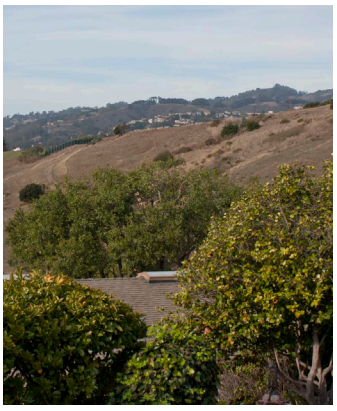
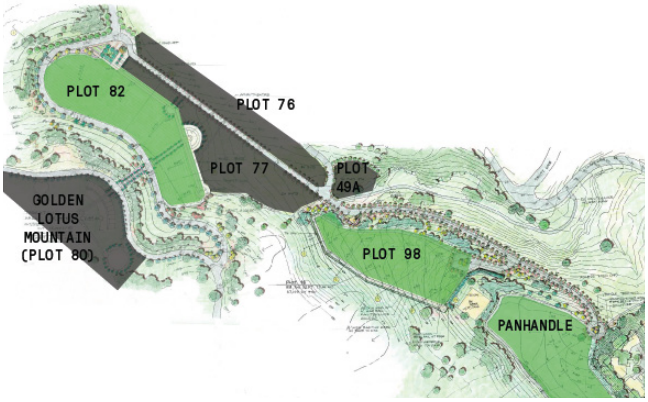
Mountain View Cemetery Expansion Project





Draft Environmental Impact Report

Technical Appendices

SCH # 2015022037
Lead Agency: City of Oakland
May, 2016

City Case # PCN15048 – ER01

LAMPHIER-GREGORY

Appendices

(Technical appendices are included on a Compact Disk included in the back cover of the Draft EIR document.)

Appendix 1A

Notice of Preparation

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 #

Project Title: Mountain View Cemetery Burial Site Expansion

Lead Agency: City of Oakland | Contact Person: Lynn Warner
Mailing Address: 250 Frank H. Ogawa Plaza, Suite 2114 | Phone: (510) 238-6983
City: Oakland, CA | Zip: 94612 | County: Alameda

Project Location: County: Alameda | City/Nearest Community: Oakland
Cross Streets: Piedmont Avenue and Ramona Avenue | Zip Code: 94611
Longitude/Latitude (degrees, minutes and seconds): ____° ____′ ____″ N / ____° ____′ ____″ W | Total Acres: 226
Assessor's Parcel No.: 48A-7002-3-2 | Section: ____ | Twp.: ____ | Range: ____ | Base: ____
Within 2 Miles: State Hwy #: 13, 24, I-580, I-980 | Waterways: Lake Temescal, Lake Merritt, Glen Echo Creek
Airports: ____ | Railways: BART | Schools: many

Document Type:

CEQA: ☒ NOP ☐ Draft EIR | NEPA: ☐ NOI | Other: ☐ Joint Document
☐ Early Cons ☐ Supplement/Subsequent EIR | ☐ EA | ☐ Final Document
☐ Neg Dec (Prior SCH No.) ____ | ☐ Draft EIS | ☐ Other: ____
☐ Mit Neg Dec Other: ____ | ☐ FONSI

Local Action Type:

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

Development Type:

☐ Residential: Units ____ Acres ____
☐ 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: cemetery use

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:

Land Use = cemetery / Zoning = RD-1 / General Plan = Urban Park and Open Space

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

The Project would develop portions of the undeveloped upper one-third of the cemetery property to accommodate future needs for additional burial sites. Three separate but interrelated development sites, all entirely within the City of Oakland, would be included. The sites would be developed as a cut-and-fill plan that will move existing soils from proposed cut locations to proposed fill locations, with a resulting cut and fill balance on site. This approach would require the transfer of soil between undeveloped sections of the cemetery property and subsequent grading and site work. The Project would also connect the development sites to each other and to the existing portions of the Cemetery by extensions of on-site roadways.

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
____ Caltrans District # ____	____ 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	__X__ SWRCB: Water Quality
____ Energy Commission	____ SWRCB: Water Rights
____ Fish & Game Region # ____	____ 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: _____
____ Native American Heritage Commission	

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

Starting Date February 6, 2015 Ending Date March 11, 2015

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: Mountain View Cemetery Association
Address: 5000 Piedmont Avenue
City/State/Zip: Oakland, CA 94611
Phone: (510) 658-2588

Signature of Lead Agency Representative: _____ **Date:** 2/6/15

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

CITY OF OAKLAND

DALZIEL BUILDING • 250 FRANK H. OGAWA PLAZA • SUITE 2114 • OAKLAND, CALIFORNIA 94612

Planning and Building Department
Bureau of Planning

(510) 238-3911
FAX (510) 238-6538
TDD (510) 238-4730

NOTICE OF PREPARATION (NOP) OF A DRAFT ENVIRONMENTAL IMPACT REPORT (EIR) MOUNTAIN VIEW CEMETERY BURIAL SITE EXPANSION

The City of Oakland Department of Planning and Building is preparing a Draft Environmental Impact Report ("EIR") for the proposed Mountain View Cemetery Burial Site Expansion Project (the "Project") as described below, and is requesting comments on the scope and content of the EIR. The EIR will address the potential physical, environmental effects for each of the environmental topics outlined in the California Environmental Quality Act ("CEQA"). The City has not prepared an Initial Study, and all CEQA topics will be addressed in the EIR. The City of Oakland is the Lead Agency for the Project and is the public agency with the greatest responsibility for approving the Project.

This notice is being sent to Responsible Agencies and other interested parties. Responsible Agencies are those public agencies, besides the City of Oakland, that may also have a role in approving or carrying out the Project. When the Draft EIR is published, it will be sent to all Responsible Agencies and to others who respond to this NOP or who otherwise indicate that they would like to receive a copy. Responses to this NOP and any questions or comments should be directed in writing to:

Lynn Warner, Planner III
City of Oakland, Planning and Building Department
250 Frank H. Ogawa Plaza, Suite 2114
Oakland, CA 94612
Phone: (510) 238-6983
Fax: (510) 238-4730
E-mail: lwarner@oaklandnet.com

Comments on the NOP must be received at the above mailing or e-mail address **by 5:00 p.m. March 11, 2015**. Please reference **case number ER 15001** in all correspondence. In addition, comments may be provided at the EIR Scoping Meeting to be held before the City Planning Commission:

PUBLIC HEARING: The City of Oakland Planning Commission will conduct a public hearing on the scope of the EIR for the Project on March 4, 2015 at 6:00 p.m. in Hearing Room #1, City Hall, 1 Frank H. Ogawa Plaza.

Comments should focus on discussing possible impacts on the physical environment, ways in which potential adverse effects might be avoided or minimized, and alternatives to the Project in light of the EIR's purpose to provide useful and accurate information about such factors.

PROJECT TITLE: Mountain View Cemetery Burial Site Expansion

PROJECT LOCATION: Mountain View Cemetery, 5000 Piedmont Avenue, Oakland, CA (Assessor's Parcel Number: 48A-7002-3-2). The cemetery is located between the Claremont Country Club, Clarewood Drive, Moraga Avenue, and Ramona Avenue in the cities of Oakland and Piedmont. The Project will take place in the eastern half of the cemetery and entirely within the City of Oakland, as shown in Figure 1, attached.

PROJECT SPONSOR: Mountain View Cemetery Association

EXISTING CONDITIONS: Mountain View Cemetery is a 226 acre facility which includes graves, internments, chapels, and a crematorium. The cemetery is located at the upper end of Piedmont Avenue and extends into the Oakland hills. The location of the Project, immediately above the developed portion of the cemetery, consists of unused land covered with grasses and trees on steep slopes.

PROJECT DESCRIPTION: Mountain View Cemetery wishes to develop portions of the undeveloped upper one-third of the Cemetery site to accommodate future needs for additional burial sites (see Figure 1 for orientation of the Cemetery and proposed development sites). The proposed Project includes development plans at three separate but interrelated development sites on the Cemetery property, all of which are entirely within the City of Oakland. The three new development sites will be connected to each other and to the existing portions of the Cemetery by extensions of on-site roadways. The grading operation needed to develop these sites as desired by Mountain View Cemetery is an interrelated cut-and-fill plan that will move existing soils from proposed cut locations to proposed fill locations, with a resulting cut and fill balance on site. The intent of the Project is to develop new burial sites that are gently pitched to the southwest, offering panoramic views of the San Francisco Bay and skyline.

All grading operations described above will be completed at one time, with all cut and fill placed on the plot sites as a single operation. However, final design plans and individual plot sales and development are expected to be implemented in phases for operational and economic purposes. Opening of Plot 82, including installation of irrigations systems and landscaping, will comprise Phase 1. Phase 2 will include final development of Plot 98, expected to be initiated as sales of individual plots in Plot 82 begin to reach capacity, but potentially sooner. The opening of the Panhandle site for burial use will be the final phase of site development pursuant to the Project. Activities at the new burial sites will be the same as the majority of the cemetery, primarily a pastoral and scenic area with occasional burial services and visitors. With a design capacity of approximately 6,300 individual plots among the three development sites, the Project would provide Mountain View Cemetery with approximately 15 years of additional operational capacity.

PROBABLE ENVIRONMENTAL EFFECTS: It is anticipated that the potential for environmental effects to result from implementation of the Project will be primarily limited to those effects associated with the construction and grading operations associated with development of the new burial and internment sites. As such, the following topics will be specifically addressed in the EIR: construction-period air quality emissions, biological resources, cultural resources, geology and soils, hydrology and water quality, hazardous conditions or hazardous materials, construction-period noise, and construction-

period traffic and transportation. The Project may have temporary or long term environmental impacts related to aesthetics and historic resources. Each of these issues will be addressed in detail in the EIR.

It is not anticipated that the Project will result in significant long-term operational impacts. Mountain View Cemetery is an existing cemetery that has been in use since 1863, when it was originally designed by the renowned landscape architect Frederick Law Olmsted as a site for future burials and related services. The Project is intended to enable the Cemetery to continue to provide these same services into the future, with no substantial change to the existing, or baseline condition. As such, it is not anticipated the Project will have significant environmental impacts related to operational issues such as greenhouse gas emissions and climate change, land use and planning, population and housing, public services, recreation, traffic and transportation, or utilities and service systems. Additionally, it is not anticipated that the Project will have significant environmental effects on agricultural and forest resources, or mineral resources. Nevertheless, each of these environmental factors will be addressed in the EIR.

The Draft EIR will also examine a reasonable range of alternatives to the Project, including the CEQA-mandated No Project Alternative, and other potential alternatives that may be capable of reducing or avoiding potential environmental effects.

February 6, 2015
File Number ER 15001

Lynn Warner, Planner III
City of Oakland Planning and Building Department

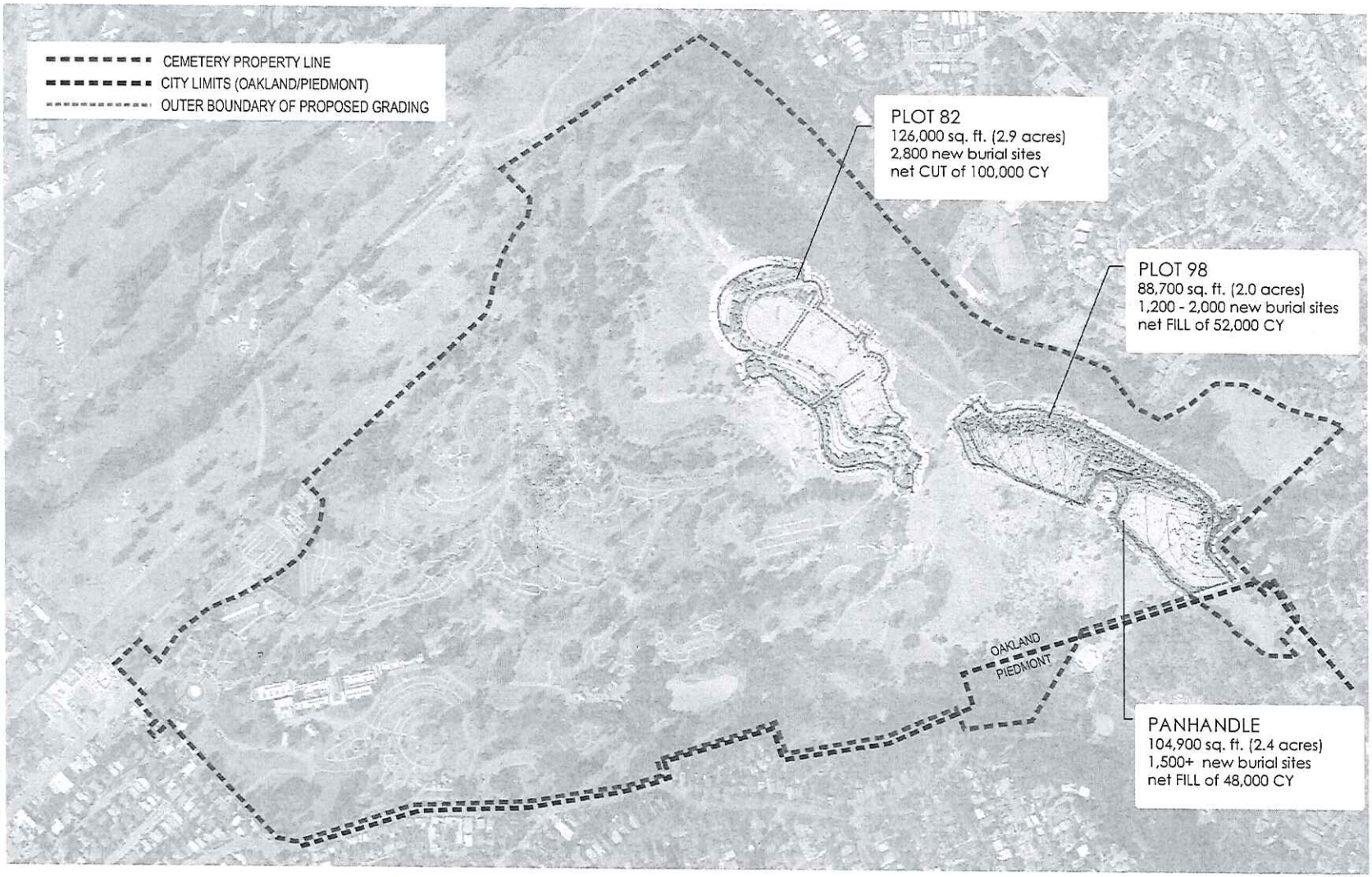


Figure 1
Project Site

Mountain View Cemetery Burial Site Expansion EIR NOP
Source: SWA

Appendix 1B

Responses to Notice of Preparation

Mountain View Cemetery Meeting 10/23/2014

ATTENDEES:

Jeff Lindeman, Scott Gregory – CEQA Consultant, Joe Runco – Landscape Architect
OHA: Alison Finlay, Tom Haw, Steve Rynerson, Valerie Winemiller, Joann Pavlinec

PROJECT:

To increase burial capacity for 15 years;
Selected least environmentally sensitive areas;
Proposal in the vicinity of Plots, 77, 80, 81, 82, and 98;
Substantial amount of cut and fill, resulting in a pitch to the Southwest, with a 14-15% grade;
Goal is geo-tech stability which will require some remedial grading, excavate more than needed, to create benches;
Current thought on finish of retaining walls is board concrete;
Will require a Conditional Use Permit, Design Review and EIR;
EIR will follow required path; Notice of Preparation, Draft and Final EIRs;
Working on a tree survey;
Parking – there is an overall 2% increase, which may not require additional parking;
Consultants: Historic – Page and Turnbull
Archeology – William Self Associates

RECOMMENDATIONS/QUESTIONS:

Include photographs of the areas of work in presentation.
Include plan of proposal with plan of existing to visualize texture (roads, pathways, scale of burial areas, overall design - curvilinear vs. straight) of proposed vs. texture of existing cemetery.
Include detail of how the crypt wall will be designed: scale, rhythm, break-up of length, planting, railings.
How will retaining walls be treated to break up monolithic appearance? (One of the walls is very lengthy and straight.)
How many trees will be removed? Planted?
Study habitat oriented planting.
Do an ornithology study.
What will the effect of additional required irrigation have on current water supply, especially in reference to that of the existing ponds which provide a source of water for animal life?
Modify the secondary straight path in one of the proposed burial areas, so as not to compete with the main straight path leading to the arched shape area (in plan view).

Ref: Documents/Advocacy/MountainViewCemeteryMeeting

From: Russ Hafferkamp [mailto:russhafferkamp@yahoo.com]
Sent: Tuesday, February 17, 2015 2:39 PM
To: Warner, Lynn
Subject: Case # ER 15001

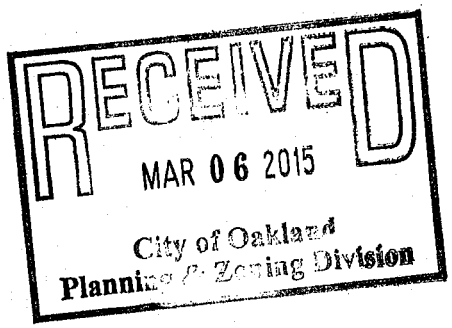
Ms. Warner,

I am concerned mostly about erosion of the existing hillside above Plot 98. Our home sits above the proposed addition and with the drought, the hillside is very dry. Then the quick deluge of rains come and without a deep soaking, the top-layers of the hillside get heavy and 'slip' down the hill. With grading and such proposed at the base of the hill, I want to be certain the use of retaining walls are used where appropriate to prevent any future or unintended slippage of the hillside.

Thank you.

Russ Hafferkamp
54 Stark Knoll Place
Oakland, CA 94618

February 18, 2015



Lynn Warner, Planner III
City of Oakland, Planning and Building Department
250 frank H. Ogawa Plaza, Suite 2114
Oakland, CA 94612

Re: Mountain View Cemetery
File Number ER 15001

Dear Ms. Warner:

I live at 5335 Hilltop Crescent, Oakland, and I share a property line with Mountain View Cemetery. I have spoken with Jeff Lindeman and have attended a few meetings at the cemetery regarding the planned earth moving project to change the topography of the cemetery.

On numerous occasions, I have expressed to Mr. Lindeman my concern that putting 48,000 cubic yards of dirt on the Panhandle area of the cemetery, especially on the promontory point, will block my view of San Francisco. He has assured me that the impact will be minimal. To my untrained eye, it would appear that the topographical maps of the proposed dirt build up will in fact impact my view of the City. I would be opposed to any accumulation of dirt that would block my view.

As much as I can determine, the view from my property would be the only property affected by a fifteen foot high mound of dirt deposited on the promontory of the Panhandle section of the cemetery. As such my request is that the dirt be contoured in such a way as to not block my view of San Francisco.

Since I don't know how this would be accomplished, or if this information needs to be included in an Environmental Impact Report, I thought I would write you and let you know of my concerns.

I would also like to receive a copy of the Draft EIR when it is published.

Yours truly,

William C. Owens
5335 Hilltop Crescent
Oakland, CA 94595

bowens@owensfinancial.com
925-899-1570

55 Stark Knoll Place
Oakland, CA 94618

February 19, 2015

Lynn Warner, Planner III, City of Oakland, Planning and Building Department
250 Frank H. Ogawa Plaza, Suite 2114
Oakland, CA 94612
E-mail: Lwarner@oaklandnet.com

Subject: Case Number ER 15001
Assessor's Parcel Number: 48A-7002-3-2
(The Cemetery located between the Claremont Country, Clarewood Drive, Moraga Avenue, and Ramona Avenue in the cities of Oakland and Piedmont.)

Major Concern: Soil Erosion at 55 Stark Knoll Place, Oakland, CA 94618
Owners: Patricia and Philip Shoptaugh

My husband and I have lived at 55 Stark Knoll Place, a residence adjacent to the Cemetery property, for over 21 years. Several times a year I trim the ivy from the base of the large "signature" pine tree that has been a landmark for our neighborhood . When I started doing this, the ground was level all around the tree. As you can see from the attached photo, the dirt on the northern side of the tree has eroded away.

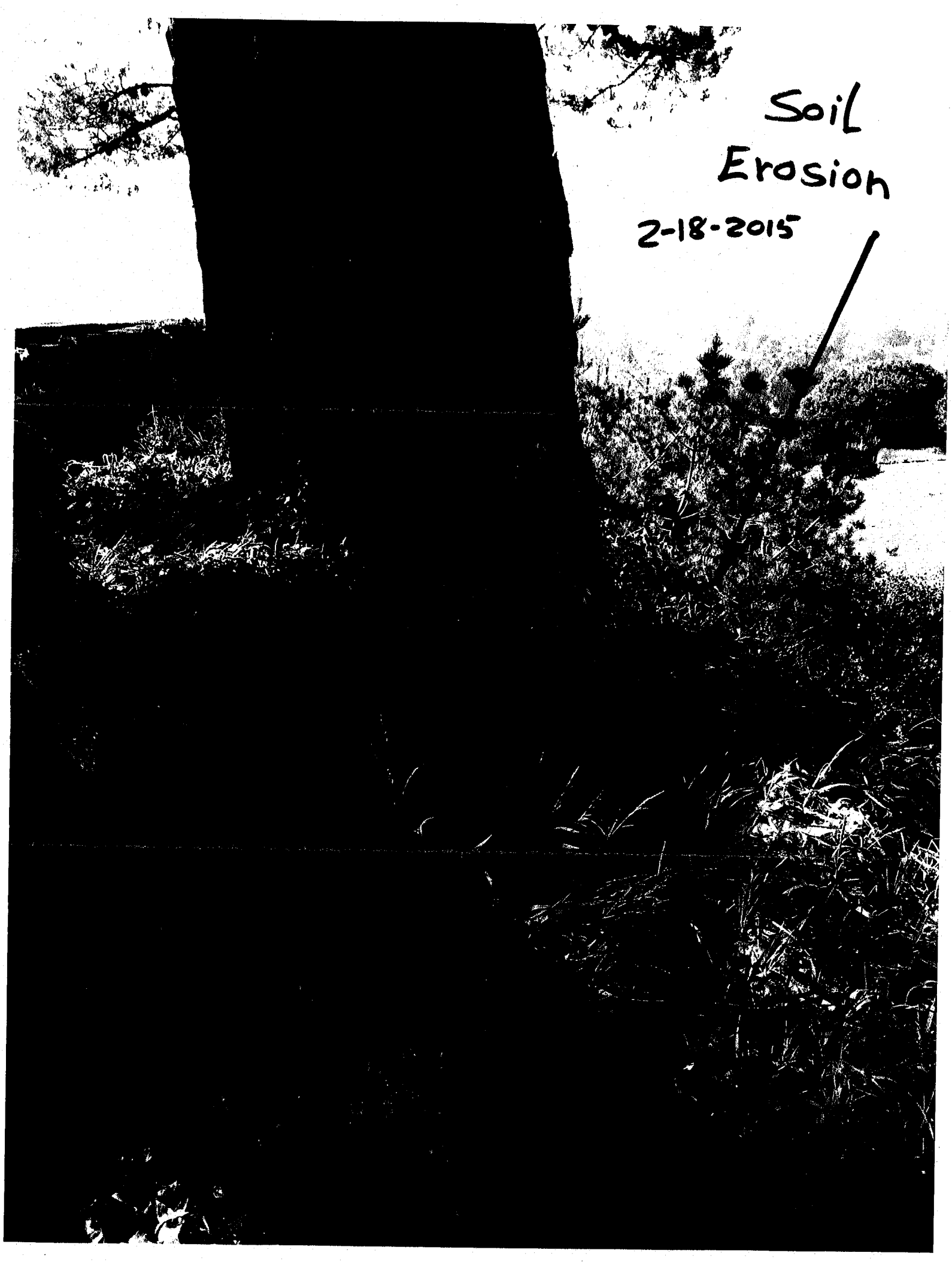
The Mountain View Cemetery should shore up the eroding embankment of this upper terrain before starting major grading and expansion projects. This remedial activity should be their **#1 priority** before additional damage occurs. The removal of their marked trees and activity of heavy equipment in this area (Plot 98) will intensify the unstable condition that exists there now. It is becoming a serious problem, and I would **not recommend going forward** with their proposed expansion until there is a resolution to this erosion problem.

Sincerely,

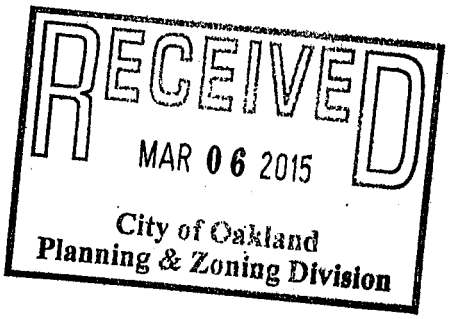
Patricia A. Shoptaugh
T: 510-271-7552 (w); T: 510-219-8904 (c)
T: 510-654-4119 (h)
Email: pat.shoptaugh@clorox.com

cc: Jeffrey Lindeman, CEO and General Manager, Mountain View Cemetery
Email: jeff@mountainviewcemetery.org
att: photo of pine tree with erosion problem

P:\Projects\31405 - Mountain View Cemetery\NOP\Responses to NOP\2015 Cemetery Expansion Rebuttal Letter Shoptaug.docx


Soil
Erosion
2-18-2015

EAST BAY
MUNICIPAL UTILITY DISTRICT



March 2, 2015

Lynn Warner, Planner III
City of Oakland, Planning and Building Department
250 Frank H. Ogawa Plaza, Suite 2114
Oakland, CA 94612

Re: Notice of Preparation of a Draft Environmental Impact Report – Mountain View Cemetery Burial Site Expansion

Dear Ms. Warner:

East Bay Municipal Utility District (EBMUD) appreciates the opportunity to comment on the Notice of Preparation of a Draft Environmental Impact Report for the Mountain View Cemetery Burial Site Expansion located in the city of Oakland (City). EBMUD has the following comments.

WATER SERVICE

EBMUD's Highland Pressure Zone, Piedmont Pressure Zone, Broadway Terrace Pressure Zone, and Dingee Pressure Zone, with service elevation ranges between 200 and 325 feet, 325 and 500 feet, 400 and 475 feet, 500 and 675 feet respectively, provide water service to the existing property. If additional water service is needed, the project sponsor should contact EBMUD's New Business Office and request a water service estimate to determine the costs and conditions of providing additional water service to the proposed development. Engineering and installation of water services require substantial lead time, which should be provided for in the project sponsor's development schedule.

WATER CONSERVATION

The proposed project presents an opportunity to incorporate water conservation measures. EBMUD requests that the City include in its conditions of approval a requirement that the project sponsor comply with Assembly Bill 325, "Model Water Efficient Landscape Ordinance," (Division 2, Title 23, California Code of Regulations, Chapter 2.7, Sections 490 through 495). The project sponsor should be aware that Section 31 of EBMUD's Water Service Regulations requires that water service shall not be furnished for new or expanded service unless all the applicable water-efficiency measures described in the regulation are installed at the project sponsor's expense.

WATER RECYCLING

EBMUD's Policy 9.05 requires that customers use non-potable water, including recycled water, for non-domestic purposes when it is of adequate quality and quantity, available at reasonable cost, not detrimental to public health and not injurious to plant, fish and wildlife to offset demand on EBMUD's limited potable water supply.

The proposed project is located at least three miles away from any existing or future planned recycled water pipelines; therefore, EBMUD does not currently anticipate serving recycled water to this project. Based on the cemetery's non-potable water demand, it may be feasible to implement a remote satellite treatment facility that involves tapping into a nearby existing sewer line and treating the wastewater at a location on or near the site to produce recycled water for the project's use. EBMUD is also currently conducting a recycled water project expansion study. Therefore, EBMUD recommends that the City and the project sponsor maintain continued coordination and consultation with EBMUD regarding the feasibility of using recycled water either from a centralized facility or from an on-site recycled water treatment facility for appropriate non-potable uses.

If you have any questions concerning this response, please contact Timothy McGowan, Associate Civil Engineer, Water Service Planning, at (510) 287-1981.

Sincerely,

David J. Rehnstrom
Manager of Water Distribution Planning

DJR:TRM:dks
sb15_034

cc: Mountain View Cemetery Association
5000 Piedmont Avenue
Oakland, CA 94611

Chris Ford <cford@lamphier-gregory.com>

FW: Mt. View Cemetery

2 messages

Warner, Lynn <LWarner@oaklandnet.com> Thu, Mar 5, 2015 at 11:29 AM
To: Chris Ford <cford@lamphier-gregory.com>

Chris,

Here's another comment.

Lynn

-----Original Message-----
From: Norma Harrison [mailto:betnorh@sbcglobal.net]
Sent: Thursday, March 05, 2015 10:42 AM
To: Warner, Lynn
Subject: Mt. View Cemetery

The continued expansion of the cemetery is of some concern, however my primary concern is the fact that the long, unsheltered area of the cemetery is destroying the ambience of homes on Clarewood Drive. Since hundreds of trees were removed some years ago, the view along the drive is of an ugly chain link fence (not in good repair) and a completely open view of gravestones and any activity in the area.

I believe that it is the responsibility of the cemetery management to remedy this situation by installing a high wall, or even a dense hedge to enclose their property and to return the Drive to a more pleasant and attractive place to live.

I hope that others have expressed this view.

Norma Harrison
41 Clarewood Lane
Oakland, 94618

Chris Ford <cford@lamphier-gregory.com> Fri, Mar 6, 2015 at 9:21 AM
To: "Warner, Lynn" <LWarner@oaklandnet.com>

Thank you
[Quoted text hidden]

No virus found in this message.
Checked by AVG - www.avg.com
Version: 2015.0.5751 / Virus Database: 4299/9222 - Release Date: 03/03/15

Chris Ford <cford@lamphier-gregory.com>

FW: Comments on ER15001

2 messages

Warner, Lynn <LWarner@oaklandnet.com> Thu, Mar 5, 2015 at 11:28 AM
To: Chris Ford <cford@lamphier-gregory.com>

Chris,

Here's a comment on the project.

Lynn

From: Dan Auker [mailto:dan.auker@gmail.com]
Sent: Wednesday, March 04, 2015 9:33 PM
To: Warner, Lynn
Subject: Comments on ER15001

Ms Warner -

I am writing to put into writing my public comments regarding the Mountain View Cemetery (MVC) expansion at the Planning Commission meeting this evening.

My comments are in regard to the scope of the EIR for the project.

I live on Harbord Drive. My property is less than 100 yards from the back fence of the MVC. Our home looks directly out upon the three proposed expansion plots.

I will preface my comments by saying that I have lived in this neighborhood my entire life. My childhood home was three blocks away on Sheridan Road. That home (and those of most of my friends and neighbors) burned to the ground in the 1991 Oakland Fire Storm.

My request is the the following two items be considered in the EIR:

1) The permission of open fires and the burning of funerary offerings in MVC and the new expansion

2) The planting of redwoods and other large trees within the cemetery, particularly along the perimeter and ridge lines.

Regarding the burning of funerary offerings; MVC currently permits open fires and the unsupervised burning of paper (Joss money, etc.) during funerals and memorial ceremonies. Some of the fires get quite large and are entirely unsupervised and uncontrolled by MVC staff. MVC even provides large red funerary burners for this purpose. Burning occurs on a constant and ongoing basis within the cemetery and within sight of nearby homes. This is a significant ongoing concern and should be considered as part of the EIR for the following reasons:

- The extreme fire danger existing in the existing MVC open space and in the surrounding neighborhoods. As we know from 1991, one spark can lead to disaster. Open fires are currently not permitted to the residents of the neighborhood due to the high fire danger of the area. Fire pits, outdoor fireplaces, cooking pits and the like are not allowed. In addition, spark arresters are required on all chimneys in the area.

- Prevailing winds, which generally blow from west to east - from the cemetery directly into the surrounding neighborhood.

- The proximity to nearby housing and schools. The newly proposed expansion not only has the potential to increase the total amount and frequency of open burning, but it also moves this activity closer to housing by several hundred yards - and at the top of the expansion, within 100 feet of peoples' homes.

With all respect for people's cultural traditions, open fires should not be allowed anywhere in the Oakland Hills, including in cemeteries. They should not be allowed in the new MVC expansion. I would also urge that any changes to MVC's existing land use model be contingent on immediately ending the practice of open fires within the cemetery.

Regarding the planting of large trees, MVC has already planted hundreds of redwood trees 6-8 feet apart in a line along its uphill perimeter. When these tree start to mature, they will create an unbroken wall between MVC and its neighbors. In a short time these trees will begin to block views and sight lines for neighbors throughout the Upper Rockridge neighborhood. These trees will also cast significant shadows on private properties throughout the neighborhood, particularly in the evening hours. We are greatly concerned that MVC will expand its short-sighted tree fencing campaign to the newly expanded areas of the cemetery. The EIR should evaluate and mitigate the planting of large trees along the ridge lines and perimeter of MVC in order to:

- Protect existing sight lines and views

- Ensure that trees do not throw excessive shadows on private property

- Ensure that all trees are planted in a naturalistic manner - not a giant green wall between MVC and its neighbors.

Thank you,

Daniel Auker

Chris Ford <cford@lamphier-gregory.com> Fri, Mar 6, 2015 at 9:21 AM
To: "Warner, Lynn" <LWarner@oaklandnet.com>

Thomas Bachand
P.O. Box 20796
Oakland, CA 94620
510.547.8622

March 11, 2015

Lynn Warner
City of Oakland Planning & Building Dept
250 Frank H. Ogawa Plaza, Suite 2114
Oakland, CA 94612
510.238.6983
lwarner@oaklandnet.com

RE: Mountain View Cemetery Burial Plot Expansion. ER 15001

Dear Ms. Warner,

The proposed expansion of burial plots at Mountain View Cemetery (MVC) raises many concerns with the surrounding communities, including the Piedmont Avenue neighborhood. Before MVC is allowed to expand, there needs to be assurances that current and ongoing practices are both sustainable and not damaging to the community. There is a well documented record of disagreement between the community and MVC concerning how the property is managed. Unless mitigated, continued development is sure to exacerbate these conflicts. Concerns include:

- Insufficient guidelines for historic preservation
- Preservation of the cemetery's open space
- Unclear zoning regulations and lack of City enforcement
- Groundwater use and contamination
- Wide spread use of herbicides and pesticides
- Wildlife abatement
- Burial costs and exclusivity

INSUFFICIENT GUIDELINES FOR HISTORIC PRESERVATION

As you are aware, MVC is one of the most historic properties in the City of Oakland. The original plans for the cemetery were developed by renown 19th Century landscape architect Frederick Olmsted (Attachment A). As the cemetery and the surrounding areas have been developed, MVC has increasingly deviated from this plan. Several years ago, during the widespread removal of eucalyptus from the miles-long unendowed areas on the perimeter of the cemetery, it was clear that tree crews were not following established procedures for working on an historic site. Tree felling and heavy equipment use damaged a large number of headstones, which were ultimately discarded. MVC only took on restoration efforts after being taken to task by the Oakland Heritage Alliance (Attachment B & C). MVC needs to revamp its landscape practices to be conducive with the preservation of historic resources.

OPEN SPACE INTEGRAL TO OLMSTEAD PLAN

The Olmsted Plan envisioned a park-like setting containing a central area of burial plots surrounded by considerable undeveloped open space. As the cemetery and the surrounding areas have been developed there has been little consideration given to the surrounding open space. MVC has no plans to preserve any undeveloped open space, nor refrain from plot or mausoleum construction on any part of the property. As MVC has no long-term development plan, intermittent plot expansion creates a gradual creep that is not only in direct conflict with the Olmsted Plan, but substantially degrades the historic and natural character of the cemetery grounds. There is no way for the members of the community to know whether any single event, whether it be a tree removal or grading project, is part of a larger plan or an indiscriminate action taken at the spur of the moment. Many in the community do not feel that wall-to-wall headstone or mausoleum construction qualifies as "urban park" or "open space."

UNCLEAR ZONING REGULATIONS AND LACK OF CITY ENFORCEMENT

In 2010, MVC undertook the extensive and unpermitted grading of an entire hillside. At the time, Tim Low, Permit Counter Supervisor at the City of Oakland, took the position that MVC was not required to secure a grading permit as grave digging allowed them to move dirt unregulated (Attachment D & E). Despite this position being absurd on its face, the City of Oakland took no action to regulate this reshaping of the landscape, despite the fact that MVC sits along the Echo Creek watershed and the soils contain both naturally occurring and man-made toxins. If Mr. Low's interpretation of the zoning of MVC is correct, clearly, the zoning designation is outdated and not in keeping with current environmental expectations.

GROUNDWATER USE AND CONTAMINATION

The Olmsted plan incorporated an ingenious water recycling plan that captured water at the base of the cemetery's watershed and pumped it to an underground reservoir at the top of the cemetery for reuse. Today that system has been abandoned and MVC relies on three man-made ponds along Glen Echo Creek and groundwater pumping. This outdated approach fails to recognize that we live in an urban metropolis with a Mediterranean climate that is frequently subjected to droughts. Precious water meant for Glen Echo Creek, Lake Merritt, and San Francisco Bay is being diverted to keep the cemetery grounds perpetually green. The proposed luxury plots will only further this unsustainable practice. Meanwhile, MVC has refused to explore more environmentally sound natural burial practices, has increased groundwater pumping, and is exploring removal of the ponds for additional luxury plots.

WIDE SPREAD USE OF HERBICIDES AND PESTICIDES

In contrast to the luxury plots being proposed, MVC takes a quite different approach to the unendowed, "low rent" plots occupying the perimeter of the cemetery. Many years ago the brush was managed in these areas with goats. After unleashed dogs killed a number of goats, MVC instituted a program whereby the unendowed areas are hosed down semi-annually with glyphosate (also known as RoundUp) to control plant growth in these unmaintained areas. Despite studies that glyphosate is an endocrine disrupter toxic to human health, MVC continues its widespread use. They have assured their employees that the substance is safe and does not require the use of safety gear, including gloves, dust masks, and protective clothing – despite the fact that the contractor previously hired to apply glyphosate required such equipment for their employees (Attachment F). Even though Glen Echo

Creeks runs through the cemetery and the Piedmont Avenue and Grand Lake neighborhoods, and drains into Lake Merritt, MVC has not disclosed their extensive use of glyphosate. Jeff Lindeman, General Manager at MVC, ignores all emails regarding MVC's use of glyphosate (Attachment G).

WILDLIFE ABATEMENT

There was a time when the cemetery was teaming with wildlife. I personally have seen foxes, coyotes, deer, bobcats, turkeys, herons, egrets, ducks, owls, hawks, geese, raccoons, gophers, mice, squirrels, and snakes in the cemetery. Many of these animals have disappeared due to the denuding of hillsides, poisoning of rodents, heavy use of pond water that leads to extended dry spells, and inadequate enforcement of leash controls on dogs. In addition to the killing of goats, loose dogs are responsible for the deaths of geese, ducks, turkeys, squirrels, and deer. It is a daily occurrence to see dogs being run off-leash at MVC.

BURIAL COSTS AND EXCLUSIVITY

As burial space becomes more limited, the cemetery seeks a greater monetary return from its plots. So while the unendowed areas are neglected and treated with toxic chemicals, open space is converted to high-value plots for exclusive clientele. The costs borne by the community continue to grow, whether it be from the cemetery's increased water use, herbicide and pesticide contamination, or consumption of urban open space prized by wildlife and the community. Meanwhile community access is further limited, whether it be to affordable burials or undisturbed urban open space. The exclusivity being perpetuated by the cemetery, in the least, violates the spirit of the Urban Park and Open Space provisions of the General Plan .

SOLUTIONS

Before MVC is allowed to move forward with any additional development, the following actions need to be taken:

MVC should:

- Produce a long-term development plan so that the community can understand and prudently participate in the development of this historic and precious open space.
- Reduce their water use and eliminate the use of toxic chemicals.
- Develop a wildlife management plan.
- Enforce the city's leash laws on cemetery grounds and prevent the cemetery from becoming a defacto dog park.
- Commit to serving the interests of the entire community and not just those able to afford luxury burials.

The City of Oakland should:

- Address the zoning issues surrounding the property so as to bring MVC in line with current environmental standards and preserve its open space.
- Enforce its current ordinances on grading, groundwater pumping, watershed encroachment, and pest control.

MVC is a historic and unique property, central to one of the largest contiguous open space areas in urban Oakland. The City of Oakland Planning & Building Department has a central role to play in its preservation and continued enjoyment by the community as a whole.

Sincerely,

Thomas Bachand

ATTACHMENT A

Olmsted Plan

Olmstead Plan, 1865

ATTACHMENT B

Letter to MVC from Oakland Heritage Alliance concerning tree removal and headstone desecration.

OAKLAND HERITAGE ALLIANCE

December 14, 2011

Mr. Jeff Lindeman
Mountain View Cemetery
5000 Piedmont Avenue
Oakland, CA 94611

Dear Mr. Lindeman,

On Tuesday, December 13, 2011 concerned neighbors of Mountain View Cemetery contacted the Oakland Heritage Alliance (OHA) to express dismay regarding the treatment of historic headstones located in the un-endowed section of the cemetery. These visitors reported seeing headstones toppled and crushed, presumably by earthmoving equipment used to clear vegetation. In response to their requests, OHA's Administrative Director, January Ruck, contacted you to inquire about the situation.

OHA certainly supports your efforts to comply with fire suppression requirements, but we are distressed by photographs taken at the site on December 13 that show historic headstones freshly collapsed and newly broken (see attached images). While some of the headstones may have fallen over time due to aggressive eucalyptus growth, these images clearly show the contractors hired to undertake this work had little regard for the historic resources.

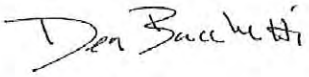
Given the cemetery grounds are maintained through the Mountain View Cemetery Association's endowment fund, we are sympathetic to your financial constraints. If you require help with 1) identifying grant funding to support preservation of the historic resources in your care, 2) coordinating volunteers who can assist with more sensitive maintenance than that provided by the current contractors, or 3) appealing to your neighbors for donations in support of headstone conservation, OHA is willing to discuss what role it might play in these efforts.

We understand the Mountain View Cemetery Association maintains a budget for headstone restoration. Although the 2011 funds have been exhausted, we ask you to consider using 2012 money to conserve the historic materials damaged by this recent maintenance mishap. In addition, you may find information presented by the National Center for Preservation Technology and Training's online webinar "Addressing Landscape Maintenance in Historic Cemeteries" to be very informative: http://www.ustream.tv/recorded/6024474 . The presentation provides an overview of the damaging effects standard landscape maintenance practices have on cemetery historic resources. Topics include landscape documentation, replacing key features, removing invasive plants, mowing and trimming, tree care, and addressing conflicts between historic vegetation and built features. All of these issues are relevant at Mountain View Cemetery.

446 17th Street, Suite 301, Oakland, California 94612 • (510) 763-9218 • info@oaklandheritage.org
Web Site: www.oaklandheritage.org

We actively pursue an open dialogue with you and the Mountain View Cemetery Association because the historic landscape you manage is exceptionally unique. While Mountain View Cemetery is private property, people throughout Oakland identify the landscape as one of the City's most treasured historic resources. Other Bay Area communities have architectural gems, but none of them have historic cemeteries on par with Mountain View. OHA and its members believe, especially in socially and economically difficult times such as these, people need places in their local community that tangibly represent our shared past, inspire awe, and instill pride. In Oakland, Mountain View Cemetery is one of those places. We ask you to do what you can to retain the defining historic features that make it so.

Sincerely,



Dea Bacchetti,
President
Oakland Heritage Alliance

CC: Oakland Heritage Alliance Board

ATTACHMENT C

Additional images of headstone debris after tree removal. Note where heavy equipment has run over and placed logs on top of headstones.

ATTACHMENT D

Email to Tim Low, Permit Desk, City of Oakland, regarding unpermitted grading at MVC.

From: Thomas Bachand <pa@thomasbachand.com>
Subject: Re: Mountain View Cemetery development
Date: February 27, 2012 3:55:19 PM PST
To: "Low, Tim" <TLow@oaklandnet.com>
Cc: "Miller, Scott" <SMiller@oaklandnet.com>, "Wilson, Isaac" <IWilson@oaklandnet.com>, "Campbell-Washington, Anne" <ACampbell-Washington@oaklandnet.com>, "Wald, Zachary" <ZWald@oaklandnet.com>, Cecil Felix <cfelix@waterboards.ca.gov>, Valerie Winemiller <vwinemiller@hotmail.com>, Oakland Heritage Alliance <info@oaklandheritage.org>, Alison Finlay <alisonfinlay@sbcglobal.net>, Marjorie Blackwell <marjb@sbcglobal.net>, Jane Brunner <jbrunner@oaklandnet.com>

Tim,

From my review of the regulations, it appears that Mountain View Cemetery should have secured a permit from the City of Oakland before grading the hill at the top of the cemetery and conducting widespread tree removal in the unendowed sections. The implementation of this work without City oversight has led to potential health effects on the community and damage to the historical resources at MVC.

The following factors indicate that City review and permitting were required:

- The grading reshaped the top and sides of an entire hill whose slope is greater than 10% and altered the "natural grade." In addition, the action appears to require a CEQA exemption. As you know, the soil in this area contains arsenic and other harmful substances. Also, it appears that MVC has been operating with an expired storm water permit. (Sec. 17.92.050, 17.102.11,17.102.110, 17.136, 17.158.140)

- The ridge where the grading and tree removal has taken place, can be viewed from surrounding neighborhoods, both west and east of the property. (Sec. 17.90.050)

- The tree removal is being conducted in such a manner that headstones are being damaged widely across the unendowed areas. As you know, MVC is one of Oakland's most historic areas and, as such, is subject to increased regulation. (Sec. 17.84.040, 17.84.070, 17-100B, 17.136.060, 17.136.070)

Photos of the grading and improper tree removal procedures can be downloaded here:
http://www.thomasbachand.com/client/mtview/MtView022712.zip

Images include:

- Early images of grading, where heavy equipment are beginning their decent down slope (images DSC4296 & DSC4300). Eventually the entire slope was graded. I you visit the site, you will see clear evidence of the extent of the grading.

- Staging of logs on headstones (image DSC7682). This practice continues.

- Headstone inadvertently moved to maintenance yard. Found near main log staging area. (image MG_0069)

- Crushed headstones and general disturbance to unendowed area by heavy equipment. Clearly MVC is not taking the necessary precautions to prevent headstone destruction and grave desecration.

It is imperative that the City take this matter seriously before further damage to this historic property occurs. Your close attention to this matter is appreciated.

Sincerely,

Thomas Bachand
510.547.8622

On Feb 25, 2012, at 1:28 PM, Low, Tim wrote:

> Thank you for your concerns and interest in our community.
>
> NO expansion proposal has been filed with the city currently. Please note that community input is required and valued by our Agency.
>
> On-going work does not trigger any City permits yet. Following is our 02/22/12 field observation:
>
> CmpInt# 1200600 Code ALL CmpInt Disp: C 02/22/12
>
> Address 5000 PIEDMONT AV Suite: Parcel: 048A-7002-603-02
>
> Existing Use CEMETERY
>
> ----------COMMENTS----------

Complaint#: 1200600

I met with Ms. Toni Reed today Feb 22,2012. I explained to her that the cemetery did not need a permit to cut down the eucalyptus tree on their property. The trees are interfering with the graves underneath them and causing a maintenance problem. When the work is completed the cemetery will be replanting new trees. The dirt stocked piled on site reopened on a daily basis, the dirt is reused to fill in graves.

Pictures taken reflect the work that is being done. This complaint is officially closed.

>>> 02/22/2012 16:56:22 RAY#CM QPADEV000Z

Timothy Low, P.E.

Principal Civil Engineer - Inspection Services

250 Frank H Ogawa Plaza

2nd floor #2328C

Oakland, CA 94612

Tel (510-238-6315

Fax (510) 238-2263

-----Original Message-----

From: Thomas Bachand [mailto:pa@thomasbachand.com]

Sent: Thursday, February 23, 2012 12:09 PM

To: Low, Tim; Ray, Cliff

Subject: Fwd: Mountain View Cemetery development

Tim and Cliff,

I am forwarding to you portions of an email to Councilwoman Jane Brunner. It outlines many of the issues the Piedmont Avenue neighborhood is having with the Mountain View Cemetery (MVC). While some of these issues may be outside your rubric, the letter will give you the broader context under which your issues pertain.

More specifically to your jurisdiction:

- Unpermitted Grading: Attached is a photo of the grading early on. Later it would extend down the entire hillside. If you need additional photography let me know and I'll dig it up.

- Storm water permit: Cecil Felix at the Storm Water Board (CFelix@waterboards.ca.gov) has been notified of these issues. It is my understanding that he has not determined as to whether they were in compliance when the grading took place.

- Use of RoundUp: I am also attaching a recent photo of the application of RoundUp to the unendowed area. The entire area (over a mile in length) is hosed down to prevent anything from growing there.

- Unleashed Dogs: This is an ongoing problem. By not discouraging the running of unleashed dogs, the cemetery is operating a defacto dog park.

Feel free to contact me if you need additional information. Also keep me posted on any determinations you make.

Thanks,

Tom Bachand

Begin forwarded message:

> Desecration of Headstones:
>
> Under the auspices of fire control, the cemetery has removed a large number of eucalyptus trees from the property. As the recent letter from the Oakland Heritage Alliance (OHA) to the cemetery (attached & below) points out, the tree removal has damaged and moved headstones in the unendowed areas. The OHA letter has done little to change the contractor's methods. Headstones continue to be damaged by both felled trees and the contractor's heavy equipment.
>
> Unpermitted Grading & Storm Water Discharges:
>
> A good portion of this tree removal seems to have an ulterior motive. Beginning in 2010, several eucalyptus groves were removed near the top of the cemetery and extensive grading took place (photo attached). I have been told that the removal of a hilltop is planned and that the City of Piedmont was offered the dirt as fill for the planned Moraga Canyon soccer field project. I filed a complaint (#1003853) with the City of Oakland's Community &

> Economic Development Agency in June of 2010 and later spoke with
> Supervisor Isaac Wilson. While the cemetery is permitted to do
> minor dirt work related to the backfilling of roots or the building
> of crypts, larger projects require a permit. To my knowledge, Mr.
> Wilson's office did not follow up to verify the scope of the
> grading. Cemetery employees claim that the grading was performed
> without a permit despite one being required. In the last few
> months crews have been on site conducting land surveys and soil
> borings in the same area as the grading. It is possible that
> cemetery soils contain asbestos, arsenic, and other contaminants
> that can lead to air and water quality issues.
>
> In addition to MVC's failure to apply for, and obtain a grading
> permit, they appear to be in violation of the National Pollution
> Discharge Elimination System (NPDES) Construction General Permit
> for Storm Water Discharges Associated with Construction and Land
> Disturbance Activities (See attached: http://tinyurl.com/NPDES-
> Notice-MVC). Their deadline for filing a Risk Level Determination
> and Storm Water Pollution Prevention Plan (SWPPP) was Sept. 2, 2011.
>
> Certainly, MVC should be brought into compliance and the city and
> residents should be informed of any major construction.
>
> Extensive Use of Roundup:
>
> Also of concern is MVC's extensive use of the herbicide Roundup
> (glyphosate) in the unendowed area. Approximately a mile in
> length, the unendowed area is hosed down with Roundup on a regular
> basis. Roundup is an endocrine disrupter that is toxic to animals
> and humans [http://en.wikipedia.org/wiki/Roundup_(herbicide)].
> It is my understanding that the City of Oakland does not permit the
> use of Roundup on city property. City residents, pets, and
> wildlife suffer exposure to Roundup vapors during application and
> contaminated soils and plants when entering the area afterwards.
> Due to the heavy application of Roundup, I suspect it is also
> entering the water table and migrating through the Glen Echo and

> Rockridge/Temescal watersheds.
>
> Unleashed Dogs:
>
> On any given day, one can see residents running their dogs off-
> leash in the cemetery. There have been incidents of wildlife being
> killed or injured by loose dogs, including the injury of deer and
> Canadian geese, the drowning of a deer, and the killing of goats
> (whose herd was brought in to clear brush from the unendowed
> areas). Understandably, cemetery employees and visitors are wary
> to confront dog owners. Security patrols will neither exit their
> vehicles nor stray beyond the manicured areas to pursue owners of
> off-leash pets.
>
> The Cemetery's Future:
>
> In his letter to the OHA, MVC General Manager Jeff Lindeman claims
> that the proposed funeral home is key the fiscal health of the
> cemetery and the maintenance of the grounds. MVC's financial
> concerns raise questions about the cemetery's long range plans, the
> health of the endowment, and MVC's role in the community.
>
> Are the jobs in the cemetery good jobs that allow its workers to
> engage in and participate in the community? MVC has been weakening
> the union for years and now contracts out a wide variety of jobs –
> everything from plot restoration to mowing.
>
> What is the environmental impact of the cemetery's actions? Does
> MVC have an environmental mitigation plan? Aside from the toxicity
> of older burials, MVC's heavy use of herbicides and older diesel
> and two-stroke machinery creates an ongoing environmental hazard to
> the community.
>
> Does MVC have any plan to maintain open space? Central to the
> cemetery is its open park-like setting and surrounding open space.
> MVC borders Moraga Canyon and drains into both Glen Echo Creek (and

> Lake Merritt) and the Rockridge/Temescal area below the golf course
> and Clarewood Drive. Aside from providing visitors a place to
> grieve, renew one's spirit, and escape the confines of the city,
> the cemetery's open space provides wildlife habitat and corridors.
> I have seen a wide variety of animals in the cemetery, including
> hawks, owls, heron, egrets, ducks, geese, turtles, coyote, fox,
> turkeys, deer, and the usually variety of urban species, including
> skunks, racoons, gophers, and snakes. Animal sightings are
> becoming less frequent. To my knowledge MVC has no wildlife policy
> and, to the contrary, discourages wildlife through habitat
> destruction, poisoning, and the use of herbicides. Certainly, the
> maintenance of the property's natural setting is integral to the
> cemetery's original vision and highly valued by the community.
>
> MVC has been a significant part of this community for nearly 150
> years. It is one of the few places in Oakland where one can
> connect deeply with the city's historic past – its founders,
> community members, and the character of the natural landscape – in
> a personal way. I find it disturbing that current developments on
> the property are being conducted in an ad-hoc fashion without
> proper community oversight. Before MVC expands existing
> facilities, it is imperative that current issues be resolved and a
> long term plan be established with community input.
>
> Sincerely,
>
> Thomas Bachand
> 510.547.8622
>

ATTACHMENT E

Photos of Unpermitted Grading at MVC.

Initial grading at top of hillside. Eventually, entire hillside graded.

ATTACHMENT F

Photo of glyphosate application in unendowed area of MVC.

Contractor in hazmat gear hosing down unendowed area. Cemetery employees do not enjoy same protections. Is this heavy application of glyphosate in the unendowed areas safe for the employees, watershed, and community? The City of Oakland does not permit the use of RoundUp on City property.

ATTACHMENT G

Most recent emails to MVC regarding glyphosate. Emails were not responded to.

From: Thomas Bachand <pa@thomasbachand.com>
Subject: Mt View Roundup use
Date: January 24, 2015 10:00:44 PM PST
To: Jeff Lindeman <jeff@mountainviewcemetery.org>
Bcc: Valerie Winemiller <vwinemiller@hotmail.com>

Jeff,

Is the cemetery still using Round Up throughout the property? Here's another study that might be of interest:
http://tinyurl.com/kwn2pxx

Thanks,
Tom Bachand
510.547.8622

Begin forwarded message:

> From: Thomas Bachand <pa@thomasbachand.com>
> Subject: Mt View Roundup use
> Date: March 13, 2012 1:40:59 PM PDT
> To: Jeff Lindeman <jeff@mountainviewcemetery.org>
> Cc: Valerie Winemiller <vwinemiller@hotmail.com>, Jane Brunner <jbrunner@oaklandnet.com>, Zack Wald <ZWald@oaklandnet.com>, January Ruck <info@oaklandheritage.org>, Marjorie Blackwell <marjb@sbcglobal.net>
>
> Jeff,
>
> Here's a current article on Roundup. Widespread use is killing off the Monarch butterfly, polluting water sources worldwide, and is found in 100% of people tested.
> http://naturalsociety.com/monsantos-roundup-shown-to-be-ravaging-butterfly-population/
>
> Your use of the herbicide in the cemetery, including the regular hosing down of the over mile-long unendowed area, is damaging to the community and the environment. It would be a benefit to all if you found alternative methods to reducing overgrowth.
>
> Best,
>
> Thomas Bachand

Appendix 4.2

Technical Air Quality, GHG and Health Risk Assessment Appendices

Construction-Period Health Risk Assessment
Calculations for Diesel Particulate Matter (DPM) Cancer Risk,
DPM Non-Cancer Hazard and PM 2.5 Exposure

Mountain View Cemetery Expansion Project

CANCER RISK:

1. CalEEMod Output

Specifics of construction phases were entered into CalEEMod. Default assumptions regarding construction equipment were used. CalEEMod projected PM10 levels of 0.1533 short tons for the construction period.

2. AERSCREEN

The average yearly emissions rate from the CalEEMod output was converted to grams/second (0.0130 g/s) then entered into AERSCREEN using model defaults for a worst-case screening level analysis per the attached AERSCREEN output file.

This resulted in a maximum 1-hour concentration of 3.159 ug/m^3, which would occur at a distance of approximately 425 meters.

3. Scaling to Annual

GLC = (X1-hour) (Scalar)

Where GLC is the annual average ground level concentration.

The maximum 1-hour concentration from the AERSCREEN output was then multiplied by the BAAQMD recommended hourly to annual Scalar of 0.1 for the following:

GLC = (3.159 ug/m3) (0.1)

Ground Level Concentration = 0.3159 ug/m3

4. Calculate Risk

This GLC was used as the concentration in air ("C air") for calculation of inhalation dose as follows:

Inhalation Dose = (C air*DBR*A*EF*ED*1x10^{-6})/AT

DBR = daily breathing rate = 335

A = inhalation absorption rate for DPM = 1

EF = Exposure frequency = 250 days/yr (assuming 5 days a week for 50 weeks for the entire year)

ED = Exposure duration = 0.34 years (full construction period)

AT = Averaging time = 25,550 (for a 70 year cancer risk)

Inhalation Dose = (0.3159) (335) (1) (250) (0.34) (10^-6) / 25550

Inhalation Dose = 3.520E-07

And from there calculated the Inhalation Cancer Risk:

Inhalation Cancer Potency factor (for DPM) = 1.1

Inhalation Cancer Risk per million = (Inhalation Dose)*Inhalation Cancer Potency factor*10^6

Inhalation Cancer Risk per million = (3.520E-07)*1.1*10^6

Inhalation Cancer Risk per million (adult) = 0.387 - compared to Threshold of 10.000

Because an infant could be exposed during the construction, an age sensitivity factor of 10 is used.

Inhalation Cancer Risk * ASF = risk adjusted for age sensitivity

0.387*10 = 3.87

Inhalation Cancer Risk per million (infant) = 3.87 compared to Threshold of 10.00

This screening level analysis is below threshold levels and therefore further modeling would not be required to make conclusions. (Note that screening analyses such as this are intended to overestimate risk to determine if further modeling would be required and are not expected to estimate actual risk.)

FOR CHRONIC NON-HAZARD:

Hazard Quotient = C air/REL

REL = DPM inhalation non-cancer chronic (long-term) reference exposure level = 5 ug/m^3

Hazard Quotient = 0.3159 / 5.0

Hazard Quotient = 0.063 compared to Threshold of 1.000

FOR PM2.5

CalEEMod projected PM2.5 levels of 0.1414 short tons for the construction period.

The average yearly emissions rate from the CalEEMod output was converted to grams/second (0.0120g/s) then entered into AERSCREEN using model defaults for a worst-case screening level analysis per the attached AERSCREEN output file.

This emission rate was entered into AERSCREEN with the same parameters as for PM10 above and scaled to an annual average.

Annual Average PM2.5 concentration of 0.291 ug/m^3 compared to the threshold of 0.300 ug/m^3

This screening level analysis is below threshold levels and therefore further modeling would not be required to make conclusions. (Note that screening analyses such as this are intended to overestimate risk to determine if further modeling would be required and are not expected to estimate actual risk.)

