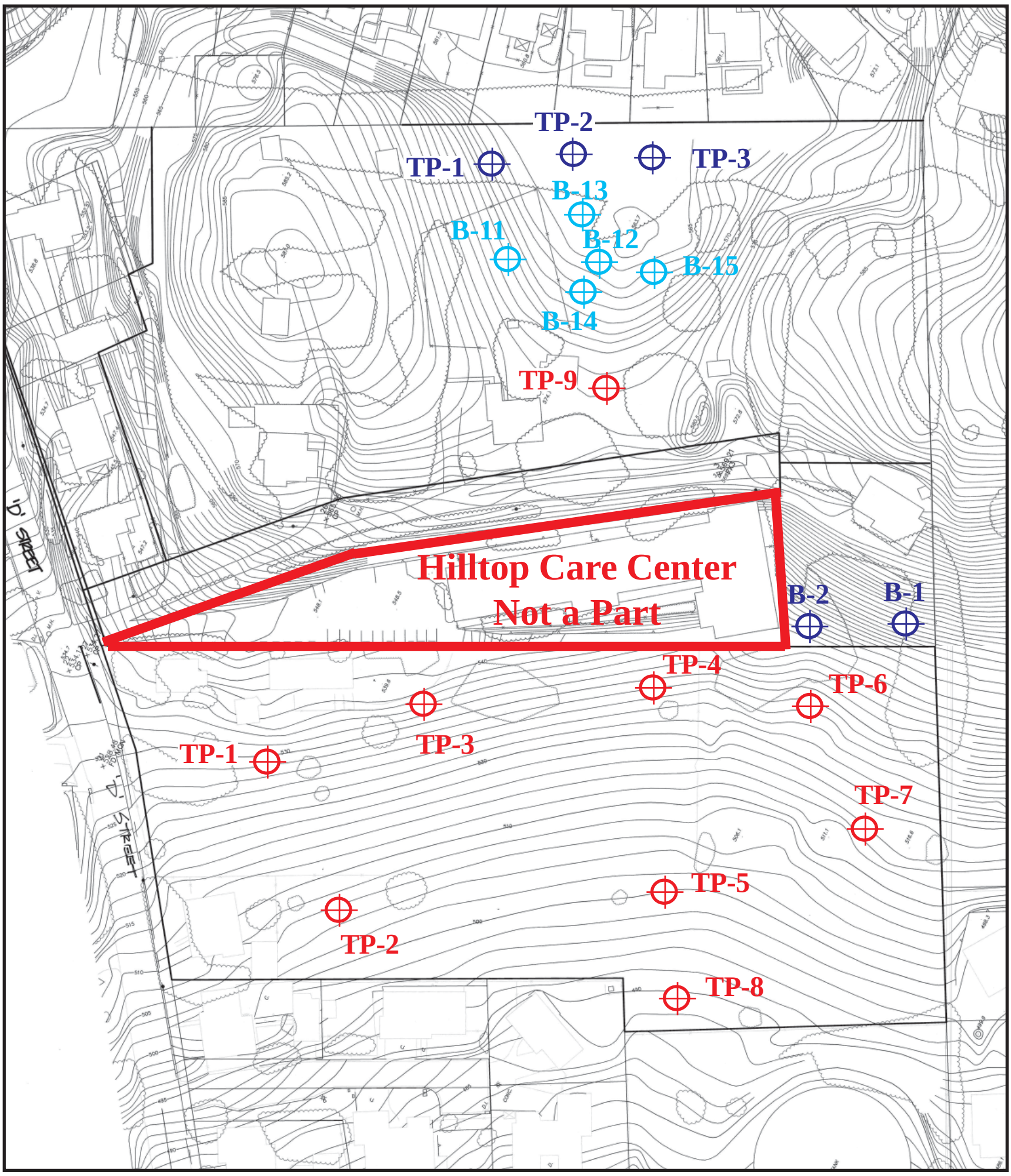
SITE LOCATION

Sources: Thomas Guide and Google Earth

Project No.: C-149-03	Date: 08-10-15	Scale: NTS

Henry Justiniano & Associates
Soils and Foundation Engineering

Figure No. 1



Explanation

Approximate Borehole and Test Pit Locations and Dates by GEI and HJ&A

GEI Inc., March, 2006

GEI Inc., October, 2007

HJ & Assoc., June, 2015

Source: Crawford Development

SITE PLAN

Project No. : C-149-03	Date: 08-10-15	Scale: NTS

Henry Justiniano & Associates
Soils and Foundation Engineering

Figure No. 2

'D' STREET PROPERTY - East Side

CONCEPTUAL SITE PLAN

Fairview Specific Plan

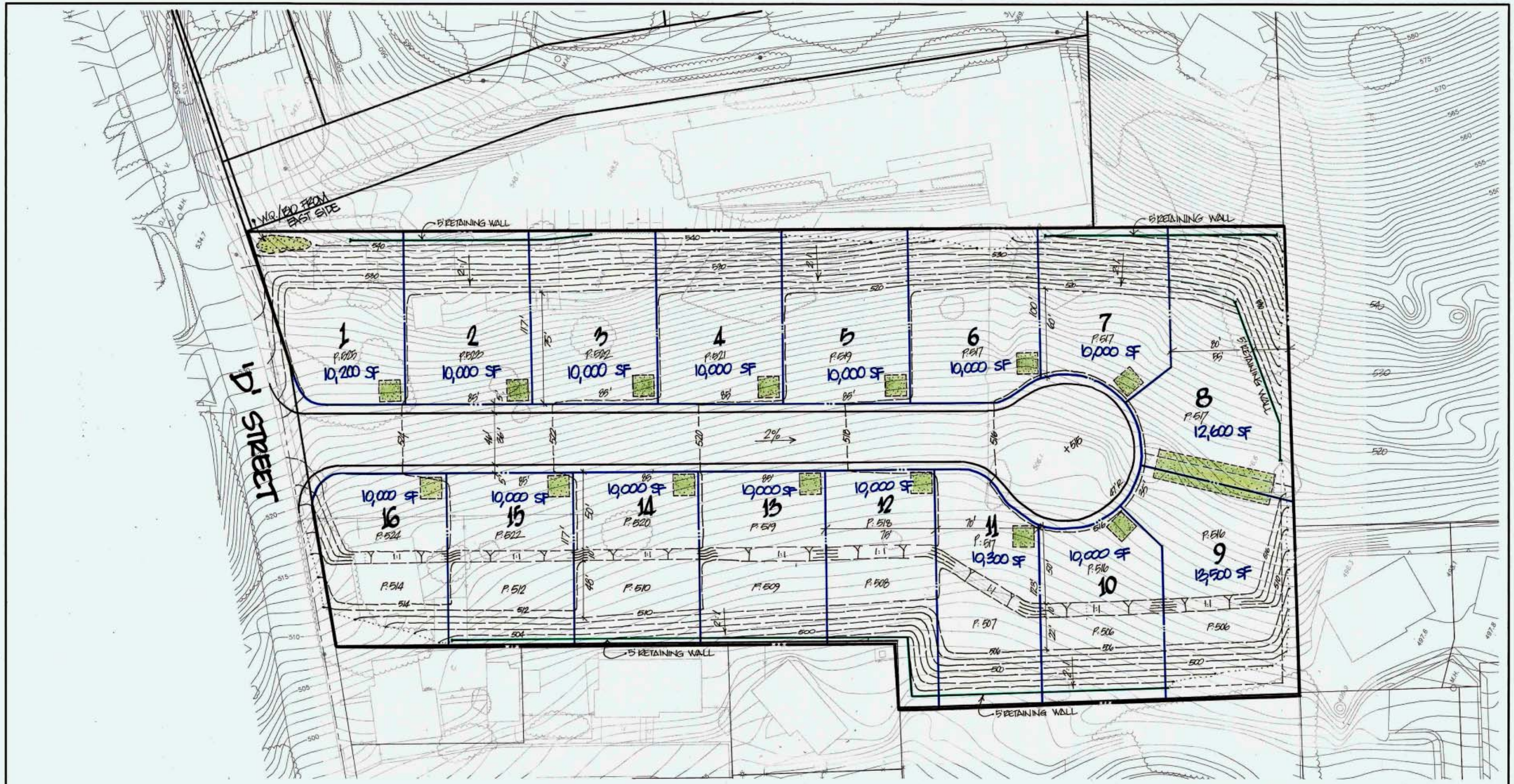
CITY OF HAYWARD ALAMEDA COUNTY CALIFORNIA

SCALE: 1" = 30' DATE: JULY 2, 2015

cbg Carlson, Barbee & Gibson, Inc. CIVIL ENGINEERS • SURVEYORS • PLANNERS

2633 CAMINO RAMON, SUITE 350 SAN RAMON, CALIFORNIA 94583 (925) 866-0322 www.cbandg.com

Figure 3



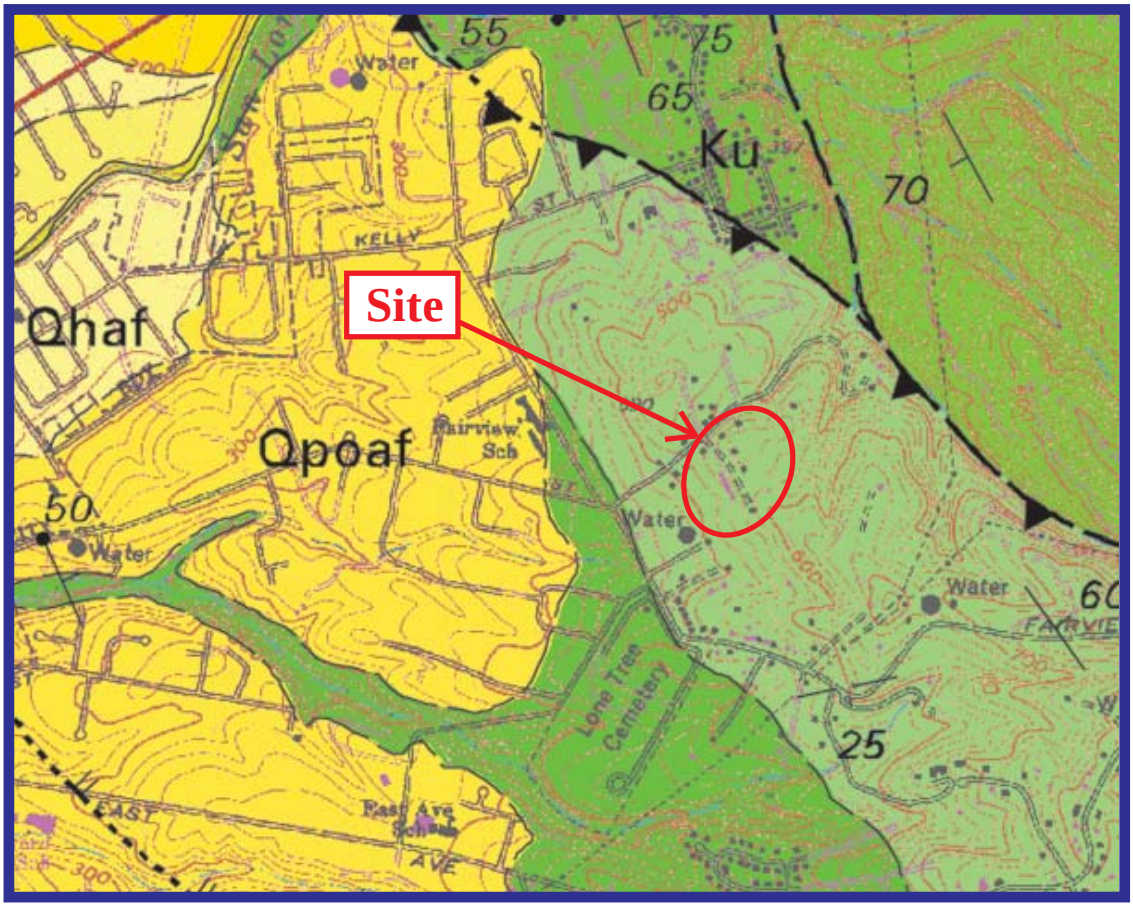
'D' STREET PROPERTY

CONCEPTUAL SITE PLAN

Fairview Specific Plan

CITY OF HAYWARD ALAMEDA COUNTY CALIFORNIA

Figure 4



N

EXPLANATION

