Draft

Initial Study/Mitigated Negative Declaration
El Cariso Community Regional Park
Soccer/Football Fields, Universally Accessible Playground and Phase II General Improvements

Prepared for

County of Los Angeles Department of Public Works and
County of Los Angeles Department of Parks and Recreation

Prepared by

PARSONS

November 2012

DRAFT

INITIAL STUDY/MITIGATED NEGATIVE DECLARATION

EL CARISO COMMUNITY REGIONAL PARK SOCCER/FOOTBALL FIELDS, UNIVERSALLY ACCESSIBLE PLAYGROUND AND PHASE II GENERAL IMPROVEMENTS

SYLMAR, CALIFORNIA

Prepared for

County of Los Angeles
Department of Public Works
900 South Fremont Avenue, 5th Floor
Alhambra, California 91803-1331

and

County of Los Angeles
Department of Parks and Recreation
510 South Vermont Avenue, Room 201
Los Angeles, California 90020

Prepared by

PARSONS
100 W. Walnut Street
Pasadena, California 91124

November 2012

TABLE OF CONTENTS

SECTION 1. PROJECT INFORMATION 1

1.1 Project Title 1
1.2 Lead Agency Name and Address 1
1.3 Contact Person and Phone Number 1
1.4 Project Location 1
1.5 Project Sponsor's Name and Address 1
1.6 General Plan Designation 1
1.7 Zoning 1
1.8 Purpose of the Project 3
1.9 Background 3
1.10 Description of the Proposed Project 4
1.11 Related Projects 9
1.12 Surrounding Land Uses and Setting 9
1.13 Other Agencies Whose Approval is Required 10

SECTION 2. CEQA ENVIRONMENTAL CHECKLIST 13

I. Aesthetics 13
II. Agriculture Resources 15
III. Air Quality 16
IV. Biological Resources 21
V. Cultural Resources 24
VI. Geology and Soils 27
VII. Greenhouse Gas Emissions 30
VIII. Hazards and Hazardous Materials 34
IX. Hydrology and Water Quality 38
X. Land Use and Planning 42
XI. Mineral Resources 43
XII. Noise 43
XIII. Population and Housing 48
XIV. Public Services 49
XV. Recreation 50
XVI. Transportation/Traffic 50
XVII. Utilities and Service Systems 52
XVIII. Mandatory Findings of Significance 54

SECTION 3. SUPPORTING INFORMATION 56

3.1 References 56
3.2 List of Preparers 58

TABLE OF CONTENTS (CONT'D)

APPENDICES

A Mitigation and Monitoring Reporting Program
B Cultural Resources Investigation Report
C Geotechnical Investigation Report

LIST OF FIGURES

Figure 1. Location of the Proposed Project 2
Figure 2. El Cariso Community Regional Park 2
Figure 3. Preliminary Site Plan of Proposed Improvements to El Cariso Community Regional Park 5
Figure 4. Typical View of Interior of El Cariso Park 14

LIST OF TABLES

Table 1. Soccer Facilities in the Project Area 4
Table 2. Estimated Use of New Soccer/Football Fields at El Cariso Community Regional Park 8
Table 3. Estimated Air Pollutant Emissions from Proposed Construction of the Soccer/Football Fields, Playground and Parking at El Cariso Community Regional Park 17
Table 4. Estimated Air Pollutant Emissions from Operation of the Proposed Soccer/Football Fields, Playground and Improvements at El Cariso Community Regional Park 18
Table 5. Summary of Ambient Air Quality in the Sylmar Area 19
Table 6. Estimated Cumulative Air Pollutant Emissions During Construction of the El Cariso Park Soccer/Football Fields, Playground and Improvements 20
Table 7. CNDDB Species Recorded in the Project Vicinity 22
Table 8. Global Warming Potential of Greenhouse Gases 30
Table 9. Estimated Construction–Related Greenhouse Gas Emissions from the Proposed Project 32
Table 10. Estimated Operational Greenhouse Gas Emissions from the Proposed Project 32
Table 11. Estimated Cumulative Greenhouse Gas Emissions from Proposed Project Construction 33
Table 12. Estimated Cumulative GHG During Operation of the Proposed Project 34
Table 13. Contaminated Properties in the Immediate Project Area 36
Table 14. Private Airports in the Vicinity of El Cariso Community Regional Park 38

Table A-1. Summary of Mitigation Measures A-2
Table A-2. Implementation of Mitigation Measures A-3

INITIAL STUDY/MITIGATED NEGATIVE DECLARATION

EL CARISO COMMUNITY REGIONAL PARK SOCCER/FOOTBALL FIELDS, UNIVERSALLY ACCESSIBLE PLAYGROUND AND PHASE II GENERAL IMPROVEMENTS, (SYLMAR, CALIFORNIA)

The County of Los Angeles Department of Parks and Recreation proposes to construct and operate a two soccer/football fields, a universally accessible playground, and associated Phase II park improvements at El Cariso Community Regional Park in Sylmar, Los Angeles County, California.

The California Environmental Quality Act (CEQA), as established by the statute (Public Resources Code §§ 21000 *et seq.)*, requires that the environmental implications of an action by a local agency be estimated and evaluated before project approval. This Initial Study has been prepared in accordance with Section 15365 of CEQA Guidelines (14 Cal. Code Reg. 1500 *et seq.*). This Initial Study provides the assessment for a determination of whether the project may have a significant effect on the environment.

SECTION 1. PROJECT INFORMATION

1.1	**Project Title**	El Cariso Community Regional Park Universally Accessible Playground and Phase II General Improvements
1.2	**Lead Agency Name and Address**	County of Los Angeles Department of Public Works 900 South Fremont Avenue, 5th Floor Alhambra, CA 91803-1331
1.3	**Contact Person and Phone Number**	Sam Shadab Project Manager, Project Management Division I (626) 300-2337
1.4	**Project Location**	El Cariso Community Regional Park is located at 13100 Hubbard Street in the community of Sylmar (zip code 91342), within the boundaries of the City of Los Angeles in Los Angeles County, California. Sylmar is approximately 30 miles northwest of downtown Los Angeles (Figure 1). El Cariso Community Regional Park is approximately 0.9 mile northeast of the Foothill Freeway or Interstate 210 (I-210). The park is located along Hubbard Street between Simshaw and Eldridge Avenues (Figure 2). The proposed project will be located on the eastern and central portions of the park.
1.5	**Project Sponsor's Name and Address**	Sam Shadab Project Manager, Project Management Division I County of Los Angeles Department of Public Works 900 South Fremont Avenue, 5th Floor Alhambra, CA 91803-1331
1.6	**General Plan Designation**	The Generalized Land Use Policy Map of the County of Los Angeles General Plan (adopted in 1980) designates the project site as Open Space and within an incorporated city. The City of Los Angeles – Sylmar Community Plan designation for the proposed project site is Open Space (this project is located on County of Los Angeles land and not subject to City of Los Angeles planning restrictions).
1.7	**Zoning**	El Cariso Community Regional Park is zoned as Open Space (OS-1XL) in accordance with City of Los Angeles zoning regulations (this project is located on County of Los Angeles land and not subject to City of Los Angeles zoning restrictions)

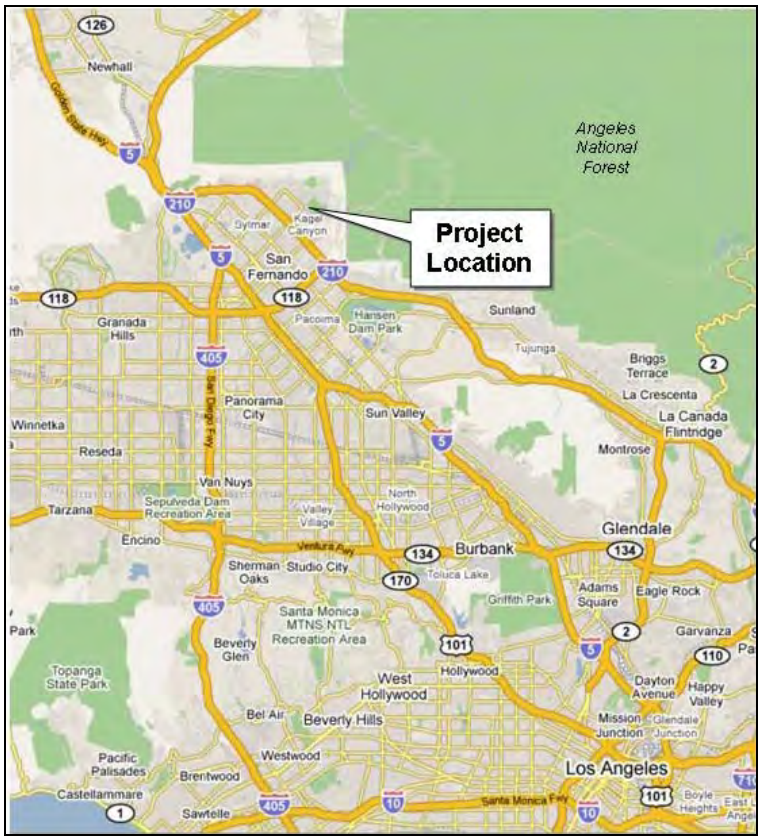


Figure 1. Location of the Proposed Project

Figure 2. El Cariso Community Regional Park

1.8 Purpose of the Project

The purpose of the project is to improve recreational and community opportunities by providing a new universally accessible playground, two soccer/football fields and associated park improvements for use by the general public. The soccer/football fields and park improvements will support future planned activities at El Cariso Community Regional Park in addition to the continuation of ongoing park programs. A universally accessible playground will be consistent with the Los Angeles County Department of Parks and Recreation's (DPR) mission to provide accessible recreation for people with disabilities in the County of Los Angeles.

1.9 Background

El Cariso Community Regional Park was created in 1973 when the County of Los Angeles purchased unimproved property for parkland from the State of California. Over the next 14 years, the property was transformed into a 79-acre community regional park. El Cariso Community Regional Park stands as a memorial to the young men who lost their lives in the Loop Fire of November 1966 and to those who survived this fire, as well as to firefighters everywhere.

El Cariso Community Regional Park currently has 11 tennis courts, ten picnic pavilions, two swimming pools and a pool building, two basketball courts, four softball fields, a baseball field, four play areas, six restroom buildings and a park office building that functions as a community center. The park is characterized by turfed areas and concrete walkways that connect picnic stations and play areas. Picnic pavilions, covered or uncovered, include barbeque concrete pads and water fountains. Phase 1 general improvements to the park added a new gymnasium and community center building in the southwestern portion of the park (a Mitigated Negative Declaration for Phase 1 improvements was adopted on July 13, 2010).

The El Cariso Head Start preschool is located inside the park near its eastern perimeter and adjacent to the park's northeast parking lot. The Head Start program is administered by the Office of Head Start (OHS), Administration for Children and Families (ACF), U.S. Department of Health and Human Services (HHS). The preschool consists of a fenced play yard and an approximately 2,300 sq ft classroom building. Volunteers of America of Los Angeles operates two sessions of the El Cariso Head Start for children ages 3 to 5 years old: morning sessions are 8:00 a.m. to 11:30 a.m. Monday through Thursday; and, afternoon sessions are 12:30 p.m. to 4:00 p.m. Tuesday through Friday. El Cariso Head Start uses the existing parking area on the northeast side of the park.

Two entrances to El Cariso Community Regional Park are used for access to the swimming pool, picnic areas and parking lots on the western side of the park. A third and southernmost entrance at the intersection of Hubbard Street and Garrick Avenue provides access to athletic fields, tennis courts, and the community center on the southern side of the park. The middle entrance along Hubbard Street provides access to the swimming pools, while the northern entrance (approximately 230 ft from Simshaw Avenue) provides access to picnic areas and the Head Start preschool on the eastern portion of the park. The entire park currently has approximately 437 parking spaces.

Universally Accessible Playgrounds are designed to offer a place where children of all abilities can play side-by-side. In recognition of

the absence of wheelchair-accessible playgrounds, the first Universally Accessible Playground was opened in 2000 with a mission of providing an opportunity for children with disabilities to play at their highest level, enhancing emotional, physical and social development as well as teaching compassion and acceptance (City of Los Angeles, 2010). There are 15 Universally Accessible Playgrounds operated by the City of Los Angeles Department of Recreation and Parks, the nearest at Hansen Dam Recreation Center (Lakeview Terrace) and Lake Balboa/Anthony C. Beilenson Park (Van Nuys). This will be the first County-operated universally accessible playground.

Soccer leagues, instructional programs and clinics utilize a variety of fields and recreation centers. Twenty-one of the 151 parks operated by the County of Los Angeles have soccer fields. Parks and recreation centers operated by the City of Los Angeles also offer facilities for outdoor and indoor soccer league activities, instruction and clinics. Table 1 identifies County-operated soccer fields and City-operated fields and recreation centers within 20 miles of the project site.

Table 1. Soccer Facilities in the Project Area

No.	Description	Facility	Distance/Direction[1]
Los Angeles County Department of Parks and Recreation			
1	Castaic Sports Complex (Castaic)	MPF	17.0 miles NW
2	Del Valle Park (Castaic)	MPF	17.0 miles NW
3	Charles White Park (Altadena)	MPF	18.0 miles SE
City of Los Angeles Department of Recreation and Parks			
1	Hubert H. Humphrey RC (Fillmore - Pacoima)	LF	3.2 miles SE
2	David M. Gonzales RC (Pacoima)	LF	4.6 miles S
3	Hansen Dam Recreation Area (Lake View Terrace)	UF	4.7 miles S
4	Ritchie Valens RC (Pacoima)	UF	5.4 miles S
5	Stonehurst RC (Sun Valley)	LF	7.4 miles SE
6	Fernangeles RC (Sun Valley)	LF	8.8 miles S
7	Panorama RC (Panorama City)	Gym	9.2 miles S
8	Granada Hills RC (Granada Hills)	Gym	9.4 miles W
9	Van Nuys/Sherman Oaks RC (Sherman Oaks)	LF	16.1 miles S
10	Chatsworth Park North (Chatsworth)	LF	16.1 miles W
11	Winnetka RC (Winnetka)	Gym	16.6 miles SW
12	Chatsworth Park South (Chatsworth)	Gym	16.8 miles W

[1] Indicates distance from the project site in Sylmar.

LF Lighted Soccer Field
RC Recreation Center
MPF Multi-Purpose Field
UF Unlighted Soccer Field

1.10 Proposed Project

The County of Los Angeles Department of Public Works proposes to construct a new universally accessible playground, two soccer/football fields and park improvements at El Cariso Community Regional Park in the community of Sylmar (City of Los Angeles) in Los Angeles County, California. Proposed facilities to be constructed are shown on Figure 3.

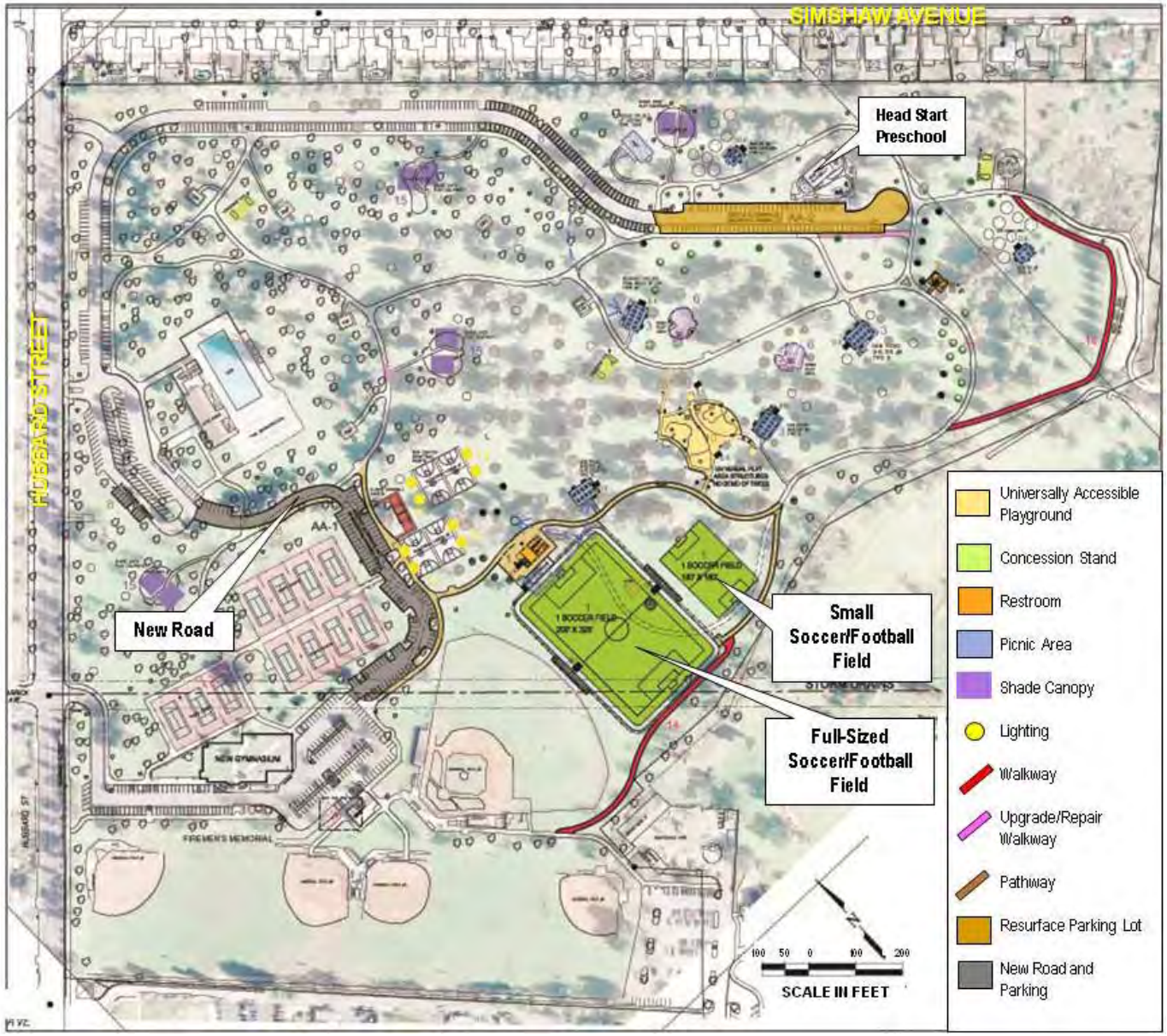


Figure 3. Preliminary Site Plan of Proposed Improvements to El Cariso Community Regional Park

Project Description and Construction. The playground, one large soccer/football field with lights and fencing, and one small soccer/football field, would be located on the southern side of the park east of the tennis courts away from residential areas on the north side of the park. In addition, the Proposed Project would include concession stands, handball courts with lights, pathways, shade canopies, replacement of picnic areas, and improvements to parking and security lighting.

The proposed project would be constructed as a design-build[1] project to provide the County with the cost savings associated with a shorter schedule. For this reason, certain specific design and construction details are not known at this time. The following description represents anticipated features based on a preliminary concept package. Upon completion of design, the County of Los Angeles will determine whether any additional environmental evaluation and documentation is required under CEQA. This evaluation will occur before any project implementation. As shown on Figure 3, the proposed project will include the following features:

- Demolition of two existing play areas, two existing restrooms, five large concrete picnic areas, two small concrete picnic areas, one round concrete picnic table pad.
- Construction of a full-sized (200 ft by 325 ft) soccer/football field with artificial turf system with misting/cooling system, fencing, bleachers (capacity: 192 persons; height approx. 3 ft above ground) with canopy, field lights, restrooms (approx. 760 sq ft) and concession stand with bicycle rack.
- Construction of a small soccer/football field, 120 ft by 180 ft in size, with natural grass (no fencing, bleachers or canopy), and moveable goal posts.
- Construction of a new Americans with Disabilities Act (ADA)-compliant restroom building.
- Relocation of one picnic shelter from the north side of the park and replacement of three large picnic shelters (total of 4) with metal shade structure, concrete slab, picnic tables, barbeque grills, drinking fountain.
- Replacement of two smaller picnic areas with metal shade structures, concrete slabs, picnic tables, barbeque grills and drinking fountain. Replacement of round concrete picnic table pad (due to location of soccer/football field).
- Installation of 108 additional parking spaces to accommodate soccer/football field patrons.
- Rerouting of existing pathways to accommodate new soccer/football fields. Connection of the east walkway to existing walkways with decomposed granite pathways; connection of the new soccer/football fields to existing baseball fields with decomposed granite pathways.

[1] Design-Build is a construction approach in which a single individual or business is responsible for both the design and construction of a project. The design-build approach is used to minimize risks for the project owner and to reduce the delivery schedule by overlapping the design phase and construction phase of a project.

- Upgrade and repair of walkways for ADA compliance.
- Installation and replacement of 11 drinking fountains (some with pet drinking bowls).
- Addition of shade canopies to existing play areas to shade existing playground equipment.
- Install new lighting for the basketball courts.
- Construction of two handball courts with lighting.
- Cut of approximately 11,000 cubic yards (cy) of soil at the soccer/football fields and fill of approximately 6,400 cy of existing soil over approximately 5.6 acres in the park (the anticipated maximum depth of excavation required will be 6 ft).
- Export of approximately 4,600 cubic yards of soil from the park.
- Removal of one eucalyptus tree and relocation of one sweet gum tree for construction of full-sized soccer/football field; the eucalyptus to be removed would be replaced with a California sycamore tree (minimum size: 5-ft box).
- Clearing and grading for a universally accessible playground with play areas for ages 2 to 5 and 5 to 12, shaded play equipment, seating for parents (both seat walls and ADA-compliant concrete benches with companion seating), ADA-compliant pathways and swings.
- Areas disturbed by construction will be reseeded and landscaped.
- Resurfacing of the existing parking lot on the north side of the park.
- Los Angeles County DPR may elect to construct a new roadway to connect the existing pool parking lot to the new soccer/football fields and the new gymnasium and community building parking lot. The new roadway may result in additional parking spaces. Two existing eucalyptus trees may be removed for construction of the new roadway. Each of the two trees to be removed would be replaced with a California sycamore tree (minimum size: 5-ft box). Although it is uncertain if the proposed new roadway will be constructed, this element of the project is analyzed herein for potential environmental impacts
- Connection of new utilities to existing sources to support new structures.

Temporary detours and lane closures will not be required during the construction period. The entrance to the northernmost parking lot will be controlled by a flagman during construction. Construction vehicles and equipment will be staged onsite in existing parking lots on the northeast side of the park or between the proposed fields and golf course away from the residential area (Figure 3). A portion of one or more parking areas in the park will be temporarily unavailable during construction; however, parking will continue to be available throughout the rest of the park.

Construction of the proposed project is assumed to start in 2013 and would require approximately 15 months as follows:

- Demolition of Existing Park Structures (3 months)
- Trenching for Utilities (2 months)
- Construction of playground, soccer/football fields and park improvements (7 months)
- Parking and Paving (3 months)

Operation. El Cariso Community Regional Park will continue to be owned and operated by the County of Los Angeles DPR. The park will continue to be open from sunrise to sunset on Mondays through Friday and 10 a.m. to 10 p.m. on Saturdays and Sundays, except for occasional events where extended hours of operation will be approved by the Los Angeles County DPR (but in no case later than midnight), similar to current conditions. Baseball leagues are allowed to use the lighted fields past sunset.

The proposed soccer/football fields would be open to the public from 9 a.m. to 10 p.m. on Mondays through Friday, 9 a.m. to 9 p.m. on Saturdays, and 10 a.m. to 5 p.m. on Sundays. Access to the new playground and soccer/football fields will be from three existing park entrances along Hubbard Street. Scheduling of activities in the proposed fields would be managed by the North Agency Headquarters of the Los Angeles County DPR.

The new soccer/football fields would result in an increase in attendance at El Cariso Community Regional Park. Table 2 presents a summary of the number of persons that could be present at the park on any weekday or weekend.

Table 2. Estimated Use of New Soccer/Football Fields at El Cariso Community Regional Park

Type	Persons Per Team			Referees	Total Persons
	Players	Coaches	Guests		
Adult League	18	2	40	3	123 [a]
Persons on Full-Sized Soccer/Football Field					123
Staff					2
Subtotal					125
Youth League	12	1	26	3	81 [a]
Persons on Small Soccer/Football Field					81
Staff					2
Subtotal					83
Total, Persons on Both Fields					208

Source: LACDPW, 2011

[a] Based on two teams per field.

The additional persons from use of the project would represent an approximately 11 percent increase in users at the park. Activities will be scheduled by the Los Angeles County Department of Parks and Recreation based on availability of recreational facilities and parking. For evaluation purposes, it is assumed that no more than two or three practice sessions or games per field would be scheduled on weekdays or weekends, respectively. In the event that both fields are in operation for practice and/or scheduled games, it is estimated that a

maximum of 208 persons could be on the fields at any time (weekday or weekend).

Parking for the proposed soccer/football fields would be available in the central and northern sections of the park. Soccer or football parking would use these spaces during after school hours and weekends. The Proposed Project would result in addition of approximately 108 parking spaces which would be added to the park. This would result in a total of 545 parking spaces within El Cariso Community Regional Park. Additional off-site parking is available at the Los Angeles Mission College parking structure south of the El Cariso Golf Course.

The proposed universally accessible playground will result in an increase in patrons but this increase would not be considered to be substantial. The nearest universally accessible playground is located at Hansen Dam Recreational Area approximately 4.7 miles south of El Cariso Community Regional Park.

1.11 Related Projects

There are two ongoing and planned projects within a one mile radius of El Cariso Community Regional Park:

- The Los Angeles Community College is constructing Facility Master Plan improvements on the campus of Los Angeles Mission College (LAMC). Construction of the Media Arts Center is ongoing (completion February 2013); construction of the Student Services Center is expected to start in 2012 (completion September 2013); and, construction of athletic fields (1 baseball, 1 softball and 1 soccer field) on the East Campus is on hold (LAMC, 2012).
- In October 2012, the City of Los Angeles released a Draft Environmental Impact Report (EIR) for the Granada Hills-Knollwood Community Plan and Sylmar Community Plan Update. The Plan includes changes to land use designations and zones intended to accommodate forecasted growth aimed at preserving single-family residential neighborhoods, open space, and natural resources. The Sylmar Plan would preserve the character of existing single-family and equine-keeping neighborhoods, and the general semi-rural suburban character of the area, by maintaining lower density land use designations. Adoption of this EIR will not constitute a commitment to any specific project or development.

For purposes of this analysis, it was assumed that the proposed construction of the soccer/football fields, universally accessible playground, and associated park improvements could overlap for 2 months with both LAMC projects and 7 months with the LAMC Student Services Center construction.

1.12 Surrounding Land Uses and Setting

The project site is surrounded by suburban, single-family residential land uses approximately 100 ft to the northeast. An approximately 2,300 sq ft building that houses a Head Start preschool is located within the park immediately northwest of the northeast parking area and approximately 900 ft from the proposed soccer/football fields. El Cariso Golf Course is directly south of the site (access is from Eldridge Street). Softball fields and a model aircraft flight park are located west of the site. Swimming pools, tennis courts and other park facilities are west and southwest of the site. Los Angeles Mission College (zoned for Public Facilities) is 975 ft south of the site. The college and golf course are accessed via Eldridge Street.

1.13 Other Agencies Whose Approval is Required

The project will be subject to a National Pollutant Discharge Elimination System (NPDES) permit from the State Regional Water Quality Control Board (RWQCB).

Environmental Factors Potentially Affected:

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following page.

☐ Aesthetics	☐ Agricultural and Forestry Resources	☐ Air Quality
☐ Biological Resources	☐ Cultural Resources	☐ Geology/Soils
☐ Greenhouse Gas Emissions	☐ Hazards and Hazardous Materials	☐ Hydrology/Water Quality
☐ Land Use/Planning	☐ Mineral Resources	☐ Noise
☐ Population/Housing	☐ Public Services	☐ Recreation
☐ Transportation/Traffic	☐ Utilities/Service Systems	☐ Mandatory Findings of Significance

Determination: (To be completed by the Lead Agency)

On the basis of this initial evaluation:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☑ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signature

11/6/12
Date

Sam Shadab
Printed Name

County of Los Angeles
Department of Public Works
For

EVALUATION OF ENVIRONMENTAL IMPACTS:

1) A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).

2) All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.

3) Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.

4) "Negative Declaration: Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from "Earlier Analyses," as described in (5) below, may be cross-referenced).

5) Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:
   a) Earlier Analysis Used. Identify and state where they are available for review.
   b) Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.
   c) Mitigation Measures. For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.

6) Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.

7) Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.

8) This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.

9) The explanation of each issue should identify:
   a) the significance criteria or threshold, if any, used to evaluate each question; and
   b) the mitigation measure identified, if any, to reduce the impact to less than significance

SECTION 2. CEQA ENVIRONMENTAL CHECKLIST

The Environmental Checklist and discussion of potential environmental effects were completed in accordance with Section 15063(d)3 of the California Environmental Quality Act Guidelines to determine if the proposed project may have any significant impacts on the environment.

A brief explanation is provided for all determinations. A "No Impact" or "Less Than Significant Impact" determination is made when the project will not have any impact or will not have a significant effect on the environment for that issue area, respectively, based on a project-specific analysis

Potential Impacts	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
I. Aesthetics Would the project:				
a) Have a substantial adverse effect on a scenic vista?			X	

While the Sylmar Community Plan (adopted in 1997) does not evaluate aesthetics as a planning element, this plan includes general design standards for community projects and landscaping. There are no designated scenic vistas in the community of Sylmar (the proposed project is located on County of Los Angeles land and not subject to City of Los Angeles zoning restrictions).