AERSCREEN 14147 / AERMOD 14134 06/18/15
12:01:57

TITLE: MNT VIEW CEMETARY EXPANSION PM10

********** AREA PARAMETERS **********

SOURCE EMISSION RATE:	0.0130	g/s	0.103	lb/hr
AREA EMISSION RATE:	0.545E-07	g/(s-m2)	0.432E-06	lb/(hr-m2)
AREA HEIGHT:	3.00	meters	9.84	feet
AREA SOURCE LONG SIDE:	850.00	meters	2788.71	feet
AREA SOURCE SHORT SIDE:	280.00	meters	918.64	feet
INITIAL VERTICAL DIMENSION:	3.00	meters	9.84	feet
RURAL OR URBAN:	URBAN			
POPULATION:	400000			
INITIAL PROBE DISTANCE =	5000.	meters	16404.	feet

********** BUILDING DOWNWASH PARAMETERS **********

BUILDING DOWNWASH NOT USED FOR NON-POINT SOURCES

********** FLOW SECTOR ANALYSIS **********
25 meter receptor spacing: 1. meters - 5000. meters

MAXIMUM IMPACT RECEPTOR

Zo SECTOR	SURFACE ROUGHNESS	1-HR CONC (ug/m3)	RADIAL (deg)	DIST (m)	TEMPORAL PERIOD
1*	1.000	3.159	0	425.0	WIN

* = worst case diagonal

********** MAKEMET METEOROLOGY PARAMETERS **********

MIN/MAX TEMPERATURE: 250.0 / 310.0 (K)

MINIMUM WIND SPEED: 0.5 m/s

ANEMOMETER HEIGHT: 10.000 meters

SURFACE CHARACTERISTICS INPUT: AERMET SEASONAL TABLES

DOMINANT SURFACE PROFILE: Urban
DOMINANT CLIMATE TYPE: Average Moisture

DOMINANT SEASON: Winter

ALBEDO: 0.35
BOWEN RATIO: 1.50
ROUGHNESS LENGTH: 1.000 (meters)

METEOROLOGY CONDITIONS USED TO PREDICT OVERALL MAXIMUM IMPACT

YR	MO	DY	JDY	HR
10	01	10	10	01

H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O LEN	Z0	BOWEN	ALBEDO	REF WS
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50

HT	REF TA	HT
10.0	310.0	2.0

METEOROLOGY CONDITIONS USED TO PREDICT AMBIENT BOUNDARY IMPACT

YR	MO	DY	JDY	HR
10	01	10	10	01

H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O LEN	Z0	BOWEN	ALBEDO	REF WS
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50

HT	REF TA	HT
10.0	310.0	2.0

********** AERSCREEN AUTOMATED DISTANCES **********
OVERALL MAXIMUM CONCENTRATIONS BY DISTANCE

DIST (m)	MAXIMUM 1-HR CONC (ug/m3)	DIST (m)	MAXIMUM 1-HR CONC (ug/m3)
1.00	2.511	2525.00	0.2495
25.00	2.561	2550.00	0.2470
50.00	2.610	2575.00	0.2445
75.00	2.657	2600.00	0.2421
100.00	2.702	2625.00	0.2398
125.00	2.744	2650.00	0.2375
150.00	2.784	2675.00	0.2353
175.00	2.822	2700.00	0.2331
200.00	2.858	2725.00	0.2310
225.00	2.893	2750.00	0.2289
250.00	2.926	2775.00	0.2269
275.00	2.957	2800.00	0.2250
300.00	2.988	2825.00	0.2231

325.00	3.017	2850.00	0.2212
350.00	3.075	2875.00	0.2194
375.00	3.104	2900.00	0.2176
400.00	3.132	2925.00	0.2159
425.00	3.159	2950.00	0.2143
450.00	2.788	2975.00	0.2126
475.00	2.310	3000.00	0.2110
500.00	2.084	3025.00	0.2095
525.00	1.924	3050.00	0.2079
550.00	1.794	3075.00	0.2064
575.00	1.682	3100.00	0.2049
600.00	1.556	3125.00	0.2035
625.00	1.476	3150.00	0.2021
650.00	1.403	3175.00	0.2007
675.00	1.336	3200.00	0.1994
700.00	1.275	3225.00	0.1980
725.00	1.218	3250.00	0.1967
750.00	1.165	3275.00	0.1955
775.00	1.117	3300.00	0.1942
800.00	1.071	3325.00	0.1930
825.00	1.029	3350.00	0.1918
850.00	0.9897	3375.00	0.1907
875.00	0.9524	3400.00	0.1895
900.00	0.9179	3425.00	0.1884
925.00	0.8857	3450.00	0.1873
950.00	0.8549	3475.00	0.1862
975.00	0.8261	3500.00	0.1852
1000.00	0.7991	3525.00	0.1841
1025.00	0.7734	3550.00	0.1831
1050.00	0.7489	3575.00	0.1821
1075.00	0.7260	3600.00	0.1811
1100.00	0.7044	3625.00	0.1801
1125.00	0.6840	3650.00	0.1791
1150.00	0.6642	3675.00	0.1781
1175.00	0.6456	3700.00	0.1772
1200.00	0.6279	3725.00	0.1763
1225.00	0.6111	3750.00	0.1754
1250.00	0.5951	3775.00	0.1745
1275.00	0.5797	3800.00	0.1736
1300.00	0.5649	3825.00	0.1727
1325.00	0.5508	3850.00	0.1719
1350.00	0.5373	3875.00	0.1710
1375.00	0.5245	3900.00	0.1702
1400.00	0.5123	3925.00	0.1694
1425.00	0.5006	3950.00	0.1686
1450.00	0.4895	3975.00	0.1678
1475.00	0.4786	4000.00	0.1670
1500.00	0.4681	4025.00	0.1663
1525.00	0.4581	4050.00	0.1655
1550.00	0.4485	4075.00	0.1648
1575.00	0.4393	4100.00	0.1640
1600.00	0.4304	4125.00	0.1633
1625.00	0.4219	4150.00	0.1626
1650.00	0.4137	4175.00	0.1619
1675.00	0.4058	4200.00	0.1612
1700.00	0.3982	4225.00	0.1605
1725.00	0.3908	4250.00	0.1598
1750.00	0.3836	4275.00	0.1591
1775.00	0.3767	4300.00	0.1585
1800.00	0.3701	4325.00	0.1578
1825.00	0.3637	4350.00	0.1572
1850.00	0.3576	4375.00	0.1565
1875.00	0.3516	4400.00	0.1559

1900.00	0.3459	4425.00	0.1553
1925.00	0.3404	4450.00	0.1547
1950.00	0.3351	4475.00	0.1541
1975.00	0.3300	4500.00	0.1535
2000.00	0.3250	4525.00	0.1529
2025.00	0.3202	4550.00	0.1523
2050.00	0.3156	4575.00	0.1517
2075.00	0.3111	4600.00	0.1511
2100.00	0.3067	4625.00	0.1505
2125.00	0.3024	4650.00	0.1500
2150.00	0.2983	4675.00	0.1494
2175.00	0.2942	4700.00	0.1488
2200.00	0.2904	4725.00	0.1483
2225.00	0.2866	4750.00	0.1477
2250.00	0.2829	4775.00	0.1472
2275.00	0.2794	4800.00	0.1467
2300.00	0.2760	4825.00	0.1461
2325.00	0.2727	4850.00	0.1456
2350.00	0.2695	4875.00	0.1451
2375.00	0.2663	4900.00	0.1446
2400.00	0.2633	4925.00	0.1441
2425.00	0.2604	4950.00	0.1436
2450.00	0.2575	4975.00	0.1431
2475.00	0.2548	5000.00	0.1426
2500.00	0.2521		

********** AERSCREEN MAXIMUM IMPACT SUMMARY **********

3-hour, 8-hour, and 24-hour scaled
concentrations are equal to the 1-hour concentration as referenced in
SCREENING PROCEDURES FOR ESTIMATING THE AIR QUALITY
IMPACT OF STATIONARY SOURCES, REVISED (Section 4.5.4)
Report number EPA-454/R-92-019
http://www.epa.gov/scram001/guidance_permit.htm
under Screening Guidance

CALCULATION PROCEDURE	MAXIMUM 1-HOUR CONC (ug/m3)	SCALED 3-HOUR CONC (ug/m3)	SCALED 8-HOUR CONC (ug/m3)	SCALED 24-HOUR CONC (ug/m3)	SCALED ANNUAL CONC (ug/m3)
FLAT TERRAIN	3.160	3.160	3.160	3.160	N/A
DISTANCE FROM SOURCE	426.00 meters				
IMPACT AT THE AMBIENT BOUNDARY	2.511	2.511	2.511	2.511	N/A
DISTANCE FROM SOURCE	1.00 meters				

AERSCREEN 14147 / AERMOD 14134 06/18/15
12:15:38

TITLE: MNT VIEW CEMETARY EXPANSION PM2.5

********** AREA PARAMETERS **********

SOURCE EMISSION RATE:	0.0120 g/s	0.095 lb/hr
AREA EMISSION RATE:	0.502E-07 g/(s-m2)	0.399E-06 lb/(hr-m2)
AREA HEIGHT:	3.00 meters	9.84 feet
AREA SOURCE LONG SIDE:	850.00 meters	2788.71 feet
AREA SOURCE SHORT SIDE:	280.00 meters	918.64 feet
INITIAL VERTICAL DIMENSION:	3.00 meters	9.84 feet
RURAL OR URBAN:	URBAN	
POPULATION:	400000	
INITIAL PROBE DISTANCE =	5000. meters	16404. feet

********** BUILDING DOWNWASH PARAMETERS **********

BUILDING DOWNWASH NOT USED FOR NON-POINT SOURCES

********** FLOW SECTOR ANALYSIS **********

25 meter receptor spacing: 1. meters - 5000. meters

MAXIMUM IMPACT RECEPTOR

Zo SECTOR	SURFACE ROUGHNESS	1-HR CONC (ug/m3)	RADIAL (deg)	DIST (m)	TEMPORAL PERIOD
1*	1.000	2.914	0	425.0	WIN

* = worst case diagonal

********** MAKEMET METEOROLOGY PARAMETERS **********

MIN/MAX TEMPERATURE: 250.0 / 310.0 (K)

MINIMUM WIND SPEED: 0.5 m/s

ANEMOMETER HEIGHT: 10.000 meters

SURFACE CHARACTERISTICS INPUT: AERMET SEASONAL TABLES

DOMINANT SURFACE PROFILE: Urban
DOMINANT CLIMATE TYPE: Average Moisture

DOMINANT SEASON: Winter

ALBEDO: 0.35
BOWEN RATIO: 1.50
ROUGHNESS LENGTH: 1.000 (meters)

METEOROLOGY CONDITIONS USED TO PREDICT OVERALL MAXIMUM IMPACT

YR	MO	DY	JDY	HR
10	01	10	10	01

H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O LEN	Z0	BOWEN	ALBEDO	REF WS
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50

HT	REF TA	HT
10.0	310.0	2.0

METEOROLOGY CONDITIONS USED TO PREDICT AMBIENT BOUNDARY IMPACT

YR	MO	DY	JDY	HR
10	01	10	10	01

H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O LEN	Z0	BOWEN	ALBEDO	REF WS
-1.30	0.043	-9.000	0.020	-999.	21.	6.0	1.000	1.50	0.35	0.50

HT	REF TA	HT
10.0	310.0	2.0

********** AERSCREEN AUTOMATED DISTANCES **********
OVERALL MAXIMUM CONCENTRATIONS BY DISTANCE

DIST (m)	MAXIMUM 1-HR CONC (ug/m3)	DIST (m)	MAXIMUM 1-HR CONC (ug/m3)
1.00	2.316	2525.00	0.2302
25.00	2.362	2550.00	0.2278
50.00	2.408	2575.00	0.2256
75.00	2.451	2600.00	0.2234
100.00	2.492	2625.00	0.2212
125.00	2.531	2650.00	0.2191
150.00	2.568	2675.00	0.2170
175.00	2.603	2700.00	0.2150
200.00	2.637	2725.00	0.2131
225.00	2.669	2750.00	0.2112
250.00	2.699	2775.00	0.2093
275.00	2.728	2800.00	0.2075
300.00	2.756	2825.00	0.2058

325.00	2.783	2850.00	0.2041
350.00	2.837	2875.00	0.2024
375.00	2.864	2900.00	0.2008
400.00	2.889	2925.00	0.1992
425.00	2.914	2950.00	0.1977
450.00	2.572	2975.00	0.1961
475.00	2.131	3000.00	0.1947
500.00	1.922	3025.00	0.1932
525.00	1.775	3050.00	0.1918
550.00	1.655	3075.00	0.1904
575.00	1.552	3100.00	0.1890
600.00	1.435	3125.00	0.1877
625.00	1.362	3150.00	0.1864
650.00	1.294	3175.00	0.1851
675.00	1.233	3200.00	0.1839
700.00	1.176	3225.00	0.1827
725.00	1.124	3250.00	0.1815
750.00	1.075	3275.00	0.1803
775.00	1.030	3300.00	0.1792
800.00	0.9883	3325.00	0.1781
825.00	0.9491	3350.00	0.1770
850.00	0.9130	3375.00	0.1759
875.00	0.8786	3400.00	0.1748
900.00	0.8467	3425.00	0.1738
925.00	0.8171	3450.00	0.1728
950.00	0.7887	3475.00	0.1718
975.00	0.7621	3500.00	0.1708
1000.00	0.7372	3525.00	0.1698
1025.00	0.7134	3550.00	0.1689
1050.00	0.6909	3575.00	0.1679
1075.00	0.6697	3600.00	0.1670
1100.00	0.6498	3625.00	0.1661
1125.00	0.6310	3650.00	0.1652
1150.00	0.6127	3675.00	0.1643
1175.00	0.5955	3700.00	0.1635
1200.00	0.5792	3725.00	0.1626
1225.00	0.5637	3750.00	0.1618
1250.00	0.5490	3775.00	0.1610
1275.00	0.5348	3800.00	0.1601
1300.00	0.5211	3825.00	0.1594
1325.00	0.5081	3850.00	0.1586
1350.00	0.4957	3875.00	0.1578
1375.00	0.4839	3900.00	0.1570
1400.00	0.4726	3925.00	0.1563
1425.00	0.4618	3950.00	0.1555
1450.00	0.4515	3975.00	0.1548
1475.00	0.4415	4000.00	0.1541
1500.00	0.4318	4025.00	0.1534
1525.00	0.4226	4050.00	0.1527
1550.00	0.4137	4075.00	0.1520
1575.00	0.4053	4100.00	0.1513
1600.00	0.3970	4125.00	0.1507
1625.00	0.3892	4150.00	0.1500
1650.00	0.3816	4175.00	0.1493
1675.00	0.3743	4200.00	0.1487
1700.00	0.3673	4225.00	0.1481
1725.00	0.3605	4250.00	0.1474
1750.00	0.3539	4275.00	0.1468
1775.00	0.3475	4300.00	0.1462
1800.00	0.3414	4325.00	0.1456
1825.00	0.3355	4350.00	0.1450
1850.00	0.3299	4375.00	0.1444
1875.00	0.3244	4400.00	0.1438

1900.00	0.3191	4425.00	0.1433
1925.00	0.3140	4450.00	0.1427
1950.00	0.3091	4475.00	0.1421
1975.00	0.3044	4500.00	0.1416
2000.00	0.2998	4525.00	0.1410
2025.00	0.2954	4550.00	0.1405
2050.00	0.2912	4575.00	0.1399
2075.00	0.2870	4600.00	0.1394
2100.00	0.2829	4625.00	0.1389
2125.00	0.2790	4650.00	0.1384
2150.00	0.2752	4675.00	0.1378
2175.00	0.2714	4700.00	0.1373
2200.00	0.2679	4725.00	0.1368
2225.00	0.2644	4750.00	0.1363
2250.00	0.2610	4775.00	0.1358
2275.00	0.2577	4800.00	0.1353
2300.00	0.2546	4825.00	0.1348
2325.00	0.2515	4850.00	0.1343
2350.00	0.2486	4875.00	0.1338
2375.00	0.2457	4900.00	0.1334
2400.00	0.2429	4925.00	0.1329
2425.00	0.2402	4950.00	0.1324
2450.00	0.2376	4975.00	0.1320
2475.00	0.2350	5000.00	0.1315
2500.00	0.2326		

********** AERSCREEN MAXIMUM IMPACT SUMMARY **********

3-hour, 8-hour, and 24-hour scaled
concentrations are equal to the 1-hour concentration as referenced in
SCREENING PROCEDURES FOR ESTIMATING THE AIR QUALITY
IMPACT OF STATIONARY SOURCES, REVISED (Section 4.5.4)
Report number EPA-454/R-92-019
http://www.epa.gov/scram001/guidance_permit.htm
under Screening Guidance

CALCULATION PROCEDURE	MAXIMUM 1-HOUR CONC (ug/m3)	SCALED 3-HOUR CONC (ug/m3)	SCALED 8-HOUR CONC (ug/m3)	SCALED 24-HOUR CONC (ug/m3)	SCALED ANNUAL CONC (ug/m3)
FLAT TERRAIN	2.915	2.915	2.915	2.915	N/A
DISTANCE FROM SOURCE	426.00 meters				
IMPACT AT THE AMBIENT BOUNDARY	2.316	2.316	2.316	2.316	N/A
DISTANCE FROM SOURCE	1.00 meters				

Mountain View Cemetery Expansion

Alameda County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Commercial	6.30	User Defined Unit	7.20	0.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	63
Climate Zone	5			**Operational Year**	2016

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Cemetary use on 7.2 acres accomodating approximately 6,300 interment sites.

Construction Phase - From Table 3-1: Estimated Construction Schedule in Draft EIR.

Off-road Equipment - Equipment and hours from Table 3-1: Estimated Construction Equipment. Load Factor from OFFROAD2011.

Off-road Equipment - Equipment and hours from Table 3-1: Estimated Construction Equipment. Load Factor from OFFROAD2011.

Off-road Equipment - Equipment and hours from Table 3-1: Estimated Construction Equipment. Load Factor from OFFROAD2011.

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Off-road Equipment - Equipment and hours from Table 3-1: Estimated Construction Equipment. Load Factor from OFFROAD2011.

Off-road Equipment - Equipment and hours from Table 3-1: Estimated Construction Equipment. Load Factor from OFFROAD2011.

Off-road Equipment - Equipment and hours from Table 3-1: Estimated Construction Equipment. Load Factor from OFFROAD2011.

Grading - Equipment and hours from Table 3-1: Estimated Construction Equipment. Load Factor from OFFROAD2011.

Demolition - Rough estimate 800 lf of roadway debris.

Construction Off-road Equipment Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	5.00
tblConstructionPhase	NumDays	10.00	2.00
tblConstructionPhase	NumDays	10.00	3.00
tblConstructionPhase	NumDays	20.00	10.00
tblConstructionPhase	NumDays	20.00	25.00
tblConstructionPhase	NumDays	20.00	3.00
tblConstructionPhase	NumDays	10.00	2.00
tblConstructionPhase	NumDays	20.00	3.00
tblConstructionPhase	NumDays	230.00	15.00
tblConstructionPhase	NumDays	20.00	15.00
tblConstructionPhase	NumDays	20.00	5.00
tblConstructionPhase	NumDays	10.00	7.00
tblConstructionPhase	PhaseEndDate	3/11/2016	3/12/2016
tblConstructionPhase	PhaseStartDate	3/13/2016	3/14/2016
tblGrading	AcresOfGrading	9.00	4.50

tblGrading	AcresOfGrading	2.50	2.70
tblGrading	AcresOfGrading	1.00	1.40
tblGrading	AcresOfGrading	87.50	5.90
tblGrading	AcresOfGrading	2.50	4.50
tblGrading	AcresOfGrading	1.50	2.70
tblLandUse	LotAcreage	0.00	7.20
tblOffRoadEquipment	HorsePower	255.00	410.00
tblOffRoadEquipment	HorsePower	361.00	515.00
tblOffRoadEquipment	HorsePower	97.00	144.00
tblOffRoadEquipment	HorsePower	361.00	270.00
tblOffRoadEquipment	HorsePower	205.00	612.00
tblOffRoadEquipment	HorsePower	162.00	578.00
tblOffRoadEquipment	HorsePower	255.00	410.00
tblOffRoadEquipment	HorsePower	400.00	87.00
tblOffRoadEquipment	HorsePower	8.00	405.00
tblOffRoadEquipment	HorsePower	255.00	410.00
tblOffRoadEquipment	HorsePower	174.00	180.00
tblOffRoadEquipment	HorsePower	400.00	75.00
tblOffRoadEquipment	HorsePower	199.00	230.00
tblOffRoadEquipment	HorsePower	16.00	162.00
tblOffRoadEquipment	HorsePower	199.00	230.00
tblOffRoadEquipment	HorsePower	361.00	515.00
tblOffRoadEquipment	HorsePower	8.00	405.00
tblOffRoadEquipment	HorsePower	255.00	410.00
tblOffRoadEquipment	HorsePower	174.00	180.00
tblOffRoadEquipment	HorsePower	361.00	270.00
tblOffRoadEquipment	HorsePower	400.00	87.00
tblOffRoadEquipment	HorsePower	8.00	405.00
tblOffRoadEquipment	HorsePower	174.00	180.00
tblOffRoadEquipment	HorsePower	8.00	405.00
tblOffRoadEquipment	HorsePower	199.00	230.00
tblOffRoadEquipment	HorsePower	8.00	405.00
tblOffRoadEquipment	HorsePower	400.00	87.00
tblOffRoadEquipment	HorsePower	255.00	410.00
tblOffRoadEquipment	LoadFactor	0.38	0.42
tblOffRoadEquipment	OffRoadEquipmentType	Concrete/Industrial Saws	Scrapers
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentType	Excavators	Scrapers
tblOffRoadEquipment	OffRoadEquipmentType	Excavators	Bore/Drill Rigs
tblOffRoadEquipment	OffRoadEquipmentType	Paving Equipment	Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType	Rollers	Plate Compactors
tblOffRoadEquipment	OffRoadEquipmentType	Tractors/Loaders/Backhoes	Graders
tblOffRoadEquipment	OffRoadEquipmentType	Welders	Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType	Concrete/Industrial Saws	Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType	Excavators	Dumpers/Tenders
tblOffRoadEquipment	OffRoadEquipmentType	Excavators	Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType	Excavators	Scrapers
tblOffRoadEquipment	OffRoadEquipmentType	Excavators	Plate Compactors
tblOffRoadEquipment	OffRoadEquipmentType	Graders	Scrapers
tblOffRoadEquipment	OffRoadEquipmentType	Graders	Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType	Graders	Plate Compactors

tblOffRoadEquipment	OffRoadEquipmentType	Pavers	Graders
tblOffRoadEquipment	OffRoadEquipmentType	Paving Equipment	Plate Compactors
tblOffRoadEquipment	OffRoadEquipmentType	Rollers	Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType	Rubber Tired Dozers	Plate Compactors
tblOffRoadEquipment	OffRoadEquipmentType	Rubber Tired Dozers	Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	1.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblOffRoadEquipment	UsageHours	7.00	1.00
tblOffRoadEquipment	UsageHours	8.00	1.00
tblOffRoadEquipment	UsageHours	8.00	1.00
tblProjectCharacteristics	OperationalYear	2014	2016
tblTripsAndVMT	WorkerTripNumber	28.00	18.00
tblTripsAndVMT	WorkerTripNumber	20.00	5.00
tblTripsAndVMT	WorkerTripNumber	18.00	5.00
tblTripsAndVMT	WorkerTripNumber	18.00	8.00
tblTripsAndVMT	WorkerTripNumber	38.00	25.00
tblTripsAndVMT	WorkerTripNumber	20.00	8.00
tblTripsAndVMT	WorkerTripNumber	20.00	8.00
tblTripsAndVMT	WorkerTripNumber	20.00	8.00
tblTripsAndVMT	WorkerTripNumber	25.00	10.00
tblTripsAndVMT	WorkerTripNumber	10.00	3.00
tblTripsAndVMT	WorkerTripNumber	10.00	3.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2016	0.2852	3.2601	2.0765	3.0000e-003	0.2713	0.1533	0.4246	0.1371	0.1414	0.2784						282.9639
Total	**0.2852**	**3.2601**	**2.0765**	**3.0000e-003**	**0.2713**	**0.1533**	**0.4246**	**0.1371**	**0.1414**	**0.2784**						**282.9639**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2016	0.2852	3.2601	2.0765	3.0000e-003	0.1092	0.1533	0.2625	0.0544	0.1414	0.1957						282.9636
Total	**0.2852**	**3.2601**	**2.0765**	**3.0000e-003**	**0.1092**	**0.1533**	**0.2625**	**0.0544**	**0.1414**	**0.1957**						**282.9636**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**59.75**	**0.00**	**38.18**	**60.34**	**0.00**	**29.70**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Phase 1	Site Preparation	1/4/2016	1/6/2016	5	3	Prepare Plot 98 and Panhandle to accommodate new fill (clear and
2	Phase 2	Demolition	1/7/2016	1/11/2016	5	3	Demo existing road through Plot 82 (demolish existing asphalt and
3	Phase 3	Grading	1/12/2016	1/25/2016	5	10	Drill rock at Plot 82 and crush or ram large rocks into smaller
4	Phase 4	Site Preparation	1/26/2016	1/27/2016	5	2	Cut and doze temporary haul road
5	Phase 5 and 6	Grading	1/28/2016	3/2/2016	5	25	Over-excavate Plot 82, build keyways and benches to rough
6	Phase 7	Grading	3/3/2016	3/9/2016	5	5	Rough grade Plot 98 and Panhandle, building keyways and
7	Phase 8	Site Preparation	3/10/2016	3/12/2016	5	2	Re-vegetate Plot 98 and Panhandle
8	Phase 9	Grading	3/14/2016	3/16/2016	5	3	Rough grade Plot 82
9	Phase 10	Building Construction	3/17/2016	4/6/2016	5	15	Build niche/wall at Plot 82
10	Phase 11	Paving	4/7/2016	4/27/2016	5	15	Build new road thru Plot 82, including storm drain and irrigation
11	Phase 12	Grading	4/28/2016	5/4/2016	5	5	Finish grade Plot 82
12	Phase 13	Site Preparation	5/5/2016	5/13/2016	5	7	Landscape installation (tree planting, grass, etc.)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Phase 7	Rubber Tired Dozers	1	8.00	410	0.40
Phase 1	Scrapers	3	8.00	515	0.48
Phase 11	Tractors/Loaders/Backhoes	1	4.00	144	0.37
Phase 1	Scrapers	3	8.00	270	0.48
Phase 3	Bore/Drill Rigs	1	4.00	612	0.50
Phase 2	Concrete/Industrial Saws	1	8.00	81	0.73
Phase 10	Cranes	1	7.00	226	0.29
Phase 3	Excavators	1	4.00	578	0.38
Phase 5 and 6	Rubber Tired Dozers	1	8.00	410	0.40
Phase 5 and 6	Off-Highway Trucks	2	8.00	87	0.38
Phase 5 and 6	Plate Compactors	1	8.00	405	0.43
Phase 1	Rubber Tired Dozers	1	8.00	410	0.40
Phase 2	Excavators	3	8.00	162	0.38
Phase 12	Excavators	1	8.00	162	0.38
Phase 4	Graders	1	8.00	180	0.41
Phase 5 and 6	Excavators	1	8.00	162	0.38
Phase 7	Excavators	1	8.00	162	0.38
Phase 4	Off-Highway Trucks	1	8.00	75	0.38
Phase 2	Rubber Tired Loaders	1	8.00	230	0.36
Phase 9	Excavators	1	8.00	162	0.38
Phase 2	Dumpers/Tenders	1	8.00	162	0.42
Phase 12	Rubber Tired Loaders	1	8.00	230	0.36
Phase 5 and 6	Scrapers	3	8.00	515	0.48
Phase 7	Plate Compactors	1	8.00	405	0.43
Phase 9	Rubber Tired Dozers	1	8.00	410	0.40
Phase 10	Forklifts	3	8.00	89	0.20
Phase 10	Generator Sets	1	8.00	84	0.74
Phase 12	Graders	1	8.00	180	0.41
Phase 5 and 6	Scrapers	3	8.00	270	0.48
Phase 7	Off-Highway Trucks	1	8.00	87	0.38

Phase 9	Plate Compactors	1	8.00	405	0.43
Phase 11	Graders	1	4.00	180	0.41
Phase 11	Plate Compactors	1	4.00	405	0.43
Phase 11	Rubber Tired Loaders	1	4.00	230	0.36
Phase 12	Plate Compactors	1	8.00	405	0.43
Phase 3	Graders	1	8.00	174	0.41
Phase 5 and 6	Graders	1	8.00	174	0.41
Phase 9	Off-Highway Trucks	1	8.00	87	0.38
Phase 7	Graders	1	8.00	174	0.41
Phase 4	Rubber Tired Dozers	1	8.00	410	0.40
Phase 9	Graders	1	8.00	174	0.41
Phase 10	Tractors/Loaders/Backhoes	1	1.00	97	0.37
Phase 11	Pavers	2	8.00	125	0.42
Phase 11	Paving Equipment	2	8.00	130	0.36
Phase 11	Rollers	2	8.00	80	0.38
Phase 2	Rubber Tired Dozers	2	8.00	255	0.40
Phase 12	Rubber Tired Dozers	1	8.00	255	0.40
Phase 13	Tractors/Loaders/Backhoes	1	1.00	97	0.37
Phase 8	Tractors/Loaders/Backhoes	1	1.00	97	0.37
Phase 3	Rubber Tired Dozers	1	8.00	255	0.40
Phase 13	Rubber Tired Dozers	3	8.00	255	0.40
Phase 8	Rubber Tired Dozers	3	8.00	255	0.40
Phase 12	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Phase 3	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Phase 5 and 6	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Phase 7	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Phase 9	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Phase 1	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Phase 4	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Phase 10	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Phase 1	11	18.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Phase 2	8	5.00	0.00	99.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Phase 3	7	5.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Phase 4	7	8.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Phase 5 and 6	15	25.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Phase 7	8	8.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Phase 10	7	0.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Phase 12	8	8.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Phase 9	8	8.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Phase 11	10	10.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Phase 13	4	3.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Phase 8	4	3.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Clean Paved Roads

3.2 Phase 1 - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0114	0.0000	0.0114	5.2200e-003	0.0000	5.2200e-003						0.0000
Off-Road	0.0164	0.2002	0.1256	1.9000e-004		8.7300e-003	8.7300e-003		8.0300e-003	8.0300e-003						17.6354
Total	**0.0164**	**0.2002**	**0.1256**	**1.9000e-004**	**0.0114**	**8.7300e-003**	**0.0202**	**5.2200e-003**	**8.0300e-003**	**0.0133**						**17.6354**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						0.0000
Worker	1.0000e-004	1.4000e-004	1.3700e-003	0.0000	2.5000e-004	0.0000	2.5000e-004	7.0000e-005	0.0000	7.0000e-005						0.2169
Total	**1.0000e-004**	**1.4000e-004**	**1.3700e-003**	**0.0000**	**2.5000e-004**	**0.0000**	**2.5000e-004**	**7.0000e-005**	**0.0000**	**7.0000e-005**						**0.2169**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					4.4500e-003	0.0000	4.4500e-003	2.0400e-003	0.0000	2.0400e-003						0.0000
Off-Road	0.0164	0.2002	0.1256	1.9000e-004		8.7300e-003	8.7300e-003		8.0300e-003	8.0300e-003						17.6354
Total	**0.0164**	**0.2002**	**0.1256**	**1.9000e-004**	**4.4500e-003**	**8.7300e-003**	**0.0132**	**2.0400e-003**	**8.0300e-003**	**0.0101**						**17.6354**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						0.0000
Worker	1.0000e-004	1.4000e-004	1.3700e-003	0.0000	2.5000e-004	0.0000	2.5000e-004	7.0000e-005	0.0000	7.0000e-005						0.2169
Total	**1.0000e-004**	**1.4000e-004**	**1.3700e-003**	**0.0000**	**2.5000e-004**	**0.0000**	**2.5000e-004**	**7.0000e-005**	**0.0000**	**7.0000e-005**						**0.2169**

3.3 Phase 2 - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Fugitive Dust					0.0107	0.0000	0.0107	1.6200e-003	0.0000	1.6200e-003						0.0000
Off-Road	7.2900e-003	0.0797	0.0557	7.0000e-005		3.8200e-003	3.8200e-003		3.5600e-003	3.5600e-003						6.6036
Total	**7.2900e-003**	**0.0797**	**0.0557**	**7.0000e-005**	**0.0107**	**3.8200e-003**	**0.0145**	**1.6200e-003**	**3.5600e-003**	**5.1800e-003**						**6.6036**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0800e-003	0.0148	0.0116	4.0000e-005	8.4000e-004	1.9000e-004	1.0300e-003	2.3000e-004	1.8000e-004	4.1000e-004						3.3924
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						0.0000
Worker	3.0000e-005	4.0000e-005	3.8000e-004	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005						0.0602
Total	**1.1100e-003**	**0.0148**	**0.0120**	**4.0000e-005**	**9.1000e-004**	**1.9000e-004**	**1.1000e-003**	**2.5000e-004**	**1.8000e-004**	**4.3000e-004**						**3.4527**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					4.1700e-003	0.0000	4.1700e-003	6.3000e-004	0.0000	6.3000e-004						0.0000
Off-Road	7.2900e-003	0.0797	0.0557	7.0000e-005		3.8200e-003	3.8200e-003		3.5600e-003	3.5600e-003						6.6036
Total	**7.2900e-003**	**0.0797**	**0.0557**	**7.0000e-005**	**4.1700e-003**	**3.8200e-003**	**7.9900e-003**	**6.3000e-004**	**3.5600e-003**	**4.1900e-003**						**6.6036**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0800e-003	0.0148	0.0116	4.0000e-005	8.4000e-004	1.9000e-004	1.0300e-003	2.3000e-004	1.8000e-004	4.1000e-004						3.3924
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						0.0000
Worker	3.0000e-005	4.0000e-005	3.8000e-004	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005						0.0602
Total	**1.1100e-003**	**0.0148**	**0.0120**	**4.0000e-005**	**9.1000e-004**	**1.9000e-004**	**1.1000e-003**	**2.5000e-004**	**1.8000e-004**	**4.3000e-004**						**3.4527**

3.4 Phase 3 - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0328	0.0000	0.0328	0.0168	0.0000	0.0168						0.0000
Off-Road	0.0208	0.2318	0.1414	2.4000e-004		0.0119	0.0119		0.0110	0.0110						22.3893
Total	**0.0208**	**0.2318**	**0.1414**	**2.4000e-004**	**0.0328**	**0.0119**	**0.0447**	**0.0168**	**0.0110**	**0.0278**						**22.3893**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						0.0000
Worker	9.0000e-005	1.3000e-004	1.2700e-003	0.0000	2.3000e-004	0.0000	2.3000e-004	6.0000e-005	0.0000	6.0000e-005						0.2008
Total	**9.0000e-005**	**1.3000e-004**	**1.2700e-003**	**0.0000**	**2.3000e-004**	**0.0000**	**2.3000e-004**	**6.0000e-005**	**0.0000**	**6.0000e-005**						**0.2008**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0128	0.0000	0.0128	6.5700e-003	0.0000	6.5700e-003						0.0000
Off-Road	0.0208	0.2318	0.1414	2.4000e-004		0.0119	0.0119		0.0110	0.0110						22.3893
Total	**0.0208**	**0.2318**	**0.1414**	**2.4000e-004**	**0.0128**	**0.0119**	**0.0247**	**6.5700e-003**	**0.0110**	**0.0176**						**22.3893**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						0.0000
Worker	9.0000e-005	1.3000e-004	1.2700e-003	0.0000	2.3000e-004	0.0000	2.3000e-004	6.0000e-005	0.0000	6.0000e-005						0.2008
Total	**9.0000e-005**	**1.3000e-004**	**1.2700e-003**	**0.0000**	**2.3000e-004**	**0.0000**	**2.3000e-004**	**6.0000e-005**	**0.0000**	**6.0000e-005**						**0.2008**

3.5 Phase 4 - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					6.7600e-003	0.0000	6.7600e-003	3.3900e-003	0.0000	3.3900e-003						0.0000
Off-Road	3.8700e-003	0.0427	0.0284	3.0000e-005		2.2800e-003	2.2800e-003		2.1000e-003	2.1000e-003						3.1455
Total	**3.8700e-003**	**0.0427**	**0.0284**	**3.0000e-005**	**6.7600e-003**	**2.2800e-003**	**9.0400e-003**	**3.3900e-003**	**2.1000e-003**	**5.4900e-003**						**3.1455**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						0.0000

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						0.0000
Worker	3.0000e-005	4.0000e-005	4.1000e-004	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005						0.0643
Total	**3.0000e-005**	**4.0000e-005**	**4.1000e-004**	**0.0000**	**7.0000e-005**	**0.0000**	**7.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**						**0.0643**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.6400e-003	0.0000	2.6400e-003	1.3200e-003	0.0000	1.3200e-003						0.0000
Off-Road	3.8700e-003	0.0427	0.0284	3.0000e-005		2.2800e-003	2.2800e-003		2.1000e-003	2.1000e-003						3.1455
Total	**3.8700e-003**	**0.0427**	**0.0284**	**3.0000e-005**	**2.6400e-003**	**2.2800e-003**	**4.9200e-003**	**1.3200e-003**	**2.1000e-003**	**3.4200e-003**						**3.1455**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						0.0000
Worker	3.0000e-005	4.0000e-005	4.1000e-004	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005						0.0643
Total	**3.0000e-005**	**4.0000e-005**	**4.1000e-004**	**0.0000**	**7.0000e-005**	**0.0000**	**7.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**						**0.0643**

3.6 Phase 5 and 6 - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0784	0.0000	0.0784	0.0417	0.0000	0.0417						0.0000
Off-Road	0.1496	1.8126	1.1205	1.6500e-003		0.0797	0.0797		0.0733	0.0733						156.9543
Total	**0.1496**	**1.8126**	**1.1205**	**1.6500e-003**	**0.0784**	**0.0797**	**0.1581**	**0.0417**	**0.0733**	**0.1150**						**156.9543**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						0.0000
Worker	1.1600e-003	1.6400e-003	0.0159	3.0000e-005	2.8500e-003	2.0000e-005	2.8700e-003	7.6000e-004	2.0000e-005	7.8000e-004						2.5098
Total	**1.1600e-003**	**1.6400e-003**	**0.0159**	**3.0000e-005**	**2.8500e-003**	**2.0000e-005**	**2.8700e-003**	**7.6000e-004**	**2.0000e-005**	**7.8000e-004**						**2.5098**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0306	0.0000	0.0306	0.0163	0.0000	0.0163						0.0000
Off-Road	0.1496	1.8126	1.1205	1.6500e-003		0.0797	0.0797		0.0733	0.0733						156.9542
Total	**0.1496**	**1.8126**	**1.1205**	**1.6500e-003**	**0.0306**	**0.0797**	**0.1102**	**0.0163**	**0.0733**	**0.0896**						**156.9542**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						0.0000
Worker	1.1600e-003	1.6400e-003	0.0159	3.0000e-005	2.8500e-003	2.0000e-005	2.8700e-003	7.6000e-004	2.0000e-005	7.8000e-004						2.5098
Total	**1.1600e-003**	**1.6400e-003**	**0.0159**	**3.0000e-005**	**2.8500e-003**	**2.0000e-005**	**2.8700e-003**	**7.6000e-004**	**2.0000e-005**	**7.8000e-004**						**2.5098**

3.7 Phase 7 - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0174	0.0000	0.0174	8.5300e-003	0.0000	8.5300e-003						0.0000
Off-Road	0.0111	0.1172	0.0811	9.0000e-005		6.4800e-003	6.4800e-003		5.9600e-003	5.9600e-003						8.3421
Total	**0.0111**	**0.1172**	**0.0811**	**9.0000e-005**	**0.0174**	**6.4800e-003**	**0.0239**	**8.5300e-003**	**5.9600e-003**	**0.0145**						**8.3421**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						0.0000
Worker	7.0000e-005	1.0000e-004	1.0200e-003	0.0000	1.8000e-004	0.0000	1.8000e-004	5.0000e-005	0.0000	5.0000e-005						0.1606
Total	**7.0000e-005**	**1.0000e-004**	**1.0200e-003**	**0.0000**	**1.8000e-004**	**0.0000**	**1.8000e-004**	**5.0000e-005**	**0.0000**	**5.0000e-005**						**0.1606**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					6.8000e-003	0.0000	6.8000e-003	3.3300e-003	0.0000	3.3300e-003						0.0000

Off-Road	0.0111	0.1172	0.0811	9.0000e-005		6.4800e-003	6.4800e-003		5.9600e-003	5.9600e-003						8.3421
Total	**0.0111**	**0.1172**	**0.0811**	**9.0000e-005**	**6.8000e-003**	**6.4800e-003**	**0.0133**	**3.3300e-003**	**5.9600e-003**	**9.2900e-003**						**8.3421**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						0.0000
Worker	7.0000e-005	1.0000e-004	1.0200e-003	0.0000	1.8000e-004	0.0000	1.8000e-004	5.0000e-005	0.0000	5.0000e-005						0.1606
Total	**7.0000e-005**	**1.0000e-004**	**1.0200e-003**	**0.0000**	**1.8000e-004**	**0.0000**	**1.8000e-004**	**5.0000e-005**	**0.0000**	**5.0000e-005**						**0.1606**

3.8 Phase 8 - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0181	0.0000	0.0181	9.9300e-003	0.0000	9.9300e-003						0.0000
Off-Road	3.7600e-003	0.0420	0.0318	3.0000e-005		1.9700e-003	1.9700e-003		1.8100e-003	1.8100e-003						2.5660
Total	**3.7600e-003**	**0.0420**	**0.0318**	**3.0000e-005**	**0.0181**	**1.9700e-003**	**0.0200**	**9.9300e-003**	**1.8100e-003**	**0.0117**						**2.5660**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						0.0000
Worker	1.0000e-005	2.0000e-005	1.5000e-004	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005						0.0241
Total	**1.0000e-005**	**2.0000e-005**	**1.5000e-004**	**0.0000**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**						**0.0241**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					7.0500e-003	0.0000	7.0500e-003	3.8700e-003	0.0000	3.8700e-003						0.0000
Off-Road	3.7600e-003	0.0420	0.0318	3.0000e-005		1.9700e-003	1.9700e-003		1.8100e-003	1.8100e-003						2.5660
Total	**3.7600e-003**	**0.0420**	**0.0318**	**3.0000e-005**	**7.0500e-003**	**1.9700e-003**	**9.0200e-003**	**3.8700e-003**	**1.8100e-003**	**5.6800e-003**						**2.5660**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						0.0000
Worker	1.0000e-005	2.0000e-005	1.5000e-004	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005						0.0241
Total	**1.0000e-005**	**2.0000e-005**	**1.5000e-004**	**0.0000**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**						**0.0241**

3.9 Phase 9 - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0105	0.0000	0.0105	5.1200e-003	0.0000	5.1200e-003						0.0000
Off-Road	6.6300e-003	0.0703	0.0487	5.0000e-005		3.8900e-003	3.8900e-003		3.5800e-003	3.5800e-003						5.0053
Total	**6.6300e-003**	**0.0703**	**0.0487**	**5.0000e-005**	**0.0105**	**3.8900e-003**	**0.0144**	**5.1200e-003**	**3.5800e-003**	**8.7000e-003**						**5.0053**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						0.0000
Worker	4.0000e-005	6.0000e-005	6.1000e-004	0.0000	1.1000e-004	0.0000	1.1000e-004	3.0000e-005	0.0000	3.0000e-005						0.0964
Total	**4.0000e-005**	**6.0000e-005**	**6.1000e-004**	**0.0000**	**1.1000e-004**	**0.0000**	**1.1000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**						**0.0964**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					4.0800e-003	0.0000	4.0800e-003	2.0000e-003	0.0000	2.0000e-003						0.0000
Off-Road	6.6300e-003	0.0703	0.0487	5.0000e-005		3.8900e-003	3.8900e-003		3.5800e-003	3.5800e-003						5.0053
Total	**6.6300e-003**	**0.0703**	**0.0487**	**5.0000e-005**	**4.0800e-003**	**3.8900e-003**	**7.9700e-003**	**2.0000e-003**	**3.5800e-003**	**5.5800e-003**						**5.0053**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						0.0000

Worker	4.0000e-005	6.0000e-005	6.1000e-004	0.0000	1.1000e-004	0.0000	1.1000e-004	3.0000e-005	0.0000	3.0000e-005						0.0964
Total	**4.0000e-005**	**6.0000e-005**	**6.1000e-004**	**0.0000**	**1.1000e-004**	**0.0000**	**1.1000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**						**0.0964**

3.10 Phase 10 - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0192	0.1528	0.0936	1.4000e-004		0.0101	0.0101		9.5400e-003	9.5400e-003						12.7156
Total	**0.0192**	**0.1528**	**0.0936**	**1.4000e-004**		**0.0101**	**0.0101**		**9.5400e-003**	**9.5400e-003**						**12.7156**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**						**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0192	0.1528	0.0936	1.4000e-004		0.0101	0.0101		9.5400e-003	9.5400e-003						12.7156
Total	**0.0192**	**0.1528**	**0.0936**	**1.4000e-004**		**0.0101**	**0.0101**		**9.5400e-003**	**9.5400e-003**						**12.7156**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**						**0.0000**

3.11 Phase 11 - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0211	0.2390	0.1376	2.3000e-004		0.0121	0.0121		0.0111	0.0111						22.2753
Paving	0.0000					0.0000	0.0000		0.0000	0.0000						0.0000
Total	**0.0211**	**0.2390**	**0.1376**	**2.3000e-004**		**0.0121**	**0.0121**		**0.0111**	**0.0111**						**22.2753**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						0.0000
Worker	2.8000e-004	3.9000e-004	3.8100e-003	1.0000e-005	6.8000e-004	1.0000e-005	6.9000e-004	1.8000e-004	1.0000e-005	1.9000e-004						0.6024
Total	**2.8000e-004**	**3.9000e-004**	**3.8100e-003**	**1.0000e-005**	**6.8000e-004**	**1.0000e-005**	**6.9000e-004**	**1.8000e-004**	**1.0000e-005**	**1.9000e-004**						**0.6024**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0211	0.2390	0.1376	2.3000e-004		0.0121	0.0121		0.0111	0.0111						22.2753
Paving	0.0000					0.0000	0.0000		0.0000	0.0000						0.0000
Total	**0.0211**	**0.2390**	**0.1376**	**2.3000e-004**		**0.0121**	**0.0121**		**0.0111**	**0.0111**						**22.2753**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						0.0000
Worker	2.8000e-004	3.9000e-004	3.8100e-003	1.0000e-005	6.8000e-004	1.0000e-005	6.9000e-004	1.8000e-004	1.0000e-005	1.9000e-004						0.6024
Total	**2.8000e-004**	**3.9000e-004**	**3.8100e-003**	**1.0000e-005**	**6.8000e-004**	**1.0000e-005**	**6.9000e-004**	**1.8000e-004**	**1.0000e-005**	**1.9000e-004**						**0.6024**

3.12 Phase 12 - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0165	0.0000	0.0165	8.4300e-003	0.0000	8.4300e-003						0.0000
Off-Road	9.3500e-003	0.1073	0.0629	9.0000e-005		5.2700e-003	5.2700e-003		4.8500e-003	4.8500e-003						8.7776
Total	**9.3500e-003**	**0.1073**	**0.0629**	**9.0000e-005**	**0.0165**	**5.2700e-003**	**0.0218**	**8.4300e-003**	**4.8500e-003**	**0.0133**						**8.7776**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						0.0000
Worker	7.0000e-005	1.0000e-004	1.0200e-003	0.0000	1.8000e-004	0.0000	1.8000e-004	5.0000e-005	0.0000	5.0000e-005						0.1606
Total	**7.0000e-005**	**1.0000e-004**	**1.0200e-003**	**0.0000**	**1.8000e-004**	**0.0000**	**1.8000e-004**	**5.0000e-005**	**0.0000**	**5.0000e-005**						**0.1606**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					6.4300e-003	0.0000	6.4300e-003	3.2900e-003	0.0000	3.2900e-003						0.0000
Off-Road	9.3500e-003	0.1073	0.0629	9.0000e-005		5.2700e-003	5.2700e-003		4.8500e-003	4.8500e-003						8.7776
Total	**9.3500e-003**	**0.1073**	**0.0629**	**9.0000e-005**	**6.4300e-003**	**5.2700e-003**	**0.0117**	**3.2900e-003**	**4.8500e-003**	**8.1400e-003**						**8.7776**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						0.0000
Worker	7.0000e-005	1.0000e-004	1.0200e-003	0.0000	1.8000e-004	0.0000	1.8000e-004	5.0000e-005	0.0000	5.0000e-005						0.1606
Total	**7.0000e-005**	**1.0000e-004**	**1.0200e-003**	**0.0000**	**1.8000e-004**	**0.0000**	**1.8000e-004**	**5.0000e-005**	**0.0000**	**5.0000e-005**						**0.1606**

3.13 Phase 13 - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0632	0.0000	0.0632	0.0348	0.0000	0.0348						0.0000
Off-Road	0.0132	0.1471	0.1112	9.0000e-005		6.8900e-003	6.8900e-003		6.3400e-003	6.3400e-003						8.9811
Total	**0.0132**	**0.1471**	**0.1112**	**9.0000e-005**	**0.0632**	**6.8900e-003**	**0.0701**	**0.0348**	**6.3400e-003**	**0.0411**						**8.9811**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						0.0000

Worker	4.0000e-005	5.0000e-005	5.3000e-004	0.0000	1.0000e-004	0.0000	1.0000e-004	3.0000e-005	0.0000	3.0000e-005						0.0843
Total	**4.0000e-005**	**5.0000e-005**	**5.3000e-004**	**0.0000**	**1.0000e-004**	**0.0000**	**1.0000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**						**0.0843**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0247	0.0000	0.0247	0.0136	0.0000	0.0136						0.0000
Off-Road	0.0132	0.1471	0.1112	9.0000e-005		6.8900e-003	6.8900e-003		6.3400e-003	6.3400e-003						8.9811
Total	**0.0132**	**0.1471**	**0.1112**	**9.0000e-005**	**0.0247**	**6.8900e-003**	**0.0316**	**0.0136**	**6.3400e-003**	**0.0199**						**8.9811**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						0.0000
Worker	4.0000e-005	5.0000e-005	5.3000e-004	0.0000	1.0000e-004	0.0000	1.0000e-004	3.0000e-005	0.0000	3.0000e-005						0.0843
Total	**4.0000e-005**	**5.0000e-005**	**5.3000e-004**	**0.0000**	**1.0000e-004**	**0.0000**	**1.0000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**						**0.0843**

Appendix 4.3A

Arborist Report,

HortScience, January 2015

DRAFT ARBORIST REPORT

Mountain View Cemetery
Oakland, CA

PREPARED FOR:
Mountain View Cemetery
5000 Piedmont Ave.
Oakland, CA 94611

PREPARED BY:
HortScience, Inc.
325 Ray Street
Pleasanton, CA 94566

February 2015

HORT SCIENCE

DRAFT Arborist Report
Mountain View Cemetery
Oakland, CA

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Introduction and Overview

The Mountain View Cemetery is proposing to develop two areas in the northeast portion of the property, in Oakland. The proposal is to allow the construction of new cemetery plots on two undeveloped portions of the site. HortScience, Inc. was asked to prepare an **Arborist Report** for the site for review by the City of Oakland.

This report provides the following information:

1. An assessment of all trees within 30' of the proposed grading.

2. An assessment of the impacts of constructing the proposed project on the trees.

3. Recommendations for tree preservation and removal.

Assessment Methods

Trees were assessed on January 14, 2015. The assessment included coast live oaks greater than or equal to 4" in diameter and trees of any other species greater than or equal to 9" in diameter, and within 30 feet of the project site. The assessment procedure consisted of the following steps:

1. Identifying the tree as to species.
2. Tagging each tree with an identifying number and recording its location on a map.
3. Measuring the trunk diameter at a point 54" above grade.
4. Evaluating the health and structural condition using a scale of 1 – 5:
   - ***5*** - A healthy, vigorous tree, reasonably free of signs and symptoms of disease, with good structure and form typical of the species.
   - ***4*** - Tree with slight decline in vigor, small amount of twig dieback, minor structural defects that could be corrected.
   - ***3*** - Tree with moderate vigor, moderate twig and small branch dieback, thinning of crown, poor leaf color, moderate structural defects that might be mitigated with regular care.
   - ***2*** - Tree in decline, epicormic growth, extensive dieback of medium to large branches, significant structural defects that cannot be abated.
   - ***1*** - Tree in severe decline, dieback of scaffold branches and/or trunk; most of foliage from epicormics; extensive structural defects that cannot be abated.
5. Rating the suitability for preservation as "high", "moderate" or "low". Suitability for preservation considers the invasiveness of the species, health, age and structural condition of the tree, and its potential to remain an asset to the site.
   - ***High***: Trees with good health and structural stability that have the potential for longevity at the site.
   - ***Moderate***: Trees with somewhat declining health and/or structural defects than can be abated with treatment. The tree will require more intense management and monitoring, and may have shorter life span than those in 'high' category.
   - ***Low***: Trees in poor health or with significant structural defects that cannot be mitigated. The tree is expected to continue to decline, regardless of treatment. The species or individual may have characteristics that are undesirable for landscapes, and generally are unsuited for use areas.

Description of Trees

Two hundred and twenty-two (222) trees were evaluated, representing 15 species (Table 1, following page). Descriptions of each tree are found in the ***Tree Assessment Form*** and locations are plotted on the ***Tree Assessment Map*** (see Attachments).

The trees were spread across the upper slopes in the northeast corner of the cemetery. Parts of the project area had been developed and used in the past, with site features and uses including subterranean storage tanks and a maintenance yard.

Trees included a mix of planted exotics and indigenous trees. Indigenous trees were concentrated along the eastern edge of the site, adjacent to undeveloped areas. Planted exotics were concentrated around the roads and developed areas.

The most frequently encountered tree species was coast live oak, with 153 trees, or 69% of the population. Coast live oaks ranged from 4 to 36" in diameter. The majority were young, with 101 measuring 12" or less in diameter, 45 measuring 12-24" in diameter and the remaining seven (7) measuring 25-36" in diameter. Eighty-seven (87) of the coast live oaks were in fair condition, 58 were in good and eight (8) were in poor. Many of the oaks, especially those in the southeast corner of the project site appeared to have been impacted by a fire at some point in the past. This had led to trunk wounds and other structural defects that affected tree health and structure.

Blue gum eucalyptus, with 26 trees was the second most commonly encountered species. Twenty-five (25) of the blue gums were located along the north edge of the project boundary (trees #97-121) and were part of a larger group of blue gums in the area. Eighteen (18) were in fair condition, five (5) were in poor and three (3) were in good. These trees also appeared to have been damaged by fire, producing trunk and branch wounds and basal cavities.

Eight (8) Blue Atlas cedars had been planted along the road. The species had performed well at the site, with seven (7) trees in good condition and one (1) in fair.

The remaining 12 species were represented by five (5) or fewer individuals, including:

- Five (5) red ironbark eucalyptus: All were in fair condition and several had been damaged by fire.
- Five (5) common elderberry: all were multi-trunked shrubs in fair and poor conditions.
- Four (4) olives: Condition was variable, from fair to excellent. Most appeared to have sprouted from a previously removed tree.
- Four (4) big leaf maples: Concentrated in the northeast corner of the project site, their condition was fair. Most of the big leaf maples also appeared to be stump sprouts.
- Four (4) blackwood acacias: These were young to semi-mature and in fair condition (2 trees) and good condition (2 trees).
- Three (3) Monterey pines: Two (2) were young, measuring 10" and 13" in diameter, and one was mature at 23" in diameter. Dieback and pine pitch canker (*Fusarium subglutinans*) were present in the crowns of two trees.
- Three (3) Calif. peppers: Located in the southern extent of the project area, these three trees grew in a cluster on the south side of the road. Two (2) were in good condition and one (1) was in fair.
- Two (2) Calif. bay laurels: One was young, the other semi-mature. Both were in good condition.
- Two (2) plums: Both were young and multi-trunked from the base.
- One (1) London plane, one (1) sweetgum and one (1) Italian stone pine.

Average tree condition was fair (123 trees, or 55%), with 80 trees (36%) in good condition and 19 trees (9%) in poor (Table 1). The City of Oakland defines all single-stem trees with a diameter of 9" or greater, and all multi-stem trees with a cumulative diameter of 9" and greater as *Protected*. Eucalypts and Monterey pines are not *Protected*. One hundred eighty-eight (188) of the trees qualified as *Protected* under the City of Oakland Tree Preservation Ordinance 12.36. *Protected* trees are identified in the ***Tree Assessment Form*** (see Attachments).

Table 1. Tree condition & frequency of occurrence.
Mountain View Cemetery. Oakland, CA.

Common Name	Scientific Name	Condition Rating			No. of Trees
		Poor (1-2)	Fair (3)	Good (4-5)	
Blackwood acacia	*Acacia melanoxylon*	2	-	2	4
Big leaf maple	*Acer macrophylum*	-	3	1	4
Blue Atlas cedar	*Cedrus atlantica* 'Glauca'	-	1	7	8
Blue gum	*Eucalyptus globulus*	5	18	3	26
Red iron bark	*Eucalyptus sideroxylon*	-	5	-	5
Sweetgum	*Liquidambar styraciflua*	-	1	-	1
Olive	*Olea europaea*	-	2	2	4
Italian stone pine	*Pinus pinea*	-	1	-	1
Monterey pine	*Pinus radiata*	2	1	-	3
London plane	*Platanus x hispanica*	-	-	1	1
Plum	*Prunus domestica*	-	-	2	2
Coast live oak	*Quercus agrifolia*	8	87	58	153
Common elderberry	*Sambucus nigra*	2	3	-	5
Calif. pepper	*Schinus molle*	-	1	2	3
Calif. bay	*Umbellularia californica*	-	-	2	2
Total		**19**	**123**	**80**	**222**
		9%	55%	36%	100%

Suitability for Preservation

Before evaluating the impacts that will occur during development, it is important to consider the quality of the tree resource itself, and the potential for individual trees to function well over an extended length of time. Trees that are preserved on development sites must be carefully selected to make sure that they may survive development impacts, adapt to a new environment and perform well in the landscape.

Our goal is to identify trees that have the potential for long-term health, structural stability and longevity. For trees growing in open fields, away from areas where people and property are present, structural defects and/or poor health presents a low risk of damage or injury if they fail. However, we must be concerned about safety in use areas. Therefore, where development encroaches into existing plantings, we must consider their structural stability as well as their potential to grow and thrive in a new environment. Where development will not occur, the normal life cycles of decline, structural failure and death should be allowed to continue.

Evaluation of suitability for preservation considers several factors:

- **Tree health**
  Healthy, vigorous trees are better able to tolerate impacts such as root injury, demolition of existing structures, changes in soil grade and moisture, and soil compaction than are non-vigorous trees.

- **Structural integrity**
  Trees with significant amounts of wood decay and other structural defects that cannot be corrected are likely to fail. Such trees should not be preserved in areas where damage to people or property is likely.

- **Species response**
  There is a wide variation in the response of individual species to construction impacts and changes in the environment. In our experience, for example, mature Monterey pines are sensitive to construction impacts, while coast live oak and olive are tolerant of site disturbance.

- **Tree age and longevity**
  Old trees, while having significant emotional and aesthetic appeal, have limited physiological capacity to adjust to an altered environment. Young trees are better able to generate new tissue and respond to change.

- **Invasiveness**
  Species which spread across a site and displace desired vegetation are not always appropriate for retention. This is particularly true when indigenous species are displaced. The California Invasive Plant Inventory Database (http://www.cal-ipc.org/paf/) lists species identified as being invasive. Oakland is part of the Central West Floristic Province. Blackwood acacia and olive were the only two species assessed on the Mountain View Cemetery site that are considered invasive.

Trees were rated for suitability for preservation based upon age, health, structural condition and ability to safely coexist within a development environment. Table 2 provides suitability ratings for each tree.

We consider trees with good suitability for preservation to be the best candidates for preservation. We do not recommend retention of trees with low suitability for preservation in areas where people or property will be present. Retention of trees with moderate suitability for preservation depends upon the intensity of proposed site changes.

Table 2. Suitability for Preservation.
Mountain View Cemetery, Oakland CA

High	These are trees with good health and structural stability that have the potential for longevity at the site. Thirty-three (33) trees were considered highly suitable for preservation, including: Twenty-four (24) coast live oaks, five (5) Blue Atlas cedars, two (2) Calif. bay laurels, one (1) olive and one (1) Calif. pepper.

(Continued, following page)

Table 2. Suitability for Preservation, continued.
Mountain View Cemetery, Oakland CA

Moderate	Trees in this category have fair health and/or structural defects that may be abated with treatment. Trees in this category require more intense management and monitoring, and may have shorter life-spans than those in the "high" category. One hundred and thirty-nine (139) trees were of moderate suitability for preservation, including: One hundred and four (104) coast live oaks, 15 blue gum eucalyptus, four (4) big-leaf maples, three (3) common elderberries, two (2) each of red ironbark eucalyptus, plum, blackwood acacia, Blue Atlas cedar and Calif. pepper, and one (1) each of Monterey pine, London plane and olive.
Poor	Trees in this category are in poor health or have significant defects in structure that cannot be abated with treatment. These trees can be expected to decline regardless of management. Fifty (50) trees were of poor suitability for preservation, including: twenty-five (25) coast live oaks, 11 blue gum eucalyptus, three 93) red ironbark eucalyptus, two (2) each of common elderberry, blackwood acacia, Monterey pine and olive, and one (1) each of sweetgum, Italian stone pine and Blue Atlas cedar.

Evaluation of Impacts and Recommendations

Appropriate tree retention develops a practical match between the location and intensity of construction activities and the quality and health of trees. The ***Tree Assessment Form*** was the reference point for tree condition and quality. Potential impacts from construction were evaluated using the Grading and Plan prepared by Sandis Engineers, dated December 8, 2014.

The proposed plan would regraded both project areas for cemetery plots. Demolition and grading across the sites would directly impact trees.

Using the proposed plan, potential impacts from grading were estimated for each tree. One hundred and thirty-seven (137) trees fell within the graded portion of the site, requiring their removal, including 113 that qualified as *Protected*. **Table 3**, following page provides a list of the trees to be removed, along with their *Protected* status. Fifty eight (58) trees would be within the 30' buffer area and far enough from the proposed grading to tolerate the impacts (**Table 4**, page 9).

Twenty-six (26) trees were identified for possible preservation, with the understanding that the grading would need to be adjusted adjacent to them. All 26 qualified as *Protected*. These trees were either in the 30' buffer but so close they would be impacted by grading (16 trees), or within the grading but close enough to the buffer that an adjustment to the grading might be possible (10 trees). **Table 5** (page 10) provides a list of the 26 trees identified for possible preservation, along with the recommended minimum distance required to adequately protect them.