Qhaf	Alluvial fan and fluvial deposits (Holocene)	Kcv	Unnamed sandstone, conglomerate, and shale of the Castro Valley area (Late Cretaceous, Turonian and younger (?))
Qpoaf	Older alluvial fan deposits (Pleistocene)	Kjm	Joaquin Miller Formation (Late Cretaceous, Cenomanian)
Ko	Oakland Conglomerate (Late Cretaceous, Turonian and/or Cenomanian)		
Ku	Undivided Great Valley complex rocks (Cretaceous)		

GEOLOGY MAP

R.W. Graymer, 2000

Project No.: C-149-03	Date: 08-10-03	Scale: NTS

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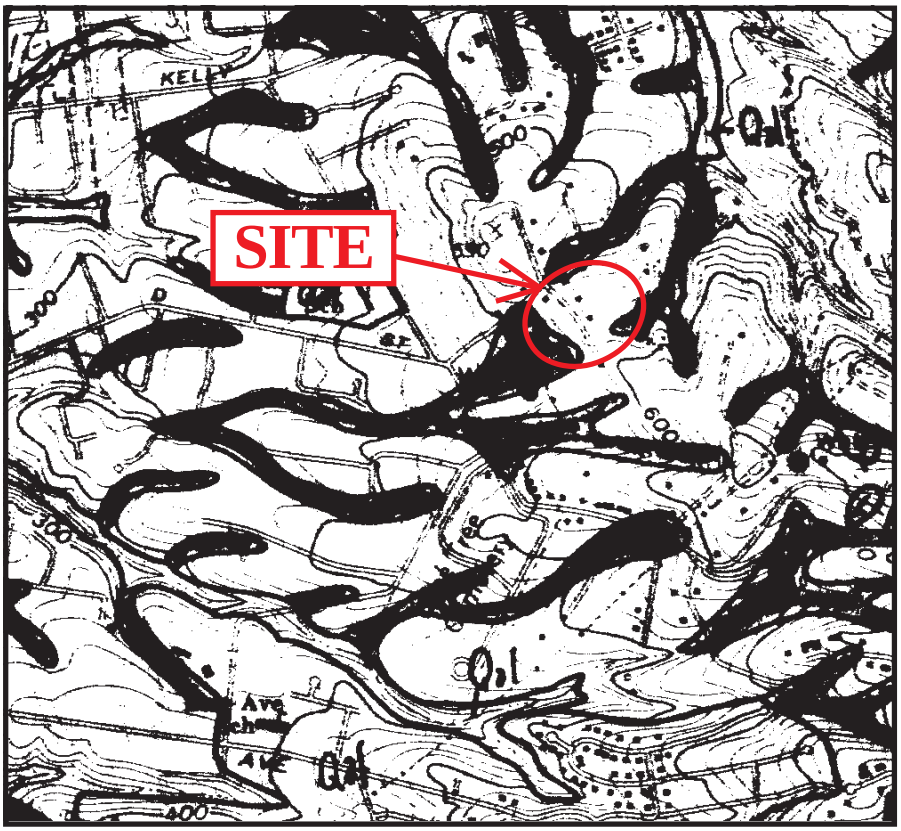
Soils and Foundation Engineering

Figure No. 5



EXPLANATION

Qal
Alluvial deposit

Qt
Alluvial terrace deposit
Queried where uncertain.

Colluvial deposit and/or small alluvial fan deposit

Qaf
Artificial fill

Bedrock
Queried where identification uncertain.

Landslide & Surficial Deposits

Source: **T. H. Nilsen, 1975**

N

Project No. C-149-03	Date: 08-10-15	Scale: NTS

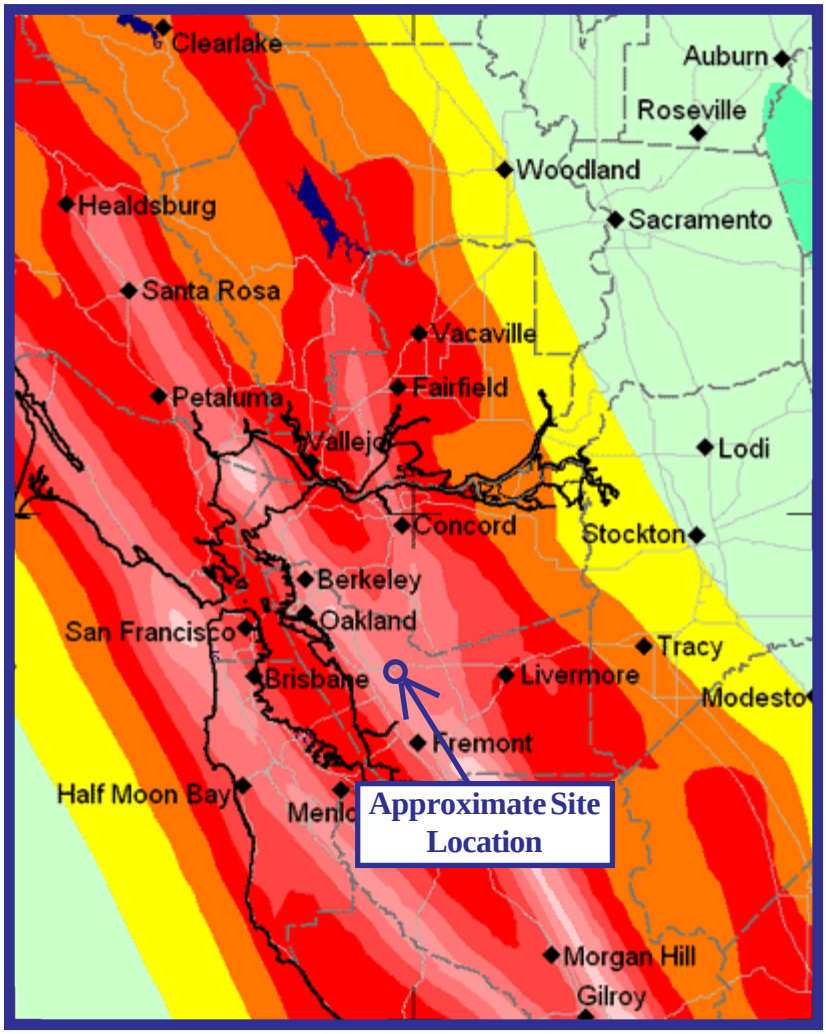
Henry Justiniano & Associates
Soils and Foundation Engineering

Figure No. 6

Shaking (%g)
Pga (Peak Ground Acceleration)
Firm Rock

- < 10%
- 10 - 20%
- 20 - 30%
- 30 - 40%
- 40 - 50%
- 50 - 60%
- 60 - 70%
- 70 - 80%
- > 80%

The unit "g" is acceleration of gravity.