The proposed playground, soccer/football fields and park improvements will be located in the central/southern portion of El Cariso Community Regional Park. The area of the park is characterized by mature eucalyptus and pine trees approximately 30 to 40 ft in height. The new playground and soccer/football fields will be permanent, fixed structures that will not be visible from the backyards of some residences along Simshaw Avenue (these residences form the northeastern boundary of the park) or from parts of the adjacent El Cariso golf course. The proposed playground, soccer/football fields and park improvements will not be visible from Los Angeles Mission College adjacent to the south side of the park. The proposed playground and soccer/football fields will be a new visual element in the area with limited visibility from surrounding areas. The playground and soccer/football fields will not obstruct views of the mountains or other scenic aspects of the area from nearby residences. The effect of the proposed project on scenic vistas is considered less than significant.

b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?				X

There are no official State Scenic Highways in the project area. A segment of the Foothill Freeway (I-210) from the I-5 near Tunnel Station to State Route 134 is an eligible state scenic highway that has not been officially designated by the California Department of Transportation. The I-210 through Sylmar is designated as a Scenic Highway on the City of Los Angeles Scenic Highways Plan (City of Los Angeles, 1997). This segment of the I-210 is approximately 0.9 mile from the project site. The proposed playground, soccer/football fields and park improvements will not be visible in the local area. Therefore, there would be no impacts to scenic resources from the proposed project.

Potential Impacts	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
c) Substantially degrade the existing visual character or quality of the site and its surroundings?			X	

The visual character of the project site is recreational/open space with surrounding residential and institutional land uses. The visual field is an urbanized area composed of natural features and park improvements including a backdrop of mountain ranges to the northeast. This view contains developed structures including college buildings south of the park and recreational facilities (e.g., golf course) east of the park. The proposed playground, soccer/football fields and park improvements will be partially obscured by mature trees within El Cariso Community Regional Park (Figure 4).

Figure 4. Typical View of Interior of El Cariso Park

Although the playground, soccer/football fields and park improvements will become a permanent visible aspect in the view of the park, these features will not be visible from Hubbard Street because they would be obscured from view by mature trees in the park. The playground, soccer/football fields and park improvements will be visible from the east when viewed from the El Cariso golf course. These features will not alter the existing general visual character of the remaining park. The view of mature trees will be the predominant image in the park even after construction of the soccer/football fields and playground. Limited tree removal would not result in any aesthetic impact to the view of the park because the playground, soccer/football fields and park improvements will not obscure views of the distant mountains to residents along Hubbard Street and the visual character of the park will remain the same. This visual change will not be considered a substantial degradation of the visual quality of the area.

The Sylmar Community Plan (City of Los Angeles, 1997) recognizes the regional open space and parkland associated with El Cariso Regional Park, and prominent landmarks that include Los Angeles Mission College, as some of the many special and unique design features of Sylmar. Design standards ensure that planned uses are compatible and consistent with the visual environment. The proposed project will not result in any conflicts with plans and policies for preservation of open space, and will not adversely impact the visual character and quality of the project area. The proposed project will comply with the Sylmar Community Plan. The proposed project will not substantially degrade the visual character of the site and its surroundings. Impacts to the visual character and quality of the area will be less than significant.

Potential Impacts	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
d) Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area?			X	

The existing recreational fields and parking lots at El Cariso Community Regional Park have artificial lighting (light standards above the fields and parking). The surrounding area is characterized by typical urban sources of light and glare.

Construction activities will occur during daylight hours; therefore, no new sources of artificial lighting will be necessary during construction at the playground, soccer/football fields and park improvements at the site.

The proposed playground, soccer/football fields and park improvements will not be constructed of reflective materials, and will not be expected to generate a substantial amount of light or glare in the surrounding community. Lighting for the playground would not be visible from any residences. Four lamps per soccer/football field would be mounted on galvanized steel poles 55 ft above the playing field. Light poles would be approximately 900 ft from the nearest residence on Simshaw Avenue (See Figure 1-3). The proposed field lighting would introduce ambient lighting that would be noticeable in absolute darkness of the existing site. Field lighting would not be discernible from residences on Simshaw Avenue because of the distance and presence of existing mature trees within the park. The additional parking spaces to be constructed northeast of the soccer/football fields will include artificial lighting directed inward without spillover onto the adjacent residential properties. Therefore, impacts from light and glare are considered less than significant.

II. Agriculture Resources In determining whether impacts to agriculture resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?				X

The State of California Department of Conservation Division of Land Resources has surveyed land in Southern California as part of its Farmland Mapping and Monitoring Program (FMMP). The FMMP

Geographic Information System (GIS) data shows that the project site is classified as Urban and Built-Up Land and does not contain farmland of unique or local importance (FMMP, 2008). The site is developed as a public park and does not contain active farmland. The proposed project will not result in the conversion of farmland to non-agricultural use. Therefore, no impacts to farmland will occur.

Potential Impacts	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?				X

The California Land Conservation Act of 1965, commonly referred to as the Williamson Act, enables local governments to enter into contracts with private landowners for the purpose of restricting specific parcels of land to agricultural or related open space use. In return, landowners receive property tax assessments which are much lower than normal because they are based upon farming and open space uses as opposed to full market value. Williamson Act contracts are applicable to land in agricultural preserves and restrict specific parcels of land to agriculture or related open space use. There are no Williamson Act contracts in effect for the project site or surrounding area. No portion of the site is zoned for agricultural use. Therefore, the proposed project will not result in any impacts to existing zoning or Williamson Act contracts.

c) Involve other changes in the existing environment that, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?				X

The proposed project will consist of improvements to the existing El Cariso Regional County Park. There is no land within the boundaries of the park that is currently used as farmland. Therefore, the proposed project will not result in the conversion of farmland into a non-agricultural use. No impacts to farmland will occur.

III. Air Quality Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?			X	

The project area is located in the South Coast Air Basin managed by the South Air Quality Management District (SCAQMD). The SCAQMD is required, pursuant to the Clean Air Act of 1988, to reduce emissions of criteria pollutants for which the basin is in non-attainment. Strategies to achieve these emissions reductions are included in the regional air quality plan which is the 2007 SCAQMD Air Quality Management Plan (AQMP) for the region. The AQMP is based on Southern California Association of Governments (SCAG) population projections for communities within the Basin. Conformance with the AQMP for future development projects is determined by demonstrating compliance with local land use plans and/or population projections. The proposed project would not conflict or obstruct implementation of the AQMP. The proposed playground, soccer/football fields and associated park improvements would be constructed to provide a recreational opportunity to the local public and would be designed to accommodate projected population increases in the area. The project would be designed to reduce vehicle miles traveled by the public to other soccer/football fields that are located farther from residential areas. As such, the project would meet goals and objectives of the AQMP by minimizing vehicle miles traveled for recreation, which consequently minimizes air pollutant emissions. Therefore, the project is in

compliance with goals and objectives of the AQMP and impacts would be considered less than significant.

The proposed project will result in temporary air pollutant emissions during construction of the playground, soccer/football fields, parking lot, walkways, and utility tie-ins at El Cariso Community Regional Park. Table 3 provides a summary of estimated maximum daily (mitigated) emissions anticipated during each phase of construction work based on typical construction equipment in use at the site. Emissions were calculated using SCAQMD emission factors for typical equipment during each phase of construction. Dust and exhaust emissions are reflected in particulate matter emission rates. These emissions are compared to SCAQMD significance thresholds applicable to construction activities.

Table 3. Estimated Air Pollutant Emissions from Proposed Construction of the Soccer/Football Fields, Playground and Parking at El Cariso Community Regional Park

Phase	Estimated Duration[b]	Construction Activities	Emissions (lb/day)[a]					
			CO	ROG	NO_X	SO_X	PM_{10}	$PM_{2.5}$
1	5 months	Demolition and Trenching	25.71	6.27	48.26	0.06	2.59	2.31
		SCAQMD Threshold[c]	550	75	100	150	150	55
		Exceed Threshold?	No	No	No	No	No	No
	Assumptions: Equipment to be used in this phase would include 1 concrete/industrial saw, 1 rubber-tired dozer, 3 tractor/loader/backhoes, 2 excavators, and 1 other general industrial type equipment.							
2	7 months	Mass Grading	15.53	3.76	29.33	0.04	1.69	1.38
		Soil Hauling	8.20	1.99	24.14	0.04	1.18	1.01
		Total	23.73	5.75	53.47	0.08	2.87	2.39
		SCAQMD Threshold	550	75	100	150	150	55
		Exceed Threshold?	No	No	No	No	No	No
	Assumptions: Equipment to be used for mass grading in this phase would include 1 tractor/loader/backhoes, 2 excavators, and 1 other general industrial type equipment. Soil hauling emissions represent 48 truck trips per day by heavy duty trucks.							
3	3 months	Paving (Parking and Paths)	11.96	3.61	19.32	0.65	2.11	1.74
		SCAQMD Threshold [b]	550	75	100	150	150	55
		Exceed Threshold?	No	No	No	No	No	No
	Assumptions: Equipment to be used in this phase would include 1 tractor/loader/backhoes, 4 cement/mortar mixers, 1 paver, 1 paving equipment and 1 roller.							

[a] Emissions are approximate only; values shown represent a worst-case condition reflecting operation of equipment for 8 hours per day. The design builder will be required to ensure that all construction contractors use the cleanest available trucks for construction, and that on-road trucks are in compliance with SCAQMD requirements and meet the lowest certified emission levels, but not greater than EPA 2007 standards.

[b] There is no anticipated overlap of these construction phases.

[c] Source: SCAQMD, 2012a (this threshold applies to construction projects in the South Coast Air Basin)

CO = carbon monoxide
ROG = reactive organic gases
NO_X = nitrogen oxides
SO_X = sulfur oxides
PM_{10} = particulate matter less than or equal to 10 microns in diameter
$PM_{2.5}$ = particulate matter less than or equal to 2.5 microns in diameter

Emissions of particulate matter can be reduced by approximately 50 percent with watering for dust control (a standard construction practice). To prevent and reduce air pollutant emissions, the proposed project will be designed and constructed to include the following requirements:

- *All disturbed areas, including storage piles and unpaved surfaces which are not being actively used for construction, shall be effectively stabilized as needed for dust emissions using water, chemical stabilizer or suppressants, covered with a tarp or other suitable cover.*
- *Traffic speeds on unpaved areas shall be limited to 15 miles per hour (mph).*
- *Excavation and grading activities shall be suspended when winds exceed 20 mph.*

- *Construction vehicle and equipment idling time will be restricted to 15 minutes maximum or equipment must be shut off.*
- *No idling of construction vehicles, including heavy duty trucks, will be allowed within 200 ft of the Head Start preschool property fenceline.*

Project-related air pollutant emissions from the use of construction equipment and construction worker vehicles are not expected to exceed SCAQMD significance thresholds applicable to each pollutant. Construction activities will be temporary and will not be expected to result in any adverse, long-term effects on air quality because the generation of air pollutants will be limited to the 15-month construction period. For these reasons, impacts to air quality from construction of the proposed project are considered less than significant.

Once the construction is completed, operational emissions will consist of vehicular emissions associated with use of the new playground and soccer/football fields in addition to the continuation of routine park maintenance activities. Weekday operations will include vehicular emissions from park patrons utilizing the soccer/football fields for practice sessions, while most soccer games are expected to be scheduled during the weekends. Emissions associated with activities at the new universally accessible playground and soccer/football fields will not exceed significance thresholds. The proposed project will result in an increase of up to approximately 312 vehicles on a weekend day (e.g., league competitions using the soccer/football fields). Table 4 provides a summary of estimated air pollutant emissions during normal operation of the proposed playground, soccer/football fields and park improvements. These values reflect the maximum daily emissions associated with operations. Emissions will not exceed SCAQMD significance thresholds. For these reasons, impacts to air quality associated with operation of the proposed project are considered less than significant.

Table 4. Estimated Air Pollutant Emissions from Operation of the Proposed Soccer/Football Fields, Playground and Improvements at El Cariso Community Regional Park

Source	Emissions (lb/day)					
	CO	ROG	NO_X	SO_X	PM_{10}	$PM_{2.5}$
Daily Operations (Soccer practices during weekdays and games during weekends)	11.96	3.61	19.32	0.65	2.11	1.74
SCAQMD Significance Threshold[a]	550	55	55	150	150	55
Exceed Threshold?	No	No	No	No	No	No
Assumptions: 312 vehicle trips per day (three scheduled soccer/football games per field per day).						

[a] Source: SCAQMD, 2012a

Potential Impacts	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?			X	

The proposed project will generate air pollutant emissions during construction and operations primarily as a result of vehicle exhaust. These emissions will not exceed SCAQMD significance thresholds or ambient air quality standards. National Ambient Air Quality Standards (NAAQS) have been established by the U.S. Environmental Protection Agency for carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3), sulfur dioxide (SO_2), particulate matter (PM_{10} and $PM_{2.5}$) and lead. A summary of ambient air quality for the Sylmar area (east San Fernando Valley) is provided in Table 5.

Table 5. Summary of Ambient Air Quality in the Sylmar Area

Criteria Pollutant	Averaging Time	NAAQS[a,b,c]	Max. Concentration Reported	
			2010	2011
Carbon Monoxide	8-hour	9 ppm (10 mg/m^3)	2.4 ppm	2.37 ppm
	1-hour	35 ppm (40 mg/m^3)	3.0 ppm	(not available)
Lead	Quarterly	1.5 μg/m^3	(not monitored)	(not monitored)
Nitrogen Oxides (measured as NO_2)	1 hour	100 ppb (0.100 ppm)	82.0 ppb	0.068 ppm
	Annual	53.4 ppb (0.03 ppm)	24.1 ppb	(not available)
Ozone[d]	8-hour	0.08 ppm (157 μg/ m^3)	0.084 ppm	0.084 ppm
	1-hour	0.12 ppm (235 μg/ m^3)	0.111 ppm	0.120 ppm
Particulate Matter (measured as PM_{10})[e]	Annual	50 μg/m^3 [(e)]	29.6 μg/m^3	25 μg/m^3
	State annual average	20 μg/m^3	29.6 μg/m^3	25 μg/m^3
	24-hour	150 μg/m^3	51 μg/m^3	60 μg/m^3
Particulate Matter (measured as $PM_{2.5}$) [f]	Annual	15 μg/m^3	43.7 μg/m^3	(not available)
	24-hour	66 μg/m^3	21.5 μg/m^3	47.8 μg/m^3
Sulfur Oxides (measured as SO_2)	1-hour	75 ppb (0.078 ppm)	14.9 ppb	(not available)

Source: SCAQMD, 2012b and City of Los Angeles, 2012

[a] National Ambient Air Quality Standards (NAAQS): This primary standard reflects the levels of air quality necessary to protect the health with an adequate margin of. Each state must attain the primary standards no later than three years after the state implementation plan is approved by the USEPA.

[b] National standards (other than ozone, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year.

[c] Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon reference temperature of 25°C and a reference pressure of 760 mm of mercury. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 mm of mercury (1,013.2 millibar); ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

[d] The ozone standard is attained when the highest eight hour concentration in a year, averaged over three years, is equal to or less than the standard.

[e] For PM_{10}, the 24 hour standard is attained when 99 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. The federal PM_{10} average annual arithmetic mean (AAM) standard of 50 μg/m^3 was revoked by USEPA in 2006.

[f] For $PM_{2.5}$, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard.

In 2011, ambient air quality in Sylmar exceeded the NAAQS for ozone and the State standard for particulate matter (PM_{10}) (City of Los Angeles, 2012). In 2010, ozone and particulate matter (PM_{10} and $PM_{2.5}$) standards were exceeded (SCAQMD, 2012 b).

The proposed project will not violate any air quality standard or result in an air quality violation. With the exception of a 2005 violation issued by the SCAQMD for the swimming pool approximately 350 ft from the proposed site (this condition has been corrected), there are no air quality violations applicable to the existing park. Impacts to air quality from construction of the proposed project will be considered less than significant.

Potential Impacts	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)?			X	

The project area is located in the South Coast Air Basin and managed by the South Coast Air Quality Management District. The area is classified as a non-attainment area for ozone precursors (reactive organic compounds and nitrogen oxides) and particulate matter (PM_{10} and $PM_{2.5}$). The basin is designated as a non-attainment area for O_3 and particulate matter (PM_{10} and $PM_{2.5}$), and is in maintenance for NO_2 and CO. The basin is in attainment status for sulfur oxides (SOx) and lead.

Two known projects planned within 1.0 mile of the project site at El Cariso Community Regional Park may occur during the same time frame as the proposed project. Construction of the Media Arts Center at Los Angeles Mission College (LAMC), as identified in its 2007 Master Plan, is ongoing and expected to continue through 2013. Construction of the Student Services Center at LAMC could also initiate during the same time as the proposed project. Based on the anticipated schedules, estimated air pollutant emissions from the LAMC projects could overlap with the proposed project. It is possible that the proposed project could overlap for 2 months with both LAMC projects and 7 months with the LAMC Student Services Center construction. Building construction project emissions were added to emissions from construction of the proposed project to determine cumulative emissions. Table 6 identifies the estimated air pollutant emissions from the cumulative condition that could occur during construction of the proposed project.

Table 6. Estimated Cumulative Air Pollutant Emissions During Construction of the El Cariso Park Soccer/Football Fields, Playground and Improvements

Source	Emissions (lb/day)				
	CO	ROG	NO_X	SOX	PM_{10}
LAMC Media Arts Center (through 2013) [a]	15.02	18.72	10.37	0.00	3.15
LAMC Student Services Center (through 2014)	13.70	31.17	25.29	0.00	3.95
Proposed Project (playground, soccer/football fields and park improvements construction phase, worst case would be during demolition and trenching)	25.71	6.27	48.26	0.06	2.59
Cumulative Emissions	64.43	56.16	83.92	0.06	9.69
SCAQMD Significance Threshold[b]	550	75	100	150	150
Exceed Threshold?	No	No	No	No	No

[a] Reflects mitigated emissions (Source: LACCD, 2009)
[b] Source: SCAQMD, 2012a
CO = carbon monoxide
ROG = reactive organic gases
NO_X = nitrogen oxides
SO_X = sulfur oxides
PM_{10} = particulate matter less than or equal to 10 microns in diameter
$PM_{2.5}$ = particulate matter less than or equal to 2.5 microns in diameter

As shown on Table 6, emissions of from cumulatively considerable air pollutant emissions generated by the proposed project and other planned projects are considered less than significant.

Potential Impacts	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
d) Expose sensitive receptors to substantial pollutant concentrations?			X	

The proposed playground, soccer/football fields and park improvements will be located within an existing park in use by the public. The proposed soccer/football fields would be located approximately 900 ft south of the existing Head Start preschool building that is used during weekday mornings. The new parking spaces for the project would be constructed approximately 100 ft southwest of single-family residences on Simshaw Avenue. The nearest sensitive receptors are persons at the Head Start preschool, park patrons, residents on Simshaw Avenue, and golfers adjacent to the park. These persons could be exposed to construction dust during the earthwork activities associated with paving of the north parking area. Los Angeles Mission College is approximately 975 ft south of the project site. Park patrons and nearby sensitive receptors will not be expected to be exposed to substantial construction-related pollutants from the proposed project. Impacts to sensitive receptors are considered less than significant.

e) Create objectionable odors affecting a substantial number of people?			X	

Painting activities associated with construction of the playground, soccer/football fields and park improvements may result in temporary periods (i.e., approximately 3 months) of potentially objectionable odors. No other activities will occur, and no materials or chemicals will be stored on-site, that will have the potential to cause odor impacts during project activities at the site. Painting and asphalt laying activities will not be expected to generate odors discernible to park patrons or other nearby sensitive receptors. With the exception of asphalt laying and painting of road striping, no other objectionable odors will occur at the existing Head Start preschool on the north side of El Cariso Community Regional Park. Construction equipment and vehicles would not emit objectionable odors. The public will be temporarily restricted from access to the construction zone during the construction phase. Therefore, adverse odor impacts affecting a substantial number of people will not be expected. Impacts from odors would be considered less than significant.

IV. Biological Resources Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?			X	

A review of the California Department of Fish and Game (CDFG) California Natural Diversity Database (CNDDB) indicates that seven species of concern and one biotic community[2] of regional importance have been recorded within approximately one mile of the project site. As shown on Table 7, three of the species recorded in the project area have formal protection under the federal Endangered Species Act and the California Endangered Species Act of 1984. The playground, soccer/football fields and associated project improvements will be constructed entirely within the fully landscaped park (a

[2] A biotic community is a group of interdependent living organisms inhabiting the same region and interacting with each other.

previously disturbed area) where no native biotic communities remain. Due to lack of habitat, the seven species of concern are absent from the project area.

Table 7. CNDDB Species Recorded in the Project Vicinity

No.	Common Name	Scientific Name	Federal Status	State Status
Plants				
1	Slender-horned spineflower	*Dodecahema leptoceras*	Endangered	Endangered
2	Greata's aster	*Symphyotrichum greatae*	None	None
3	Davidson's bush-mallow	*Malacothamnus davidsonii*	None	None
4	Nevin's barberry	*Berberis nevinii*	Endangered	Endangered
Birds				
5	Western yellow-billed cuckoo	*Coccyzus americanus occidentalis*	Candidate	Endangered
Reptiles				
6	Coastal western whiptail	*Aspidoscelis tigris stejnegeri*	None	None
Mammals				
7	Hoary bat	*Lasiurus cinereus*	None	None

Southern Coast Live Oak Riparian Forest, a biotic community of regional importance, occurs only within Little Tujunga Wash which is over approximately 1.25 miles from the site. Due to the entirely landscaped grounds, this community is not found within El Cariso Community Regional Park.

The proposed site for the playground, soccer/football fields and associated project improvements was surveyed for this project by a biologist on November 2, 2010. Neither direct sightings nor indirect evidence of species considered sensitive by the State of California, and no Federal- or State-listed threatened or endangered species, were observed in the vicinity of the proposed site or will be expected to inhabit the project site or surrounding area.

Vegetation on the project site is entirely landscaped with grass lawns and predominantly non-native ornamental plantings. El Cariso Park is noted for its many non-native gum (*Eucalyptus* sp.) and Aleppo pine (*Pinus halepensis*) trees, many of which are mature specimens.

Wildlife observed at the site included: Anna's hummingbird (*Calypte anna*), black phoebe (*Sayornis nigricans*), and yellow-rumped warblers (*Dendroica coronata*). Flocks of crows (*Corvus brachyrhyncos*) were foraging on the ground in the area where the playground would be constructed. Raven (*Corax corax*) and Nuttall's woodpecker (*Picoides nuttallii*) is also expected in the park. No owl pellets, whitewash on tree limbs, or feathers from either owl species common in this part of the San Fernando Valley (great horned owl [*Bubo virginianus*] or barn owl [*Tyto alba*]) were found on the project site. Red-tailed hawk (*Buteo jamaicensis*) may forage or nest in the area.

Impacts to biological resources from construction and operation of the proposed project will not adversely affect listed and sensitive species. The construction of the proposed full-sized soccer/football field would require the removal of one eucalyptus tree and relocation of one sweet gum tree. Addition of a new roadway from the existing pool parking lot to the new soccer/football fields may result in removal of two existing eucalyptus trees (Figure 3). The proposed project will result in removal of a maximum of three non-native trees for construction of the soccer/football fields and new roadway; one other non-native tree would be relocated to another location within the park. All trees to be removed will be replaced with California sycamore (minimum size: 5-ft box). Trees to be removed or replaced are not listed by State of federal agencies. Direct and indirect impacts to listed or sensitive species of plants and animals are considered less than significant.

Potential Impacts	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations, or by the California Department of Fish and Game or the U.S. Fish and Wildlife Service?				X

The project site does not contain riparian habitat or any other sensitive natural community identified by the California Department of Fish and Game or the U.S. Fish and Wildlife Service. The proposed site for the playground, soccer/football fields and park improvements is an existing community park that does not contain any watercourses or native habitat. The nearest watercourse is Pacoima Wash, approximately 0.6 mile from the project site. Impacts to riparian habitat or other sensitive natural communities will not occur.

c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?				X

There are no federally protected wetlands on the project site or within one mile of the proposed site for the playground, soccer/football fields and park improvements (Track Info Services, 2008). The proposed project will not result in physical modifications or placement of facilities in, or adjacent to, wetlands. Therefore, impacts to federally-protected wetlands will not occur.

d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?			X	

The proposed construction of the playground, soccer/football fields, utility connections, roadways and other improvements will occur on previously disturbed ground. The proposed site does not contain any native wildlife nursery sites. A total of four trees are present within the project footprint. While the trees to be removed may provide nesting habitat for native migratory birds, removal of three trees (one will be relocated within the park) will not substantially interfere with the movement of any native resident or migratory wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites. This is because there would be no change to the remaining stands of mature trees located elsewhere within the park. Impacts to movement of any native resident or migratory wildlife species, and interference with established native resident or migratory wildlife corridors, are considered less than significant.

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?			X	

The proposed project will not require the removal or relocation of any trees within the park that are subject to local preservation policies or ordinances. Although not protected under any County of Los Angeles policy or ordinance, Western sycamore (*Plantanus racemosa*) trees are protected under the City

of Los Angeles Native Tree Protection Ordinance. The proposed project would not result in the need to remove or relocate any Western sycamore trees. The County of Los Angeles is not required to comply with this city ordinance. The County of Los Angeles would replace trees that are removed with California sycamore trees (minimum size: 5-ft box). Therefore, impacts to native trees would be considered less than significant.

Potential Impacts	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
f) Conflict with the provision of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?				X

The proposed project is not located in the planning area of any Habitat Conservation Plan or Natural Community Conservation Plan. The project site is not located within or near any Los Angeles County Significant Ecological Area (SEA). The proposed project will not conflict with any adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan. Therefore, there will be no impact to approved habitat conservation plans.

V. Cultural Resources Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5?				X

The nearest known cultural resource, a historic lime kiln possibly associated with the San Fernando Mission, is located over 0.5 mile from the site (SWCA, 2008a; See Appendix B). The park is not listed on the National Register of Historic Places (NRHP). A stone plaque (on the south side of the park) dedicated to the firefighters who lost their lives in the Loop Fire was dedicated in 1996 and is not a historic resource. There are no features on the property that are considered historic. The proposed project does not include demolition of any structures that were constructed prior to 1962. Therefore, the proposed project will not result in any adverse change to historical resources and no impact will result.

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?		X		

An archaeological investigation of the proposed site for the playground, soccer/football fields and park improvements was conducted in January 2011 (see Appendix B). No prehistoric or historic archaeological resources or historic-era built-environment resources were identified during the survey. Based on a review of the Native American Heritage Commission (NAHC) Sacred Lands File obtained in December 2011, there are no Native American cultural resources or sacred sites that are expected to be impacted by the proposed project.

The site is underlain by artificial fill overlying Pleistocene Age alluvial fan deposits generally consisting of unconsolidated sand, silt, clay, and gravel. Artificial fill was observed to a maximum depth of 2 feet below existing ground surface (Geocon, 2010). The project area has a low sensitivity for encountering buried archaeological resources.

The NAHC has identified eight culturally-affiliated Native American contacts that may have knowledge of cultural resources in the project area. In January 2011, letters and email messages were sent to each of these contacts to notify them of the proposed construction of the soccer fields and universally accessible playground at El Cariso Community Regional Park. No responses have been received to date. No

specific resources were identified as a result of the Sacred Lands File Search, Native American Coordination, or cultural resources survey.

Although no archaeological resources were identified within or immediately adjacent to the project area and the results of the archaeological survey were negative, the proposed project has a potential to encounter subsurface archaeological material due to the need for intrusive ground disturbance associated with the clearing, grubbing and grading for the soccer/football fields and other improvements (maximum excavation to 6 feet below surface for all project features). To avoid potential impacts to archaeological resources that may be buried beneath the project area, the County of Los Angeles Department of Public Works will implement the following mitigation measures:

- ***Cultural 1.*** *Before initiation of ground-disturbing activities, a qualified archaeologist will conduct an awareness training session for all construction workers and supervisory personnel. The training session would explain the importance of, and legal basis for, the protection of significant archaeological resources. Each worker would also learn the proper procedures to follow in the event cultural resources or human remains/burials are uncovered during ground-disturbing activities. These procedures include work curtailment or redirection and the immediate contact of their supervisor. It is recommended that this worker education session include visuals of artifacts (prehistoric and historic) that might be found in the project vicinity, and that it take place on-site immediately before the start of ground disturbance.*
- ***Cultural 2.*** *All excavation in native soil or below 5 ft below ground surface (bgs) will be monitored by a qualified archaeologist that meets Secretary of the Interior's standards. The monitor will attend the pre-grading meeting(s) with contractors to explain and coordinate requirements and procedures.*
- ***Cultural 3.*** *In the event any archaeological materials or subsurface deposits are exposed during ground disturbance, the construction contractor will immediately cease activity in the affected area (e.g., redirect activities into another area) until the discovery can be evaluated by a qualified archaeologist or historic resources specialist, as appropriate, and appropriate treatment measures implemented. If the discovery proves to be significant in accordance with CEQA Section 21083.2(g), additional work such as testing or data recovery will occur. The methods used during monitoring and/or recovery of archaeological resources shall be documented in a report of findings.*

With incorporation of these mitigation measures, impacts to archaeological resources are considered less than significant.

Potential Impacts	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
c) Directly or indirectly destroy a unique paleontological resource or site of unique geologic feature?		X		

According to published geologic mapping, El Cariso Community Regional Park is mostly underlain by Quaternary older alluvium of Pleistocene age (1.8 million years ago [Ma] to 10,000 years before present [BP]) consisting of fine to coarse-grained unconsolidated to moderately consolidated sand and gravel. Numerous fossil localities in Pleistocene-age alluvial and fluvial deposits throughout southern California have yielded fossilized terrestrial vertebrates such as mammoths, mastodons, ground sloths, dire wolves, short-faced bears, saber-toothed cats, horses, camels, and bison. Within the vicinity of the project area, at least four vertebrate fossil localities have been previously recorded within older Quaternary deposits and fill, including mastodon, bison, mammoth and horse fossils (SWCA, 2008b). Therefore, older alluvium present within the project area is determined to have a high paleontological sensitivity.