Table 3. Trees identified for removal.
Mountain View Cemetery, Oakland CA

Tree No.	Common Name	Trunk Diameter	Protected?	Recommendation
4	Coast live oak	26	Yes	Remove, within grading
5	Calif. bay	6,6,5,5	Yes	Remove, within grading
6	Coast live oak	23	Yes	Remove, within grading
7	Coast live oak	18,12,11	Yes	Remove, within grading
18	Coast live oak	13,12	Yes	Remove, within grading
19	Coast live oak	10,7	Yes	Remove, within grading
20	Coast live oak	10,9,9,8	Yes	Remove, within grading
22	Calif. bay	16,15,14,6	Yes	Remove, within grading
23	Coast live oak	12,12,12,9,8	Yes	Remove, within grading
24	Coast live oak	5,3	Yes	Remove, within grading
25	Coast live oak	5,5,3	Yes	Remove, within grading
26	Coast live oak	5	Yes	Remove, within grading
27	Coast live oak	5	Yes	Remove, within grading
28	Coast live oak	5	Yes	Remove, within grading
29	Coast live oak	5,3	Yes	Remove, within grading
30	Coast live oak	7	Yes	Remove, within grading
31	Plum	6,6,5,4	Yes	Remove, within grading
32	Olive	12,9,7,7,7,5	Yes	Remove, within grading
33	Coast live oak	16	Yes	Remove, within grading
34	Coast live oak	20,17,14	Yes	Remove, within grading
35	Olive	4,3,3,3,2,2,2	Yes	Remove, within grading
36	Coast live oak	11,11,8,8	Yes	Remove, within grading
37	Coast live oak	9,9,7,7	Yes	Remove, within grading
38	Coast live oak	8,6,5	Yes	Remove, within grading
39	Coast live oak	14	Yes	Remove, within grading
40	Olive	6,5,4,3,3,3,2,2,2	Yes	Remove, within grading
41	Blackwood acacia	10	Yes	Remove, within grading
42	Blackwood acacia	19,13	Yes	Remove, within grading
43	Common elderberry	7,5,5,4,4	Yes	Remove, within grading
44	Common elderberry	7,5,5,4,4,4,4	Yes	Remove, within grading
45	Common elderberry	6,5	Yes	Remove, within grading
48	Coast live oak	11	Yes	Remove, within grading
49	Big leaf maple	6,5,5,4,4,3,3	Yes	Remove, within grading
50	Big leaf maple	8,7,6,5,4,4,4	Yes	Remove, within grading
51	Coast live oak	27	Yes	Remove, within grading
56	Big leaf maple	7,6,5,5	Yes	Remove, within grading
57	Coast live oak	12	Yes	Remove, within grading
58	Coast live oak	20,11	Yes	Remove, within grading
59	Coast live oak	22	Yes	Remove, within grading
60	Coast live oak	10	Yes	Remove, within grading
61	Coast live oak	16	Yes	Remove, within grading
62	Coast live oak	15	Yes	Remove, within grading
63	Coast live oak	7,4,4	Yes	Remove, within grading
64	Coast live oak	25,18	Yes	Remove, within grading
65	Coast live oak	11	Yes	Remove, within grading

(**Continued, following page**)

Table 3. Trees identified for removal, continued.
Mountain View Cemetery, Oakland CA

Tree No.	Common Name	Trunk Diameter	Protected?	Recommendation
66	Big leaf maple	10,9,9	Yes	Remove, within grading
67	Coast live oak	14	Yes	Remove, within grading
68	Monterey pine	10	No	Remove, within grading
69	Coast live oak	10,9	Yes	Remove, within grading
70	Coast live oak	6	Yes	Remove, within grading
71	Coast live oak	6	Yes	Remove, within grading
72	Coast live oak	17	Yes	Remove, within grading
73	Coast live oak	15,12	Yes	Remove, within grading
74	Coast live oak	11,9,6,6,5	Yes	Remove, within grading
75	Coast live oak	7,7	Yes	Remove, within grading
76	Coast live oak	6,5	Yes	Remove, within grading
77	Coast live oak	6,6,5,5	Yes	Remove, within grading
89	Common elderberry	7,6,5	Yes	Remove, within grading
90	Common elderberry	5,4,4,4	Yes	Remove, within grading
94	Coast live oak	10,9	Yes	Remove, within grading
95	Coast live oak	8,5,2	Yes	Remove, within grading
96	Coast live oak	9,5,4	Yes	Remove, within grading
97	Blue gum	23	No	Remove, within grading
98	Blue gum	22	No	Remove, within grading
99	Blue gum	16	No	Remove, within grading
100	Blue gum	16	No	Remove, within grading
101	Blue gum	18	No	Remove, within grading
102	Blue gum	23	No	Remove, within grading
103	Blue gum	22	No	Remove, within grading
104	Blue gum	14	No	Remove, within grading
113	Blue gum	36	No	Remove, poor health
114	Blue gum	30	No	Remove, within grading
115	Blue gum	26	No	Remove, within grading
116	Blue gum	28	No	Remove, within grading
117	Blue gum	18	No	Remove, within grading
118	Blue gum	16	No	Remove, within grading
119	Blue gum	46	No	Remove, within grading
120	Blue gum	14	No	Remove, within grading
121	Blue gum	20	No	Remove, within grading
122	Coast live oak	12,12,10,7	Yes	Remove, within grading
123	Coast live oak	11,5	Yes	Remove, within grading
124	Coast live oak	10,10,9	Yes	Remove, within grading
125	Coast live oak	7,6,5,5,3	Yes	Remove, within grading
126	Coast live oak	7	Yes	Remove, within grading
127	Coast live oak	8,8,6,4	Yes	Remove, within grading
128	Coast live oak	10,6	Yes	Remove, within grading
129	Coast live oak	11,11,7	Yes	Remove, within grading
137	Blue gum	91	No	Remove, within grading
138	Monterey pine	23	No	Remove, within grading
139	Blue Atlas cedar	15,11,8,8,7	Yes	Remove, within grading
140	Coast live oak	15,10	Yes	Remove, within grading

(**Continued, following page**)

Table 3. Trees identified for removal, continued.
Mountain View Cemetery, Oakland CA

Tree No.	Common Name	Trunk Diameter	Protected?	Recommendation
141	Blue Atlas cedar	15,9,8,8,6	Yes	Remove, within grading
142	Plum	7,6,4,4,2	Yes	Remove, within grading
143	Blue Atlas cedar	15,9,8,7,6	Yes	Remove, within grading
144	Coast live oak	7	Yes	Remove, within grading
145	Coast live oak	9,6	Yes	Remove, within grading
146	Coast live oak	5,5	Yes	Remove, within grading
147	Coast live oak	13	Yes	Remove, within grading
148	Coast live oak	6	Yes	Remove, within grading
149	Coast live oak	12	Yes	Remove, within grading
150	Coast live oak	10,9	Yes	Remove, within grading
151	Coast live oak	9	Yes	Remove, within grading
152	Coast live oak	15	Yes	Remove, within grading
153	Blue Atlas cedar	14,9,9,6,3	Yes	Remove, within grading
154	Blue Atlas cedar	13,7,6,6	Yes	Remove, within grading
155	Coast live oak	13,12	Yes	Remove, within grading
156	Coast live oak	10,9	Yes	Remove, within grading
157	Coast live oak	5	Yes	Remove, within grading
158	Blue Atlas cedar	12,8	Yes	Remove, within grading
159	Coast live oak	10,9	Yes	Remove, within grading
160	Coast live oak	5,5	Yes	Remove, within grading
161	Coast live oak	11,9,5	Yes	Remove, within grading
169	Coast live oak	10,9	Yes	Remove, within grading
170	Coast live oak	11,5	Yes	Remove, within grading
171	Coast live oak	15,13,12	Yes	Remove, within grading
172	Coast live oak	17,7,6	Yes	Remove, within grading
173	Red iron bark	7,5,5	No	Remove, within grading
174	Red iron bark	19	No	Remove, within grading
175	Red iron bark	13,12,12	No	Remove, within grading
176	Red iron bark	19	No	Remove, within grading
176	Red iron bark	17,14	No	Remove, within grading
178	Olive	6,4,3,3,2,2	Yes	Remove, within grading
184	Coast live oak	13	Yes	Remove, within grading
185	Coast live oak	10	Yes	Remove, within grading
196	Italian stone pine	23	Yes	Remove, within grading
197	Coast live oak	19	Yes	Remove, within grading
198	Coast live oak	31	Yes	Remove, within grading
199	Coast live oak	10,9,7	Yes	Remove, within grading
200	Coast live oak	15,12	Yes	Remove, within grading
201	Coast live oak	10	Yes	Remove, within grading
202	Coast live oak	13,10,7	Yes	Remove, within grading
203	Coast live oak	10,9	Yes	Remove, within grading
204	Coast live oak	4,3	Yes	Remove, within grading
206	Coast live oak	4	Yes	Remove, within grading
211	Coast live oak	4,3	Yes	Remove, within grading
220	Coast live oak	5	Yes	Remove, within grading
221	Coast live oak	6,6	Yes	Remove, within grading
222	Coast live oak	5	Yes	Remove, within grading

Table 4. Trees identified for preservation.
Mountain View Cemetery, Oakland CA

Tree No.	Common Name	Trunk Diameter	Protected?	Recommendation
1	Coast live oak	21	Yes	Preserve, within 30' buffer
8	Coast live oak	14	Yes	Preserve, within 30' buffer
9	Coast live oak	14	Yes	Preserve, within 30' buffer
10	Coast live oak	10	Yes	Preserve, within 30' buffer
11	Coast live oak	11	Yes	Preserve, within 30' buffer
12	Coast live oak	15	Yes	Preserve, within 30' buffer
13	Coast live oak	16,15	Yes	Preserve, within 30' buffer
14	Coast live oak	14	Yes	Preserve, within 30' buffer
47	Blackwood acacia	15	Yes	Preserve, within 30' buffer
52	Coast live oak	11,4	Yes	Preserve, within 30' buffer
80	Coast live oak	16,12	Yes	Preserve, within 30' buffer
81	Coast live oak	8,5	Yes	Preserve, within 30' buffer
82	Coast live oak	20	Yes	Preserve, within 30' buffer
83	London plane	8,8,7,5,5,4	Yes	Preserve, within 30' buffer
84	Coast live oak	25,14	Yes	Preserve, within 30' buffer
88	Coast live oak	7,4	Yes	Preserve, within 30' buffer
91	Coast live oak	26	Yes	Preserve, within 30' buffer
92	Coast live oak	11,9,9,8	Yes	Preserve, within 30' buffer
93	Coast live oak	12,12	Yes	Preserve, within 30' buffer
105	Blue gum	17	No	Preserve, within 30' buffer
106	Blue gum	23	No	Preserve, within 30' buffer
107	Blue gum	18	No	Preserve, within 30' buffer
108	Blue gum	34	No	Preserve, within 30' buffer
109	Blue gum	19	No	Preserve, within 30' buffer
110	Blue gum	14	No	Preserve, within 30' buffer
111	Blue gum	30	No	Preserve, within 30' buffer
112	Blue gum	34	No	Preserve, within 30' buffer
131	Coast live oak	5	Yes	Preserve, within 30' buffer
132	Coast live oak	23	Yes	Preserve, within 30' buffer
133	Coast live oak	5	Yes	Preserve, within 30' buffer
134	Coast live oak	5,4	Yes	Preserve, within 30' buffer
135	Coast live oak	8,7	Yes	Preserve, within 30' buffer
136	Coast live oak	4,3	Yes	Preserve, within 30' buffer
162	Sweetgum	10	Yes	Preserve, within 30' buffer
164	Blue Atlas cedar	17	Yes	Preserve, within 30' buffer
166	Calif. pepper	9	Yes	Preserve, within 30' buffer
167	Calif. pepper	10	Yes	Preserve, within 30' buffer
168	Calif. pepper	13	Yes	Preserve, within 30' buffer
180	Coast live oak	6	Yes	Preserve, within 30' buffer
181	Coast live oak	5	Yes	Preserve, within 30' buffer
182	Coast live oak	7,5	Yes	Preserve, within 30' buffer
186	Coast live oak	6	Yes	Preserve, within 30' buffer
187	Coast live oak	15,15	Yes	Preserve, within 30' buffer
188	Coast live oak	11,10,9	Yes	Preserve, within 30' buffer
189	Coast live oak	13	Yes	Preserve, within 30' buffer
190	Coast live oak	6	Yes	Preserve, within 30' buffer

(**Continued**, following page)

Table 4. Trees identified for preservation, continued.
Mountain View Cemetery, Oakland CA

Tree No.	Common Name	Trunk Diameter	Protected?	Recommendation
192	Coast live oak	13	Yes	Preserve, within 30' buffer
193	Coast live oak	8	Yes	Preserve, within 30' buffer
208	Coast live oak	15,14	Yes	Preserve, within 30' buffer
209	Coast live oak	5	Yes	Preserve, within 30' buffer
212	Coast live oak	6	Yes	Preserve, within 30' buffer
213	Coast live oak	14	Yes	Preserve, within 30' buffer
214	Monterey pine	13	No	Preserve, within 30' buffer
215	Coast live oak	8,5	Yes	Preserve, within 30' buffer
216	Coast live oak	8,5	Yes	Preserve, within 30' buffer
217	Coast live oak	6,5,4	Yes	Preserve, within 30' buffer
218	Coast live oak	8,5	Yes	Preserve, within 30' buffer
219	Coast live oak	8,5	Yes	Preserve, within 30' buffer

Table 5. Trees identified for possible preservation.
Mountain View Cemetery, Oakland CA

Tree No.	Common Name	Trunk Diameter	Location	Minimum distance required for preservation
2	Coast live oak	17	Grading	Needs 12' min.
3	Coast live oak	8	On line	Needs 8' min.
15	Coast live oak	16	Buffer	Needs 10' min.
16	Coast live oak	6,4	Grading	Needs 8' min.
17	Coast live oak	5,3	Grading	Needs 8' min.
21	Coast live oak	22,15	Grading	Needs 15' min.
46	Blackwood acacia	10	Buffer	Needs 8' min.
53	Coast live oak	10	Buffer	Needs 8' min.
54	Coast live oak	12	Buffer	Needs 8' min.
55	Coast live oak	9	Buffer	Needs 8' min.
78	Coast live oak	7,7,5,5	Buffer	Needs 8' min.
79	Coast live oak	12	Buffer	Needs 10' min.
85	Coast live oak	36	Grading	Needs 20' min.
86	Coast live oak	19,18	Buffer	Needs 15' min.
87	Coast live oak	12,12,11	Buffer	Needs 10' min.
130	Coast live oak	12,9	Grading	Needs 10' min.
163	Blue Atlas cedar	17,9,6	Grading	Needs 10' min.
165	Coast live oak	15	On line	Needs 10' min.
179	Coast live oak	10,5	Buffer	Needs 8' min.
183	Coast live oak	8	Buffer	Needs 8' min.
191	Coast live oak	17,16,16	Buffer	Needs 12' min.
194	Coast live oak	17	Buffer	Needs 12' min.
195	Coast live oak	18,17	Buffer	Needs 12' min.
205	Coast live oak	7,6,5	Grading	Needs 8' min.
207	Coast live oak	7,4	Buffer	Needs 8' min.
210	Coast live oak	10,9	Grading	Needs 8' min.

Tree Preservation Guidelines

The goal of tree preservation is not merely tree survival during development but maintenance of tree health and beauty for many years. Impacts can be minimized by coordinating any construction activities inside the **TREE PROTECTION ZONE**.

The following recommendations will help reduce impacts to trees from development and maintain and improve their health and vitality through the clearing, grading and construction phases.

Design recommendations

1 Any plan affecting trees should be reviewed by the Consulting Arborist with regard to tree impacts. These include, but are not limited to, improvement plans, utility and drainage plans, grading plans, landscape and irrigation plans and demolition plans.

2 Evaluate the possibility of providing the recommended minimum distance from grading for those trees identified for possible preservation and listed in **Table 5**. Preservation will require providing the recommended minimum distance in all directions from grading, trenching, pathways, utilities, irrigation, etc. If these distances cannot be achieved, the tree should be identified for removal.

3 **Tree Preservation Notes**, prepared by the Consulting Arborist, should be included on all plans.

4 A **TREE PROTECTION ZONE** shall be established around each tree to be preserved. No grading, excavation, construction or storage of materials shall occur within that zone. **TREE PROTECTION ZONES** for trees identified within the buffer zone shall be the limit of the buffer. If trees listed in **Table 5** are to be preserved, their **TREE PROTECTION ZONES** shall be established at the limit of the recommended minimum distance in all directions (see **Table 5**).

5 Underground services including utilities, sub-drains, water or sewer shall be routed around the **TREE PROTECTION ZONE**. Where encroachment cannot be avoided, special construction techniques such as hand digging or tunneling under roots shall be employed where necessary to minimize root injury.

6 Irrigation systems must be designed so that no trenching will occur within the **TREE PROTECTION ZONE**.

Pre-construction treatments and recommendations

1. The project supervisor, demolition contractor and any other contractors who may work around trees identified for preservation shall meet with the Consulting Arborist before beginning work to discuss work procedures and tree protection.

2. Structures and underground features to be removed within the **TREE PROTECTION ZONE** shall use the smallest equipment, and operate from outside the **TREE PROTECTION ZONE**. The consultant shall be on-site during all operations within the **TREE PROTECTION ZONE** to monitor demolition and construction activities.

3. Fence all trees to be retained to completely enclose the **TREE PROTECTION ZONE** prior to demolition, grubbing or grading. Fences shall be 6 ft. chain link or equivalent as approved by the City of Sunnyvale. Fences are to remain until all construction is completed.

4. Trees to be preserved may require pruning to provide construction clearance. All pruning shall be completed by a Certified Arborist or Tree Worker. Pruning shall adhere to the latest edition of the ANSI Z133 and A300 standards as well as the *Best Management Practices -- Tree Pruning* published by the International Society of Arboriculture.

Recommendations for tree protection during construction

1. Prior to beginning work, the contractors working in the vicinity of trees to be preserved are required to meet with the Consulting Arborist at the site to review all work procedures, access routes, storage areas and tree protection measures.

2. Fences are to remain until all site work has been completed. Fences may not be relocated or removed without permission of the Consulting Arborist.

3. HortScience shall be present during excavation adjacent to trees to remain. Where roots 2" and larger are encountered, the soil will be removed around the roots by hand and the root shall be cut cleanly with a saw. The Consulting Arborist will evaluate the potential survival and stability of each tree based on the amount of root removal. If a tree is unlikely to survive, the Consulting Arborist will recommend that the client apply for a tree removal permit with the City of Oakland.

4. Root-injured trees have a limited capacity to absorb water. Therefore, it is important to insure adequate soil moisture in the area of active roots.

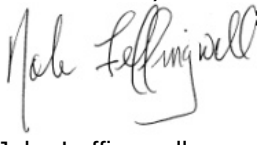
5. If injury should occur to any tree during construction, it should be evaluated as soon as possible by the Consulting Arborist so that appropriate treatments can be applied.

6. Any additional tree pruning needed for clearance during construction must be performed by a Certified Arborist and not by construction personnel.

Maintenance of impacted trees

Trees preserved at the site may experience a physical environment different from that pre-development. As a result, tree health and structural stability should be monitored. Therefore, monitoring both tree health and structural stability following construction must be made a priority. As trees age, the likelihood of branches or entire trees failing will increase. Therefore, annual inspection for hazard potential is recommended.

HortScience, Inc.



John Leffingwell
Board Certified Master Arborist WE-3966B
Registered Consulting Arborist #442

Attached: ***Tree Assessment Form***
Tree Assessment Map

Tree Assessment

Mountain View Cemetery
Oakland, California
January 2015

HORT SCIENCE

TREE No.	SPECIES	SIZE DIAMETER (in inches)	PROTETED?	CONDITION 1=POOR 5=EXCELLENT	SUITABILITY FOR PRESERVATION	COMMENTS
1	Coast live oak	21	Yes	3	Moderate	Multiple attachments at 6'; spreading form; thin upper crown.
2	Coast live oak	17	Yes	4	High	Codominant trunks at 8'; good form; twig dieback.
3	Coast live oak	8	Yes	5	High	Good young tree.
4	Coast live oak	26	Yes	3	Moderate	Codominant trunks at 8'; upright form; large trunk &
5	Calif. bay	6,6,5,5	Yes	4	High	Multiple attachments at base; good form.
6	Coast live oak	23	Yes	3	Moderate	Multiple attachments at 6'; fair structure; dieback.
7	Coast live oak	18,12,11	Yes	4	Moderate	Multiple attachments at 1'; trunks intertwined; twig dieback.
8	Coast live oak	14	Yes	3	Moderate	One sided W.; vertical trunk wounds; twig dieback.
9	Coast live oak	14	Yes	3	Moderate	Slight lean N.; vertical trunk wounds; twig dieback.
10	Coast live oak	10	Yes	2	Low	Suppressed form; small crown.
11	Coast live oak	11	Yes	3	Low	Crooks; asymmetric form.
12	Coast live oak	15	Yes	3	Moderate	One sided N.; heavy lateral limb.
13	Coast live oak	16,15	Yes	3	Moderate	Codominant trunks at 1'; trunk & branch wounds; moderate dieback.
14	Coast live oak	14	Yes	3	Moderate	Leans E.; vertical trunk wounds; dieback.
15	Coast live oak	16	Yes	4	Moderate	Upright form; vertical trunk wounds; dieback.
16	Coast live oak	6,4	Yes	4	High	Codominant trunks at base; good young tree.
17	Coast live oak	5,3	Yes	4	High	Codominant trunks at base; good young tree.
18	Coast live oak	13,12	Yes	3	Low	Codominant trunks at 1'; S. stem cracked at 6'.
19	Coast live oak	10,7	Yes	4	High	Codominant trunks at 1'; upright form; dieback.
20	Coast live oak	10,9,9,8	Yes	4	Moderate	Multiple attachments at 4'; included bark; one sided
21	Coast live oak	22,15	Yes	4	High	Codominant trunks at base; history of branch failures; dieback.

Tree Assessment

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TREE No.	SPECIES	SIZE DIAMETER (in inches)	PROTETED?	CONDITION 1=POOR 5=EXCELLENT	SUITABILITY FOR PRESERVATION	COMMENTS
22	Calif. bay	16,15,14,6	Yes	4	High	Multiple attachments at base; mostly upright.
23	Coast live oak	12,12,12,9,8	Yes	4	High	Multiple attachments at base; decay in 8" stem.
24	Coast live oak	5,3	Yes	5	High	Codominant trunks at 2'; good young tree.
25	Coast live oak	5,5,3	Yes	4	High	Multiple attachments at base; stems intertwined; good young tree.
26	Coast live oak	5	Yes	5	High	Good young tree.
27	Coast live oak	5	Yes	4	Moderate	One sided W.; good young tree.
28	Coast live oak	5	Yes	4	Moderate	One sided E.; good young tree.
29	Coast live oak	5,3	Yes	5	High	Codominant trunks at 2'; good young tree.
30	Coast live oak	7	Yes	5	High	Good young tree.
31	Plum	6,6,5,4	Yes	4	Moderate	Multiple attachments at base; trunk wounds.
32	Olive	12,9,7,7,7,5	Yes	3	Low	Multiple attachments at base; central stem dead; trunk decay.
33	Coast live oak	16	Yes	3	Low	Multiple attachments at 8'; long vertical trunk wound & decay.
34	Coast live oak	20,17,14	Yes	4	High	Multiple attachments at 1'; spreading form; low branching.
35	Olive	4,3,3,3,2,2,2	Yes	3	Low	Multiple attachments at base; central stem dead; stump sprout.
36	Coast live oak	11,11,8,8	Yes	4	Moderate	Multiple attachments at 1'; fair structure; low lateral NW.
37	Coast live oak	9,9,7,7	Yes	3	Low	Multiple attachments at 1'; history of branch failures; one sided S.
38	Coast live oak	8,6,5	Yes	3	Low	Multiple attachments at 1'; history of branch failures; one sided S.

Tree Assessment

Mountain View Cemetery
Oakland, California
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TREE No.	SPECIES	SIZE DIAMETER (in inches)	PROTETED?	CONDITION 1=POOR 5=EXCELLENT	SUITABILITY FOR PRESERVATION	COMMENTS
39	Coast live oak	14	Yes	3	Moderate	Codominant trunks at 5'; good form; large trunk wound.
40	Olive	6,5,4,3,3,3,2,2,2	Yes	4	Moderate	Multiple attachments at base; stump sprout.
41	Blackwood acacia	10	Yes	2	Low	Suppressed.
42	Blackwood acacia	19,13	Yes	2	Low	Codominant trunks at base; partial failure.
43	Common elderberry	7,5,5,4,4	Yes	3	Moderate	Multiple attachments at base; some stems dead.
44	Common elderberry	7,5,5,4,4,4,4	Yes	2	Low	Multiple attachments at base; basal decay; ganoderma.
45	Common elderberry	6,5	Yes	2	Low	Multiple attachments at base; trunk decay.
46	Blackwood acacia	10	Yes	4	Moderate	Upright form; basal wound.
47	Blackwood acacia	15	Yes	4	Moderate	Codominant trunks at 8'; good form; fair structure.
48	Coast live oak	11	Yes	3	Moderate	One sided S.; windswept.
49	Big leaf maple	6,5,5,4,4,3,3	Yes	4	Moderate	Multiple attachments at base; stump sprout.
50	Big leaf maple	8,7,6,5,4,4,4	Yes	3	Moderate	Multiple attachments at base; stump sprout.
51	Coast live oak	27	Yes	4	Moderate	Multiple attachments at 5'; one sided S.; trunk wounds; low laterals S.
52	Coast live oak	11,4	Yes	3	Moderate	Suppressed; small crown.
53	Coast live oak	10	Yes	3	Moderate	Suppressed; leans W.
54	Coast live oak	12	Yes	3	Moderate	Crowded; small crown.
55	Coast live oak	9	Yes	3	Moderate	Crook at 6'; small crown.
56	Big leaf maple	7,6,5,5	Yes	3	Moderate	Multiple attachments at base; stems lean NW.
57	Coast live oak	12	Yes	3	Low	Crown bowed W.; lost top.
58	Coast live oak	20,11	Yes	3	Moderate	Codominant trunks at 1': crown bowed W.; sparse canopy.
59	Coast live oak	22	Yes	3	Moderate	Multiple attachments at 10': one sided W.; sparse canopy.

Tree Assessment

Mountain View Cemetery
Oakland, California
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HORT SCIENCE

TREE No.	SPECIES	SIZE DIAMETER (in inches)	PROTETED?	CONDITION 1=POOR 5=EXCELLENT	SUITABILITY FOR PRESERVATION	COMMENTS
60	Coast live oak	10	Yes	2	Low	Suppressed; very small crown.
61	Coast live oak	16	Yes	3	Moderate	Codominant trunks at 8': one sided W.; sparse canopy.
62	Coast live oak	15	Yes	3	Moderate	Suppressed; narrow form.
63	Coast live oak	7,4,4	Yes	3	Moderate	Codominant trunks at base: one sided W.; small crown.
64	Coast live oak	25,18	Yes	3	Low	Codominant trunks at base; trunk wounds & decay; bowed heavily SW.
65	Coast live oak	11	Yes	3	Moderate	Upright form; small crown.
66	Big leaf maple	10,9,9	Yes	3	Moderate	Multiple attachments at base; stems lean S.
67	Coast live oak	14	Yes	3	Moderate	Multiple attachment at 6'; growing on steep slope; girdling root.
68	Monterey pine	10	No	3	Moderate	Growing on steep slope; one sided NW.
69	Coast live oak	10,9	Yes	4	Moderate	No tag; codominant trunks at 2'; growing on steep slope; good form.
70	Coast live oak	6	Yes	3	Moderate	No tag; growing on steep slope; good form.
71	Coast live oak	6	Yes	3	Moderate	No tag; growing on steep slope; good form.
72	Coast live oak	17	Yes	3	Moderate	Codominant trunks at 5'; one sided W.
73	Coast live oak	15,12	Yes	3	Moderate	Codominant trunks at 2'; included bark; one sided SE.
74	Coast live oak	11,9,6,6,5	Yes	3	Moderate	Multiple attachments at 2'; included bark; growing on steep slope.
75	Coast live oak	7,7	Yes	3	Moderate	Codominant trunks at 1'; growing on steep slope; narrow form.
76	Coast live oak	6,5	Yes	3	Moderate	Codominant trunks at 3'; growing on steep slope; one sided S.

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TREE No.	SPECIES	SIZE DIAMETER (in inches)	PROTETED?	CONDITION 1=POOR 5=EXCELLENT	SUITABILITY FOR PRESERVATION	COMMENTS
77	Coast live oak	6,6,5,5	Yes	4	Moderate	Multiple attachments at base; good young tree.
78	Coast live oak	7,7,5,5	Yes	3	Moderate	Multiple attachments at base; narrow form; drain line at base.
79	Coast live oak	12	Yes	4	Moderate	Multiple attachments at 4'; good young tree.
80	Coast live oak	16,12	Yes	4	Moderate	Codominant trunks at 2'; good form; branch
81	Coast live oak	8,5	Yes	5	High	Good young tree.
82	Coast live oak	20	Yes	2	Low	Multiple attachments at 5'; trunk & branch wounds; very sparse canopy.
83	London plane	8,8,7,5,5,4	Yes	4	Moderate	Multiple attachments at base; trunk wounds.
84	Coast live oak	25,14	Yes	4	Moderate	Codominant trunks at 1'; good form; included bark.
85	Coast live oak	36	Yes	4	Moderate	Codominant trunks at 4'; spreading form; trunk & branch wound N.
86	Coast live oak	19,18	Yes	3	Moderate	Codominant trunks at 2'; included bark; moderate dieback.
87	Coast live oak	12,12,11	Yes	3	Moderate	Multiple attachments at 1'; upright, narrow form.
88	Coast live oak	7,4	Yes	3	Moderate	Codominant trunks at 3'; crowded; crown bowed W.
89	Common elderberry	7,6,5	Yes	3	Moderate	Multiple attachments at base; engulfed in
90	Common elderberry	5,4,4,4	Yes	3	Moderate	Multiple attachments at base; engulfed in
91	Coast live oak	26	Yes	4	High	Multiple attachments at 7'; good form; windswept.
92	Coast live oak	11,9,9,8	Yes	3	Moderate	Multiple attachments at 3'; stems intertwined; crack at 5'; dieback.
93	Coast live oak	12,12	Yes	3	Moderate	Codominant trunks at 3'; included bark; dieback.
94	Coast live oak	10,9	Yes	3	Moderate	Codominant trunks at 1'; narrow attachment.
95	Coast live oak	8,5,2	Yes	2	Low	Multiple attachments at base; included bark; extensive dieback.

Tree Assessment

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TREE No.	SPECIES	SIZE DIAMETER (in inches)	PROTETED?	CONDITION 1=POOR 5=EXCELLENT	SUITABILITY FOR PRESERVATION	COMMENTS
96	Coast live oak	9,5,4	Yes	3	Low	Multiple attachments at base; one sided S.; history of branch failure.
97	Blue gum	23	No	2	Low	Upright form; basal wound E.; sulfur fungus.
98	Blue gum	22	No	3	Moderate	Upright form; high crown.
99	Blue gum	16	No	2	Low	High crown; basal wound E.; sulfur fungus.
100	Blue gum	16	No	3	Moderate	High crown; one sided S.; epicormics.
101	Blue gum	18	No	3	Moderate	High, small crown; epicormics.
102	Blue gum	23	No	3	Moderate	High crown; upper crown bowed S.; trunk wound.
103	Blue gum	22	No	4	Moderate	High crown.
104	Blue gum	14	No	3	Moderate	One sided SW.; dieback.
105	Blue gum	17	No	3	Low	High crown; upper crown bowed S.; trunk wound.
106	Blue gum	23	No	3	Moderate	High crown; first branch at 40' failing.
107	Blue gum	18	No	3	Moderate	High crown; upper crown bowed W.
108	Blue gum	34	No	3	Moderate	High crown; first branch at 40' extends E.; heavy root pruning E.
109	Blue gum	19	No	3	Moderate	High, narrow crown.
110	Blue gum	14	No	3	Moderate	High crown; one sided S.
111	Blue gum	30	No	2	Low	Large trunk & basal wounds.
112	Blue gum	34	No	3	Low	Full crown; basal wounds; sulfur fungus.
113	Blue gum	36	No	2	Low	Basal wound covers 60% circumference.
114	Blue gum	30	No	3	Low	Leans S.; trunk wounds & cavity.
115	Blue gum	26	No	3	Low	Upright form; basal wound & Fire damage.
116	Blue gum	28	No	3	Moderate	Codominant trunks at 18'; one sided S.
117	Blue gum	18	No	3	Low	Trunk wounds; sulfur fungus.
118	Blue gum	16	No	2	Low	Small crown; dieback.

Tree Assessment

Mountain View Cemetery
Oakland, California
January 2015

HORT SCIENCE

TREE No.	SPECIES	SIZE DIAMETER (in inches)	PROTETED?	CONDITION 1=POOR 5=EXCELLENT	SUITABILITY FOR PRESERVATION	COMMENTS
119	Blue gum	46	No	3	Low	Multiple attachments at 6'; stems removed S.; dieback.
120	Blue gum	14	No	3	Moderate	High, small crown.
121	Blue gum	20	No	4	Moderate	High crown; one sided S.
122	Coast live oak	12,12,10,7	Yes	3	Low	Multiple attachments at base; one sided S.; history of branch failure.
123	Coast live oak	11,5	Yes	4	Moderate	Codominant trunks at base; growing on rock
124	Coast live oak	10,10,9	Yes	4	Moderate	Multiple attachments at base; upright form; growing on rock outcrop.
125	Coast live oak	7,6,5,5,3	Yes	3	Moderate	Multiple attachments at base; growing in face of rock outcrop.
126	Coast live oak	7	Yes	3	Moderate	Leans S.; growing on rock outcrop.
127	Coast live oak	8,8,6,4	Yes	3	Moderate	Multiple attachments at base;failed at base and sprouted; growing at base of rock outcrop.
128	Coast live oak	10,6	Yes	3	Moderate	Codominant trunks at base; narrow form; growing at base of rock outcrop.
129	Coast live oak	11,11,7	Yes	4	Moderate	Multiple attachments at 3'; good form; growing at base of rock outcrop.
130	Coast live oak	12,9	Yes	4	Moderate	Codominant trunks at base; stems growing around each other.
131	Coast live oak	5	Yes	4	Moderate	Leans N.; good young tree.
132	Coast live oak	23	Yes	2	Low	Half of tree failed at base; what remains bowed N. to horizontal; dieback.
133	Coast live oak	5	Yes	3	Moderate	Upright; branch tear out; small crown.
134	Coast live oak	5,4	Yes	4	High	Crowded; narrow form.
135	Coast live oak	8,7	Yes	4	High	Codominant trunks at base; narrow attachments.

Tree Assessment

Mountain View Cemetery
Oakland, California
January 2015

TREE No.	SPECIES	SIZE DIAMETER (in inches)	PROTETED?	CONDITION 1=POOR 5=EXCELLENT	SUITABILITY FOR PRESERVATION	COMMENTS
136	Coast live oak	4,3	Yes	3	Moderate	Codominant trunks at 1'; one sided S.
137	Blue gum	91	No	4	Moderate	Multiple attachments at 12'; spreading form; large wounds in underside of all major limbs; dieback.
138	Monterey pine	23	No	2	Low	Declining; pine pitch canker.
139	Blue Atlas cedar	15,11,8,8,7	Yes	4	High	Multiple attachments at 4'; spreading form.
140	Coast live oak	15,10	Yes	4	High	Codominant trunks at 2'; 10" stem low lateral W.
141	Blue Atlas cedar	15,9,8,8,6	Yes	4	Moderate	Multiple attachments at 4'; pruned W.; one sided E.
142	Plum	7,6,4,4,2	Yes	4	Moderate	Multiple attachments at base; epicormics.
143	Blue Atlas cedar	15,9,8,7,6	Yes	4	High	Multiple attachments at 2'; spreading form.; small branch wounds.
144	Coast live oak	7	Yes	3	Moderate	Crowded; one sided SW.
145	Coast live oak	9,6	Yes	3	Moderate	Codominant trunks at 4'; leans W.; sparse canopy.
146	Coast live oak	5,5	Yes	3	Moderate	Codominant trunks at 4'; leans W.; sparse canopy.
147	Coast live oak	13	Yes	4	Moderate	Multiple attachments at 8'; upright, narrow form.
148	Coast live oak	6	Yes	3	Moderate	Crowded; narrow form.
149	Coast live oak	12	Yes	3	Moderate	Codominant trunks at 8'; leans NW.; sparse
150	Coast live oak	10,9	Yes	3	Moderate	Codominant trunks at 4'; included bark; sparse canopy.
151	Coast live oak	9	Yes	3	Moderate	Crowded; one sided SW.
152	Coast live oak	15	Yes	4	Moderate	Codominant trunks at 5'; upright, narrow form.
153	Blue Atlas cedar	14,9,9,6,3	Yes	4	Moderate	Multiple attachments at 2'; seam in attachment; dieback.
154	Blue Atlas cedar	13,7,6,6	Yes	4	High	Multiple attachments at 2'; good form.
155	Coast live oak	13,12	Yes	4	Moderate	Codominant trunks at 4'; seam in attachment; one sided S.

Tree Assessment

Mountain View Cemetery
Oakland, California
January 2015

HORT SCIENCE

TREE No.	SPECIES	SIZE DIAMETER (in inches)	PROTETED?	CONDITION 1=POOR 5=EXCELLENT	SUITABILITY FOR PRESERVATION	COMMENTS
156	Coast live oak	10,9	Yes	4	Moderate	Codominant trunks at 1'; seam in attachment; one sided N.
157	Coast live oak	5	Yes	5	High	Good young tree.
158	Blue Atlas cedar	12,8	Yes	3	Low	Stem failure E.; 8" stem cracked at attachment.
159	Coast live oak	10,9	Yes	4	High	Codominant trunks at 2'; one sided W.
160	Coast live oak	5,5	Yes	4	High	Codominant trunks at 2'; crowded; good young tree.
161	Coast live oak	11,9,5	Yes	4	High	Multiple attachments at 1'; seam in attachment; good form.
162	Sweetgum	10	Yes	3	Low	Windswept; history of branch failures.
163	Blue Atlas cedar	17,9,6	Yes	4	High	Multiple attachments at 3'; spreading form.
164	Blue Atlas cedar	17	Yes	4	High	Multiple attachments at 8'; upright form; girdling
165	Coast live oak	15	Yes	4	Moderate	Codominant trunks at 6'; trunk wounds; good form.
166	Calif. pepper	9	Yes	3	Moderate	Suppressed; leans S.
167	Calif. pepper	10	Yes	4	Moderate	Codominant trunks at 5'; crowded but upright.
168	Calif. pepper	13	Yes	4	High	Multiple attachments at 6'; spreading form.
169	Coast live oak	10,9	Yes	3	Moderate	Codominant trunks at 3'; seam in attachment; very sparse canopy.
170	Coast live oak	11,5	Yes	4	High	Codominant trunks at 2'; seam in attachment; good form.
171	Coast live oak	15,13,12	Yes	3	Moderate	Codominant trunks at 2'; included bark; spreading form; extensive dieback.
172	Coast live oak	17,7,6	Yes	4	Moderate	Low branching S.; spreading form; moderate dieback.
173	Red iron bark	7,5,5	No	3	Low	Multiple attachments at base; leans W.
174	Red iron bark	19	No	3	Moderate	Lost top; low lateral S.; fire damage.
175	Red iron bark	13,12,12	No	3	Low	Multiple attachments at 2'; fire damaged; poor form.

Tree Assessment

Mountain View Cemetery
Oakland, California
January 2015

HORT SCIENCE

TREE No.	SPECIES	SIZE DIAMETER (in inches)	PROTETED?	CONDITION 1=POOR 5=EXCELLENT	SUITABILITY FOR PRESERVATION	COMMENTS
176	Red iron bark	19	No	3	Moderate	Crown bowed E.; fire damage.
176	Red iron bark	17,14	No	3	Low	Codominant trunks at 1'; fire damaged; trunk wounds; poor form.
178	Olive	6,4,3,3,2,2	Yes	5	High	Multiple attachments at base; good form and structure.
179	Coast live oak	10,5	Yes	4	Moderate	Codominant trunks at base; basal cavity.
180	Coast live oak	6	Yes	3	Moderate	Crowded; one sided E.
181	Coast live oak	5	Yes	3	Moderate	Crowded; upright, narrow form; sparse canopy.
182	Coast live oak	7,5	Yes	3	Moderate	Codominant trunks at 2'; sparse canopy
183	Coast live oak	8	Yes	4	Moderate	Good young tree; basal wounds.
184	Coast live oak	13	Yes	1	Low	Leans N.; extensive dieback.
185	Coast live oak	10	Yes	3	Low	Large trunk wound; poor branch attachments.
186	Coast live oak	6	Yes	5	High	Good young tree.
187	Coast live oak	15,15	Yes	3	Moderate	Codominant trunks at 3'; fire damaged; trunk & branch wounds; dieback.
188	Coast live oak	11,10,9	Yes	2	Low	Multiple attachments at 2'; fire damaged; trunk & branch wounds; extensive dieback.
189	Coast live oak	13	Yes	3	Low	Fire damaged; trunk & branch wounds; poor form; moderate dieback.
190	Coast live oak	6	Yes	4	Moderate	Stump sprout; leans S.
191	Coast live oak	17,16,16	Yes	4	Moderate	Multiple attachments at 3'; fire damaged; trunk & branch wounds; full canopy.
192	Coast live oak	13	Yes	3	Moderate	Fire damaged; trunk & branch wounds; one sided
193	Coast live oak	8	Yes	2	Low	Suppressed; fire damaged; trunk & branch wounds.
194	Coast live oak	17	Yes	3	Moderate	Multiple attachments at 8'; fire damaged; trunk & branch wounds; one sided N.

Tree Assessment

Mountain View Cemetery
Oakland, California
January 2015

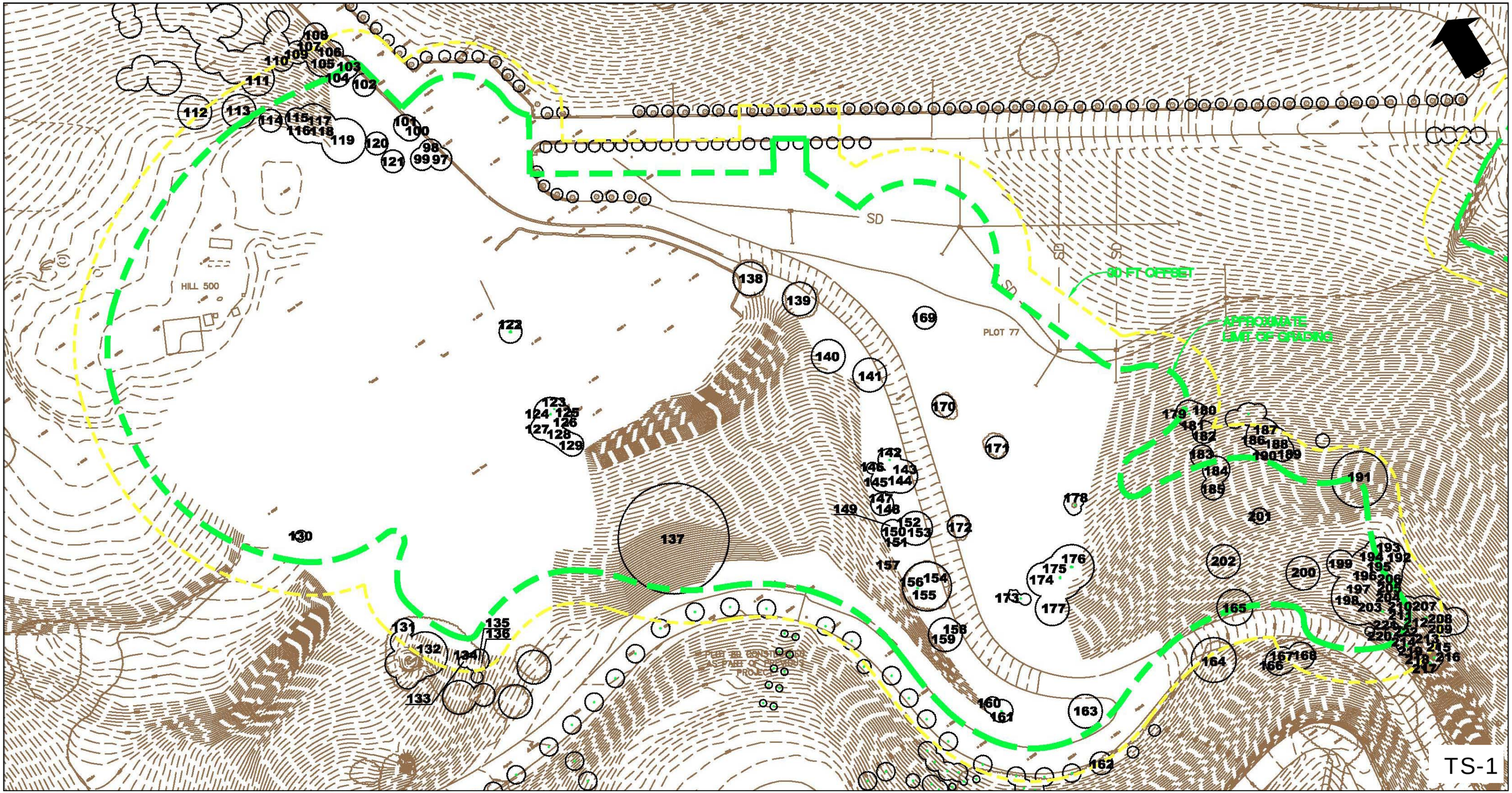
HORT SCIENCE

TREE No.	SPECIES	SIZE DIAMETER (in inches)	PROTETED?	CONDITION 1=POOR 5=EXCELLENT	SUITABILITY FOR PRESERVATION	COMMENTS
195	Coast live oak	18,17	Yes	3	Moderate	Codominant trunks at 3'; included bark; one sided S.; dieback.
196	Italian stone pine	23	Yes	3	Low	Crooks; fire damaged; trunk wounds.
197	Coast live oak	19	Yes	3	Low	Multiple attachments at 5'; fire damaged; trunk & branch wounds; narrow form; poorly rooted.
198	Coast live oak	31	Yes	3	Moderate	Codominant trunks at 4'; included bark; one sided SW.; fire damaged.
199	Coast live oak	10,9,7	Yes	3	Low	Multiple attachments at 3'; fire damaged; basal wounds; one sided W.
200	Coast live oak	15,12	Yes	3	Low	Codominant trunks at 3'; fire damaged; trunk & branch wounds; moderate dieback.
201	Coast live oak	10	Yes	3	Moderate	Codominant trunks at 5'; fire damaged; trunk & branch wounds.
202	Coast live oak	13,10,7	Yes	4	Moderate	Multiple attachments at 4'; good form; lateral E.
203	Coast live oak	10,9	Yes	4	Moderate	Codominant trunks at base; one sided SW.
204	Coast live oak	4,3	Yes	3	Moderate	Codominant trunks at base; suppressed; small crown.
205	Coast live oak	7,6,5	Yes	4	Moderate	Multiple attachments at base; narrow form.
206	Coast live oak	4	Yes	3	Low	Suppressed; small crown; leans NE.
207	Coast live oak	7,4	Yes	3	Moderate	Narrow form; trunk wounds.
208	Coast live oak	15,14	Yes	4	Moderate	Codominant trunks at base; spreading form; twig dieback.
209	Coast live oak	5	Yes	3	Low	Suppressed; small crown.
210	Coast live oak	10,9	Yes	4	Moderate	Codominant trunks at 4'; narrow form.
211	Coast live oak	4,3	Yes	3	Low	Codominant trunks at 1'; suppressed; one sided S.
212	Coast live oak	6	Yes	3	Moderate	Suppressed; one sided S.

Tree Assessment

Mountain View Cemetery
Oakland, California
January 2015

TREE No.	SPECIES	SIZE DIAMETER (in inches)	PROTETED?	CONDITION 1=POOR 5=EXCELLENT	SUITABILITY FOR PRESERVATION	COMMENTS
213	Coast live oak	14	Yes	3	Moderate	Upright form; trunk wounds; moderate dieback.
214	Monterey pine	13	No	2	Low	Upright form; small crown; extensive dieback.
215	Coast live oak	8,5	Yes	3	Moderate	One sided NE; trunk wounds.
216	Coast live oak	8,5	Yes	3	Moderate	Codominant trunks at base; narrow form.
217	Coast live oak	6,5,4	Yes	3	Moderate	Multiple attachments at base; trunk wounds; one sided W.
218	Coast live oak	8,5	Yes	3	Moderate	Codominant trunks at base; one sided SW
219	Coast live oak	8,5	Yes	3	Moderate	Multiple attachments base; upright form; trunk wounds.
220	Coast live oak	5	Yes	3	Moderate	Leans SE.; small crown.
221	Coast live oak	6,6	Yes	3	Moderate	Codominant trunks at base; leans SW.
222	Coast live oak	5	Yes	4	Moderate	Good young tree; trunk wounds.



Notes:
Base map provided by:
Sandis
Oakland, CA

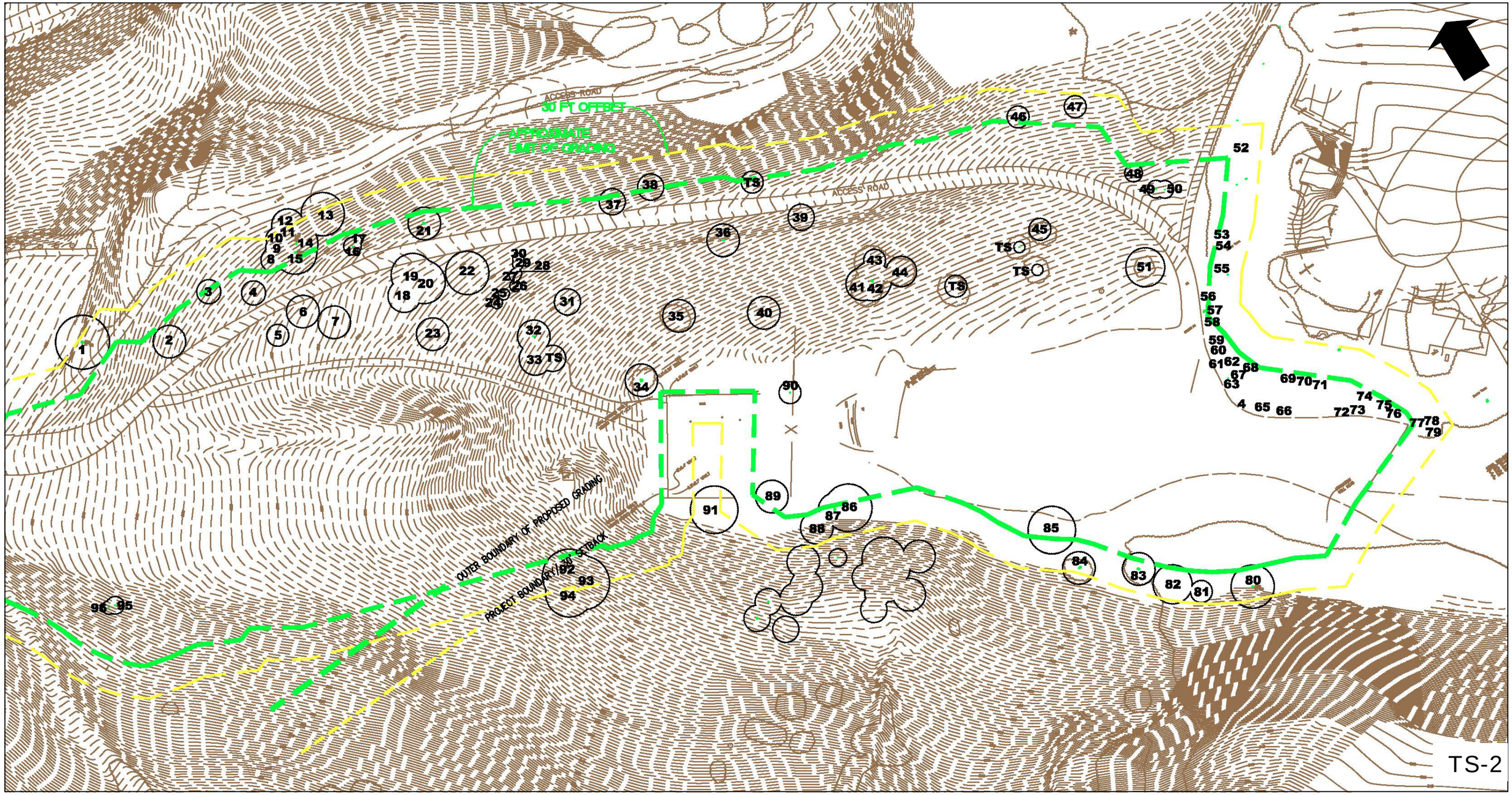
Numbered tree locations are approximate.

HORT SCIENCE
325 Ray Street
Pleasanton, California 94566
Phone 925.484.0211
Fax 925.484.0596

Tree Assessment Map

Mountain View Cemetery
Oakland, CA

Prepared for:
Mountain View Cemetery



Notes:
Base map provided by:
Sandis
Oakland, CA

Numbered tree locations are approximate.

325 Ray Street
Pleasanton, California 94566
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Fax 925.484.0596

Tree Assessment Map

Mountain View Cemetery
Oakland, CA

Prepared for:
Mountain View Cemetery

Appendix 4.3B

Supplemental Arborist Report

Valley Crest, 2015

4055 Bohannon Dr.
Menlo Park, CA 94025
(408) 595-1829 (t)
(650) 289-9202 (f)
www.valleycrest.com
www.treecareservices.com/northern-california

Mountain View Cemetery

Tree Inventory

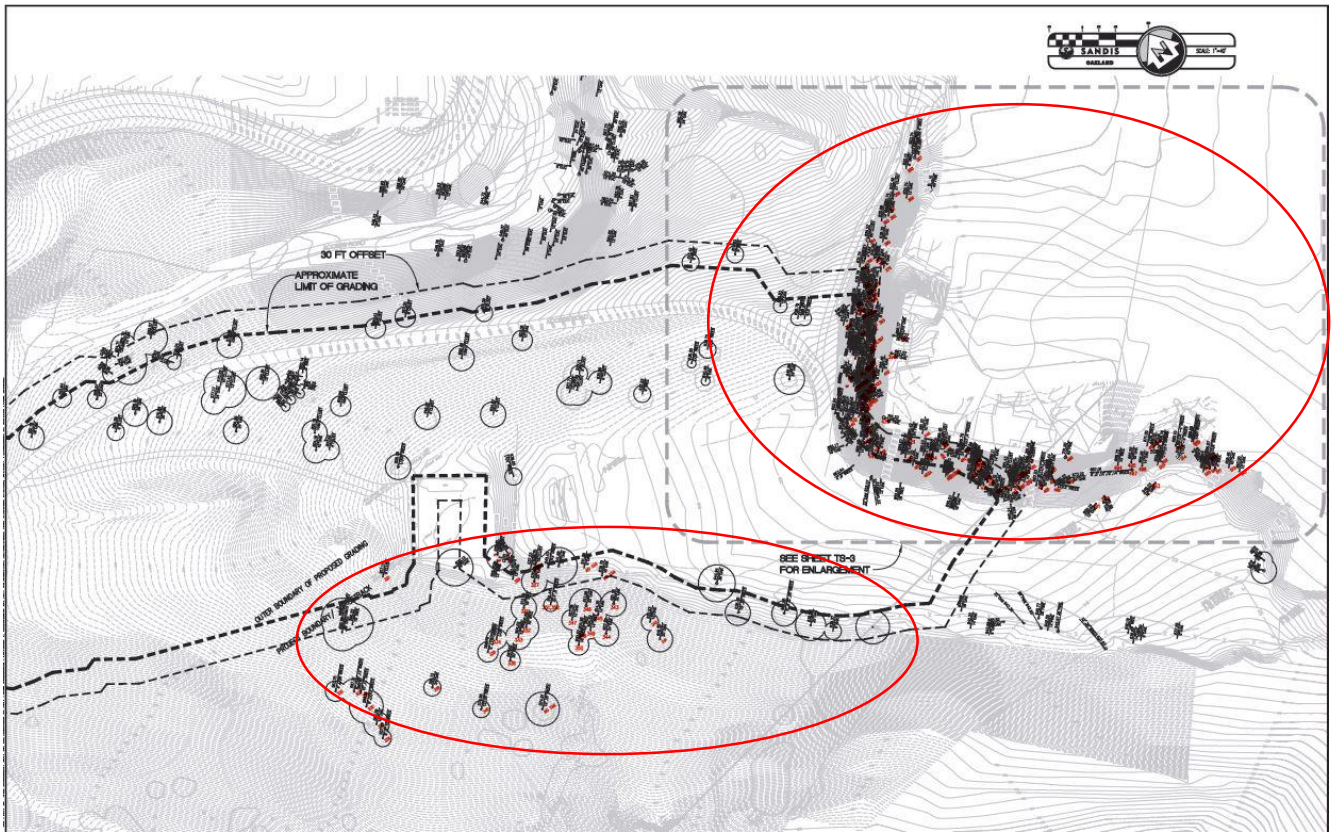
June 9, 2015

Information Collected by:

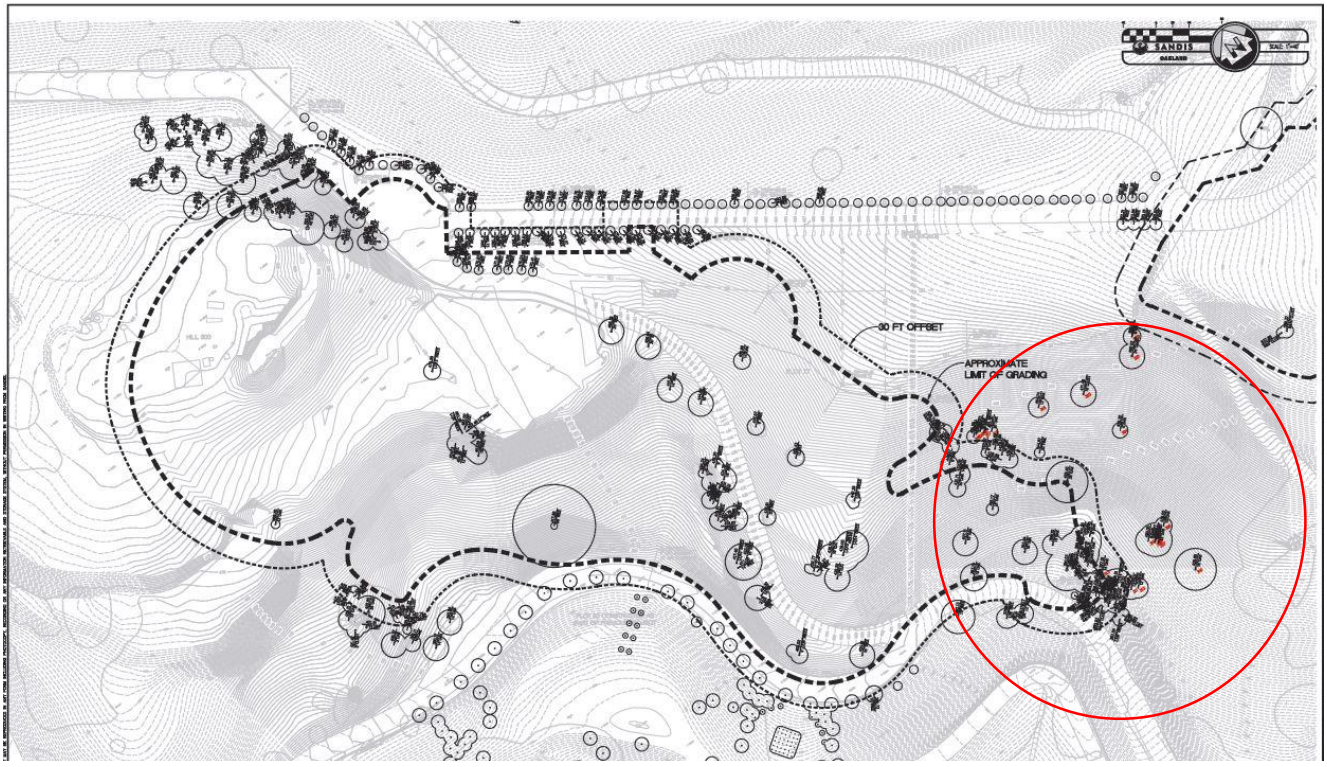
Katie Hawkins
Certified Arborist #UT4469A
khawkins@valleycrest.com

Kyle Sager
Certified Arborist # WE-8205A
ksager@valleycrest.com

Tree inventory was completed for tree located in the circled areas (maps below) on the hills of Mountain view Cemetery located at 5000 Piedmont Ave., Oakland, CA. The tree inventory was taken to get an accurate accounting of the trees currently on-site with their species, size (dbh), and condition. Trees size was determined by measuring the tree diameter (in inches) at breast height using dbh tape. For trees that had multiple trunks we used the total dbh of all trunks/ stems combined together. Trees with multiple stems/ trunks are designated as such in the last column labeled “trunk”. The current condition was determined using a rating system as follows: “Good” – tree is in good health and has a healthy, full canopy; “Fair” – tree has a somewhat of a full green canopy but there may be patches of dead or branches throughout the canopy; “Poor” – tree has very little canopy remaining, has signs of decay and/ or large wounds on the branches or trunk, “Dead” – tree is > 90% dead and thus on its way out. The tree inventory is attached below.



Tree locations for trees # 321-513.



Tree locations for trees # 300-320.