PROBABILISTIC SEISMIC HAZARD MAP
(Modified)

(10% Probability of Exceedance in 50 Years)
Peak Horizontal Ground Acceleration
Firm-Rock Site Condition

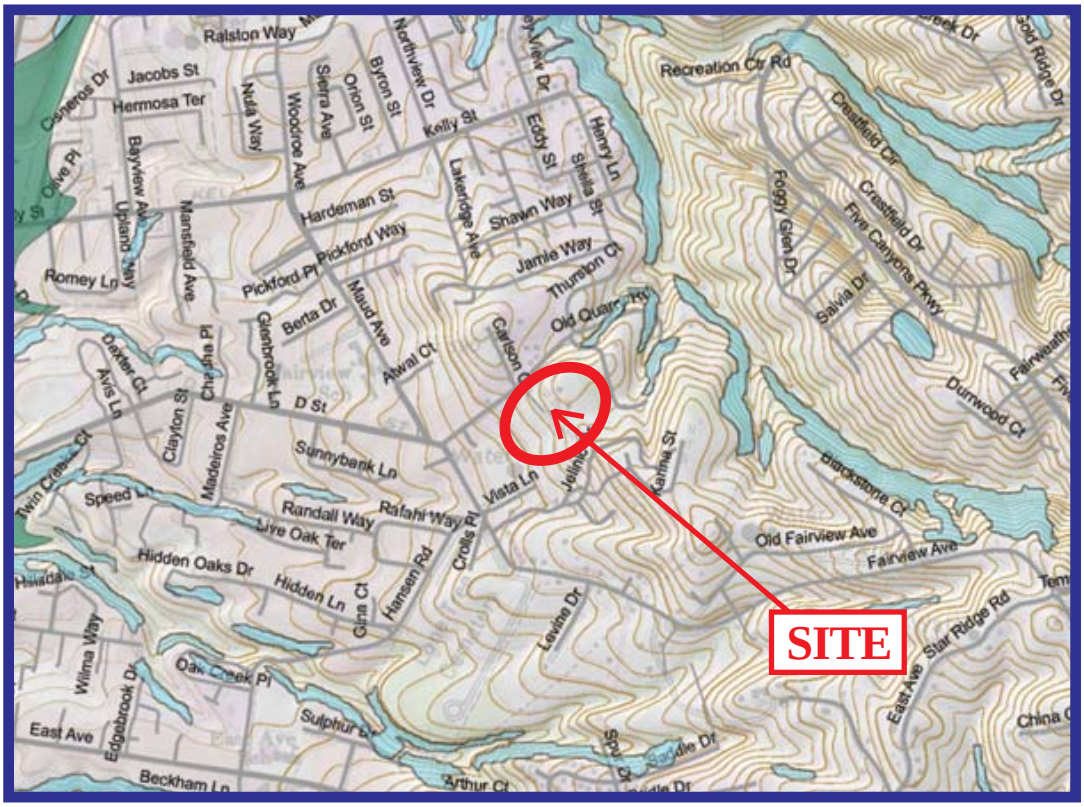
Based on the USGS/CGS Probabilistic Seismic Hazards Assessment (PSHA)
(revised 2003)

N

Project No. C-149-03	Date: 08-10-15	Scale: NTS

Henry Justiniano & Associates
Soils and Foundation Engineering

Figure No. 7



EXPLANATION

Liquefaction
Areas where historical occurrence of liquefaction, or local geological, geotechnical and ground water conditions indicate a potential for permanent ground displacements such that mitigation as defined in Public Resources Code Section 2693(c) would be required.

Earthquake-Induced Landslides
Areas where previous occurrence of landslide movement, or local topographic, geological, geotechnical and subsurface water conditions indicate a potential for permanent ground displacements such that mitigation as defined in Public Resources Code Section 2693(c) would be required.

CALIFORNIA GEOLOGICAL SURVEY

EARTHQUAKE ZONES OF REQUIRED INVESTIGATION

HAYWARD QUADRANGLE OFFICIAL MAP

RELEASED SEPTEMBER 21, 2012 (MODIFIED)

Project No.: C-149-03	Date: 08-10-15	Scale: As Shown

Henry Justiniano & Associates
Soils and Foundation Engineering

Figure No. 8

Project No C-1149-03
August 10, 2015

TEST PIT LOGS

Test Pit No.	Depth (Feet)	Description
TP 1	0.0 - 0.4	Brown Silty Sand (SM); loose to medium dense; porous; roots to 4"; Topsoil
	0.6 - 1.1	Brown Silty Sand; medium dense; dry; Residual Soil
	1.1 - 2.5	Yellow Brown Sandstone; weak to moderately strong; closely fractured; dry; prominent fracture orientation (N24E, 55NW); bedding not apparent
TP 2	0.0 - 1.8	Brown Silty Sand (SM); loose to medium dense; porous; roots to 6"; Topsoil
	1.8 - 2.7	Brown Silty Clay; Stiff; dry; Colluvial Soil; Liquid Limit 32; Plasticity Index 19
	2.7 - 4.3	Chocolate Brown Silty Clay; Stiff; moist
	4.3 - 7.3	Yellow Brown Silty Clay; Very Stiff; appears to be deeply weathered sandstone; moderately difficult to excavate
TP 3		
	0.0 - 1.7	Brown Silty Sand (SM); loose to medium dense; porous; roots to 4"; Topsoil
	1.7 - 3.0	Dark Brown Sandstone; deeply weathered; friable; dry:
	3.0 - 4.3	Yellow Brown Sandstone; moderately strong; moderately fractured with no prominent orientations; bedding not evident.

Figure 9

Project No C-1149-03
August 10, 2015

TEST PIT LOGS

Test Pit No.	Depth (Feet)	Description
TP 4	0.0 - 2.0	Brown Silty Sand (SM); loose to medium dense; porous; roots to 5"; Topsoil
	2.0 - 3.1	Mottled Gray/Yellow/Brown Silty Clay; Stiff; moist; Liquid Limit 42; Plasticity Index 27
	3.1 - 4.2	Dark Brown Clayey Sand with scattered sandstone fragments; dense; moist
	4.2 - 4.9	Yellow/Brown Sandstone; moderately strong; moderately fractured with no prominent orientations; bedding not evident
TP 5	0.0 - 2.5	Brown Silty Sand (SM); loose to medium dense; porous; roots to 5"; Topsoil
	2.5 - 5.0	Yellow/Brown Silty Sand; medium dense to dense; moist; Colluvial Soil ?
	5.0 - 6.3	Mottled Yellow/Dark Brown Clayey Sand; medium dense; moist
	6.3 - 6.9	Dark Brown Clayey Sand; slight increase in clay content; medium dense; moist; Residual Soil / Deeply Weathered Sandstone ?
TP 6	0.0 - 0.2	Brown Silty Sand (SM); loose to medium dense; porous; roots to 2"; Topsoil
	0.2 - 1.4	Yellow/Brown Sandstone; moderately strong; moderately fractured with no prominent orientations; bedding not evident; moderately difficult to excavate

Figure 10

Project No C-1149-03
August 10, 2015

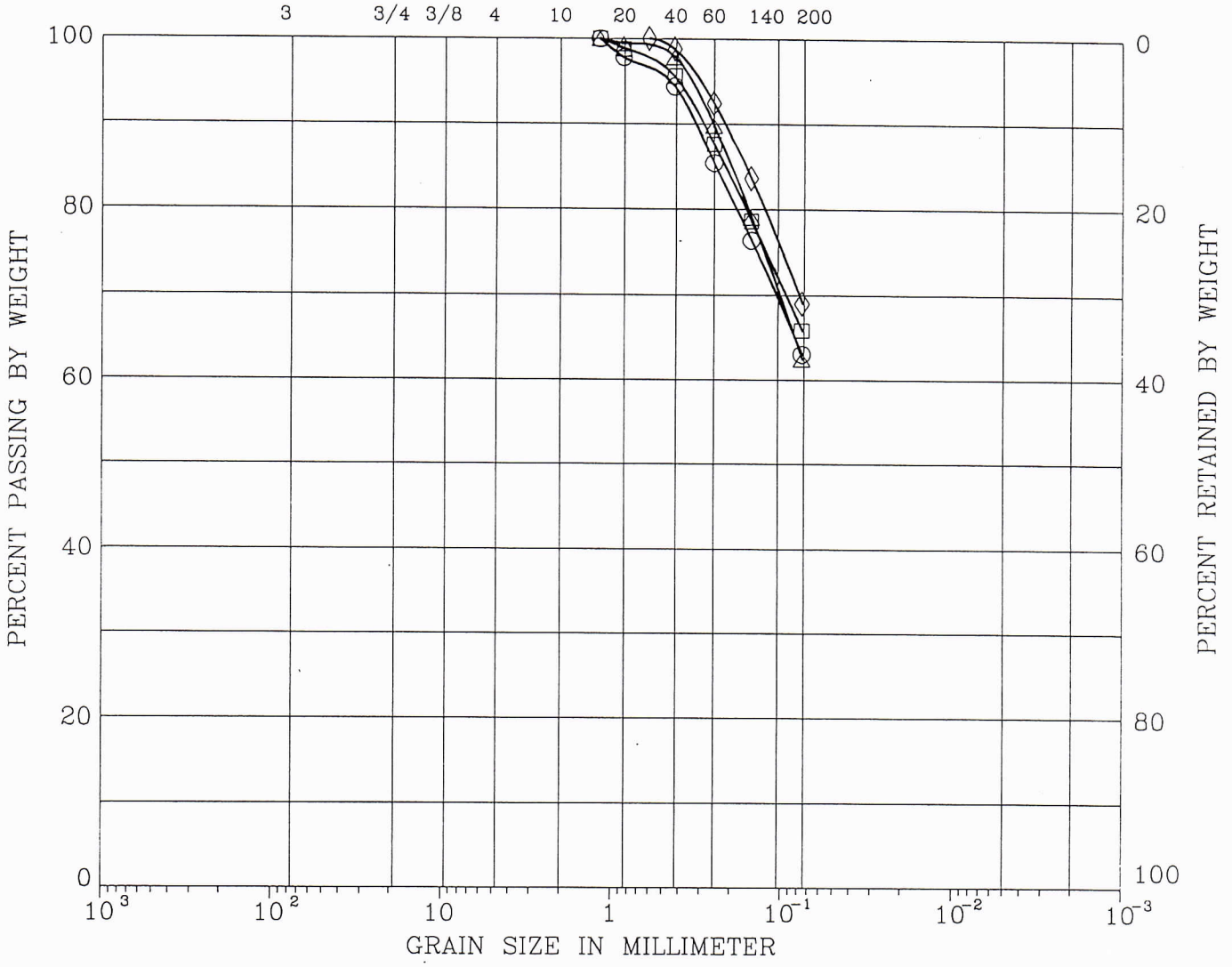
TEST PIT LOGS

Test Pit No.	Depth (Feet)	Description
TP 7	0.0 - 1.2	Brown Silty Sand (SM); loose to medium dense; porous; roots to 4"; Topsoil
	1.2 - 2.1	Dark Brown Clayey Sand; medium dense to dense; dry
	2.1 - 6.6	Chocolate Brown Silty Sand; medium dense; moist with increasing moisture at 6 ft.
	6.6 - 7.1	Yellow/Brown Clayey Sand; dense; moist; Residual Soil ?
TP 8	0.0 - 0.7	Brown Silty Sand (SM); loose to medium dense; porous; roots to 4"; Topsoil
	0.7 - 1.5	Brown Sand; medium dense to dense; dry
	1.5 - 3.3	Yellow/Brown Clayey Sand; medium dense; moist with increasing moisture at 3 ft.
	3.3 - 7.2	Dark Brown Sand; dense; moist; Residual Soil ?
TP 9	0.0 - 1.0	Brown Silty Sand (SM); loose to medium dense; porous; roots to 4"; Topsoil
	1.0 - 1.6	Dark Brown Silty/Clayey Sand; medium dense to dense; dry
	2.1 - 4.6	Brown Silty Sand; medium dense; moist with slight increase in moisture at 4 ft.
	4.6 - 7.0	Yellow/Brown Clayey Sand; dense; moist; Residual Soil ?