The site is underlain by artificial fill overlying Pleistocene Age alluvial fan deposits generally consisting of unconsolidated sand, silt, clay, and gravel. Artificial fill was observed to a maximum depth of 2 feet below existing ground surface (Geocon, 2010). Artificial fill is the result of human construction and is considered to have a low paleontological sensitivity because of the loss of associated sedimentological

and positional data that results during the movement of the sediments. Due to the presence of older alluvium beneath artificial fill, the project site is considered to have a paleontological sensitivity from low to high (increasing with depth) (SWCA, 2008b).

Destruction of fossils as a result of human-caused ground disturbance has a significant cumulative impact, as it makes biological records of ancient life permanently unavailable for study by scientists. To avoid potential impacts to nonrenewable paleontological resources, the County of Los Angeles will implement the following mitigation measures during construction activities:

- ***Cultural 4.*** *All project-related ground disturbances in native soil or below 5 ft bgs will be monitored by a qualified paleontological monitor on a full-time basis. A qualified paleontologist will be retained to supervise monitoring of construction excavations. Excavations in artificial fill (from ground surface to a depth of 2 ft beneath ground surface) will not require a paleontological monitor.*
- ***Cultural 5.*** *In the event paleontological resources are encountered during earthwork, the construction crew will immediately cease activity in the affected area (e.g., divert grading away from exposed fossils and redirect activities into another area) until the resources can be evaluated by a qualified paleontologist, and the appropriate treatment measures implemented. The paleontologist will determine if the paleontological material should be salvaged, identified and permanently preserved. Recovered fossils will be prepared to the point of curation, identified by qualified experts, listed in a museum database to facilitate analysis, and reposited in a designated paleontological curation facility (e.g., Los Angeles County Museum of Natural History).*

With incorporation of these mitigation measures, impacts to nonrenewable paleontologic resources are considered less than significant.

Potential Impacts	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
d) Disturb any human remains, including those interred outside of formal cemeteries?		X		

The proposed project is not expected to encounter any human remains as a result of earthmoving activities. The project area is not otherwise known to be a previous cemetery or burial site. Therefore, the probability of encountering human remains during project construction is unlikely. To avoid potential impacts to human remains that may be buried beneath the surface in the work area, the County of Los Angeles Department of Public Works will implement the following mitigation measure:

- ***Cultural 6.*** *In the event human remains are encountered during project construction, the construction crew will immediately cease activity in the affected area and the Los Angeles County Coroner shall be immediately contacted to determine whether or not investigation of the cause of death is required. The Coroner shall make a determination of origin and disposition pursuant to Public Resources Code Section 5097.98. In the event the remains are Native American in origin, the Native American Heritage Commission shall be contacted to determine necessary procedures for protection and preservation of remains, including reburial, as provided in the CEQA Guidelines, Section 15064.5(e).*

With incorporation of this mitigation measure, impacts to human remains are considered less than significant.

Potential Impacts	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
VI. Geology and Soils Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.			X	

The site is located approximately 0.8 miles southwest of the San Gabriel Mountains in the northeastern perimeter of the San Fernando Valley (CTL Environmental Services, 2008a). The San Fernando Valley is part of the Peninsular Ranges which are characterized by northwest trending mountain ranges bounded by northwest trending faults (Koury Geotechnical Services, Inc., 2008). The San Gabriel Mountains are bound to the south by the Sierra Madre-Cucamonga fault and to the north by the San Andreas fault (Koury Geotechnical Services, Inc., 2008).

The project site is not located within a currently established Alquist-Priolo Earthquake Fault Zone for surface fault rupture hazards. No active or potentially active faults with the potential for surface fault rupture are known to pass directly beneath the site. Therefore, the potential for surface rupture due to faulting occurring beneath the site during the design life of the proposed project is considered low (Geocon West, 2010).

The closest surface trace of an active fault to the site is the San Fernando Fault located approximately 3,300 feet south of the site. Other nearby active faults are the Olive View Fault, the San Gabriel Fault, the Verdugo Fault, the Northridge Fault and the Sierra Madre Fault located approximately 0.9 mile west, 3.0 miles northeast, 3.8 miles south, 6.0 miles south-southwest and 7.2 miles southeast of the site, respectively. The active San Andreas Fault Zone is located approximately 22 miles northeast of the site. The closest potentially active fault to the site is the Santa Susana Fault located approximately 4.6 miles west of the site. Other nearby potentially active faults is the Holser Fault and the Simi Fault located approximately 12.5 miles northwest and 15 miles west of the site, respectively (Geocon West, 2010).

The proposed playground, soccer/football fields and park improvements will be designed and constructed to resist damage from an earthquake, and will conform to the appropriate Earthquake Design Regulations of Chapter 16, Section 1613, of the California Building Code. Therefore, the potential impact from rupture of an earthquake fault is considered less than significant.

ii) Strong seismic ground shaking?			X	

Ground shaking from earthquakes associated with nearby and distant faults may occur during the lifetime of the project. Because earthquake-related hazards cannot be avoided in the southern California region, the project site could be subjected to strong seismic ground shaking.

The site could be subjected to moderate to severe ground shaking in the event of a major earthquake on any of the faults referenced above or other faults in Southern California. With respect to seismic shaking, the site is considered comparable to the surrounding developed area (Geocon West, 2010).

The proposed park improvements will be designed and constructed to resist damage from an earthquake in accordance with site-specific design criteria derived from the 2007 California Building Code (Geocon West, 2010). Therefore, the potential impact from seismic ground shaking is considered less than significant.

Potential Impacts	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
iii) Seismic-related ground failure, including liquefaction?			X	

Liquefaction occurs when loose sand and silt that is saturated with water can behave like a liquid when shaken by an earthquake (USGS, 2008). For liquefaction to occur, there must be: (1) loose, granular sediment; (2) saturation of the sediment by ground water; and, (3) strong shaking (USGS, 2008).

According to the State of California Seismic Hazards Zones Map, the site does not lie within a liquefaction hazard zone. Because there is no high groundwater table that could contribute to liquefaction at the site, liquefaction is not a potential problem on the site (Koury Geotechnical Services, Inc., 2008).

Based on a review of the County of Los Angeles Seismic Safety Element and the City of Los Angeles Seismic Safety Element (1996), the site is not located within an area identified as having a potential for liquefaction. The historically highest groundwater in the area is in excess of 110 feet beneath the ground surface and groundwater was not encountered during 2010 site explorations drilled to a maximum depth of 15.5 feet beneath the existing ground surface. Based on these considerations, the potential for liquefaction of the site soils is very low. Further, no surface manifestations of liquefaction would be expected at the project site (Geocon West, 2010). Therefore, the impact from seismic ground failure is considered to be less than significant.

iv) Landslides?			X	

The project site is generally flat, and is not located in a landslide hazard zone on the State of California Seismic Hazards Zones Map (Koury Geotechnical Services, Inc., 2008; County of Los Angeles, 2008).

According to the Los Angeles County Seismic Safety Element, the site is not within an area identified as having a potential for slope instability. Additionally, according to the California Geological Survey (1998), the site is not located within an area identified as having a potential for seismic slope instability. There are no known landslides near the site, nor is the site in the path of any known or potential landslides. The potential for a landslide would not be considered a hazard to the proposed project (Geocon West, 2010). For these reasons, the impact from landslides is considered less than significant.

b) Result in substantial soil erosion or the loss of topsoil?			X	

The proposed project will result in removal of topsoil from the site during construction. To prevent or minimize the potential for erosion and loss of topsoil during construction, the following requirements will be included in plans and specifications:

- *Standard erosion control measures such as scheduling, preservation of existing vegetation, use of soil binders/straw mulch and storm drain protection will be implemented during any ground disturbing activities (e.g., excavation and/or grading operations).*
- *Any topsoil removed from the site will be placed in the immediate area of the site and used for re-compaction purposes.*
- *For excavations that occur during the rainy season (November through April), installation of berms, plastic sheeting will be utilized.*
- *Earthwork will be planned and conducted in such a manner as to minimize the duration of exposure of unprotected soils.*

- *Earthwork will be conducted using best management practices such as, but not limited to, single point construction entries, to minimize erosion during construction.*
- *In order to minimize soil loss, earthwork will include watering for dust control.*
- *Grass and other landscaping will be reestablished in the disturbed areas immediately after construction is completed, thereby reducing the potential for erosion.*

With incorporation of these project requirements, impacts from substantial soil erosion and loss of topsoil are considered less than significant.

Potential Impacts	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
c) Be located on a geological unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?			X	

The site is in the San Fernando Valley along the foothills of the San Gabriel Mountains. The site is underlain by alluvial sediments of Quaternary age consisting of unconsolidated alluvial deposits of sand and gravel from major stream channels. During the geotechnical investigation, fill was encountered in the soil borings up to 6 feet in depth overlaying the alluvium. The alluvium extended to the total depth of the soil borings (50 feet bgs) and consists of sandy, gravelly material (Koury Geotechnical Services, Inc., 2008).

An updated geotechnical investigation conducted in 2012 (Geocon West, 2012; Appendix C) included specific recommendations for grading, shrinkage, foundation and lateral design, settlement, concrete slabs-on-grade, pavements, storm water infiltration, temporary excavation, surface drainage and plan review. These recommendations will be incorporated into design plans for the proposed project.

As discussed in Sections VI.a)(iii) and (iv), the project site is not within a known liquefaction area or an area prone to landslides. In addition, groundwater was not encountered within25.5 feet bgs during the 2012 geotechnical investigation at the site, which would contribute to liquefaction. The site is not located on a geological unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse. Impacts to geologic resources are considered less than significant.

d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?			X	

Soils on the proposed site have an expansion index of between 6 and 9 (Geocon West, 2010), which corresponds to the “very low” expansion (E<20) category in accordance with Table 18A-I-B of the 2001 California Building Code. Therefore, impacts from expansive soils are considered less than significant.

e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?				X

El Cariso Community Regional Park is serviced by the City of Los Angeles sewer system (DPR, 2008). The proposed project will not include any requirement for use of septic tanks or alternative wastewater disposal systems. Therefore, the proposed project will not result in an impact on soils from the use of septic tanks or alternative wastewater disposal systems.

VII. Greenhouse Gas Emissions

Greenhouse gases consist of water vapor, ozone, aerosols, carbon dioxide, methane, nitrous oxide, chlorofluorocarbons, hydrofluorocarbons, perfluorocarbons and sulfur hexafluoride. Greenhouse gases are calculated in emissions of three pollutants: carbon monoxide (CO_2); methane (CH_4); and, nitrous oxides (N_2O). Because other greenhouse gases represent a small fraction of emissions, a carbon dioxide equivalent (CO_2e) of the combined emissions of all greenhouse gases is computed to indicate the anticipated amount of greenhouse gases from an activity. Greenhouse gas emissions are primarily related to fossil fuel combustion for energy use. These are driven largely by economic growth and fuel used for power generation, transportation, heating, and cooling.

Greenhouse gas emissions come from a variety of sources including carbon dioxide emissions from the combustion of fossil fuels (i.e., automobile driving, electricity production, and industrial sources). Transportation (38%) and electricity production (25% - both in-state and imported) combined make up nearly two-thirds of greenhouse gas emissions in the state (State of California, 2009a).

GHGs have varying global warming potentials (GWP). The GWP is the potential of a gas to trap heat in the atmosphere. The reference gas for GWP is CO_2, which has a GWP of one. Methane has a GWP of 21, which means that it has a 21-times greater global warming effect than CO_2 on a mass basis. N_2O has a GWP of 310. The GWP of greenhouse gases are shown on Table 8.

Table 8. Global Warming Potential of Greenhouse Gases

Gas	Atmospheric Lifetime (yrs)	Global Warming Potential (100 year time horizon)
Carbon Dioxide	50 to 200	1
Methane	9 to 15	21
Nitrous Oxide	120	310
HFC-23	264	11,700
HFC-134a	14.6	1,300
HFC-152a	1.5	140
PFC: Tetrafluoromethane (CF_4)	50,000	6,500
PFC: Hexafluoromethane (C_2F_6)	10,000	9,200
Sulfur Hexafluoride (SF_6)	3,200	23,900

Source: Hendrix, 2008
HFC = hydroflurorocarbons
PFC = perflurorocarbons

Significance criteria for evaluating the impact of greenhouse gases have not been established at this time. CEQA Guidelines Section 15064.4 allows the Lead Agency to have discretion to determine, in the context of a particular project, whether to use a model or methodology to quantify greenhouse gas emissions resulting from a project or to rely on a qualitative analysis or performance based standards. When assessing the significance of impacts from greenhouse gas emissions on the environment, the Lead Agency should consider: (a) the extent to which the project may increase or reduce greenhouse gas emissions as compared to the environmental setting; (b) whether the project emissions exceeds a threshold of significance that the Lead Agency determines applies to the project; and, (c) the extent to which the project complies with regulations and requirements adopted to implement a statewide, regional or local plan for reduction of greenhouse gas emissions.

Significance criteria for evaluating the impact of greenhouse gases have been proposed as follows:

- The SCAQMD has proposed a screening level of 3,000 metric tons of CO_2 per year for commercial or residential projects, below which project impacts would be considered less than significant. This screening level was developed to achieve the policy objective of capturing 90 percent of greenhouse gas emissions from new development projects in the residential and commercial sectors.

- The California Air Pollution Control Officers Association (CAPCOA) has identified two potential quantitative criteria for determining significance of GHG emissions from a project: (1) a 900 metric ton annual threshold that corresponds to office projects of approximately 35,000 sq ft; and, (2) a 25,000 metric tons of CO_2 per year threshold applicable to emissions from approximately 1,400 residential units.

Neither proposed threshold would be considered binding on Los Angeles County projects.

At this time, one agency has adopted a significance criterion for operational emissions of greenhouse gases. On June 12, 2010, the Bay Area Air Quality Management District adopted an operational threshold of 10,000 metric tons of CO_2 per year for stationary sources.

The County of Los Angeles has not yet developed its own quantitative significance thresholds for greenhouse gases. In lieu of applicable significance criteria, the County will evaluate the proposed project against the SCAQMD screening level of 3,000 metric tons of CO_2 per year. Although not directly applicable to the proposed recreation project, this threshold is the most stringent of available thresholds at this time (the proposed project could be compared to a commercial project in that it may generate daily vehicular emissions of a similar nature). In addition, the County will also consider the extent to which the project may increase or reduce greenhouse gas emissions as compared to the environmental setting, and, the extent to which the project complies with regulations and requirements adopted to implement a statewide, regional or local plan for reduction of greenhouse gas emissions.

CEQA requires that lead agencies inform decision-makers and the public about potentially significant environmental impacts of proposed projects. While linking the projected greenhouse gas emissions of a project to a direct influence on climate change would be considered only speculative at this time, conclusions of significance must be based on scientific and factual data. Climate change, as it relates to man-made greenhouse gas emissions, is by nature a global and cumulative impact. According to the Association of Environmental Professionals (AEP), in its paper titled *Alternative Approaches to Analyzing Greenhouse Gas Emissions and Global Climate Change in CEQA Documents* (Hendrix and Wilson, 2007), "an individual project does not generate enough greenhouse gas emissions to significantly influence global climate change. Global climate change is a cumulative impact; a project participates in this potential impact through its incremental contribution combined with the cumulative increase of all other sources of greenhouse gases."

Potential Impacts	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment, based on any applicable threshold of significance?			X	

Greenhouse gases are calculated in emissions of three pollutants: carbon monoxide (CO_2); methane (CH_4); and, nitrous oxides (N_2O). Because other greenhouse gases represent only a small fraction of emissions, a carbon dioxide equivalent (CO_2e) of the combined emissions of all greenhouse gases is computed to indicate the anticipated amount of greenhouse gases from an activity. The total CO_2e is calculated by multiplying the amount of each greenhouse gas emitted from the project by its global warming potential (shown on Table 8) and adding each gas value to derive a total.

The proposed playground, soccer/football fields and park improvements will result in emissions of greenhouse gases during its 12-month construction and long-term operation. Construction emissions of greenhouse gases expected during each phase of construction are provided in Table 9.

Table 9. Estimated Construction–Related Greenhouse Gas Emissions from the Proposed Project

Construction Phase	Duration	Emissions (Metric Tons Per Year)			
		CO_2	CH_4	N_2O	CO_2e
Demolition and Trenching	3 months	153.40	0.02	0.00	154.97
Mass Grading	6 months	437.20	0.03	0.01	441.21
Paving (Parking and Paths)	3 months	53.10	0.01	0.00	53.73
Total Emissions		643.70	0.05	0.02	649.91
Emissions would be generated by construction equipment (i.e., tractors, loaders, backhoes) and construction worker vehicles). There is no anticipated overlap of these construction phases during the 12- to 15-month construction period.					

CO_2 = carbon dioxide
CH_4 = methane
N_2O = nitrous oxides
One metric ton equals 2,204.6 lbs
CO_2e = carbon dioxide equivalent of combined emissions of all GHG. The CO_2-equivalent emission of each GHG the emission rate multiplied by its corresponding global warming potential (GWP).

The SCAQMD advises that construction-related emissions of greenhouse gases should be amortized over the life of the project, which is estimated at 30 years. The annual CO_2 construction emissions from the proposed project (shown in Table 9) amortized throughout the 30-year life of the project yields 21.66 tons of CO_2e per year.

Operation of the proposed project will result in air pollutant emissions from vehicular traffic by park patrons attending scheduled events at the soccer/football fields. Greenhouse gas emissions from annual operations are summarized on Table 10. Because emissions are below the 900-metric ton threshold selected for comparison, greenhouse gas emissions from construction of the proposed project are considered to be less than significant.

Table 10. Estimated Operational Greenhouse Gas Emissions from the Proposed Project

Source	Emissions (Metric Tons Per Year)			
	CO_2	CH_4	N_2O	CO_2e
Daily Operations (Weekday soccer practices and weekend soccer games)	339.72	0.02	0.01	342.85

CO_2 = carbon dioxide
CH_4 = methane
N_2O = nitrous oxides
One metric ton equals 2,204.6 lbs
CO_2e = carbon dioxide equivalent of combined emissions of all GHG. The CO_2-equivalent emission of each GHG the emission rate multiplied by its corresponding global warming potential (GWP).

In addition to vehicular emissions of greenhouse gases, the project will result in emissions associated with energy consumption (electricity for lighting). The proposed playground, soccer/football fields and park improvements would be designed with energy efficient fixtures to the maximum extent feasible.

There are no quantitative significance thresholds for greenhouse gases that are binding on the County of Los Angeles at this time. The proposed project will generate CO_2 emissions below the 7,000 metric ton significance threshold proposed by the ARB for construction and transportation emissions. In consideration of the various proposed criteria (e.g., absence of directly applicable criteria), and although the proposed project is below the applicable building size, the County of Los Angeles has elected to compare project GHG emissions to the SCAQMD screening level of 3,000 metric tons of CO_2 per year for commercial projects. This threshold is the most applicable and stringent of available thresholds at this time. The contemplated use of the proposed soccer/football fields, playgrounds and associated park improvements is most similar, and can be compared, to this type of use.

Long-term operational emissions of greenhouse gases from the proposed project are not expected to significantly influence global climate change. Although there is no directly applicable threshold of significance, the SCAQMD screening level of 3,000 metric tons of CO_2 per year was used for comparison. It is unlikely that emissions from the project, approximately 343 metric tons of CO_2, would directly affect global climate change. Because emissions are below the 3,000 metric ton threshold selected for comparison, greenhouse gas emissions from operation of the proposed project are considered to be less than significant.

Potential Impacts	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
b) Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?			X	

In accordance with the County of Los Angeles Energy and Environmental Policy (the only applicable plan, policy or regulation adopted and applicable to this project at this time), the proposed project will be designed to incorporate sustainable energy efficient features, to the maximum extent feasible.

The proposed new playground, soccer/football fields and park improvements will be greater than 10,000 square feet in size which is the County threshold for meeting or exceeding the U.S. Green Building Council (USGBC) Leadership in Energy and Environmental Design (LEED) Silver standard in new County owned and operated facilities. The design of the playground, soccer/football fields and associated park improvements will take into consideration: construction activity pollution prevention; selection of building materials; alternative transportation; maximizing open space; stormwater design; water efficient landscaping; water use reduction; energy efficiency; and, waste reduction (i.e., recycling). The new playground, soccer/football fields and park improvements will implement Energy and Water Efficiency by requiring use of low energy lighting fixtures and water-efficient landscaping. Environmental Stewardship will be met by implementing a recycling program into the daily operations of the new park facilities. Public Outreach will be achieved by providing readily available literature informing community residents of local utility energy conservation programs. These efforts are expected to reduce the proposed project's anticipated contributions to global climate change. With incorporation of energy efficiency features, carbon dioxide (CO_2) emissions will be reduced. The project will not conflict with the County of Los Angeles Energy and Environmental Policy which has been adopted for the purpose of reducing the emissions of greenhouse gases.

The proposed playground, soccer/football fields and park improvements will generate greenhouse gas emissions that are considered less than significant. Construction-related emissions of greenhouse gases will be a temporary condition. Long-term operational emissions of greenhouse gases from the proposed project will not significantly influence global climate change. The proposed project will have an incremental contribution combined with the cumulative increase of all other sources of greenhouse gases. Therefore, the project will not conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.

The proposed project would generate construction-related greenhouse gases at the same time as other construction projects in the area. The other projects in the area with planned construction that could occur at the same time as the proposed project are within El Cariso Community Regional Park and at Los Angeles Mission College. Emissions of construction-related greenhouse gases from the proposed project and construction projects, amortized over the 30-year life of these projects, are shown on Table 11.

Table 11. Estimated Cumulative Greenhouse Gas Emissions from Proposed Project Construction

Source	CO_2e (metric tons per year)
Los Angeles Mission College East Campus Projects (2012)[a]	124.40
Proposed Project (playground, soccer/football fields and park improvements construction phase)	649.91
Cumulative Emissions	773.31

[a] Source: LACCD, 2009a

The cumulative CO_2 emissions that would be generated at the same time as the proposed project would be below the 7,000 metric ton significance threshold proposed by the ARB for construction and transportation emissions. Although there is no directly applicable threshold of significance, the CAPCOA

900 metric ton threshold was used for comparison. It is unlikely that cumulative emissions from the project, approximately 773 metric tons of CO_2, would directly affect global climate change. Because emissions are below the 900-metric ton threshold selected for comparison, cumulative greenhouse gas emissions from construction of the proposed project are considered to be less than significant.

The proposed project would generate operational greenhouse gases at the same time as other projects in the area. Table 12 shows greenhouse gas emissions from annual operations of other projects.

Table 12. Estimated Cumulative GHG During Operation of the Proposed Project

Source	CO_2e (metric tons per year)
Los Angeles Mission College (2015)[a]	8,528.58
Proposed Project	342.85
Total Cumulative Emissions	8,871.43
Project's Contribution to Cumulative Emissions	1.74 %

[a] Source: LAMC, 2009a

Greenhouse gas emissions from Los Angeles Mission College represent annual operational emissions expected in the year 2015. This emissions level exceeds the significance threshold for greenhouse gas emissions as proposed by SCAQMD, CAPCOA and ARB. To reduce these emissions, the college will implement mitigation measures that encompass alternative transportation, low emission vehicles, ridesharing, and trip reduction planning. It is not expected that feasible mitigation exists that would reduce greenhouse gas emissions from Los Angeles Mission College to a level below the significance threshold. The contribution of the proposed project would contribute less than 4 percent of greenhouse gas emissions in the cumulative condition. The impact of the proposed project's contribution to greenhouse gases during the operational phase, therefore, is not considered cumulatively considerable.

Potential Impacts	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
VIII. Hazards and Hazardous Materials Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?				X

The proposed project will not involve any routine transport, use or disposal of hazardous materials. The use and disposal of hazardous materials at the site will be limited to commercial solvents and cleaners for normal maintenance activities. For this reason, the proposed project will not result in any impacts from hazardous materials.

b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?		X		

In 2008, a lead and asbestos survey was conducted at El Cariso Regional Park. Asbestos was detected in samples taken from Comfort Stations 5 and 6, Picnic Shelters 7, 8, 9, and 10, and roofing materials within the park. There were no painted surfaces with detectable concentrations of lead above the lead content established by Los Angeles County Department of Health Services found in any of the samples tested (CTL Environmental Services, 2008b).

The proposed project would require the demolition of Comfort Stations 5 and 6 (only concrete pads of picnic shelters remain to be demolished). Because these buildings were found to contain asbestos (CTL Environmental Services, 2008b), the following mitigation measures will be implemented as part of the proposed project:

- ***Hazards 1.*** *Dry sawing, sanding, or drilling will be avoided for the areas that contain asbestos. Areas that are suspected to contain asbestos will be sampled and analyzed before demolition.*
- ***Hazards 2.*** *Any damaged asbestos will be removed, repaired, encapsulated, or enclosed before any demolition activities that may impact the material.*
- ***Hazards 3.*** *Asbestos-containing material will be containerized and double-bagged for removal, disposal or transport and will be conducted in accordance with local, state, and federal regulations and/or guidance.*

The potential for an unforeseen upset or accident involving asbestos as a hazardous material exists, however, the impact from release of hazardous materials into the environment is considered less than significant with implementation of avoidance measures identified herein. Mitigation measures for management of asbestos-containing materials or residual chemicals that may be present in the soil will be implemented to ensure that no hazardous material is released into the environment or creates a hazard to the public.

Due to historical agricultural activities on the site (orchards until 1956), there is a potential for residual pesticides, herbicides and heavy metals to be present in the soil (CTL Environmental Services, 2008a). It is not known if substances that may be harmful to human health are present in the subsurface of the site, and whether any such substances are above action levels to protect human health. The following mitigation measure applicable to construction will be implemented as part of the proposed project:

- ***Hazards 4.*** *Subsurface soil sampling will be conducted to determine if residual chemicals associated with historical agricultural activities are present in the soil and in concentrations above action levels.*
- ***Hazards 5.*** *Soil remediation and/or worker protection measures will be implemented in the event that subsurface soil sampling results indicate that residual chemicals associated with historical agricultural activities are above action levels.*

With the incorporation of mitigation measures, hazards to the public from the release of hazardous materials into the environment are considered less than significant.

Potential Impacts	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?			X	

Two schools are within 0.25 mile of the project site: the Head Start preschool is directly adjacent to the north parking area on the north side of the park; and, Los Angeles Mission College (with a Child Development Center) is approximately 975 ft south. Hubbard Street Elementary School (with the adjoining Hubbard Street Early Education Center) is approximately 3,000 ft west. There are no schools planned to be opened within 0.25 mile of the site within the next year (LAUSD, 2012).

The proposed project will not use or store hazardous substances in quantities that could result in a significant hazard to the public. Therefore, an accidental explosion or release of toxic or hazardous substances as a result of the proposed project will not be expected to occur near an existing or proposed school. The impact of hazardous emissions from the proposed project is considered less than significant.

Potential Impacts	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?				X

Section 65962.5(a)(4) requires that the State of California Department of Toxic Substances Control (DTSC) compile and update as appropriate, but at least annually, a list of all sites listed pursuant to Section 25356 of the Health and Safety Code (HSC). HSC § 25356(b)(1) requires a listing of hazardous substance release sites selected for, and subject to, a response action under this chapter. HSC § 25356(b)(2) requires DTSC to update the list of sites at least annually to reflect new information regarding previously listed sites or the addition of new sites requiring response action. The implementing regulations provide that sites may be listed pursuant to HSC § 25356 if: (a) they are not owned by the Federal Government; and, (b) a release or threatened release of hazardous substances has been confirmed by on-site sampling.

The proposed site is not a listed hazardous materials site. Underground and aboveground storage tanks are located at the El Cariso golf course southeast of the project site (CTL Environmental Services, 2008a). Los Angeles County obtained a hazardous waste generator identification number for the disposal of oil-containing waste from El Cariso Community Regional Park in 2006 (Track Info Services, 2008). This activity was associated with past construction activities at the park but not at the site of the proposed project.

The DTSC list of sites that meet those criteria as well as the criteria in HSC § 25356(c), is reported in the DTSC Envirostor database. A search of the DTSC Envirostor database was conducted on September 14, 2012 to identify properties that have had known releases of regulated substances, or which have had histories involving the use, storage, treatment, generation, disposal, or handling of hazardous substances. A review of this database did not reveal any DTSC sites located on or immediately adjacent to the proposed site for the proposed soccer/football fields, playground and associated improvements to El Cariso Community Regional Park. There are four contaminated properties reported within a distance of approximately 1.0 mile of the site, as summarized on Table 13. With the exception of one leaking underground fuel tank undergoing remediation, all contaminated sites have been closed. Because none of these sites are within the immediate area of the proposed project, none of these contaminated sites would create a significant hazard to the public or environment.

Table 13. Contaminated Properties in the Immediate Project Area

No.	Owner/Site	Location	Distance from Site	Status
1	Mountain View Gated Villas	12831 Hubbard Street Sylmar, CA 91342	0.33 mi northeast	Proposed residential development was the site of a historic medical facility contaminated with fly ash from a medical waste incinerator. Soil was contaminated by arsenic, dioxin (as 2,3,7, 8-TCDD TEQ), lead, copper compounds and furan. In 2000, DTSC entered into a Voluntary Cleanup Agreement with Mountain View Gated Villas to review and comment on a 2001 Preliminary Endangerment Assessment (PEA) which determined no further action needed. The Proponent wishes to use this site for future residential development. A No Further Action determination was issued by the State Water Resources Control Board in April 2000. This LUST case has been closed.