ID #	Tree Species	dbh (inches)	Condition	Trunk
300	Coast Live Oak	15.5	Fair	Multi-stem
301	Coast Live Oak	14	Fair	Multi-stem
302	Coast Live Oak	28.5	Poor	Multi-stem
303	Coast Live Oak	22.5	Fair	Multi-stem
304	Coast Live Oak	6.5	Fair	
305	Coast Live Oak	12	Good	Multi-stem
306	Coast Live Oak	10	Fair	
307	Coast Live Oak	17	Fair	Multi-stem
308	Coast Live Oak	21.5	Fair	Multi-stem
309	Coast Live Oak	7.5	Poor	
310	Coast Live Oak	46.5	Fair	Multi-stem
311	Coast Live Oak	10.5	Good	
312	Coast Live Oak	12.5	Good	
313	Coast Live Oak	4	Fair	
314	n/a	n/a	n/a	n/a
315	Coast Live Oak	22	Fair	Multi-stem
316	Coast Live Oak	13.5	Fair	Multi-stem
317	Coast Live Oak	24.5	Fair	Multi-stem
318	Coast Live Oak	5.5	Fair	
319	Coast Live Oak	17.5	Fair	Multi-stem
320	Coast Live Oak	2.5	Fair	
321	Olive	60	Fair	Multi-stem
322	Coast Live Oak	36	Fair	Multi-stem
323	Coast Live Oak	33	Good	Multi-stem
324	Coast Live Oak	24	Good	Multi-stem
325	Coast Live Oak	52	Good	Multi-stem
326	Coast Live Oak	16	Fair	Multi-stem
327	Coast Live Oak	39	Fair	Multi-stem
328	Coast Live Oak	2.5	Good	
329	Coast Live Oak	11.5	Fair	
330	n/a	n/a	n/a	n/a
331	Coast Live Oak	26	Fair	
332	Coast Live Oak	16.5	Good	
333	Coast Live Oak	12	Fair	
334	Coast Live Oak	29	Good	Multi-stem
335	Coast Live Oak	54	Fair	Multi-stem
336	Coast Live Oak	26	Good	Multi-stem
337	Coast Live Oak	22	Good	Multi-stem
338	Coast Live Oak	36	Good	Multi-stem
339	Coast Live Oak	36	Fair	Multi-stem
340	Coast Live Oak	26	Good	Multi-stem
341	Coast Live Oak	18	Poor	

342	Coast Live Oak	12	Good	
343	Coast Live Oak	95	Fair	Multi-stem
344	Coast Live Oak	75	Poor	Multi-stem
345	Coast Live Oak	13	Fair	
346	Coast Live Oak	79	Fair	Multi-stem
347	Coast Live Oak	16	Fair	
348	Coast Live Oak	15	Good	
349	Coast Live Oak	11	Fair	
350	Coast Live Oak	38	Good	Multi-stem
351	Coast Live Oak	6.5	Fair	
352	Coast Live Oak	8	Fair	Multi-stem
353	Ash	18	Poor	Multi-stem
354	Ash	13	Poor	Multi-stem
355	Ash	22	Poor	Multi-stem
356	Maple	51	Good	Multi-stem
357	Maple	24	Good	Multi-stem
358	Maple	8	Good	Multi-stem
359	Maple	23	Good	Multi-stem
360	Coast Live Oak	10	Fair	
361	Coast Live Oak	13.5	Good	
362	Coast Live Oak	8	Fair	
363	Coast Live Oak	21	Good	
364	Coast Live Oak	60	Fair	
365	Coast Live Oak	6	Fair	
366	Coast Live Oak	3	Good	
367	Coast Live Oak	11.5	Good	Multi-stem
368	Coast Live Oak	9	Fair	
369	Coast Live Oak	5.5	Fair	Multi-stem
370	Coast Live Oak	9	Fair	Multi-stem
371	Coast Live Oak	8	Fair	Multi-stem
372	Ash	27	Fair	Multi-stem
373	Coast Live Oak	8	Fair	Multi-stem
374	Ash	31	Good	Multi-stem
375	Coast Live Oak	7.5	Fair	
376	Coast Live Oak	6.5	Fair	
377	Coast Live Oak	7	Fair	
378	Coast Live Oak	9.5	Poor	
379	Coast Live Oak	26	Good	Multi-stem
380	Coast Live Oak	6	Poor	
381	Coast Live Oak	5	Good	
382	Coast Live Oak	5	Good	
383	Coast Live Oak	17	Poor	Multi-stem
384	Coast Live Oak	19.5	Fair	Multi-stem

385	Coast Live Oak	3.5	Good	
386	Coast Live Oak	7	Fair	
387	Coast Live Oak	16	Fair	Multi-stem
388	Coast Live Oak	7.5	Fair	
389	Coast Live Oak	41	Fair	
390	Coast Live Oak	27.5	Fair	
391	Coast Live Oak	2	Fair	
392	Coast Live Oak	4	Fair	
393	Coast Live Oak	11	Poor	Multi-stem
394	Coast Live Oak	3.5	Fair	
395	Coast Live Oak	3	Fair	
396	Coast Live Oak	10	Fair	
397	Coast Live Oak	22	Fair	Multi-stem
398	Coast Live Oak	4	Fair	Multi-stem
399	Coast Live Oak	2.5	Fair	
400	Coast Live Oak	6	Fair	
401	Coast Live Oak	10	Poor	Multi-stem
402	Coast Live Oak	7	Poor	Multi-stem
403	Coast Live Oak	6	Poor	Multi-stem
404	Coast Live Oak	4	Fair	Multi-stem
405	Coast Live Oak	13	Fair	
406	Coast Live Oak	6.5	Fair	
407	Coast Live Oak	4.5	Fair	
408	Coast Live Oak	7	Fair	
409	Coast Live Oak	2.5	Fair	
410	Coast Live Oak	5	Fair	
411	Coast Live Oak	5	Fair	
412	Coast Live Oak	6	Poor	
413	Coast Live Oak	2	Fair	
414	Coast Live Oak	10	Fair	
415	Coast Live Oak	7	Fair	
416	Coast Live Oak	6.5	Fair	Multi-stem
417	Coast Live Oak	7	Fair	Multi-stem
418	Coast Live Oak	20	Fair	Multi-stem
419	Coast Live Oak	3	Fair	
420	Coast Live Oak	21	Poor	Multi-stem
421	Coast Live Oak	5.5	Fair	
422	Coast Live Oak	6.5	Fair	
423	Coast Live Oak	7.5	Fair	Multi-stem
424	Coast Live Oak	7	Fair	
425	Coast Live Oak	2.5	Fair	
426	Coast Live Oak	13	Fair	Multi-stem
427	Coast Live Oak	11	Fair	

428	Coast Live Oak	9	Fair	Multi-stem
429	Coast Live Oak	7	Fair	
430	Coast Live Oak	2.5	Fair	
431	Coast Live Oak	2	Fair	
432	Pine	43.5	Fair	
433	Coast Live Oak	7	Fair	
434	Coast Live Oak	5	Fair	
435	Coast Live Oak	3.5	Fair	
436	Coast Live Oak	8	Fair	
437	Coast Live Oak	7	Fair	
438	Coast Live Oak	6.5	Fair	
439	Coast Live Oak	4	Poor	
440	Coast Live Oak	17	Fair	Multi-stem
441	Coast Live Oak	2	Fair	
442	Coast Live Oak	14.5	Fair	
443	Coast Live Oak	3.5	Fair	
444	Pine	9.5	Fair	
445	Pine	6	Fair	
446	Pine	8	Fair	
447	Coast Live Oak	11.5	Fair	
448	Coast Live Oak	7	Fair	
449	Coast Live Oak	5.5	Fair	
450	Coast Live Oak	37	Fair	
451	Pine	21	Fair	
452	Pine	6.5	Fair	
453	Coast Live Oak	6	Fair	
454	Pine	24	Fair	
455	Coast Live Oak	4	Fair	
456	Coast Live Oak	2	Fair	
457	Coast Live Oak	4	Fair	
458	Coast Live Oak	22.5	Fair	
459	Coast Live Oak	8	Fair	
460	Pine	25.5	Poor	Multi-stem
461	Pine	17	Poor	Multi-stem
462	Coast Live Oak	10	Poor	
463	Coast Live Oak	6	Poor	
464	Coast Live Oak	11.5	Fair	Multi-stem
465	Coast Live Oak	6	Fair	
466	Coast Live Oak	5.5	Poor	
467	Coast Live Oak		Poor	
468	Coast Live Oak	12	Fair	
469	Coast Live Oak	17	Fair	
470	Maple	10	Fair	Multi-stem

471	Coast Live Oak	8.5	Poor	
472	Coast Live Oak	29	Fair	Multi-stem
473	Coast Live Oak	11.5	Fair	
474			Fair	
475	Coast Live Oak	12.5	Fair	
476	Coast Live Oak	33	Fair	Multi-stem
477	Coast Live Oak	13	Fair	Multi-stem
478	Coast Live Oak	13.5	Fair	
479	Coast Live Oak	14.5	Poor	Multi-stem
480	Coast Live Oak	10	Poor	
481	Coast Live Oak	9	Poor	Multi-stem
482	Coast Live Oak	37	Fair	Multi-stem
483	Pine	32.5	Fair	
484	Coast Live Oak	23	Poor	Multi-stem
485	Coast Live Oak	9	Poor	Multi-stem
486	Coast Live Oak	10	Poor	
487	Coast Live Oak	18	Poor	
488	Coast Live Oak	86	Fair	Multi-stem
489	Coast Live Oak	21	Good	
490	Pine	40	Fair	
491	Coast Live Oak	11.5	Fair	
492	Coast Live Oak	18	Fair	
493	Coast Live Oak	23	Fair	Multi-stem
494	Coast Live Oak	11.5	Fair	
495	Coast Live Oak	18.5	Fair	
496	Coast Live Oak	14	Fair	
497	Coast Live Oak	49	Fair	Multi-stem
498	Coast Live Oak	6.5	Fair	
499	Coast Live Oak	6	Fair	
500	Coast Live Oak	29	Fair	
501	Coast Live Oak	25	Fair	
502	Acacia	10	Fair	Multi-stem
503	Acacia	2	Fair	Multi-stem
504	Acacia	31	Fair	Multi-stem
505	Acacia	3.5	Fair	
506	Acacia	4.5	Fair	
507	Acacia	9	Fair	Multi-stem
508	Acacia	8	Fair	Multi-stem
509	Hawthorn	30	Fair	Multi-stem
510	Acacia	4	Fair	
511	Acacia	4.5	Fair	
512	Coast Live Oak	20	Fair	Multi-stem
513	Coast Live Oak	11	Fair	

Appendix 4.3C

List of Suspected Species with Potential for Occurrence

Environmental Collaborative, 2015

POTENTIAL SPECIAL STATUS PLANT SPECIES LIST
MOUNTAIN VIEW CEMETERY AREA OF OAKLAND, CALIFORNIA
CNPS INVENTORY DATA SEARCH

Scientific Name/ Common Name	**Status**	**Habitat**	**Blooming Period**
Amsinckia grandiflora large-flowered fiddleneck	Fed: Endangered State: Endangered CNPS: List 1B.1	Cismontane woodland, valley and foothill grassland	April-May
Amsinckia lunaris bent-flowered fiddleneck	Fed: None State: CEQA CNPS: List 1B.2	Cismontane woodland; valley and foothill grassland	March-June
Androsace elongata ssp. *acuta* California androsace	Fed: None State: CEQA CNPS: List 4.2	Chaparral, cismontane woodland, coastal scrub	March-June
Arctostaphylos pallida pallid manzanita	Fed: Threatened State: Endangered CNPS: List 1B.1	Broadleaved upland forest, chaparral, cismontane woodland (siliceous shale)	Dec.-March
Balsamorhiza macrolepis var. *macrolepis* big-scale balsamroot	Fed: None State: CEQA CNPS: List 1B.2	Cismontane woodland, valley and foothill grassland (sometimes serpentinite)	March-June
Calandrinia breweri Brewer's calandrinia	Fed: None State: CEQA CNPS: List 1B.1	Chaparral, coastal scrub	March-June
California macrophylla) round-leaved filaree *(*formerly *Erodium macrophyllum*)	Fed: None State: CEQA CNPS: List 2.1	Coastal scrub, valley and foothill grassland	March-May
Calochortus umbellatus Oakland star-tulip	Fed: None State: CEQA CNPS: List 4.2	Broadleaved upland forest, chaparral, conifer forest, valley and foothill grassland	March-May
Carex comosa bristly sedge	Fed: None State: CEQA CNPS: List 2.B.1	Coastal prairie, marshes and swamps, valley and foothill grassland	May-Sept.
Castilleja ambigua ssp. *ambigua* Johny nip	Fed: None State: CEQA CNPS: List 4.2	Coastal bluff scrub, coastal prairie, coastal scrub, marshes and swamps, valley and foothill grassland, vernal pool margins	March-August
Cirsium andrewsii Franciscan thistle	Fed: None State: CEQA CNPS: List 1B.2	Broadleaved upland forest, coastal bluff scrub	June-July

POTENTIAL SPECIAL STATUS SPECIES LIST FOR THE MOUNTAIN VIEW CEMETERY AREA OF OAKLAND, CALIFORNIA CNPS INVENTORY DATA SEARCH

Scientific Name/ Common Name	Status	Habitat	Blooming Period
Clarkia breweri Brewer's clarkia	Fed: None State: CEQA CNPS: List 4.2	Chaparral, cismontane woodland, coastal scrub (often serpentinite)	April-May
Cryptantha hooveri Hoover's cryptantha	Fed: None State: CEQA CNPS: List 1A	Valley and foothill grassland (sandy)	April-May
Delphinium californicum ssp. *interius* hospital canyon larkspur	Fed: None State: CEQA CNPS: List 1B.2	Cismontane woodland (mesic)	April-June
Didymodon norrisii Norris' beard moss	Fed: None State: CEQA CNPS: List 2.2	Cismontane woodland, lower montane coniferous forest	Unknown
Dirca occidentalis western leatherwood	Fed: None State: CEQA CNPS: List 1B.2	Broadleaved upland forest, conifer forest, chaparral, riparian forest, cismontane woodland	January-April
Eriogonum umbelliferum var. *bahiiforme* bay buckwheat	Fed: None State: CEQA CNPS: List 4.2	Cismontane woodland, lower montane coniferous forest (rocky, often serpentinite)	July-September
Eriophyllum jepsonii Jepson's woolly sunflower	Fed: None State: CEQA CNPS: List 4.3	Chaparral, cismontane woodland, coastal scrub (sometimes serpentinite)	April-June
Erodium macrophyllum (see *Californica macrophylla)*			
Eschscholzia rhombipetala diamond-petaled California poppy	Fed: None State: CEQA CNPS: List 1B.1	Valley and foothill grassland (clay)	March-April
Fritillaria agrestis stinkbells	Fed: None State: CEQA CNPS: List 4.2	Chaparral, cismontane woodland, valley and foothill grassland (clay, sometimes serpentinite)	March-April
Fritillaria liliacea fragrant fritillary	Fed: None State: CEQA CNPS: List 1B.2	Coastal prairie, coastal scrub, valley and foothill grassland (often serpentinite)	Feb.-April

POTENTIAL SPECIAL STATUS SPECIES LIST FOR THE MOUNTAIN VIEW CEMETERY AREA OF OAKLAND, CALIFORNIA CNPS INVENTORY DATA SEARCH

Scientific Name/ Common Name	Status	Habitat	Blooming Period
Galium andrewsii ssp. *gatense* serpentine bedstraw	Fed: None State: CEQA CNPS: List 4.2	Chaparral, cismontane woodland, lower montane coniferous forest (serpentinite, rocky)	April-July
Helianthella castanea Diablo helianthella	Fed: None State: CEQA CNPS: List 1B.2	Broadleaved upland forest, chaparral, cismontane woodland, coastal scrub, valley and foothill grassland	April-June
Hesperevax caulescens hogwallow starfish	Fed: None State: CEQA CNPS: List 4.2	Vernal Pools	April-June
Hoita strobilina Loma Prieta hoita	Fed: None State: CEQA CNPS: List 1B.1	Chaparral, cismontane woodland	May-June
Holocarpha macradenia Santa Cruz tarplant	Fed: Threatened State: Endngered CNPS: List 1B.1	Coastal prairie, valley and foothill grassland	June-October
Horkelia cuneata ssp. *sericea* Kellogg's horkelia	Fed: None State: CEQA CNPS: List 1B.1	Chaparral, closed-cone forest, coastal scrub (sandy or gravelly openings)	April-July
Irsi longipetala coast iris	Fed: None State: CEQA CNPS: List 4.2	Coastal prairie, lower montane coniferous forest, meadows and seeps	March-May
Juglans californica var. *hindsii* Northern California black walnut	Fed: None State: CEQA CNPS: List 1B.1	Cismontane woodland, riparian forest	April-May
Lasthenia conjugens Contra Costa goldfields	Fed: Endangered State: CEQA CNPS: List 1B.1	Cismontane woodland, playas, valley and foothill grassland, vernal pools (mesic)	March-June
Lasthenia ferrisiae Ferris' goldfields	Fed: None State: CEQA CNPS: List 4.2	Vernal pools (alkaline, clay)	February-May
Legenere limosa legenere	Fed: None State: CEQA CNPS: List 1B.1	Vernal pools	April-June

POTENTIAL SPECIAL STATUS SPECIES LIST FOR THE MOUNTAIN VIEW CEMETERY AREA OF OAKLAND, CALIFORNIA CNPS INVENTORY DATA SEARCH

Scientific Name/ Common Name	Status	Habitat	Blooming Period
Leptosiphon acicularis bristly linanthus (formerly *Linanthus acicularis*)	Fed: None State: CEQA CNPS: List 4.2	Chaparral, cismontane woodland, coastal prairie	April-July
Leptosiphon grandiflorus large-flowered linanthus (formerly *Linanthus grandiflorus*)	Fed: None State: CEQA CNPS: List 4.2	Coastal bluff scrub, closed-cone conifer forest, cismontane woodland, coastal dunes, coastal prairie, coastal scrub, valley and foothill grassland	April-July
Linanthus acicularis (See *Leptosiphon acicularis*)			
Linanthus grandiflorus (See *Leptosiphon grandiflorus*)			
Madia radiata showy madia	Fed: None State: CEQA CNPS: List 1B.1	Cismontane woodland, valley and foothill grassland	March-May
Meconella oregona Oregon meconella	Fed: None State: CEQA CNPS: List 1B.1	Cismontane woodland, valley and foothill grassland, miscellaneous habitats	March-April
Micropus amphibolus Mt. Diablo cottonweed	Fed: None State: CEQA CNPS: List 3.2	Broadleaved upland forest, cismontane woodland, valley and foothill grassland	April-May
Microseris sylvatica sylvan microseris	Fed: None State: CEQA CNPS: List 4.2	Cismontane woodland, valley and foothill grassland	March-May
Monardella antonina ssp. *antonina* San Antonio hills monardella	Fed: None State: CEQA CNPS: List 3	Chaparral, cismontane woodland	June-August
Monardella villosa ssp. *globosa* robust monardella	Fed: None State: CEQA CNPS: List 1B.2	Chaparral, Woodland	June-July
Myosurus minimus ssp. *apus* little mousetail	Fed: None State: CEQA CNPS: List 3.1	Valley and foothill grassland, vernal pools	March-June
Navarretia cotulifolia cotula navarretia	Fed: None State: CEQA CNPS: List 4.2	Chaparral, cismontane woodland, valley and foothill grassland	May-June

POTENTIAL SPECIAL STATUS SPECIES LIST FOR THE MOUNTAIN VIEW CEMETERY AREA OF OAKLAND, CALIFORNIA CNPS INVENTORY DATA SEARCH

Scientific Name/ Common Name	Status	Habitat	Blooming Period
Navarretia nigelliformis ssp. *nigelliformis* adobe navarretia	Fed: None State: CEQA CNPS: List 4.2	Valley and foothill grassland, vernal pools (sometimes clay, sometimes serpentinite)	April-June
Navarretia nigelliformis ssp. *radians* shining navarretia	Fed: None State: CEQA CNPS: List 1B.2	Chaparral, cismontane woodland, valley and foothill grassland, vernal pools	April-July
Navarretia prostrata prostrate vernal pool navarretia	Fed: None State: CEQA CNPS: List 1B.1	Coastal scrub, valley and foothill grassland (alkaline), vernal pools (mesic)	April-July
Perideridia gairdneri ssp. gairdneri Gairdner's yampah	Fed: None State: CEQA CNPS: List 4.2	Broadleaved upland forest, chaparral, valley and foothill grassland, vernal pools (mesic)	June-Oct.
Piperia michaelii Michael's rein orchid	Fed: None State: CEQA CNPS: List 4.2	Coastal Bluff Scrub, Conifer Forest, Woodland	May-August
Plagiobothrys chorisianus var. *chorisianus* Choris's popcorn-flower	Fed: None State: Endangered CNPS: List 1B.1	Chaparral, coastal prairie, coastal scrub (mesic)	April-June
Plagiobothrys diffusus San Francisco popcorn-flower	Fed: None State: CEQA CNPS: List 4.2	Coastal prairie, valley and foothill grassland	April-June
Psilocarphus brevissimus var. *multiflorus* Delta woolly marbles	Fed: None State: CEQA CNPS: List 4.2	Vernal pools	May-June
Ranunculus lobbii Lobb's aquatic buttercup	Fed: None State: CEQA CNPS: List 4.2	Cismontane woodland, north coast conifer forest, valley and foothill grassland, vernal pools (mesic)	March-May
Viburnum ellipticum oval-leaved viburnum	Fed: None State: CEQA CNPS: List 2.3	Chaparral	May-June

Explanation of Status Terms

Federal
Endangered: Required for consideration
Threatened: Required for consideration

State
Endangered: Required for consideration
Rare: Required for consideration
CEQA: Recommended for consideration under California Environmental Quality Act

CNPS (California Native Plant Society
1A: Plants presumed extinct in California. Required for consideration
1B: Rare, threatened or endangered in California and elsewhere. Required for consideration
List 2: Plants rare, threatened or endangered in California, but more common elsewhere. Required for consideration
List 3: Plants needing more information – a review list. Recommended for consideration
List 4: Plants of limited distribution – a watch list. Recommended for consideration

CNPS Threat Code Extensions: .1 Seriously endangered in California
.2 Fairly endangered in California
.3 Not very endangered in California

Plant Species Observed at Mountain View Cemetery Project Site

Surveys performed on April 17, 2013 and May 27 and July 16, 2014

Scientific Name	Common Name	Native
Acacia dealbata	silver wattle	no
Acacia melanoxylosn	black wood acacia	no
Acer macrophyllum	big leaf maple	yes
Acmispon americanus var. *americanus*	Spanish clover	yes
Acmispon glaber	deer weed	yes
Acmispon parviflorus	small flower lotus	yes
Acmispon wrangelianus	California lotus	yes
Aesculus californica	California buckeye	yes
Agave americana	century plant	no
Allium sp.	onion	yes
Anagallis arvensis	scarlet pimpernel	no
Anthemis cotula	mayweed	no
Anthriscus caucalis	burr chervil	no
Arctotheca calendula	Cape weed	no
Artemisia douglasiana	Douglas' mugwort	yes
Arundo donax	giant reed	no
Avena barbata	slender wild oats	no
Avena fatua	wild oats	no
Baccharis pilularis	coyote brush	yes
Bellis perennis	English daisy	no
Brassica rapa	field mustard	no
Bromus carinatus var. *carinatus*	California brome	yes
Bromus caroli-henrici	weedy brome	no
Bromus catharticus	rescue grass	no
Bromus diandrus	ripgut brome	no
Bromus hordeaceus	soft chess	no
Bromus madritensis	Madrid brome	no
Carduus pycnocephalus	Italian thistle	no
Cedrus atlantica	Atlas cedar	no
Centaurea solstitialis	yellow star thistle	no
Chenopodium murale	nettle-leaf goosefoot	no
Chlorogalum pomeridianum	soap plant	yes
Cirsium vulgare	bull thistle	no
Claytonia perfoliata	miner's lettuce	yes
Conium maculatum	poison hemlock	no
Convolvulus arvensis	bindweed	no
Cotoneaster pannosus	silverleaf cotoneaster	no
Cotula australis	Southern brass buttons	no
Crataegus sp.	hawthorn	no
Cynodon dactylon	Bermuda grass	no

Cynosurus echinatus	dog's tail	no
Cyperus eragrostis	tall flatsedge	yes
Cytisus scoparius	Scotch broom	no
Datura stramonium	Jimson weed	no
Daucus carota	carrot	no
Delairea odorata	Cape ivy	no
Dittrichia graveolens	stinkwort	no
Ehrharta erecta	panic veldtgrass	no
Erigeron bonariensis	asthmaweed	no
Erigeron canadensis	horseweed	yes
Eriogonum nudum var. *auriculatum*	Ear-shaped wild buckwheat	yes
Erodium botrys	long-beaked filaree	no
Erodium cicutarium	red-stemmed filaree	no
Erodium moschatum	white-stemmed filaree	no
Eschscholzia californica	California poppy	yes
Eucalyptus globulus	blue gum	no
Eucalyptus sideroxylon	red ironbark	no
Euphorbia oblongata	eggleaf spurge	no
Euphorbia peplus	petty spurge	no
Euphorbia prostrata	prostrate sandmat	no
Festuca myuros	sixweeks	no
Festuca perennis	Italian ryegrass	no
Foeniculum vulgare	sweet fennel	no
Galium aparine	Common bedstraw	yes
Galium parisiense	wall bedstraw	no
Galium sp.	bedstraw	
Gastridium phleoides	nit grass	no
Genista monspessulana	French broom	no
Geranium dissectum	cut leaf geranium	no
Geranium robertianum	Robert geranium	no
Hedera helix	English ivy	no
Helminthotheca echioides	prickly ox-tongue	no
Heteromeles arbutifolia	toyon	yes
Hirschfeldia incana	short pod mustard	no
Hordeum marinum ssp. *gussoneanum*	Mediterranean barley	no
Hordeum murinum ssp. *leporinum*	foxtail barley	no
Hypochaeris glabra	smooth cat's ears	no
Hypochaeris radicata	rough cat's ears	no
Kickxia elatine	fluvellin	no
Lactuca saligna	willowleaf lotus	no
Lactuca serriola	prickly lettuce	no
Lactuca virosa	wild lettuce	no
Lathyrus latifolius	sweet pea	no
Lathyrus tingitanus	tangier pea	no
Lepidium didymum	lesser swine cress	no

Lepidium strictum	upright pepperweed	no
Lobularia maritima	sweet alyssum	no
Logfia gallica	daggerleaf cottonrose	no
Lotus corniculatus	bird's foot trefoil	no
Lupinus bicolor	miniature lupine	yes
Lupinus sp.	lupine	yes
Lupinus succulentus	arroyo lupine	yes
Lythrum hyssopifolia	hyssop loosestrife	no
Madia sativa	coast tarweed	yes
Malva pseudolavatera	Cornish mallow	no
Malva parviflora	cheeseweed	no
Marah fabaceus	manroot	yes
Matricaria discoidea	pineapple weed	no
Medicago lupulina	black medic	no
Medicago polymorpha	California burclover	no
Melilotus indicus	small melilot	no
Mercurialis annua	annual mercury	no
Modiola caroliniana	Carolina bristle mallow	no
Myoporum sp.	myoporum	no
Nasturtium officinale	water cress	yes
Olea europaea	olive	no
Opuntia sp.	prickly pear	no
Oxalis pes-caprae	African wood sorrel	no
Paspalum dilatatum	Dallis grass	no
Pennisetum clandestinum	kikuyu grass	no
Petrorhagia dubia	grass pink	no
Phyla nodiflora	garden lippia	yes
Pinus radiata	Monterey pine	no
Plantago lanceolata	English plantain	no
Plantago major	common plantain	no
Platanus racemosa	sycamore	yes
Poa annua	annual bluegrass	no
Polycarpon tetraphyllum	four-leaved allseed	no
Polygonum aviculare	knotgrass	no
Polypogon monspeliensis	rabbitfoot grass	no
Portulaca oleracea	common purslane	no
Prunella vulgaris	self heal	yes
Prunus ilicifolia	holly-leaved cherry	yes
Prunus sp.	plum	no
Pseudognaphalium californicum	California everlasting	yes
Pseudognaphalium luteoalbum	Jersey cudweed	no
Quercus agrifolia	coast live oak	yes
Raphanus sativus	wild radish	no
Ricinus communis	castor bean	no
Rubus armeniacus	Himalayan blackberry	no

Rubus ursinus	California blackberry	yes
Rumex crispus	curly dock	no
Rytidosperma penicillatum	hairy oat grass	no
Sambucus nigra ssp. *caerulea*	blue elderberry	yes
Scabiosa atropurpurea	pincushion flower	no
Scrophularia californica	bee plant	yes
Senecio vulgaris	common groundsel	no
Silene gallica	windmill pink	no
Silybum marianum	milk thistle	no
Sisymbrium officinale	hedge mustard	no
Solanum americanum	small-flowered nightshade	yes
Solidago elongata	goldenrod	yes
Sonchus asper	prickly sow thistle	no
Sonchus oleraceus	common sow thistle	no
Spergularia rubra	red sandspurry	no
Stellaria media	chickweed	no
Stipa milliacea var. *milliacea*	smilo grass	no
Stipa pulchra	purple needle grass	yes
Sisyrinchium bellum	blue-eyed grass	yes
Taraxacum officinale	dandelion	no
Torilis arvensis	Field hedge parsley	no
Torilis nodosa	knotted hedge parsley	no
Toxicodendron diversilobum	poison oak	yes
Trifolium dubium	little hop clover	no
Trifolium fragiferum	strawberry clover	no
Trifolium glomeratum	clustered clover	no
Trifolium hirtum	rose clover	no
Trifolium incarnatum	crimson clover	no
Trifolium repens	white clover	no
Tropaeolus majus	nasturtium	no
Umbellularia californica	California bay tree	yes
Urospermum picroides	prickly goldenfleece	no
Veronica peregrina ssp. *xalapensis*	hairy purslane speedwell	no
Vicia hirsuta	tiny vetch	no
Vicia sativa ssp. *sativa*	common vetch	no
Wyethia angustifolia	narrow-leaf mule's ears	yes
Zantedeschia aethiopica	calla lily	no

Nomenclature according to: *The Jepson Manual: Vascular Plants of California*, Second edition, 2012

Appendix 4.4A

Mountain View Cemetery Expansion Project Historic Resource Evaluation

Page & Turnbull, November 2014

MEMORANDUM

DATE	November 19, 2014	PROJECT NO.	14050
TO	Scott Gregory	PROJECT NAME	Mountain View Cemetery Expansion Project Evaluation Memorandum
OF	Lamphier-Gregory 1944 Embarcadero Oakland, CA 94606	FROM	Christina Dikas, Architectural Historian
CC	Chris Ford	VIA	Email

REGARDING: MOUNTAIN VIEW CEMETERY EXPANSION PROJECT EVALUATION MEMORANDUM

INTRODUCTION

This Project Evaluation Memorandum has been prepared at the request of Lamphier-Gregrory for proposed development within the existing property boundaries of Mountain View Cemetery in Oakland, which would involve grading three heretofore largely undeveloped plots of land (Plots 82, 98, and Panhandle) at the eastern edge of the cemetery. This memorandum evaluates the proposed project according to the *Secretary of the Interior's Standards for Rehabilitation* in order to determine whether the grading activities and future landscape design would negatively impact the Mountain View Cemetery District or any historic resources within it.

The 226-acre, park-like Mountain View Cemetery was established in 1863 and was designed by renowned landscape architect Frederick Law Olmsted the following year. Of note are connected Gothic Chapel and Tower Chapel, and the Crematorium, designed by Weeks and Day and mostly built between 1929 and 1939. There is also a columbarium/mausoleum built in 1929 with additions through 1963.

The Oakland Cultural Heritage Survey (OCHS) surveyed buildings within the Cemetery in 1994, and assigned the Administration building an "A1+", the Chapel(s) and Crematory building an "A1+", and the St. Mary's Cemetery Office building at "B1+". "A" properties are of highest importance in the OCHS evaluation scale, and "B" properties are of major importance. The numerical rating of "1" indicates that the building is in an Area of Primary Importance (API), and the "+" indicates that the building is a contributor to the district. According to the Historic Preservation Element of the City of Oakland General Plan, APIs are areas that have been identified by an intensive survey as having a high proportion of individual properties with ratings of "C" or higher. At least two-thirds of the properties within an API must be contributory to the API, i.e. they reflect the API's principle historical or architectural themes. APIs appear eligible for the National Register of Historic Places either as districts or as historically related complexes. In general, properties with excellent or good integrity which are of the period of significance and are otherwise compatible contribute to National Register districts.

In 1998, a city-wide reconnaissance survey defined the Cemetery property, along with the Administration, Chapel(s), Chapel of the Chimes, and St. Mary's office building, as the Mountain View Cemetery District. The OCHS assigned a preliminary rating of A1+ to the historic district, and confirmed ratings of A1+ assigned in 1994 to the Administration Building (1930) and Chapel and Crematorium Building (1929-1939 with additions through 1963), which are within the Cemetery.

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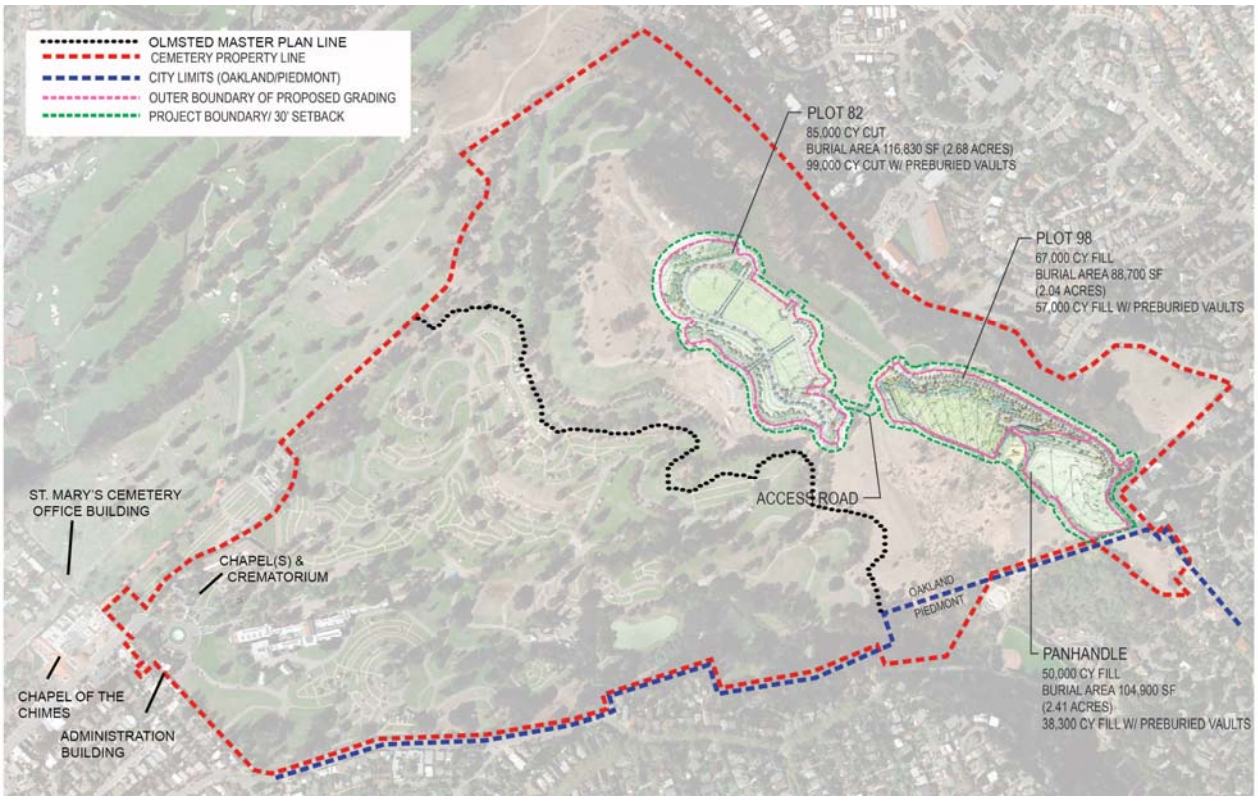

Figure 1. Site map showing cemetery boundaries, locations of identified historic buildings, and locations of portions for development. Source: SWA, edited by Page & Turnbull November 2014.

SIGNIFICANCE AND CHARACTER-DEFINING FEATURES

The California Department of Parks and Recreation (DPR) forms prepared by the OCHS for the cemetery district and individual buildings (**Appendix**, item 1) do not use detailed criteria in evaluating the property for historic significance, since they were evaluated as part of a reconnaissance survey and assigned OCHS ratings. For this assessment, Page & Turnbull adopts a summary statement of significance by Garavaglia Architecture in a letter to the City of Oakland for a previous project in 2003. Garavaglia Architecture came to the conclusion that the cemetery would be significant under National Register of Historic Places Criterion A (Events) for its association with the evolving history of cemetery development and other physical development in Oakland, and Criterion C (Architecture) for its picturesque master plan by reputed landscape architect Frederick Law Olmsted as well as its buildings, structures and objects of high artistic value.[1] Page & Turnbull concurs with this assessment.

Garavaglia Architecture outlined a number of character-defining features that were articulated in the DPR forms completed by OCHS:

[1] Garavaglia Architecture, "Substantial Adverse Change/Material Impairment Review: Mountain View Cemetery Mausoleum Project," 23 May 2003, 7.

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- Lower Oakland Hills (below Piedmont) location
- 200 acres in size
- Naturalistic manner of design by Frederick Law Olmsted (1864)
- Winding roads
- Picturesque vistas
- Gated entrance
- Circular fountain
- Office building (1929) by Weeks and Day
- Chapel and Crematorium building (1929) by Weeks and Day
- Columbarium and Mausoleum (1929)
- Newer garden mausoleum with reflecting pool
- "Millionaire's Row" at top of cemetery with 19th century mausoleums
- Gravestones
- Chapel of the Chimes (1927) by Julia Morgan at 4499 Piedmont Avenue
- St. Mary's Office (1900s), 4529 Howe Street.[2]

Of note, the undeveloped hills at the east end of the cemetery, where proposed development is to be located, were not identified as a character-defining feature.

At the eastern end of the cemetery, Plots 82, 98, and the Panhandle were not within the boundary of the original Olmsted Master Plan, but were portions of the original land purchase and later quarry purchase. Plot 82 is largely undeveloped but has a maintenance staging area with one prefabricated metal shed. The Panhandle has shallow concrete amphitheater steps that appear to have been installed between 1946 and 1959, based on historic aerial photographs, but have always sat within an undeveloped site. The steps do not appear to contribute to the Mountain View Cemetery Historic District. A concrete foundation above an underground water tank also exists in the notch between Plot 98 and the Panhandle. Aside from these and paved roads, there is little development in the area studied for this memorandum.

CURRENT PHOTOGRAPHS

This section includes photographs of the undeveloped eastern area of the cemetery that were taken on November 11 and 12, 2014. (See **Appendix** for cemetery map and proposed project drawings for references to plot numbers, items 2 and 4).

[2] Ibid, 8-9.

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Figure 1. Looking southwest from northwest perimeter of Plot 82.

Figure 2. Looking south from Plot 82.

Figure 3. Looking southeast, showing Plots 82 (left foreground), 98, and Panhandle with the developed/landscaped Plot 76 in the middle.

Figure 4. Looking northwest from an undeveloped portion of Plot 76 that would become Plot 77.

Figure 5. View north from developed/landscaped Plot 65.

Figure 6. Looking northwest from Plot 98 toward the developed/landscaped Plot 76.

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PROJECT-SPECIFIC IMPACT ANALYSIS

This section analyzes the project-specific impacts of the proposed project at Mountain View Cemetery on the environment, as required by the California Environmental Quality Act (CEQA).

CALIFORNIA ENVIRONMENT QUALITY ACT (CEQA)

The California Environment Quality Act (CEQA) is state legislation (Pub. Res. Code §21000 et seq.), which provides for the development and maintenance of a high quality environment for the present-day and future through the identification of significant environmental effects.[3] CEQA applies to "projects" proposed to be undertaken or requiring approval from state or local government agencies. "Projects" are defined as "…activities which have the potential to have a physical impact on the environment and may include the enactment of zoning ordinances, the issuance of conditional use permits and the approval of tentative subdivision maps."[4] Historic and cultural resources are considered to be part of the environment. In general, the lead agency must complete the environmental review process as required by CEQA.

According to CEQA, a "project with an effect that may cause a substantial adverse change in the significance of an historic resource is a project that may have a significant effect on the environment."[5] Substantial adverse change is defined as: "physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historic resource would be materially impaired."[6] The significance of an historical resource is materially impaired when a project "demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance" and that justify or account for its inclusion in, or eligibility for inclusion in, the California Register.[7] Thus, a project may cause a substantial change in a historic resource but still not have a significant adverse effect on the environment as defined by CEQA as long as the impact of the change on the historic resource is determined to be less-than-significant, negligible, neutral or even beneficial.

STATUS OF A BUILDING AS A HISTORICAL RESOURCE FOR CEQA

In the City of Oakland, an historical resource under CEQA is a resource that meets any of the following Thresholds of Significance:

1) A resource listed in, or determined to be eligible for listing in, the California Register of Historical Resources;

2) A resource included in Oakland's Local Register of historical resources, unless the preponderance of evidence demonstrates that it is not historically or culturally significant;

3) A resource identified as significant (e.g., rated 1-5) in a historical resource survey recorded on Department of Parks and Recreation Form 523, unless the preponderance of evidence demonstrates that it is not historically or culturally significant;

---

[3] State of California, California Environmental Quality Act, http://ceres.ca.gov/topic/env_law/ceqa/summary.html, accessed 31 August 2007.
[4] Ibid.
[5] CEQA Guidelines subsection 15064.5(b).
[6] CEQA Guidelines subsection 15064.5(b)(1).
[7] CEQA Guidelines subsection 15064.5(b)(2).

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4) Any object, building, structure, site, area, place, record, or manuscript which the Oakland City Council determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California, provided the determination is supported by substantial evidence in light of the whole record. Generally, a resource is considered "historically significant" if it meets the criteria for listing on the California Register of Historical Resources (CEQA Guidelines section 15064.5); or

5) A resource that is determined by the City Council to be historically or culturally significant even though it does not meet the other four criteria listed here.

A "local register of historical resources" means a list of properties officially designated or recognized as historically significant by a local government pursuant to a local ordinance or resolution, unless the preponderance of evidence demonstrates otherwise.

In March 1994, the Oakland City Council adopted a Historic Preservation Element of the General Plan (amended July 21, 1998). The Historic Preservation Element sets out a graduated system of ratings and designations resulting from the Oakland Cultural Heritage Survey (OCHS) and Oakland Zoning Regulations. The Element provides Policy 3.8: "Definition of 'Local Register of Historical Resources' and Historic Preservation 'Significant Effects' for Environmental Review Purposes" related to identifying historic resources under CEQA:

> For purposes of environmental review under the California Environmental Quality Act, the following properties will constitute the City of Oakland's Local Register of Historical Resources:
>
> 1. All Designated Historic Properties (Landmarks, Heritage Properties, Study List Properties, Preservation Districts, and S-7 and S-20 Preservation Combining Zone Properties); and
>
> 2. Those Potential Designated Historic Properties that have an existing rating of "A" or "B" or are located within an Area of Primary Importance.

Consequently, Mountain View Cemetery and the identified individual buildings within it fall under the second type of resources that are considered historical resources for environmental review by the City of Oakland.

PROPOSED PROJECT DESCRIPTION

A detailed project description was provided to Page & Turnbull by Lamphier-Gregory, and is attached for reference (item 3) at the end of this memorandum **(See Appendix)**. In sum, the easterly, or topographically upper, one-third of the Cemetery is at present largely undeveloped, serving as a future site for expanded burial and interment plots. The proposed project seeks to develop three portions of this undeveloped land, which will require a cut-and-fill grading operation

Plot 82 will re-route an existing roadway, provide a new pedestrian path, a retaining/crypt wall, and an open lawn area with a gentle slope. The plot will hold approximately 2,800 new burial sites of various types. Currently, it is steeply pitched.

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Plot 92 is located southeast of Plot 82, connected by the existing ridgeline road. Work will include improvements to the existing road, construction of a pedestrian path around the perimeter, an open lawn area with a moderate slope, and a retaining wall. This site may accommodate between 1,200 to 2,000 new traditional in-ground burial sites. Currently, this plot is moderately pitched.

The Panhandle is located immediately southeast of Plot 98, and will include improvements to the existing roadway, up to 1,500 new interment sites in a design that has yet to be developed, and improvements to the existing pedestrian/maintenance/emergency path through the site. The Panhandle is currently relatively flat but will be graded to create a pitch toward southwest views.

Though the overall project is phased, the grading will occur at the same time.

SECRETARY OF THE INTERIOR'S STANDARDS FOR THE TREATMENT OF HISTORIC PROPERTIES

The *Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings* (*Secretary's Standards*) provide guidance for working with historic properties. The *Secretary's Standards* are used by Federal agencies and local government bodies across the country (including the San Francisco Historic Preservation Commission) to evaluate proposed rehabilitative work on historic properties. The *Secretary's Standards* are a useful analytic tool for understanding and describing the potential impacts of substantial changes to historic resources. Compliance with the *Secretary's Standards* does not determine whether a project would cause a substantial adverse change in the significance of an historic resource. Rather, projects that comply with the *Secretary's Standards* benefit from a regulatory presumption under CEQA that they would have a less-than-significant adverse impact on an historic resource. Projects that do not comply with the *Secretary's Standards* may or may not cause a substantial adverse change in the significance of an historic resource.

The *Secretary's Standards* offers four sets of standards to guide the treatment of historic properties: Preservation, Rehabilitation, Restoration, and Reconstruction. The four distinct treatments are defined as follows:

> **Preservation**: The *Standards for Preservation* "require retention of the greatest amount of historic fabric, along with the building's historic form, features, and detailing as they have evolved over time."
>
> **Rehabilitation**: The *Standards for Rehabilitation* "acknowledge the need to alter or add to a historic building to meet continuing new uses while retaining the building's historic character."
>
> **Restoration**: The *Standards for Restoration* "allow for the depiction of a building at a particular time in its history by preserving materials from the period of significance and removing materials from other periods."

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Reconstruction: The *Standards for Reconstruction* "establish a limited framework for re-creating a vanished or non-surviving building with new materials, primarily for interpretive purposes."[8]

Typically, one set of standards is chosen for a project based on the project scope. In this case, the proposed project scope includes expansion of the cemetery to meet its continued use. Therefore, the *Standards for Rehabilitation* will be applied.

Standards for Rehabilitation

The following analysis applies each of the *Standards for Rehabilitation* to the proposed project at Mountain View Cemetery. This analysis is based upon design documents included in the Mountain View Cemetery CUP Application, which are included in the **Appendix** (item 4) to this report.

Rehabilitation Standard 1: *A property will be used as it was historically or be given a new use that requires minimal change to its distinctive materials, features, spaces and spatial relationships.*

The grading and improvements to the three plots of land are intended for the expansion of burial and interment plots within the Mountain View Cemetery boundaries, on land that has been reserved for this specific purpose. Therefore, the property will continue to be used as it was historically.

As designed, the proposed project will be in compliance with Rehabilitation Standard 1.

Rehabilitation Standard 2: *The historic character of a property will be retained and preserved. The removal of distinctive materials or alteration of features, spaces, and spatial relationships that characterize the property will be avoided.*

The historic character of the cemetery will be retained and preserved in the construction of this proposed expansion and grading project. The project location is a distance from the character-defining buildings near the entrance to the cemetery, and will not affect them in any way. The project design will retain the naturalistic design, winding roads, and picturesque vistas that characterize the property. Relatively minor changes will be made to existing roads and the grading plan will work to enhance the picturesque vistas from these new plots. This area is not completely undeveloped, as Plots 75 and 76 at the center-east edge of the site, located between Plots 82 and 98, were already landscaped and used for burial/interment during the 1970s. The grading and development of the three subject sites will therefore be consistent with the character of adjacent Plots 75 and 76. Lastly, bands of undeveloped hill will still exist between portions of the established cemetery and the new plots, namely north of Plot 82 and south/southwest of Plot 98 and the Panhandle, retaining some of the current appearance of undeveloped hill at the east end of the property (though this has not specifically been identified as a character-defining historic feature).

As designed, the proposed project will be in compliance with Rehabilitation Standard 2.

[8] Kay D. Weeks and Anne E. Grimmer, *The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring and Reconstructing Historic Buildings* (Washington, D.C.: U.S. Department of the Interior, 1995), 2.

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Rehabilitation Standard 3: *Each property will be recognized as a physical record of its time, place, and use. Changes that create a false sense of historical development, such as adding conjectural features or elements from other historical properties, will not be undertaken.*

The proposed project will not create a false sense of history, nor will it add conjectural historical features to the cemetery plan or design. The new plots will be somewhat separated from the most historic western portions of the cemetery. While the designs will take cues from the historic naturalistic curving roads and walkways and will continue the upward topographical slope to the east, each plot will have a contained design and will have modern design features for interment (such as the retaining/crypt wall or above-ground mausoleum or columbaria) that cannot be confused with the historic 1864 Olmsted portion of the cemetery or older twentieth century additions.

As designed, the proposed project will be in compliance with Rehabilitation Standard 3.

Rehabilitation Standard 4: *Changes to a property that have acquired significance in their own right will be retained and preserved.*

The original portion of Mountain View Cemetery and its buildings have been altered and new plot areas have been added or redesigned over its 150 year existence. Many of these areas have acquired significance in their own right because the property as a whole was identified as a historic district in the 1998 OCHS survey. However, the proposed project at the undeveloped eastern portions of the cemetery will not alter any existing buildings or burial/interment areas. All existing developed portions of the property will be preserved during the undertaking of this project.

As designed, the proposed project will be in compliance with Rehabilitation Standard 4.

Rehabilitation Standard 5: *Distinctive materials, features, finishes and construction techniques or examples of craftsmanship that characterize a property will be preserved.*

As explained in Standard 2, grading and landscape design at three plots within the undeveloped eastern portions of the property will not affect any surrounding contributing features to the historic district or individually significant buildings such that their materials, features, finishes, and construction techniques would be impacted. All existing buildings and features will be preserved during the construction of this project.

As designed, the proposed project will be in compliance with Rehabilitation Standard 5.

Rehabilitation Standard 6: *Deteriorated historic features will be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature will match the old in design, color, texture, and, where possible, materials. Replacement of missing features will be substantiated by documentary and physical evidence.*

The proposed project does not include alterations to existing historic features; therefore, Standard 6 is not applicable.

Rehabilitation Standard 7: *Chemical or physical treatments, if appropriate, will be undertaken using the gentlest means possible. Treatments that cause damage to historic materials will not be used.*

The proposed project does not entail the cleaning or repair of historic materials. Therefore, Standard 7 is not applicable.

Rehabilitation Standard 8: *Archeological resources will be protected and preserved in place. If such resources must be disturbed, mitigation measure will be undertaken.*

The proposed project does include excavation work as part of the grading scheme, particularly for Plots 82 and 98. According to communication with former City of Oakland planner Joann Pavlinec in 2012 regarding a different project at Mountain View Cemetery, Page & Turnbull confirmed that there was no ethnographic information, historical literature, or reports available for the immediate area at the Northwest Information Center of the Office of Historic Preservation that may have identified any archeological material. Jeff Lindeman, Executive Director of the Mountain View Cemetery, stated at the time that archeological material is not typically uncovered when excavation occurs regularly on the site.[9] Nevertheless, the City's regulations will require investigation and mitigation of any archeological remains that may be found.

Using proper mitigation procedures, the proposed project will be in compliance with Rehabilitation Standard 8.

Rehabilitation Standard 9: *New additions, exterior alterations, or related new construction will not destroy historic materials, features, and spatial relationships that characterize the property. The new work shall be differentiated from the old and will be compatible with the historic materials, features, size, scale, proportion, and massing to protect the integrity of the property and environment.*

The proposed project includes grading and development of currently undeveloped land at the eastern portion of the cemetery in order to expand the available area of burial/interment. Grading will be of a cut-and-fill method, shifting soil within the site, in order to create gentle to moderately sloped areas that will provide a vista to the west. The designs for Plots 82 and 98 will feature retaining walls, lawns, and walking/maintenance paths, with modified or improved perimeter roads. The design for the Panhandle has not yet been determined, as it is the final phase of the overall project.

None of these actions will destroy historic materials, features, and spatial relationships that characterize the property. As described above, the project location is a distance from the character-defining buildings near the entrance to the cemetery, and will not affect them. The project design will retain the naturalistic design, winding roads, and picturesque vistas that characterize the property but will be slightly removed from the established cemetery via bands of undeveloped hill at the north end of Plot 82 and southwest of Plot 98 and the Panhandle. Modern design features for interment, such as the retaining/crypt wall or any above-ground mausoleum or columbaria, will also differentiate these plots from the historic 1864 Olmsted portion of the cemetery or other earlier twentieth century additions. Nevertheless, the extended use as a cemetery necessitates a similar palate of materials, features, scale, and proportion for the designs of the plots as is used in the rest of

[9] Jay Turnbull, Principal of Page & Turnbull, letter to Joann Pavlinec, Planner IV City of Oakland, "Re: Mountain View Cemetery, Archeological Status," 12 July 2012.

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the cemetery. This land is already part of the cemetery property, so while changes will be made to the grading and the plots will be landscaped, general spatial relationships between the cemetery as a whole and its surrounding residential environment will not change.

As designed, the proposed project will be in compliance with Rehabilitation Standard 9.

Rehabilitation Standard 10: *New additions and adjacent or related new construction will be undertaken in such a manner that, if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.*

The proposed project does not include any alterations within the existing developed portions of the cemetery. Therefore, if in the future the proposed grading and landscape development of the three plots was removed and/or returned to its current state, the essential form and integrity of the historic property and its environment would be unimpaired.

As designed, the proposed project will be in compliance with Rehabilitation Standard 10.

ANALYSIS OF PROJECT-SPECIFIC IMPACTS UNDER CEQA

As the above analysis demonstrates, the project as currently designed appears to be in compliance with the *Secretary of the Interior's Standards for Rehabilitation*, and does not appear to affect the eligibility of the Mountain View Cemetery for listing in any local, state, or national historical registers. According to Section 15126.4(b)(1) of the CEQA Guidelines, if a project complies with the *Secretary's Standards*, the project's impact "will generally be considered mitigated below a level of significance and thus is not significant." Because the proposed project at Mountain View Cemetery complies with the *Secretary's Standards*, it does not appear to cause a significant adverse impact under CEQA.

ANALYSIS OF CUMULATIVE IMPACTS UNDER CEQA

CEQA defines cumulative impacts as follows:

> "Cumulative impacts" refers to two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts. The individual effects may be changes resulting from a single project or a number of separate projects. The cumulative impact from several projects is the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time.[10]

The proposed expansion project does not appear to adversely impact Mountain View Cemetery. No other projects or potential projects in or near the cemetery are known that would add to a cumulative impact. Therefore, the project does not appear to have any cumulative impacts as defined by CEQA.

[10] CEQA Guidelines, Article 20, subsection 15355.

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SUGGESTED MITIGATION

According to Section 15126.4 (b) (1) of the CEQA Guidelines: "Where maintenance, repair, stabilization, rehabilitation, restoration, preservation, conservation or reconstruction of the historical resource will be conducted in a manner consistent with the *Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings*, the project's impact on the historical resource will generally be considered mitigated below a level of significance and thus is not significant." Because the proposed project would not have a substantial adverse effect on a historic resource, no mitigation measures would be required.

CONCLUSION

Mountain View Cemetery includes several "A" rated buildings, according to the Oakland Cultural Heritage Survey of 1994 and 1998, and was determined to be an Area of Primary Importance (API). As such, the property is considered a historic resource for the purposes of CEQA review and the proposed grading and expansion project is subject to review by the City of Oakland for impacts to the historic resources.

As the above analysis demonstrates, the proposed project appears to comply with the *Secretary of the Interior's Standards for Rehabilitation* and does not adversely impact the Mountain View Cemetery or the significant buildings contained therein.

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

Primary # _____
HRI # _____
Trinomial _____
NRHP Status Code: 7

Other Listings OCHS API
Review Code _____ Reviewer _____ Date _____

*P1. a. Resource Identifier (assign a name or number): MVC - Mountain View Cemetery District
b. Other Identifier: 013 1126 MVC

*P2. Location: a. County Alameda
*b. Address 4499-5000 PIEDMONT AV
City Oakland, CA Zip 94611
*c. UTM: USGS 7.5' Quad Oakland East Date 1959 (1980) Zone: 10 567230 mE / 4188120mN
*d. Other Locational Data (e.g. parcel #, legal description, additional UTMs, etc.) OCHS 337A,804,825
UTMs: 2. 568030 mE/ 4187400 mN 3. 566700 mE/ 4187020 mN 4. 566400 mE/ 4187180 mN

*P3. a. Description (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, etc.):

The Mountain View Cemetery is a 200-acre cemetery in the lower Oakland hills below Piedmont, designed in 1864 by Frederick Law Olmsted in the naturalistic manner, with winding roads and picturesque vistas. There are three buildings near the gated entrance. On the right, the Mountain View Cemetery office is a one story red brick Gothic Revival building with concrete quoins, base and trim (see 5000 Piedmont Av/Admin). Straight ahead and slightly to the left the Mountain View Cemetery Chapel and Crematorium is also one story, red brick Gothic Revival with two port-cocheres and a square tower in the L (see 5000 Piedmont Av/Chapel). Both buildings were designed by Weeks and Day in 1929.

The large neoclassical columbarium and mausoleum is beyond the circular fountain. It is one and two stories, granite, with tall rectangular pilasters. The central entry is arched and recessed with columns. It was built in 1929 with additions through 1963. Interior corridors are lined in marble with arched and domed skylights of stained glass. A small chapel is immediately inside the entrance, and there are several interior fountains and pools. A newer Garden Mausoluem with reflecting pool is to the north.

At the top of the cemetery is "Millionaires' Row", a double row of large 19th

(see continuation page)

b. Resource attributes: HP39--funerary building
*P4. Resources present: / /Building / /Structure / /Object / /Site /X/District (API) / /Element of District / /Other

*P5. a. Photograph or Drawing

*P5. Photo: Number: 760-6
Photo date: 03/25/98

*P6. Date Constructed/Age; and Source:
/ /Prehistoric /X/Historic / /Both
1864-present F
secondary sources

*P7. Owner and Address:
Mountain View Cemetery

*P8. Recorded by (name, affiliation, address):
Oakland Cultural Heritage Survey, 250 Frank Ogawa Plaza Oakland 94612 (510-238-3941)

*P9. Date Recorded: 09/30/98

*P10. Type of Survey: / /Intensive /X/Reconnaissance / /Other

005, 9/30/98 (Citywide Recon.)
-81

Attachments: / /None /X/Location Map / /Sketch Map /X/Continuation Sheet / /Building, Structure, & Object Record / /Other

State of California - The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
CONTINUATION SHEET
Page P2 of 5

Primary # _____
HRI # _____

*Resource Name or #: 013 1126 MVC - -Mountain View Cemetery
4499-5000 PIEDMONT AV Oakland CA 94611

*Recorded by Oakland Cultural Heritage Survey *Date 09/30/98 /X/ Continuation /X/ Update

P3a. Description:

century mausoleums holding the remains of many of the Bay Area's early and most prominent families. These tombs represent a large range of style including Greek Revival, Gothic Revival, Romanesque, pyramid and the elaborate 70' Cogswell obelisk. Some are known to have been designed by prominent Oakland architects.

Grave stones span more than 130 years and represent a full range of style and funerary symbolism, including weeping angels, urns, drapes, cherubs and broken shafts. An avenue dedicated to Civil War soldiers is lined with cannon balls.

Immediately outside the gates at the head of Piedmont Avenue is Julia Morgan's Chapel of the Chimes (1927ff), also considered to contribute to the Mountain View Cemetery district.

Photo 760-7
Entrance to Mountain View Cemetery

State of California - The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
CONTINUATION SHEET

Primary # _____
HRI # _____

Page P3 of 5 *Resource Name or #: MVC - Mountain View Cemetery District

*Recorded by Oakland Cultural Heritage Survey *Date 09/30/98 /X/ Continuation / / Update

Preliminary Property List

Address	Prelim. Rating	Est. Date	Parcel Number
4529 HOWE ST/St. Mary's Off.	B-1+	1900s	048A 7002 001
4499 PIEDMONT AV	A1+	1927	013 1128 023
5000 PIEDMONT AV/MT.VIEW CEMETY.	A1+	1860s	048A 7002 003
5000 PIEDMONT AV/Chapel	A1+	1920s	048A 7002 003 G
5000 PIEDMONT AV/Admin	A1+	1920s	048A 7002 003 J

Photo 760-3
Fountain with
Columbarium-Mausoleum beyon

Photo 760-4
Cogswell obelisk in distance

State of California - The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
CONTINUATION SHEET
Page P4 of 5.