Figure 11

UNIFIED SOIL CLASSIFICATION

COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	
U.S. SIEVE SIZE IN INCHES			U.S. STANDARD SIEVE No.			HYDROMETER



SYMBOL	BORING	DEPTH (ft)	LL (%)	PI (%)	DESCRIPTION
○	TP 2	2	32	19	INORGANIC CLAYS (CL)
□	TP 2	3			INORG. SILTS AND CLAYS (ML-CL)
△	TP 2	7.25			INORG. SILTS AND CLAYS (ML-CL)
◇	TP 4	2.5	42	27	INORGANIC CLAYS (CL)

Remark :

Project No.C-14903	D Street, Hayward
H. Justiniano And Associates	GRAIN SIZE DISTRIBUTION Figure No. 12

Appendix A

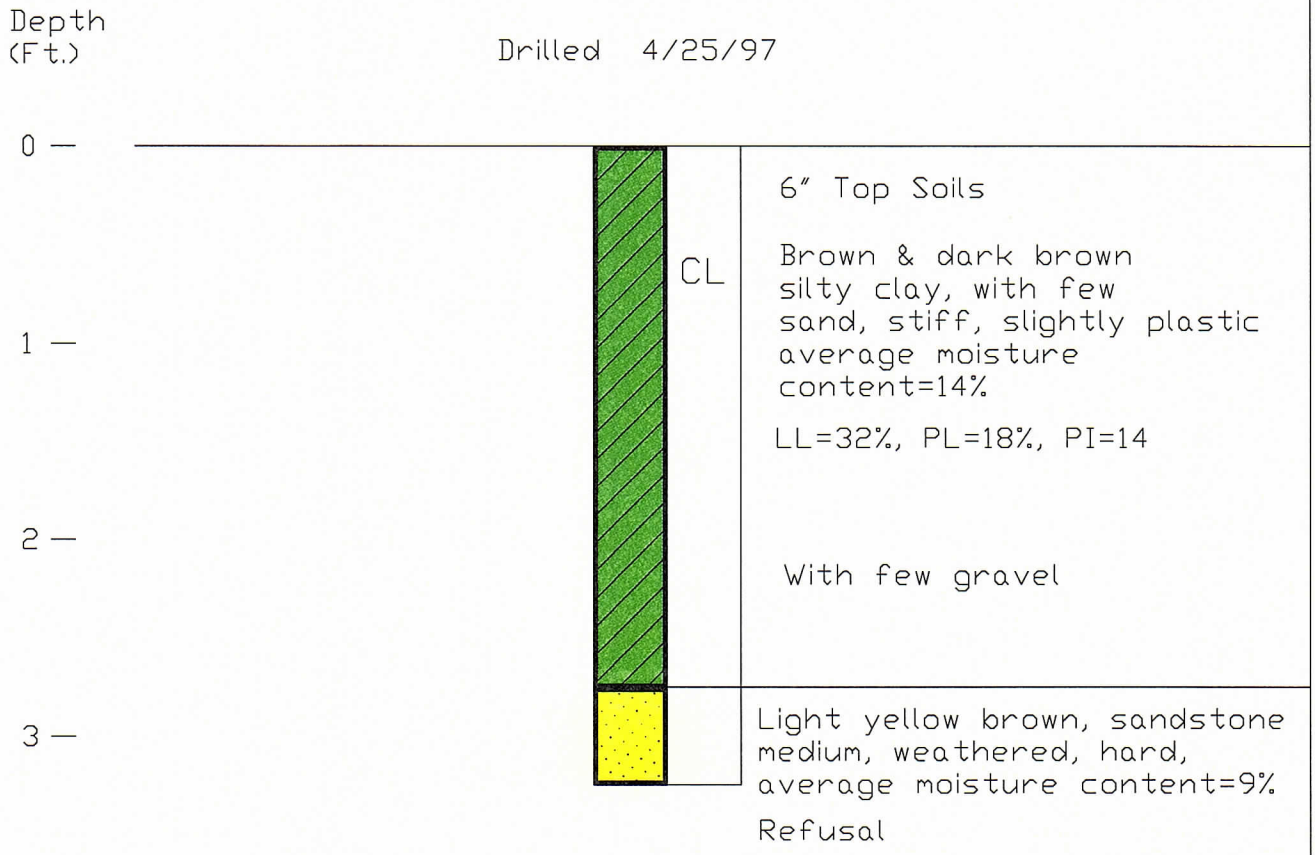
GEI's

Logs of Borings
and
Test Pit Logs

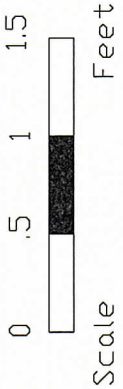
BORING 1

1" Diameter Percussion Hole

Drilled 4/25/97



Note: Free Ground Water Not Encountered



LOG OF BORING

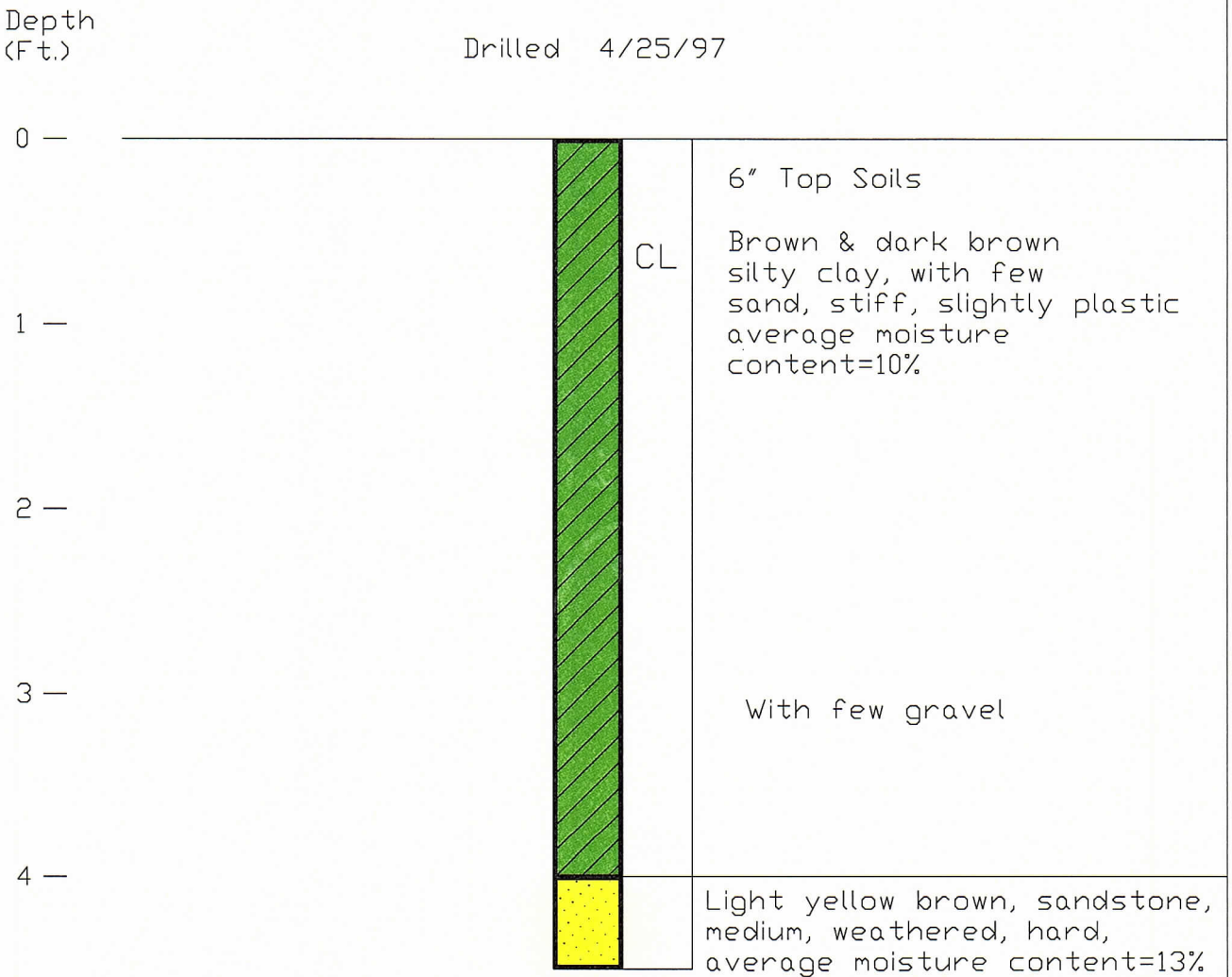
GEOTECHNICAL ENGINEERING, INC.