Table 13. Contaminated Properties in the Immediate Project Area (Cont'd)

No.	Owner/Site	Location	Distance from Site	Status
2	Chevron Station 9-5063	13500 Hubbard Street Sylmar, CA 91342	0.80 mi southwest	Leaking underground gasoline storage tank discovered in 1994, soil affected. Work plan and quarterly reporting have been completed through October 2010. This cleanup site is an open case with interim remedial action occurring; additional activities such as site characterization, investigation, risk evaluation, and/or site conceptual model development are ongoing at this time. The facility is permitted by the City of Los Angeles.
3	Valley Crest Tree Company	13745 Sayre Street Sylmar, CA 91342	0.95 mi west	Leaking underground gasoline and diesel storage tanks were discovered in 1998 and 2000 (soil affected). A site assessment initiated in 2003. The State Water Resources Control Board closed this case in April 2004.
4	ExxonMobil #18-FJE	13617 Foothill Blvd. Sylmar, CA 91342	1.03 mi southwest	A leaking underground gasoline storage tank was discovered in 1998, soil affected and the aquifer used for drinking water was potentially affected. Groundwater was pumped and treated from 2005 to 2006. A No Further Action determination was issued by the State Water Resources Control Board in September 2006. This LUST case has been closed.

Sources: Envirostor, 2012 and Geotracker, 2012

Potential Impacts	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?				X

There are no airports located within two miles of the proposed project. The closest public airport is Whiteman Airport located approximately 3.8 miles south of the site. The proposed project area is not within the planning boundary or airport influence area of Whiteman Airport (ALUC, 2004). The proposed project will not result in any safety hazard for aircraft or interfere with operations or plans relating to this public airport. Therefore, the proposed project will not result in a safety hazard for people residing or working in the project area.

f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?				X

The proposed project is not within the vicinity of a private airstrip. The closest private airstrip to the site is the Pacoima Dam Heliport approximately 1.5 miles northeast of the site. Other private use airports in the project area are shown on Table 14. There will be no safety hazard or impacts to people working or residing in the project area.

Table 14. Private Airports in the Vicinity of El Cariso Community Regional Park

No.	Name of Private Airstrip	Location	Distance from Site
1	Pacoima Dam Heliport	Pacoima Reservoir	1.5 miles
2	Merle Norman Cosmetics Heliport	San Fernando Rd., Sylmar	2.6 miles
3	Spears Heliport	15853 Olden St, Sylmar	3.2 miles
4	Holy Cross Medical Center Heliport	15031 Rinaldi St., Mission Hills	3.4 miles
5	DWP Granada Hills Heliport	Blucher Ave., Granada Hills	3.6 miles

Source: www.airport-data.com/airport/WHP/nearby-airports.html

Potential Impacts	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?			X	

The proposed project will not result in any interference with the Los Angeles County Operational Area Emergency Response Plan, Los Angeles County Department of Public Health Emergency Preparedness and Response Program). Street closures will not be required during project construction. All emergency procedures will be implemented within local, state, and federal guidelines. Therefore, impacts to emergency response or evacuation plans are considered less than significant.

h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?			X	

The proposed project site is not located within a Very High Fire Severity Zone (County of Los Angeles, 2008). The construction and operation of the proposed project will not result in any increase in the fire hazard at or near the project site. Since the park lies at the base of the San Gabriel Mountains and near the Angeles National Forest, there is potential for wildland fires in the vicinity, however, the proposed project does not increase this risk of wildland fires. The proposed project will not result in any increase in exposure of people or structures to risk from wildland fires. Therefore, the impact from wildland fires is considered less than significant.

IX. Hydrology and Water Quality Would the project:				
a) Violate any water quality standards or waste discharge requirements?			X	

The proposed project consists of demolition and construction activities. The only waste discharge requirements applicable to the project site will be identified as part of the Storm Water Pollution Prevention Program (SWPPP) and National Pollutant Discharge Elimination System (NPDES) Permit for this project. With incorporation of best management practices for erosion control and storm water management during construction, these activities will not be expected to violate any applicable water quality standards or waste discharge requirements. No surface discharges during operation of the proposed playground, soccer/football fields and park improvements will occur other than routine cleaning and maintenance of the grounds which would be conducted to avoid discharge into storm drains.

There are no surface water bodies on the site (CTL Environmental Services, 2008a). Pacoima Wash, approximately 0.6 mile east of the site and east of the El Cariso Golf Course, is a major tributary to the Los Angeles River (LARWQCB, 2008). Construction activities will not extend outside of the park boundaries or reach the wash.

As described in Section VI.(b), recommendations of the site-specific geotechnical investigation and standard erosion control measures will be incorporated into project design and construction to prevent or reduce impacts to water quality. Impacts to water quality standards or waste discharge requirements are considered less than significant.

Potential Impacts	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?			X	

Sylmar is within the boundaries of the San Fernando Valley Groundwater Basin which is bounded on the north and northwest by the Santa Susana Mountains, on the north and northeast by the San Gabriel Mountains, on the east by the San Rafael Hills, on the south by the Santa Monica Mountains and Chalk Hills, and on the west by the Simi Hills. The valley is drained by the Los Angeles River and its tributaries. Precipitation in the San Fernando Valley ranges from 15 to 23 inches per year and averages about 17 inches (CDWR, 2004). Recharge of the basin is from a variety of sources. Spreading of imported water and runoff occurs in the Pacoima, Tujunga, and Hansen Spreading Grounds. Runoff contains natural stream flow from the surrounding mountains, precipitation falling on impervious areas, reclaimed wastewater, and industrial discharges. Water flowing in surface washes infiltrates, particularly in the eastern portion of the basin (CDWR, 2004).

Results of the geotechnical investigation show that groundwater was not encountered at the site between 0 to 30 feet bgs, and that it is unlikely that groundwater will be encountered during park improvements because historical groundwater depths place the aquifer at 150 feet bgs or deeper (Koury Geotechnical Services, Inc., 2008). The earthwork associated with construction of the proposed park improvements will be at a maximum depth of 6 feet bgs.

The City of Los Angeles Department of Water and Power provides water to the community of Sylmar. Water use will be limited to site watering for dust control during the construction period, and grounds irrigation and visitor use during operations (drinking water and restrooms). The proposed project will result in a new demand for water during operations over and above the current demand for water by the existing park. The playground, soccer/football fields and park improvements will be designed to incorporate water efficient landscaping and water use reduction (i.e., water efficient fixtures). Water consumption will increase during periods when the park is occupied with large crowds (i.e., soccer games on weekends). It is estimated that a maximum of 756 persons could be on the soccer/football fields during the weekends. This would result in an increase in water consumption of approximately 7,560 gallons of water per day. In addition, water used for irrigation in the park will decrease because the playground, soccer/football fields and park improvements would displace a portion of the irrigated landscaped areas. The proposed project will not result in depletion of ground water supplies from the basin or interference with groundwater recharge. The proposed park improvements will not be expected to substantially contribute to depletion of groundwater. Therefore, impacts to groundwater supplies are considered less than significant.

Potential Impacts	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on- or off-site?			X	

The proposed project will require design of adequate site drainage to accommodate the new playground, soccer/football fields and park improvements as well as additional parking. The new park features would not decrease the amount of existing open space. The new structures will be designed with adequate drainage and storm water flow systems in accordance with applicable building engineering and design codes. Design and construction of the project will incorporate the following requirements to prevent erosion and siltation:

- *All surface drainage will be directed away from proposed structures so that ponding of water is not allowed.*
- *Erosion control measures such as scheduling, preservation of existing vegetation, use of soil binders/straw mulch and storm drain protection will be implemented during construction to minimize the potential for sediment to be picked up and transported off-site, or by runoff.*
- *Construction equipment will not be rinsed off on-site in such a manner as to enter storm drains.*
- *Construction materials will be covered and stored in contained areas away from any drainage areas.*
- *Cleaning and maintenance procedures for the playground, soccer/football fields and park improvements will include prohibiting any materials from entering storm drains.*

Impacts to drainage patterns on the site from the proposed project are considered less than significant. Substantial erosion and siltation on- and off-site would be prevented with incorporation of preventive design features. For this reason, the proposed project would not substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on- or off-site. Impacts from erosion and siltation would be considered less than significant.

d) Substantially alter the existing drainage pattern of the site or area, including the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off- site?				X

The site is located approximately 0.4 mile west of the Pacoima Wash, which is part of a 100-year floodplain. A portion of the Pacoima Wash, located northeast of the park, is classified as “Zone AO” where flood depths range between 1 to 3 feet (usually sheet flow on sloping terrains), and for alluvial fan flooding, velocity is approximated at 14 feet per second (fps) at a depth of 3 feet (FEMA, 2008). The elevation difference between Pacoima Wash and the project site is approximately 100 feet.

The May Canyon Channel, a 100-year floodplain, runs beneath the site from southeast to the northwest (FEMA, 2008); west of the area where the proposed construction activities will occur. Los Angeles County Flood Control District maintains an easement for May Canyon Channel. Through its National Flood Insurance Program, the Federal Emergency Management Agency (FEMA) has identified areas subject to periodic flood hazards. The Flood Insurance Rating Map (FIRM) identifies May Channel, running northeast/north through the park as Zone A (FEMA, 2008). Areas designated Zone A are subject to flooding in the event of a 100-year flood (no base flood elevations have been determined). Immediately south of the May Channel in the Pacoima Wash is an area designated as the U.S. Army

Corps of Engineers (USACE) Lopez Canyon Flood Control Debris Basin. The presence of flood control improvements, such as the debris basin, reduces the potential for flooding from the Pacoima Wash into the May Channel. In addition, May Channel is able to contain a 1 percent annual chance flood (100-year flood) (FEMA, 2008). The proposed project will not alter any existing drainage patterns. Impacts to drainage areas will not occur.

Potential Impacts	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?			X	

The proposed project will contribute to storm runoff due to an increase in impervious surface area. This will result from construction of the playground, soccer/football fields and park improvements. The project will be designed with adequate storm water drainage systems to accommodate the increase in runoff. The proposed project will not result in substantial additional sources of polluted runoff during the construction period or during operations. Therefore, impacts from increased runoff are considered less than significant.

f) Otherwise substantially degrade water quality?			X	

The proposed project will not result in any other effects that could substantially degrade water quality. The proposed project will be designed and constructed with best management practices to avoid impacts to water quality. No substantial degradation of water quality will be expected to occur as a result of the proposed project. Therefore, impacts to water quality are considered less than significant.

g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?				X

The proposed project will not result in the placement of housing in the 100-year flood hazard area. Therefore, the proposed project will not result in impacts to a flood hazard area.

h) Place within a 100-year flood hazard area structures that would impede or redirect flood flows?				X

The proposed site is south/southwest of two designated Flood Hazard Areas, Pacoima Wash and May Canyon Channel (FEMA, 2008). Pacoima Wash is approximately 0.4 miles east of the site, and May Canyon Channel runs from Hubbard Street along the extension of Garrick Avenue entirely underground beneath El Cariso Community Regional Park. Both Pacoima Wash and May Canyon Channel are designated as 100-year flood zones. The project site is not located within a 100-year flood hazard area. Additionally, the proposed project will not impede or redirect flow within any drainage areas. The proposed project will be designed to avoid the underground May Canyon Channel. The proposed project would not result in the placement of structures within the 100-year flood hazard area. Impacts associated with construction within a 100-year flood hazard area will not occur.

i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?				X

The proposed project consists of improvements to an existing public park and will not expose people or property to an increase in flood-related hazards including significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam. Therefore, no impacts from flooding are expected to occur.

Potential Impacts	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
j) Inundation by seiche, tsunami, or mudflow?				X

Flooding associated with seiches (wave-like oscillations of water in an enclosed basin caused by earthquakes, high winds or other atmospheric conditions) is not anticipated at the project site due to its distance from enclosed bodies of water. The project site is located in the northeast part of the San Fernando Valley, which is surrounded by mountain ranges on all sides. The site is located approximately 21 miles from the coast; therefore, the potential for inundation by a tsunami is expected to be a rare occurrence. The proposed project will not result in any increased risk for inundation by mudflow. Therefore, impacts from seiche, tsunami or mudflow are not expected.

X. Land Use and Planning Would the project:				
a) Physically divide an established community?				X

The proposed project will consist of construction of a playground, soccer/football fields and park improvements entirely within the existing El Cariso Community Regional Park on land owned by the County of Los Angeles. No additional land will be required. Therefore, the proposed project will not result in any impacts from physical division of an established community.

b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?				X

The proposed playground, soccer/football fields and park improvements will be located in the Sylmar Community Planning Area of the City of Los Angeles General Plan. The Sylmar Community Plan designation for the proposed project site is Open Space. Although this project is located on County of Los Angeles land and not subject to City of Los Angeles planning restrictions, the future land use at the site will continue to be recreational and, therefore, will not result in any conflict with any land use plan, policy or regulation.

El Cariso Community Regional Park is zoned as Open Space (OS-1XL) in accordance with zoning regulations of the City of Los Angeles (City of Los Angeles, 2008). For properties designated as Open Space, the Open Space (OS) Zone is intended to be a corresponding zone only for publicly owned property. The Height District for properties designated as open space shall be 1XL, which has a 42 ft limitation on overall height. For properties zoned as Open Space, including parks and recreation facilities, there is no maximum height restriction (City of Los Angeles, 2003). Although this project is located on County of Los Angeles land and not subject to City of Los Angeles zoning restrictions, the site will continue to be recreational and, therefore, will not result in any conflict with the zoning designation for this site. Therefore, impacts to land use plans, policies and regulations will not occur.

Potential Impacts	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?				X

The proposed project is not located in the planning area of any Habitat Conservation Plan or Natural Community Conservation Plan. The project site is not located within or near any Los Angeles County Significant Ecological Area (SEA). The proposed project will not conflict with any adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan. The proposed project will not have any impact on habitat conservation plans.

XI. Mineral Resources Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?				X

The project site is not located in a Mineral Resource Zone (MRZ), which are areas where geologic information indicates that significant inferred mineral resources are present. There are no MRZs located in the Sylmar area (the nearest MRZ is east of San Fernando and in Ventura County). Therefore, the proposed project will not result in loss of availability of any known mineral resources and no impact to minerals will occur.

b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?				X

The project site is not located within any mineral resource area delineated on a local land use plan. The proposed project will not require the removal of any locally important mineral resources, nor will it result in any interference with existing mining operations. Therefore, there will be no impacts to mineral resources.

XII. Noise Would the project result in:				
a) Exposure of persons to, or generation of, noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?		X		

The primary noise source in the vicinity of the project site is motor vehicle traffic from local surface streets. The proposed site is approximately 0.9 mile from Interstate 210 which does not contribute to ambient noise levels at the park. The nearest major roadway to the site for the proposed playground, soccer/football fields and park improvements is Hubbard Street approximately 1,000 ft west. Traffic along Hubbard Street is associated primarily with Los Angeles Mission College at its intersection of Eldridge Street. Traffic noise from Hubbard Street is generally not discernible at the project site. The nearest residences to the project site are approximately 900 ft of the proposed soccer/football field and to the northeast along Simshaw Avenue. Residences along Simshaw Avenue are approximately 70 ft northwest of the parking area to be repaved near the Head Start preschool. The only other sensitive

receptors at the project site are the Head Start preschool and golfers at El Cariso County Golf Course, approximately 800 ft northeast and 150 ft south of the proposed soccer/football fields, respectively.

The County of Los Angeles does not have quantifiable construction noise limits; however, Title 12 Section 12.12.030 of the Los Angeles County Code establishes construction noise limits based on the time and day as follows:

> *Except as otherwise provided in this chapter, a person, on any Sunday, or at any other time between the hours of 8:00 p.m. and 6:30 a.m. the following day, shall not perform any construction or repair work of any kind upon any building or structure, or perform any earth excavating, filling or moving, where any of the foregoing entails the use of any air compressors; jackhammers; power-driven drill; riveting machine; excavator, diesel-powered truck, tractor or other earth moving equipment; hand hammers on steel or iron, or any other machine, tool, device or equipment which makes loud noises to the disturbance of persons occupying sleeping quarters in a dwelling, apartment, hotel, mobilehome, or other place of residence. (Ord. 9818 § 1, 1969: Ord. 8594 § 6, 1964.)*

Section 12.08.440 of the Los Angeles County Code contains restrictions applicable to construction noise. These guidelines:

- restrict the operation of construction equipment from 7:00 p.m. and 7:00 a.m. or at any time on Sundays or holidays;
- establish that maximum noise levels from mobile equipment shall not exceed 75 dBA from 7:00 a.m. to 8:00 p.m., or 60 dBA from 8:00 p.m. to 7:00 a.m., in single-family residential areas;
- establish that maximum noise levels from stationary equipment not exceed 60 dBA from 7:00 a.m. to 8:00 p.m., or 50 dBA from 8:00 p.m. to 7:00 a.m., in single-family residential areas;
- require that all mobile or stationary internal combustion engine-powered equipment of machinery be equipped with suitable exhaust and air-intake silencers in proper working order.

Construction Noise. Construction noise effects from the proposed project would be a function of the noise generated by construction equipment, the location and sensitivity of nearby land uses, and the duration of the noise-generating activities. The construction of the proposed soccer/football fields, universally accessible playground and park improvements would include clearing (demolition and trenching), grading and excavation. Heavy equipment that could be used during construction would include: backhoe, bulldozer, excavator, concrete truck, dump truck, front-end loader, paver, roller, and water truck.

The use of heavy equipment is typically a sporadic occurrence during the work day. This noise will vary greatly depending on the particular construction process, type and condition of equipment used and the layout of the construction site.

The anticipated noise impacts from construction activities at the two primary construction areas of the proposed project were determined based on typical construction equipment noise levels, the anticipated construction equipment types, and distance to nearest receptors. Noise and are as follows:

- **Northeast Parking Lot Construction.** During construction, temporary periods of increased noise levels could be expected at the existing parking lot at the northeast end of the park, residences on Simshaw Avenue, the Head Start preschool, and the northwest side of El Cariso Golf Course. While the operation of construction equipment could generate intermittent noise levels up to approximately 75 dBA at the nearest residence, 73 dBA at the Head Start preschool, and approximately 70 dBA at the golf course, the construction contractor will be required to comply with project specifications contained in Section 01560 (*Environmental Protection*) Part 3, Paragraph 3.05 (*Noise Control*). These specifications require the construction contractor to ensure that noise from trenchers, pavers, graders and trucks does not exceed 90 dBA at 50 feet as measured under the noisiest operation conditions, and 85 dBA at 50 feet for all other equipment. Noise from parking lot construction activities would be similar to road surface maintenance noise levels. Noise from construction activities within the northeast parking area is not expected to exceed the 75 dBA daytime construction noise limit

applicable to residential areas. Temporary construction noise associated with repaving the existing parking lot would occur approximately 70 ft from the backyards of residences.

- **Construction of Soccer/Football Fields and Playground.** Although temporary noise increases associated with project construction may result in annoyance to some local residents, adverse effects such as speech interference, sleep disturbance, and hearing loss will not be expected. Construction activities associated with the proposed construction of the soccer/football fields will not exceed the average Community Noise Equivalent Level (CNEL) of 65 dBA at the nearest residences on Simshaw Avenue approximately 900 ft northeast of the site for the proposed soccer/football fields. Noise from soccer/football field construction would not be discernible to residences along Simshaw Avenue. The estimated noise levels at the nearest residence due to construction of the soccer/football fields, playgrounds and other site improvements are not expected to be higher than 75 dBA. Construction activities will be limited to daytime hours (i.e., 7 a.m. to 4 p.m.). Impacts from construction noise are considered less than significant.

Although temporary noise increases during project construction may result in annoyance to some people in the area (including patrons and County employees in the park and on the golf course), construction activities would be limited to daytime hours in accordance with noise restrictions established in Section 12.12.030 of the County Code. Noise from construction activities will be considered less than significant because the estimated construction equipment noise would not be expected to exceed the maximum daytime noise limit for construction which is 75 dBA for mobile equipment. Due to the proximity of the construction work area to residents north of the site and the Head Start preschool, the following mitigation measures will be implemented:

- ***Noise 1.*** *During northeast parking lot construction activities, the construction contractor will conduct truck loading, unloading, hauling and other operations so that noise is kept to a minimum on site to avoid generating noise near the Head Start preschool and residences along Simshaw Avenue.*
- ***Noise 2.*** *During northeast parking lot construction activities, all construction equipment will be outfitted with noise abatement devices no less effective than those provided on the original equipment. No equipment shall have an unmuffled exhaust.*
- ***Noise 3.*** *During northeast parking lot construction activities, the construction contractor will use and relocate temporary sound barriers, as required, to avoid excessive construction noise. Noise barriers can be made of heavy plywood or include moveable insulated sound blankets.*
- ***Noise 4.*** *During northeast parking lot construction activities, the construction contractor shall implement appropriate additional noise abatement measures including at a minimum, but not limited to, changing the location of stationary construction equipment, turning off idling equipment, rescheduling construction activity, notifying adjacent residents in advance of construction work, or installing acoustic barriers around stationary construction noise sources.*
- ***Noise 5.*** *The construction contractor will comply with the Los Angeles County Noise Control Ordinance and, in consideration of nearby residences, avoid construction activities during evening, nighttime, weekend, and holiday periods, except as authorized by the County. Construction work shall be limited to the hours of 7:00 a.m. to 4:00 p.m., except as authorized by the County.*
- ***Noise 6.*** *The construction contractor will post (on the construction site fencing) a phone number for noise complaints on the site, and address complaints within two (2) business days.*
- ***Noise 7.*** *In the event that community noise complaints are received, the construction contractor will ensure that construction equipment noise levels are monitored by a qualified noise/acoustics specialist. If monitored noise levels exceed County of Los Angeles standards, construction activities will be modified to reduce noise levels to within County standards.*

Mitigation measures Noise 1 through Noise 4 are specifically designated for construction in the northeast parking lot which is in proximity to the existing Head Start preschool. Potential noise impacts to the Head

Start preschool will be minimized and prevented through incorporation of mitigation measures Noise 1 through Noise 4.With incorporation of the above mitigation measures, impacts from construction noise would be considered less than significant.

Operational Noise. With regard to operation of the soccer/football fields and associated parking, an average day-night sound level of 65 dBA is generally accepted as a standard for residential communities (HUD, 2010). In California, the standard is 65 dBA, CNEL. As a land use compatibility guideline, this standard represents an averaged noise level over a 24-hour period and includes a penalty of 10dB[3] for nighttime hours, and with CNEL, an additional plus 5 dB penalty/adjustment for evening hours. The Los Angeles County Noise Control Ordinance, Title 12 of the County Code, was adopted by the Board of Supervisors in 1977 "…to control unnecessary, excessive, and annoying noise and vibration …." It declared that County policy was to "…maintain quiet in those areas which exhibit low noise levels and to implement programs aimed at reducing noise in those areas within the county where noise levels are above acceptable values" (Section 12.08.010 of the County Code). On August 14, 2001, the Board of Supervisors approved an ordinance amending Title 12 of the County Code to prohibit loud, unnecessary, and unusual noise that disturbs the peace and/or quiet of any neighborhood or which causes discomfort or annoyance to any reasonable person of normal sensitivity residing in the area. Regulations can include requirements for sound barriers, mitigation measures to reduce excessive noise, or the placement and orientation of buildings, and can specify the compatibility of different uses with varying noise levels. The County exterior noise standard for residential properties is 45 decibels from 10:00 p.m. to 7:00 a.m. (nighttime) and 50 decibels for 7:00 a.m. to 10:00 p.m. (daytime). These noise standards are applicable to residential areas along Simshaw Avenue.

The most noticeable noise associated with parking lot activity is car door slamming. Typical car door slamming generates a maximum sound level of 73 dBA when measured at a distance of 50 feet without any attenuation due to building walls and other barriers. Activities at the northeast parking area may contribute to an increase the existing ambient noise levels at the nearest residences. The estimated noise levels at the nearest residence due to operation of the soccer/football fields, playgrounds and other site improvements are not expected to be higher than 75 dBA. Impacts to noise from operation of the new soccer/football fields would be considered less than significant.

Noise generated by operation of the soccer/football fields would be attributed to vehicles entering or exiting the parking area as well as the noise emanated from spectators viewing the playing fields. The predominant noise source would be the spectators and it is anticipated that it would be fairly localized and confined to within the soccer/football fields and within the park. Noise levels at surrounding land uses are not expected to be significantly affected by the operation of the soccer/football fields. The Head Start preschool is a weekday operation open until 4:00 p.m. and, for this reason, it is not expected that scheduled soccer practice sessions during the weekdays or games on the weekends would contribute to increased noise levels during its operational hours. Operation of the proposed soccer/football fields would not result in exposure of persons at the Head Start preschool to, or generation of, noise levels in excess of standards established by the County of Los Angeles. Impacts to noise from operation of the new soccer/football fields would be considered less than significant.

Potential Impacts	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?				X

Construction activities would not include the use of equipment that is considered an impact device (i.e., no pile driving will be required). For this reason, impacts from groundborne vibration would not occur.

[3] When noise levels over a 24-hour period are averaged, the eight hours in the nighttime are assessed a 10 dB penalty to account for the impact of noise during these hours.

Potential Impacts	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?		X		

Daily operation of the proposed soccer/football fields may result in a permanent increase to the existing noise level at the park during the soccer season and when the soccer/football fields are in use. Normal park hours are 9 a.m. to 10 p.m. on weekdays and 10 a.m. to 10 p.m. on weekends. The increase in noise levels will consist of noise from the playing fields and vehicular noise before and after scheduled events. Because the new soccer/football fields will be located in the interior of the existing park (approximately 900 ft from the nearest residence on Simshaw Avenue), noise from the playing fields will not be discernible to the nearest residences. A permanent increase in noise levels at the parking area at the northeast side of the park would occur as a result of the project. This noise level increase would be discernible to some residences on Simshaw Avenue. With implementation of the mitigation measures Noise 1 through Noise 8 described in Section XII.a, the noise level increases would be considered less than significant.

d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?			X	

The proposed project will result in a temporary increase in ambient noise levels during construction activities as a result of the use of heavy construction equipment (see Section XII.a above). The only residences that may experience temporary periods of increased noise from construction are along Simshaw Avenue; noise would be limited to construction activities in the northeastern parking lot. The construction contractor will be required to ensure that noise from trenchers, pavers, graders and trucks does not exceed 90 dBA at 50 feet as measured under the noisiest operation conditions, and 85 dBA at 50 feet for all other equipment. Noise from construction activities within the northeast parking lot area is not expected to exceed the 75 dBA daytime construction noise limit applicable to residential areas. This temporary increase in noise would be considered less than significant.

The proposed project will result in temporary periods of increased ambient noise levels when soccer or football games are held primarily during the weekends (see Section XII.a above). Noise generated by vehicles entering and exiting the parking lot, as well as car door slamming, contributes to ambient noise levels. However, because of the relatively limited number of scheduled events, these contributions are not considered substantial enough to significantly increase the overall ambient noise levels at sensitive land uses in the vicinity of the project. Therefore, the impact of the temporary increase in ambient noise levels is considered less than significant.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?				X

The proposed project is not located within any Airport Master Plan area and is not within two miles of a public airport. Therefore, the proposed project will not result in any impacts from excessive noise levels in an airport land use plan area.

Potential Impacts	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?				X

The proposed playground and soccer/football fields will be located approximately 1.5 miles from the nearest private airstrip. The proposed project will not expose people residing or working in the area to excessive noise levels. Therefore, the proposed project will not result in any impacts from excessive noise levels within the vicinity of a private airstrip.

XIII. Population and Housing Would the project:				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?			X	

The proposed project may result in an increase in visitors to El Cariso Community Regional Park such as during special events, however, the project will not directly or indirectly induce population growth because it will not propose new housing, business opportunities or employment. The proposed project will not have direct growth inducing effects, although it will support recreational needs associated with current recreational needs in the local community. The proposed project will not indirectly induce substantial population growth in the area or result in the need for additional infrastructure. Impacts to population growth are considered less than significant.

b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?				X

The proposed project will not displace any housing. All proposed structures will be constructed within the boundaries of El Cariso Community Regional Park. Therefore, the project will not result in any impacts to housing.

c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?				X

The proposed project will not displace any people, or result in the need for replacement housing elsewhere. Therefore, the proposed project will not result in any impacts to housing.

Potential Impacts	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
XIV. Public Services Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
a) Fire protection?			X	

Fire protection services for the Sylmar community are provided by the Los Angeles City Fire Department, the Los Angeles County Fire Department, the National Forest Service or by all three departments under a Mutual Aid and Assistance Program (County of Los Angeles, 2008). The City of Los Angeles Fire Department has one station in Sylmar. City of Los Angeles Fire Station No. 91, serves Sylmar and northeast portion of the city of San Fernando. This station will provide fire protection services to El Cariso Community Regional Park. The proposed project will result in additional public facilities in an existing park that will continue to require fire protection services. No change to the response time to the park would be anticipated. Due to the nature of the recreational facilities to be added to the park, the proposed project will not result in a substantial increase in the demand for fire protection services or generate a need for a new fire station in the area. Therefore, impacts to fire protection are considered less than significant.

b) Police protection?			X	

The Los Angeles County Police provide police protection at El Cariso Community Regional Park. The proposed project will not interfere with circulation for pedestrians, vehicles, and police patrols. The proposed project will result in new recreational facilities in the park that will require police protection services, but this will not result in a substantial increase in the demand for police protection services because police protection is already provided to the area, including this park. Therefore, impacts to police protection are considered less than significant.

c) Schools?				X

The proposed project is not expected to generate any additional population in the area, and therefore will not impact local school enrollments. The proposed project will not otherwise adversely impact existing and planned schools in the area. The project may have a beneficial effect on local schools that utilize new recreational facilities in the park. The Head Start preschool is directly adjacent to the parking area on the north side of the park. Los Angeles Mission College (with a Child Development Center) is approximately 975 ft south. Hubbard Street Elementary School (with the adjoining Hubbard Street Early Education Center) is approximately 3,000 ft west. Therefore, no adverse impacts to schools will result from the proposed project.

d) Parks?				X

The proposed project will result in a beneficial effect on El Cariso Community Regional Park. New facilities and improvements to the park will provide improved recreational opportunities to the local community. The proposed project will not result in adverse impacts to existing or planned parks in the region.

Potential Impacts	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
e) Other public facilities?				X

The proposed project facilities will be operated and maintained by the County of Los Angeles and will not result in any impacts to other public facilities.