Primary # _____
HRI # _____

*Resource Name or #: 013 1126 MVC - -Mountain View Cemetery
4499-5000 PIEDMONT AV Oakland CA 94611

*Recorded by Oakland Cultural Heritage Survey *Date 09/30/98 /X/ Continuation /X/ Update

Photo 760-2
Various tombstones

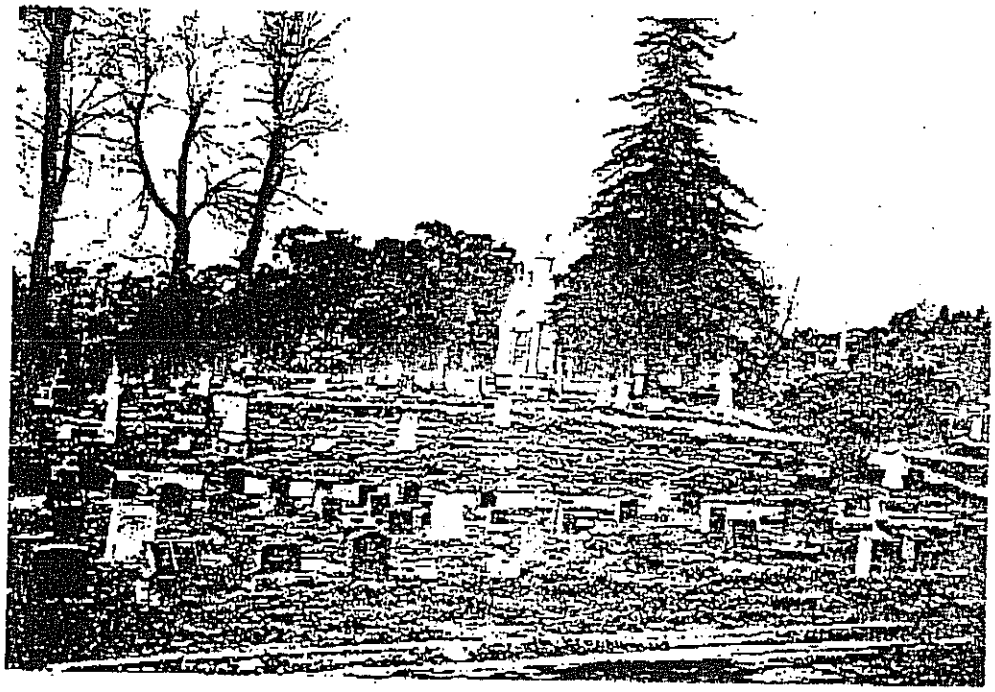
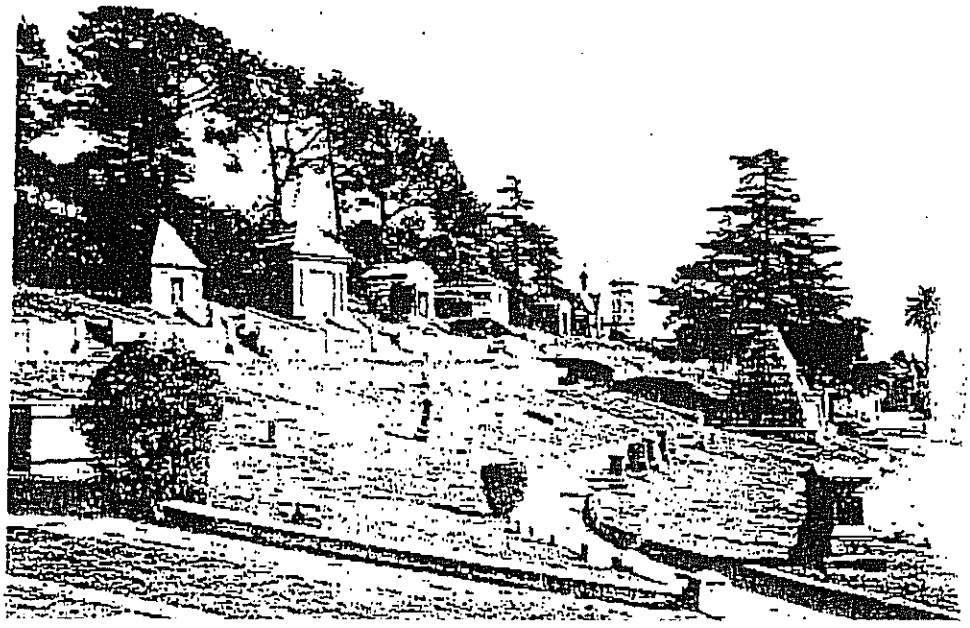


Photo 760-5
Below Millionaires' Row



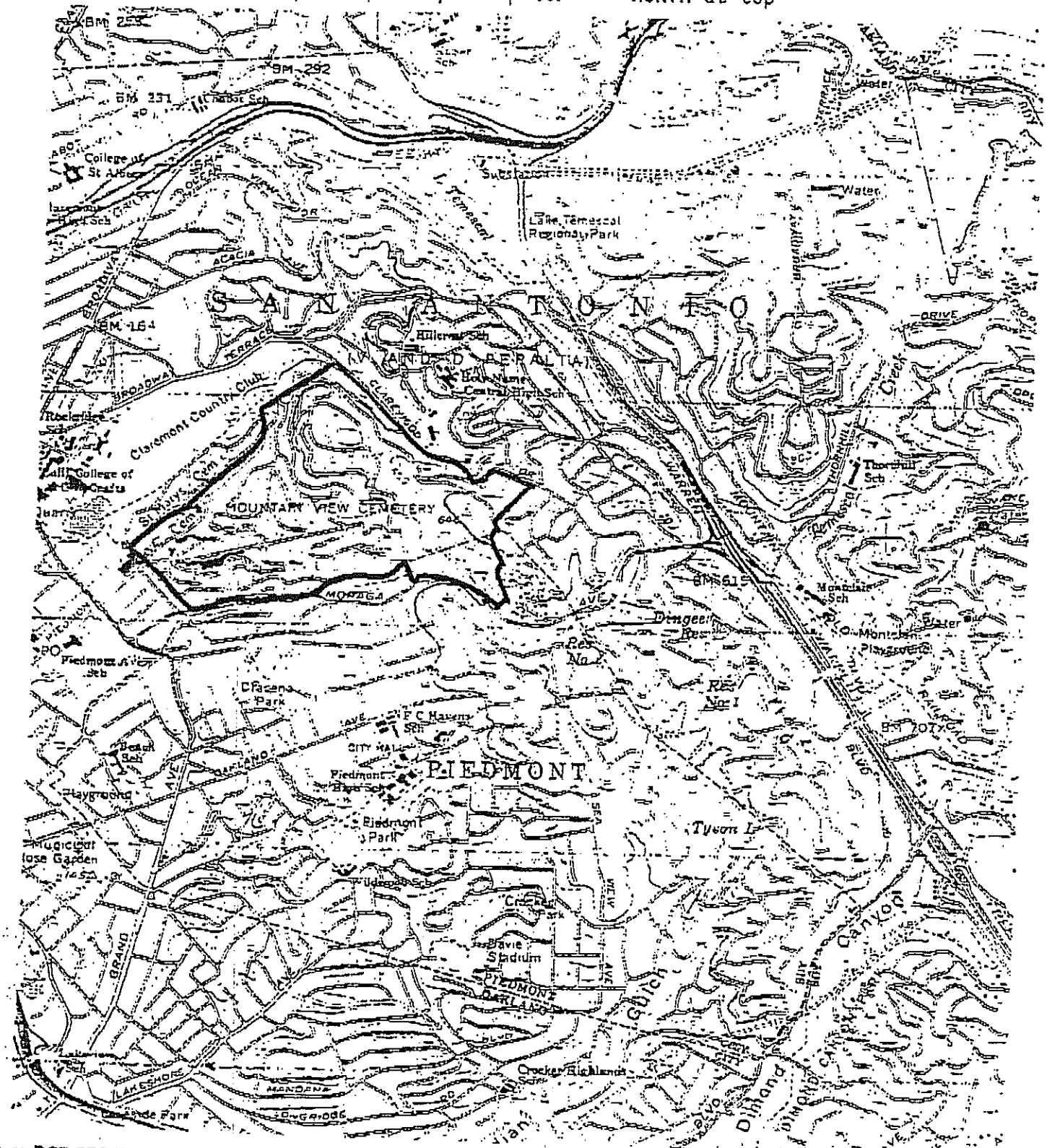
State of California - The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
LOCATION MAP
Page P5 of 5

Primary # _____
HRI # _____

*Resource Name or #: MVC - Mountain View Cemetery District
4499-5000 PIEDMONT AV Oakland CA 94611

*Map Name: Oakland East *Scale: 1:24,000 *Date of Map: 1959 (1980)
UTM(s): 10/567230 mE/4188120 mN 568000/4187400 566700/4187020 566400/4187180

0| 1000| 2000| 3000| 4000| 5000| feet NORTH at top



Substitute DPR 523J(1/95)

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

Primary # _____
HRI # _____
Trinomial _____
NRHP Status Code: 7

Page P1 of 1

Other Listings OCHS A1÷
Review Code _____ Reviewer _____ Date _____

*P1. a. Resource Identifier (assign a name or number): Serial No. 1459
b. Other Identifier: Mountain View Cemetery office

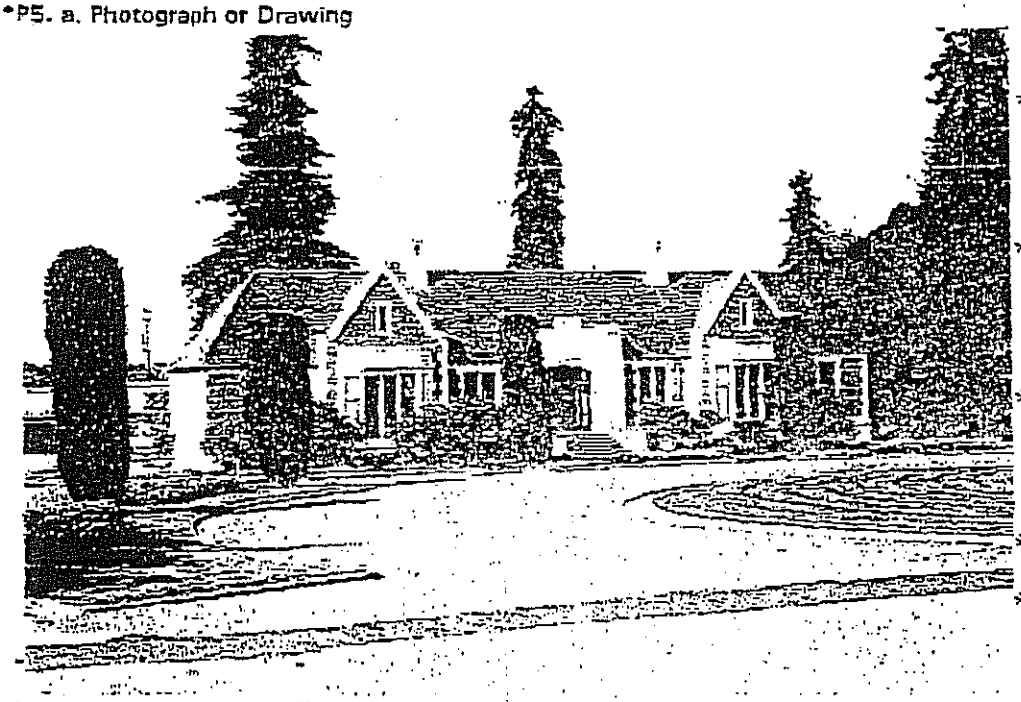
*P2. Location:
a. County Alameda
*b. Address 5000 PIEDMONT AV/Admin
City Oakland, CA Zip
*c. UTM: USGS 7.5' Quad Oakland East Date 1980; Zone: 10, 566590 mE / 4187210 mN
*d. Other Locational Data (e.g. parcel #, legal description, additional UTMs, etc.)
Parcel no.: 048A 7002 003 02 J

*P3. a. Description (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, etc.):

5000 PIEDMONT AV is a Gothic Revival funerary building in the Mountain View Cemetery-Chapel of the Chimes district. It is one story, T-shaped plan with pavilion and wings, on a multi-block cemetery parcel. It has a hip roof, gable-roofed shallow angled bays on either side of a raised monumental entry with deep concrete arch, and quoins at the building corners and all the edges of windows and bays. The bays have ornate concrete balconettes above, and slit windows and coping on the gable ends. Exterior walls are dark red brick with white mortar and much white cast concrete ornament. Roof is slate. Foundation is concrete. Structure is brick bearing wall. Sanborn maps describe it as 12" brick walls. The building has concrete base, tall leaded glass windows, and two decorated brick and concrete chimneys. Present use is Mountain View Cemetery office. Supportive elements include long-time occupancy and similar chapel building. Surroundings are open land. The building is in excellent condition; its integrity is excellent.

b. Resource attributes: HP39--funerary building
*P4. Resources present: /X/Building / /Structure / /Object / /Site / /District /X/Element of District (API) / /Other

*P5. a. Photograph or Drawing



P5. b. Photo number: 618-31
Photo date: 07/10/92

*P6. Date Constructed/Age, and Source:
/ /Prehistoric /X/Historic / /Both
1929 F
building permit

*P7. Owner and Address:
MOUNTAIN VIEW CEMETERY
5000 PIEDMONT AV
OAKLAND CA 94611

*P8. Recorded by (name, affiliation, address):
Oakland Cultural Heritage Survey, 1 City Hall Plaza, Oakland 94612 (510-238-3941)

*P9. Date Recorded: 09/30/94

*P10. Type of Survey: / /Intensive
/X/Reconnaissance / /Other

*P11. Report Citation: OCHS Completion Report, CLG Project #06-93-80101, 9/30/94 (URM Citywide)

*Attachments: /X/None / /Location Map / /Sketch Map / /Continuation Sheet / /Building, Structure, and Object Record / /Other

State of California - The Resources Ag
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary # _____
HRI # _____
Trinomial _____
NRHP Status Code: 7

Page P1 of 1

Other Listings OCHS A1+
Review Code _____ Reviewer _____ Date _____

*P1. a. Resource Identifier (assign a name or number): Serial No. 1460
b. Other Identifier: Mountain View Cemetery chapel &crematory
*P2. Location:
*b. Address 5000 PIEDMONT AV/Chapel
City Oakland, CA
a. County Alameda
Zip
*c. UTM: USGS 7.5' Quad Oakland East Date 1980; Zone: 10, 566640 mE / 4187300 mN
*d. Other Locational Data (e.g. parcel #, legal description, additional UTMs, etc.)
Parcel no.: 048A 7002 003 02 G

*P3. a. Description (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, etc.):

5000 PIEDMONT AV is a Gothic Revival funerary building in the Mountain View Cemetery-Chapel of the Chimes district. It is high one story, L-plan, on a multi-block cemetery parcel. It has a cross-gabled roof, square tower with elaborate Gothic cast concrete ornament, tall pointed-arch windows, and two monumental arched entry vestibules. Exterior walls are dark red brick with large amounts of cast concrete ornament. Roof is slate. Foundation is concrete. Structure is brick bearing wall and reinforced concrete. Sanborn maps describe it as 12" brick walls with rear crematorium wing of fireproof construction. The building has stained glass, concrete coping and buttresses, and quoins. Interiors are also notable. Present use is Mountain View Cemetery chapel. Supportive elements include landscaping, long-term occupancy, and similar office building about 250' away. Surroundings are open land, cemetery. The building is in excellent condition; its integrity is excellent.

b. Resource attributes: HP39--funerary building
*P4. Resources present: /X/Building / /Structure / /Object / /Site / /District /X/Element of District (API) / /Other

*P5. a. Photograph or Drawing

P5. b. Photo number: 618-34
Photo date: 07/10/92

*P6. Date Constructed/Age, and Source:
/ /Prehistoric /X/Historic / /Both
1929-30 F add 1940s?
building permit

*P7. Owner and Address:
MOUNTAIN VIEW CEMETERY
5000 PIEDMONT AV
OAKLAND CA 94611

*P8. Recorded by (name, affiliation, address
Oakland Cultural Heritage Survey, 1 City Hall Plaza, Oakland 94612 (510-238-3941)

*P9. Date Recorded: 09/30/94

*P10. Type of Survey: / /Intensive
/X/Reconnaissance / /Other

*P11. Report Citation: OCHS Completion Report, CLG Project #06-93-80101, 9/30/94 (URM Citywide)

*Attachments: /X/None / /Location Map / /Sketch Map / /Continuation Sheet / /Building, Structure, and Object Record / /Othe

Substitute DPR 523A-Test (ochsp1.frm, rev 7/31/94)

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

Primary # _____
HRI # _____
Trinomial _____
NRHP Status Code: 7

Page P1 of 1

Other Listings OCHS B-1+
Review Code _____ Reviewer _____ Date _____

*P1. a. Resource Identifier (assign a name or number): Serial No. 1423
b. Other Identifier: St. Mary's Cemetery lodge building

*P2. Location:
a. County Alameda
*b. Address 4529 HOWE ST/St. Mary's Off.
City Oakland, CA Zip 94611
*c. UTM: USGS 7.5' Quad Oakland East Date 1980; Zone: 10, 566415 mE / 4187330 mN
*d. Other Locational Data (e.g. parcel #, legal description, additional UTMs, etc.)
Parcel no.: 048A 7002 001 00

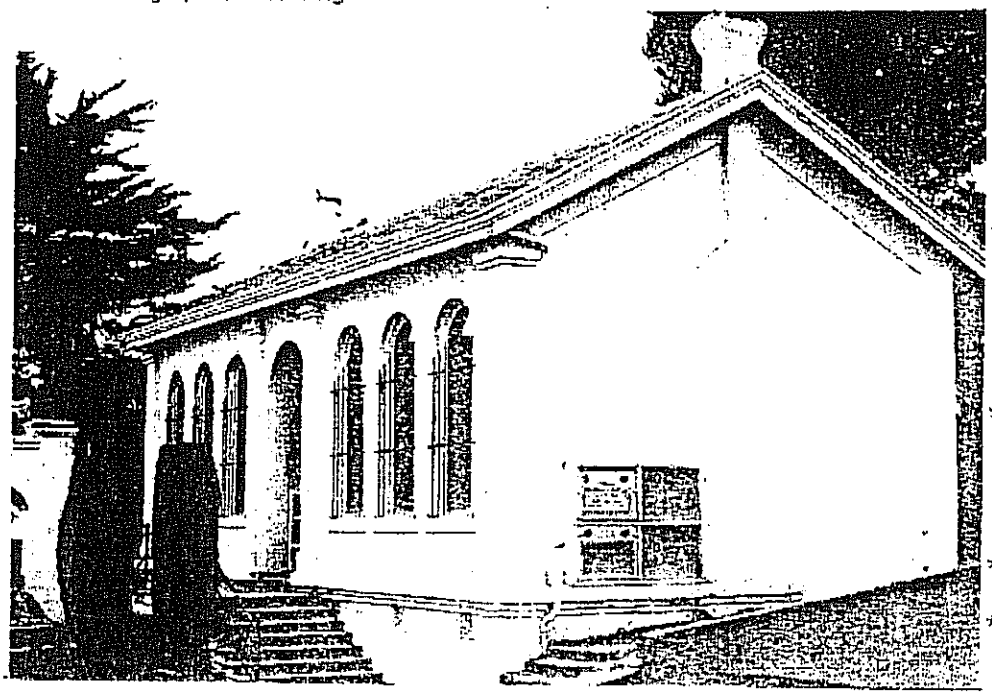
*P3. a. Description (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, etc.):

4529 HOWE ST is a small Romanesque revival funerary-utilitarian building in the Mountain View Cemetery-Chapel of the Chimes district. It is one story and slightly raised basement, T-plan, on a corner site just inside the gates of St. Mary's Cemetery. It has a side gabled roof with wide plain eaves, tall arched windows and door, and square pilasters dividing the facade into three parts (bays of three windows flanking a center recessed entry). Exterior walls are stucco over brick. Structure is brick bearing wall. Sanborn maps describe it as brick with wood cornice and 12" walls. The building has corbeled stucco chimneys at each end. Present use is cemetery, St. Mary's Cemetery office. Supportive elements include landscaping and monuments. Surroundings are open land (cemetery) and residential.

Visible alterations include new steps and railings, security grilles. The building is in excellent condition; its integrity is excellent.

b. Resource attributes: HP39--funerary building
*P4. Resources present: /X/Building / /Structure / /Object / /Site / /District /X/Element of District (API) / /Other

*P5. a. Photograph or Drawing



P5. b. Photo number: 617-3A
Photo date: 07/09/92

*P6. Date Constructed/Age, and Source:
/ /Prehistoric /X/Historic / /Both
1893 F
Edwards Transcript of Records

*P7. Owner and Address:
ROMAN CATHOLIC BISHOP OF OAKLAND
P O BOX 488
LAFAYETTE CA 94549

*P8. Recorded by (name, affiliation, address):
Oakland Cultural Heritage Survey, 1 City Hall Plaza, Oakland 94612 (510-238-3941)

*P9. Date Recorded: 09/30/94

*P10. Type of Survey: / /Intensive /X/Reconnaissance / /Other

*P11. Report Citation: OCHS Completion Report, CLG Project #06-93-80101, 9/30/94 (URM Citywide)

*Attachments: /X/None / /Location Map / /Sketch Map / /Continuation Sheet / /Building, Structure, and Object Record / /Other

Substitute DPR 523A-Test (ochsp1.frm, rev 7/31/94)

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DEPARTMENT OF PARKS AND RECR ON
BUILDING, STRUCTURE, AN OBJECT RECORD
Page B1 of 1

*NRHP Status Code: 4X
Local/Other Rating: B-1+

*Resource Name or #: Serial No. 1423
4529 HOWE ST/St. Mary's Off. Oakland CA 94611

B1. Historic Name: St. Mary's Cemetery lodge building
B2. Common Name: St. Mary's Cemetery office
B3. Original Use: Funerary B4. Present Use: Funerary/cemetery
*B5. Architectural Style: Romanesque revival
*B6. Construction History: built 1893
new steps and railings, security grilles
*B7. Moved? /X/No / /Yes / /Unknown Date: Original Location:
*B8. Related Features: landscaping

B9a. Architect: Clinch, Bryan J. b. Builder: McIntyre & Johnson

*B10. Significance: Theme: masonry buildings (civic and institutional) Area: Oakland
Period: 1850-1948 Property Type: funerary building N.R. Criteria: A,C
(Discuss importance in terms of context as defined by theme, period, and geographic scope. Also address integrity.)

4529 HOWE ST, the St. Mary's Cemetery lodge building, is a very good example of a Romanesque revival funerary building - utilitarian building. It was built in 1893, architect Bryan J. Clinch and builder McIntyre & Johnson. It is dated by Edwards Transcript of Records, valued at $2,200. Historically the building reflects civic institutions and activities, and immigrants and ethnic communities in Oakland. St. Mary's Cemetery, Oakland's Catholic cemetery, occupied this site adjoining the larger Mountain View Cemetery from about 1865 on. Its burials include members of the Peralta family and Oakland's large Irish, Italian, and Portuguese communities. The complex at the entrance to the 42-acre cemetery also includes an arched gate (Bryan Clinch, 1893) and a superintendent's residence behind the office. Bryan J. Clinch (c.1842-1906) was a leading late 19th century Catholic church architect in Northern California, and author of "California and its Missions."

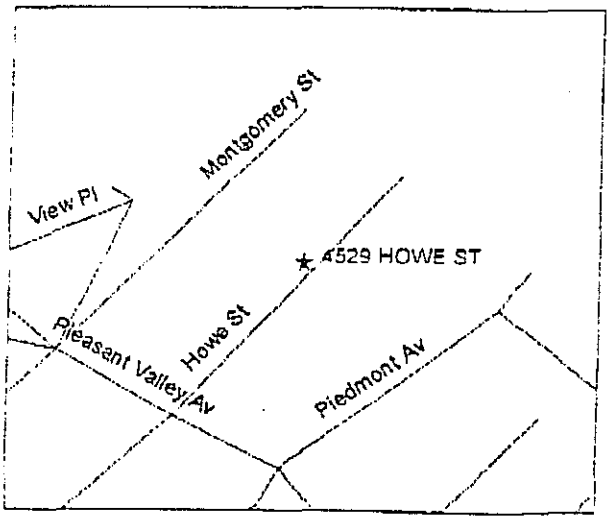
The Oakland Cultural Heritage Survey rates this property B-1+ (B, major importance, landmark quality), particularly for its design quality and designer. It is a contributor to the National Register quality Mountain View Cemetery-Chapel of the Chimes district (not yet documented; Area of Primary Importance: 1+). Its Survey rating makes it a historic property under Oakland's Historic Preservation Element. It meets the definition of a Historic Structure in the Oakland URM ordinance. This property appears eligible for the National Register as a contributor to a district that has not yet been fully documented.

B11. Resource Attributes: HP39--funerary building - utilitarian building
*B12. References:
City & county tax rolls & block books, 1869-1925; Sanborn maps, 1882-1970s; city directories & phone books; U.S. census; building & alt. permits; biographical & subject indexes, Oakland History Room

B13. Remarks:
Primary Record submitted 9/30/94.

*B14. Evaluator: Betty Marvin
*Date of Evaluation: 03/02/94
Date Recorded: 09/30/95
(This space reserved for official comments.)

(Sketch map, ^N^ north at top.)



Substitute DPR 523B(1/95) ochsbso.frm rev 9/16/95)

Mountain View CEMETERY

MOUNTAIN VIEW CEMETERY ASSOCIATION
5000 Piedmont Avenue,
Oakland, CA 94611-4294
Telephone: (510) 658-2588

HOURS:
Mon - Fri
8:00am - 4:30pm
Sat-Sun & Holidays
10:00am - 4:00pm

Mausoleum Hours:
Mon - Fri
8:00am - 4:30pm
Sat-Sun & Holidays
9:00am - 4:00pm

NONENDOWED

INTERMENTS
Lots and Graves

ENTOMBMENTS
Crypts in Mausoleum
and Garden Mausoleum

CREMATION AND INURNMENTS
Niches in Columbarium

NO OUTSIDE AFFILIATIONS

Name _____

Plot _____ Lot _____ Grave _____

Section _____ Crypt Niche _____ Tier _____

The Mountain View Cemetery Association was organized in 1863 by a group of East Bay Pioneers under the California Rural Cemetery Act of 1859. The Association operates without profit, there being no stockholders. It is governed by a board of trustees, with the aim to provide and perpetuate a Memorial Park which will always be a credit to the community.

Appendix 4.4B

Cultural Resources Assessment Report

William Self Associates, Inc., December 2014

CULTURAL RESOURCES ASSESSMENT REPORT

Mountain View Cemetery Burial Expansion Project
Oakland, Alameda County, California

PREPARED FOR:

Lamphier-Gregory
1944 Embarcadero
Oakland, CA 94606

ON BEHALF OF:

Mountain View Cemetery
5000 Piedmont Avenue
Oakland, CA 94611

PREPARED BY:

WILLIAM SELF ASSOCIATES, Inc.
PO Box 2192
Orinda, CA 94563

WSA

December 2014

CULTURAL RESOURCES ASSESSMENT REPORT

Mountain View Cemetery Burial Expansion Project
Oakland, Alameda County, California

PREPARED BY:

Teresa Bulger, Ph.D., Tom Young, B.A., and Nazih Fino, M.A.

SUBMITTED BY:

James M. Allan, Ph.D., Principal Investigator

WSA PROJECT NO. 2014-98
WSA REPORT NO. 2014-72

December 2014

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Management Summary

William Self Associates, Inc. (WSA) has been contracted by Lamphier-Gregory on behalf of the Mountain View Cemetery to perform a cultural resource assessment of the proposed Mountain View Cemetery Burial Site Expansion Project (Project). The Project includes development at three separate but interrelated development sites in the northeastern portion of the Mountain View Cemetery (Cemetery) property that are targeted at creating new burial locations. The Project will involve a grading operation in New Plot 82, where a retaining wall, amphitheater, and other design improvements will be installed; a grading and filling operation in Plot 98 as well as design improvements; and a grading and filling operation in the Panhandle area. All soil stabilization and grading work is planned within the Oakland portion of the property, however, depending on final grading plans, finish grading work may extend slightly across into the City of Piedmont portion of the Panhandle site.

This Cultural Resources Assessment Report (CRAR) defines the Project area, presents the results of the records search, describes and evaluates newly recorded sites located during a field survey of the Project area, assesses the potential Project impacts to any potentially significant resources, and recommends mitigation to reduce impacts to a less-than-significant level.

A records search conducted by WSA staff archaeologist Christina Alonso at the Northwest Information Center (NWIC) at Sonoma State University, Rohnert Park, indicated that the Project area had not been previously surveyed. No archaeological sites have been previously recorded within the Project area, though one potential cultural resource is located within the Cemetery property. Three historic buildings have been recorded within ¼-mile of the Project area. An additional seven historic buildings located within ¼-mile of the Project area are listed in the Office of Historic Preservation (OHP) Historic Properties Directory. WSA archaeologist, Tom Young conducted a pedestrian field reconnaissance of the Project area on October 21, 2014. No prehistoric or historic cultural resources were observed. Page and Turnbull will analyze the potential impacts of the proposed Project on the historic significance and character-defining features of the Cemetery.

Should any previously unknown historical resources be discovered during construction, their potential significance would have to be determined in relation to the criteria for eligibility for the California Register of Historical Resources.

1.0 Introduction

The Mountain View Cemetery (Cemetery) is an Oakland institution dating back to 1863. The present Cemetery site was designed in 1865 by renowned landscape architect Frederick Law Olmsted as a site for future burials and related services. The Cemetery occupies a site of approximately 226 acres, surrounded by the Claremont Country Club to the north, the City of Piedmont to the south, and Oakland Residential neighborhoods to the east and west. Approximately 2/3^{rds} of the lower portions of the Cemetery has been improved with access roads, landscaping, and burial plots. The easterly, or upper 1/3rd, of the Cemetery remains largely undeveloped. The Cemetery is topographically interesting, located on the western face of the Berkeley Hills and rising from 200 feet (ft.) above mean sea level at its main entrance at the east end of Piedmont Avenue, to an elevation of 650 ft. near the eastern edge of Clarewood Avenue. The objective of the Mountain View Cemetery Burial Expansion Project (Project) is to develop portions of the undeveloped upper third of the Cemetery's site.

1.1 Project Location

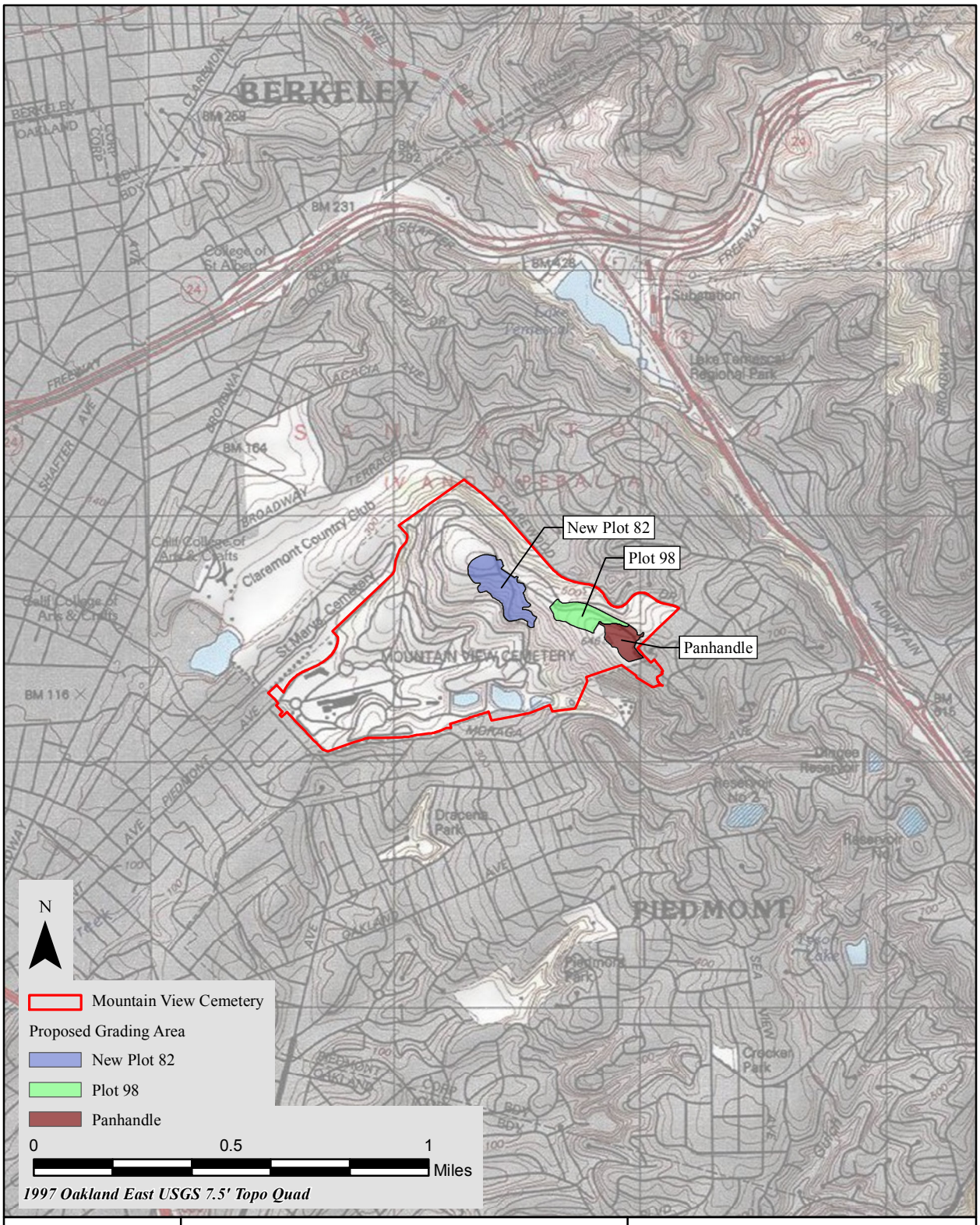
The Cemetery, at 5000 Piedmont Avenue, is situated on the western slope of the Berkeley Hills. The Cemetery is situated in Oakland between Piedmont Avenue on the west and Clarewood Avenue the east, as depicted on the Oakland East US Geological Survey 7.5 minute topographic quadrangle (USGS 1997) (Figures 1 and 2). The Project area encompasses 7.13 acres in the eastern, upland portion of the Cemetery, above the currently developed portion of the property (Figure 3).

1.2 Project Description

The Project will involve cutting, filling, and landscape engineering to depths of up to 18 ft. within a 7.13-acre area including New Plot 82 (2.68 Acres), Plot 98 (2.04 Acres), and the Panhandle (2.41 Acres) (refer to Figure 3). Within the New Plot 82, development will involve a grading operation to a depth of approximately 15-18 ft., the excavation of keyways and construction of subdrains, the engineering of the area for burial vaults, the construction of a retaining wall along the hillside, relocating roadways and pathways, and the construction of a small amphitheater as a design feature of the retaining wall. Within the central site, Plot 98, development will involve the temporary removal of unconsolidated soil and artificial fill, excavation of keyways and construction of subdrains, filling of the area for use as a new burial site, construction of a retaining wall for the fill, construction of a pedestrian pathway, improvements to the existing roadway, and construction of a memorial wall. Within the southeastern-most site, The Panhandle, development will involve the temporary removal of unconsolidated soil and artificial fill excavation of keyways and installation of subdrains, and filling of the area for potential future use as a burial site.

WSA	Project Vicinity Map	Figure 1 Lamphier-Gregory Mountain View Cemetery Project Alameda County, CA

WSA	Project Area Map	Figure 2 Lamphier-Gregory Mountain View Cemetery Project Alameda County, CA



WSA

Project Location Map

Figure 3
Lamphier-Gregory
Mountain View Cemetery Project
Alameda County, CA

1.3 Project Goals and Objectives

The primary objectives of the Project are to develop portions of the eastern, upland portion of the Cemetery to accommodate future needs for additional burial sites. While the upland portion of the Cemetery is presently very steep, the Project would result in creating moderately flat burials sites, with a gentle pitch toward the southwest, toward the San Francisco Bay.

2.0 Regulatory Context

The following regulations from the State Public Resources Code (PRC), the California Code of Regulations (CCR) and the California Environmental Quality Act (CEQA), and the California Penal Code apply:

PRC, Division 5, Chapter 1, Article 1, Section 5020.1 defines terms, including the following: (f) "DPR Form 523" means the Department of Parks and Recreation Historic Resources Inventory Form; (i) "historical resource" includes, but is not limited to, any object, building, structure, site, area, place, record, or manuscript which is historically or archaeologically significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California; (j) "local register of historical resources" means a list of properties officially designated or recognized as historically significant by a local government pursuant to a local ordinance or resolution; (l) "National Register of Historic Places" means the official Federal list of districts, sites, buildings, structures, and objects significant in American history, architecture, archaeology, engineering, and culture as authorized by the National Historic Preservation Act of 1966 (Title 16 United States Code Section 470 et seq.); (q) "substantial adverse change" means demolition, destruction, relocation, or alteration such that the significance of an historical resource would be impaired.

PRC, Division 5, Chapter 1, Article 2, Section 5024.1 establishes a California Register of Historical Resources; sets forth criteria to determine significance; defines eligible properties; lists nomination procedures.

PRC, Division 5, Chapter 1.7, Section 5097.5 establishes that unauthorized removal of archaeological resources on sites located on public lands is a misdemeanor. As used in this section, "public lands" means lands owned by, or under the jurisdiction of the state, or any city, county, district, authority or public corporation, or any agency thereof.

PRC, Division 5, Chapter 1.75, Section 5097.98 prohibits obtaining or possessing Native American artifacts or human remains taken from a grave or cairn; sets penalties.

PRC, Division 13, Chapter 2.6, Section 21083.2 establishes that the CEQA lead agency determines whether a project may have a significant effect on unique archaeological resources. If a potential for damage to unique archaeological resources can be demonstrated, such resources must be avoided; if they can't be avoided, mitigation measures will be required; discusses excavation as mitigation; discusses cost of mitigation for several types of projects; sets time frame for excavation; defines "unique and non-unique archaeological resources," provides for mitigation of unexpected resources.

PRC, Division 13, Chapter 2.6, Section 21084.1 establishes that a project may have a significant effect on the environment if it causes a substantial change in the significance of a historic resource; the section further describes what constitutes a historic resource and a significant historic resource.

California Penal Code, Title 14, Section 622.5 establishes that anyone who damages an item of archaeological or historic interest is guilty of a misdemeanor.

CCR, Title 14, Division 6, Chapter 3 (CEQA Guidelines), Sections 15000, et seq., Appendix G (j), specifically defines a potentially significant environment effect as occurring when the Proposed Project would "...disrupt or adversely affect...an archeological site, except as part of a scientific study."

CCR, Title 14, Division 6, Chapter 3 (CEQA Guidelines), Article 5, Section 15064.5, specifically addresses effects on historic and prehistoric archaeological resources, in response to problems that have previously arisen in the application of CEQA to those resources.

3.0 Project Setting

3.1 Environmental Setting

The San Francisco Bay region is defined by the San Francisco Peninsula on the southwest, the Marin Peninsula on the northwest, and the Berkeley Hills and the Diablo Range on the east. The heart of the region is the San Francisco Bay system, which occupies a late Pliocene trough that flooded repeatedly during the Pleistocene interglacials, the last flooding occurring approximately 10,000 years ago. This trough extends to the south where it forms the Santa Clara and San Benito valleys and to the north where it forms the Petaluma, Napa, and Sonoma valleys (Moratto 1984:219). About 15,000 years ago the coastal shoreline extended more than 15 miles west of today's coastline. The California River flowed through the gorge that is now the Golden Gate and across what is today's submerged continental shelf, finally reaching the ocean far west of today's coastline (Moratto 1984:219).

Approximately 8,000 years ago, with the rising sea levels associated with the melting of continental glaciers, marine waters began to invade the San Francisco trough, creating a lush and bountiful marshland environment on the shores surrounding a newly-created bay. Elk, deer, and waterfowl inhabited the marshlands and surrounding environs. The waters of the bay and ocean produced abalone, oyster, mussels, clams, salmon, sturgeon, seabass, shark, perch, and many other fish species. Tule and marsh grasses provided raw material for a variety of implements fashioned by the earliest inhabitants.

The flanks of the coastal mountain ranges provide the biotic zone of the coastal grasslands. These mountain ranges are the product of tectonic activity caused by the collision of the Pacific continental plate and the continent of North America. A variety of geological composition and soil variability are the result of this activity. The geologic foundation underlying the coastal grasslands is largely granite bedrock intermixed with large areas of sedimentary shales, sandstones and composites of igneous rock (Brown 1997:86). Mineral resources for both tool manufacture and trade were abundant. Obsidian, prized for projectile points and blades, was available to the north at Anadel and Napa's Glass Mountain. Franciscan chert was found locally in streambeds and rock outcroppings while banded Monterey chert could be found in coastal deposits to the south (Moratto 1984:221).

Native grasses covered the middle-elevation hillsides in the coastal areas prior to the late 18th century. The grasses now covering the coastal grassland region are not the same as those that would have been found in the area 250 years ago. Although the types of animals inhabiting the coastal regions before the influx of humans are largely known, the type of plants that may have occupied the coastal grassland is not as well defined.

Annual precipitation in the San Francisco Bay region varies from 20 to 40 in. with precipitation concentrated in the fall, winter, and spring months. This climate is much like that found in the Mediterranean: mild, rainy winters, and warm, dry summers. After the first rain at the end of October or early November, the vegetation becomes and remains green, but not growing, until late February, when it begins to grow rapidly. By early May, grasses have usually changed to dry golden-colored and remain that way until fall (Brown 1985:86). Due to the cooling effects of the local Bay environment, temperatures in the Project area are mild in the summer, usually averaging 55-65°F (Moratto 1984:223).

3.2 Cultural Setting

Prehistoric Background

Research into local prehistoric cultures began in the early 1900s with the work of N. C. Nelson of the University of California at Berkeley. Nelson documented 425 shellmounds along the Bay shore and adjacent coast when the Bay was still ringed by salt marshes three to

five miles wide (Nelson 1909:322-331). He maintained that the intensive use of shellfish, a subsistence strategy reflected in both coastal and bay shoreline middens, indicated a general economic unity in the region during prehistoric times, and he introduced the idea of a distinct San Francisco Bay archaeological region (Moratto 1984:227). Three sites, in particular, provided the basis for the first model of cultural succession in Central California, the Emeryville Shellmound (CA-ALA-309), the Ellis Landing Site (CA-CCO-295), and the Fernandez Site (CA-CCO-259) (Moratto 1984:227).

Investigations into the prehistory of the Central Valley of California, presaged by early amateur excavations in the 1890s, began in earnest in the 1920s. In the early 20th century, Stockton-area amateur archaeologists J. A. Barr and E. J. Dawson separately excavated a number of sites in the Central Valley and made substantial collections. On the basis of artifact comparisons, Barr identified what he believed were two distinct cultural traditions, an early and a late. Dawson later refined his work and classified the Central Valley sites into three "age-groups" (Schenck and Dawson 1929:402).

Professional or academic-sponsored archaeological investigations in central California began in the 1930s, when J. Lillard and W. Purves of Sacramento Junior College formed a field school and conducted excavations throughout the Sacramento Delta area. By seriating artifacts and mortuary traditions, they identified a three-phase sequence similar to Dawson's, including Early, Intermediate, and Recent cultures (Lillard and Purves 1936). This scheme went through several permutations (see Lillard et al. 1939; 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 (Beardsley 1948, 1954). The resulting scheme came to be known as the Central California Taxonomic System (CCTS) (Fredrickson 1973; Hughes 1994:1). Subsequently, the CCTS system of Early, Middle, and Late Horizons was applied widely to site dating and taxonomy throughout central California.

As more data were acquired through continued fieldwork, local exceptions to the CCTS were discovered. The accumulation of these exceptions, coupled with the development of radiocarbon dating in the 1950s and obsidian hydration analysis 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.

In the 1960s and 1970s, archaeologists including Ragir (1972) and Fredrickson (1973) revised existing classificatory schemes and suggested alternative ways of classifying the prehistory of California. Fredrickson (1973:113-114) proposed four "major chronological periods" in prehistoric California: the Early Lithic Period (described as hypothetical), a Paleoindian Period, an Archaic Period, and an Emergent Period. The Archaic and Emergent Periods were further divided into Upper and Lower periods. Subsequently, Fredrickson

(1974, 1994) subdivided the Archaic into Lower, Middle, and Upper. Milliken et al. (2007) have recently updated and further refined this scheme.

A series of "patterns," emphasizing culture rather than temporal periods, can be identified throughout California prehistory. Following Ragir, Fredrickson (1973:123) proposed that the nomenclature for each pattern relates to the location at which it was first identified, such as the Windmiller, Berkeley, and Augustine Patterns.

Various modifications of the CCTS (e.g., Bennyhoff and Hughes 1987; Fredrickson 1973, 1974; Milliken and Bennyhoff 1993) sustain and extend the system's usefulness for organizing our understanding of local and regional prehistory in terms of time and space. The cultural patterns identified in the Bay Area that in a general way correspond to the CCTS scheme are the Berkeley and Augustine patterns (for information on the Berkeley and Augustine Patterns see Fredrickson 1973, Milliken et al. 2007, Moratto 1984 and Wiberg 1997). Dating techniques such as obsidian hydration analysis or radiometric measurements can further increase the accuracy of these assignments.

Most recently, Milliken et al. (2007:99-123) developed what they term a "hybrid system" for the San Francisco Bay Area, combining the Early-Middle-Late Period temporal sequence with the pattern-aspect-phase cultural sequence. Dating of the cultural patterns, aspects, and phases was based on Dating Scheme D of the CCTS, developed by Groza (2002). Groza directly dated over 100 Olivella shell beads, obtaining a series of AMS radiocarbon dates representing shell bead horizons. The new chronology she developed has moved several shell bead horizons as much as 200 years forward in time.

Milliken et al.'s (2007) San Francisco Bay Area Cultural Sequence includes:

Early Holocene (Lower Archaic) from 8000 to 3500 B.C.
Early Period (Middle Archaic) from 3500 to 500 B.C.
Lower Middle Period (Initial Upper Archaic) from 500 B.C. to A.D. 430
Upper Middle Period (Late Upper Archaic) from A.D. 430 to 1050
Initial Late Period (Lower Emergent) from A.D. 1050 to 1550
Terminal Late Period, post-A.D. 1550

No archaeological evidence dating to pre-8000 B.C. has been located in the Bay Area. Milliken et al. (2007) posit that this dearth of archaeological material may be related to subsequent environmental changes that submerged sites, buried sites beneath alluvial deposits, or destroyed sites through stream erosion. A brief summary of the approach presented by Milliken et al. (2007) follows.

A "generalized mobile forager" pattern marked by the use of milling slabs and handstones and the manufacture of large, wide-stemmed and leaf-shaped projectile points emerged around the periphery of the Bay Area during the Early Holocene Period (8000 to 3500 B.C.). Beginning around 3500 B.C., evidence of sedentism, interpreted to signify a regional symbolic integration of peoples, and increased regional trade emerged. This Early Period lasted until ca. 500 B.C. (Milliken et al. 2007:114, 115).

Milliken et al. (2007:115) identify "a major disruption in symbolic integration systems" circa 500 B.C., marking the beginning of the Lower Middle Period (500 B.C. to A.D. 430). Bead Horizon M1, dating from 200 B.C. to A.D. 430, is described by Milliken et al. (2007:115) as marking a 'cultural climax' within the San Francisco Bay Area.

The Upper Middle Period (A.D. 430 to 1050) is marked by the collapse of the Olivella saucer bead trade in central California, abandonment of many Bead Horizon M1 sites, an increase in the occurrence of sea otter bones in those sites that were not abandoned, and the spread of the extended burial mortuary pattern characteristic of the Meganos complex into the interior East Bay. Bead Horizons M2 (A.D. 430 to 600), M3 (A.D. 600 to 800), and M4 (A.D. 800 to 1050) were identified within this period (Milliken et al. 2007:116).

The Initial Late Period, dating from A.D. 1050 to 1550, is characterized by increased manufacture of status objects. In lowland central California during this period, Fredrickson (1973, 1994) noted evidence for increased sedentism, the development of ceremonial integration, and status ascription. The beginning of the Late Period (ca. A.D. 1000) is marked by the Middle/Late Transition bead horizon. The Terminal Late Period began circa A.D. 1550 and continued until European settlement of the area.

Ethnographic Background

This section provides a brief summary of the ethnography of the Project vicinity 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 (1970), 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 1970:462-473). 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 actually designates a family of eight languages.

Tribal groups occupying the area from the Pacific Coast to the Diablo Range and from San Francisco to Point Sur spoke the other seven languages of the Costanoan family. 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 Augustine Pattern previously described (Levy 1978:486).

Although linguistically linked as a family, the eight Costanoan languages actually 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. These groups were independent political entities, each occupying specific territories defined by physiographic features. Each group controlled access to the natural resources of its territory, which also included one or more permanent villages and numerous smaller campsites used as needed during a seasonal round of resource exploitation. Chochenyo or East Bay Costanoan was the language spoken by the estimated 2,000 people who occupied the "east shore of San Francisco Bay between Richmond and Mission San Jose, and probably also in the Livermore Valley" (Levy 1978:485).

A chief, who inherited the position patrilineally and could be either a woman or man, provided leadership. The chief and a council of elders served mainly as community advisers. Specific responsibility for feeding visitors, providing for the impoverished and directing ceremonies, hunting, fishing, and gathering fell to the chief. Only during warfare was the chief's role as absolute leader recognized by group members (Levy 1978:487).

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 1970:468).

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).

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 largely eradicate the aboriginal life ways. Brought into the missions, the surviving Ohlone, along with the Esselen, Yokuts, and Miwok, were transformed from hunters and gatherers into agricultural laborers (Levy 1978; Shoup et al. 1995). Following secularization of the mission system in the 1830s, numerous ranchos were established in the 1840s. Generally, the few Indians 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 are active participants in the monitoring and excavation of archaeological sites.

Historic Background

The historic period in the eastern San Francisco Bay region began with the Fages-Crespi expedition of 1770. The Fages party explored the eastern shore of San Francisco Bay, eventually reaching the location of modern Fremont, where they traded with the local Costanoans. Members of the expedition eventually sighted the entrance to San Francisco Bay from the Oakland Hills. In 1772, a second Fages expedition traveled from Monterey through what are now Milpitas, San Lorenzo, Oakland, and Berkeley, finally reaching Pinole on March 28, 1772 (Cook 1957:131). From there they traveled through the locations of today's Rodeo and Crockett to Martinez, made a brief foray into the delta region of the Central Valley, and then camped somewhere near Pittsburg or Antioch. On March 31, the Fages party began the return journey to Monterey. They traveled to the vicinity of today's Walnut Creek, turned south, and then made their way to the Danville area, where they spent the night. On April 1st, they passed through today's San Ramon, Dublin, and Pleasanton, finally arriving back in the area of Milpitas on the following day.

In 1776, the Anza-Font expedition traveled through the same area and also traded with residents of native villages encountered along the way. The most significant impact of the European presence on the local California natives, however, was not felt until the Spanish missions were established in the region (Cook 1957:132).

In 1775, Captain Juan Manuel Ayala's expedition studied the San Francisco Bay and ventured up the Sacramento and San Joaquin rivers. The first mission in the region was established the following year with the completion of Mission San Francisco de Asis

(Mission Dolores) in San Francisco. Mission Santa Clara followed in 1777, and Mission San Jose in 1797. The Mission era lasted approximately 60 years and proved to be the downfall of the native inhabitants of the region, who were brought to the missions to be assimilated into a new culture as well as to provide labor for the missionaries. Diseases introduced by the early explorers and missionaries, and the contagions associated with the forced communal life at the missions killed a large number of local peoples, while changes in land use made traditional hunting and gathering practices increasingly difficult. Cook (1976) estimates that by 1832, the Costanoan population had been reduced from a high of over 10,000 in 1770 to less than 2,000.

In 1820, Sergeant Luis Maria Peralta received a grant of "10 square leagues" of land in the East Bay in recognition of his long, faithful military service in California. Peralta named his grant Rancho San Antonio. It comprised the land that lay from the water's edge to the crest of the Oakland hills between San Leandro Creek to the south and El Cerrito Creek to the north (Hendry and Bowman 1940), completely encompassing modern-day Oakland, Berkeley, Emeryville, Piedmont, Albany, Alameda, and a portion of San Leandro (Sher 1994:9).

Following the U.S. takeover of Alta California from Mexico in 1848, rancho lands began to be divided up and generally overrun by Anglo immigration to the area that was coincident with the land boom following the Gold Rush of 1849. Rancho San Antonio suffered the fate of most Mexican land grants in northern California, with squatters taking quasi-legal title to lands, and the courts denying title to the original grantees (Hendry and Bowman 1940).

Early surveyors mapped parts of Oakland just after the time that Peralta's dominance began to give way to recently-settled American interests. The 1856 Survey of the Coast of the United States depicts the area that would become known as downtown and West Oakland. Although streets had been laid out near Broadway, much of the dry land remained covered in groves of oaks and was relatively unpopulated. Marshland extended as far north as modern-day Fifth Street in several locations, and Gibbons Pier, located at the end of Seventh Street, was the only sign of the industry to come. Oakland's early growth was concentrated near the wharves and rail lines that eventually transformed the rural outpost into a transportation center for both passengers and goods.

The first growth period followed the completion of the San Francisco & Oakland Railroad (SF&ORR) along Seventh Street in 1863, connecting Oakland to San Francisco by way of San Jose and enticing real estate speculators who saw the area as ideal for development. Only six years after the local rail connection was completed, the Big Four (Collis Huntington, Leland Stanford, Charles Crocker and Mark Hopkins) made a decision that would shape Oakland's future. The Central Pacific Railroad would locate the western terminus of its transcontinental route at Oakland Point (Scott 1959:48). Buildings were clustered at the foot of Broadway as well as at the end of the alignment of Seventh Street, where wharves

extended into the bay. The businesses and residents that would soon fill the area, however, did not yet surround the local and transcontinental rail lines. City streets had been surveyed, although many blocks remained wooded or had become home to only small numbers of people. The large lots characteristic of a more rural settlement pattern were still present, and the northeastern portions of the city were growing far slower than downtown and West Oakland.

As Oakland grew, the need to find a suitable place to bury the dead was a persistent issue. Two early cemetery plots designated within the city were outgrown by 1863. That year, the Mountain View Cemetery Association was established. Renowned landscape architect Frederick Law Olmsted was commissioned to design the cemetery in 1865. In 1865, the 220-acre Cemetery was dedicated, including much of the present-day Project area.

By the turn-of-the-century, electric railways connected the most densely populated areas of Oakland to the outlying suburbs. Some previously urban middle-class families now chose a suburban life in the relatively open spaces of the East Bay, and the 1906 earthquake further encouraged some urban residents to relocate to outlying areas. One of these electric railways ran up Piedmont Avenue in Oakland and served the Cemetery.

Near the Project area, the neighborhood of Piedmont began as a resort known as Piedmont Park (Bagwell 1982:120). Its mineral springs and hotel catered to tourists and locals looking for a respite from city life. The Piedmont Land Company was largely responsible for transforming the small resort destination into a suburban neighborhood during the final decades of the 19th and the early 20th centuries (Bagwell 1982:120).

This 1873 description of the Piedmont area by travel writer and New York journalist Charles Nordoff (1873:62-63) provides an idea of how far the suburbs felt from the larger city until roads and electric rail lines provided a reliable connection.

> Outside of Oakland we drove for three or four miles over an admirable road, built through a difficult piece of country by a company only to make a new watering place accessible [possibly Piedmont Springs].
>
> Most of these roads are macadamized; private enterprise provides steam stone-crushers and steam rollers; and you see constantly, near Oakland, heavy wagons laden with crushed stone, which is brought from a distance of three or four miles.

The source of at least some of the crushed stone used on local roadways was likely the Alameda Paving Company quarry that was located about a mile south of the Project area. By the 1920s, the neighborhoods north and east of the densely populated portions of the city were being incorporated into the larger metropolitan area. By 1915, the USGS Concord topographic map depicts the Cemetery as increasingly surrounded by suburban development

(Figure 4). The land to the southeast had been designated as the Thornhill neighborhood, while the neighborhood of to the south was designated as Piedmont.

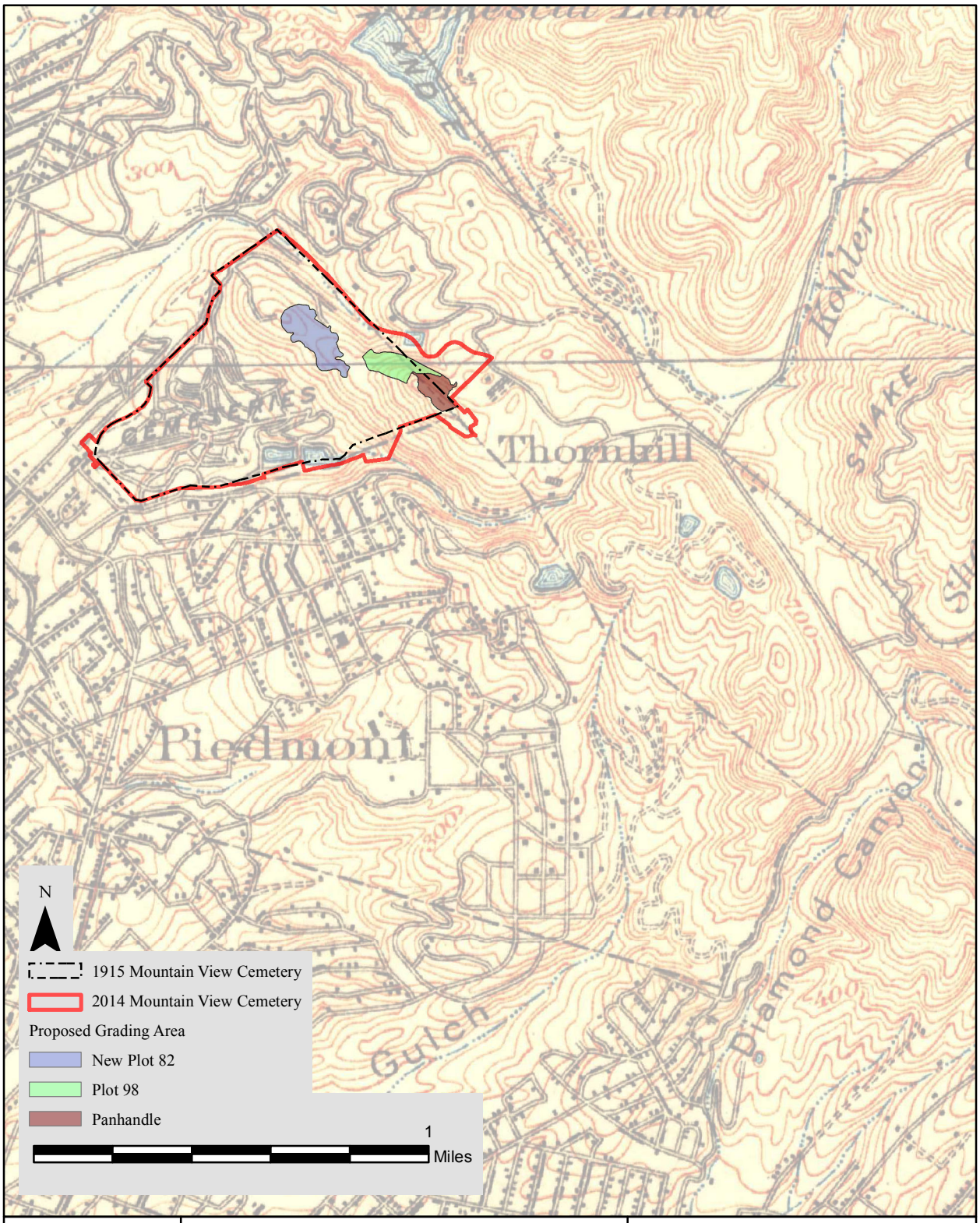
The Oakland, Antioch & Eastern Railroad (OA&E) was also depicted on the 1915 USGS map along an alignment that ran southeast to northwest, ½-mile east of the Project area. The OA&E, an interurban line, shared the Key system ferry terminal in Oakland and made travel between San Francisco and emerging suburbs and recreation areas easier and more cost efficient. Lines between Oakland and Sacramento were operational by 1913 and eventually became part of the Sacramento Northern Railroad (Groff 2011; Western Railway Museum 2014).

World War I was a catalyst for the shipyards on the Oakland waterfront, as new workers were enticed to the area by increased economic activity. Beth Bagwell summarized the growth of Oakland's hillside neighborhoods.

> After the earthquake, Oakland experienced a housing construction boom; bungalows replaced the remaining hayfields in Rockridge, Claremont, and the district north to the Berkeley border. In the 1920s, the demand continued, spurred by the post-war prosperity and by the opening of new real estate tracts made easily reachable by the automobile. Piedmont, Montclair, Trestle Glen, and the Lakeshore district were among neighborhoods that experienced their greatest growth at this time. In 1923, a graph in the *Oakland Tribune Yearbook* showed a 900 percent increase in the number of dwellings built over the previous five years (Bagwell 1982:200).

Oakland did not escape the consequences of the Great Depression. Although the Southern Pacific Railroad (which merged with the Central Pacific Railroad in 1885) remained solvent, large numbers of jobs were lost. The San Francisco Bay Bridge was constructed between 1933 and 1936 in the midst of the Great Depression, and although it may not have been evident at the time, the bridge would significantly change a community that had built itself around its transportation terminals.

World War II brought a degree of economic relief through another round of increased shipbuilding, and it also saw the construction of the Oakland Army Base and the Naval Supply Center. As the outlying areas of Oakland continued to fill with new immigrants and residents who had left the city center, the oldest areas of downtown struggled, as automobiles and trucks began to dominate the transportation market that had defined Oakland's early growth



WSA

Project Location Depicted on
1915 Concord USGS 15' Topo Quad

Figure 4
Lamphier-Gregory
Mountain View Cemetery Project
Alameda County, CA

Site-Specific History of the Project Area

Historic ownership of the Project area began with the 1820 San Antonio Land Grant, which was held by Sergeant Luis Maria Peralta, as described above. There is no evidence that the Project area was developed at that time. The 1857 Alameda County Map show no development within the Project area, but depicts two unnamed streams running through and near the Project area. These formed the headwaters for a larger creek that drained into a marsh that would later become Lake Merritt (Figure 5). In 1857 Oakland was quickly developing on the west side of the marsh, while Brooklyn was developing on the east side of the marsh (and would later be incorporated into Oakland). Streets had defined the downtown area, and larger roads leading north through Oakland Township and southeast through Brooklyn Township connected the city with the surrounding hinterland. Peralta's Rancho was located three miles southeast of the Project area.