PLATE 7

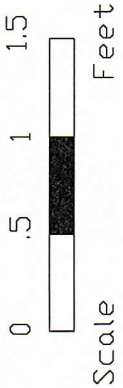
BORING 2

1" Diameter Percussion Hole

Drilled 4/25/97



Note: Free Ground Water Not Encountered



LOG OF BORING

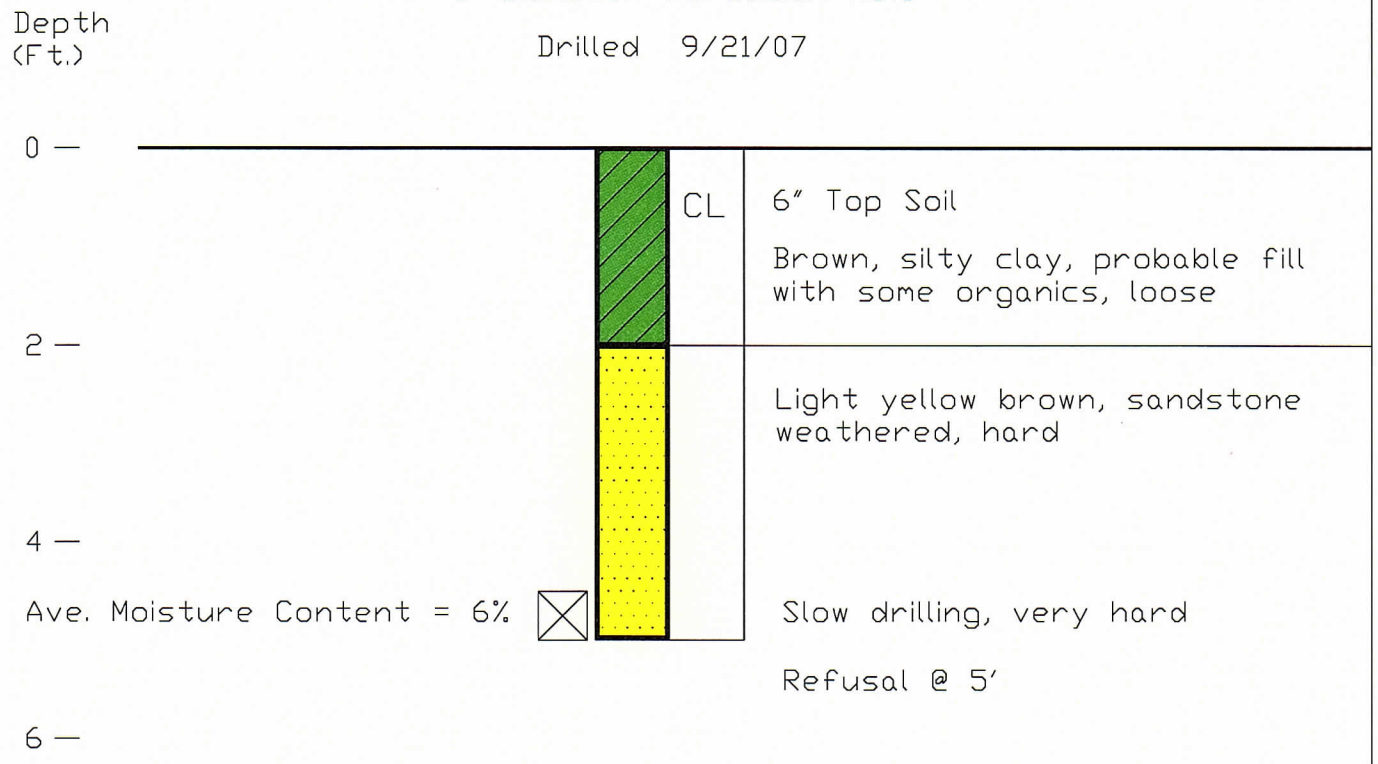
GEOTECHNICAL ENGINEERING, INC.

PLATE 8

BORING 11

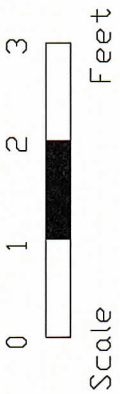
1" Diameter Percusion Hole

Drilled 9/21/07



Note: Free ground water not encountered

LOG OF BORING



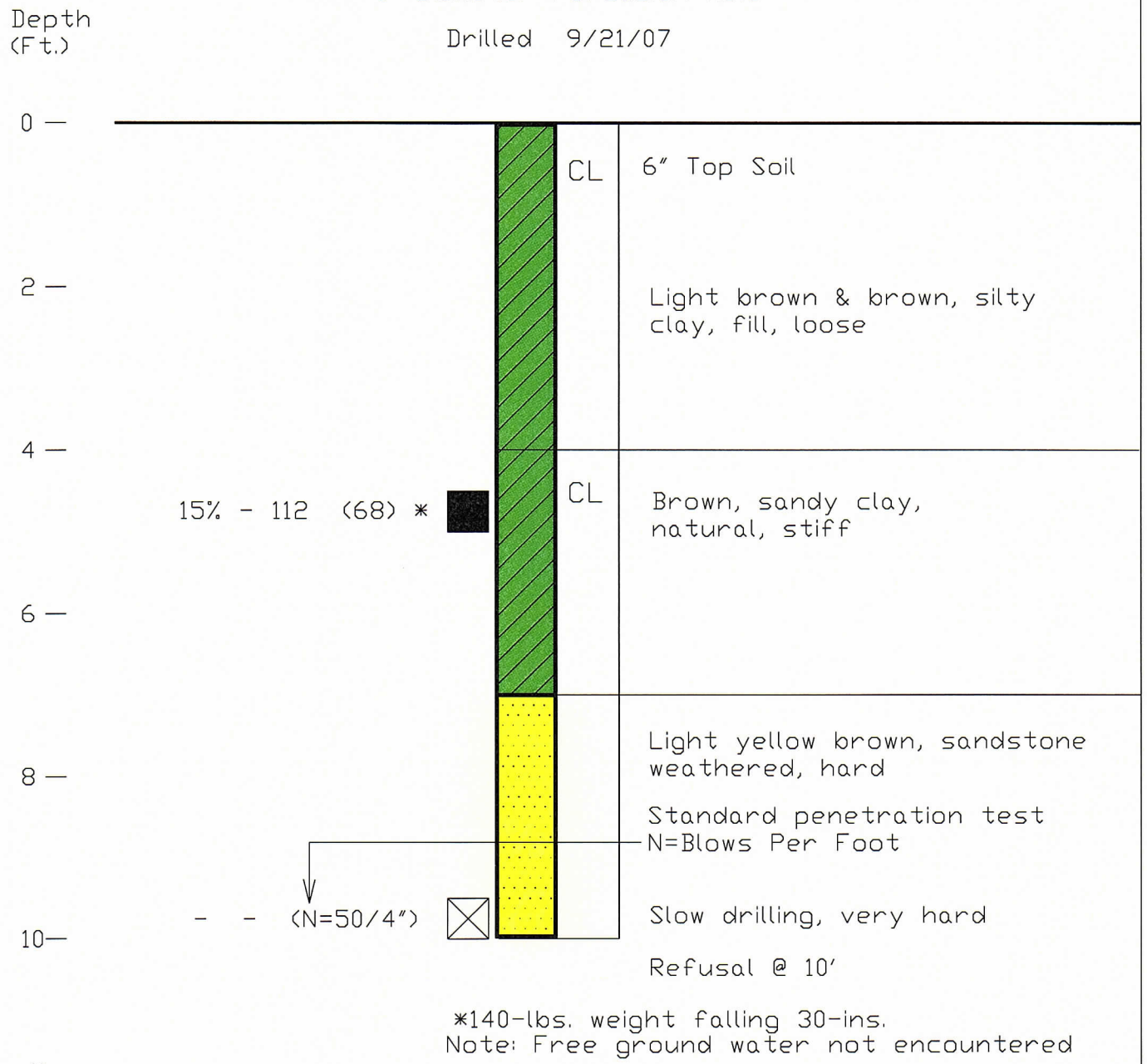
GEOTECHNICAL ENGINEERING, INC.

PLATE 2

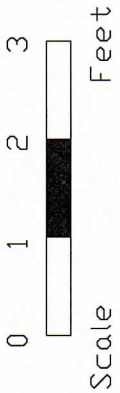
BORING 12

1" Diameter Percusion Hole

Drilled 9/21/07



*140-lbs. weight falling 30-ins.
Note: Free ground water not encountered



15% - 112 (68) Undisturbed Sample

Blows per Foot

Field Dry Density (p.c.f.)

Natural Moisture Content (%)

GEOTECHNICAL ENGINEERING, INC.