XV. Recreation				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?			X	

The purpose of the proposed project is to improve recreational and community opportunities in the Sylmar community by providing a new facilities for use by the general public. The playground, soccer/football fields and park improvements will be used for athletic events and ongoing recreational programs in the park.

Although proposed park improvements will result in an increase in use of the park, the proposed project will not result in substantial deterioration of the park or other recreational facilities at a rate greater than normal use will cause. This is because the park was designed to accommodate a high usage rate. Therefore, impacts to existing or planned neighborhood and regional parks are considered less than significant.

b) Does the project include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?			X	

The proposed project will result in improvements to an existing public park. These improvements will be designed to accommodate the anticipated usage of the playground, soccer/football fields and park improvements. Physical effects on the environment will be limited to temporary construction-related impacts (i.e., noise, traffic and air pollutant emissions that are not considered significant). For this reason, the proposed project will not have any adverse physical effect on the environment. Impacts to the environment from improvements to these recreational facilities are considered less than significant.

XVI. Transportation/Traffic Would the project:				
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit)?			X	

During the construction period, construction workers would access the site on a daily basis. Assuming that all the workers travel in single occupant vehicles, this would result in additional inbound and outbound vehicle trips. These trips would occur before morning and evening peak hour traffic.

Movement of the construction vehicles would not result in any change to the volume-to-capacity ratio of roadways or congestion at intersections in the local area. Construction-related traffic will be a temporary, short-term condition and would not result in any substantial effects on traffic.

Operation of the Proposed Project will result in periodic increases in the vehicular traffic associated with scheduled soccer/football practices and games. There are no transportation management plans or policies applicable to the proposed site. The Proposed Project will not conflict with any plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit. For these reasons, impacts to traffic will be considered less than significant.

Potential Impacts	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?			X	

There are no congestion management plans applicable to the Sylmar community. Vehicular traffic would increase temporarily during the construction period as a result of the daily project-related vehicle trips. Traffic along Hubbard Street may be temporarily delayed during construction activities. Temporary lane detours may be required, however, closure of complete roads would not occur. These temporary and localized impacts would not result in a substantial change to the current level of service for affected roadways. For these reasons, construction impacts to traffic will be considered less than significant. During operations, the Proposed Project would not result in any change to the existing level of service on any roads or highways in the project area. Impacts to traffic levels of service on roads and highways will be considered less than significant.

c) Results in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?				X

The proposed project will not result in any changes to air traffic patterns that could result in any increases in safety risks. Therefore, the proposed project will not have any impact on air traffic patterns.

d) Substantially increase hazards due to a design feature (e.g. sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?				X

No alterations to area roadways or improvements to park access are proposed at this time. No change from the existing road alignment or different land uses will result. No substantial increase in hazards or incompatible uses would be anticipated as a result of the proposed project. Therefore, the proposed project will not have any impact from design features of incompatible uses.

Potential Impacts	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
e) Result in inadequate emergency access?			X	

The new soccer/football fields, playgrounds and parking spaces will be operated in accordance with safety policies defined in the Los Angeles County Safety Element and will follow the appropriate area emergency response plan. Emergency vehicles will continue to access the park from the entrances along Hubbard Street. Therefore, the impact of the proposed project on emergency access is considered less than significant.

f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?			X	

The County of Los Angeles Department of Recreation and Parks would continue to encourage the use of high-occupancy vehicles for scheduled games and practices. No modifications to area roadways or bikeways outside the park are proposed. The Metropolitan Transportation Authority (MTA) Metro Shuttle Line 634 runs along Hubbard Street to El Cariso Community Regional Park. The proposed project would not result in any conflicts with policies that support public transit, bicycle, or pedestrian facilities. The proposed project would not otherwise decrease the performance or safety of such facilities. Therefore, impacts to public transit performance and safety will be less than significant.

g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?				X

The proposed project will be designed and operated to support alternative transportation with inclusion of additional bicycle racks to support alternative transportation. The proposed project will not result in any conflict with policies that support alternative transportation. Therefore, no impacts to policies, plans or programs supporting alternative transportation will occur.

XVII. Utilities and Service Systems Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?				X

The proposed project will result in continuation of wastewater discharge as a result of the operation of the new playground, soccer/football fields and park improvements. Proposed discharges will not exceed wastewater treatment requirements of the Los Angeles Regional Water Quality Control Board. Therefore, there will be no impacts to water quality standards or waste discharge requirements.

b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?			X	

Water for the park is provided by the Los Angeles Department of Water and Power. Wastewater from the park is discharged to the municipal sewer system. The proposed project will not require the construction of new water or wastewater treatment facilities, or the expansion of existing facilities. Therefore, impacts

to water or wastewater treatment facilities from the proposed project will be considered less than significant.

Potential Impacts	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?			X	

The proposed project will require modification of the existing on-site storm water drainage system to accommodate the new soccer/football field and expansion of the parking lot. Adequate drainage for the site will be designed to accommodate the park improvements. Therefore, impacts from construction of the storm drainage system are considered less than significant.

d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?			X	

Water for El Cariso Community Regional Park is provided water by the Los Angeles Department of Water and Power. The proposed project will use a limited amount of water to control dust during the construction period. The project will be designed to include low-flow water fixtures and water-efficient landscaping. Water consumption at El Cariso Community Regional Park will increase as a result of increased use of restrooms and drinking water fountains when soccer practices and games are in session. The increase in water consumption would not result in the need for new or expanded entitlements or resources. Therefore, impacts to water supply are considered less than significant.

e) Result in a determination by the wastewater treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?			X	

The Los Angeles Department of Public Works Bureau of Sanitation (Wastewater Division) provides wastewater disposal for the park. Wastewater generation at El Cariso Community Regional Park will increase as a result of increased use of restrooms and drinking water fountains when soccer practices and games are in session. It is estimated that the proposed project would generate an increase of approximately 576 gallons per day of wastewater[4]. The Los Angeles Bureau of Sanitation has adequate capacity to serve the projected demand associated with the proposed project. Impacts to wastewater treatment systems are considered less than significant.

f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?			X	

Construction activities will generate solid waste, however waste management during construction will include diversion of wastes from disposal as a LEED waste reduction objective. Construction wastes will not significantly impact landfill capacities. It is expected that solid waste from the project will be disposed of in the Sunshine Canyon Landfill in Sylmar. This City/County landfill was designed to provide 25 years of disposal capacity at an average rate of 11,000 tons per day (Sunshine Canyon Landfill, 2009). The

[4] Based on City of Los Angeles Bureau of Sanitation loading factor of 3 gallons per day of wastewater per stadium seat (192 seats X 3 gallons per day = 576 gallons of wastewater per day).

proposed playground, soccer/football fields and park improvements will be designed to include recycling of wastes. Operation of the proposed playground, soccer/football fields and park improvements will not be expected to generate a substantial increase in solid waste. The nearest landfill has sufficient capacity to accommodate the project's solid waste disposal needs. Impacts to solid waste disposal are considered less than significant.

Potential Impacts	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
g) Comply with federal, state, and local statutes and regulations related to solid waste?			X	

All solid waste disposal will be managed in accordance with applicable federal, state and local statutes and regulations. Therefore, impacts to solid waste are considered less than significant.

XVIII. Mandatory Findings of Significance				
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?		X		

As noted herein, the analysis conducted in this Initial Study results in a determination that the project, with implementation of mitigation measures, will result in a less than significant effect on the environment. Based on the potential for significant impacts in the areas of cultural resources, hazards/hazardous materials, and noise, nineteen (19) mitigation measures were identified to avoid or minimize impacts to a less than significant level. The construction and operation of the proposed project will not substantially degrade fish, wildlife, and/or plant populations, substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory. This is because there are no such fish, wildlife or plant populations present on the site. There are no important examples of the major periods of California history or prehistory found on the project site. Intrusion on any previously undiscovered cultural or historic resources is not anticipated (mitigation for inadvertent discovery of cultural materials has been included in this analysis). Therefore, with implementation of mitigation measures identified in this study, impacts will be considered less than significant.

b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)			X	

There are two planned projects within 1.0 mile of the proposed project at El Cariso Community Regional Park (a radius of 1.0 mile was used to represent the anticipated sphere of influence where environmental

impacts could be evident for a project of this type). According to State CEQA Guidelines Section 15355, cumulative impacts refer to two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts. As discussed in Section 1.11, there are up to three probable future projects on the Los Angeles Mission College campus with construction that could overlap with construction of the proposed project. It is possible that the proposed project could overlap for 2 months with two LAMC projects and 7 months with the LAMC Student Services Center construction. Because impacts from projects on the Los Angeles Mission College campus are either not significant or will be mitigated, the proposed project would not result in cumulative impacts to aesthetics, air quality, agriculture and forest resources, biological resources, cultural resources, geology and soils, hazards and hazardous materials, hydrology and water quality, land use and planning, mineral resources, population and housing, public services, recreation, or utilities and service systems. The proposed project will not contribute to cumulative biological resource impacts because the site is a developed urban park that represents marginal biological habitat.

Greenhouse gas emissions from the proposed project, when added to these emissions from related projects, would be less than significant because these emissions would be below the 3,000 metric ton SCAQMD screening level (selected threshold). When this individual project's contribution to greenhouse gas emissions is compared to that produced by activities elsewhere in the world, the mass of greenhouse gas emissions generated by the construction and operation of the proposed project would be so small that the concentration of greenhouse gas emissions in the atmosphere would not change. The project's incremental contribution to cumulative effects on a regional scale would not be considerable. For this reason, the project's cumulative impact to global climate change is considered less than significant.

Construction-related increases in noise levels will not be considered cumulatively considerable. The proposed project will contribute to temporary periods of increased construction-related noise levels at the same time as construction at Los Angeles Mission College. Due to sound attenuation by distance, it is not anticipated that significant cumulative noise impacts will occur. The project's incremental operational noise contribution to cumulative noise effects on a regional scale would not be considerable. For this reason, the project's cumulative impact to noise is considered less than significant.

Traffic from the proposed project may have a combined effect from traffic associated with future expansion of facilities at Los Angeles Mission College. Traffic improvements are being constructed to accommodate projected traffic associated with Los Angeles Mission College. There may be weekend days when scheduling of both the gymnasium and soccer/football fields at El Cariso Community Regional Park may result in temporary periods of increased traffic on Hubbard Street. The proposed project would include additional parking for soccer/football field patrons. The project's incremental contribution to cumulative traffic impacts would not be considerable. For this reason, the project's cumulative impact to traffic is considered less than significant.

When the potential impacts of the proposed project are viewed in consideration of past and ongoing projects (both of which have been incorporated into the existing baseline of environmental conditions), these impacts would not be considered cumulatively considerable. Therefore, the cumulative impacts of the proposed project are considered less than significant.

Potential Impacts	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
c) Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?				X

Substantial direct and indirect adverse effects on human beings will not be expected as a result of the project. The proposed project will result in new recreational facilities within an existing park which will be beneficial to humans. These facilities will be designed to incorporate alternative transportation, energy efficiency, water efficiency and reduced water consumption in order to prevent or reduce adverse environmental effects. Therefore, the proposed project will not have substantial direct or indirect adverse effects on human beings.

SECTION 3. SUPPORTING INFORMATION

3.1 References

ALUC, 2004. Los Angeles County Airport Land Use Commission. *Los Angeles County Airport Land Use Plan.* Prepared by the Department of Regional Planning. Adopted December 19, 1991 (Revised December 1, 2004). Available at http://planning.lacounty.gov/doc/aluc/ALUC_CLUP.pdf.

CDWR, 2004. California Department of Water Resources (CDWR). California Groundwater Bulletin 118, at http://www.groundwater.water.ca.gov/bulletin118/basin_desc/basins_al.cfm#gwb19htm), dated February 27, 2004 (accessed October 7, 2008).

City of Los Angeles, 2012. Granada Hills-Knollwood/Sylmar Community Plans EIR. October.

City of Los Angeles, 2010. City of Los Angeles Department of Recreation and Parks. Universally Accessible Playgrounds. http://www.laparks.org/dos/playground/accessibleplay.htm (accessed on November 22, 2010).

City of Los Angeles, 2008. City of Los Angeles Zoning Information and Map Access System (ZIMAS). Property information for 13056 Hubbard. http://zimas.lacity.org/search.asp (accessed on December 30, 2008).

City of Los Angeles, 2003. *Generalized Summary of Zoning Regulations. City of Los Angeles.* CP-7150. Revised 10/23/03. Available at http://cityplanning.lacity.org/zone_code/Appendices/sum_of_zone.pdf (accessed November 13, 2008).

City of Los Angeles, 1997. *Sylmar Community Plan*. Adopted 08/06/1997. Available at http://cityplanning.lacity.org/complan/pdf/sylcptxt.pdf (accessed October 7, 2008).

County of Los Angeles, 2008. *Draft General Plan. Planning Tomorrow's Great Places.* Fourth Edition. County of Los Angeles Department of Regional Planning. Available at http://planning.lacounty.gov/generalplan/default.htm (accessed on November 7, 2008).

CTL Environmental Services, 2008a. Phase I Environmental Site Assessment. El Cariso Regional County Park. March 2008.

CTL Environmental Services, 2008b. Asbestos and Lead-Based Paint Survey Project Record. El Cariso Regional Park. Sylmar, California. March 14, 2008.

CTL Environmental Services, 2008c. *Supplemental Asbestos and Lead-Based Paint Survey. El Cariso Park. Sylmar, California.* Prepared for GKK Works. CTL Project No. 108-0508. September 19, 2008.

Envirostor, 2012. Database information from the State of California Department of Toxic Substances Control. http://www.envirostor.dtsc.ca.gov/public/map.asp Reviewed on September 14, 2012.

FEMA, 2008. Federal Emergency Management Agency (FEMA). Map Service Center (Map Item ID - 06037C1075F), at http://msc.fema.gov/webapp/wcs/stores/servlet/MapSearchResult?storeId=10001&catalogId=10001&langId=1&panelIDs=06037C1075F$&Type=pbp&nonprinted=&unmapped= Effective September 26, 2008 (accessed October 7, 2008).

FMMP, 2008. Farmland Mapping and Monitoring Program (FMMP) mapping data, available at: ftp://ftp.consrv.ca.gov/pub/dlrp/FMMP/pdf/2006/los06.pdf

Geocon West, 2012. Updated Geotechnical Investigation. Proposed Park Improvements. El Cariso Park. 13100 Hubbard Street, Los Angeles, California. Prepared for County of Los Angeles Department of Public Works, Alhambra, California. Project No. A8559-06038A. October 2, 2012.

Geocon West, 2010. *Geotechnical Investigation. Proposed Park Improvements. El Cariso Park. 13100 Hubbard Street, Los Angeles, California*. Prepared for County of Los Angeles Department of Public
Works, Alhambra, California. Project No. A8559-06038. November 22, 2010.

Geotracker, 2012. Database information from the State Water Resources Control Board. Available at: http://geotracker.waterboards.ca.gov/ Reviewed on September 14, 2012.

Hendrix and Wilson, 2007. *Alternative Approaches to Analyzing Greenhouse Gas and Global Climate Change in CEQA Documents.* Association of Environmental Professionals. By Michael Hendrix and Cori Wilson, Michael Brandman Associates. June 29, 2007.

Khoury Geotechnical Services, Inc., 2008. Preliminary Geotechnical Engineering Investigation for Proposed New Gymnasium / Community Center Building at El Cariso Park, 13108 Hubbard Street, Sylmar, California. May 6, 2008.

LACCD, 2009a. Los Angeles Community College District (LACCD). Air Quality Technical Memorandum. Los Angeles Mission College Supplemental Environmental Impact Report. July 8, 2009.

LACCD, 2009b. Los Angeles Community College District (LACCD). Los Angeles Mission College Supplemental Draft Environmental Impact Report. Appendix H. Traffic Impact Analysis. July 2009.

LACDPW, 2011. Los Angeles County Department of Public Works. El Cariso Community Regional Park. Phase II – General Improvements Universal Playground. Att-J Occupant, Parking, Restroom Calculation (from Jane Becronis). October 12, 2011.

LARWQCB, 2008. Los Angeles Regional Water Quality Control Board (LARWQCB). Watershed Management Initiative, Los Angeles River Watershed Summary available at http://www.swrcb.ca.gov/rwqcb4/ water_issues/programs/regional_program/wmi/ws_losangeles.shtml (accessed October 6, 2008).

LAUSD, 2012. Los Angeles Unified School District (LAUSD) Strategic Execution Plan. June 2012. http://www.laschools.org/documents/download/about_fsd/sep/2012_consolidated_strategic_execution_plan/2012_FSD_Consolidated_SEP.pdf Reviewed on September 11, 2012.

SCAQMD, 2012a. SCAQMD Air Quality Significance Thresholds. http://www.aqmd.gov/ceqa/handbook/signthres.pdf (accessed on November 8, 2012).

SCAQMD, 2012b. Summary of South Coast Air Quality Management District (SCAQMD) 2010 air quality monitoring data for East San Fernando Valley (Station No. 069). http://www.aqmd.gov/smog/historical/AQ10card.pdf (accessed on November 8, 2012).

Sunshine Canyon Landfill, 2009. Landfill lifespan information obtained from website http://www.sunshinecanyonlandfill.com/index.htm). Downloaded on July 2, 2009.

SWCA, 2008a. Cultural Resources Assessment for the El Cariso Gymnasium and Community Building Project,, Community of Sylmar, City of Los Angeles, Los Angeles County, California. Prepared for County of Los Angeles Department of Parks and Recreation and Parsons. Prepared by SWCA Environmental Consultants. November 2008.

SWCA, 2008b. Paleontological Resources Assessment for the El Cariso Gymnasium and Community Building Project, Community of Sylmar, City of Los Angeles, Los Angeles County, California. Prepared for Parsons. Prepared by SWCA Environmental Consultants. Pasadena Office. November 2008.

Track Info Services, 2008. *Environmental FirstSearch™ Report. Target Property: El Cariso Park. 13100 Hubbard Street Sylmar CA 91342.* Job Number 110508. Prepared for Parsons by Track Info Services, LLC. November 5.

USGS, 2008. United States Geological Survey (USGS). *About Liquefaction*, http://geomaps.wr.usgs.gov/sfgeo/liquefaction/ aboutliq.html (last accessed October 7, 2008).

3.2 List of Preparers

- Elvira Gaddi, P.E., Technical Advisor (Parsons)
- Rosemarie Crisologo, CEQA Task Manager (Parsons)
- John Moeur, Ecologist/Principal Scientist (Parsons)
- Kip Harper, Cultural Resource Specialist (Parsons)

APPENDIX A

MITIGATION MONITORING AND REPORTING PROGRAM

MITIGATION MONITORING AND REPORTING PROGRAM: EL CARISO COMMUNITY REGIONAL PARK SOCCER/FOOTBALL FIELDS, UNIVERSALLY ACCESSIBLE PLAYGROUND AND PHASE II GENERAL IMPROVEMENTS PROJECT

Section 21081.6 of the Public Resources Code, enacted by passage of AB 3180 (Cortese Bill), requires public agencies approving projects with significant environmental impacts to adopt a Mitigation Monitoring and Reporting Program. This objective of the program is to ensure that mitigation measures adopted to avoid or mitigate potentially significant environmental impacts are implemented. Section 21081.6 of the Public Resources Code requires all state and local agencies to establish monitoring and reporting programs whenever approval of a project relies upon a mitigated negative declaration or an environmental impact report (EIR). In accordance with these requirements, this mitigation monitoring and reporting program has been prepared to ensure that mitigation measures identified in the Initial Study/Mitigated Negative Declaration for the proposed construction and operation of soccer/football fields, universally accessible playground and Phase II general improvements at El Cariso Community Regional Park, 13100 Hubbard Street, Sylmar, California 91342 (or subsequent revisions thereto), are implemented in an effective and timely manner, and that identified impacts are avoided or mitigated to a level of insignificance. This plan identifies responsible parties for the mitigation program, and includes a detailed discussion of monitoring and reporting procedures for each mitigation measure.

I. Responsible Party

The Los Angeles County Department of Public Works (DPW), or its designee, will be responsible for implementing and reporting mitigation measures in this program. The County will have responsibility for ensuring that mitigation measures are accomplished in an environmentally responsible manner. The County will be responsible for ensuring that the status of mitigation measures is reported in accordance with this program. The County will be responsible for ensuring that the cost of mitigation is included in its budget, as appropriate.

The Los Angeles County DPW will be responsible for program oversight and implementing construction-related mitigation measures. Mitigation measures will be included in applicable requests for proposals (RFP), specifications and procedures issued for construction of the soccer/football fields, universally accessible playground and Phase II general improvements within the scope of this project. Other mitigation measures funded by the Contractor will be subject to oversight by the Los Angeles County DPW. In addition, Los Angeles County DPW will be responsible for ensuring that mitigation measures are properly carried out by designated and qualified personnel, which may include specialty contractors.

The Los Angeles County Department of Parks and Recreation will be responsible for ensuring that applicable mitigation measures are carried forward in operational and maintenance procedures for the new playground and soccer/football fields.

II. Mitigation Requirements

Based on the findings of the Initial Study, mitigation measures are not required for aesthetics, agriculture resources, air quality, biological resources, geology and soils, greenhouse gases, hydrology and water quality, land use and planning, mineral resources, population and housing, public services, recreation, transportation/traffic and utilities/service systems. Specific mitigation measures are required or otherwise included for cultural resources, hazards and hazardous materials, and noise. Potentially significant impacts in these environmental resource areas will be avoided or minimized with implementation of eighteen (18) specific mitigation measures summarized on Table A-1.

Table A-1. Summary of Mitigation Measures

Category	Item	Mitigation No.	Mitigation Measure	Initial Study Section
Cultural Resources	1	Cultural 1	Archaeological Awareness Training (Pre-Construction)	2.V.b
	2	Cultural 2	Archaeological Monitoring at Depths Exceeding 5 ft bgs	2.V.b
	3	Cultural 3	Inadvertent Discovery of Archaeological Materials	2.V.b
	4	Cultural 4	Paleontological Monitoring at Depths Exceeding 5 ft bgs	2.V.c
	5	Cultural 5	Inadvertent Discovery of Paleontological Materials	2.V.c
	6	Cultural 6	Inadvertent Discovery of Human Remains	2.V.c
Hazards and Hazardous Materials	7	Hazards 1	Prevention of Impacts from Asbestos-Containing Materials	2.VIII.b
	8	Hazards 2	Prevention of Impacts from Asbestos-Containing Materials	2.VIII.b
	9	Hazards 3	Prevention of Impacts from Asbestos-Containing Materials	2.VIII.b
	10	Hazards 4	Soil Sampling for Residual Pesticides	2.VIII.b
	11	Hazards 5	Prevention of Impacts from Residual Subsurface Chemicals from Past Agricultural Use of the Site	2.VIII.b
Noise	12	Noise 1	Operation of Vehicles/ Equipment Away from Sensitive Receptors	2.IX.a
	13	Noise 2	Equipment Noise Control	2.IX.a
	14	Noise 3	Noise Barriers	2.IX.a
	15	Noise 4	Additional Noise Abatement	2.IX.a
	16	Noise 5	Compliance with Noise Control Ordinance	2.IX.a
	17	Noise 6	Posting of Sign at Site and Respond to Noise Complaints	2.IX.a
	18	Noise 7	Noise Monitoring if Complaints Received/ Modify Construction Activities to Reduce Noise	2.IX.a

III. Schedule and Reporting Frequency

Table A-2 describes the method for executing the mitigation measure, organization responsible for implementing and funding the measure, estimated completion date for each measure, frequency of reporting, and significance after mitigation. Due to possible funding conditions and other external factors, facility construction and operation could be delayed. These delays may also affect the start and completion of mitigation measures.

It should be noted that although impacts to noise from the proposed project will not be considered significant, mitigation measures to reduce noise have been included as part of this Mitigation Monitoring and Reporting Program.

The monitoring and accomplishment of each mitigation measure will be documented on a Mitigation Monitoring Report form (see Exhibit A). This form will be filled out by the appropriate individual in the event of an inadvertent discovery of archaeological materials, paleontological materials, or human remains as described in Table A-2. Supplemental recordkeeping, report preparation and documentation will be required for some mitigation measures. The Mitigation Monitoring Report form will be filled out by the appropriate individual verifying that steps to prevent or minimize environmental degradation have been completed as described in Table A-2. Monitoring reports will be submitted to the County Department of Public Works and County Department of Parks and Recreation (Attn: Environmental Section Head), retained in the County's project files, and be available for inspection upon request. Completion of these forms will demonstrate and document compliance with Public Resources Code 21081.6.

Table A-2. Implementation of Mitigation Measures

Mit. No.	Mitigation Measure	Method for Execution of Mitigation	Entity Responsible for Mitigation Monitoring	Completion Date	Frequency of Reporting	Significance After Mitigation
Cultural 1	Archaeological Awareness Training (Pre-Construction)	Before initiation of ground-disturbing activities, a qualified archaeologist will conduct an awareness training session for all construction workers and supervisory personnel. The training session would explain the importance of, and legal basis for, the protection of significant archaeological resources. Each worker would also learn the proper procedures to follow in the event cultural resources or human remains/burials are uncovered during ground-disturbing activities. These procedures include work curtailment or redirection and the immediate contact of their supervisor. It is recommended that this worker education session include visuals of artifacts (prehistoric and historic) that might be found in the project vicinity, and that it take place on-site immediately before the start of ground disturbance.	Los Angeles County	At Pre-Construction Meeting	Within 2 weeks of start of construction	Less than Significant
Cultural 2	Archaeological Monitoring	All excavation in native soil or below 5 ft bgs will be monitored by a qualified archaeologist that meets Secretary of the Interior's standards. The monitor will attend the pre-grading meeting(s) with contractors to explain and coordinate requirements and procedures.	Los Angeles County	During Construction	Weekly during earthwork	Less than Significant
Cultural 3	Inadvertent Discovery of Archaeological Materials	In the event any archaeological materials or subsurface deposits are exposed during ground disturbance, the construction contractor will immediately cease activity in the affected area (e.g., redirect activities into another area) until the discovery can be evaluated by a qualified archaeologist or historic resources specialist, as appropriate, and appropriate treatment measures implemented. If the discovery proves to be significant per CEQA Section 21083.2(g), additional work such as testing or data recovery will occur. Methods used during monitoring and/or recovery of archaeological resources shall be documented in a report of findings.	Los Angeles County	During Construction	Upon discovery and at completion of construction	Less than Significant

Mit. No.	Mitigation Measure	Method for Execution of Mitigation	Entity Responsible for Mitigation Monitoring	Completion Date	Frequency of Reporting	Significance After Mitigation
Cultural 4	Paleontological Monitoring	All project-related ground disturbances in native soil or below 5 ft bgs will be monitored by a qualified paleontological monitor on a full-time basis. A qualified paleontologist will be retained to supervise monitoring of construction excavations. Excavations in artificial fill (from ground surface to a depth of 2 ft beneath ground surface) will not require a paleontological monitor.	Los Angeles County	During Construction	Weekly during earthwork	Less than Significant
Cultural 5	Inadvertent Discovery of Paleontological Materials	In the event paleontological resources are encountered during earthwork, the construction crew will immediately cease activity in the affected area (e.g., divert grading away from exposed fossils and redirect activities into another area) until the resources can be evaluated by a qualified paleontologist, and the appropriate treatment measures implemented. The paleontologist will determine if the paleontological material should be salvaged, identified and permanently preserved. Recovered fossils will be prepared to the point of curation, identified by qualified experts, listed in a museum database to facilitate analysis, and reposited in a designated paleontological curation facility (e.g., Los Angeles County Museum of Natural History).	Los Angeles County	During Construction	Upon discovery and at completion of construction	Less than Significant
Cultural 6	Inadvertent Discovery of Human Remains	In the event human remains are encountered during project construction, the construction crew will immediately cease activity in the affected area and the Los Angeles County Coroner shall be immediately contacted to determine whether or not investigation of the cause of death is required. The Coroner shall make a determination of origin and disposition pursuant to Public Resources Code Section 5097.98. In the event the remains are Native American in origin, the Native American Heritage Commission shall be contacted to determine necessary procedures for protection and preservation of remains, including reburial, as provided in the CEQA Guidelines, Section 15064.5(e).	Los Angeles County	During Construction	Upon discovery and at completion of construction	Less than Significant

Mit. No.	Mitigation Measure	Method for Execution of Mitigation	Entity Responsible for Mitigation Monitoring	Completion Date	Frequency of Reporting	Significance After Mitigation
Hazards 1	Prevention of Impacts from Asbestos-Containing Materials	Dry sawing, sanding, or drilling will be avoided for the areas that contain asbestos. For areas that are suspected to contain asbestos, those areas will be sampled and analyzed before demolition.	Los Angeles County	During demolition	Upon completion of demolition	Less than Significant
Hazards 2	Prevention of Impacts from Asbestos-Containing Materials	Any damaged asbestos will be removed, repaired, encapsulated, or enclosed before any demolition activities that may impact the material.	Los Angeles County	During demolition	Upon completion of demolition	Less than Significant
Hazards 3	Prevention of Impacts from Asbestos-Containing Materials	Asbestos-containing material will be containerized and double-bagged for removal, disposal or transport and should be conducted in accordance with local, state, and federal regulations and/or guidance.	Los Angeles County	During demolition	Upon completion of demolition	Less than Significant
Hazards 4	Soil Sampling for Residual Pesticides	Subsurface soil sampling will be conducted to determine if residual chemicals associated with historical agricultural activities are present in the soil and in concentrations above action levels.	Los Angeles County	Prior to Ground Disturbance	Upon completion of site preparation	Less than Significant
Hazards 5	Prevention of Impacts from Residual Subsurface Chemicals from Past Agricultural Use of the Site	Soil remediation and/or worker protection measures will be implemented in the event that subsurface soil sampling results indicate that residual chemicals associated with historical agricultural activities are above action levels.	Los Angeles County	Before Initiation of Construction	Before Initiation of Construction	Less than Significant
Noise 1	Operation of Vehicles and Equipment Away from Head Start preschool and Residences	During northeast parking lot construction activities, the construction contractor will conduct truck loading, unloading, hauling and other operations so that noise is kept to a minimum on site to avoid generating noise near the Head Start preschool and residences along Simshaw Avenue.	Los Angeles County	During construction of new parking area	Weekly during earthwork at new parking area	Less than Significant
Noise 2	Equipment Noise Control	During northeast parking lot construction activities, all construction equipment will be outfitted with noise abatement devices no less effective than those provided on the original equipment. No equipment shall have an unmuffled exhaust.	Los Angeles County	During construction	Weekly during earthwork	Less than Significant

Mit. No.	Mitigation Measure	Method for Execution of Mitigation	Entity Responsible for Mitigation Monitoring	Completion Date	Frequency of Reporting	Significance After Mitigation
Noise 3	Noise Barriers	During northeast parking lot construction activities, the construction contractor will use and relocate temporary sound barriers, as required, to avoid excessive construction noise. Noise barriers can be made of heavy plywood or include moveable insulated sound blankets.	Los Angeles County	During construction	Weekly during earthwork	Less than Significant
Noise 4	Additional Noise Abatement	During northeast parking lot construction activities, the construction contractor shall implement appropriate additional noise abatement measures including at a minimum, but not limited to, changing the location of stationary construction equipment, turning off idling equipment, rescheduling construction activity, notifying adjacent residents in advance of construction work, or installing acoustic barriers around stationary construction noise sources.	Los Angeles County	During construction	Weekly during earthwork	Less than Significant
Noise 5	Compliance with Noise Control Ordinance	The construction contractor will comply with the Los Angeles County Noise Control Ordinance and, in consideration of nearby residences, avoid construction activities during evening, nighttime, weekend, and holiday periods, except as authorized by the County. Construction work shall be limited to the hours of 7:00 a.m. to 4:00 p.m., except as authorized by the County.	Los Angeles County	During construction	Weekly during earthwork	Less than Significant
Noise 6	Posting of Sign at Site and Respond to Noise Complaints	The construction contractor will post (on the construction site fencing) a phone number for noise complaints on the site, and address complaints within two (2) business days.	Los Angeles County	Prior to start of construction	Within 2 weeks of start of construction	Less than Significant
Noise 7	Noise Monitoring if Complaints Received/ Modify Construction Activities to Reduce Noise	In the event that community noise complaints are received, the construction contractor will ensure that construction equipment noise levels are monitored by a qualified noise/acoustics specialist. If monitored noise levels exceed County of Los Angeles standards, construction activities will be modified to reduce noise levels to within County standards.	Los Angeles County	During construction	Monthly	Less than Significant

EXHIBIT A

MITIGATION MONITORING REPORT FORM

MITIGATION MONITORING REPORT

SECTION 21081.6 PUBLIC RESOURCES CODE

County of Los Angeles Department of Public Works 900 S. Fremont Avenue, 5th Floor (Attn: Sam Shadab) Alhambra, CA 91803	Page ____ of ____

Project Name

EL CARISO REGIONAL PARK
SOCCER/FOOTBALL FIELDS, UNIVERSALLY ACCESSIBLE PLAYGROUND AND
PHASE II GENERAL IMPROVEMENTS

Location **13100 Hubbard Street** **Sylmar, CA 91342**	File No.