By 1857, Oakland had begun to encounter problems with the issue of dealing with its dead. After the village of Oakland was founded in 1852, the first graveyard was established east of Oak Street, and in 1857 the graves were moved when the city limits expanded and began to envelope it (Bagwell 1982: 137). The graves were moved to a cemetery east of Broadway from about Seventeenth to Nineteenth streets (Broadway Cemetery), which was considered to be located far outside of town and provided ample space. In 1863, Isaac H. Brayton and Edward Tompkins, the men tasked with running Broadway Cemetery, petitioned the city to close it, arguing that interments should no longer be permitted within the city limits (Baker 1914:362). Broadway Cemetery was closed soon after, when Mountain View Cemetery was established in 1865. Broadway Cemetery remained relatively undisturbed until 1877, when the city had grown around it and its removal became a priority (Baker 1914:386). The process of removing the burials and relocating them was done inefficiently, and resulted in buried remains being encountered for years to come (Bagwell 1982:139).

While some care had been taken to establish the first two cemeteries away from dense concentrations of people, these were still urban cemeteries and the concept of an urban cemetery was beginning to clash with changing sensibilities about the treatment of the dead and the growing popularity of rural cemeteries.

The Mountain View Cemetery Association (Association) was established in December of 1863 in order to make plans for a new cemetery which would be permanent, separated from downtown Oakland, and provide an opportunity for Oakland to establish itself as a modern city. The Association elected a Board of Trustees and bought 220 acres in the Berkeley-

WSA	Project Location Depicted on 1857 Alameda County Map	Figure 5 Lamphier-Gregory Mountain View Cemetery Project Alameda County, CA

Oakland hills from Reverend Isaac H. Brayton, a board member, who sold the land to the Association for $13,000 (Supernowicz 2013). According to historian Beth Bagwell the founders of the Association "envisioned Oakland's future as a great metropolis and wanted fitting resting places for its illustrious leading citizens, including themselves" (Bagwell 1982). This desire may have been the impetus behind hiring Frederick Law Olmsted to plan the layout of the property.

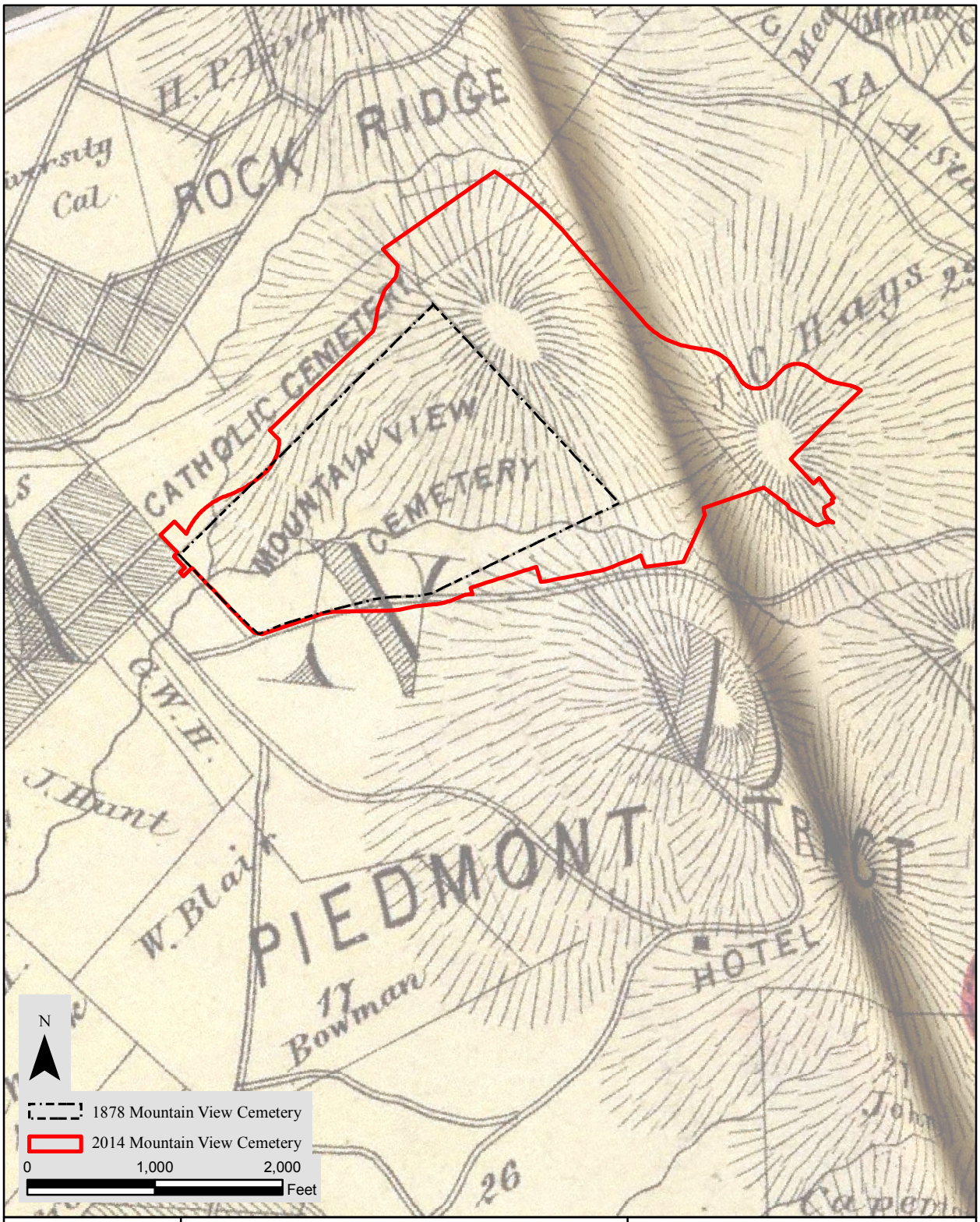
By 1863, Olmsted had already designed Central Park in New York City and was in California working to convince Congress to protect Yosemite as a national park (Bagwell 1982:139). At that time, he had not yet designed a burial ground and the Cemetery represented his first independent commission (Evanosky 2007). Olmsted was hired by the Association in October of 1865 (Olmsted 1922).

Olmsted designed the Cemetery around a central avenue, diamond-shaped pattern in the western, lower elevations of the cemetery, and curving paths which followed the slopes in the eastern, upper portion of the property (Evanosky 2007:11) (Figure 6). His design did not attempt to reproduce the "forest cemeteries" of the east coast, in part because of the different vegetation available in the West (Barth 1988). Olmsted noted "scarcely anywhere in the world except in actual deserts, is the indigenous vegetation so limited in variety as in the country about San Francisco" (Olmsted 1865 as quoted in Barth 1988). Olmsted focused on local plants, trees, and hedges and incorporated several imported varieties, such as Italian Cypress trees that would intentionally contrast with the forested atmosphere of east coast cemeteries (Supernowicz 2013; Sloane 1991:108-109). Olmsted wove together geometric design with the organic undulation of the landscape, combining "formal and picturesque styles" which "called forth the defense of both natural and synthetic designs" (Sloane 1991: 109). Notably, Olmsted's original design did not include the Project area.

Mountain View Cemetery was dedicated on May 25, 1865 and the first interment was that of Jane Weir, in July of that year. The graves from Oakland's Broadway cemetery were moved to the Cemetery. By 1876, 2,000 people had been interred at the Cemetery and today it is the final resting place for more than 160,000 people (Superowicz 2013). The growth of the Cemetery and its surrounding neighborhood can be traced through a number of historical maps of the area.

The 1878 Alameda County Farm Map shows the boundaries of Mountain View Cemetery, which only included a portion of the Project area at the time (Figure 7). To the east of the Mountain View Cemetery was the land of J.C. Hays, to the north was Saint Mary's Catholic Cemetery and the Rock Ridge quarry area, and to the south were the steep hills of the Piedmont Tract and the Piedmont Springs Hotel.

WSA	Olmstead 1865 Mountain View Cemetery Plans	Figure 6 Lamphier-Gregory Mountain View Cemetery Project Alameda County, CA



WSA	Project Location Depicted on 1878 Alameda County Farm Map	Figure 7 Lamphier-Gregory Mountain View Cemetery Project Alameda County, CA

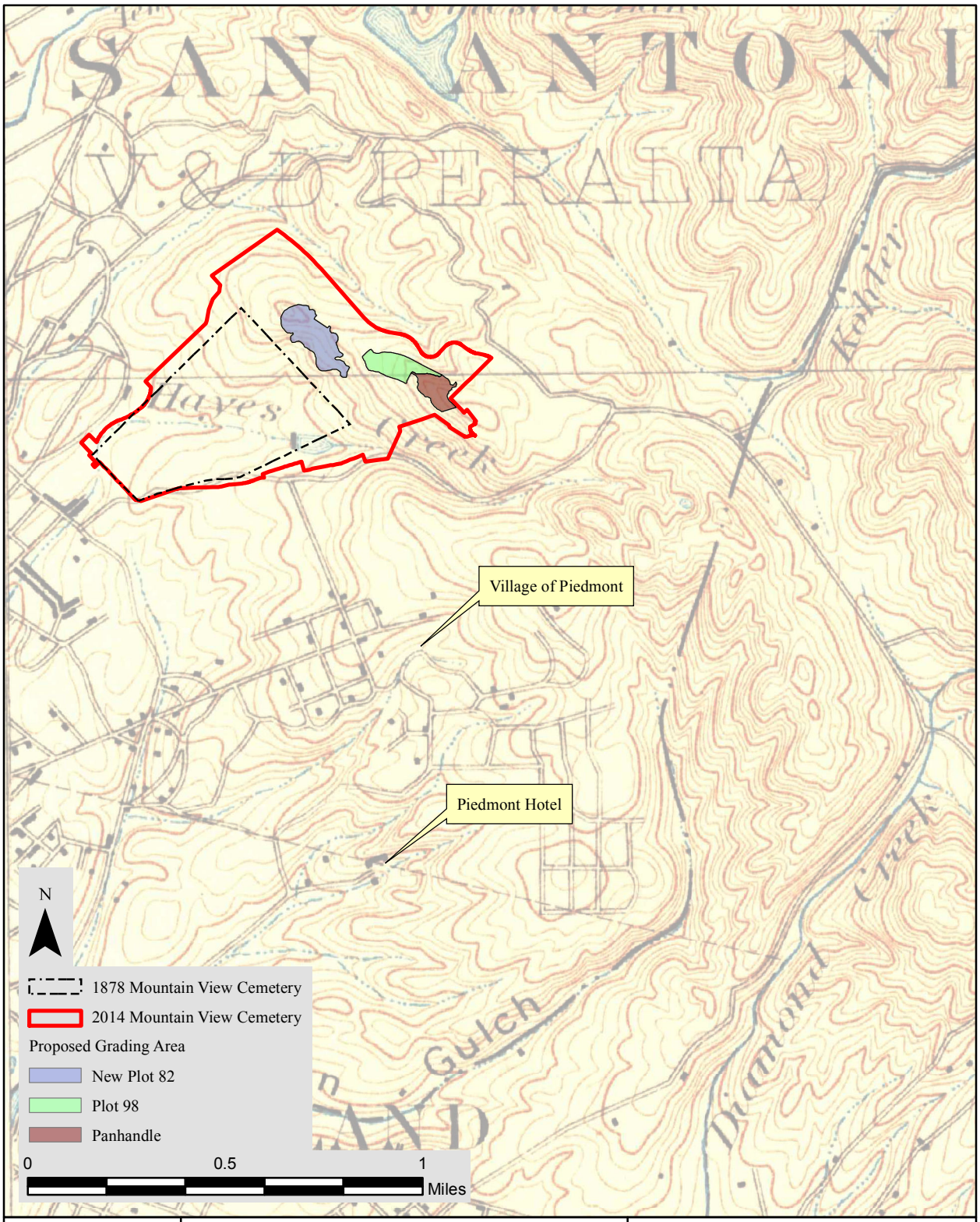
The 15' Concord quadrangle of the 1897 USGS Topographic Map depicts not only the topography and roads in the Project vicinity, but also shows structures (Figure 8). No structures are located within the Project area. The boundaries of the Cemetery are not delineated, however, within the 1878 Cemetery boundary, a structure is depicted that apparently dammed Hayes Creek, creating a reservoir of water for the landscaped area of the Cemetery. The dam had been constructed between 1883 and 1884 to create a reservoir with a capacity of 5,500,000 gallons (Baker 1914: 394). Also around this time, a mausoleum was erected (Baker 1914: 394). The 1897 map depicts no other structures within the Cemetery. Moraga Road, running along the southern boundary of the Cemetery, appears to partially cross the Project area in two places. The 1897 topographic map also shows the village of Piedmont developing around the Piedmont Springs to the south. The City of Oakland, to the southwest, was developing quickly at this time (not pictured in Figure 8).

The 1903 Sanborn Fire Insurance Map does not depict the Project area, but does depict the western portion of the Cemetery, adjacent to Piedmont Avenue. Notably, in 1903 the "Northern City Boundary Line" for Oakland was depicted just south of the Cemetery's gates. The majority of Mountain View Cemetery was annexed by Oakland, along with much of East Oakland, in 1909 (City of Oakland 1998). A small portion of the Cemetery remained within the boundary of the City of Piedmont.

The 1915 Concord 15' Quad of the USGS Topographic map depicts the Project area in detail, and while Mountain View and Saint Mary's cemeteries are not labeled separately, the Cemetery boundaries and the layout of the Cemetery, with the roads and paths that Olmsted had designed is clear (refer to Figure 4). Several structures are visible, one near the gate, in addition to several buildings close to the ponds fed by Cemetery Creek (formerly Hayes Creek). No roads or buildings were present in the Project area according to the 1915 map, and it appears that a small portion of the Project area was situated outside the Cemetery boundary at that time.

The 1952 Sanborn Fire Insurance Map does not depict the Project area, but does depict several structures within the Cemetery that differ from the 1915 depiction of the Cemetery and closely resemble the layout of the administrative and funerary structures present today.

By the time the 1959 Concord USGS 15' Topographic Map was prepared neighborhoods surrounded the Project area on all sides. The 1959 map depicts the Cemetery boundaries much as they exist today (Figure 9). The roads and paths that traverse the Cemetery are represented in detail, as are some of the buildings that are still present, including the administrative offices, the chapels and the mausoleum, and an additional cemetery building near a set of three ponds. The Cemetery's boundaries in 1959 included the Project area and several cemetery access roads crossed the Project area.



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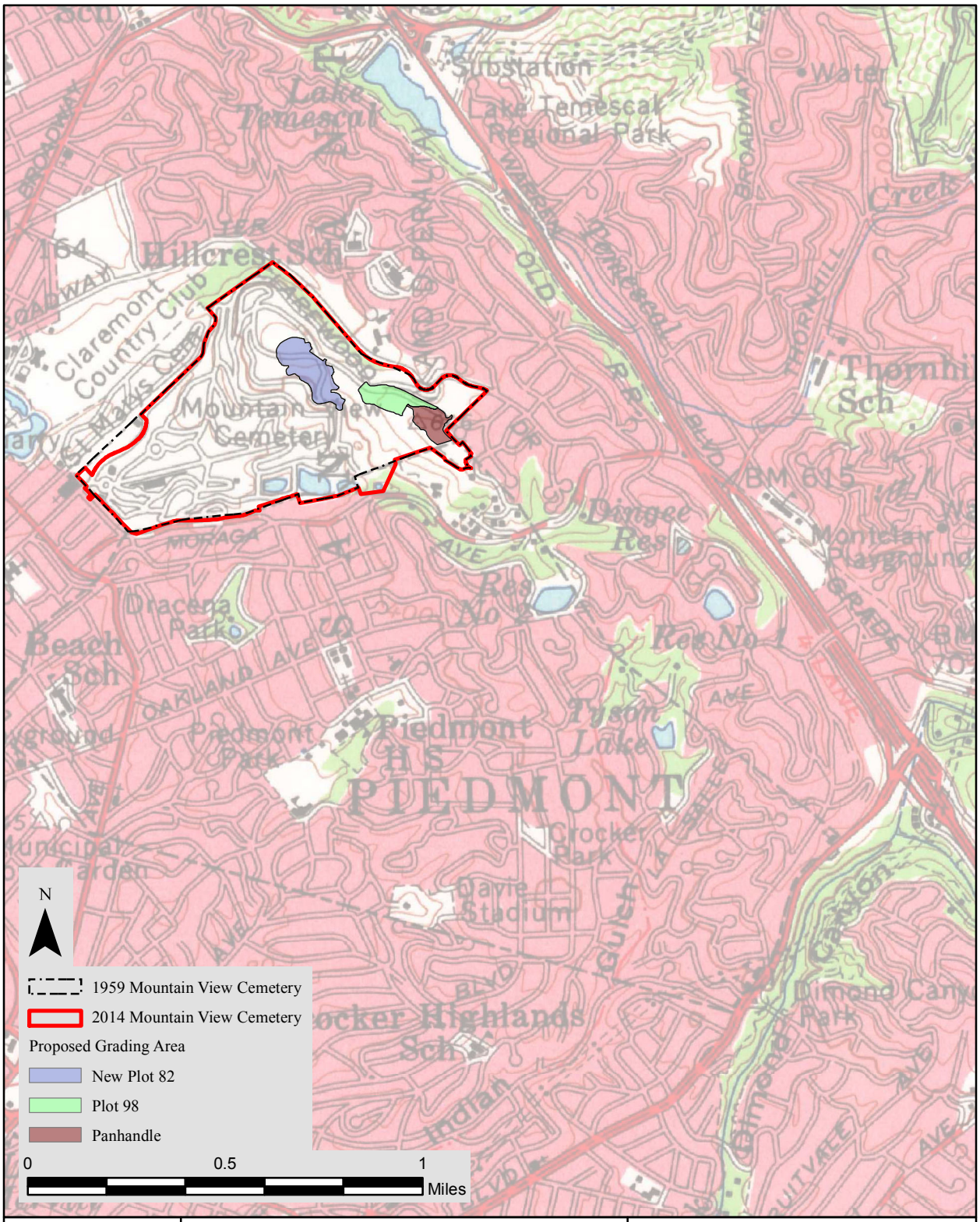
Project Location Depicted on
1897 Concord USGS 15' Topo Quad

Figure 8
Lamphier-Gregory
Mountain View Cemetery Project
Alameda County, CA



WSA

Project Location Depicted on
1959 Concord USGS 15' Topo Quad

Figure 9
Lamphier-Gregory
Mountain View Cemetery Project
Alameda County, CA

4.0 Results of the Literature and Records Search

On October 14th, 2014, WSA archaeologist Christina Alonso undertook a records search at the California Historical Resources Information System, Northwest Information Center (NWIC) at Sonoma State University (File No. 14-0486). The records search involved a review of records and maps on file at the NWIC, and information on previous archaeological studies and recorded sites within a ¼-mile radius of the Project area was examined. Relevant pages from the Office of Historic Preservation (OHP) Historic Properties Directory were included with the search results. There are no listings on the California Inventory of Historical Resources or on the California Inventory of Historical Landmarks in the vicinity of the Project area. As described below, however, the City of Oakland treats the Mountain View Cemetery as though it were eligible for both the California Register of Historical Resources (CRHR) and the National Register of Historic Place (NRHP).

WSA reviewed copies of the appropriate sections of the 1878 Thompson & West Historical Atlas Map of Alameda County, the 1897 (reprinted 1907) and 1915 (reprinted 1939) USGS Concord Quadrangles, and the 1903 and 1912-1952 Sanborn Fire Insurance Maps.

4.1 Previous Cultural Resource Studies

There are no cultural resource studies on file at the NWIC that encompass the Project area. Fifteen regional overview cultural resource studies include the Project area, but they do not address the Project area specifically, and they did not include field reconnaissance (S-848, S-2458, S-7903, S-9462, S-9583, S-15529, S-16660, S-17773, S-18217, S-20395, S-26045, S-32596, S-33239, S-33600, S-39349). Two additional studies (S-25788, S25491) that did include an archaeological survey have been conducted within ¼-mile of the Project area. These are summarized in Table 1.

Table 1: Overview Cultural Resource Studies

Study #	Authors	Year	Title	Publisher
S-000848	David A. Fredrickson	1977	A Summary of Knowledge of the Central and Northern California Coastal Zone and Offshore Areas, Vol. III, Socioeconomic Conditions, Chapter 7: Historical & Archaeological Resources	The Anthropology Laboratory, Sonoma State College
S-002458	Suzanne Marie Ramiller, Neil Ramiller, Roger Werner, and Suzanne Stewart	1981	Overview of Prehistoric Archaeology for the Northwest Region, California Archaeological Sites Survey.	Northwest Regional Office, California Archaeological Sites Survey; Anthropological Studies Center
S-007903	David Chavez	1985	Cultural Resources Evaluation for the East Bay Municipal Utility District	David Chavez & Associates

Study #	Authors	Year	Title	Publisher
			Infiltration/Inflow Project (P.O. 951 1143 EA)	
S-009462	Teresa Ann Miller	1977	Identification and Recording of Prehistoric Petroglyphs in Marin and Related Bay Area Counties	San Francisco State University
S-009583	David W. Mayfield	1978	Ecology of the Pre-Spanish San Francisco Bay Area	San Francisco State University
S-015529	Robert L. Gearhart II, Clell L. Bond, Steven D. Hoyt, James H. Cleland, James Anderson, Pandora Snethcamp, Gary Wesson, Jack Neville, Kim Marcus, Andrew York, and Jerry Wilson	1993	California, Oregon, and Washington: Archaeological Resource Study	Espey, Huston & Associates, Inc.; Dames & Moore
S-016660	Jeffrey B. Fentress	1992	Prehistoric Rock Art of Alameda and Contra Costa Counties, California	California State University, Hayward
S-017773	Angela M. Banet	1992	Contract 04E634-EP, Task Order #9, Historic Map Review for CALTRANS Maintenance Facilities (letter report)	Basin Research Associates, Inc.
S-018217	Glenn Gmoser	1996	Cultural Resource Evaluations for the Caltrans District 04 Phase 2 Seismic Retrofit Program, Status Report: April 1996	Caltrans
S-020395	Donna L. Gillette	1998	PCNs of the Coast Ranges of California: Religious Expression or the Result of Quarrying?	California State University, Hayward
S-026045	Richard Carrico, Theodore Cooley, and William Eckhardt	2000	Cultural Resources Reconnaissance Survey and Inventory Report for the Metromedia Fiberoptic Cable Project, San Francisco Bay Area and Los Angeles Basin Networks	Mooney & Associates
S-032596	Randall Milliken, Jerome King, and Patricia Mikkelsen	2006	The Central California Ethnographic Community Distribution Model, Version 2.0, with Special Attention to the San Francisco Bay Area, Cultural Resources Inventory of Caltrans District 4 Rural Conventional Highways	Consulting in the Past; Far Western Anthropological Research Group, Inc.

Study #	Authors	Year	Title	Publisher
S-033239	David Chavez	1994	Alameda Watershed, Natural and Cultural Resources: San Francisco Watershed Management Plan	None Given
S-033600	Jack Meyer and Jeff Rosenthal	2007	Geoarchaeological Overview of the Nine Bay Area Counties in Caltrans District 4	Far Western Anthropological Research Group, Inc.
S-039349	Allen G. Pastron and Andrew Gottsfield	2012	Limited Phase I Cultural Resources Evaluation for the City of Piedmont Sewer Rehabilitation Project – Phase V, Located in the City of Piedmont, Alameda County, California (letter report)	Archeo-Tec
S-25788	Carolyn Leese	2002 (Sep)	Historical Architecture Survey for AT&T Wireless Bechtel "Westminster" Site (Ref#960006243)	None Given
S-25491	Carolyn Leese	2002 (Jun)	Records Search for AT7T Wireless Services, Inc. "Holy Names" Site (Ref#960006243): Architectural History Analysis Recommended (letter report)	None Given

4.2 Previously Recorded Cultural Resources

No previously recorded historic properties have been identified within the Project area. However four historic properties have been identified within the Cemetery itself (Table 2).

P-01-010791 was identified by the NWIC as a prehistoric archaeological site within the Cemetery. The site was recorded in 2006 by local historian Richard Schwartz as a shell scatter "at least 200 ft. in diameter." Schwarz suggested that although the density of shell was not high (no density or shell count was given), it appeared similar to "the density that is often found in areas that have been disturbed and graded as this site has" (Schwartz 2006).

Five historic buildings have been recorded within ¼-mile of the Cemetery, some of which contribute to the Mountain View Cemetery District (Table 3).

Table 1: Previously Recorded Historic Properties Within Mountain View Cemetery

Primary #	Resource Name	Resource Type	Age	Attributes	Recording Events
P-01-000885	Mountain View Cemetery Office	Building	Historic	Cemetery Office	1994 Oakland Cultural Heritage Survey
P-01-010791	Mt. View Cemetery	Site	Prehistoric	Shell Scatter	2006, Richard Schwartz, Local Historian

Primary #	Resource Name	Resource Type	Age	Attributes	Recording Events
P-01-011355	MVC - Mountain View Cemetery District	District	Historic	Funerary Buildings; Cemetery	2013 Dana Supernowicz Historical Resources Associates; 1998 Cultural Heritage Survey
P-01-011356	Mountain View Cemetery	Element of district	Historic	Cemetery	1998 Cultural Heritage Survey

Table 3: Historic Properties within ¼-mile Radius of Mountain View Cemetery

Primary #	Resource Name	Resource Type	Age	Attributes	Recording Event
P-01-000694	Holy Names Central High School (Serial #1437)	Building	Historic	Educational Building	1994 Oakland Cultural Heritage Survey
P-01-000711	Saint Mary's Lodge Building (Serial #1423)	Building, Element of MVC District	Historic	Funerary Building	1994 Oakland Cultural Heritage Survey
P-01-000883	Maccario (Henry & Caroline) Florist Shop	Building	Historic	Multiple Family Property; 1-3 story commercial building	1994 Oakland Cultural Heritage Survey
P-01-000884	Rabinowitz (I.) Morturary-Cole Honey Plant	Building	Historic	Other (Industrial)	1994 Oakland Cultural Heritage Survey
P-01-000886	Mountain View Cemetery Chapel and Crematory	Building, Element of MVC District	Historic	Cemetery Chapel and Crematory	1994 Oakland Cultural Heritage Survey
P-01-008024	California Crematorium and Columbarium, "Chapel of the Chimes" (Serial #1424)	Building, Element of MVC District	Historic	Funerary Building	1994 Oakland Cultural Heritage Survey

An additional eighteen historic buildings located within ¼-mile of the Cemetery are listed in the OHP Historic Properties Directory. These are listed in Table 4.

Table 4: Buildings Listed on the OHP Historic Properties Directory Within ¼ Mile of the Project Area

OHP #	Address	Name	Date of Construction
143305	4401 Piedmont Ave	Not Applicable (N/A)	1900
143306	4409 Piedmont Ave	N/A	1900
143307	4420 Piedmont Ave	N/A	Not Available.
143308	4425 Piedmont Ave	N/A	1930
143309	4429 Piedmont Ave	N/A	1870
143310	4432 Piedmont Ave	N/A	1920

OHP #	Address	Name	Date of Construction
143311	4435 Piedmont Ave	N/A	1910
143312	4436 Piedmont Ave	N/A	1910
143313	4437 Piedmont Ave	N/A	1900
143314	4446 Piedmont Ave	N/A	1910
143315	4449 Piedmont Ave	N/A	1918
143316	4450 Piedmont Ave	N/A	1910
143317	4454 Piedmont Ave	N/A	Not Available
143318	4466 Piedmont Ave	N/A	1910
143319	4468 Piedmont Ave	N/A	1900
143320	4498 Piedmont Ave	N/A	Not Available.
143321	4486 Piedmont Ave	N/A	1933
143323	5000 Piedmont Ave	N/A	1920

5.0 Native American Consultation

On October 10, 2014, WSA contacted the Native American Heritage Commission (NAHC) by email to request information on known Native American sacred lands within the Project area and to request a listing of individuals or groups with a cultural affiliation to the Project area. On October 22, 2014, Leyta Winston, on behalf of Debbie Pilas-Treadway of the NAHC responded by letter. The letter stated that a search of the sacred land file had failed to indicate the presence of Native American cultural resources in the immediate Project area. A list of ten Native American individuals who may have an interest in the Project was included in the response.

On October 22, 2014, WSA sent letters to the following ten individuals identified by the NAHC, requesting comment on this Project: Jakki Kehl; Rosemary Cambra, Chairperson, Muwekma Ohlone Indian Tribe of the San Francisco Bay Area; Andrew Galvan, The Ohlone Indian Tribe; Katherine Erolinda Perez; Ramona Garibay, Representative, Trina Marine Ruano Family; Irene Zwierlein, Chairperson, Amah/Mutsun Tribal Band; Michelle Zimmer of the Amah Mutsun Tribal Band; Tony Cerda, Chairperson of the Costanoan Rumsen Carmel Tribe; and Ann Marie Sayers, Chairperson, Indian Canyon Mutsun Band of Costanoan. No responses were received.

WSA archaeologist Tom Young placed follow-up phone calls on November 7th, 2014 to each of the ten individuals identified by the NAHC. Mr. Young left voicemail messages for five individuals, describing the Project and requesting comment (Katherine E. Perez, Linda Yamane, Tony Cerda, Ann Marie Sayers, Andrew Galvan). One individual's phone was disconnected and no message could be left (Jakki Kehl). Michelle Zimmer, Chairperson of the Amah Mutsun Tribal Band, recommended that cultural sensitivity training be undertaken for the construction crew, and archaeological and Native American monitors be present on site if necessary. She also noted that she spoke on behalf of her sister, Irene Zwierlein.

Rosemary Cambra, Chairperson of The Muwekma Ohlone Indian Tribe of the San Francisco Bay Area asked that if anything is found that the NAHC be contacted. Finally, Ramona Garibay, Representative of the Trina Marine Ruano Family, noted that she approves of our recommendations.

WSA Project Director Teresa Bulger made follow-up calls on November 17th, 2014 to four of the individuals who were not reached in the first round of calls. These individuals were again not available and voicemail messages were left for each. Ms. Bulger also sent email follow-up messages requesting comment to Jakki Kehl and Andrew Galvan. Andrew Galvan responded that he had no comments and had received all the information he needed. Copies of this correspondence are provided, and the results summarized, in Appendix A.

6.0 Consultation with Oakland Planning and Heritage Institutions

To ascertain the local protections that the Cemetery might be afforded and that may impact planning for the alterations to be made in the Project area, WSA Project Director Teresa Bulger contacted the City of Oakland Planning Department and the Oakland Heritage Alliance to request comment.

City of Oakland Planning and Building Department

On November 4, 2014, Dr. Bulger contacted Scott Miller at the City of Oakland Planning Department via email to request comment on the Project, including information on any protections that the Cemetery and the Project area may be afforded. Mr. Miller redirected the query to Oakland's City History Preservation Planner, Betty Marvin. Copies of all correspondence with the City are provided in Appendix B.

On November 4, 2014, Betty Marvin responded stating that Mountain View Cemetery is an Area of Primary Importance as assessed by the Oakland Cultural Heritage Survey (OCHS), which informs the Historic Preservation element of the City's General Plan (City of Oakland 1998). Additionally, it is on Oakland's Local Register of Historical Resources (Local Register).

The OCHS includes, almost exclusively, above ground resources in the built environment and constitutes a "general survey of every visible building in Oakland" (City of Oakland 2014a). The OCHS established a rating system, with letters (A, B, and C) indicating the level of importance, and numbers (1, 2, 3), which indicates district status. Based on this survey, the Mountain View Cemetery retains an A-1 status. As an "A" property, it is considered to be of the "highest importance" as it stands as an "outstanding architectural example" or has "extreme historical importance." (City of Oakland 2014a). With a "1" rating, the Cemetery represents an Area of Primary Importance, or National Register quality district (City of Oakland 2014a).

The Local Register is a more preservation-specific list and includes local resources that are likely eligible, but often have not been formally nominated, for national, state or local register designations. The Local Register was created in 1998 in an amendment to the Preservation Element of Oakland's General Plan. According to the City's Website, "this includes Designated Historic Properties (City landmarks and districts, as well as properties designated under State and Federal programs) plus the most important Potentially Designated Historic Properties (PDHPs): those that have existing ratings of A or B or are in Areas of Primary Importance" (Oakland Planning Department 2014b). Approximately 3% of properties in Oakland are on the Local Register.

Protections afforded to the Mountain View Cemetery based on the OCHS are essentially the same as for properties that formally have been listed on the National Register. Ms. Marvin noted that, as an Area of Primary Importance, the Mountain View Cemetery "is treated as a significant and protected resource in any City reviews." Further, Ms. Marvin stated "the Landmarks Preservation Advisory Board consistently reviews alterations and new construction at the cemetery" (Marvin, Email Nov 4, 2014, See Appendix B).

Protections afforded to the Mountain View Cemetery, as a property listed on the Local Register include the following:

> Under certain circumstances, demolition or incompatible alteration of these properties cannot be carried out unless an Environmental Impact Report demonstrates that there are no feasible preservation alternatives and identifies mitigations to make up for loss of a historic resource (City of Oakland 2014b).

Oakland Heritage Alliance

On November 4, 2014, Dr. Bulger contacted Joann Pavlinec and Christina Herd of the Oakland Heritage Alliance via email to request comment on the Project, including information on any protections the Cemetery and the Project area may be afforded. No response was received.

To follow-up the initial email, Dr. Bulger telephoned the Oakland Heritage Alliance on November 20, 2014 and left a message on the institution's voicemail describing the Project and requesting comment. Ms. Christina Herd responded on November 21, 2014, reinforcing the evaluation of the Oakland Planning Department and noting that the Oakland History Room has early Sanborn Maps and newspapers that may enhance an historical sketch of the Cemetery. Ms. Herd followed-up on November 29, 2014, providing information about CEQA compliance of the Project's design. Ms. Herd also provided a historical essay written on the Cemetery via mail (Anders 1987). Copies of all correspondence with the City and the OHA, as well as documents provided by the OHA, are provided in Appendix B.

7.0 Results of the Field Survey

WSA archaeologist, Tom Young, conducted a pedestrian survey of the Project area on October 22, 2014. The surveyed area included New Plot 82, Plot 98, and the Panhandle (Figure 10). All three areas were surveyed at a maximum transect interval of 15-meters. The ground surface was investigated for signs of archaeological resources, such as stone tools, faunal bone, dark soil containing shell, burnt bone, or charcoal, old bottles and cans, and building foundations or other structural remnants. The survey results of the individual plots are described below.

7.1 New Plot 82

This plot comprises an area of 2.68 acres, and is the westernmost of the three plots. At the northwest end is a construction yard, which is at the highest point of the plot. The construction area is relatively level, with a large corrugated work shed, a backhoe, and construction debris in several stockpiles (Photo 1, all Photos in Appendix C). On the north side of the construction yard are several mature eucalyptus trees and a steep bank to the paved road below. There are tree stumps in the ground, and quantities of leaf litter and dried grasses that reduced ground visibility to about 70%. Generally, the visibility in the yard was very good, but also highly disturbed.

The southeast portion of New Plot 82 is considerably steeper, rising from approximately 380 ft. above sea level in the west to 500 ft. above sea level in the east. The area southwest of the main road was surveyed first, in close-interval transects due to the terrain and the vegetation. The terrain sloped up to 30%, with several flat benches at the base of each slope (Photo 2). Dried wild grasses, wildflowers, and scrub-brush dominate the ground cover, while eucalyptus and oaks were the prominent tree species; there were several tree stumps observed in the ground during the survey. While leaf litter and grasses obscured visibility in some places, for the most part visibility was very good, ranging from 60-90%. The soils were a light brown/gray, dry, loamy clayey silt, very loose on the hillsides. There was one large bedrock outcrop on the south face of a slope that was fractured; the hillside below it contained a high percentage of rock that had broken off this outcrop (Photo 3). Rodent burrows were present throughout the hillside and these burrows were inspected for cultural material. Based on observation of the exposed burrows, there appears to be several feet of colluvial soil at the bases of the slopes. During the survey, some pieces of glass and ceramic sherds were observed, but the fragments appeared modern and occurred in sparse scatters, with no dense concentration. No other cultural material was observed.

Northeast of the main road, the conditions were similar -- hilly terrain with narrow, flat benches; loosely consolidated loamy clayey silt with fractured bedrock, and quantities of leaf litter and dried grasses covered the ground. There was an area of grassy lawn and graves in

WSA

Archaeological Survey Map

Figure 10
Lamphier-Gregory
Mountain View Cemetery Project
Alameda County, CA

the northern, higher elevation, area (Photo 4). Some trash scattered about, but no other cultural material was observed.

7.2 Plot 98

This plot comprises an area of 2.04 acres, located between Plot 82 and the Panhandle. The terrain slopes from relatively low elevations in the west to higher elevations in the east, rising to approximately 500 to 540 ft. above sea level. The soil color ranged from a light brown, to yellow, to grayish; but the soil type is the same loosely consolidated loamy clayey silt with fractured bedrock. The exposure is generally open, with a few mature eucalyptus and oak trees, with the associated leaf litter that obscures the ground. Overall, the ground visibility ranged from 60-90%. There is a lot of ground disturbance towards the western end of the plot (Photo 5). There is a paved road that skirts the plot along its northern edge, and terminates at the eastern edge of the Panhandle (Photo 6). At the southeastern edge of this plot, a board-formed concrete vault measuring 10 ft-x-5 ft. which contains a water-main and five valves was observed (Photo 7); it is connected to an existing underground water tank higher up the hill. Broken bottles, cigarette packs, and other trash was observed in high numbers near this vault and near the water tank, but no diagnostic cultural material was observed.

7.3 Panhandle

This plot is 2.41 acres in size, and is the easternmost of the three plots; it butts up against Plot 98. The terrain is also gently rolling, and it reaches its peak at the eastern end. The soil is the same as in Plot 98, but the exposure is more open, with fewer trees and shrubs. Along the southwestern edge there is thick growth of scrub-brush and poison oak, and just east of that is a stepped concrete feature with an adjacent asphalt slab. There were no other cultural resources or associated structures observed.

<u>Stepped Concrete Feature</u>

Within the Panhandle, a concrete feature was located that consists of three steps, slightly curved to form an amphitheater-like structure (Photos 8 & 9). The interior portion of the curve faces the southeast. An asphalt slab at the base of the lowest step is also curved. The concrete is smooth, but cracked, with fine aggregate material, while the asphalt contains coarse aggregate. There is no date of construction anywhere on the feature, but it appears to be of relatively recent construction.

This feature does not appear on any historical maps available to WSA. It is possible that this structure is associated with non-Cemetery related activities. It is also possible that its function related to the nearby subterranean water tank, to the west. This portion of the Project area was outside of the area that Frederick Law Olmsted designed (refer to Figure 6). Additionally, this portion of the property does not appear to have been within the Mountain View Cemetery in 1878 (refer to Figure 7). It is not known when this area was incorporated into the Cemetery.

8.0 Evaluation of Eligibility to the CRHR and the NRHP

8.1 CRHR Evaluation Criteria

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 resource 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; or
2. it is associated with the lives of persons important to California's past; or
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).

In order to meet one or more of the criteria listed above, a cultural resource must possess integrity to qualify for listing in the CRHR. Integrity is generally evaluated with reference to qualities including location, design, 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 (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.

Section 15064.5 of the CEQA Guidelines indicates a project may have a significant environmental effect if it causes "substantial adverse change" in the significance of an "historical resource" or a "unique archaeological resource" as defined or referenced in CEQA Guidelines Section 15064.5[b, c] (revised October 26, 1998). Such changes include "physical

demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired" (CEQA Guidelines 1998 Section 15064.5 [b]).

8.2 The Mountain View Cemetery Burial Expansion Site (Project area)

The Project area consists of 7.13 acres within the Cemetery. The Cemetery is represented by 220+ acres of gravesites and monuments, trees, plants, buildings, and landscape features arranged around a central avenue and curvilinear paths among the Berkeley Hills. The design of the Cemetery is based on the plans drawn up by renowned landscape architect Frederick Law Olmsted. The historical significance of the above ground resources at the Cemetery has been evaluated separately by Page & Turnbull, Inc. Historic Preservation Architecture. For the purposes of this evaluation, only archaeological resources within the Project area are considered, and the Project area's potentially eligible historic (archaeological) properties will be evaluated only under Criterion 4 of the CEQA Guidelines.

Criterion 4: The Project area is unlikely to yield information important in history or prehistory. No evidence of prehistoric archaeological material was identified in the Project area, and the stepped concrete feature detected during the survey does not bear a close association with Cemetery activities or other documented uses of the Project area.

In the broader area of the Cemetery, local historian Richard Schwartz previously recorded a sparse shell scatter (Schwartz 2006; P-01-01791). Located in a different topographical area of the Cemetery, this resource does not affect the Project area. P-0101791 would require formal archaeological analysis in order to determine it if contributes to the Cemetery's significance with respect to Criteria 4 and its eligibility for listing on the CRHR.

In addition to being devoid of exposed prehistoric artifacts, much of the Project area is located on steep terrain, and it is likely that any archaeological sites that may have once been present have since been displaced by wind and water erosion of the Berkeley-Oakland hillsides. The Project area does not contribute to the Cemetery's eligibility for the CRHR under Criterion 4.

8.3 National Register of Historic Places Evaluation Criteria

A resource must meet one of the following criteria to be eligible for listing on the (NRHP):

(A) it is associated with events that have made a significant contribution to the broad patterns of our history; or
(B) it is associated with the lives of persons significant in our past; or

(C) it embodies the distinctive characteristics of a type, period, or method of construction, or that possess high artistic values, or that represent a significant distinguishable entity whose components may lack individual distinction; or
(D) it has yielded or may be likely to yield, information important to history or prehistory.

Significance Evaluation

The historical significance of the above ground resources at the Cemetery has been evaluated separately by Page & Turnbull, Inc. Historic Preservation Architecture. For the purposes of this evaluation, only potential archaeological resources within the Project area are considered, and the Project area's potentially eligible historic (archaeological) properties will be evaluated only under Criterion D of the NRHP Guidelines.

Criterion D: At this time there is no indication that the Mountain View Cemetery site is in an area of known prehistoric activity. Generally, because of the steep slopes and the resulting erosion in the Project area, it seems unlikely that potentially eligible historic properties will be found. Therefore WSA does not recommend that the Project area is a contributing element to the eligibility of the Mountain View Cemetery for the NRHP under Criterion D.

Local Register of Historic Places

Like most cities, Oakland has a program for officially designating select Landmarks and Preservation Districts. Oakland also has a wealth of historic buildings and neighborhoods matched by few other California cities. To recognize this wide range of historic value, the Historic Preservation Element of the Oakland General Plan, adopted in 1994 and amended in 1998, sets out a graduated system of ratings, designation programs, regulations, and incentives proportioned to each property's importance (City of Oakland 2014). As described above, the Cemetery is considered an Area of Primary Importance according to the OCHS and it is also listed on the Oakland Local Register of Historic Resources. Based on its status as an Area of Primary Importance, it is considered eligible for the NRHP for the purposes of all City reviews.

9.0 Impacts and Mitigation

9.1 Previously Undiscovered Archaeological Resources

Although the likelihood of encountering intact archaeological deposits is considered low, there is the possibility that archaeological material may be located during construction activities. Site preparation, grading, and construction activities could adversely impact previously undiscovered archeological resources. Implementation of the following mitigation

measure would reduce potential impacts to undiscovered archeological resources to a less-than-significant level.

Mitigation Measure CULT-1: If deposits of prehistoric or historic archeological materials are encountered during Project activities, all work within 25 feet of the discovery will be stopped and a qualified archeologist meeting federal criteria under 36 CFR 61 will be contacted to assess the deposit(s) and make recommendations.

While deposits of prehistoric or historic archeological materials should be avoided by Project activities, if the deposits cannot be avoided, they will be evaluated for their potential historic significance. If the deposits are recommended to be non-significant, avoidance is not necessary. If the deposits are recommended to be potentially significant, they will be avoided. If avoidance is not feasible, Project impacts will be mitigated in accordance with the recommendations of the evaluating archaeologist and CEQA Guidelines §15126.4 (b)(3)(C), which require development and implementation of a data recovery plan that would include recommendations for the treatment of the discovered archaeological materials. The data recovery plan will be submitted to the City of Oakland for review and approval. Upon approval and completion of the data recovery program, Project construction activity within the area of the find may resume, and the archaeologist will prepare a report documenting the methods and findings. The report will be submitted to the City of Oakland. Once the report is reviewed and approved by the City of Oakland, a copy of the report will be submitted to the Northwest Information Center (NWIC), as required.

9.2 Previously Undiscovered Human Remains

Ground disturbing activities associated with site preparation, grading, and construction activities could disturb human remains, including those interred outside of formal cemeteries. The potential to uncover Native American human remains exists in locations throughout California. In the Mountain View Cemetery specifically, it is possible that unmarked historic graves are present as well. Although not anticipated, human remains may be identified during site-preparation and grading activities, resulting in a significant impact to Native American and/or Euroamerican interments. Implementation of the following mitigation measure would reduce potential adverse impacts to human remains to a less-than-significant level.

Mitigation Measure CULT-2: Section 7050.5(b) of the California Health and Safety code will be implemented in the event that human remains, or possible human remains, are located during Project-related construction excavation. Section 7050.5(b) states:

> In the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the coroner of the county in which the human remains

> are discovered has determined, in accordance with Chapter 10 (commencing with Section 27460) of Part 3 of Division 2 of Title 3 of the Government Code, that the remains are not subject to the provisions of Section 27492 of the Government Code or any other related provisions of law concerning investigation of the circumstances, manner and cause of death, and the recommendations concerning treatment and disposition of the human remains have been made to the person responsible for the excavation, or to his or her authorized representative, in the manner provided in Section 5097.98 of the Public Resources Code.

The County Coroner, upon recognizing the remains as being of Native American origin, is responsible to contact the Native American Heritage Commission (NAHC) within 24 hours. The Commission has various powers and duties, including the appointment of a Most Likely Descendant (MLD) to the Project. The MLD, or in lieu of the MLD, the NAHC, has the responsibility to provide guidance as to the ultimate disposition of any Native American remains.

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Supernowicz, Dana
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Wiberg, Randy S.
1997 *Archaeological Investigations at Site CA-ALA-42, Alameda County, California: Final Report.* Coyote Press, Salinas, CA.

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: Mountain View Cemetery Project

County Alameda County

USGS Quadrangle

Name Oakland East Quad

Township 1S Range 3W Section(s) 19

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

Contact Person: Teresa Bulger

Street Address: 61-d Avenida de Orinda

City: Orinda, California Zip: 94563

Phone: (925) 253-9070

Fax: (925) 254-3553

Email: tbulger@williamself.com

Project Description: We are doing CEQA cultural resources assessment of the Mountain View Cemetery in Oakland and Piedmont, California. Grading is planned for a portion of the property, which will provide fill for a canyon on another portion of the property.
Thank you! -Teresa Bulger 10-10-14

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

October 22, 2014

Teresa Bulger
WILLIAM SELF ASSOCIATES, INC.
61-d Avenida de Orinda
Orinda, CA 94563

By: FAX: 925-254-3553

2 Pages

Re: Mountain View Cemetery project, Alameda County

Ms. Bulger,

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 (916) 373-3713.

Sincerely,

Debbie Pilas-Treadway
Environmental Specialist III

Native American Contacts
Alameda County
October 22, 2014

Jakki Kehl
720 North 2nd Street
Patterson , CA 95363
(209) 892-1060
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
Irene Zwierlein, Chairperson
789 Canada Road
Woodside , CA 94062
amahmutsuntribal@gmail.com
(650) 400-4806 Cell
(650) 332-1526 Fax
Ohlone/Costanoan

The Ohlone Indian Tribe
Andrew Galvan
P.O. Box 3152
Fremont , CA 94539
chochenyo@AOL.com
(510) 882-0527 Cell
(510) 687-9393 Fax
Ohlone/Costanoan
Bay Miwok
Plains Miwok
Patwin

Amah MutsunTribal Band of Mission San Juan Bautista
Michelle Zimmer
789 Canada Road
Woodside , CA 94062
amahmutsuntribal@gmail.com
(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 Mountain View Cemetery project, Alameda County.

Mountain View Cemetery Burial Expansion Project
Native American Heritage Commission Consultation

Native American Contacts Correspondence Table

Native American Contact	Date of Notification Letter (certified)	Date of Phone Contact	Comments	Date of Follow-Up Phone Contact	Comments
Jakki Kehl 720 North 2nd Street Patterson, CA 95363 209-892-1060	10/23/14	11/7/14	Phone number is disconnected - no forwarding number provided	11/17/14 Sent follow-up email	No response.
Katherine Erolinda Perez P.O. Box 717 Linden, CA 95236 209-887-3415	10/23/14	11/7/14	Left message on voicemail	11/17/14	Left message on voicemail
Linda G. Yamane 1585 Mira Mar Avenue Seaside, CA 93955 831-394-5915	10/23/14	11/7/14	Left message on voicemail	11/17/14	Left message on voicemail
Irene Zwierlein, Chairperson Amah Mutsun Tribal Band of Mission San Juan Bautista 789 Canada Road Woodside, CA 94062 650-400-4806	10/23/14	11/7/14	Per Michelle Zimmer: Recommends Cultural Sensitivity Training for construction crew, and Archaeological and Native American Monitors on site if necessary	---	---
Michelle Zimmer Amah Mutsun Tribal Band of Mission San Juan Bautista 789 Canada Road Woodside, CA 94062 650-851-7747	10/23/14	11/7/14	Recommends Cultural Sensitivity Training for construction crew, and Archaeological and Native American Monitors on site if necessary	---	---
Tony Cerda, Chairperson Coastanoan Rumsen Carmel Tribe 240 E. 1st Street Pomona, CA 91766 909-524-8041	10/23/14	11/7/14	Left message on voicemail	11/17/14	Left message on voicemail

Native American Contact	Date of Notification Letter (certified)	Date of Phone Contact	Comments	Date of Follow-Up Phone Contact	Comments
Ann Marie Sayers, Chairperson Indian Canyon Mutsun Band of Costanoan P.O. Box 28 Hollister, CA 95024 831-637-4238	10/23/14	11/7/14	Left message on voicemail	11/17/14	Left message on voicemail
Rosemary Cambra, Chairperson Muwekma Ohlone Indian Tribe of the SF Bay Area P.O. Box 360791 Milpitas, CA 95036 408-314-1898	10/23/14	11/7/14	If anything is found, contact NAHC	---	---
Andrew Galvan The Ohlone Indian Tribe P.O. Box 3152 Fremont, CA 94539 510-882-0527	10/23/14	11/7/14	Left message on voicemail	11/17/14 Email Follow-up	No response.
Ramona Garibay, Representative Trina Marine Ruano Family 30940 Watkins Street Union City, CA 94587 510-972-0645	10/23/14	11/7/14	She says we do a wonderful job, and agrees with any recommendations we have.	---	---

October 23, 2014

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

RE: Mountain View Cemetery Project, Alameda County, CA

Dear Ms. Kehl,

WSA has been contracted by Lamphier-Gregory to do a CEQA cultural resources assessment of the Mountain View Cemetery Burial Site Expansion Project in Oakland and Piedmont, California. The project area encompasses 7.13 acres within Township 1 South, Range 3 West, Section 19 of the Oakland East 7.5' Topographic Map. Project plans indicate that grading is planned for a lot in the eastern (upland) portion of the Mountain View Cemetery property, where a section of a steep hillside will be graded to a depth of 15-18 ft. below ground surface. The soil from this lot will provide fill for a canyon on another portion of the property.

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 below, 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.

Thank you again for your assistance.

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:wself@williamself.com

October 23, 2014

Katherine Erolinda Perez
PO Box 717
Linden, CA 95236

RE: Mountain View Cemetery Project, Alameda County, CA

Dear Ms. Perez,

WSA has been contracted by Lamphier-Gregory to do a CEQA cultural resources assessment of the Mountain View Cemetery Burial Site Expansion Project in Oakland and Piedmont, California.The project area encompasses 7.13 acres within Township 1 South, Range 3 West, Section 19 of the Oakland East 7.5' Topographic Map. Project plans indicate that grading is planned for a lot in the eastern (upland) portion of the Mountain View Cemetery property, where a section of a steep hillside will be graded to a depth of 15-18 ft. below ground surface. The soil from this lot will provide fill for a canyon on another portion of the property.

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Thank you again for your assistance.

Sincerely,

James M Allan

James Allan, Ph.D., RPA
Principal

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

William Self Associates, Inc.

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

WSA

Consultants in Archaeology and Historic Preservation

October 23, 2014

Linda G. Yamane
1585 Mira Mar Ave.
Seaside, CA 93955

RE: Mountain View Cemetery Project, Alameda County, CA

Dear Ms. Yamane,

WSA has been contracted by Lamphier-Gregory to do a CEQA cultural resources assessment of the Mountain View Cemetery Burial Site Expansion Project in Oakland and Piedmont, California.The project area encompasses 7.13 acres within Township 1 South, Range 3 West, Section 19 of the Oakland East 7.5' Topographic Map. Project plans indicate that grading is planned for a lot in the eastern (upland) portion of the Mountain View Cemetery property, where a section of a steep hillside will be graded to a depth of 15-18 ft. below ground surface. The soil from this lot will provide fill for a canyon on another portion of the property.

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Orinda CA 94563

William Self Associates, Inc.

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

October 23, 2014

Irene Zwierlein, Chairperson
Amah Mutsun Tribal Band of Mission San Juan Bautista
789 Canada Road
Woodside, CA 94062

RE: Mountain View Cemetery Project, Alameda County, CA

Dear Ms. Zwierlein,

WSA has been contracted by Lamphier-Gregory to do a CEQA cultural resources assessment of the Mountain View Cemetery Burial Site Expansion Project in Oakland and Piedmont, California.The project area encompasses 7.13 acres within Township 1 South, Range 3 West, Section 19 of the Oakland East 7.5' Topographic Map. Project plans indicate that grading is planned for a lot in the eastern (upland) portion of the Mountain View Cemetery property, where a section of a steep hillside will be graded to a depth of 15-18 ft. below ground surface. The soil from this lot will provide fill for a canyon on another portion of the property.

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Orinda CA 94563

William Self Associates, Inc.

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

October 23, 2014

Michelle Zimmer
Amah Mutsun Tribal Band of Mission San Juan Bautista
789 Canada Road
Woodside, CA 94062

RE: Mountain View Cemetery Project, Alameda County, CA

Dear Ms. Zimmer,

WSA has been contracted by Lamphier-Gregory to do a CEQA cultural resources assessment of the Mountain View Cemetery Burial Site Expansion Project in Oakland and Piedmont, California.The project area encompasses 7.13 acres within Township 1 South, Range 3 West, Section 19 of the Oakland East 7.5' Topographic Map. Project plans indicate that grading is planned for a lot in the eastern (upland) portion of the Mountain View Cemetery property, where a section of a steep hillside will be graded to a depth of 15-18 ft. below ground surface. The soil from this lot will provide fill for a canyon on another portion of the property.

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Orinda CA 94563

William Self Associates, Inc.

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

October 23, 2014

Tony Cerda, Chairperson
Costanoan Rumsen Carmel Tribe
240 E. 1st Street
Pomona, CA 91766

RE: Mountain View Cemetery Project, Alameda County, CA

Dear Mr. Cerda,

WSA has been contracted by Lamphier-Gregory to do a CEQA cultural resources assessment of the Mountain View Cemetery Burial Site Expansion Project in Oakland and Piedmont, California.The project area encompasses 7.13 acres within Township 1 South, Range 3 West, Section 19 of the Oakland East 7.5' Topographic Map. Project plans indicate that grading is planned for a lot in the eastern (upland) portion of the Mountain View Cemetery property, where a section of a steep hillside will be graded to a depth of 15-18 ft. below ground surface. The soil from this lot will provide fill for a canyon on another portion of the property.

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Thank you again for your assistance.

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:wself@williamself.com

October 23, 2014

Ann Marie Sayers, Chairperson
Indian Canyon Mutsun Band of Costanoan
PO Box 28
Hollister, CA 95024

RE: Mountain View Cemetery Project, Alameda County, CA

Dear Ms. Sayers,

WSA has been contracted by Lamphier-Gregory to do a CEQA cultural resources assessment of the Mountain View Cemetery Burial Site Expansion Project in Oakland and Piedmont, California.The project area encompasses 7.13 acres within Township 1 South, Range 3 West, Section 19 of the Oakland East 7.5' Topographic Map. Project plans indicate that grading is planned for a lot in the eastern (upland) portion of the Mountain View Cemetery property, where a section of a steep hillside will be graded to a depth of 15-18 ft. below ground surface. The soil from this lot will provide fill for a canyon on another portion of the property.

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61d Avenida de Orinda
Orinda CA 94563

William Self Associates, Inc.

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

October 23, 2014

Rosemary Cambra, Chairperson
Muwekma Ohlone Indian Tribe of the SF Bay Area
PO Box 360791
Milpitas, CA 95036

RE: Mountain View Cemetery Project, Alameda County, CA

Dear Ms. Cambra,

WSA has been contracted by Lamphier-Gregory to do a CEQA cultural resources assessment of the Mountain View Cemetery Burial Site Expansion Project in Oakland and Piedmont, California.The project area encompasses 7.13 acres within Township 1 South, Range 3 West, Section 19 of the Oakland East 7.5' Topographic Map. Project plans indicate that grading is planned for a lot in the eastern (upland) portion of the Mountain View Cemetery property, where a section of a steep hillside will be graded to a depth of 15-18 ft. below ground surface. The soil from this lot will provide fill for a canyon on another portion of the property.

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Thank you again for your assistance.

Sincerely,

James M Allan

James Allan, Ph.D., RPA
Principal

Attachment

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

William Self Associates, Inc.

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

October 23, 2014

Andrew Galvan
The Ohlone Indian Tribe
PO Box 3152
Fremont, CA 94539

RE: Mountain View Cemetery Project, Alameda County, CA

Dear Mr. Galvan,

WSA has been contracted by Lamphier-Gregory to do a CEQA cultural resources assessment of the Mountain View Cemetery Burial Site Expansion Project in Oakland and Piedmont, California.The project area encompasses 7.13 acres within Township 1 South, Range 3 West, Section 19 of the Oakland East 7.5' Topographic Map. Project plans indicate that grading is planned for a lot in the eastern (upland) portion of the Mountain View Cemetery property, where a section of a steep hillside will be graded to a depth of 15-18 ft. below ground surface. The soil from this lot will provide fill for a canyon on another portion of the property.

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Thank you again for your assistance.

Sincerely,

James M Allan

James Allan, Ph.D., RPA
Principal

Attachment

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

William Self Associates, Inc.

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

WSA

Consultants in Archaeology and Historic Preservation

October 23, 2014

Ramona Garibay, Representative
Trina Marine Ruano Family
30940 Watkins Street
Union City, CA 94587

RE: Mountain View Cemetery Project, Alameda County, CA

Dear Ms. Garibay,

WSA has been contracted by Lamphier-Gregory to do a CEQA cultural resources assessment of the Mountain View Cemetery Burial Site Expansion Project in Oakland and Piedmont, California.The project area encompasses 7.13 acres within Township 1 South, Range 3 West, Section 19 of the Oakland East 7.5' Topographic Map. Project plans indicate that grading is planned for a lot in the eastern (upland) portion of the Mountain View Cemetery property, where a section of a steep hillside will be graded to a depth of 15-18 ft. below ground surface. The soil from this lot will provide fill for a canyon on another portion of the property.

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Sincerely,

James Allan, Ph.D., RPA
Principal

Attachment

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

William Self Associates, Inc.

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

Teresa Bulger <tbulger@williamself.com>

Mountain View Cemetery_Expansion Project

4 messages

Teresa Bulger <tbulger@williamself.com> Mon, Nov 17, 2014 at 12:05 PM
To: Andy Galvan <chochenyo@aol.com>

Dear Mr. Galvan

WSA sent you a letter a few weeks ago with regards to the Mountain View Cemetery Burial Site Expansion Project, on Oakland California, requesting comment or information on sites that you may be aware of in the project area. After we did not receive a response, we called your phone, and left a message. A co-worker mentioned to me that you may prefer email, communication, so I hope this email will give you the information you need to provide comments should you have any.

Please find the text of the letter below, and a Project location map attached.

The Burial Site Expansion Project is located specifically in the upland (east) portion of the property and is located on steep (30% or more) slopes which the Mountain View Cemetery hopes to grade to create more areas which can be utilized. Since sending our initial letter, we completed our archaeological pedestrian survey of the site (7.16 acres) and did not encounter any Euroamerican or Native American-related artifacts.

Please let us know if you have comments or questions with regards to this project.

Thank you.

Best regards,

Teresa Bulger

October 23, 2014

Andrew Galvan

The Ohlone Indian Tribe

PO Box 3152

Fremont, CA 94539

RE: Mountain View Cemetery Project, Alameda County, CA

Dear Mr. Galvan,

WSA has been contracted by Lamphier-Gregory to do a CEQA cultural resources assessment of the Mountain View Cemetery Burial Site Expansion Project in Oakland and Piedmont, California.The project area encompasses 7.13 acres within Township 1 South, Range 3 West, Section 19 of the Oakland East 7.5' Topographic Map. Project plans indicate that grading is planned for a lot in the eastern (upland) portion of the Mountain View Cemetery property, where a section of a steep hillside will be graded to a depth of 15-18 ft. below ground surface. The soil from this lot will provide fill for a canyon on another portion of the property.

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Thank you again for your assistance.

Sincerely,

James Allan, Ph.D., RPA

Principal

Attachment

--
Teresa D. Bulger, Ph.D, RPA
Archaeologist, Project Director

William Self Associates, Inc.
Consultants in Archaeology and Historic Preservation

Pacific Region Office
61-D Avenida de Orinda
Orinda, CA 94563
Ph: (925) 253-9070
Cell: (617) 875-7046
Fax: (925) 254-3553

Project Location_1.pdf
1378K

Andy Galvan <chochenyo@aol.com> Sat, Nov 22, 2014 at 12:35 PM
To: tbulger@williamself.com

Hi there,

can you tell me the results of the Literature Search that was undertaken for this Project? Better yet, may I have a copy of it?