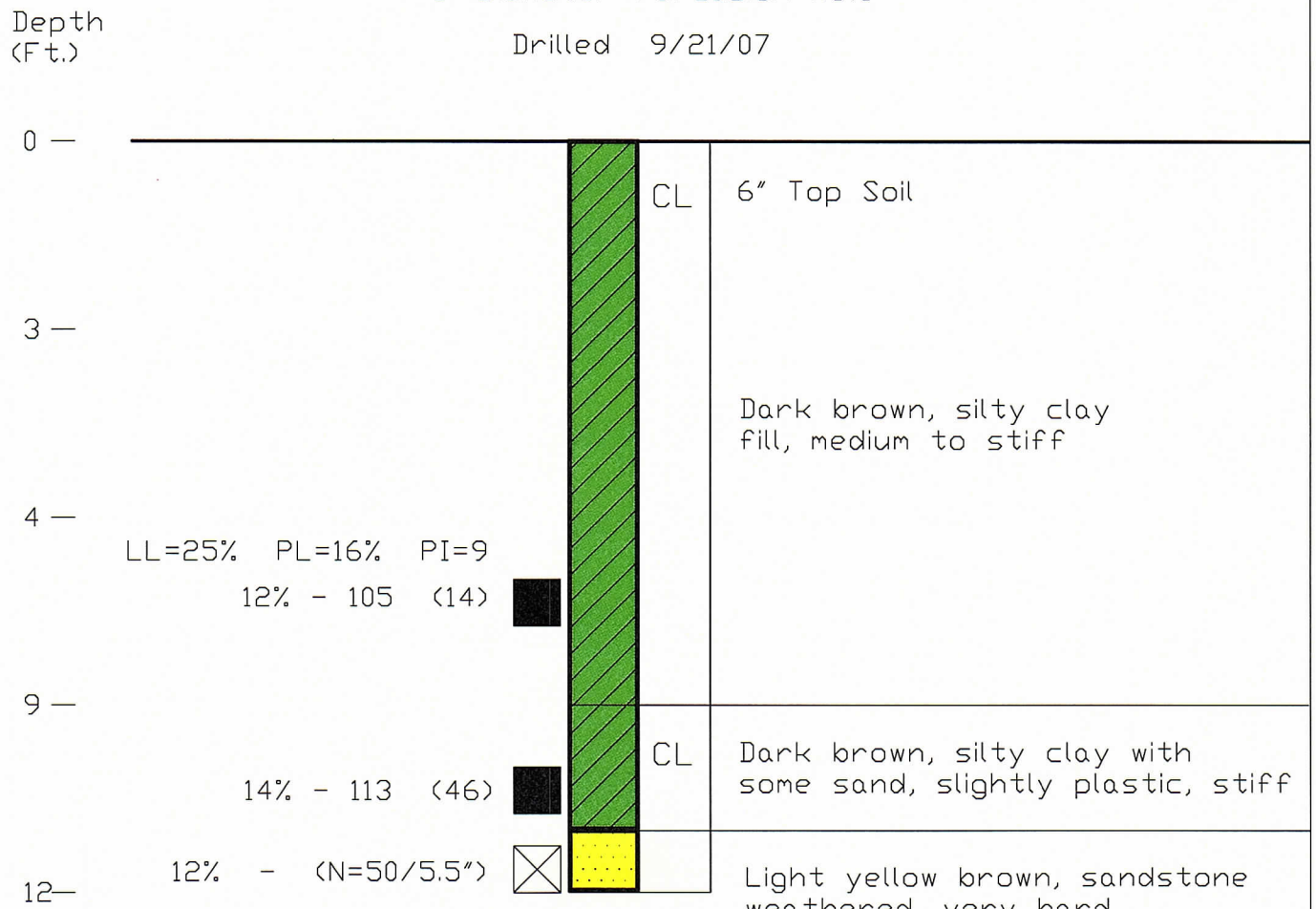
LOG OF BORING

PLATE 3

BORING 13

1" Diameter Percusion Hole

Drilled 9/21/07



Note: Free ground water not encountered

LOG OF BORING

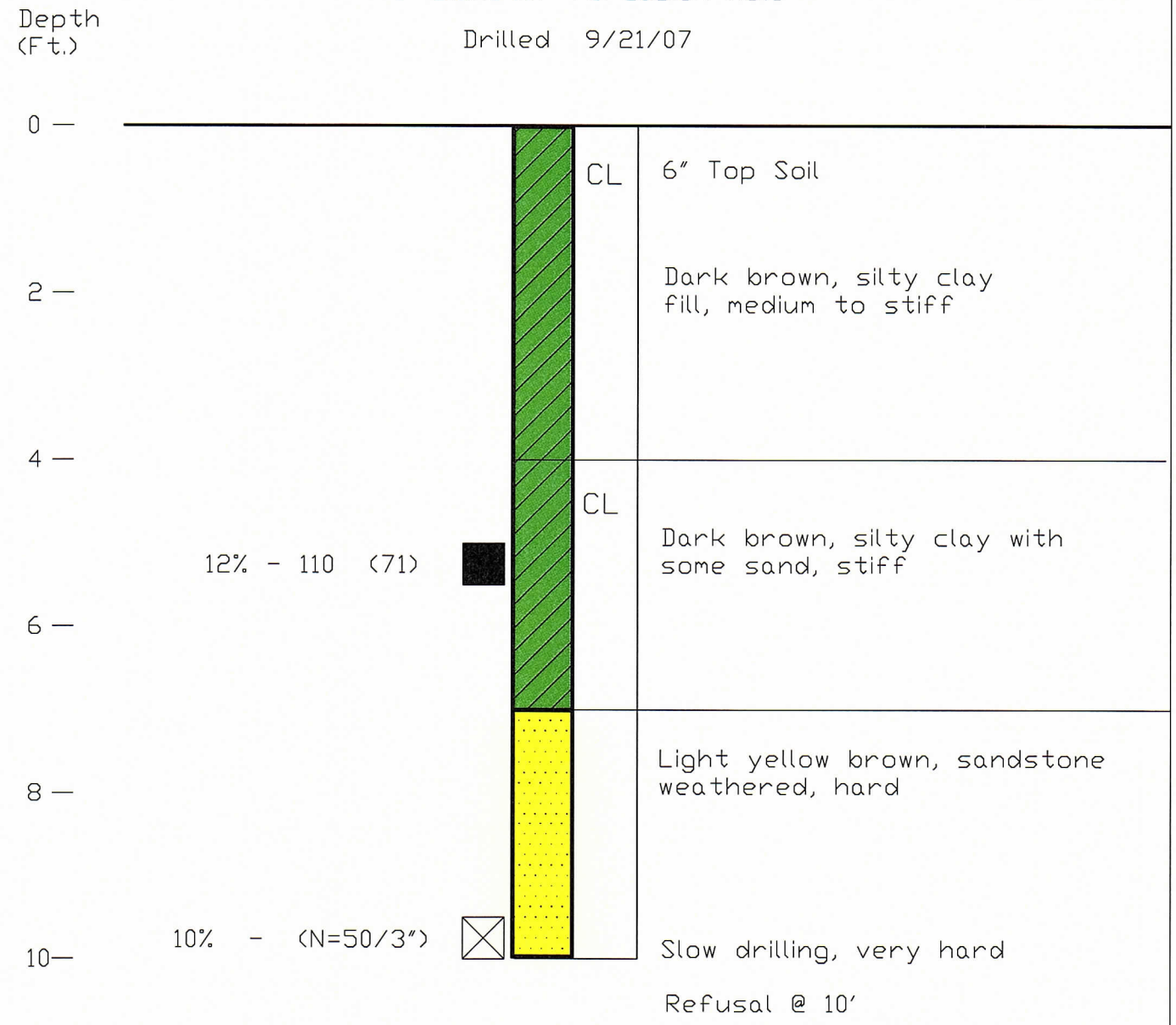
GEOTECHNICAL ENGINEERING, INC.

PLATE 4

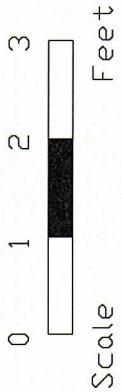
BORING 14

1" Diameter Percusion Hole

Drilled 9/21/07



Note: Free ground water not encountered



LOG OF BORING

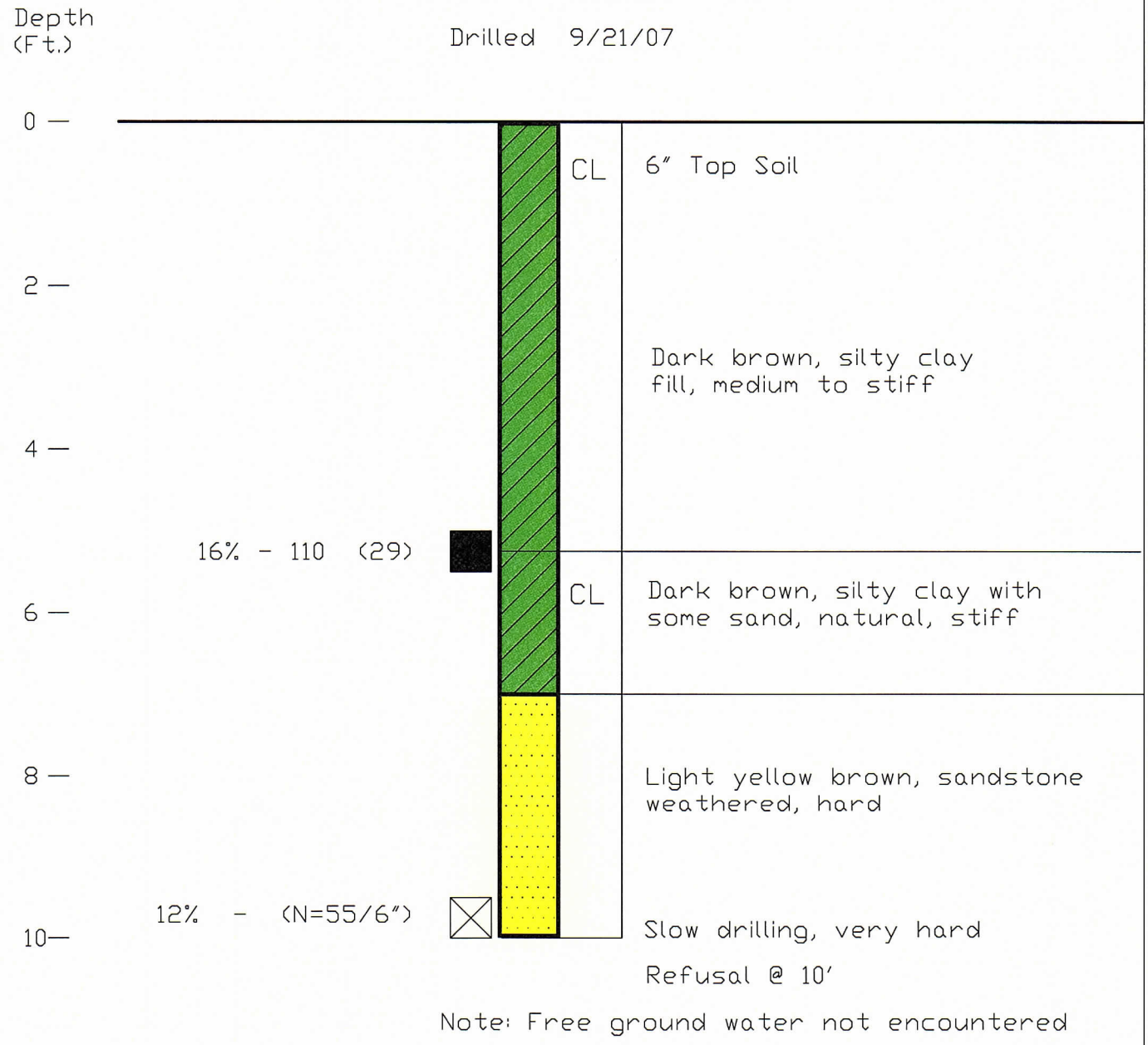
GEOTECHNICAL ENGINEERING, INC.