Mitigation Measure No. _____

Mitigation Description:

Monitoring Frequency	Reporting Requirement

Remarks

The information contained in this report is an independent evaluation based on my personal observations and information provided to me. In accordance with Section 21081.6 of the California Public Resources Code, I hereby certify under penalty of perjury that the information contained herein is true and correct to the best of my knowledge.

Name of Person Completing Form _____ Title _____

Signature _____ Date Signed _____

Form Received by: _____ Signature: _____

Title: _____ Department/Division: _____ Date Rec'd: _____

Compliance Acceptance: ☐ Yes ☐ No Date Rec'd by Report Recipient: _____

Mitigation Completed: ☐ Yes ☐ No Date Completed:

Monitoring Completed: ☐ Yes ☐ No Date Completed: ___

_____

Attach additional sheets if necessary.

APPENDIX B

CULTURAL RESOURCES INVESTIGATION REPORT

TECHNICAL MEMORANDUM

To: Alioune Dioum, P.E.
Project Manager, Project Management Division 1
County of Los Angeles Department of Public Works
900 South Fremont Avenue, 5th Floor
Alhambra, CA 91803-1331

Date: January 20, 2011

Subject: Cultural Resources Assessment for El Cariso Community Regional Park Universally Accessible Playground and Phase II General Improvements Project, Community of Sylmar, Los Angeles County, California

Prepared by: Kip Harper
Caprice "Kip" Harper, Senior Cultural Resources Specialist, Parsons

Reviewed and Concurred by: Rosemarie Crisologo
Rosemarie Crisologo, Principal Project Engineer, Parsons

INTRODUCTION

In November 2008, a cultural resources technical report was prepared in support of the El Cariso Gymnasium and Community Building Project (El Cariso Park Project) in accordance with the requirements of the California Environmental Quality Act (CEQA) (see Attachment 1). Subsequent to completion of the cultural resources technical report, Phase II general improvements were proposed for the project. Therefore, an addendum to the 2008 study is necessary to ensure that the proposed project complies with CEQA. This memorandum addresses the additional project components as they relate to cultural resources in the project area.

PROJECT DESCRIPTION

The County of Los Angeles Department of Public Works proposes to construct and operate a new universally accessible playground, soccer fields and park improvements at El Cariso Community Regional Park in the community of Sylmar (City of Los Angeles) in Los Angeles County, California (Figures 1 and 2). The universally accessible playground would be located in the center of the park, while the two soccer fields would be constructed on the east side of the park. The proposed facilities to be constructed are shown on Figure 3. The soccer fields would be constructed below grade to enable spectators to view the playing fields from above. The eastern parking lot will be improved with new medians, landscaping and bicycle racks. Park improvements also include: demolition of existing concrete walkways, picnic stations, a play area, comfort stations, and barbeque concrete pads; removal of 45 mature trees and 36 younger trees; and the addition of Americans with Disabilities Act (ADA)-compliant walkways and new exterior lighting of walkways. The anticipated maximum depth of excavation will be 8 feet at the soccer fields.

Figure 1. Location of the Proposed Project

Figure 2. El Cariso Community Regional Park

Figure 3. Aerial View of Proposed Improvements to El Cariso Community Regional Park

METHODS

BACKGROUND RESEARCH

The original records search was conducted in October 2008 and included a one-mile radius around the park boundaries. Because the records search is less than three years old, a new records search was not conducted. A review of the October 2008 records search indicates that only one resource, CA-LAN-799, a historic-period stone kiln feature was recorded within the one-mile radius, but more than 0.5 mile east of the eastern park boundary. A stone plaque dedicated to the firefighters who lost their lives in the Loop Fire was dedicated in 1996 is in the park, but is not a historic resource.

The geotechnical report prepared for the proposed project indicates that the upper 3.5 to 6 feet of soil at the area for the proposed soccer field consists of artificial fill (Koury Geotechnical Services, Inc., 2008). Geotechnical sampling indicates that the fill consists of silty sand with organic contents, and was found in loose to medium dense condition. Artificial fill is the result of human construction and is considered to have a low archaeological sensitivity because of the loss of associated sedimentological and positional data that results during the movement of the sediments.

SACRED LANDS FILE SEARCH AND NATIVE AMERICAN COORDINATION

A Sacred Lands File Search was conducted on October 15, 2008 for the original project and included the entire park boundary. The results of the Sacred Lands File Search were negative for the presence of Native American resources. The original Sacred Lands File Search was conducted less than three years ago; therefore, a new Sacred Lands File Search was not conducted for the proposed additions to the park.

Subsequent to the completion of the cultural resources assessment in November 2008, a letter was received from Steve Ortega of the Fernandeño Tatavium Band of Mission Indians on July 2, 2009 regarding the proposed project (Attachment 3). In the letter, Mr. Ortega stated the following:

> *After careful review of the information that you have provided, the Tribe have concluded that there may be immediate concern that cultural resources might be impacted during the course of soil disturbance. The area of the proposed project site is considered sensitive of Native American Cultural Resources due to the fact is has been a traditional habitation, near the Pacoima Watershed that was a prime resource for the Tataviam Indians. The Tataviam are believed to have arrived sometime around AD 450. Numerous archaeological sites have been documented in the Northeast San Fernando Valley area. Due to this extent the Tribe understands that there is a possibility of Cultural Resources that may be disturbed in the project. The Tribe also understands that the project area is an existing disturbed area, however with new building regulations creates a possibility of Cultural Resources being discovered.*

CULTURAL RESOURCES SURVEY

Parsons Senior Cultural Resources Specialist Caprice “Kip” Harper and Parsons Environmental Specialist Rosemarie Crisologo conducted an intensive-level pedestrian survey of the new project area on January 11, 2011. Ms. Harper has more than 14 years of experience in cultural resources management and exceeds the Secretary of the Interior’s Qualifications Standards. The objective of cultural resources survey was to observe site conditions for obvious archaeological and/or built environment cultural resources. The intensive pedestrian survey area included the area immediately south of the existing Head Start preschool facility, the existing eastern paved parking lot, and the playground areas in the eastern portion of the park. The park is fully landscaped, primarily with grass lawns and other nonnative ornamental plants, although there are some native sycamore trees in the park along with nonnative pines and eucalyptus trees. On the day of the survey, many younger nonnative pines appeared to have been recently planted in the project area.

Intensive-level survey methods consisted of a pedestrian survey in parallel transects spaced 15 meters (approximately 50 feet) apart in the unpaved grassy areas and other open areas within the project site. Visibility was poor (less than five percent) due to the presence of turf grass, a paved parking lot, walkways, concrete pads, and gravel play areas. Ms. Harper took photographs of the survey area using a Nikon Coolpix digital camera. All field notes, photographs, and records related to the current study are on file at the Parsons office in Pasadena, California.

SURVEY RESULTS

No archaeological resources were observed during the intensive-level pedestrian survey of the project area. The entire project site was disturbed during construction of the existing park and contains modern ornamental landscaping, lawns, concrete, gravel, picnic grounds, and playgrounds (Attachment 4, Photographs 1 and 2). Ground visibility was obscured to less than five percent by grass and other park components. Observations were consistent with observations made during the original survey in 2008. Therefore, the proposed project area has low sensitivity for encountering below-ground archaeological resources.

Photograph 1. Overview of location of proposed soccer fields, view to the northwest.

Photograph 2. Overview of the new playground location, view to the southeast.

No built environment resources dating to the period before the construction of the existing park were observed within the project area. The Head Start preschool and ubiquitous park facilities located north of the eastern parking lot were constructed after 1973 and do not meet the 45 year old threshold for evaluation and, consequently, cannot be considered eligible for listing in the California Register.

ASSESSMENT OF IMPACTS

Based on the above assessment, the records search failed to identify any previously recorded archaeological or built environment resources within the project area, no specific resources were identified as a result of the Sacred Lands File Search, and no archaeological or built environment resources were encountered during the cultural resources survey. For these reasons, the project does not have the potential to cause a significant impact to any resource that meets the definition of a “historical resource” or “unique archaeological resource” as defined by CEQA.

One Native American group considers the project area sensitive for cultural resources due to the proximity of Pacoima Watershed to the project site. However, no specific resources were identified as a result of the Sacred Lands File Search, Native American Coordination, or cultural resources survey.

RECOMMENDATIONS

No “historical resources” as defined in CEQA were identified within the proposed project area; however, one Native American group considers the project area to be sensitive for cultural resources. Therefore, Worker Cultural Awareness Training should be provided to construction workers in addition to standard archaeological mitigation measures to minimize impacts to unanticipated discovery of below-ground cultural resources or the unanticipated discovery of human remains as described below. With the addition of Worker Cultural Awareness Training to the standard archaeological mitigation measure, no additional cultural resources mitigation measures should be necessary.

WORKER CULTURAL AWARENESS TRAINING

Before initiation of ground-disturbing activities, a qualified archaeologist should conduct a short awareness training session for all construction workers and supervisory personnel. The training session would explain the importance of, and legal basis for, the protection of significant archaeological resources. Each worker would also learn the proper procedures to follow in the event cultural resources or human remains/burials are uncovered during ground-disturbing activities. These procedures include work curtailment or redirection and the immediate contact of their supervisor. It is recommended that this worker education session include visuals of artifacts (prehistoric and historic) that might be found in the project vicinity, and that it take place on-site immediately before the start of ground disturbance. The approximately 30- to 45-minute training session may be conducted on site by video, PowerPoint presentation, or related media.

UNANTICIPATED DISCOVERY OF CULTURAL RESOURCES

In the event that cultural resources are exposed during construction, work in the immediate vicinity of the find must stop until a qualified archaeologist can evaluate the significance of the find. Construction activities may continue in other areas. If the discovery proves significant under CEQA, additional work such as testing or data recovery may be warranted.

UNANTICIPATED DISCOVERY OF HUMAN REMAINS

The discovery of human remains is always a possibility during ground disturbances. State of California Health and Safety Code Section 7050.5 covers these findings. This section of the code states that no further disturbance shall occur until the Los Angeles County Coroner has made a determination of origin and disposition pursuant to Public Resources Code Section 5097.98. The County Coroner must be notified of the find immediately. If the human remains are determined to be prehistoric, the Coroner will notify the Native American Heritage Commission (NAHC), which will determine and notify a Most Likely Descendant (MLD). The MLD shall complete the inspection of the site within 48 hours of notification and may recommend scientific removal and nondestructive analysis of human remains and items associated with Native American burials.

REFERENCES

Koury Geotechnical Services, Inc.
2008 Preliminary Geotechnical Engineering Investigation for Proposed New Gymnasium / Community Center Building at El Cariso Park, 13198 Hubbard Street, Sylmar, California. On file at Parsons, 100 West Walnut, Pasadena California.

ATTACHMENTS

Attachment 1: Cultural Resources Assessment for the El Cariso Gymnasium and Community Building Project, November 2008.

Attachment 2: Correspondence from Steve Ortega of the Fernandeño Tatavium Band of Mission Indians dated July 2, 2009

ATTACHMENT 1:
CULTURAL RESOURCES ASSESSMENT FOR THE EL CARISO GYMNASIUM AND COMMUNITY BUILDING PROJECT, NOVEMBER 2008

Cultural Resources Assessment for the El Cariso Gymnasium and Community Building Project, Community of Sylmar, City of Los Angeles, Los Angeles County, California

Prepared for:

County of Los Angeles Department of Parks and Recreation
and
Parsons

Prepared by:

SWCA Environmental Consultants

November 2008

CULTURAL RESOURCES ASSESSMENT FOR THE EL CARISO GYMNASIUM AND COMMUNITY BUILDING PROJECT, COMMUNITY OF SYLMAR, CITY OF LOS ANGELES, LOS ANGELES COUNTY, CALIFORNIA

Prepared for

County of Los Angeles Department of Parks and Recreation
265 Cloverleaf Drive
Baldwin Park, California 91706

and

Parsons
Attention: Rosemarie Crisologo
100 W. Walnut Street, Suite B4
Pasadena, California 91124

Prepared by

Caprice D. (Kip) Harper, M.A., RPA,
Samantha Murray,
and
John Dietler, Ph.D., RPA

SWCA Environmental Consultants
625 Fair Oaks Avenue, Suite 190
South Pasadena, California 91030
(626) 240-0587
www.swca.com

USGS 7.5-Minute Topographic Quadrangle
San Fernando, CA 1966, (Photorevised 1988)

SWCA Project No. 14955

SWCA Cultural Resources Report Database No. 2008-456

November 2008

Keywords: CEQA, cultural resources survey, negative results

MANAGEMENT SUMMARY/ABSTRACT

Purpose and Scope: Parsons retained SWCA Environmental Consultants (SWCA) to conduct a cultural resources literature search, Native American Heritage Commission (NAHC) Sacred Lands File search, Native American consultation, cultural resources intensive-level survey, and to prepare this report in support of the proposed County of Los Angeles Department of Parks and Recreation El Cariso Gymnasium and Community Building Project in the community of Sylmar (City of Los Angeles), Los Angeles County, California. This study was completed under the provisions of the California Environmental Quality Act (CEQA). Public Resources Code (PRC) Section 5024.1, Section 15064.5 of the Guidelines, and Sections 21083.2 and 21084.1 of the Statutes of CEQA were also used as the basic guidelines for the cultural resources study (Governor's Office of Planning and Research 1998).

Dates of Investigation: The California Historical Resources Information System (CHRIS) records search was conducted by the South Central Coastal Information Center (SCCIC) on October 8, 2008. The California NAHC Sacred Lands File search was also initiated on October 8, 2008. The results of the Sacred Lands File search and a list of Native American contacts was received from the NAHC on October 15, 2008. Letters requesting information on known cultural resources were sent to the identified Native American contacts on October 22, 2008. SWCA staff conducted an intensive-level cultural resource survey on October 23, 2008.

Summary of Findings: Twenty-three prior cultural resource studies have been conducted within a 1-mile radius of the project area. The records and literature search indicated that no previously recorded cultural resources are located in the project area. The NAHC Sacred Lands File search revealed that no Native American cultural resources are known in the project area. SWCA's intensive-level survey did not identify any cultural resources within the project area. Additionally, the preliminary geotechnical report determined that the upper 3.5 to 6 feet of sediments within the project area consist of artificial fill. The results of the study indicate that there is a low potential to encounter subsurface archaeological deposits.

Investigation Constraints: Most of the project area has been developed within the last 30 years and has been largely disturbed by human activity. The archaeological intensive-level survey was partially constrained by previous disturbances such as grading, landscaping, and the construction of paved parking lots, tennis courts, and buildings.

Recommendations: Because no "historical resources" as defined in CEQA were identified in the proposed project area, no additional cultural resources mitigation measures should be necessary. Standard archaeological mitigation measures to minimize impacts to unanticipated discovery of below-ground cultural resources or the unanticipated discovery of human remains are described below.

In the event that cultural resources are exposed during construction, work in the immediate vicinity of the find must stop until a qualified archaeologist can evaluate the significance of the find. Construction activities may continue in other areas. If the discovery proves significant under CEQA, additional work such as testing or data recovery may be warranted. The methods employed during monitoring and/or recovery of archaeological resources should be documented in a report of findings.

The discovery of human remains is always a possibility during ground disturbances; State of California Health and Safety Code Section 7050.5 addresses these findings. This code section states that no further disturbance shall occur until the Los Angeles County Coroner (the Coroner) has made a determination of origin and disposition pursuant to PRC Section 5097.98. The Coroner must be notified of the find immediately. If the human remains are determined to be prehistoric, the Coroner will notify the Native American Heritage Commission, which will determine and notify a Most Likely Descendant (MLD). The MLD shall complete the inspection of the site within 48 hours of notification and may recommend scientific removal and nondestructive analysis of human remains and items associated with Native American burials.

Disposition of Data: This report and any subsequent related reports will be filed with Parsons; SCCIC at California State University, Fullerton; and with SWCA Environmental Consultants. All field notes, photographs, and records related to the current study are on file at the SWCA South Pasadena, California, office.

TABLE OF CONTENTS

MANAGEMENT SUMMARY/ABSTRACT ..... **i**
INTRODUCTION **1**
Project Description 1
LAWS, ORDINANCES, REGULATIONS, AND STANDARDS **4**
State 4
Local 5
City of Los Angeles 5
ENVIRONMENTAL SETTING **7**
Natural Setting 7
CULTURAL SETTING **8**
Prehistoric Overview 8
Early Man Period /San Dieguito/Paleo-Coastal (ca. 10,000–6000 B.C.) 10
Milling Stone Period (ca. 6000–3000/1000 B.C.) 10
Intermediate Period (ca. 3000/1000 B.C.–A.D. 500/650) 12
Late Prehistoric Period (ca. A.D. 500/650–A.D. 1769) 13
Ethnographic Overview 14
Gabrielino/Tongva 14
Chumash 16
Tataviam 16
Historic Overview 17
Spanish Period (1769–1822) 17
Mexican Period (1822–1848) 17
American Period (1848–Present) 17
City and County of Los Angeles 18
Local History 19
BACKGROUND RESEARCH **19**
Literature Search 19
Previous Cultural Resources Studies within 1 Mile of the Project Area 20
Previously Recorded Cultural Resources within 1 Mile of the Project Area 21
Sacred Lands File Search and Native American Consultation 22
METHODS **22**
Archaeological Survey 22
RESULTS AND IMPACT CONSIDERATIONS **22**
Archaeological survey 22
RECOMMENDATIONS **24**
Unanticipated Discovery of Cultural Resources 24
Unanticipated Discovery of Human Remains 24
REFERENCES **25**

LIST OF FIGURES

Figure 1. Project Location Map 2
Figure 2. Preliminary Site Layout for Improvements to El Cariso Community Regional Park 3
Figure 3. Cultural Chronologies for Southern California 9

LIST OF TABLES

Table 1. Previously Conducted Cultural Resources Studies within 1 Mile of the Project Area 20
Table 2. Previously Recorded Cultural Resources within 1 Mile of the Project Area 21

LIST OF PHOTOGRAPHS

Photograph 1. Existing administration building located south of the parking lot, view to the south. 23
Photograph 2. Tennis courts located north of the parking lot, view to the north. 23

APPENDICES

Appendix A: South Central Coastal Information Center Bibliography
Appendix B: Native American Consultation

INTRODUCTION

Parsons retained SWCA Environmental Consultants (SWCA) to conduct a preliminary cultural resources literature search and initial Native American consultation, and to perform a cultural resources site visit in support of the proposed El Cariso Gymnasium and Community Building Project in the community of Sylmar (City of Los Angeles), Los Angeles County, California.

This study was completed under the provisions of the California Environmental Quality Act (CEQA). Public Resources Code (PRC) Section 5024.1, Section 15064.5 of the Guidelines, and Sections 21083.2 and 21084.1 of the Statutes of CEQA were also used as the basic guidelines for the cultural resources study (Governor's Office of Planning and Research 1998). PRC Section 5024.1 requires the identification and evaluation of cultural resources to determine their eligibility for listing in the California Register of Historical Resources (CRHR). The CRHR is a listing of the state's historical resources, and indicates which properties are to be protected from substantial adverse change, as defined in CEQA, to the extent prudent and feasible.

Caprice D. (Kip) Harper, M.A., RPA (Cultural Resources Project Manager), managed the project, requested the records and literature review at the SCCIC, initiated Native American consultation, and prepared this report; John Dietler, Ph.D., RPA (Principal Investigator), reviewed this report; Paul Shattuck (Cultural Resources Specialist) conducted the intensive-level survey of the project area and took all of the photographs found in this report; David Cao (GIS Specialist) created all of the figures found in this report; Samantha Murray (Project Coordinator) assisted in the preparation of the report; and Michelle Treviño (Technical Editor) edited the report.

PROJECT DESCRIPTION

The project area is located at 13100 Hubbard Street between Simshaw and Eldridge Avenues, approximately 1 mile east of the Foothill Freeway (Interstate 210) in the community of Sylmar and within the boundaries of the City of Los Angeles in Los Angeles County, California. Figure 1 shows the project location on the U.S. Geologic Survey (USGS) San Fernando, California 7.5-minute quadrangle.

The proposed project involves the construction and operation of a new gymnasium and community building at the El Cariso Community Regional Park in the community of Sylmar. The proposed project would include demolition of the existing administration building, construction of a new 15,000-square-foot gymnasium and community center, and the construction of an additional 57 parking spaces as well as new medians and landscaping improvements within the parking lot, upgrades to walkways in compliance with the Americans with Disabilities Act (ADA) requirements, and upgraded exterior lighting for the new walkways. The purpose of the project is to improve recreational and community opportunities in the Sylmar area by providing a new facility for use by the general public. The gymnasium and community building would primarily play host to athletic events and after-school programs.

Figure 2 shows a preliminary site layout for the improvements that are to be performed. The estimated total area to be disturbed is approximately 2 acres. Construction would be limited to the southwestern portion of the park. The maximum depth of excavation is five feet below the existing ground surface. While some temporary detours and lane closures may be required, closures of entire roads would not be expected during the construction period. Construction vehicles and equipment would be staged on-site in the existing parking area. Construction of the proposed project would require approximately 13 months (estimated to start construction in November 2009 and complete by December 2010).

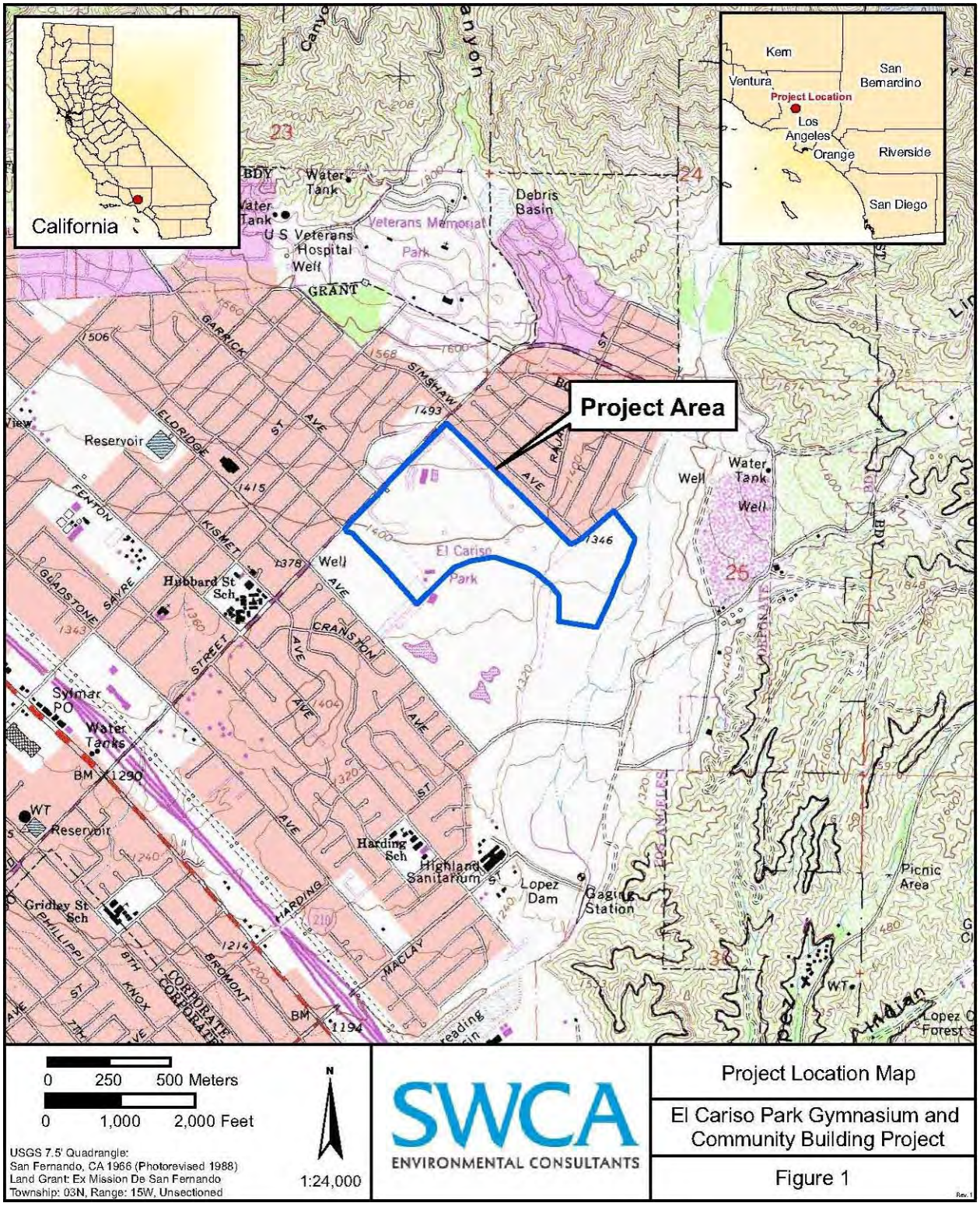


Figure 1. Project Location Map

Figure 2. Preliminary Site Layout for Improvements to El Cariso Community Regional Park

LAWS, ORDINANCES, REGULATIONS, AND STANDARDS

This section includes a discussion of the applicable laws, ordinances, regulations, and standards governing cultural resources, which must be adhered to prior to and during construction of the proposed El Cariso Gymnasium and Community Building Project. State and local ordinances are included.

STATE

CEQA requires a lead agency to determine whether a project may have a significant effect on historical resources. If it can be demonstrated that a project will cause damage to a unique archaeological resource, the lead agency may require reasonable efforts be made to permit any or all of these resources to be preserved in place or left in an undisturbed state. To the extent that they cannot be left undisturbed, mitigation measures are required (Section 21083.2[a], [b], and [c]). Section 21083.2(g) describes a *unique archaeological resource* as an archaeological artifact, object, or site about which it can be clearly demonstrated that without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

1) Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.
2) Has a special and particular quality such as being the oldest of its type or the best available example of its type.
3) Is directly associated with a scientifically recognized important prehistoric or historic event or person.

A *historical resource* is a resource listed in, or determined to be eligible for listing, in the CRHR (California Register, Section 21084.1), a resource included in a local register of historical resources (Section 15064.5[a][2]), or any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant (Section 15064.5[a][3]).

PRC Section 5024.1, Section 15064.5 of the Guidelines, and Sections 21083.2 and 21084.1 of the Statutes of CEQA were used as the basic guidelines for the cultural resources study. PRC Section 5024.1 requires evaluation of historical resources to determine their eligibility for listing in the CRHR. The purpose of the register is to maintain listings of the state's historical resources and to indicate which properties are to be protected from substantial adverse change. The criteria for listing resources on the CRHR were expressly developed to be in accordance with previously established criteria developed for listing in the National Register of Historic Places (NRHP), enumerated below.