Thank you,

Andrew Galvan
An Ohlone Man
[Quoted text hidden]

Teresa Bulger <tbulger@williamself.com> Mon, Nov 24, 2014 at 9:47 AM
To: Andy Galvan <chochenyo@aol.com>

Mr. Galvan,

Thanks for the email. I can give you a sense of what we found in our records search, but we can't forward information directly from the Information Center, especially with respect to the exact location of sites.

The records search identified one cultural resource within Mountain View Cemetery (but outside the Project area), which was documented on a DPR form. This resource consists of a sparse shell scatter (clam shell) identified over an area "at least 200 ft. in diameter." This resource was documented in 2006 by local historian Richard Schwartz, though the circumstances of the discovery were not described and no other report is associated with the DPR form. Schwartz noted that "the density of the shell scatter is not as intense as an undisturbed shell mound but the density that is often found in areas that have been disturbed and graded as this site has."

No shell or other pre-contact artifacts were observed during our pedestrian survey of the Project area (a ~7-acre area in the upland portion of the property). Notably, the slope in the Project area is steep, which would suggest that should an archaeological site have once been present, it may have been disturbed by wind and water erosion. We are not recommending testing or monitoring within the Project area.

The records search identified a number of 19th and 20th century buildings within a 1/4-mile radius of the Project area, but no further archaeological resources.

Thank you and let me know if you have any other questions.
Best regards,
Teresa Bulger
[Quoted text hidden]

Andy Galvan <chochenyo@aol.com> Sun, Nov 30, 2014 at 2:26 PM
To: tbulger@williamself.com

Teresa,

rec'd this email and it contains all the answers to any questions I might have.

Thank you,

Andy

-----Original Message-----
From: Teresa Bulger <tbulger@williamself.com>
To: Andy Galvan <chochenyo@aol.com>
[Quoted text hidden]

Teresa Bulger <tbulger@williamself.com>

Mountain View Cemetery_Historic Protections?

3 messages

Teresa Bulger <tbulger@williamself.com> Tue, Nov 4, 2014 at 11:43 AM
To: info@oaklandheritage.org

Dear Ms. Pavlinec and Ms. Herd,

I am composing a Cultural Resource Assessment Report of the archaeological resources at the Mountain View Cemetery in advance of potential development in a portion of the property. I am writing in hopes that you might be able to provide some information on the historic protections that might apply to the Cemetery, in light of its not being formally registered yet on state and national register.

While listed on the Office of Historic Preservation's list of historic resources in Alameda County, it has not yet been listed on the California Register of Historic Resources nor the National Register of Historic Places (though 2013 documentation suggests that it would be eligible for both).

Any help you might be able to provide in determining what, if any, historic protections that Cemetery is subject to would be helpful!

Thank you!
Best regards,
Teresa Bulger

--
Teresa D. Bulger, Ph.D, RPA
Archaeologist, Project Director

William Self Associates, Inc.
Consultants in Archaeology and Historic Preservation

Pacific Region Office
61-D Avenida de Orinda
Orinda, CA 94563
Ph: (925) 253-9070
Cell: (617) 875-7046
Fax: (925) 254-3553

Oakland Heritage Alliance <info@oaklandheritage.org> Sat, Nov 29, 2014 at 12:40 PM
To: Teresa Bulger <tbulger@williamself.com>

Dear Teresa,

I am back!

My colleague just had a meeting with a few others involved with Mountain View Cemetery. Please see attached.

She also mentioned you may consider adding yourself to Betty Marvin and the City's project planner mailing

list so you can be notified of public hearings, ceqa comment period, scoping sessions, etc.

I am contacting a historian who has done a lot of research on the mountain view cemetery to see if he is available to add additional information and hope to get back to you by the end of the day.

Lastly, I am mailing you a copy of an article from our 1987 *OHA News* newsletter and Mountain View Cemetery profile from the Oakland Cultural Heritage Survey of 1996-98.

I hope this helps!

Best,

Christina Herd

From: Teresa Bulger [mailto:tbulger@williamself.com]
Sent: Tuesday, November 4, 2014 11:44 AM
To: info@oaklandheritage.org
Subject: Mountain View Cemetery_Historic Protections?

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Mountain View Cemetery Meeting.docx
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Teresa Bulger <tbulger@williamself.com> Mon, Dec 1, 2014 at 10:37 AM
To: Oakland Heritage Alliance <info@oaklandheritage.org>

Christina,

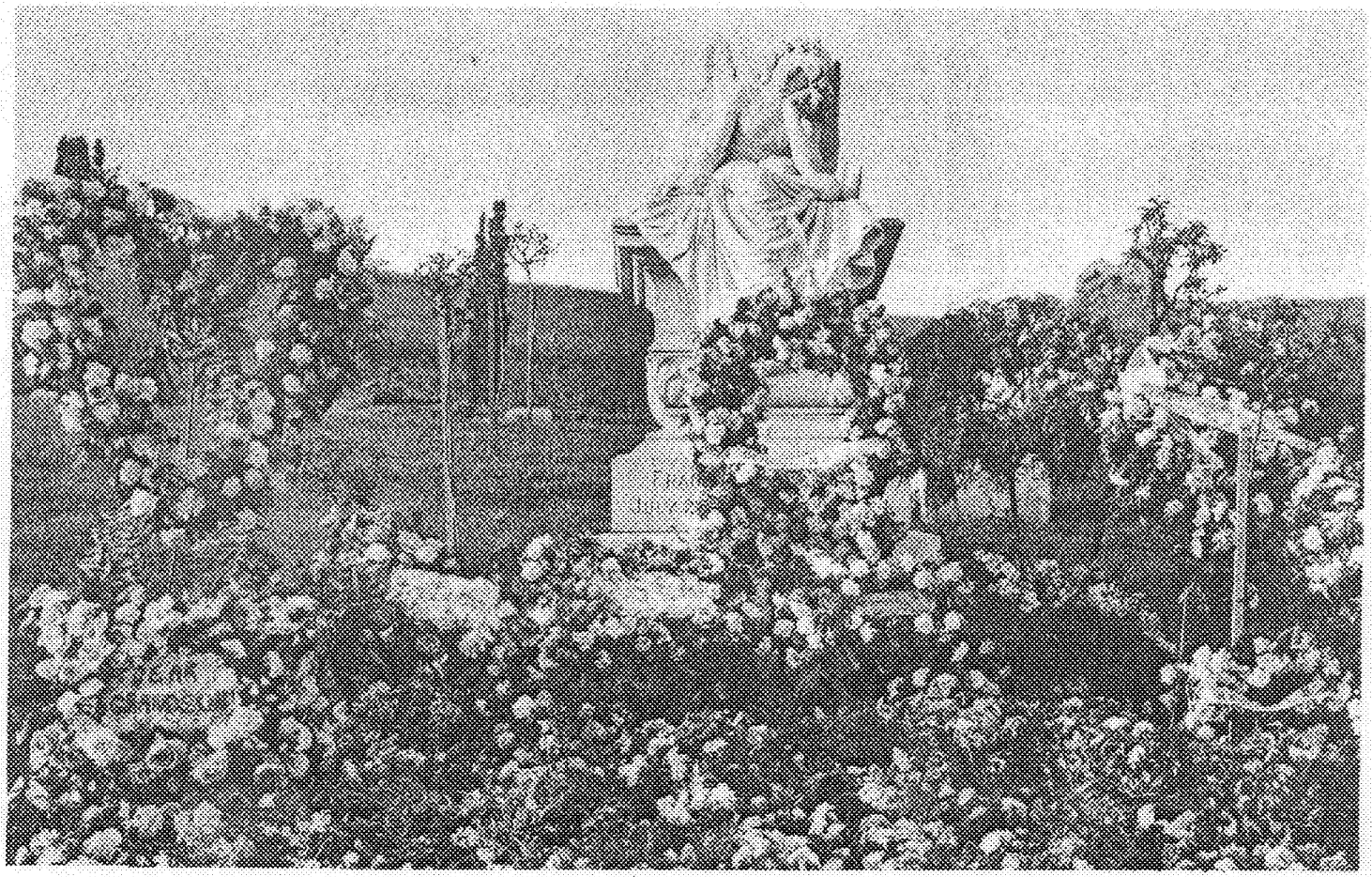
Thanks so much for all this information. I look forward to reading the newsletter article. Hopefully it will shed some light on the ways that the upland portion of the property had been used in the past. If the historian you are in contact with would like more information on the project location (within the cemetery), please do let me know.

Thanks,
Teresa
[Quoted text hidden]

NEWS OAKLAND HERITAGE ALLIANCE NEWS

VOL. 7, NO. 2 SUMMER 1987

Mountain View Cemetery 1863-1906



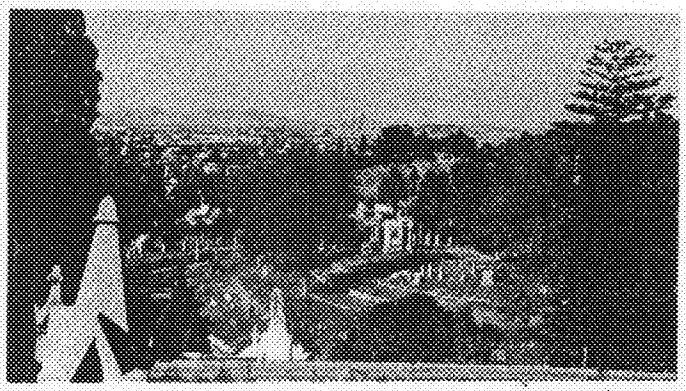
Frances Schmidt's monument (1911), surrounded by floral tributes: sculpture in the pensive-angel genre, and Olmsted's grassy hills and cypresses. (Oakland History Room)

Nestled at the base of Oakland's foothills is a 200-acre parcel of rolling hillside on which rests a forest of marble and granite called Mountain View Cemetery. While some Oaklanders have never ventured inside its gates, many regularly stroll the roads and walkways between the gravestones and monuments that have been accumulating for well over a century, each with his own purpose and his own private view.

For the historian, the cemetery is a treasure house for the study of material culture. From the time of the Civil War until the earthquake of 1906, Mountain View Cemetery was a Victorian landscape. It reflected the culture of the Victorians. Their ideas of family, death, and art are written in stone for us to see. This article will describe some of the 19th century artifacts of Mountain View and try to decipher their messages.

Western civilization has always provided burial places for the dead, but the cemetery as we know it is a rather recent development. In Europe at the beginning of

OHA is offering a walking tour of Mountain View on Sat., Aug. 1, at 1:30 pm. See Calendar for details & tour series.



Mountain View today, seen from above Millionaires' Row. (Jane Anders)

the industrial age, burial in the church or near the church was common. But with the rapidly growing urban populations, church floors and churchyards became as crowded as the surrounding city slums, and alarmed the public with pestilential fumes and rumors of disease. The resulting invention was the "rural cemetery," a special area set aside for burial of the dead in pleasant surroundings in a dignified and sanitary fashion. This was part of a wider growth of urban improvements, such as water and sewer systems and public parks.

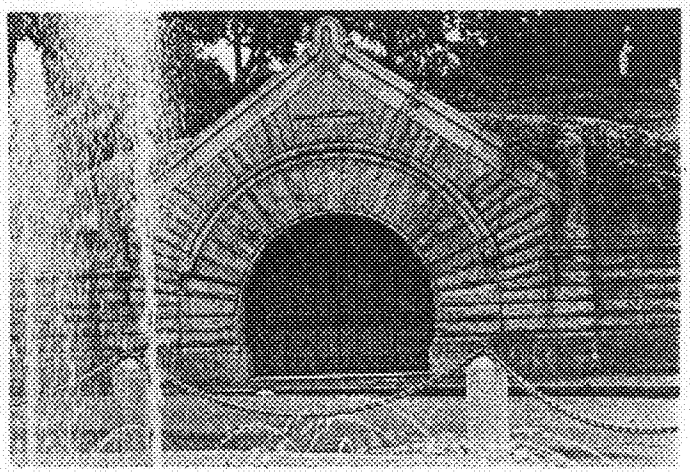
By the mid-19th century many great cemeteries (the term "graveyard" was no longer in use) were flourishing in Europe and America: Pere-Lachaise in Paris, Kensal Green and Highgate in London, Mount Auburn in Boston, Green-Wood in New York, and countless others. Mountain View was, in fact, one of the later garden cemeteries. When it opened in 1865 there were already at least 66 rural or garden cemeteries in the United States.

Like other American cities in the last half of the 19th century, Oakland in 1863 was confronted with the problem of providing pure water, light and power, transportation and parks. A thriving center of trade and commerce, Oakland had outgrown its two small, "unhealthy" and unsightly graveyards in the center of town. California had passed a Rural Cemetery Act in 1859 and in the tradition of Boston's Mount Auburn, leading business and professional men of Oakland determined that the time had come to establish a garden cemetery for Oakland in the nearby countryside. They bought land two miles north of town, incorporated a Cemetery Association and named the site "Mountain View."

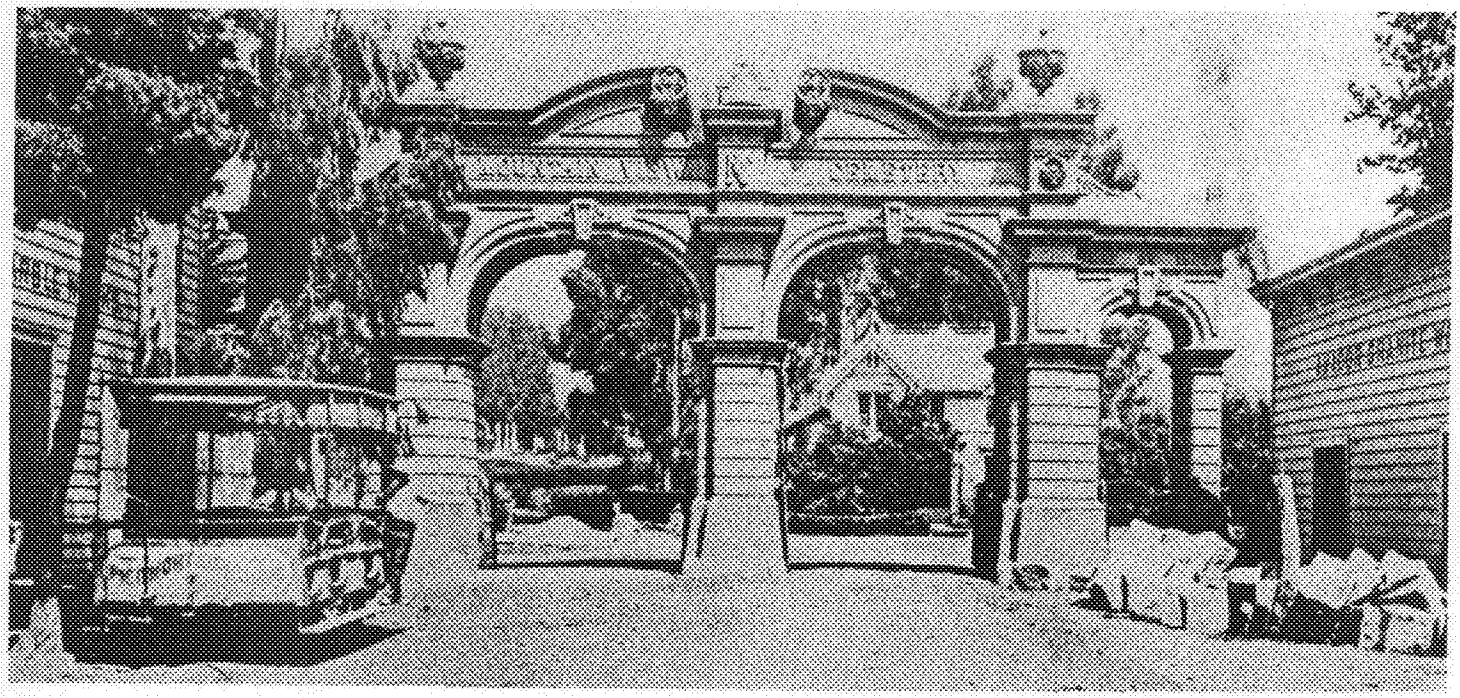
The trustees had their first meeting in December 1863 and by April 1864 were corresponding with Frederick Law Olmsted in Bear Valley. Olmsted, who had come to California in 1863 for the Mariposa Mining estates, was already famous as co-designer of Central Park in New York. As a result of this visit to the West, he was in the forefront of the movement to conserve Yosemite, and consulted on the site plan for the University in Berkeley as well as on parks for San Francisco.

In September 1864 the trustees "ordered that...the Topographical Survey...be forthwith sent to Mr. Olmsted...with a request of him to name his terms for laying out the grounds." At the March 30, 1865 meeting "Mr. Olmsted, being present, [gave] his views at length." After viewing the Bay Area's barren, scorched summer landscape, rather than imitate the eastern cemeteries he chose Italian cypress, cedars from Lebanon, stone pines of Italy, along with the Monterey pine and native oak. He could not have foreseen that Anthony Chabot would bring ample irrigation water to the area a few years later or even that the local creek would be dammed, making two ponds for cemetery watering needs.

He emphasized the vital importance of maintenance. Not for Olmsted the romantic ruins and decay of Gothic literature: "Nowhere is dilapidation so inappropriate and offensive, and therefore so much to be guarded against, as in a cemetery." For Olmsted, recreation was not a proper use for a cemetery landscape. He recommended parks for the living so that recreation



Romanesque tomb of Oakland founder Edson Adams (1824-1868), with fountains unforeseen by Olmsted. (Phil Bellman)



The second Mountain View gateway, 1885-1923. (Oak.Hist.Mm.)

would not invade the place of reverence for the dead. His idea was that "the brooding forms of the coppices and the canopy of the cedars would unite in the expression of a sheltering care extended over the place of the dead, the heaven-pointing spires of the immortal cypress would prompt the consolation of the faith." Olmsted worked all his life to provide parks so that people could escape urban congestion, but he never wavered in his conviction that cemeteries were not parks. The trustees of Mountain View have been faithful to that point of view for 120 years.

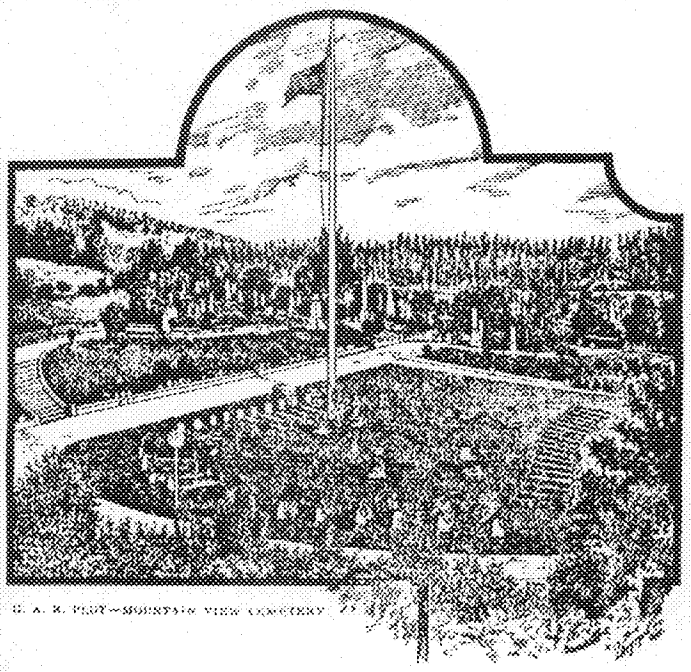
Olmsted's report was submitted to the trustees (with a bill for $1000) in 1864, and, after dedication ceremonies, the first interment took place in July 1865: "Jane Waer, age 43, who died of bilious fever."

Mountain View Cemetery is the only Bay Area plan of Frederick Law Olmsted fully carried out and still in existence. In fact, for some years the trustees continued to consult Olmsted, who had returned to New York in response to constant demands for his services. Twenty-two years later he went again to California to work on site plans for Stanford University. Whether he took the opportunity to check on Mountain View is not known. If he had, what might he have seen almost a quarter-century after he submitted his report?

What had been an all-day trip from town to the cemetery along country roads had become a short ride on the Piedmont Horse Railroad that operated from Seventh Street along Cemetery Road (now Piedmont Avenue) to the very gates of Mountain View. A classic stone gateway was erected in 1885, with great urns atop the outer edges and a broken pediment holding a large bronze bell which tolled the passing of each funeral procession. At the time of the bell's purchase in 1882 it tolled for about 40 funerals a month. By 1876 2000 burials had taken place; by 1885 there had been 6000.

A number of handsome monuments would have been in place to greet Olmsted, but only a handful of family mausoleums had been completed. Anthony Chabot had contributed his flume and fountain in 1877, and two more fountains were added to the main avenue in 1879. The hills, so dry and barren in 1864, were by the 1880s "embowered in dense foliage," and the "heaven-pointing spires" of cypress replaced by magnolias and orange trees. The main avenue was lined with roses, geraniums, and lilies for the half mile to the great receiving vault built in 1873 for the temporary storage of up to 150 bodies. Livestock pastured in the cemetery grounds and ripening crops of barley and carrots tempered the sorrowful and reverent atmosphere during the 1870s.

Outside the gates a number of stone and



G. A. R. PLOT—MOUNTAIN VIEW CEMETERY

The GAR plot (Union Civil War veterans) at Mountain View, depicted in the Oakland Enquirer 1888 special edition (OHR)

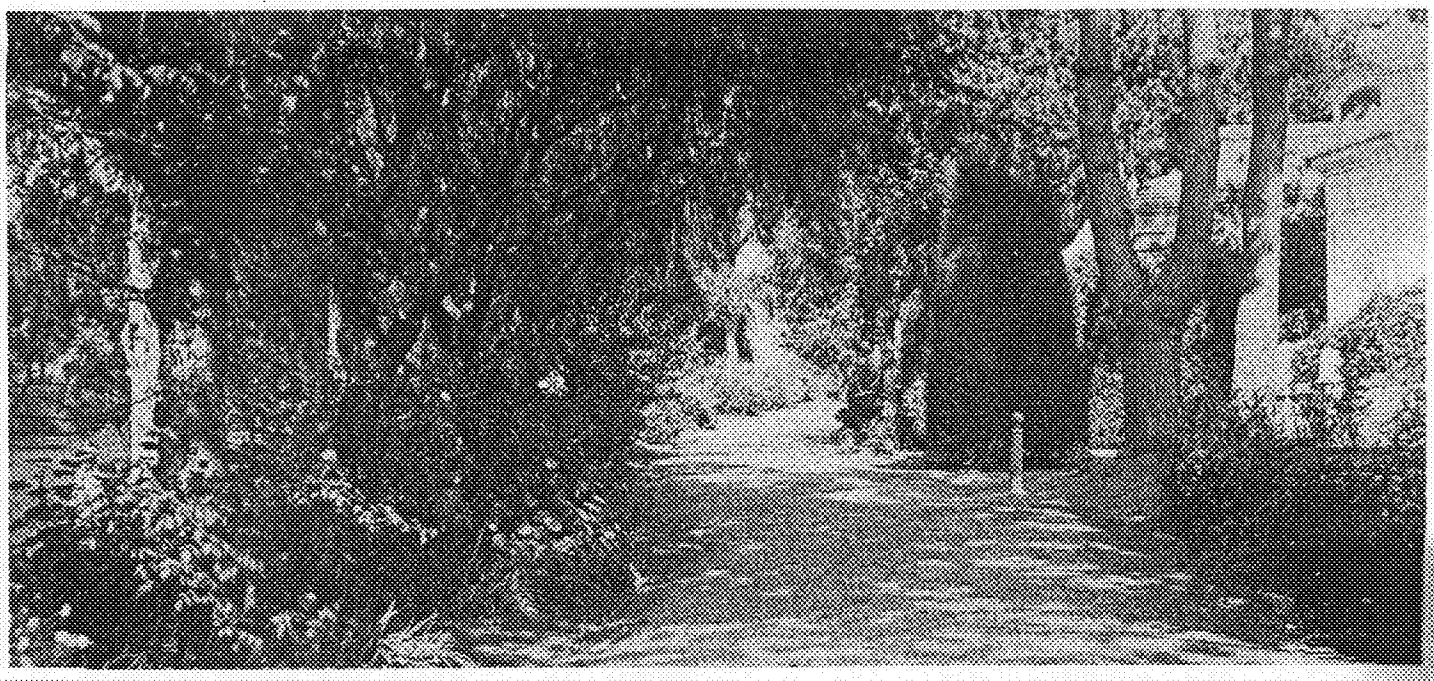
marble businesses were thriving. One was the Amador Marble Works,"filled with splendid slabs and shafts from the foothills of the Sierra Nevada...; also steps, coping walls, etc." The stonecutters' and engravers' handiwork could be seen in the many marble shafts and granite sarcophagi as well as in the early family mausoleums.

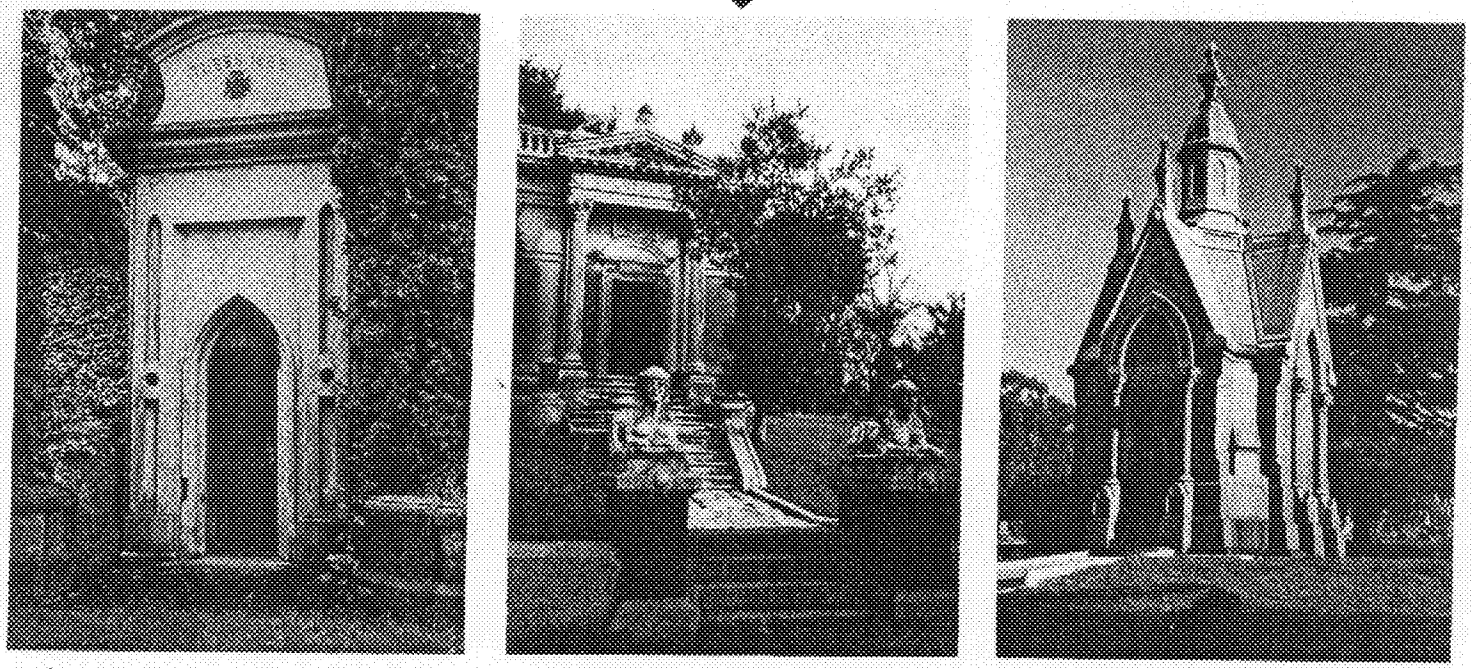
The Tubbs family tomb, tunneled into a south hillside in 1866, was one of the first of these. Unlike most, it is still in use, contains dozens of interments, and was recently renovated. Hiram Tubbs was one of the original trustees of the cemetery and owner of the Tubbs Hotel in Brooklyn (East Oakland) where many of the Cemetery Association meetings were held.

Not far from the gates, a newly completed Great Pyramid housed the remains of California's first senator, William M. Gwin. Farther up the hillside Mrs. "General" David C. Colton had erected a Greek temple in marble to "our beloved," legal counsel to the Big Four, on a site plainly visible from her Nob Hill residence in San Francisco. Some distance below Colton's tomb Charles Main--owner of the first sidewheeler on the Sacramento River--was laid to rest in a Gothic chapel reputed to have cost $50,000.

Both Main's and Colton's tombs were designed by Fulgenzio Seregni, whose repertoire was extensive to say nothing of eclectic. Main's mausoleum is pure Gothic Revival with buttresses, pointed arches, finials, solid bronze doors, and stained glass windows. A native of Milan, Seregni had been a "designer of artworks of a memorial nature" in Italy, New York, and, since 1858, San Francisco. His monuments in New York included one for financier Jay Gould. He would later build another chapel, almost a twin to Main's, for Frederick Delger, Oakland's first multi-millionaire and developer of the block of offices now

Tree-lined drive in Mountain View, photo dated 1884. Tubbs mausoleum is at far right. (Oakland History Room)





Tombs of Tubbs, Colton, and Main (left to right) display the eclecticism of Mountain View's funerary art. (Gaye Lenahan)

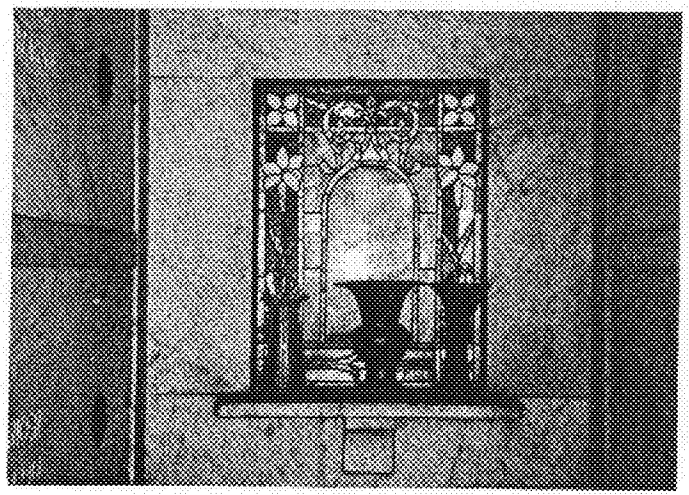
undergoing restoration at 9th and Broadway. Seregni's signature can be seen on the granite shaft over the grave of Oakland's Mayor Selby.

San Francisco owes its Ferry Building and other pre-Fire architecture of Arthur Page Brown indirectly to Mountain View, since Mary Crocker sent to New York for an architect to design the tomb for her husband, the first of the Big Four to die. Family mausoleums seem often to have been designed by family architects. Charles Mau of Oakland designed tombs for J.W. Coleman and Edward Kreyenhagen, as well as a house on the Mountain View grounds.

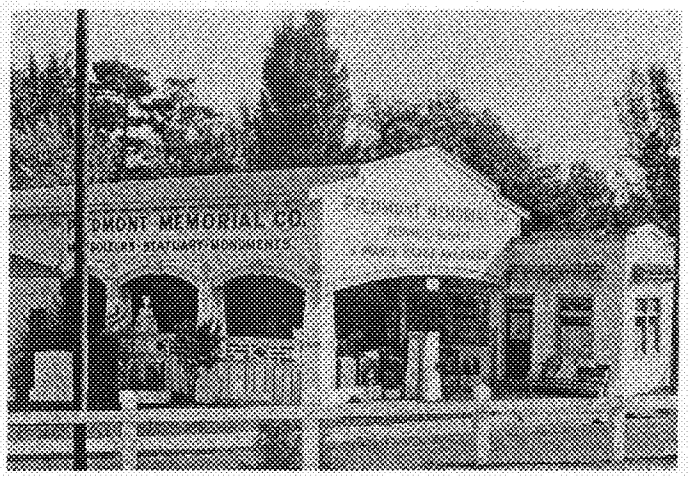
Architects were the elite of the largely anonymous ranks of cemetery artisans. Granite and marble had to be cut, polished, and then carved with words, symbols, and even portraits. Stained glass, art glass, and beveled glass were de rigueur for respectable middle class homes--and tombs--from about 1870 onward. Despite extensive vandalism, good examples can still be seen today. In the mausoleum of David Hewes, who lived in the Camron-Stanford house and designed the Golden Spike, there are stained glass windows on three sides and a matching skylight. Charles Camden's tomb has a delightful clear glass window with an all-over beveled pattern which was done by a slow and laborious process of hand grinding with a flat wheel, before invention of a beveling machine in the early 1900s.

Metalwork is represented at Mountain View by the mausoleum doors and gates in both Victorian and Art Nouveau styles. Often referred to as wrought iron, they are in most cases bronze, for the good reason that unlike bronze, iron rusts and corrodes.

Most indicative of Victorian sentiment and style are the pale, weathered remnants of memorial sculpture. Marble or granite angels of every sort are ubiquitous in all sizes and poses. They can be seen guarding a mausoleum gate, weeping over a gravestone or lounging on the edge of a sarcophagus. Little stone lambs and cherubs abound on the graves of children. These graves were



Opalescent art glass, marble, and metalwork in the Barker family vault. (Gaye Lenahan)



The Piedmont Memorial Co. of J.G. Tiitu and E. Marttila: one of about 9 monument works that once lined Piedmont Avenue just outside the gates. Amador Granite and Marble, founded in 1874 and one of the oldest continuous businesses in Oakland, is now the only survivor.
(James & Robert McCarthy, Amador Granite & Marble)

most numerous before the 1880s when science had yet to make inroads on childhood diseases. According to James McCarthy of the Amador-East Bay Memorial Company, families ordered most of the sculpture from samples at the monument works or out of catalogs, and it was generally carved in Italy.

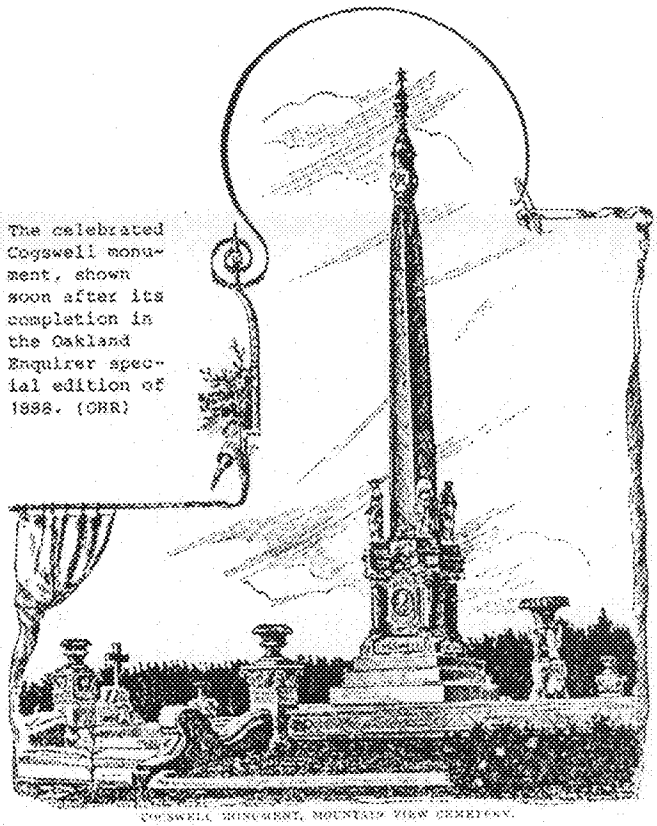
No history of Mountain View Cemetery would be complete without a look at the first major monument erected there by and for Henry David Cogswell. In August 1887 local people went in numbers to the cemetery to watch the work in progress, and the Oakland Enquirer, in several articles, recorded the amazing affair. In an interview Cogswell described his future monument. It would be a granite obelisk 70 feet high, topped with a small dome, copied from the nation's capitol, supporting a ten-inch crystal star. The granite pieces weighing 329 tons were at that very moment on their way to California on 38 freight cars and constituted the "heaviest shipment ever made at one time across the continent." Mr. McDonald, the builder, explained that the monument was earthquake-proof because of the way the stones were to fit together.

Transporting the stone from the railway proved to be an awesome task. The 30-ton obelisk was placed on a special wagon shipped from the East, but the 24 horses hitched to it could not pull together. A capstan used in moving houses got the giant stone as far as the intersection of Broadway and Cemetery Avenue before it broke down. A traction engine ferried over from San Francisco finally completed the job.

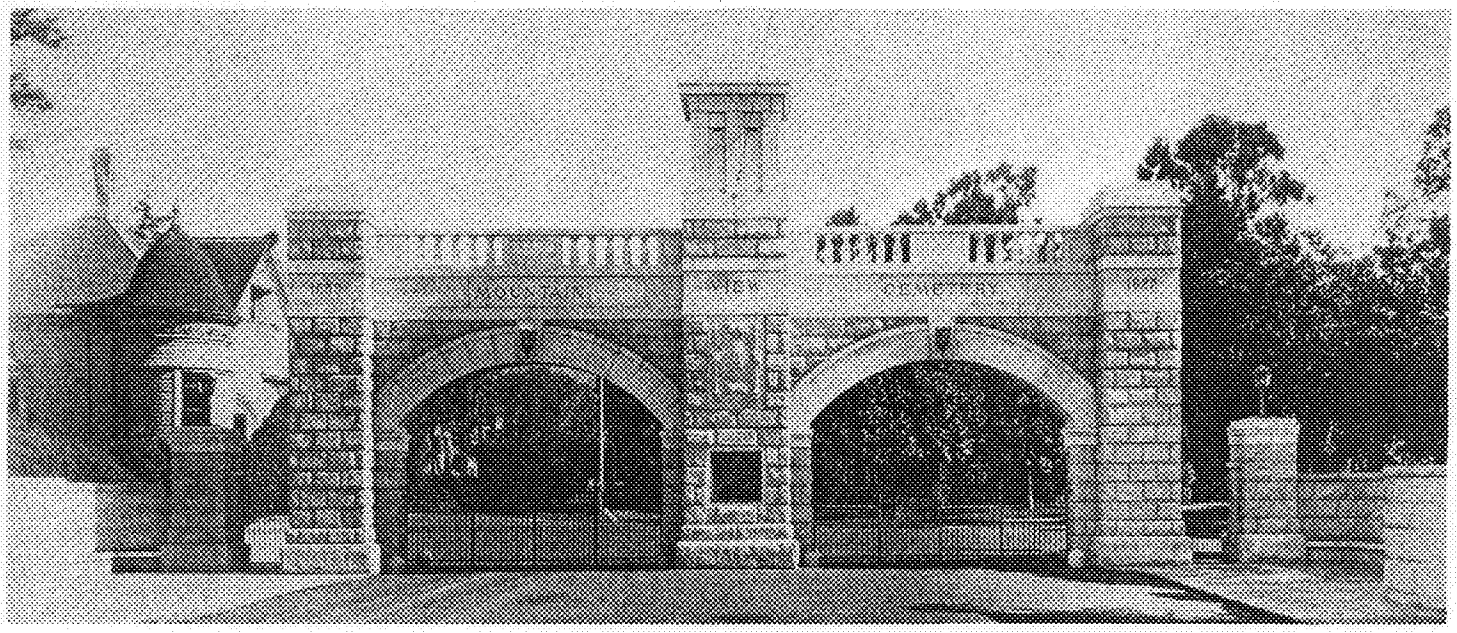
Henry Cogswell was a Rhode Island dentist who made and lost several fortunes while promoting positive thinking, education (including Cogswell College), and temperance. He gave numerous water fountains crowned with larger-than-life statues to the city of San Francisco. The statues were of Cogswell himself with a temperance pledge in one hand and a water goblet in the other. "When so much was said about the bad taste inherent in placing himself in effigy, Cogswell retorted that all he wanted was a representation of a fine specimen of non-alcoholic manhood, and that he was surprised indeed when he saw the first metal casting to note the likeness to himself. The result, he assured his critics, was entirely an accident."

The 19th century American lived closer to death than Americans of the 20th century. The afflicted usually died at home and were made ready for burial by the women of the family. People expected a proper funeral and the wearing of mourning attire, and later to pay memorial visits to the grave with its marker appropriate to the wealth and calling of the deceased.

By the early 20th century people died in hospitals; undertakers and funeral "homes" took over the care of the dead. Families



The celebrated Cogswell monument, shown soon after its completion in the Oakland Enquirer special edition of 1898. (OHA)

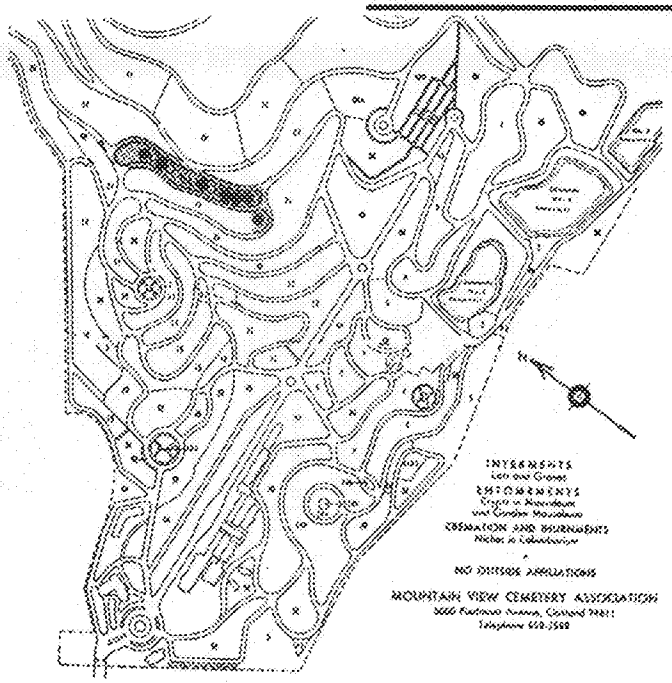


The third Mountain View gates, built in 1923 and truncated to the present pillars in the mid-50s.
(James & Robert McCarthy, Amador Granite & Marble)

moved and separated; family plots became impractical and unvisited. Fashions changed, gingerbread carving vanished from homes and from tombstones. Philanthropic foundations replaced massive monuments. The garden cemetery was replaced by the well-manicured memorial park. But not everyone agrees with the new fashions. The elaborate, vividly inscribed markers of many Asians, East Europeans, and Latin Americans still tell a story the marble angels would understand, a story of family ties, celebration of death and the need to remember.

The cemetery continues to mirror the society around it, continues, like an outdoor museum, to collect new cultural artifacts while neglect, dilapidation, and vandalism erode the old. In older areas of the cemetery there are high weeds, crumbling walks, and smashed and broken monuments that would dismay Frederick Olmsted. But many Victorians found decay, dilapidation, and ruins romantic: perhaps the spirit of the Victorians lingers on and is satisfied with things as they are at Mountain View.

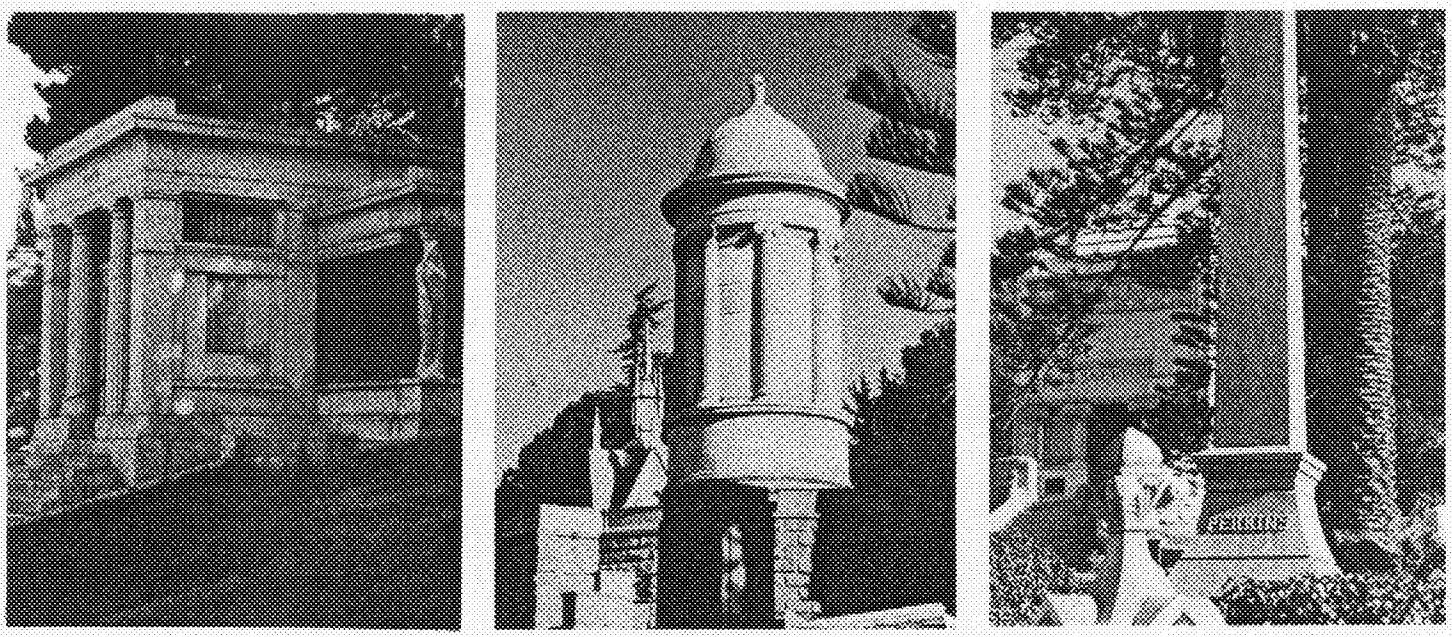
--Gaye Lanahan



Millionaires' Row

"Millionaires' Row" is the popular name for the neighborhood of impressive mausoleums at the top of Mountain View Cemetery. Here are clustered the tombs of early Oakland's founders and builders, and some great names of wider California history. A profile drawn from the average of all these achievers would be something like this: Born along the Atlantic seaboard, he came to California as a bachelor in his mid-twenties during the Gold Rush, worked for a while in the mines without much success, then went into business, married and raised a family, and died near the end of the

Millionaires' Row is at upper left, Piedmont Ave. entrance at bottom of map. Adjoining Mountain View on the northwest (left of the map) are Catholic and Jewish cemeteries of similar date. (Mountain View Cemetery Association map)



North to south along the Row, Borax Smith's bank-like vault with caryatids; Charles Crocker's classic temple, with Delger's Gothic chapel behind; George Perkins's obelisk with Samuel Merritt's Romanesque tomb beyond. (Jane Anders)

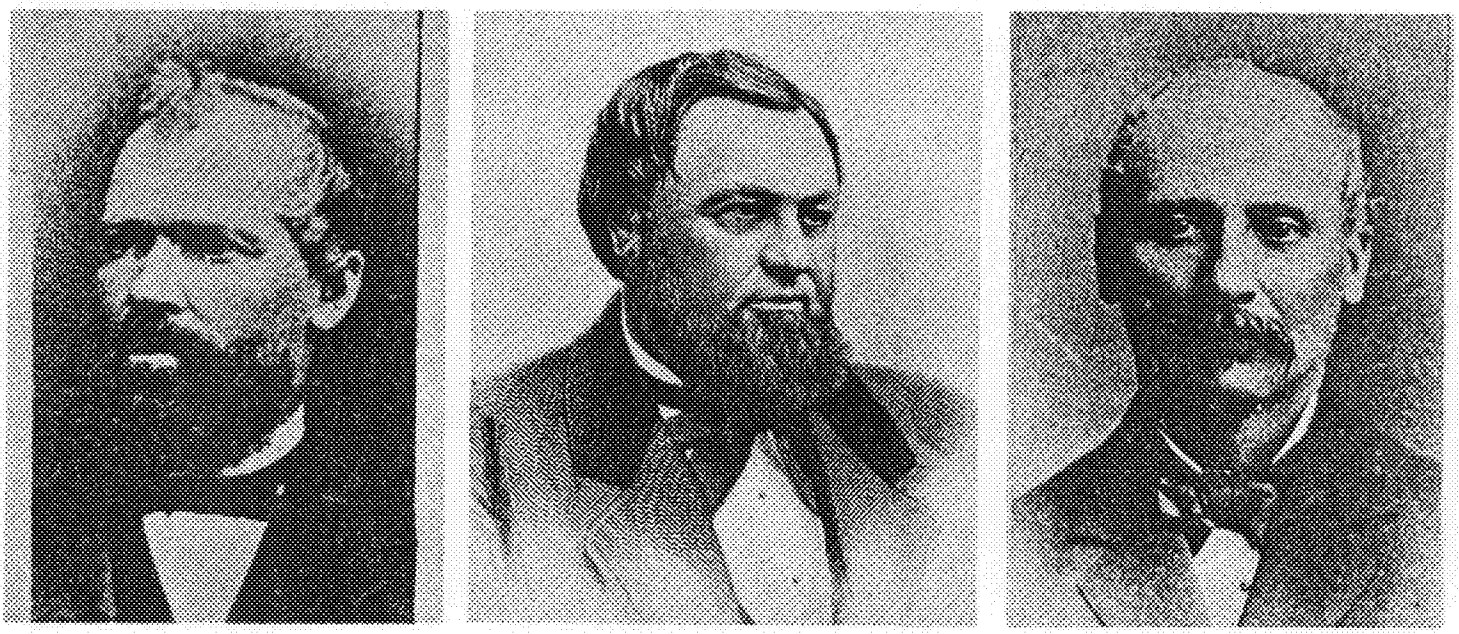
Victorian era, a wealthy man.

Proceeding north along the Row, here are short biographies of some of the self-made millionaires who now reside on the top of the hill.

George C. Perkins (1839-1924): Resident of Adams Point and namesake of Perkins Street, Perkins was born in Maine and grew up on a farm there. When he was 13 he ran away to sea on the clipper ship Galatea to San Francisco. He went to the mines, but unable to make a living there, he worked for steamboat passage to Sacramento and then walked to Oroville. He saved his money working as a store porter and driving a mule team, and eventually bought a ferry at Long's Bar and built a flour mill. He married in Oroville in 1864 and had seven children. His later business interests included shipping, banking, and railroads. In 1879 he became governor of California, and was elected senator in 1897 and 1903.

Dr. Samuel Merritt (1822-1890): When Samuel Merritt was a young physician in Plymouth, Mass., his skill attracted the attention of Daniel Webster, who encouraged him to go to California: "Go out there, young man, go out there and behave yourself, and as free as you are from family cares, you will never regret it." Merritt bought a ship, and arrived in San Francisco in May 1850, the day after one of the recurring great fires, which assured that his general cargo would sell at a good price. He started a medical practice in San Francisco and as well became a pioneer in the Puget Sound lumber trade. In 1852 he started buying and selling real estate in Oakland and San Francisco, including a large acreage along the shore of what is now Lake Merritt. This he subdivided to build several "elegant" homes, among them the Camron-Stanford House. Merritt was a San Francisco supervisor, a member of the Vigilance Committee of 1856, Mayor of Oakland in 1868, a Regent of the University of California, and a founder of the Oakland Bank of Savings and California Insurance Company. He was described as standing 6'3" and weighing 340 pounds when at his best. Diabetes complicated by uremic poisoning brought him to Mountain View in 1890.

Charles Crocker (1822-1888): Born in New York, Crocker worked from the age of 9 at such jobs as peddler and ironmaker. He had little formal education but was eventually able to help his family buy a farm in Indiana. He left there in 1849 for California where he tried gold mining, with little success. He turned to merchandising, prospered in dry goods in Sacramento, and became one of the "Big Four" who built the transcontinental railroad. Ironically for a railroad man, he died because of a fall from a horse-drawn carriage. His wife, their son George, and George's wife are buried along with Charles Crocker at Mountain View. The Crocker monument was des-



Millionaires all in a row: left to right, Frederick Delger, Samuel Merritt, and Peter Remillard. (Oakland History Room)

igned by prominent architect A. Page Brown.

Frederick Delger (1822-1898): Delger left Saxony for New York in 1847, married, and in 1853 came to San Francisco via Cape Horn with his wife and child. In 1855 he opened a retail shoe store and as business prospered moved on to the wholesale trade. In 1860 he moved from San Francisco to Oakland and became the city's first multi-millionaire. He owned ten acres from Telegraph to San Pablo between 17th and 30th Streets (20th was once called Delger Street and 19th was Frederick). "He could offer his guests, at his fabulous Telegraph Avenue estate, the visual treat presented by his collection of camellias and azaleas, after which they might divert themselves in his commodious aviary twittering with birds of rare and brilliant plumage."

Francis Marion "Borax" Smith (1846-1931): Smith went west to Esmeralda, Nevada, where he started mining. He turned to contracting timbers for the mines and while out searching for lumber he traveled to areas where borax was being discovered (borax was used for preserving meat and as a disinfectant). In 1872 he developed a borax claim of his own, and in 1880 with partner William Coleman bought a rich claim in Death Valley. His Oakland home was near 28th Street and 9th Avenue, and was a huge estate with a bowling alley and a zoo. Its avenues of palm trees are now a city landmark. Over-speculation in real estate caused his financial and transportation empire to collapse in 1910, and his palms now shade tract homes of the teens and '20s.

Remillard family: There are six members of the Remillards entombed here. According to cemetery records the mausoleum was built in 1904, and those who had died earlier were moved here. The Remillards were the leading brickmakers in the Bay Area in the period following the Gold Rush. Eleven of the twelve members of this French-Canadian family eventually came to California. The oldest brother, Hilaire (1834-1902) learned brickmaking in Boston and in 1864 some of the brothers established a Remillard Brick Co. in East Oakland with later brickyards in San Jose, Pleasanton, and Greenbrae. Peter Remillard (1837-1904) was the inventor of a new brick process. His daughter Lillian (the Countess Dandini, 1850-1973) tutored Jack London in French and later owned the famous Carolands mansion. Peter Remillard's house stands in Preservation Park at 654 13th Street.

Simon Henry Dikeman (1829-1907): A native of Prussia, Dikeman made his fortune as the president of the Excelsior Ditch and Canal Co. in Rough and Ready, California, in the 1850s. His kitchen from Rough and Ready has been reassembled in the history gallery at the Oakland Museum. His wife Anna Maria and several other family members are also buried here.

--Jane Anders, with Barbara Smith

Teresa Bulger <tbulger@williamself.com>

Historic Preservation_Local Protections

5 messages

Teresa Bulger <tbulger@williamself.com> Tue, Nov 4, 2014 at 11:37 AM
To: smiller@oaklandnet.com

Dear Mr. Miller,

I am writing hoping you could direct me to someone who might help me determine the type of historic protections the Mountain View Cemetery District might be subject to.

I am composing a Cultural Resource Assessment Report of the archaeological resources at the Cemetery in advance of potential development in a portion of the property. While listed on the Office of Historic Preservation's list of historic resources in Alameda County, it has not yet been listed on the California Register of Historic Resources nor the National Register of Historic Places (though 2013 documentation suggests that it would be eligible for both).

I apologize if this is not the office to which I should direct this query.

Thank you!
Best regards,
Teresa Bulger

--
Teresa D. Bulger, Ph.D, RPA
Archaeologist, Project Director

William Self Associates, Inc.
Consultants in Archaeology and Historic Preservation

Pacific Region Office
61-D Avenida de Orinda
Orinda, CA 94563
Ph: (925) 253-9070
Cell: (617) 875-7046
Fax: (925) 254-3553

Miller, Scott <SMiller@oaklandnet.com> Tue, Nov 4, 2014 at 2:24 PM
To: Teresa Bulger <tbulger@williamself.com>
Cc: "Marvin, Betty" <BMarvin@oaklandnet.com>

Hello, Ms. Bulger. Betty Marvin is our historic preservation Planner. I have copied her here (bmarvin@oaklandnet.com).

Scott

Sent from my iPhone
[Quoted text hidden]

Marvin, Betty <BMarvin@oaklandnet.com> Tue, Nov 4, 2014 at 3:49 PM
To: Teresa Bulger <tbulger@williamself.com>
Cc: "Miller, Scott" <SMiller@oaklandnet.com>

Mountain View Cemetery is on Oakland's *Local Register of Historical Resources*. It is identified as an Area of Primary Importance in the Oakland City Planning Department's citywide historic resources inventory, on the basis of field observation and extensive historical documentation. An Area of Primary Importance is a district that appears eligible for the National Register. As such it is treated as a significant and protected resource in any City reviews. The Landmarks Preservation Advisory Board consistently reviews alterations and new construction at the cemetery.

The inventory and Local Register are described in detail in the Historic Preservation Element of the Oakland General Plan – first link at http://www2.oaklandnet.com/Government/o/PBN/OurOrganization/PlanningZoning/s/HistoricPreservation/index.htm .

The inventory deals almost exclusively with the above-ground built environment. The Local Register was created precisely because very few resources that are eligible for national, state, or local designation ever actually get nominated and listed. It consists of resources that are formally designated (National Register, City Landmarks, etc.) as well as resources rated of comparable significance. About 3% of properties in Oakland are on the Local Register.

This is a quick answer – please let me know if you have questions or need more detail.

Betty Marvin, Historic Preservation Planner| City of Oakland | Bureau of Planning | 250 Frank H. Ogawa, Suite 3315 | Oakland, CA 94612 | Phone: (510) 238-6879 | Fax: (510) 238-6538 | Email: bmarvin@oaklandnet.com | Website: www.oaklandnet.com/planning

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From: Miller, Scott
Sent: Tuesday, November 04, 2014 2:25 PM
To: Teresa Bulger
Cc: Marvin, Betty
Subject: Re: Historic Preservation_Local Protections

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Teresa Bulger <tbulger@williamself.com> Fri, Nov 7, 2014 at 12:58 PM
To: "Marvin, Betty" <BMarvin@oaklandnet.com>
Cc: "Miller, Scott" <SMiller@oaklandnet.com>

Ms. Marvin,

Thank you for this brief summary, this is just the sort of information I needed. I could not find a list of Oakland's Local Register---do you have a link or is this something on file at the City? I found the attached PDF on the Oakland Heritage Alliance website, but it appears to be sites designated as "Landmarks" and the Mountain View Cemetery is not on it.

Thanks again!

Best regards,
Teresa Bulger
[Quoted text hidden]

Oakland_Landmarks.pdf
27K

Marvin, Betty <BMarvin@oaklandnet.com> Fri, Nov 7, 2014 at 5:08 PM
To: Teresa Bulger <tbulger@williamself.com>

Correct, Mountain View is not a designated City Landmark.

Ratings and designations are searchable by location on the City of Oakland's Zoning and Parcel Information Map . There are some anomalies where parcel numbers have changed, typos happened, a two-letter rating just isn't the whole story, or anything else that might happen with 100,000 parcels and a complicated system, but it's pretty good.

However - the Local Register tag on the online map was not reliable last time I looked. Here's the definition, so you can do the math yourself: Local Register properties are those rated A or B, in Areas of Primary Importance ("1" in the rating), or formally designated in some way (Landmark, Heritage Property, S-7 or S-20 district, Study List, National Register [listed or eligible], etc.).

You're always encouraged to write or call for details, especially if what you find or don't find online doesn't seem to make sense.

Betty Marvin, Historic Preservation Planner| City of Oakland | Bureau of Planning | 250 Frank H. Ogawa, Suite 3315 | Oakland, CA 94612 | Phone: (510) 238-6879 | Fax: (510) 238-6538 | Email: bmarvin@oaklandnet.com | Website: www.oaklandnet.com/planning

From: Teresa Bulger [mailto:tbulger@williamself.com]
Sent: Friday, November 07, 2014 12:58 PM
To: Marvin, Betty
Cc: Miller, Scott

[Quoted text hidden]

[Quoted text hidden]

Photo 1: View SW, Construction yard at NW corner of New Plot 82.

Photo 2: View E, Showing steep slope at NW corner of New Plot 82.

Photo 3: View NE within New Plot 82, showing bedrock outcrop.

Photo 4: View SE, showing grassy portion of New Plot 82, north of main road.

Photo 5: View SE, Showing ground disturbance at western edge of Plot 98.

Photo 6: View NW, Showing paved road along northern edge of Plot 98 and Panhandle.

Photo 7: View N, showing board-formed vault with water main.

Photo 8: View SE, Showing stepped semi-circular concrete structure and asphalt slab.

Photo 9: View S, showing concrete stepped, semi-circular structure and asphalt slab.

Appendix 4.5A

Geotechnical Evaluation of Plot 82, Plot 98 and Panhandle at Mountain View Cemetery

Hultgren-Tillis Engineers, December 23, 2014

DRAFT
GEOTECHNICAL EVALUATION

PLOT 82, PLOT 98, AND PANHANDLE
MOUNTAIN VIEW CEMETERY
OAKLAND, CALIFORNIA

Project No. 346.13
December 23, 2014

Prepared by

Hultgren – Tillis Engineers

A California Corporation
Specializing in Geotechnical Engineering

Hultgren-Tillis Engineers

December 23, 2014
Project No. 346.13

Mountain View Cemetery
5000 Piedmont Avenue
Oakland, California 94611

Attention: Mr. Jeff Lindeman

Geotechnical Investigation
Plot 82, Plot 98, and Panhandle
Mountain View Cemetery
Oakland, California

Dear Mr. Lindeman:

We performed a geotechnical evaluation for grading and development of the Plot 82, Plot 98, and the Panhandle within the Mountain View Cemetery in Oakland, California. The results of our evaluation are presented in the attached report.