PLATE 5

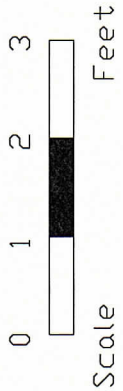
BORING 15

1" Diameter Percusion Hole

Drilled 9/21/07



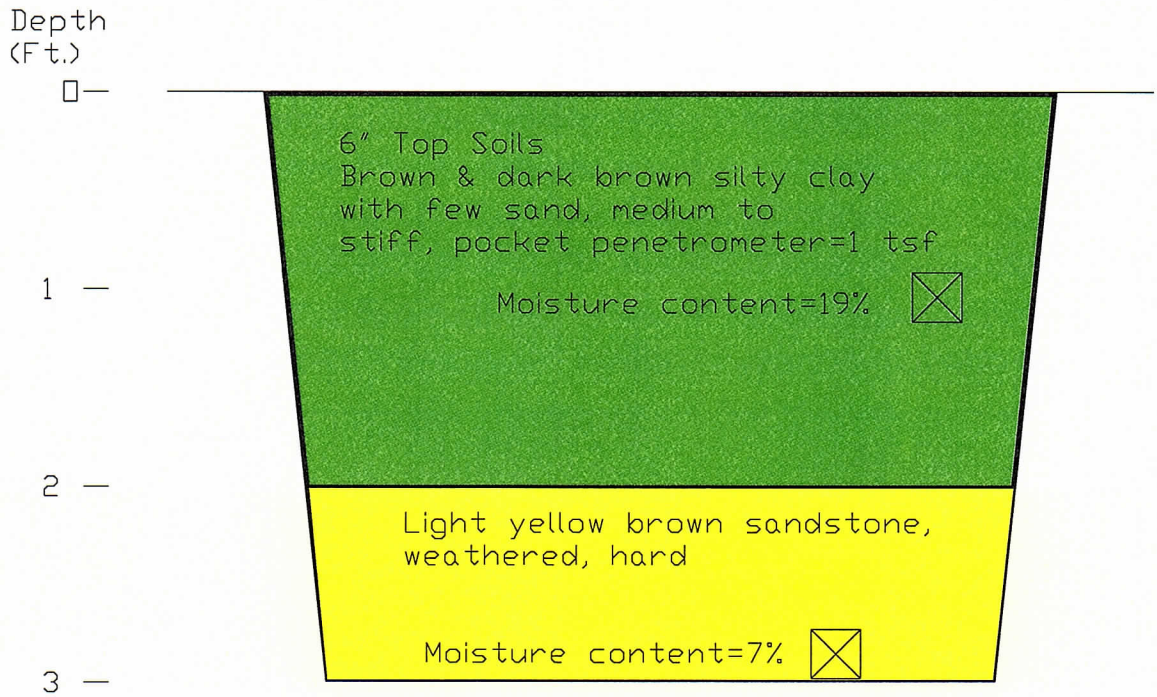
Note: Free ground water not encountered



LOG OF BORING

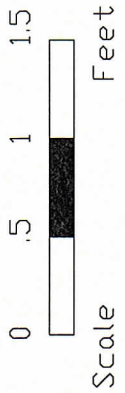
GEOTECHNICAL ENGINEERING, INC.

PLATE 6



Note: Free ground water not encountered

LOG OF TEST PIT 1

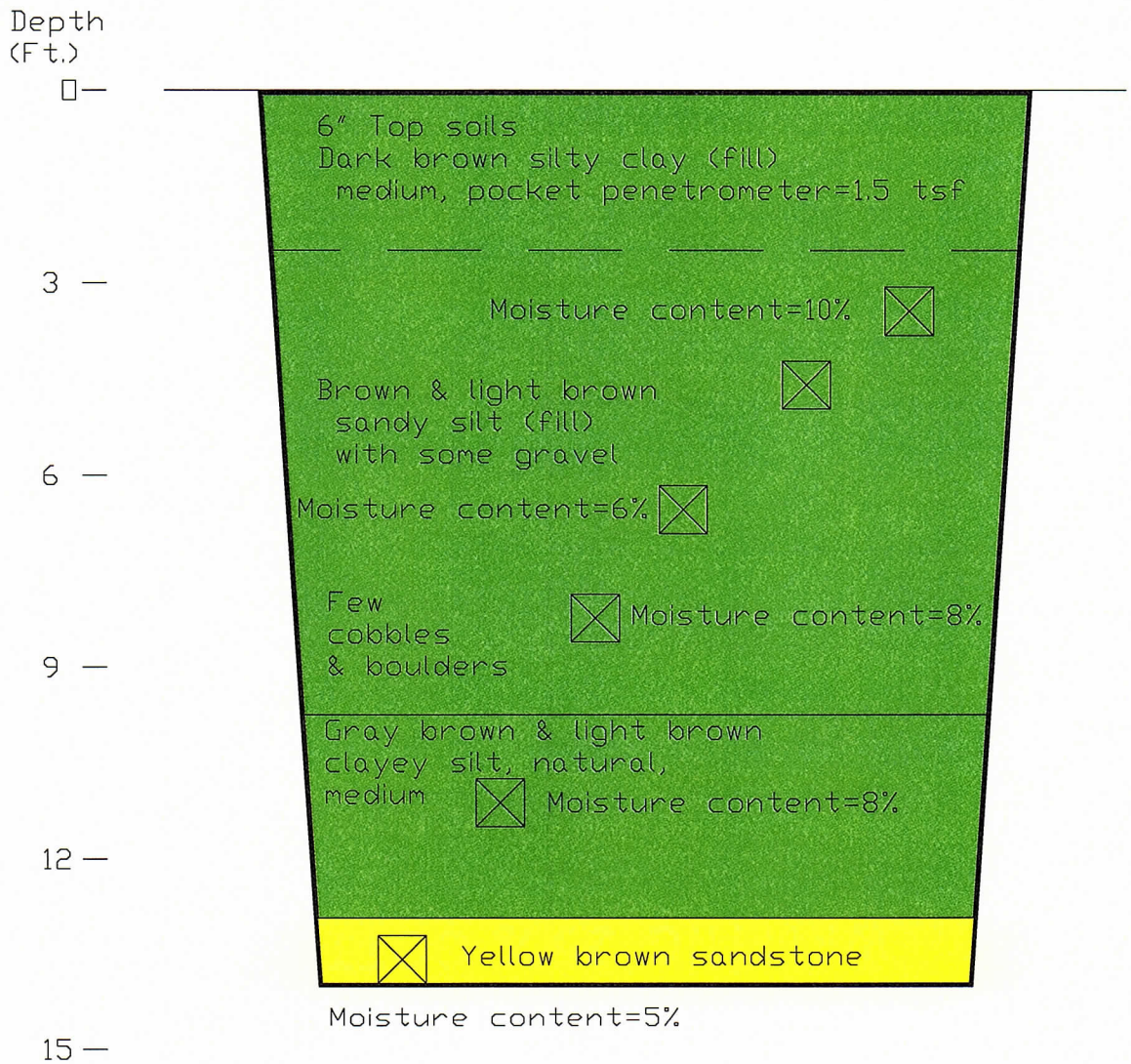


(SAMPLE LOCATIONS & LABORATORY DATA)

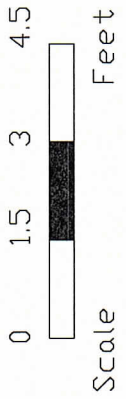
DUG 12/11/1997

GEOTECHNICAL ENGINEERING, INC.