According to PRC Section 5024.1(c)(1–4), a resource is considered historically significant if it retains "substantial integrity" and meets at least one of the following criteria:

1) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
2) Is associated with the lives of persons important in our past;
3) Embodies the distinctive characteristics of a type, period, region or method of installation, or represents the work of an important creative individual, or possesses high artistic values; or
4) Has yielded, or may be likely to yield, information important in prehistory or history.

Impacts to significant cultural resources that affect the characteristics of any resource that qualify it for the NRHP or adversely alter the significance of a resource listed on or eligible for listing in the CRHR are considered a significant effect on the environment. Impacts to significant cultural resources from the proposed project are considered significant if the project physically destroys or damages all or part of a resource, changes the character of the use of the resource or physical feature within the setting of the resource which contribute to its significance, or introduces visual, atmospheric, or audible elements that diminish the integrity of significant features of the resource. These impacts 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, Section 15064.5 [b][1], 2000). Material impairment is defined as demolition or alteration "in an adverse manner [of] those characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for inclusion in, the California Register…" (CEQA Guidelines Section 15064.5[b][2][A]).

The disposition of burials falls first under the general prohibition on disturbing or removing human remains under California Health and Safety Code 7050.5. More specifically, remains suspected to be Native American are treated under CEQA at Section 15064.5 and cite language found at PRC Section 5097.98 that illustrates the process to be followed in the event that remains are discovered. If human remains are discovered during the construction of the El Cariso Gymnasium and Community Building Project, no further disturbance to the site shall occur and the Los Angeles County Coroner must be notified. If the coroner determines the remains to be Native American, the coroner shall notify the Native American Heritage Commission (NAHC) within 48 hours. The NAHC shall identify the person or persons it believes to be the Most Likely Descendant (MLD) of the deceased. The MLD may then make recommendations as to the disposition of the remains.

LOCAL

City of Los Angeles

The City of Los Angeles General Plan provides an overview of the various federal, state and local regulations that have been put in place to protect archaeological sites and resources. The following paragraphs have been taken directly from Resource Conservation and Management Section of the City of Los Angeles General Plan (2001: II-3–II-6):

> **Site Protection**
>
> Although the state general plan law calls for mapping of the sites, all mapping of pre-historic sites is confidential, pursuant to California Government Code Section 6254.10. This is to protect sites from disturbance, scavenging and vandalism. The federal Archaeological Resources Protection Act of 1979 (Public Law 96-95) protects archaeological resources and sites on federal and Indian lands, including requirements for issuance of permits by federal land managers to excavate or remove archaeological resources. The Native American Graves and Repatriation Act (1990) and the Native American Heritage Act (1984 and 1992) provide guidelines for protection of Native American remains and artifacts.
>
> The federal Archaeological Resources Protection Act of 1979 (Public Law 96-95) protects archaeological resources and sites on federal and Indian lands, including requirements for issuance of permits by federal land managers to excavate or remove archaeological resources. The Native American Graves and Repatriation Act (1990) and the Native American Heritage Act (1984 and 1992) provide guidelines for protection of Native American remains and artifacts.

The California Environmental Quality Act (CEQA) provides guidelines for identification and protection of archaeological sites and artifacts as a part of local development permit processing. CEQA guidelines define an archaeological resource as "significant," i.e., to be protected if:

(1) it is associated with an event or person of recognized significance to California or American history or of recognized scientific importance in pre-history, including culturally significant Native American sites;

(2) it can provide information that is of demonstrable public interest and is useful in addressing scientifically consequential and reasonable archaeological research questions;

(3) it has a special or particular quality, such as the oldest, best, largest or last surviving example of its kind;

(4) it is at least one hundred years old and possesses substantial stratigraphic integrity; or

(5) it involves important research questions that historical research has shown can be answered only with archaeological methods.

If it is determined that a development project may disrupt or damage such a site, the project is required to provide mitigation measures to protect the site or enable study and documentation of the site, including funding of the study by the applicant. The city's environmental guidelines require the applicant to secure services of a bona fide archaeologist to monitor excavations or other subsurface activities associated with a development project in which all or a portion is deemed to be of archaeological significance. Discovery of archaeological materials may temporarily halt the project until the site has been assessed, potential impacts evaluated and, if deemed appropriate, the resources protected, documented and/or removed.

Under CEQA, discovery of human remains requires evaluation by the county coroner of the nature of the remains and cause of death. If the remains are determined to be of Native American origin, the Native American Heritage Commission is asked to determine the descendants who are to be notified or, if unidentifiable, to establish procedures for burial.

The state-designated repository in the Los Angeles area for archaeological data is the South Central Coastal Information Center. Reports concerning archaeological investigations are to be filed with the center. Other academic institutions, research facilities and museums in the area also have archaeological resource information and expertise.

Conclusion: The city has a primary responsibility in protecting significant archaeological and paleontological resources.

Continuing issues: loss of or damage to archaeological and paleontological sites due to development, unauthorized removal and vandalism.

Archaeological and paleontological objective, policy and program:

Objective: protect the city’s archaeological and paleontological resources for historical, cultural, research and/or educational purposes.

Policy: continue to identify and protect significant archaeological and paleontological sites and/or resources known to exist or that are identified during land development, demolition or property modification activities.

Program: permit processing, monitoring, enforcement and periodic revision of regulations and procedures.

Responsibility: departments of Building and Safety, City Planning and Cultural Affairs and/or the lead agency responsible for project implementation.

ENVIRONMENTAL SETTING

El Cariso Community Regional Park (the project area) is located at 13100 Hubbard Street in the community of Sylmar within the boundaries of the City of Los Angeles, in Los Angeles County, California. The project area is generally bounded by Hubbard Street to the northwest, Simshaw Avenue to the northeast, Eldridge Avenue to the southeast, and the Angeles National Forest to the northwest. The project area is approximately 30 miles northwest of downtown Los Angeles, and approximately 1 mile north of the Foothill Freeway (Interstate 210). The project area is at an elevation of approximately 1,346 to 1,493 feet above mean sea level (msl).

NATURAL SETTING

The project area is situated in the northwest portion of the Los Angeles basin, a sedimentary basin that includes the Santa Monica Mountains, the San Fernando Valley, and the Verdugo Mountains (Wright 1991). The Los Angeles basin is approximately 50 miles long and 20 miles wide and is bounded by the Santa Monica Mountains to the north; the Elysian, Repetto, and Puente Hills to the east; the Santa Ana Mountains and San Joaquin Hills to the southeast; the Coyote Hills to the northeast; and the Palos Verdes peninsula to the southwest (Yerkes et al. 1965). The easternmost portion of the project area is underlain by Holocene age Quaternary alluvial sediments. These sediments consist of unconsolidated gravel, silt, sand, and clay that were deposited in major stream channels. Older alluvial sediments of Pleistocene age may be present underneath the younger alluvium. According to the results of the preliminary geotechnical report, artificial fill was encountered at a depth of 6 feet in the three boring tests in the vicinity of the proposed Gymnasium/Community Building Center and at 3.5 to 6 feet in the vicinity of the proposed soccer fields (Ariannia 2008:5).

The nearest major natural water feature is the Pacoima Wash, one of the eight major tributaries of the Los Angeles River. The Pacoima Wash originates a few miles north of the project area in the Angeles National Forest. Other nearby tributaries in the San Fernando Valley include the Burbank Western Channel, the Tujunga Wash, and the Verdugo Wash (Los Angeles County Department of Public Works 2008). The Pacoima Wash flows into several nearby dams, the closest of which is Lopez Dam, located less than 0.5 mile south of the project area, and the Pacoima Dam, which is situated approximately 1.5 miles north of the project area in the Angeles National Forest.

The area surrounding the project is characterized primarily by residential and commercial development. The entire project area naturally slopes towards the south, but has been graded to create relatively flat areas. The project area is fully landscaped, primarily with grass lawns and other nonnative ornamental plants. There are some native oaks and sycamore trees in the park along with nonnative pines and eucalyptus trees. Although the project area has been modified by human use and development, the project area can still be generally classified as a California Coastal Range. Typical California Coastal Range vegetation can be found in some of the surrounding, relatively undisturbed areas within the Angeles National Forest. Vegetation within the California Coastal Range typically consists of alternating patches of trees called the sclerophyll forest (including California live oak, canyon live oak, interior live oak, tanoak, California laurel, Pacific madrone, golden chinkapin, and Pacific bayberry) and chaparral

(including at least 40 species of evergreen shrubs). Chaparral is the most dominant and generally occupies dry, south-facing slopes, but can extend over a vast area and thrive within a variety of different habitats. Sagebrush and grassland communities are also common in the interior valleys (Bailey 1995).

CULTURAL SETTING

PREHISTORIC OVERVIEW

Numerous chronological sequences have been devised to understand cultural changes for various areas within southern California in the past century (Figure 3). Building on early studies and focusing on data synthesis, Wallace (1955, 1978) developed a prehistoric chronology for the southern California coastal region that is still widely used today and is applicable to near-coastal and many inland areas, including western Riverside County. Four periods are presented in Wallace's prehistoric sequence: Early Man, Milling Stone, Intermediate, and Late Prehistoric. As noted by Moratto (1984:159), Wallace's (1955) synthesis lacked chronological precision due to the lack of absolute dates at the time of its creation, but remains generally valid today.

In addition to Wallace's classic summary, a regional synthesis developed by Warren (1968) will be referred to in the following discussion. This synthesis is supported by a larger archaeological database for southern California, which includes the advent and increased use of radiocarbon dating after the 1950s. Using the concepts of cultural ecology and cultural tradition, Warren (1968) proposed a series of six prehistoric traditions. Three of these traditions, the San Dieguito Tradition, Encinitas Tradition, and Campbell Tradition, correlate with Wallace's Early Man, Milling Stone, and Intermediate Periods. The Chumash Tradition, Takic Tradition (formerly "Shoshonean"), and Yuman Tradition are represented within Wallace's Late Prehistoric Period. As noted further, these ecologically based traditions are applicable to specific regions within southern California.

Some revisions have been made to Wallace's 1955 synthesis using radiocarbon dates and projectile point assemblages (e.g., Koerper and Drover 1983; Mason and Peterson 1994; Koerper et al. 2002). The summary of prehistoric chronological sequences for southern California coastal and near-coastal areas presented below is a composite of information in Wallace (1955) and Warren (1968), as well as more recent studies, including Koerper and Drover (1983). The chronology formulated by Koerper and Drover (1983) is based on the results of their excavations at a multi-component village site (CA-ORA-119-A) near the University of California, Irvine, in Orange County.

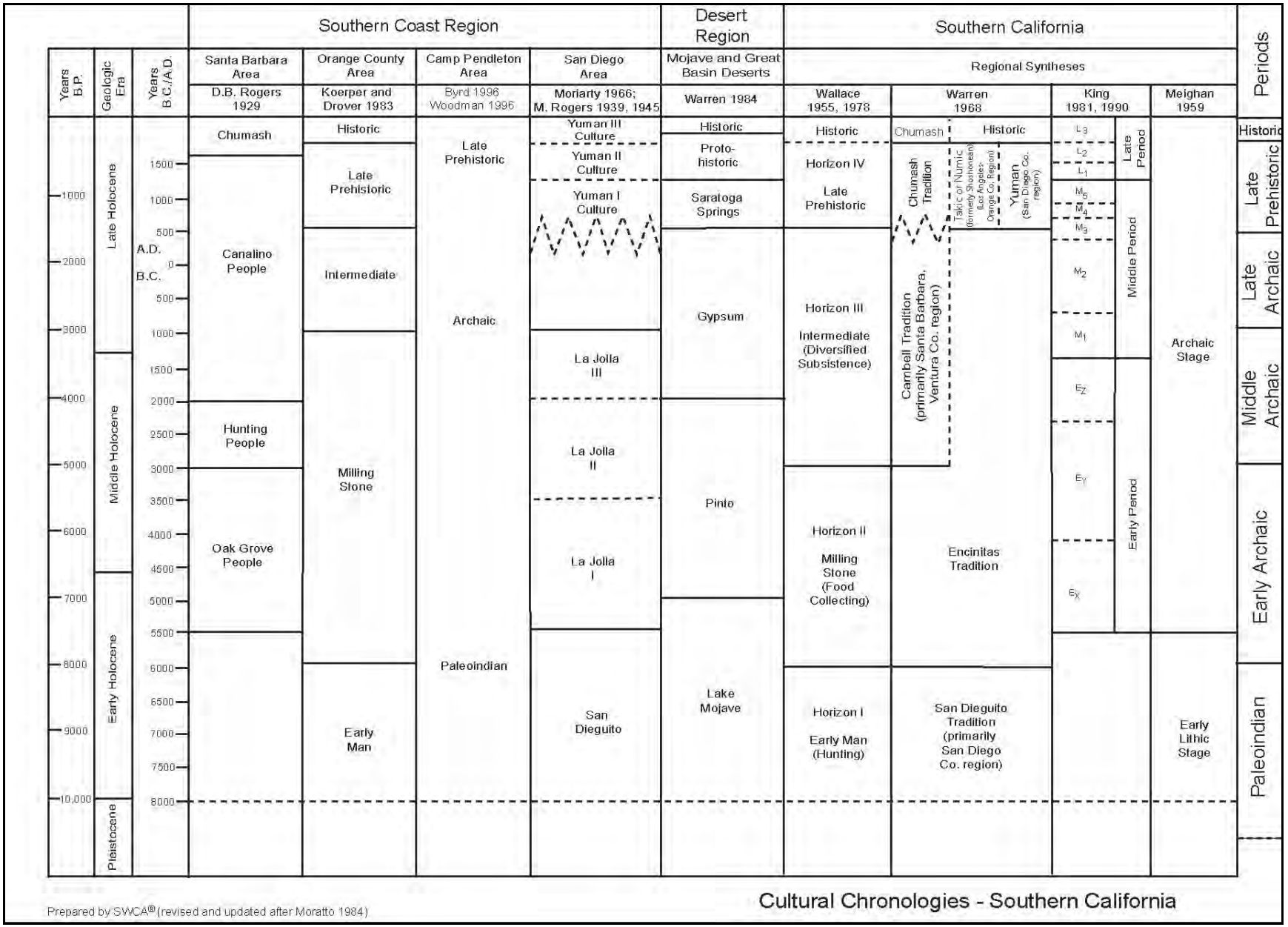


Figure 3. Cultural Chronologies for Southern California

Early Man Period /San Dieguito/Paleo-Coastal (ca. 10,000–6000 B.C.)

When Wallace defined the Early Man Period in the mid-1950s, there was little evidence of human presence on the southern California coast prior to 6000 B.C. Archaeological work in the intervening years has identified numerous older sites dating prior to 10,000 years ago, including ones on the coast and Channel Islands (e.g., Erlandson 1991; Johnson et al. 2002; Moratto 1984; Rick et al. 2001:609). The earliest accepted dates for occupation are from two of the northern Channel Islands, located off the coast of Santa Barbara. On San Miguel Island, Daisy Cave clearly establishes the presence of people in this area about 10,000 years ago (Erlandson 1991:105). On Santa Rosa Island, human remains have been dated from the Arlington Springs site to approximately 13,000 years ago (Johnson et al. 2002).

In what is now Orange County, there are sites dating to 9,000 to 10,000 years ago (Macko 1998a:41; Mason and Peterson 1994:55–57; Sawyer and Koerper 2006). Known sites dating to the Early Man Period are rare in western Riverside County. One exception is the Elsinore site (CA-RIV-2798-B), which has deposits dating as early as 6630 calibrated (cal) B.C. (Grenda 1997:260).

Recent data from coastal and inland sites during this period indicate that the economy was a diverse mixture of hunting and gathering, with a major emphasis on aquatic resources in many coastal areas (e.g., Jones et al. 2002) and on Pleistocene lakeshores in eastern San Diego County (see Moratto 1984:90–92).

A Paleo-Coastal Tradition was proposed and recently referenced to highlight the distinctive marine and littoral focus identified within the southern California coastal archaeological record prior to the emergence of the Encinitis Tradition during the succeeding Milling Stone Period (Mason and Peterson 1994:57–58; Moratto 1984:104). At coastal sites, there is abundant evidence that marine resources such as fish, sea mammals, and shellfish were exploited during the Paleo-Coastal.

At near-coastal and inland sites, it is generally considered that an emphasis on hunting may have been greater during the Early Man Period than in later periods, although few Clovis-like or Folsom-like fluted points have been found in southern California (e.g., Dillon 2002; Erlandson et al. 1987). In Riverside County, only one isolated fluted point has been identified on the surface of a site in the Pinto Basin in the central part of the county (Campbell and Campbell 1935; Dillon 2002:113). Common elements in many San Dieguito Tradition sites include leaf-shaped bifacial projectile points and knives, stemmed or shouldered projectile points (e.g., Silver Lake and Lake Mojave series), scrapers, engraving tools, and crescents (Warren 1967:174–177; Warren and True 1961:251–254). Use of the atlatl (spear-throwing stick) during this period facilitated launching spears with greater power and distance. Subsistence patterns shifted around 6000 B.C. coincident with the gradual desiccation associated with the onset of the Altithermal, a warm and dry period that lasted approximately 3000 years. After 6000 B.C., a greater emphasis was placed on plant foods and small animals.

Milling Stone Period (ca. 6000–3000/1000 B.C.)

The Milling Stone Period of Wallace (1955, 1978) and the Encinitas Tradition of Warren (1968) are characterized by an ecological adaptation to collecting and by the dominance of the principal ground stone implements generally associated with the horizontal motion of grinding small seeds, namely milling stones (metates, slabs) and handstones (manos), which are typically shaped. Milling stones occur in large numbers for the first time, and are even more numerous near the end of this period. As testified by their toolkits and shell middens in coastal sites, people during this period practiced a mixed food procurement strategy. Subsistence patterns varied somewhat as groups became better adapted to their regional or local environments.

Milling Stone Period sites are common in the southern California coastal region between Santa Barbara and San Diego, and at many inland locations, including the Prado Basin in western Riverside County and the Pauma Valley in northeastern San Diego County (e.g., Herring 1968; Langenwalter and Brock 1985; Sutton 1993; Sawyer and Brock 1999; True 1958). Wallace (1955, 1978) and Warren (1968) relied on several key coastal sites to characterize the Milling Stone Period and Encinitas Tradition, respectively. These include the Oak Grove Complex in the Santa Barbara region, Little Sycamore in southwestern Ventura County, Topanga Canyon in the Santa Monica Mountains, and La Jolla in San Diego County. The Encinitas Tradition was proposed to extend into San Diego County, where it apparently continued alongside the following Campbell Tradition, which occurred primarily in the Santa Barbara–Ventura County region beginning around 3000 B.C.

Of the numerous Milling Stone Period sites identified in the region, the most well known is the Irvine site (CA-ORA-64), which has occupation levels dating between ca. 6000 and 4000 B.C. (Drover et al. 1983; Macko 1998b). Along coastal Orange County, Koerper and Drover (1983:11) mark the transition at the end of the Milling Stone around 1000 B.C., whereas Wallace's mid-1950s scheme has the period ending at 3000 B.C. Based on radiocarbon dates from the Newport Coast Archaeological Project (NCAP), Mason and Peterson (1994) propose a timeline for the Milling Stone similar to that advanced by Koerper and Drover (1983). The chronological schemes advanced for coastal Orange County also apply to many southern California near-coastal and inland areas, including much of western Riverside County.

During the Milling Stone Period and Encinitas Tradition, stone chopping, scraping, and cutting tools are abundant, and generally made from locally available raw material. Projectile points, rather large and generally leaf-shaped, and bone tools, including awls, are generally rare. The large points are associated with the spear, and probably with an atlatl. Items made from shell, including beads, pendants, and abalone dishes, are generally rare. Evidence of weaving or basketry is present at a few sites. Cogged stones and discoidals are often purposefully buried or "cached," and are found mainly in sites along the coastal drainages from southern Ventura County southward, with a few specimens inland at Cajon Pass, and in abundance at some Orange County sites (Dixon 1968:63; Moratto 1984:149). Kowta (1969) attributes the presence of numerous scraper-planes in Milling Stone sites to the preparation of agave or yucca for food or fiber. The mortar and pestle, associated with the vertical motion of pounding foods, such as acorns, were introduced during the Milling Stone, but are not common.

Two types of artifacts that are considered diagnostic of the Milling Stone Period are the cogged stone and discoidal, most of which have been found within sites dating between 4000 and 1000 B.C. (Moratto 1984:149). The cogged stone is best described as a ground stone object that has variant forms of gear-like teeth on the perimeter, which is produced from a variety of materials. The function of cogged stones is unknown, but has been interpreted as ritualistic or ceremonial in nature (Eberhart 1961:367; Dixon 1968:64–65). Similar to cogged stones, discoidals are found in the archaeological record subsequent to the introduction of the cogged stone. Both discoidals and cogged stones have been found together at some Orange County sites, such as CA-ORA-83/86/144 (Van Bueren et al. 1989:772), CA-ORA-950 (Ron Bissell, personal communication, 1999), and Los Cerritos Ranch (Dixon 1975 in Moratto 1984:150).

Koerper and Drover (1983) suggest that Milling Stone Period sites represent migratory settlement patterns of hunters and gatherers who used marine resources in the winter and inland resources for the remainder of the year. More recent research indicates that residential bases or camps were moved to resources in a seasonal round (de Barros 1996; Koerper et al. 2002; Mason et al. 1997), or that some sites were occupied year-round, with portions of the village population leaving at certain times of the year to exploit available resources (Cottrell and Del Chario 1981). Regardless of settlement system, it is clear that subsistence strategies during the Milling Stone Period included hunting of small and large terrestrial mammals, sea mammals, and birds; collecting shellfish and other shore species; extensive use of seed and plant products; the processing of yucca and agave; and nearshore fishing with barbs or gorges (Kowta 1969; Reinman 1964). As evidenced by the abundant milling equipment found at these sites throughout the region, the processing of small seeds was an important component of their subsistence practices.

Characteristic mortuary practices during the Milling Stone Period or Encinitas Tradition include extended and loosely flexed burials, some with red ochre, and few grave goods such as shell beads and milling stones interred beneath cobble or milling stone cairns. "Killed" milling stones, exhibiting holes, may occur in the cairns. Reburials are common in the Los Angeles County area, with flexed burials oriented to the north common in Orange and San Diego Counties. Evidence of wattle-and-daub structures and walls have been identified at some sites in the San Joaquin Hills and Newport Coast area spanning all cultural periods (Mason et al. 1991, 1992, 1993; Koerper 1995; Strudwick 2004; Sawyer 2006).

Perhaps one unique trait of the Milling Stone Period, isolated to a small region of coastal Orange County, is the presence of a rudimentary ceramic industry involving the creation of fired clay effigies, figurines, and small crude thick-walled pottery vessels (Drover 1971, 1975; Drover et al. 1983; Macko 1998b; Sawyer and Koerper 2006). The figurines have been found at the Irvine site (CA-ORA-64) on Newport Bay, and a collapsed rock shelter site (CA-ORA-1405-B) within Muddy Canyon.

Intermediate Period (ca. 3000/1000 B.C.–A.D. 500/650)

Following the Milling Stone, Wallace's Intermediate Period and Warren's Campbell Tradition in Santa Barbara, Ventura, and parts of Los Angles Counties date from approximately 3000 B.C. to A.D. 500 and are characterized by a shift toward a hunting and maritime subsistence strategy, along with a wider use of plant foods. The Campbell Tradition (Warren 1968) incorporates David B. Rogers' (1929) Hunting Culture and related expressions along the Santa Barbara coast. In the San Diego region, the Encinitas Tradition (Warren 1968) and the La Jolla Culture (Moriarty 1966; M. Rogers 1939, 1945) persist with little change during this time.

Temporal placement of the Intermediate is generally recognized as ranging between 3000 B.C. and A.D. 500 (Wallace 1955; Warren 1968). In Orange County, researchers have estimated the Intermediate Period began around 1000 B.C. and lasted until ca. A.D. 650 (3000–1300 B.P.) (Koerper and Drover 1983:11; Mason and Peterson 1994). A more recent evaluation, based on some 1,300 calibrated radiocarbon dates from sites in Orange County, suggests a date of 1400 B.C. for the start of the Intermediate, marked by single-piece circular fishhooks and coinciding with the transition from the Middle to Late Holocene (Koerper et al. 2002:67–68). Another researcher sees the Intermediate not as a cultural period, but as a transition between the Milling Stone and the later Late Prehistoric Period based on his investigations at sites in the Bonita Mesa area near upper Newport Bay (Peterson 2000). This idea may simply reflect sub-regional or area-specific trends at sites in and around Newport Bay rather than an accurate depiction of the cultural period dynamics in Orange County and the greater southern California region.

Although sites in the Prado Basin and Perris Reservoir area have cultural components that date to this period (Bettinger 1974:160; Grenda 1995:25), the Intermediate Period in western Riverside County is still not as well understood as it is in coastal areas (e.g., Van Bueren et al. 1986:11). The following discussion is thus mainly based on information gathered from coastal and near-coastal sites in southern California.

During the Intermediate Period, there is a pronounced trend toward greater adaptation to regional or local resources. For example, the remains of fish, land mammals, and sea mammals are increasingly abundant and diverse in sites along the California coast in the referenced region. Related chipped stone tools suitable for hunting are more abundant and diversified, and shell fishhooks become part of the toolkit in this period. Larger knives, a variety of flake scrapers, and drill-like implements are common during this period. Projectile points include large side-notched, stemmed, and lanceolate or leaf-shaped forms. Koerper and Drover (1983) consider Gypsum Cave and Elko series points, which have a wide distribution in the Great Basin and Mojave deserts between ca. 2000 B.C. and A.D. 500, to be diagnostic of this period. Bone tools, including awls, are more numerous than in the preceding period, and the use of asphaltum adhesive is now common.

Mortars and pestles become more common during this period, gradually replacing manos and metates as milling stone implements. In addition, hopper mortars and stone bowls, including steatite vessels, appear to enter the toolkit at this time. This shift appears to correlate with a diversification in subsistence resources. Many archaeologists believe this change in milling stones signals a shift away from the processing and consumption of hard seed resources to the increasing importance of the acorn (e.g., Glassow et al. 1988; True 1993). It has been argued that mortars and pestles may have been used initially to process roots (e.g., tubers, bulbs, and corms associated with marshland plants), with acorn processing beginning at a later point in prehistory (Glassow 1997:86) and continuing to European contact.

Characteristic mortuary practices during the Intermediate Period include fully flexed burials, placed face down or face up, and oriented toward the north or west (Warren 1968:2–3). Red ochre is common, and abalone shell dishes are infrequent. Interments sometimes occurred beneath cairns or broken artifacts. Shell, bone, and stone ornaments, including charmstones, are more common than in the preceding Encinitas Tradition. Some later sites include *Olivella* shell and steatite beads, mortars with flat bases and flaring sides, and a few small points. The broad distribution of steatite from the Channel Islands and obsidian from distant inland regions, among other items, attest to the growth of trade, particularly during the later part of this period.

Late Prehistoric Period (ca. A.D. 500/650–A.D. 1769)

Wallace (1955, 1978) places the beginning of the Late Prehistoric around A.D. 500. In Orange County, the start of this period is recognized at a slightly later date, ca. A.D. 650 (Koerper and Drover 1983; Mason and Peterson 1994). In all chronological schemes for southern California, the Late Prehistoric Period lasts until European contact occurred in A.D. 1769.

During the Late Prehistoric Period, there was an increase in the use of plant food resources in addition to an increase in land and sea mammal hunting. There was a concomitant increase in the diversity and complexity of material culture during this period, demonstrated by more classes of artifacts. The recovery of a greater number of small, finely chipped projectile points, usually stemless with convex or concave bases, suggests an increased utilization of the bow and arrow rather than the atlatl and dart for hunting. In Orange County, Cottonwood series triangular projectile points in particular are diagnostic of this period (Koerper and Drover 1983). Other items include steatite cooking vessels and containers, the increased presence of smaller bone and shell circular fishhooks, perforated stones, arrow shaft straighteners made of steatite, a variety of bone tools, and personal ornaments made from shell, bone, and stone. There is also an increased use of asphalt for waterproofing and as an adhesive.

During the Late Prehistoric, sites contain beautiful and complex objects of utility, art, and decoration. Ornaments include drilled whole *Chione* (venus clam) and drilled abalone. Steatite effigies become more common, with *Pecten* shell rattles common in middens. In Orange County, for example, *Pecten* shell rattles are concentrated in the Late Prehistoric midden at CA-ORA-119A, and other time-sensitive artifacts, including abalone ornaments and drilled *Chione* shells, are also present (Koerper and Drover 1983:19–20). Most of the rock art found today in the Chumash sphere is thought to date to this period. Mortuary customs are elaborate, including cremation and interment, with abundant grave goods.

By A.D. 1000, fired clay smoking pipes and ceramic vessels begin to appear at some sites (Meighan 1954; Warren and True 1984). The scarcity of pottery in coastal and near-coastal sites implies ceramic technology was not well developed in that area, or that ceramics were obtained by trade with neighboring groups to the south and east. The lack of widespread pottery manufacture is usually attributed to the high quality of tightly woven and watertight basketry that functioned in the same capacity as ceramic vessels.

Another feature typical of Late Prehistoric Period occupation is an increase in the frequency of obsidian imported from the Obsidian Butte source in Imperial County, California. Obsidian Butte was exploited after ca. A.D. 1000 after its exposure by the receding waters of Holocene Lake Cahuilla (Wilke 1978). A

Late Prehistoric Period component of the Elsinore site (CA-RIV-2798-A) produced two flakes that originated from Obsidian Butte (Grenda 1997:255; Towner et al. 1997:224–225). Although about 16 percent of the debitage at the Peppertree site (CA-RIV-463) at Perris Reservoir is obsidian, no sourcing study was done (Wilke 1974:61). The site contains a late Intermediate to Late Prehistoric period component, and it is assumed that most of the obsidian originated from Obsidian Butte. In the earlier Milling Stone and Intermediate Periods, most of the obsidian found at sites within Orange County and many inland areas came from northern sources, mostly the Coso volcanic field. This also appears to be the case within Prado Basin and other interior sites that have yielded obsidian (e.g., Grenda 1995:59; Taşkiran 1997:46). The presence of Grimes Canyon (Ventura County) fused shale at southern California archaeological sites is also thought to be typical of the Late Prehistoric Period (Demcak 1981; Hall 1988).