It was a pleasure working on this project and we look forward to working with you during construction. If you have any questions, please call.

Sincerely,

Hultgren – Tillis Engineers

DRAFT

R. Kevin Tillis
Geotechnical Engineer

RKT:lm:la

2 copies submitted

cc: Mr. Scott Gregory, Lamphier-Gregory
Mr. Joe Runco, SWA Group

File No: 34613R01 - Draft.doc

TABLE OF CONTENTS

I. INTRODUCTION

This report presents the results of our geotechnical evaluation for grading and development of three hillside areas within the Mountain View Cemetery in Oakland, California. The purpose of this report is to support the environmental documentation and permitting for the projects. Detailed design criteria intended to support final design of the project will be provided later.

The project consists of developing existing hillside areas in the north and northeast portions of the cemetery. The areas considered for development are referred to as Plot 82, Plot 98, and the Panhandle. The general location of the cemetery is shown on the Vicinity Map, Plate 1. The development plan for Plot 82 is shown on Plate 2. The development plan for Plot 98 and the Panhandle is shown of Plate 3. The approximate locations of the three hillside areas are shown on the Site Plan and Geologic Map, Plate 4.

The project includes grading of undeveloped areas for Plot 82. The site will be extensively graded to flatten grades to create new burial plots. An existing road will be realigned. Most of the site will be excavated with cuts 15 to 40 feet deep. A retaining wall, with heights up to about 12 feet, is planned along with new fill and cut slopes. A new amphitheatre is planned within Plot 82. New mausoleums are planned in front of the retaining walls. The excess cut material will be moved to Plot 98 and the Panhandle. Development within Plot 98 and the Panhandle consists mainly of placing fill to create gently sloping areas for new burial plots. Retaining walls along the downslope edge of Plot 98 are planned. An access road is planned at the north (rear) side of Plot 98 and the Panhandle. A portion of the Panhandle is located within the City of Piedmont. No significant grading is planned for the City of Piedmont portion of this site.

As part of the previous work at the cemetery, we drilled borings and excavated test pits. Data from the explorations is presented in a separate geotechnical data report dated December 23, 2011.

II. SITE CONDITIONS

A. General

Site geology is summarized on Plate 4 and discussed below.

B. Geologic Setting

1. Bedrock

Published geologic maps describe the ridge top area and most of the cemetery property as underlain by a sequence of sedimentary, metasedimentary, and metavolcanic rocks collectively mapped as the Franciscan Complex of Late Jurassic to Cretaceous age. Specifically, these rocks include well-bedded black shale and brown sandstone, very hard red radiolarian chert, and massive greenstone. We encountered all of these rock types during our field explorations.

2. Bedrock Structure

Bedding attitudes within the layered bedrock units at the site were measured in the test pits and in bedrock exposures. The bedding orientation appears to be consistent with west-northwest strikes and north-northeast dips. The dip measurements ranged from 14 to 65 degrees. This bedrock structure is consistent with that shown on published geologic maps by others.

A prominent shear was previously mapped by others within the Clarewood area. This shear strikes north-northeast. We plotted the approximate location of this shear on Plate 3 as a “major shear” but we did not specifically explore the presence of the feature.

We mapped other smaller shears discovered at the site. In a road cut along Clarewood Drive, we mapped a northwest striking, southwest dipping shear within chert bedrock. We encountered additional shears that appears to be somewhat continuous across the Clarewood Area and within Plot 98 and the Panhandle. This shear strikes approximately east-west and dips to the south. The approximate locations of mapped shears are plotted on Plate 3.

3. Landslides

Site specific mapping and a review of historic aerial photographs suggests the presence of several landslides along the southwest-facing slope. This slope is located between the main portion of the cemetery and the ridgeline at the north end of Plot 98. The landslides are typically located below the limits of grading although the upper portion of the slides may encroach into the development. The largest slide is located within the City of Piedmont within the property adjacent to the cemetery. A small slope failure was noted below one of the residential properties within a steep slope at the northeast end of the property near the Clarewood Area. The approximate limits of the mapped landslides are shown on Plate 4.

C. Regional Seismicity and Seismic Design Parameters

The San Francisco Bay area is dominated by the northwest striking strike-slip San Andreas fault and related seismically active faults, such as the Hayward, Calaveras, Concord, and Marsh Creek-Greenville faults. The Hayward, Calaveras, Concord, and Marsh Creek-Greenville faults are east of the site at approximately 0.7 miles, 9.5 miles, 14.0 miles, and 19.0 miles, respectively. The San Andreas fault is approximately 18.0 miles west of the site.

The site is not located within a designated Earthquake Fault Zone, as defined by the State of California for areas along active faults. No known active faults pass through the site and therefore, we judge the risk of fault rupture at the site to be low. When a major displacement occurs on the nearby Hayward fault, some secondary deformation may occur on existing shears or other structural features.

The more serious seismic impact on the site will be strong groundshaking. Building codes account for proximity to active faults in the design parameters used in computing lateral forces for building design. Structures should be designed to accommodate groundshaking in accordance with existing codes.

Soil liquefaction is a phenomenon in which loose, saturated granular soil undergoes reduction of internal strength as a result of increased pore water pressure generated by shear strains within the soil mass. This behavior is most commonly induced by strong groundshaking associated with earthquakes. The subsurface materials at the site are mainly clay and bedrock, and we conclude that the risk of liquefaction is low.

D. Site Conditions

The site conditions are described by area below. Mapped and inferred bedrock units and surface topography are shown approximately on Plate 4.

No springs or areas of seepage were noted within the subject areas. Some seepage was noted in the test pits and borings. It is likely that groundwater conditions are seasonally variable and perched groundwater is seasonally present within the near-surface zone.

The following descriptions of soil and groundwater conditions summarize our observations at the time of our investigations. Conditions are expected to vary across the site over time and depend on several factors including changes in moisture content resulting from seasonal precipitation and land use changes.

1. Plot 82 Area

Plot 82 includes a relatively flat area, a portion of the area referred to as Hill 500 and a portion of Plot 77.

a. Plot 82

The site is southeast of Hill 500 and consists of a relatively level area adjacent to one of the cemetery roads. The site slopes down steeply from the south end of the level area to another cemetery roadway. The surface is covered by grass with some trees and bushes on the slope. The site was previously graded. Grading consisted of fill placement within two broad swales that originally existed in the eastern and western portions of the site. The fill appears to have been completed by 1983. The fill consists mainly of intermixed clay and rock fragments and does not appear to be well compacted. The areas without fill consist of clay underlain by bedrock.

Surficial soil consisting of stiff to very stiff lean clay with some gravel overlies the bedrock throughout most of the site. These soils typically form a thin layer about 2 to 6 feet thick. Surficial soil was encountered beneath fill in Borings 3 through 7, indicating that the surficial soil was not removed prior to fill placement. The surficial soils and fills are moderately expansive.

The slope areas include a large outcrop of chert near Boring 4. The chert outcrop is located between the two zones of fill. The chert dips to the northeast into the slope. We encountered chert in Borings 4 and 7 at depths of 6 and 14 feet, respectively. Based on these borings, we estimate that the chert has an apparent dip into the slope of 3:1 (horizontal to vertical).

Perched groundwater was encountered in the borings in the upper few feet. This water is probably the result of heavy rains. Groundwater seepage was not observed in the bedrock in the test borings.

b. Hill 500

The Hill 500 site is located at the northwest end of the planned development area. The surface is covered mainly by grasses, with some brush and trees. The site includes an existing small metal building, stockpiles of soil, wood chippings and grave boxes.

The cemetery has a copy of a 1952 topographic survey for the Hill 500 area. The 1952 survey indicates that Hill 500 was graded prior to the survey. It appears that the pre-1952 hilltop cut was made to create a more level area. Fill has been placed since 1952 on the top and slopes surrounding Hill 500. The fill was not compacted and the existing slopes were not prepared to accept the fill. We encountered debris consisting of wood and common trash within Hill 500. The wood debris included tree branches, stumps, tree trunks and wood chips. The other debris included glass bottles, plastic bottles, plastic bags, metal and paper products. The approximate limits of fill are shown on Plate 4 and the limits that are near or within the current development area are shown on Plate 5. There is no documentation of the extent or quantity of trash and debris. We understand that some of the trash was placed in concentrated zones while most was mixed with the fill. We understand that the cemetery recently removed the more concentrated zones of trash and loosely backfilled the excavations.

Hill 500 is mainly blanketed by fill. Clay and/or bedrock underlie the fill. In areas without fill, the site is covered by a thin layer of native clay underlain by bedrock. Bedrock within Hill 500 includes greenstone and chert. The greenstone varies from gray to brown, occasionally to closely fractured, and friable to moderately strong. The greenstone is typically moderately to deeply weathered within 10 to 20 feet of the original

ground surface. Below that depth, the greenstone is often less weathered and ranges from weak to moderately strong. Several greenstone outcrops occur as shown on Plate 4. These outcrops typically consist of occasionally fractured, moderately hard, moderately strong greenstone, which locally contains white silica or calcite veins. Groundwater was encountered in Borings 11 and 12 at a depth of about 27 feet below grade.

2. Clarewood Area

Plot 98 and the Panhandle areas are largely undeveloped except for an existing water reservoir used as part of the cemetery irrigation system. The surface is covered mainly by grasses. Trees are located mainly along the flanks. The site slopes up to the southeast to a near level bench and within the Panhandle.

The areas adjacent to Clarewood Drive at the northeast edge of the site and the Panhandle area, including the City of Piedmont area, have been extensively graded. Reviews of historic aerial photographs indicate that the cemetery property along the ridgeline adjacent to homes at the east end of the site was substantially modified by massive quarry operations sometime between 1939 and 1950. Based on geologic mapping of outcrops, chert bedrock was likely the resource mined at the site. The quarry created steep slopes (locally 1:1), up to 50 feet high, along the cemetery property boundary. Chert is exposed in the slopes.

Portions of the area are covered by fill. Much of the fill is related to previous quarry activities. The existing fill is up to about 15 feet thick. No groundwater was encountered in the other borings or test pits. The areas without fill include a thin mantle of soil overlying bedrock. The bedrock consists of chert, greenstone, sandstone and shale. Groundwater was encountered in Borings 15 and 16 at about 17 feet below grade.

III. DISCUSSION AND CONCLUSIONS

A. General

Development of the hillside areas has several geotechnical engineering concerns and considerations. These concerns include the presence of loosely compacted fill, debris within the fill, the presence of hard chert, and construction of fill and cut slopes. The general concerns are discussed by topic below followed by specific concerns for each hillside area.

B. Existing Fill

We conclude that the existing fills are not suitable for the planned development. With the exception of a planned 3:1 slope on the west side of Plot 82, the fills will need to be excavated and replaced below the footprint of the development. The fill below the 3:1 slope may remain. We should check the condition of this slope during construction. If loose zones of fill or debris are encountered, additional grading may be required for this slope. Fill covers much of the areas to be developed. The approximate limits of fill near the three sites are shown on Plate 5. The fill at Hill 500 contains debris consisting primarily of wood and some common trash. We did not find debris in borings or test pits at other areas and have no knowledge whether debris was placed in these fills.

The planned grading within Plot 82 includes cuts of sufficient depth to remove the existing fill and we do not expect additional grading will be needed to remove fill. The existing fill near and below the footprint of Plot 98 and the Panhandle will need to be removed and recompacted during grading. The access road along the north side of Plot 98 and the Panhandle will be partially located on fill. The fill extends downslope of the roadway. The fill below the footprint of the road should be removed and replaced as a compacted buttress. The fill further downslope may remain.

The existing fill within the City of Piedmont does not need to be removed since no significant grading is planned.

The borings and test pits with subsurface conditions including depths of the existing fill are shown in the separate data report.

C. Hillside Grading

Extensive grading is planned within the hillside. Typical hillside grading practices should be followed for the project. Current practices for hillside grading include the following: (1) excavating keyways at the toe of fill slopes to remove soil and weaker materials; (2) creating a wide, near-level pad to receive fill; (3) installing subsurface drains to collect subsurface water and reduce water pressure; (4) excavating benches to remove weak soil and to support fills on the underlying bedrock or firm materials; and (5) placing fill in thin level lifts, moisture conditioning the fill and methodically compacting the fill. Typical details for hillside grading are shown on Plates 7 through 9.

The slope below Plot 98 and the Panhandle includes several landslides. Most of the landslides are located beyond the footprint of the project. The landslides are not expected to impact the planned development provided the details noted in Plates 7 through 9 are followed. Where the landslides encroach into the development area, the portion of the landslides within the area should be removed.

The intent is to provide a slope buttress that will allow for future movement of the landslides. The final details will need to be developed along with the grading plans during final design of the project.

D. Chert and Site Excavations

Excavation within the chert may be difficult. An area in the central portion of Plot 82 is underlain by chert bedrock. Chert is also present in Plot 82 and the Panhandle and is probably the main material removed as part of the quarry operation. The approximate surface limits of the chert are shown on Plate 4. The chert dips to the north to northeast. A precise orientation could not be measured from the outcrop. The borings within the chert suggest that the chert dips into the slope at about a 3:1 slope (18 degrees) at Plot 82. Plate 6 presents estimated limits of massive chert that may be encountered in proposed excavations for Plot 82 based on the preliminary grading plans. Excavations are not planned within the Panhandle and Plot 82, except for keyways.

The bedrock includes zones of hard material including chert. We conclude that smaller zones of chert may also be encountered within the excavations.

The chert is hard, strong and relatively massive. We anticipate that ripping may be difficult to ineffective and that excavations in the chert rock will require special excavation techniques. In order to facilitate excavation, it may be desirable to drill and blast the chert bedrock area down to the planned excavation elevation or depth of future grave excavation during grading. If blasting is performed, we anticipate that excavations can be made to the depth of the blasted material with normal grading equipment. Alternatively, it may be possible to excavate the chert using hoe ram or jackhammer equipment.

E. Slope Creep and Setback

Slopes tend to creep downhill due to gravity forces. Structures located near tops of slopes will tend to move slowly downslope and settle. We conclude that structures, including graves, should not be founded within 10 feet of finished slopes that are inclined at 3:1 or steeper. A railing or fence should be considered at the top of steep slopes in public areas to improve safety and limit access to the slope face.

F. Plot 82 and Plot 98 Retaining Structures

Retaining walls are planned for the development. The proposed structures may consist of a soldier-pile and lagging wall, located near existing graves. To limit deflections, tiebacks may be needed in some areas. The design criteria for the walls will be provided in our final design report.

G. Mausoleums and Niche Walls

Design of foundations and flatwork for mausoleums or niche walls needs to consider the presence of expansive soil material at foundation level and proximity to grave excavations. Recommendations for these structures will be presented in a subsequent report.

IV. RECOMMENDATIONS

A. Earthwork

1. Site Preparation

We recommend that the surficial soil and existing fill be removed and the areas rebuilt as well-compacted fills. Grading should include construction of keyways into rock, benching into firm material, and placement of subdrains.

The site should be cleared of brush, trees, stumps, and surface vegetation designated for removal. Brush, trees, and stumps should be removed from the site. The site should be stripped to remove grasses and shallow roots.

2. Grading

The fill and cut slopes should be constructed in accordance with the typical details presented on Plates 7 and 8. A keyway should be excavated at the slope toe. Keyways should be at least 20 feet wide, measured front to back. The keyway should extend through the surface soils and existing fill and at least 5 feet into bedrock at the back of the keyway, at least 2 feet into bedrock at the front of the keyway for fill slopes, and at least 5 feet for cut slopes. Keyways should dip slightly into the hill. As the fill is extended up the hillside, benches should be excavated into the slope exposing undisturbed bedrock. Benches at subdrain locations should be at least 10 feet wide.

3. Subdrains

Subdrains should be installed at the rear of the excavated keyways and on benches above the keyway as shown on Plates 7 and 8. Typical subdrain details are shown on Plate 9. Subdrains should consist of a free draining layer of Class 2 Permeable Material meeting Caltrans Standard Specifications. The permeable material should be at least 12-inches thick and extend up the face of the backcuts. The permeable material should cover at least 50 percent of the vertical height of the existing slope. The maximum height of excavated slope that is not covered by permeable material should not exceed 8 feet between subdrains. Four-inch diameter perforated collector pipes should be installed near the bottom of the Class 2 Permeable Material. The pipes should be underlain by at least 3-inches of permeable material. The subdrain pipes should have a minimum slope of one percent and should drain to discharge to a suitable outlet. Subdrain lines should include a clean-out riser that should be covered with

a tamper-proof locking cap and a concrete Christie box. The subdrains should be connected to solid pipes that outlet to V-ditches, storm drain or paved areas. The discharge point of the downdrains should be covered with a heavy wire mesh to deter rodent access. The locations of subdrains and their cleanouts and outlets should be surveyed and marked on the as-built grading plans.

4. Materials

Fill placed at the site should be derived from the excavations. Chert may generate large pieces of rock depending on the method of excavation and massiveness of the rock. We conclude that boulders up to 3 feet in maximum dimension may be placed at least 3 feet below finished grade where burials are not planned. No rock fragments larger than 6-inches should be placed within 3 feet of finished grade or future gravesite areas.

Wood, tree limbs, roots greater than 1-inch in diameter, tree stumps, metal, and concentrated zones of common trash should be removed from existing fill during grading. Some debris (glass, plastic) that is well mixed within the existing fill may remain and be placed in the new, compacted fills. The contractor should stage grading such that existing fill containing debris is only placed in the lowest elevation of the fill below depths of future graves and excavations.

Select fill placed at the site should be a soil or soil/rock mixture free of deleterious matter and contain no rocks or hard fragments larger than 4-inches in maximum dimension with less than 15 percent larger than 1-inch in maximum dimension. Select fill should have a low expansion potential, which for this site should be defined as having a Liquid Limit (LL) less than 40 and Plasticity Index (PI) less than 15. Select fill should be predominantly granular with 100 percent passing a 2-inch sieve and less than 30 percent passing the Number 200 sieve.

Permeable material should meet requirements for Class 2 Permeable Material in accordance with Caltrans Standard Specification Section 68-1.025.

Subdrain pipe should be an ABS or PVC plastic pipe having a SDR of 23.5. The collection pipe should be nominally 4-inches in diameter and should have nominally ¼-inch diameter perforations at 12-inches or less longitudinal spacing. Subdrain pipes should

be placed with perforations down. Cleanouts should be solid 4-inch diameter SDR 23.5 pipe, and discharge pipes should be solid 6-inch diameter SDR 23.5 pipe.

5. Compaction

Fill should be placed in lifts 8-inches or less in loose thickness and moisture conditioned to at least over optimum moisture content. Moisture conditioning should be performed prior to compaction. Each lift should be compacted to a least 90 percent relative compaction with a sheepsfoot compactor. A sheepsfoot compactor or equivalent equipment should be used for compacting soils. Materials that are too wet to compact should be spread out and aerated by tilling or discing to achieve a moisture content suitable for compaction. ASTM Test No. D-1557 should be used to assess relative compaction. The outside face of the slope should be over-filled (constructed fat) to allow the finished slope to be cut back to a well-compacted surface.

6. Slopes

Slopes should be inclined at 2:1 or flatter. Fill slopes should be constructed in accordance with the details shown on Plate 7. Cut slopes should include a slope buttress constructed in accordance with the details provided on Plate 8. Slopes should include surface benches and concrete V-ditches to collect surface water. The benches should be at least 10 feet wide and at about 25 feet vertical spacing. The new V-ditches should drain to the existing storm drain system or paved areas. A V-ditch or lined swale should be located at the top of slopes or the area above the slopes should be graded to drain away from slopes.

7. Hydroseeding

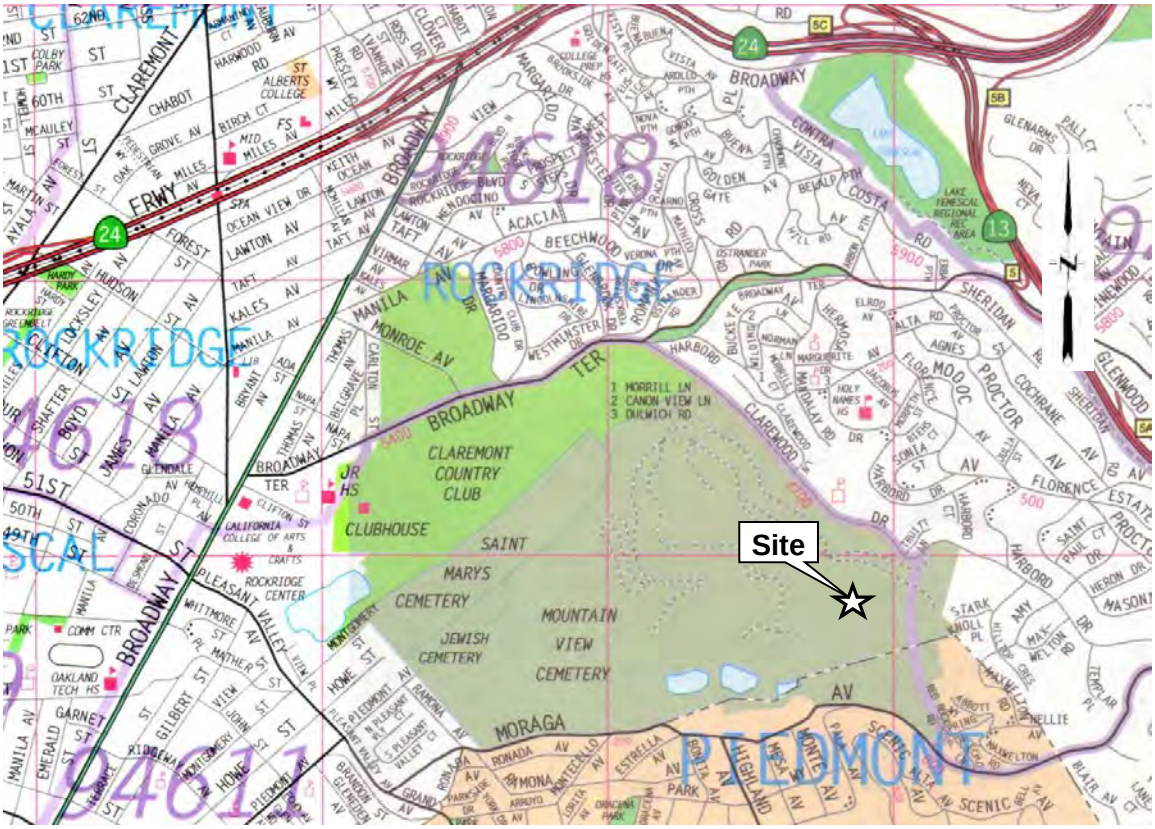
Shortly after completion of filling, slopes should be hydroseeded and irrigated to establish groundcover to minimize surface erosion.

8. Utility Trenches

Utility trenches should be set back far enough from the buildings so they will not affect the planned foundations. The utility lines should not extend down below an imaginary plane inclined at 2:1 down and away from the base of footings.

In the absence of local agency or utility company requirements, the following criteria for bedding and backfilling utility lines should be used. For pipes other than

concrete storm drains, a bedding layer consisting of clean sand or fine gravel should be placed below and around pipes and extend at least 12-inches above their tops. The bedding thickness below the bottom of the pipe should be at least 3-inches. For concrete storm drains, the above bedding criteria may be modified by extending the sand or fine gravel bedding material only up to the spring line of the pipe provided care is taken during placement and compaction of the fill around and above the pipe. Common fill may be used for trench backfill above the sand or fine gravel. Backfill materials should be placed and compacted as described above. Jetting should not be allowed for compacting backfill.



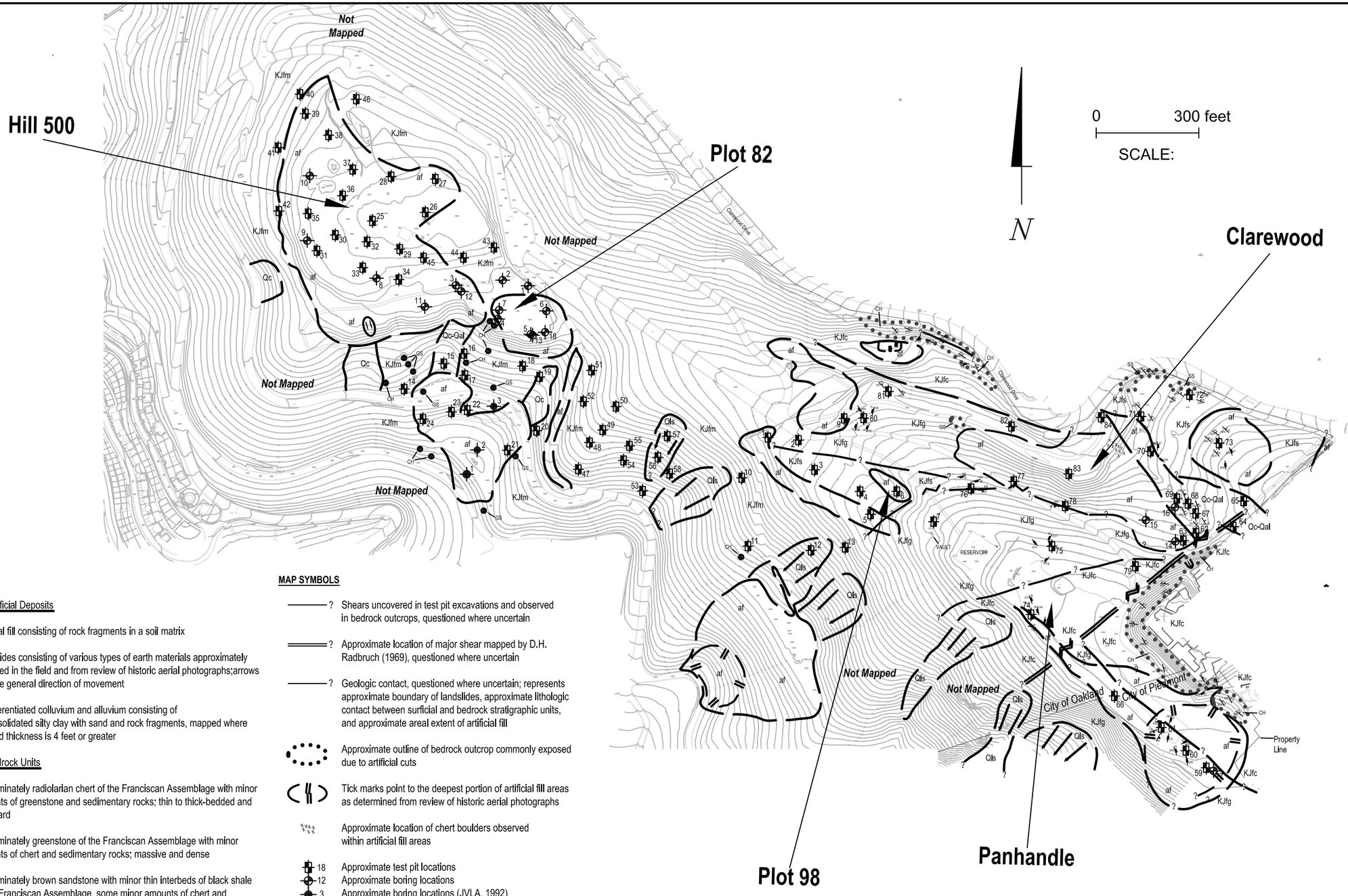
Source: The Thomas Guide, Alameda and Contra Costa Counties 2003, Pages 623 and 630

Not to Scale

Mountain View Cemetery
Oakland, California

Vicinity Map

Hultgren - Tillis Engineers	Project No. 346.13	Plate No. 1



EXPLANATION

Stratigraphic Unit - Surficial Deposits

af	Artificial fill consisting of rock fragments in a soil matrix
Qls	Landslides consisting of various types of earth materials approximately identified in the field and from review of historic aerial photographs;arrows indicate general direction of movement
Qc-Qal	Undifferentiated colluvium and alluvium consisting of unconsolidated silty clay with sand and rock fragments, mapped where inferred thickness is 4 feet or greater

Stratigraphic Unit - Bedrock Units

KJfc	Predominately radiolarian chert of the Franciscan Assemblage with minor amounts of greenstone and sedimentary rocks; thin to thick-bedded and very hard
KJfg	Predominately greenstone of the Franciscan Assemblage with minor amounts of chert and sedimentary rocks; massive and dense
KJfs	Predominately brown sandstone with minor thin interbeds of black shale of the Franciscan Assemblage, some minor amounts of chert and greenstone; well-bedded to massive, and dense
KJfm	Franciscan Assemblage, Melange consisting chiefly of sheared shale with small and large masses of chert, greenstone and graywacke

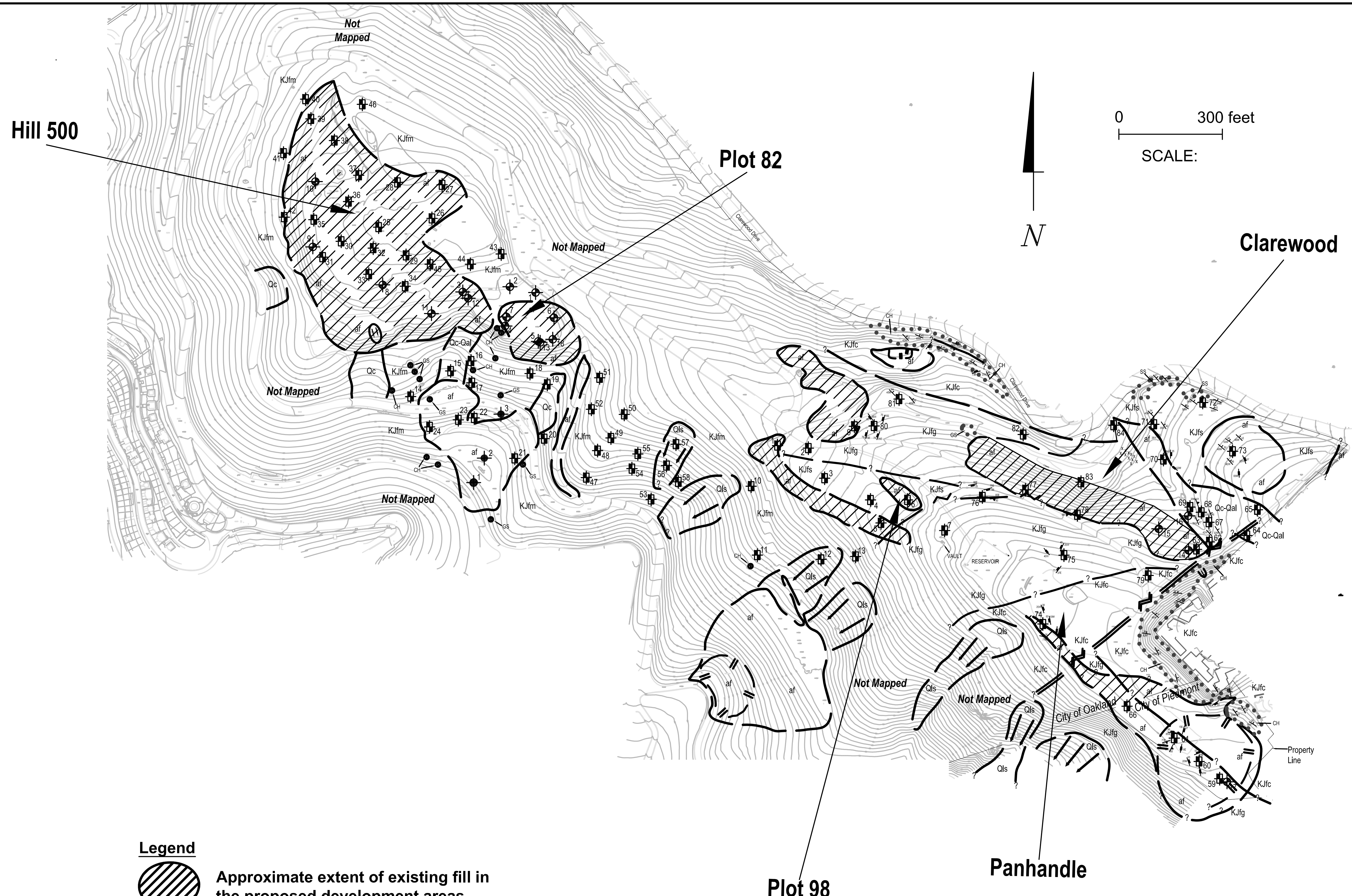
MAP SYMBOLS

- Shears uncovered in test pit excavations and observed in bedrock outcrops, questioned where uncertain
- Approximate location of major shear mapped by D.H. Radbruch (1969), questioned where uncertain
- Geologic contact, questioned where uncertain; represents approximate boundary of landslides, approximate lithologic contact between surficial and bedrock stratigraphic units, and approximate areal extent of artificial fill
- Approximate outline of bedrock outcrop commonly exposed due to artificial cuts
- Tick marks point to the deepest portion of artificial fill areas as determined from review of historic aerial photographs
- Approximate location of chert boulders observed within artificial fill areas
- 18 Approximate test pit locations
- 12 Approximate boring locations
- 3 Approximate boring locations (JVLA, 1992)
- Rock Outcrops (Not to Scale) CH = Chert GS = Greenstone
- Strike and dip of bedrock
- Strike and dip of prominent joints
- Strike of vertical joints
- Strike and dip of shears

Mountain View Cemetery
Oakland, California

Site Plan and Geologic Map

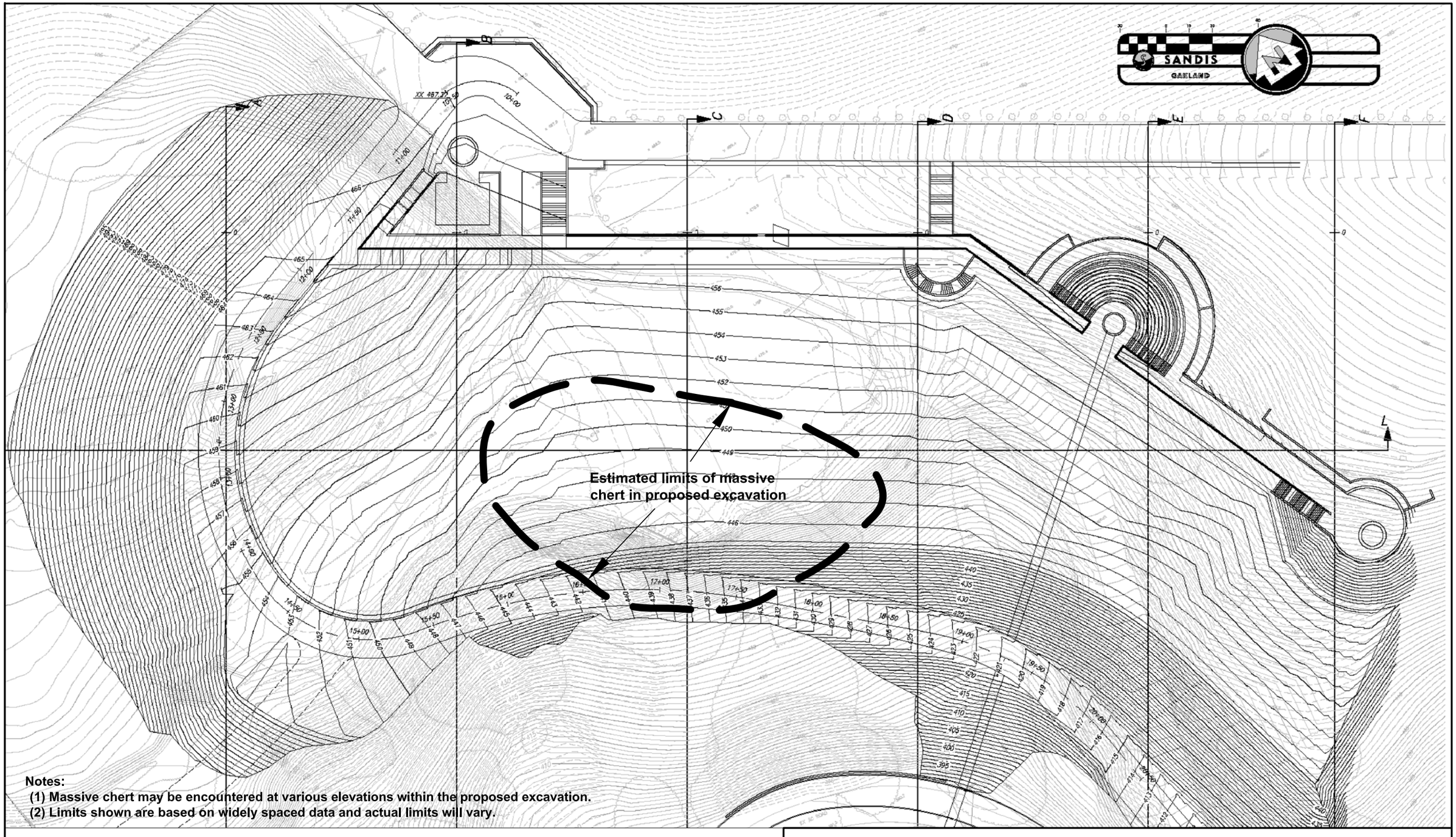
Hultgren - Tillis Engineers	Project No. 346.13	Plate No. 4



Legend

Approximate extent of existing fill in the proposed development areas

Mountain View Cemetery Oakland, California		**Approximate Locations of Poorly Compacted Existing Fill**
Hultgren - Tillis Engineers	Project No. 346.13	Plate No. 5



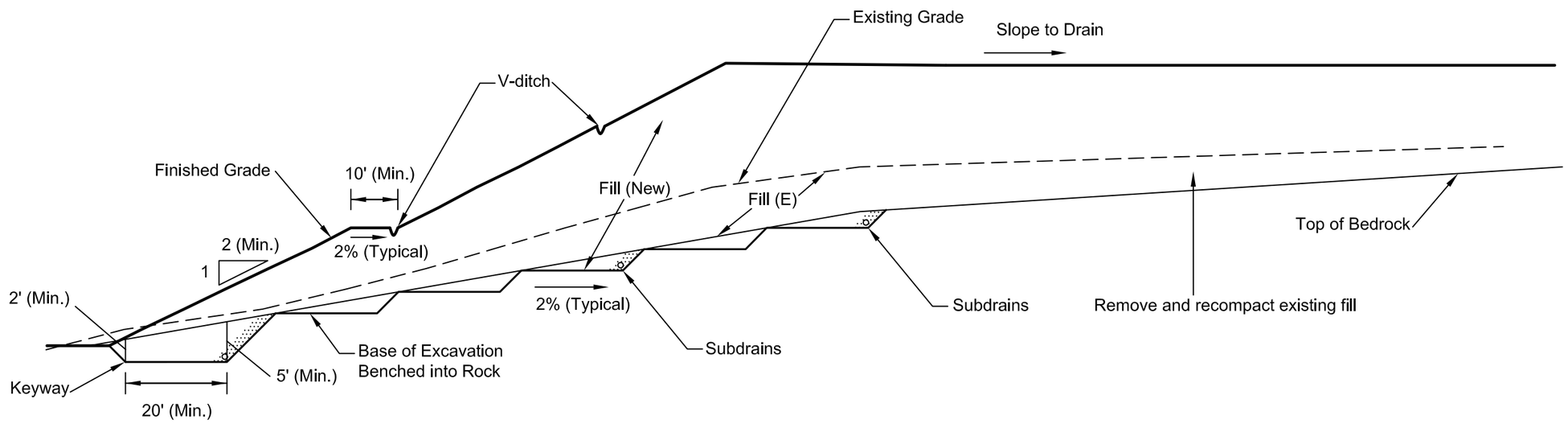
Notes:
(1) Massive chert may be encountered at various elevations within the proposed excavation.
(2) Limits shown are based on widely spaced data and actual limits will vary.

Mountain View Cemetery
Oakland, California

Estimated Limits of Massive Chert

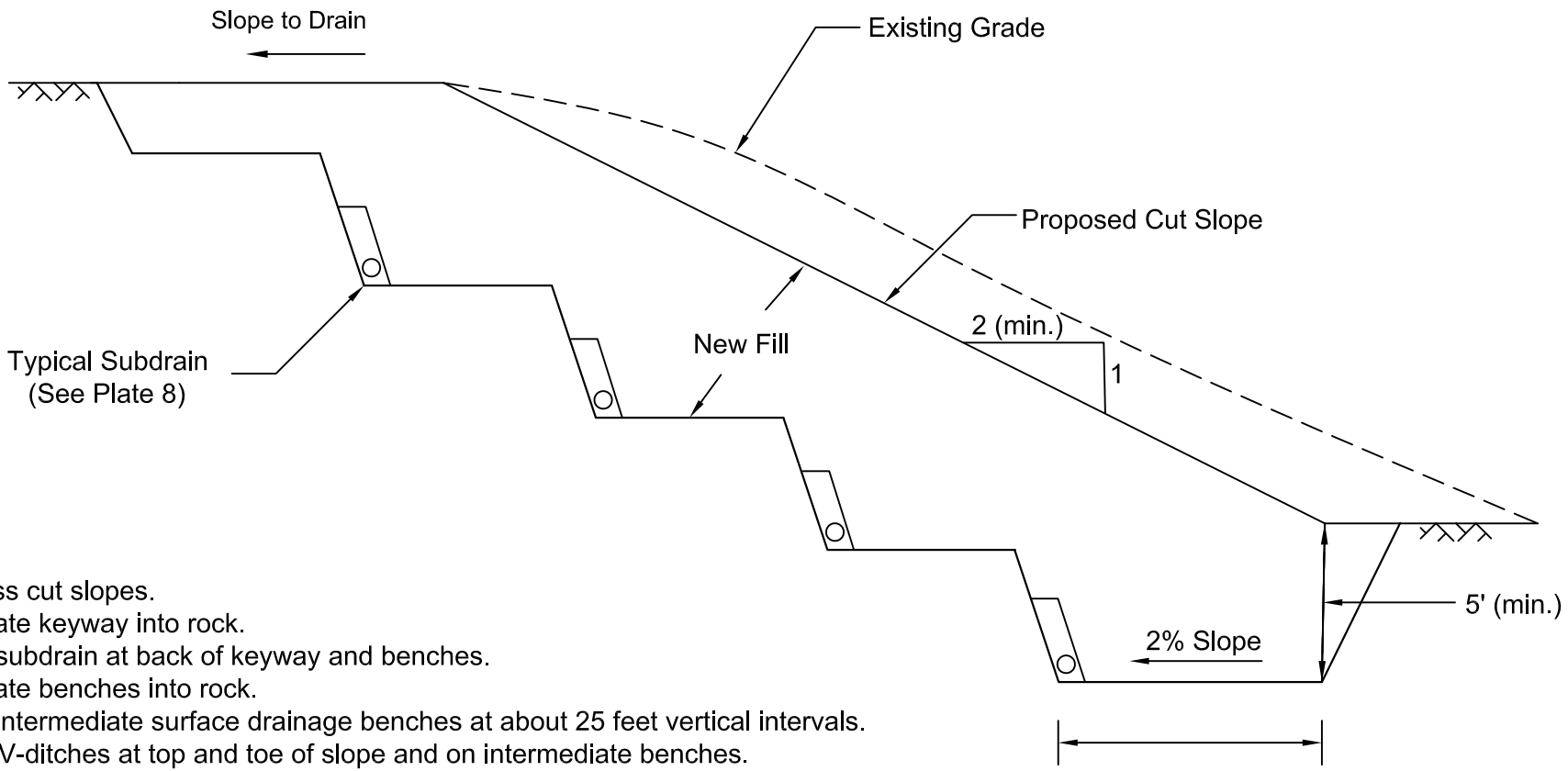
Hultgren - Tillis Engineers	Project No. 346.13	Plate No. 6

Typical Fill Cross-Section



Notes (1) Remove existing fill.
(2) Excavate keyway into rock.
(3) Place subdrains at back of keyway and benches.
(4) Place existing fill in thin lifts, moisture condition and compact.
(5) Excavate benches into rock.
(6) Place intermediate surface drainage benches at about 25 feet vertical intervals.
(7) Install V-ditches at top and toe of slope and on intermediate benches.

Mountain View Cemetery Oakland, California	**Typical Fill Cross-Section**	
Hultgren - Tillis Engineers	Project No. 346.13	Plate No. 7

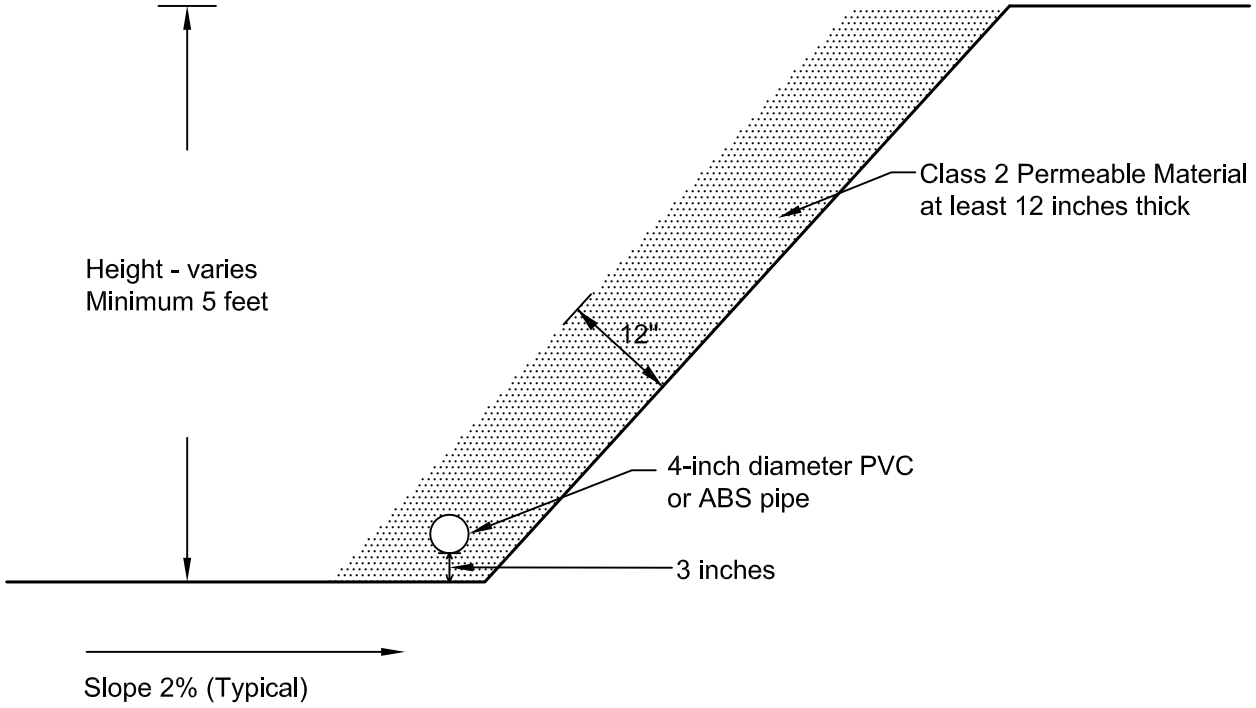


Notes:

(1) Buttress cut slopes.
(2) Excavate keyway into rock.
(3) Place subdrain at back of keyway and benches.
(4) Excavate benches into rock.
(5) Place intermediate surface drainage benches at about 25 feet vertical intervals.
(6) Install V-ditches at top and toe of slope and on intermediate benches.

NOT TO SCALE

Mountain View Cemetery Oakland, California	**Typical Cut Cross-Section**	
Hultgren - Tillis Engineers	Project No. 346.13	Plate No. 8



Notes (1) Bench into bedrock.
(2) Subdrains should include drainage material that covers 50 percent of the slope height as measured from the keyway to top.
(3) Subdrains should consist of 4-inch diameter perforated ABS or PVC pipe meeting SDR 23.5. Drainage material should be Caltrans Class 2 Permeable Material.
(4) 1% fall (minimum) on all subdrain benches and subdrain lines.
(5) All perforated pipe placed perforations down.
(6) All pipe joints shall be glued.
(7) All subdrains should discharge to a suitable outlet.

Not to Scale

Mountain View Cemetery
Oakland, California

Typical Subdrain Details

Hultgren - Tillis Engineers	Project No. 346.13	Plate No. 9

Appendix 4.5B

Existing Slope at Panhandle Site

Hultgren-Tillis Engineers, June 17,

A California Corporation
Specializing in Geotechnical Engineering

Hultgren-Tillis Engineers

June 17, 2015
Project No. 346.13

Mountain View Cemetery
5000 Piedmont Avenue
Oakland, California 94611

Attention: Mr. Jeff Lindeman

Existing Slope
Panhandle Slope
5000 Piedmont Avenue
Oakland, California

Dear Mr. Lindeman:

This letter presents our evaluation of alternatives for grading related to the existing slope at the perimeter of the Mountain View Cemetery property near the panhandle area. The panhandle and Clarewood areas were formerly part of a quarry and large scale grading occurred on the cemetery property. The quarry operation ceased sometime prior to 1950. The quarry created steep slopes at the perimeter of the cemetery property. The northeastern corner of the cemetery property is characterized by a steep hillside that rises approximately 50 feet from the relatively flat 'panhandle' area. This hillside is at a slope of roughly 1:1 (horizontal to vertical) and the top of the slope is generally coincident with the property line. The slopes are covered by trees and other vegetation.

Houses have been constructed above the slope. The property owner at 55 Stark Knoll has noted that portions of the hillside have receded over the past 21 years. At this property, rainwater from the roof of the house runs off onto the patio via several down spouts and the patio in turn drains down the hillside through openings at the base of the concrete block wall. There is a pipe discharging from the pond equipment that, according to the property owner, periodically discharges water as part of the filter backwash cycle. There is also what appears to be a perforated drainage pipe that discharges to the face of the hillside. During the last 21 years, the face of the hillside has receded such that the pipes have become exposed and it is no longer possible to walk around a large tree at the property corner.

The slope extends onto the City of Piedmont to the east and beyond the development toward the northeast. The area planned for development includes about 40 percent of the slope area. Within the developed area, the plan is to raise the site and place fill against the lower portion of the slope. The portion of the slope above the fill and the 60 percent of the slope outside the developed area will not be altered as part of the current development scheme.

DISCUSSION

The neighbors in the homes above the slope have reported some erosion and shallow movement within the slope over the past 20 years or so. The slope is within an area shown on geologic maps as chert. It is likely that the slope consisted of exposed chert when the quarry ceased operation. The slope includes areas with some loose debris and rock. The loose material has likely developed from weathering of the cut slope and from runoff from the properties above the slope. The slope has indications of some local sloughing and erosion but no definitive signs of larger zones of instability. The slope will continue to weather and movement of the debris on the slope should be expected to continue.

ALTERNATIVES

Within the developed area, the fill placement at the toe of slope will buttress the slope and improve overall stability. The slope above the fill and beyond the developed area will continue to weather and degrade with time.

We have developed three alternatives for improving the slope. Regardless of the final approach, the existing runoff will need to be addressed. There is currently water running off the upslope properties onto the hillside (coming from existing decks, roofs, etc.). Intercepting this water and routing it into a piped system would reduce the potential for erosion of the hillside. This could be achieved through a combination or curbing, brow ditch, inlets and piping.

1. Flatten Slope

An alternative is to flatten the slope to an inclination of 2:1 or flatter. The flatter slope would act as a buttress to the existing slope and have less risk of erosion and sloughing. A drawback is that the flatter slope will take up valuable space within the developed area. Its application is likely better suited within the areas beyond the development. The alternative of using a flatter slope constructed with soil will be the least costly of the alternatives.

2. Soil Nailing

The slope performance could be improved through soil nailing. Soil nailing is a technique where shallow anchors are drilled into the slope and grouted into place. A facing is normally applied to the face of the slope with the facing consisting of shotcrete. Typically, soil nailing is performed on steeper slopes or vertical faces but the technique could be adapted to the current slope inclination. Alternatively, the slope could be graded to a steeper inclination as part of the soil nailing.

3. Retaining Walls

The slope could be supported by retaining walls. The walls could be constructed by cutting into the existing slope to create space at the existing slope toe. Alternatively, the walls could be constructed at the base of the slope and then fill placed between the walls and existing slope.

If you have any questions, please call.

Sincerely yours,

Hultgren - Tillis Engineers

R. Kevin Tillis
Geotechnical Engineer

RKT:lm:la

cc: Mr. Scott Gregory, Lamphier-Gregory (via email)
Mr. Joe Runco, SWA Group (via email)
Mr. Michael Kuykendal, Sandis (via email)

File Name: 34613L01_Clarewood_Slope

Appendix 4.7

Construction-Period Noise Calculations

Mountain View - Noise Estimates from Construction at Nearby Recievers

Grading

Plot 98 / Panhandle	Distance	Comb. Noise	Dist. Reduct	Ground Reduct	Leq at Receiver
Stark Knoll	500	93.5	20.0	6.3	67.2
Truitt	425	93.5	18.6	5.9	69.1
St. Theresa's	960	93.5	25.7	8.1	59.7
Maxwelton	960	93.5	25.7	8.1	59.7
Abbott	1100	93.5	26.8	8.5	58.2
Pala Ave.	1300	93.5	28.3	8.9	56.3
Plot 82					
Stark Knoll	1550	93.5	29.8	7.5	56.2
Truitt	1000	93.5	26.0	6.5	61.0
St. Theresa's	535	93.5	20.6	5.1	67.8
Maxwelton	1950	93.5	31.8	8.0	53.7
Abbott	2000	93.5	32.0	8.0	53.4
Pala Ave.	1450	93.5	29.2	7.3	56.9
Combined					
Stark Knoll	(dB calculator)				67.4
Truitt	(dB calculator)				69.5
St. Theresa's	(dB calculator)				67.2
Maxwelton	(dB calculator)				60.3
Abbott	(dB calculator)				59.0
Pala Ave.	(dB calculator)				58.7

Equipment:

Ref. Emission Factor (Lmax) at 50'		Usage	Downtime Reduction
scraper	89	0.8	-0.97
scraper	89	0.8	-0.97
scraper	89	0.8	-0.97
dozer	85	0.8	-0.97
water truck	80	0.7	-1.55
compactor	80	0.4	-3.98

Predicted Noise at 50'

scraper	88.03
scraper	88.03
scraper	88.03
dozer	84.03
water truck	78.45
compactor	76.02

Combined Noise at 50'

93.50 (dB calculator)

Rock Breaking

Plot 98 / Panhandle	Distance	Comb. Noise	Dist. Reduct	Ground Reduct	Leq at Receiver
Stark Knoll	1550	102.3	29.8	7.5	65.0
Truitt	1000	102.3	26.0	6.5	69.8
St. Theresa's	535	102.3	20.6	5.1	76.6
Maxwelton	1950	102.3	31.8	8.0	62.5
Abbott	2000	102.3	32.0	8.0	62.2
Pala Ave.	1450	102.3	29.2	7.3	65.7

Equipment:

Ref. Emission Factor (Lmax) at 50'		Usage	Downtime Reduction
breaker	104	0.6	-2.22
ram hoe	95	0.6	-2.22

Predicted Noise at 50'

breaker	101.78
hoe	92.78

Combined Noise at 50'

102.30 (dB calculator)

Appendix 4.9

Estimated Water Demands for the Project

SWA 2015

PLOT 82 - HYDROZONE CHART

5/29/15

1. Hydrozone Table
2. Maximum Applied Water Use
3. Estimated Total Water Use

1.HYDROZONE CALCULATION TABLE

ETO= 41.8

HYDROZONE	WATER USE TYPE	IRRIGATION METHOD	EFFICIENCY (IE)	PLANT FACTOR (PF)	TOTAL AREA (HA) (SQ. FT)	PF x HA	ETWU	PERCENTAGE OF LANDSCAPE
HYDROSEED	-	-	-	-	192165	-	-	57%
SHRUB MASSING	LOW	SPRAY	0.71	0.2	16536	3307	**120717**	5%
LAWN	HIGH	SPRAY	0.71	0.7	127429	89200	**3255937**	38%
				Total sq. ft:	**336130**	**Total ETWU:**	**3376654**	**100%**

2. MAXIMUM APPLIED WATER ALLOWANCE (MAWA)= 6,097,802

Maximum Applied Water Allowance (MAWA) Gallons Per Year

MAWA = (ETo)(0.62)[(LA * 0.7) + (0.3 * SLA)]
MAWA = (41.8)(0.62)[(336130 * 0.7) + (0.3 * 0)]

ETo = Reference evapotranspiration
0.7= ET adjustment factor
LA=Landscaped Area (square feet)
0.62 = Conversion factor (gallons per square foot per year)

3. ESTIMATED TOTAL WATER USE (ETWU) (gallons)= 3,376,654

Estimated Total Water Use (ETWU) Gallons Per Year

ETWU= ((ETo)(.62)(PF(HA/IE)
ETWU= ((41.8)(.62){[0.2(16536/0.71)]+[0.7[127429/0.71)]}

ETo = Reference evapotranspiration
PF = Plant factor for hydrozones
HA = Hydrozone area (square feet)
0.62 = Conversion factor (gallons per square foot per year)
IE = Irrigation efficiency (0.90) bubbler/drip

DON'T CHANGE

PLANT WATER USE TYPE	PLANT FACTOR (PF)
-	-
LOW	0.2
MOD	0.4
HIGH	0.7

IRRIGATION METHOD	IRRIGATION EFFICIENCY (IE)
-	-
DRIP	0.9
BUBBLER	0.9
SPRAY	0.71
ROTORS	0.71

PLOT 98 - HYDROZONE CHART

5/29/15

1. Hydrozone Table
2. Maximum Applied Water Use
3. Estimated Total Water Use

1.HYDROZONE CALCULATION TABLE

ETO= 41.8

HYDROZONE	WATER USE TYPE	IRRIGATION METHOD	EFFICIENCY (IE)	PLANT FACTOR (PF)	TOTAL AREA (HA) (SQ. FT)	PF x HA	ETWU	PERCENTAGE OF LANDSCAPE
HYDROSEED	-	-	-	-	70174	-	**-**	42%
SHRUB MASSING	LOW	SPRAY	0.71	0.2	5899	1180	**43064**	4%
LAWN	HIGH	SPRAY	0.71	0.7	90133	63093	**2302987**	54%
				Total sq. ft:	**166206**	**Total ETWU:**	**2346051**	**100%**

2. MAXIMUM APPLIED WATER ALLOWANCE (MAWA)= 3,015,176

Maximum Applied Water Allowance (MAWA) Gallons Per Year

MAWA = (ETo)(0.62)[(LA * 0.7) + (0.3 * SLA)]
MAWA = (41.8)(0.62)[(166206 * 0.7) + (0.3 * 0)]

ETo = Reference evapotranspiration
0.7= ET adjustment factor
LA=Landscaped Area (square feet)
0.62 = Conversion factor (gallons per square foot per year)

3. ESTIMATED TOTAL WATER USE (ETWU) (gallons)= 2,346,051

Estimated Total Water Use (ETWU) Gallons Per Year

ETWU= ((ETo)(.62)(PF(HA/IE)
ETWU= ((41.8)(.62){[0.2(5899/0.71)]+[0.7[90133/0.71)]}

ETo = Reference evapotranspiration
PF = Plant factor for hydrozones
HA = Hydrozone area (square feet)
0.62 = Conversion factor (gallons per square foot per year)
IE = Irrigation efficiency (0.90) bubbler/drip

DON'T CHANGE

PLANT WATER USE TYPE	PLANT FACTOR (PF)
-	-
LOW	0.2
MOD	0.4
HIGH	0.7

IRRIGATION METHOD	IRRIGATION EFFICIENCY (IE)
-	-
DRIP	0.9
BUBBLER	0.9
SPRAY	0.71
ROTORS	0.71

PANHANDLE - HYDROZONE CHART

5/29/15

1. Hydrozone Table
2. Maximum Applied Water Use
3. Estimated Total Water Use

1.HYDROZONE CALCULATION TABLE

ETO= 41.8

HYDROZONE	WATER USE TYPE	IRRIGATION METHOD	EFFICIENCY (IE)	PLANT FACTOR (PF)	TOTAL AREA (HA) (SQ. FT)	PF x HA	ETWU	PERCENTAGE OF LANDSCAPE
HYDROSEED	-	-	-	-	68013	-	-	35%
SHRUB MASSING	LOW	SPRAY	0.71	0.2	11254	2251	**82157**	6%
LAWN	HIGH	SPRAY	0.71	0.7	113074	79152	**2889152**	59%
				Total sq. ft:	**192341**	**Total ETWU:**	**2971310**	**100%**

2. MAXIMUM APPLIED WATER ALLOWANCE (MAWA)= 3,489,297

Maximum Applied Water Allowance (MAWA) Gallons Per Year

MAWA = (ETo)(0.62)[(LA * 0.7) + (0.3 * SLA)]
MAWA = (41.8)(0.62)[(192341 * 0.7) + (0.3 * 0)]

ETo = Reference evapotranspiration
0.7= ET adjustment factor
LA=Landscaped Area (square feet)
0.62 = Conversion factor (gallons per square foot per year)

3. ESTIMATED TOTAL WATER USE (ETWU) (gallons)= 2,971,310

Estimated Total Water Use (ETWU) Gallons Per Year

ETWU= ((ETo)(.62)(PF(HA/IE)
ETWU= ((41.8)(.62){[0.2(11254/0.71)]+[0.7[2971310/0.71)]}

ETo = Reference evapotranspiration
PF = Plant factor for hydrozones
HA = Hydrozone area (square feet)
0.62 = Conversion factor (gallons per square foot per year)
IE = Irrigation efficiency (0.90) bubbler/drip

DON'T CHANGE

PLANT WATER USE TYPE	PLANT FACTOR (PF)
-	-
LOW	0.2
MOD	0.4
HIGH	0.7

IRRIGATION METHOD	IRRIGATION EFFICIENCY (IE)
-	-
DRIP	0.9
BUBBLER	0.9
SPRAY	0.71
ROTORS	0.71