PLATE 9



Note: Free ground water not encountered



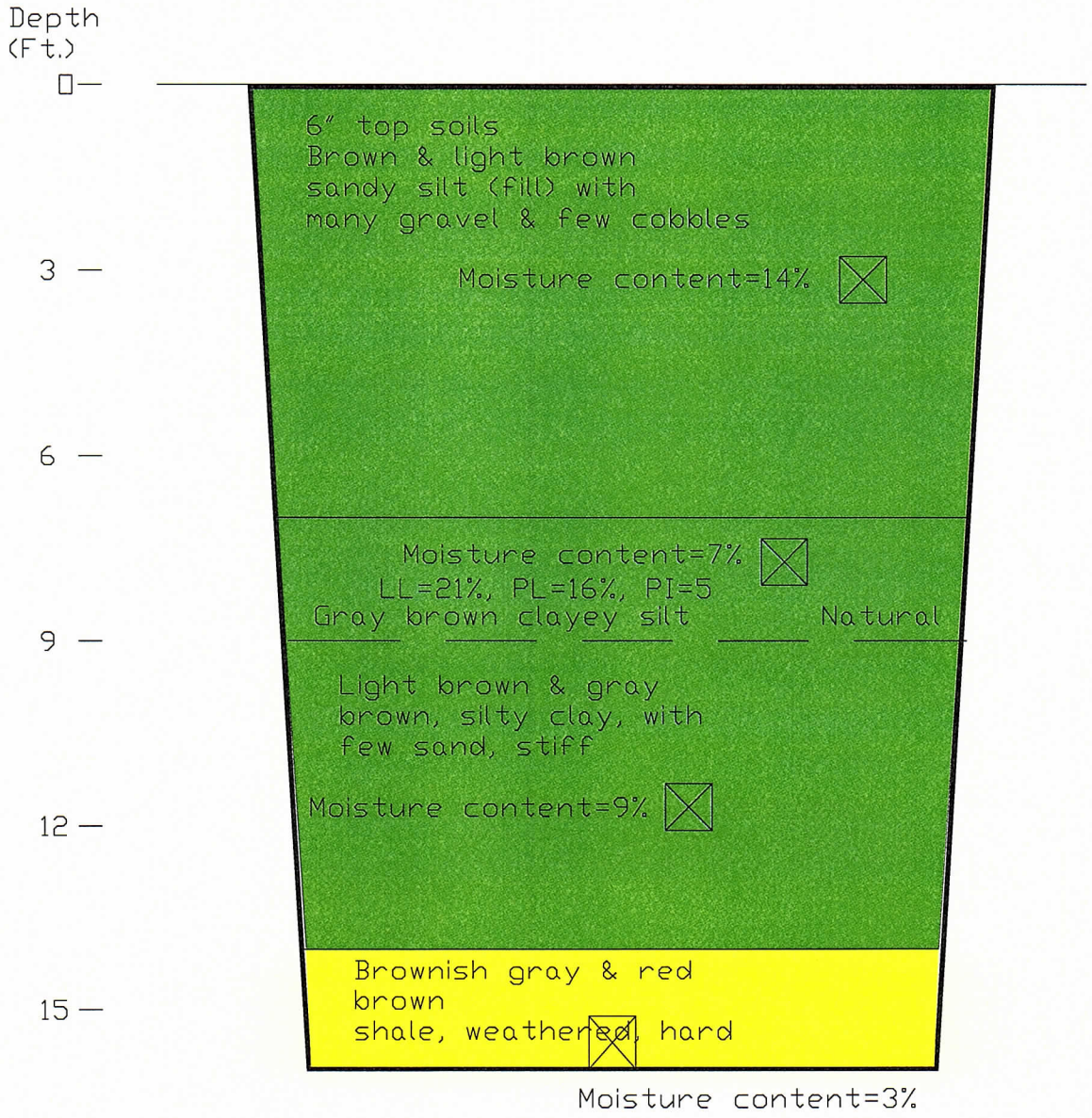
LOG OF TEST PIT 2

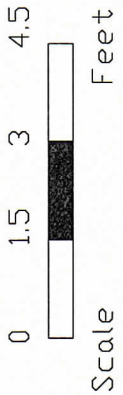
(SAMPLE LOCATIONS & LABORATORY DATA)

DUG 12/11/1997

GEOTECHNICAL ENGINEERING, INC.

PLATE 10





Note: Free ground water not encountered

LOG OF TEST PIT 3

(SAMPLE LOCATIONS & LABORATORY DATA)

DUG 12/11/1997

GEOTECHNICAL ENGINEERING, INC.

PLATE 11

Appendix B

Technical
Specifications

TECHNICAL SPECIFICATIONS
APPENDIX-B

1.0 INTRODUCTION

1.1 GENERAL

The work shall conform to applicable Federal, State, County, and local regulations. Test procedures shall conform to applicable ASTM standards, as documented in the edition of the standards in force at the start of the work, or by the specific standards quoted in these specifications.

1.2 CONFLICTS

Where a conflict exists between these specifications and applicable codes, the design drawings, other project specifications, or manufacturer's recommendations, the more stringent criteria shall apply unless otherwise directed in writing by the Engineer.

1.3 INSPECTION OF WORK

Inspection of all construction activities in these specifications, will be provided by the Owner and the Engineer while work is in progress. All work done by the Contractor shall be done in a workmanlike manner and conform to the best recognized practice to achieve a neat and functional construction. In addition, all work performed by the Contractor must meet the approval of the Engineer, but the detailed manner and methods of doing work shall be the responsibility of the Contractor.

1.4 SUSPENSION AND RESUMPTION OF OPERATIONS

The contractor shall suspend fill placing and foundation preparation operations whenever, in the opinion of the Engineer, conditions for such operations are unsatisfactory due to rain or any other reason.

1.7 CONTRACTOR RESPONSIBILITIES

The Contractor shall examine the technical specifications and construction drawings to be aware of all conditions and the site, affecting execution of the work. These conditions include:

A. The Contractor shall be responsible for the design and strength of all temporary supports and shoring which may be required for the sides of the excavations, or for protection of adjacent existing improvements. The adequacy of such systems shall be the complete responsibility of the Contractor, and shall conform to current OSHA standards.

B. The contractor shall maintain benchmarks, monuments and other reference points. If disturbed or destroyed, they must be replaced as directed.

C. Expose and verify location of all underground utilities prior to commencement of excavations. The Contractor shall be responsible for protecting existing underground utilities.

D. Applicable safety and health regulations.

C. Soil conditions.

2.0 EARTHWORK

2.1 SITE PREPARATION

Site preparations shall be performed within limits delineated in fill and borrow area in the construction drawings. These shall commence with clearing operations including, but not limited to, removal of old foundations, rubbish, abandoned pipelines, septic tanks and leach fields; cutting trees and stumps to approximately ground level, and followed by removal of all growth, stumps, brush, roots, and similar organic and deleterious matter within the borrow and fill area limits delineated in the construction drawings, and to the satisfaction of the engineer. The cleared material shall be hauled offsite prior to commencement of fill operations.

Clearing operations shall be followed by stripping. Stripping shall consist of removal and stockpiling all top soil down to suitable material as determined by the Engineer. The stripped material shall be removed from the stripped area and placed in the topsoil stockpile area from which it may later be reclaimed for landscape use. The topsoil stockpile area will be determined by the Owner.

2.2 EXCAVATION

After clearing and stripping, all surfaces to receive fill shall be scarified to a minimum 6-inch depth and recompacted to the same requirements as the fill to be placed over the prepared foundation.

Areas deemed soft or unsuitable by the Engineer, shall be excavated to accomplish a firm non-yielding foundation and backfilled in accordance with Section 2.5.

Excavations shall be graded and properly maintained to provide adequate drainage at all times. Work shall be suspended when the site is wet, muddy, or in any other condition when the area cannot be properly maintained.

Subgrade excavation shall be performed as required to achieve the lines and grades shown on the drawings. Material removed below grade shall be replaced with approved material and compacted to the requirements for structural fills, unless otherwise directed by the Engineer.

2.3 KEYWAY EXCAVATION

At the toe of side slope fills that are designated to terrain that slopes steeper than 5 horizontal to 1 vertical, a 10 foot wide base keyway shall be excavated a minimum of 3 feet into firm non-yielding material and sloped into the hillside at a gradient of no less than 5%. A 4-inch perforated pipe shall be placed at the hillside base of the keyway and shall be surrounded with 3 cubic feet of Class II filter rock

per foot of pipe. The configuration of the keyway and subdrain system shall permit gravity flow to a discharge point downhill that will be subsequently connected into a line discharging to an approved outlet.

2.4 FILL MATERIALS

Fill materials shall be obtained from designated borrow areas or areas designated by the Engineer. Placement of fill shall be made only in areas approved by the Engineer for fill placement. All fill materials shall consist of durable, nonperishable, weather resistant soil/rock mixture and be free of organics or other deleterious matter. Should import material be required, it must be approved by the Engineer prior to transporting it to the project and must adhere to the following specifications.

1. Plasticity index not to exceed 15.
2. Should not contain rocks larger than 8-inches in their greatest dimension.
3. Not more than 15% passing the No. 200 sieve.

2.5 FILL PLACEMENT

After areas designated to receive fill have been cleared, grubbed and stripped, as specified in Section 2.1, they should be compacted as specified in Section 2.6. The Engineer shall approve the compacted surface prior to placement of the fill. Fill shall be placed on the compacted surface in loose lifts not exceeding 8-inches in thickness. These materials should be moisture conditioned to near optimum and compacted to a minimum of 90% of the maximum density as determined by ASTM Test Method D-1557 (Modified Proctor). Boulders in excess of 8 inches, or greater in size than 3/4 the thickness of the lift, whichever is smaller, shall be removed. All fill should be evenly brought up. Lifts shall be uniform in thickness and moisture shall be evenly mixed throughout the fill. Any portions of previous lifts exhibiting pumping or yielding shall be removed and replaced prior to placement of subsequent lifts.

2.6 COMPACTION

Where compaction is referred to within these specifications or on the design drawings, it shall mean the relative compaction as determined by comparing the in-place dry density to the laboratory maximum dry density as determined by ASTM Test Method D-1557 (Modified Proctor). The field in-place dry density shall be as determined by ASTM D-2922 (nuclear) methods.

During the compaction operation of all fill material, the surface of the fill and the material being placed will be maintained within the moisture content range required (+/- 3%) to permit proper compaction to the specified density. The moisture shall be uniformly distributed throughout each layer.

Compaction tests will be made by the Engineer during the placement of the fill, and optimum moisture content and the maximum dry density will be determined.

The Contractor will furnish and operate the necessary types of equipment required to obtain the specified compacted dry density. After each layer of fill is placed and uniformly wetted, it will be compacted by passing compaction equipment over the entire surface a sufficient number of times to obtain the density specified. The compactive effort shall be uniform and consistent.

The degree of compaction of the placed fill will be determined by comparing field density test results to the Laboratory Maximum Dry Density as obtained by the ASTM D-1557 Test Method. A minimum of 1 compaction test per 200 cubic yards of in-place fill, is recommended. More frequent testing may be justified if deemed necessary by the Engineer, due to special circumstances.

2.6 UTILITY TRENCH BACKFILL

Materials for trench backfill shall consist of imported materials meeting the criteria specified in the drawings and approved by the Engineer, and native materials that are free of organics, rocks exceeding 4-inches in their greatest dimension, or other deleterious substances.

All utility trench backfill shall be compacted to a minimum of 90% of the Laboratory Maximum Dry Density as obtained by the ASTM D-1557 Test Method, except for the final 12-inches measured from the subgrade elevation in areas designated to receive pavements, where 95% relative compaction will govern.

Prior to pipe installations, the proper bedding shall be provided in accordance with the local authority's standards, but shall be a minimum of 6-inches thick that meets the above reference import material specifications. A minimum of 12-inches of protective cover implementing imported materials shall be provided prior to commencement of compaction efforts. Subsequent lifts may employ native materials.

The Engineer shall observe and periodically test the backfill compaction during the underground construction phase to assess compliance with these specifications.