During this period, there is an increase in population size accompanied by the advent of larger, more permanent villages (Wallace 1955:223). Large populations and, in places, high population densities are characteristic, with some coastal and near-coastal settlements containing as many as 1,500 people. Many of the larger settlements were permanent villages in which people resided year-round. The populations of these villages may have also increased seasonally.

In Warren's (1968) cultural ecological scheme, the period between A.D. 500 and European contact is divided into three regional patterns. The Chumash Tradition is present mainly in the region of Santa Barbara and Ventura Counties; the Takic or Numic Tradition is present in the Los Angeles, Orange, and western Riverside Counties region; and the Yuman Tradition is present in the San Diego region. The seemingly abrupt changes in material culture, burial practices, and subsistence focus at the beginning of the Late Prehistoric Period are considered the result of a migration to the coast of peoples from inland desert regions to the east. In addition to the small triangular and triangular side-notched points similar to those found in the desert regions in the Great Basin and Lower Colorado River, Colorado River pottery and the introduction of cremation in the archaeological record are diagnostic of the Yuman Tradition in the San Diego region. This combination certainly suggests a strong influence from the Colorado Desert region.

In Los Angeles, Orange, and western Riverside Counties, similar changes (introduction of cremation, pottery, and small triangular arrow points) are considered the result of a Takic migration to the coast from inland desert regions. This Takic or Numic Tradition was formerly referred to as the "Shoshonean wedge" or "Shoshonean intrusion" (Warren 1968). This terminology, used originally to describe a Uto-Aztecan language group, is generally no longer used to avoid confusion with ethnohistoric and modern Shoshonean groups who spoke Numic languages (Heizer 1978:5; Shipley 1978:88, 90). Modern Gabrielino/Tongva, Juaneño, and Luiseño in this region are considered the descendants of the prehistoric Uto-Aztecan, Takic-speaking populations that settled along the California coast during this period, or perhaps somewhat earlier.

ETHNOGRAPHIC OVERVIEW

Historically, tribal boundaries in southern California were not established definitively and were considered to be fluid, due to either sociopolitical features or a lack of reliable data (Bean and Smith 1978). Although the project area falls within the Gabrielino/Tongva tribal boundaries delineated by Bean and Smith (1978), the Chumash and Tataviam have occupied territories just to the northwest of the Gabrielino/Tongva.

Gabrielino/Tongva

The name Gabrielino denotes those people who were administered by the Spanish from Mission San Gabriel, which included people from the Gabrielino proper, as well as other social groups (Bean and Smith 1978; Kroeber 1925). Therefore, in the post-Contact period, the name does not necessarily identify a specific ethnic or tribal group. The names Native Americans in southern California used to identify

themselves have, for the most part, been lost. Many contemporary Gabrielino identify themselves as descendents of the indigenous people living across the plains of the Los Angeles Basin and refer to themselves as the *Tongva.*

The Gabrielino language, as well as that of the Juaneño and Luiseño to the south, was derived from the Takic family, part of the Uto-Aztecan linguistic stock, which can be traced to the Great Basin area (Mithun 1999:539). This language group represents an origin quite different from that of the Chumash to the north and the Ipai and Tipai further south. The language of the Ipai and Tipai is derived from the Hokan stock of the Yuman language family originating in the American Southwest. The Chumash language is unlike both the Hokan and Uto-Aztecan stocks, and may represent a separate lineage (Mithun 1999:390). Linguistic analysis suggests that Takic-speaking immigrants from the Great Basin area began moving into southern California around 500 B.C. (Kroeber 1925:579). This migration may have displaced both Chumashan- and Yuman-speaking peoples. The timing and extent of the migrations and their impact on indigenous peoples is not well understood, and any data related to it represent a valuable contribution to the understanding of local prehistory.

Gabrielino lands encompassed the greater Los Angeles Basin and three Channel Islands, San Clemente, San Nicolas, and Santa Catalina. Inland, their territory was bounded on the north by the Chumash at Topanga Creek, the Serrano at the San Gabriel Mountains in the east, and the Juaneño on the south at Aliso Creek (Bean and Smith 1978:538; Kroeber 1925:636). This southern boundary of Gabrielino territory at Aliso Creek was recorded based on anthropological fieldwork conducted by Kroeber in 1907 (Kroeber 1925), and the Juaneño currently dispute the defined northern boundary of their lands with the Gabrielino at Aliso Creek.

The Tongva established large, permanent villages in the fertile lowlands along rivers and streams, and in sheltered areas along the coast, stretching from the foothills of the San Gabriel Mountains to the Pacific Ocean. A total tribal population has been estimated of at least 5,000 (Bean and Smith 1978:540), but recent ethnohistoric work suggests a number approaching 10,000 seems more likely (O'Neil 2002).

Houses constructed by the Tongva were large, circular, domed structures made of willow poles thatched with tule that could hold up to 50 people (Bean and Smith 1978). Other structures served as sweathouses, menstrual huts, ceremonial enclosures, and probably communal granaries. Cleared fields for races and games, such as lacrosse and pole throwing, were created adjacent to Tongva villages (McCawley 1996:27). Archaeological sites comprised of villages with various sized structures have been identified.

The fundamental economy of the Tongva was one of subsistence gathering and hunting. The surrounding environment was rich and varied, and the tribe exploited mountains, foothills, valleys, deserts, riparian, estuarine, and open and rocky coastal eco-niches. Like most native Californians, acorns were the staple food (an established industry by the time of the early Intermediate Period). Acorns were supplemented by the roots, leaves, seeds, and fruits of a wide variety of flora (e.g., islay, *Opuntia*, yucca, sages, and agave). Fresh- and saltwater fish, shellfish, birds, reptiles, and insects, as well as large and small mammals, were also consumed.

A wide variety of tools and implements were used by the Tongva to gather and collect food resources. These included the bow and arrow, traps, nets, blinds, throwing sticks and slings, spears, harpoons, and hooks. Groups residing near the ocean used ocean-going plank canoes and tule balsa canoes for fishing, travel, and trade between the mainland and the Channel Islands (McCawley 1996:7).

Foods were processed with a variety of tools, including hammerstones and anvils, mortars and pestles, manos and metates, strainers, leaching baskets and bowls, knives, bone saws, and wooden drying racks. Food was consumed from a variety of vessels. Catalina Island steatite was used to make ollas and cooking vessels (Kroeber 1925:629).

At the time of Spanish contact, the basis of Tongva religious life was the Chinigchinich Cult, centered on the last of a series of heroic mythological figures. Chinigchinich gave instruction on laws and institutions, and also taught the people how to dance, the primary religious act for this society. He later withdrew into heaven, where he rewarded the faithful and punished those who disobeyed his laws (Kroeber 1925:637–638). The Chinigchinich religion seems to have been relatively new when the Spanish arrived, and was spreading south into the Southern Takic groups even as Christian missionization was taking place, and may have been influenced by Christianity.

Deceased Tongva were either buried or cremated (Harrington 1942; McCawley 1996). During the Contact Period, cremation was the standard practice for the mainland Tongva. Cremation ashes have been found in archaeological contexts buried within stone bowls and in shell dishes (Ashby and Winterbourne 1966:27). Archaeological and ethnographic data describe a wide variety of grave offerings, including seeds, stone grinding tools, otter skins, baskets, wood tools, shell beads, bone and shell ornaments, and projectile points and knives. Offerings varied with the sex and status of the deceased. Graves were sometimes marked, and in the San Pedro area headstones or boards were etched with figures.

Chumash

Chumash territory traditionally included the region from San Luis Obispo to Malibu Canyon on the coast and inland to the western edge of the San Joaquin Valley. Chumash territory also extended westward to the northern Santa Barbara Channel Islands, including San Miguel, Santa Rosa, Santa Cruz, and Anacapa. There were believed to be at least six different Chumash languages spoken within these territories; Ventureño, Barbareño, Ynezeño, Purisimeño, Obispeño, and the Island language; however, it is not possible to verify any Chumash linguistic data since the death of Mary Yee, the last native speaker of Barbareño, in 1965.

Of these six groups, the Ventureño Chumash were thought to have occupied the region closest to the project area (Grant 1978). The Ventureño's western boundary was just east of the headwaters of the Santa Ynez and Cuyama Rivers, encompassing the Oxnard Plain. Located at the southern extent of Chumash territory, the Ventureño were in contact with the Western Tongva, the people who occupied the region to the east (Bean and Smith 1978:547). The border between the Ventureño and Western Tongva was not well defined and both groups near the boundary appear to have shared cultural traits with each other. More detailed work with the sacramental registers at Mission San Fernando has identified a number of people from previously identified "Tongva" villages in the western San Fernando Valley with identifiably Chumash names. Recent detailed analysis of the Mission San Fernando records have lead to the realization that some Chumash villages may have been recorded under their Tongva names (King and Johnson 1999).

Tataviam

The Tataviam territories included the upper reaches of the Santa Clara River drainage east of Piru Creek, but also encompassed the Sawmill Mountains to the north and the southwestern portion of the Antelope Valley. There are different hypotheses in regards to the affiliation of the Tataviam language. Scholars hypothesize that the Tataviam may have spoken a language that was uncommonly used in Southern California, or that they may have spoken a Takic language like their southern neighbors (King and Blackburn 1978). As with most languages, the Takic dialects may have been more noticeable at the geographic extremes, while in actuality there was likely a continuum of slight sound and synonym shifts from one community to the next. One scholar has suggested that the northern edge of Western Tongva lands were home to the Tataviam Takic speakers, a related but separate language from Northern Takic (Mithun 1999:539).

HISTORIC OVERVIEW

Post-Contact history for the state of California is divided into three periods: the Spanish Period, the Mexican Period, and the American Period. Each of these periods is briefly described below.

Spanish Period (1769–1822)

The first Europeans to observe what became southern California were members of the A.D. 1542 expedition of Juan Rodriguez Cabrillo. Cabrillo and other early explorers sailed along the coast and made limited expeditions into Alta (upper) California between 1529 and 1769. Spanish, Russian, and British explorers briefly visited Alta California during this nearly 250-year span. Eventual Spanish settlement of California in the spring of 1769 marked the devastating disruption of the indigenous cultures.

Gaspar de Portolá established the first Spanish settlement in Alta California at San Diego in 1769, and with Father Junipero Serra founded the first of 21 missions (Mission San Diego de Alcalà) built by the Spanish and Franciscan Order between 1769 and 1823. Portolá continued north, reaching San Francisco Bay on October 31, 1769. Pedro Fages, who sought a site for a mission, and Lt. Colonel Juan Bautista De Anza, a Spanish military officer from Tubac, Arizona, who surveyed an overland trail from the Mexican interior to San Francisco Bay, made later expeditions to Alta California in 1772 and 1774, respectively (Grunsky 1989:2–3). De Anza's diary provides the first recorded Euro-American entry into the region. De Anza later led a group of colonists and their livestock through the San Jacinto Valley and across the Santa Ana Narrows on their way to settle San Francisco Bay between 1775 and 1776. The Juan Bautista de Anza National Historic Trail—approved by Congress in 1990 and mapped by the National Park Service in 1996—and the National Millennial Trail (designated in 1999) both commemorate the trail as a heritage tourism automobile route (California Highways 2004).

The process of converting the local Native American population to Christianity through baptism and relocation to the mission grounds began in this region by the Franciscan padres at Mission San Juan Capistrano, which was established in 1776. People from the interior region were converted within 10 years of establishing Mission San Juan Capistrano. Mission San Luis Rey was founded 20 years later, and as it grew and expanded its influence, it established ranchos east of San Juan Capistrano. This expansion created territorial conflicts with Mission San Juan Capistrano.

Mexican Period (1822–1848)

After the end of the Mexican Revolution (1810–1821) against the Spanish crown, all Spanish holdings in North America (including both Alta and Baja California) became part of the new Mexican republic. An era of extensive land grants began with the onset of the Mexican Period. Most of the land grants to Mexican citizens in California (*Californios*) were in the interior, and were granted to increase the population away from the more settled coastal areas where the Spanish concentrated their settlements. The Mexican Period is also marked by exploration by American fur trappers west of the Sierra Nevada Mountains.

American Period (1848–Present)

The Mexican-American War ended with the signing of the Treaty of Guadalupe Hidalgo in 1848, making California a territory of the United States. The discovery of gold in 1848 at Sutter's Mill near Sacramento and the resulting Gold Rush era greatly influenced the history of the state and the nation. The tens of thousands of people who rushed to the gold fields had a devastating impact on the lives of indigenous Californians, with the introduction and concentration of diseases, the loss of land and territory (including traditional hunting and gathering locales), violence, malnutrition, and starvation. Thousands of settlers

and immigrants continued to pour into the state, particularly after the completion of the transcontinental railroad in 1869.

One year after discovering gold, nearly 90,000 people journeyed to the California gold fields. A portion of Captain John Sutter's Mexican land grant, known as New Helvetia, became the bustling Gold Rush boomtown of Sacramento. California became the 31st state in 1850 largely as a result of the Gold Rush. By 1853, the population of the state exceeded 300,000 and Sacramento became the state capital in 1854.

City and County of Los Angeles

In 1781, a group of 11 Mexican families traveled from the San Gabriel Mission to establish a new pueblo called El Pueblo de la Reyna de Los Angeles (The Pueblo of the Queen of the Angels). This settlement consisted of a small group of adobe-brick houses and streets and would eventually be known as the Ciudad de Los Angeles (City of Angeles). Settlement of the Los Angeles region continued in the early American Period. The County of Los Angeles was established on February 18, 1850, one of 27 counties established in the months prior to California acquiring official statehood in the U.S. (County of Los Angeles 1999). Many of the ranchos in the county were sold or otherwise acquired by Americans, and most were subdivided into agricultural parcels or towns. Nonetheless, ranching retained its importance and by the late 1860s, Los Angeles was one of the top dairy production centers in the country (Rolle 2003). By 1876, Los Angeles County reportedly had a population of 30,000 persons (Dumke 1944).

On April 4, 1850, only two years after the Mexican-American War and five months prior to California achieving statehood, the City of Los Angeles was formally incorporated. Los Angeles maintained its role as a regional business center in early American Period and the transition of many former rancho lands to agriculture, as well as the development of citriculture in the late 1800s, further strengthened this status (Caughey and Caughey 1977). These factors, combined with the expansion of port facilities and railroads throughout the region, contributed to the impact of the real estate boom of the 1880s on Los Angeles (Caughey and Caughey 1977; Dumke 1944). The boom's fiscal impact can be observed through the City's tax assessments: in 1886, Los Angeles was assessed $18,000,000; three years later (1889), the total had more than doubled to $46,000,000 (Dumke 1944). Despite the real estate boom largely occurring in surrounding areas, Los Angeles, as the commercial center, reaped substantial benefits from the explosive growth.

The City of Los Angeles recognized the need for water to sustain the growing population in the late 1800s; Irish immigrant William Mulholland personified the city's efforts for a stable water supply (Dumke 1944; Nadeau 1997). The city purchased large tracts of land in the Owens Valley and Mulholland planned and directed the construction of the 240-mile aqueduct that brought the valley's water to the city by 1913 (Nadeau 1997).

Los Angeles continued to grow in the twentieth century, in part due to the discovery of oil in the area and its strategic location as a wartime port. The county's mild climate and successful economy continued to draw new residents in the late 1900s, with much of the county transformed from ranches and farms into residential subdivisions surrounding commercial and industrial centers. Hollywood's development into the entertainment capitol of the world and southern California's booming aerospace industry were key factors in the county's growth in the twentieth century.

Local History

The Community of Sylmar

The community of Sylmar shares much of its history with surrounding cities. Sylmar is located within the boundaries of the City of Los Angeles, and is primarily connected with the history of San Fernando, which became its own city in 1874. In the early nineteenth century, a father from the San Fernando Rey de España Mission named Iballa planted young olive trees that had been brought over from Spain. Iballa found similarities between the climate and soil conditions in Europe and the San Fernando area. In time, Sylmar would become known for its large olive tree population, and Iballa would receive credit for contributing to the olive tree boom in the area. In 1874, a businessman by the name of Robert Widney publicly praised Sylmar (then San Fernando) for its ideal growing conditions for olive trees. Shortly thereafter, a group of businessmen from Illinois purchased 2,000 acres of land and began to plant their own olive tree fields. By 1890, 1,100 acres of olive trees had been planted in the Sylmar area. These businessmen would eventually call themselves the Los Angeles Olive Growers Association. To meet the demand of water for all of the trees, it became necessary to develop a more efficient way of bringing in water from the mountains. In response to this need, Chief Water Engineer for the City of Los Angeles William Mulholland developed the Los Angeles Aqueduct, which would bring water from the High Sierra Mountains to Sylmar and the rest of the San Fernando Valley. In 1915, Sylmar was annexed to the City of Los Angeles (Sylmar Chamber of Commerce 2008).

Historic San Fernando (1900, revised 1940) USGS 15-minute quadrangle maps show that the project area was relatively undeveloped during the early to mid-twentieth century. Historic maps from 1900 show that the project area consisted of a few small roads, and that the residential grid only partially existed just southwest of the project area. Most buildings and structures were concentrated around the San Francisco and New Orleans rail line to the south, and no buildings fell within the project area at this time. Historic 1940s maps show that the project area consisted primarily of an orchard and remained relatively undisturbed, whereas the surrounding areas had become more largely developed within the residential grid.

El Cariso Community Regional Park

El Cariso Community Regional Park was purchased from the State of California by the County of Los Angeles in 1973. Since then, the property has been transformed into a 79-acre community regional park with various amenities, such as a baseball/softball field, a children's play area, a multi-purpose open playing field, picnic area, swimming pool, tennis courts, and an adjacently located golf course. Some notable history includes the 1966 Loop Fire, which claimed the lives of 10 members of the El Cariso Hot Shots, a U.S. Department of Agriculture (USDA)[en]Forest Service Wildland Firefighting Crew. While constructing a fire-line, a shift in the direction of the wind caused the fire to unexpectedly change direction. As a result, the men became trapped by the flames and died. The park itself stands as a memorial to the firefighters who lost their lives, as well as those who survived. A stone plaque was dedicated to the firefighters by the County of Los Angeles in 1996 (Los Angeles County Parks and Recreation 2008).

BACKGROUND RESEARCH

LITERATURE SEARCH

On October 8, 2008, SWCA Cultural Resources Project Manager Caprice D. (Kip) Harper requested a search of the California Historical Resources Information System (CHRIS) for the proposed project. On October 22, 2008, Ms. Harper received the search results of the literature and archival records search that

was conducted at the South Central Coastal Information Center (SCCIC), located at California State University, Fullerton, for previously recorded cultural resources and investigations within a 1-mile radius of the project area. The CHRIS search included a review of the NRHP, the CRHR, the California Points of Historical Interest (CPHI) list, the California Historical Landmarks (CHL) list, the Archaeological Determinations of Eligibility (ADOE) list, the California State Historic Resources Inventory (HRI) list, and the City of Los Angeles Historic–Cultural Monuments list. SWCA also reviewed pertinent portions of the USGS San Fernando, California 15-minute quadrangles (1900, revised in 1940).

Previous Cultural Resources Studies within 1 Mile of the Project Area

Twenty-three cultural resources studies have been previously conducted within 1 mile of the project area (Table 1). None of these studies were conducted within the project area, although one study (LA7015) was conducted in an area directly adjacent to the project area. A complete bibliography is provided in Appendix A.

Table 1. Previously Conducted Cultural Resources Studies within 1 Mile of the Project Area

SCCIC Report Number	Study	Author	Year	Proximity to Project Area
LA384	Description and Evaluation of the Cultural Resources Within Haines Debris Basin, Hadsen Dam, Lopez Dam, and Sepulveda Dam, Los Angeles County	Martz, P.	1977	Outside
LA395	Cultural Resource Survey and Impact Assessment for a 10 Acre Parcel in Sylmar (Tentative Tract No. 36182), Los Angeles County, California	Singer, C.	1978	Outside
LA455	Archaeological Survey Report: A 100+ Acre Parcel Located Adjacent to San Fernando Near the Pacoima Dam in the County of Los Angeles, California	Van Horn, D.	1979	Outside
LA464	Cultural Resource Inventory of Tentative Tract 36183 EIR Case No. 98-79ZC (SUB)	Foster, J. and Tartaglia, L.	1979	Outside
LA589	Archaeological Survey Report: A 97.5 Acre Parcel Located Adjacent to San Fernando Near the Pacoima Dam in the County of Los Angeles, CA	Van Horn, D.	1979	Outside
LA622	Cultural Resource Survey and Impact Assessment for Tentative Tract No. 35525 in Sylmar, Los Angeles County, California	Singer, C.	1979	Outside
LA977	Assessment of the Impact Upon Archaeological Resources by the Proposed Development of the Hubbard-Eldridge Site #3	Foster, J.	1979	Outside
LA1428	An Archaeological Survey and Impact Assessment of a 630' × 350' Parcel at 13684 Foothill Boulevard in the San Fernando	Colby, S.	1984	Outside
LA1589	Archaeological Investigation: Tentative Tract No. 36182 Sylmar, Los Angeles County, California	Romani, G.	1986	Outside
LA1691	Archaeological Reconnaissance Report: Homenetmen Land Exchange	Wessel, R.	1988	Outside
LA1692	Archaeological Reconnaissance Report: Divide Fire Rehab	Wessel, R.	1988	Outside
LA1746	Cultural Resource Survey and Impact Assessment for the City of Los Angeles Department of Water and Power Proposed Maclay Water Storage Tanks, Los Angeles, California	Blodgett, L.	1989	Outside
LA1999	Assessment of the Archaeological Impact by the Development of Tract No. 31408	McIntyre, M.	1976	Outside

Table 1. Previously Conducted Cultural Resources Studies within 1 Mile of the Project Area

SCCIC Report Number	Study	Author	Year	Proximity to Project Area
LA2110	Cultural Resource Investigation Maclay Ranch Limekilin Canyon San Fernando, California	Dillon, B.	1989	Outside
LA2146	An Archaeological Survey of Six-Acre Property Located on Hubbard Street, Sylmar, Los Angeles County	Alexander, M.	1990	Outside
LA4265	Archaeological Reconnaissance Report: Veteran Administration Hospital Land Disposal	McIntyre, M.	1978	Outside
LA4498	A Phase I Archaeological Study: A Proposed Senior Housing Project Located at 13574 Foothill Boulevard, City of Sylmar, Los Angeles County, California	Wlodarski, R.	1999	Outside
LA7005	Daly Water Conveyance System Angeles (Special Use Permit Issuance # LAR675001) Angeles National Forest, Los Angeles County, California	Schneyder-Case, S.	2002	Outside
LA7015	Results of a Phase I Cultural Resources Investigation for a Proposed Expansion of Los Angeles Mission College in the Community of Sylmar, Los Angeles County, California	McKenna, J. and Ferguson, C.	2002	Adjacent
LA9191	Cultural Resources Records Search and Site Visit Results for T-Mobile Candidate SV11413A (MacLay Tanks), 13601 West Astoria Street, Sylmar, Los Angeles County, California	Bonner, W.	2007	Outside
LA9193	Cultural Resources Records Search and Site Visit Results for T-Mobile Candidate SV11376A (North Valley Storage), 13043 Foothill Boulevard, Sylmar, Los Angeles County, California	Bonner, W.	2007	Outside
LA10005	D.W.O. 6059-4800; A.I.5-4818: Vaterns A1 16kV Deteriorated Pole Replacement Project, Los Angeles County	Schmidt, J.	2005	Outside
LA10011	A Phase I Archaeological Study and Paleontological Survey for Two Lots East and West of Gridley Street, 13441-13247 Foothill Boulevard City of Los Angeles, Los Angeles County, California	Wlodarski, R.	2004	Outside

Previously Recorded Cultural Resources within 1 Mile of the Project Area

No cultural resources have been previously recorded within the project area. One cultural resource has been previously recorded within 1 mile of the project area (Table 2). This resource is a historic lime kiln that may have been associated with the San Fernando Mission. It is located more than 0.5 mile east of the project area. No listed properties in the NRHP, CRHR, CPHI, CHL, ADOE, or HRI are located within the boundaries of the project area.

Table 2. Previously Recorded Cultural Resources within 1 Mile of the Project Area

Trinomial	Primary Number	Resource Description	NRHP Eligibility Recommendation	Recorded by and Year	Proximity to Project Area
CA-LAN-799	P-19-000799	Historic: stone kiln features and iron barrel hoops	Unknown	Edberg B. 1977 and Banks, T. 1979	Outside

SACRED LANDS FILE SEARCH AND NATIVE AMERICAN CONSULTATION

SWCA initiated Native American consultation for the project on October 8, 2008. SWCA contacted the NAHC to request a review of the Sacred Lands File and to obtain a list of Native American groups or individuals listed by the NAHC for Los Angeles County (Appendix B). The NAHC responded on October 15, 2008, and stated that the search failed to indicate the presence of Native American sacred lands or traditional cultural properties within the immediate project area. SWCA then mailed letters to each of the six NAHC-listed contacts on October 22, 2008. No follow-up phone calls were made and no responses have been received to date.

METHODS

ARCHAEOLOGICAL SURVEY

SWCA Cultural Resources Specialist Paul Shattuck conducted an intensive-level pedestrian survey of the project area and a reconnaissance-level, or "windshield," survey of the remainder of the park on October 23, 2008. The intensive survey area included approximately 2 acres in the vicinity of the existing administration building, and a large portion of the survey area included the paved parking lot and the tennis courts, located northwest of the administration building. The reconnaissance-level survey occurred in the remainder of the park, which contains five baseball diamonds, 11 tennis courts, a children's play area, and several picnic areas. The park is fully landscaped, primarily with grass lawns and other nonnative ornamental plants, although there are some native oaks and sycamore trees in the park along with nonnative pines and eucalyptus trees. On the day of the survey, a construction project was under way in the northwest corner of the park adjacent to Hubbard Street.

Intensive-level survey methods consisted of a pedestrian survey in parallel transects spaced 15 meters (approximately 50 feet) apart in the unpaved grassy areas and other open areas in the 2-acre gymnasium and community building project area. Visibility was poor (less than 5 percent) due to the presence of turf grass, a paved parking lot, sidewalks, and an existing building. Reconnaissance-level survey methods consisted of an examination of the remainder of the park to make generalizations about the types and distributions of cultural resources that may be present within the park boundaries. Mr. Shattuck took photographs of the survey areas using a Nikon digital camera. All field notes, photographs, and records related to the current study are on file at the SWCA South Pasadena, California, office.

RESULTS AND IMPACT CONSIDERATIONS

ARCHAEOLOGICAL SURVEY

No cultural resources were observed during the intensive-level pedestrian survey of the project area. The entire project area consists of modern ornamental landscaping, lawns, and baseball fields that have been graded flat with soil that has most likely been imported (Photographs 1 and 2). There is virtually no native soil to observe in the area of the baseball fields and tennis courts. North of the tennis courts, outside the primary survey area but still within the park, there is a small hillside with a picnic area and playground. This area is also landscaped with lawns and shade trees. In addition, the results of the preliminary geotechnical report indicated that artificial fill was encountered at depths of 3.5 to 6 feet below the existing ground surface. This indicates that there is a low potential within the project area for encountering undisturbed below-ground cultural resources within the top 3.5 to 6 feet of soil due to extensive previous disturbances. No cultural resources were observed during the reconnaissance-level survey of the remainder of the park. Therefore, the proposed project area has low sensitivity for encountering archaeological resources.

Photograph 1. Existing administration building located south of the parking lot, view to the south.

Photograph 2. Tennis courts located north of the parking lot, view to the north.

The administration building (Photograph 2) on the south side of the parking lot will be demolished as part of the proposed project improvements. The subject property was built less than 45 years ago and consequently cannot be considered eligible for listing in the California Register. In addition, SWCA finds that this building has no association or linkage to important events (Criteria 1). It has not been demonstrated to have been directly associated with persons significant in our past (Criterion 2), and does not embody the distinctive characteristics of a type, period, or method of construction, represent the work of a master, nor does it represent a significant and distinguishable entity whose components lack individual distinction (Criteria 3). Finally, there is no reason to believe that the property may yield important information about prehistory or history (Criteria 4).

RECOMMENDATIONS

Because no "historical resources" as defined in CEQA were identified within the proposed project area, no additional cultural resources mitigation measures should be necessary. Standard archaeological mitigation measures to minimize impacts to unanticipated discovery of below-ground cultural resources or the unanticipated discovery of human remains are described below.

UNANTICIPATED DISCOVERY OF CULTURAL RESOURCES

In the event that cultural resources are exposed during construction, work in the immediate vicinity of the find must stop until a qualified archaeologist can evaluate the significance of the find. Construction activities may continue in other areas. If the discovery proves significant under CEQA, additional work such as testing or data recovery may be warranted.

UNANTICIPATED DISCOVERY OF HUMAN REMAINS

The discovery of human remains is always a possibility during ground disturbances; State of California Health and Safety Code Section 7050.5 covers these findings. This code section states that no further disturbance shall occur until the Los Angeles County Coroner has made a determination of origin and disposition pursuant to Public Resources Code Section 5097.98. The County Coroner must be notified of the find immediately. If the human remains are determined to be prehistoric, the Coroner will notify the NAHC, which will determine and notify an MLD. The MLD shall complete the inspection of the site within 48 hours of notification and may recommend scientific removal and nondestructive analysis of human remains and items associated with Native American burials.

REFERENCES

Ariannia, Shawn
2008 *Preliminary Geotechnical Engineering Investigation for Proposed New Gymnasium/Community Center Building at: El Cariso Park 13108 Hubbard Street Sylmar, California*. Koury Geotechnical Services, Inc.

Ashby, G. E., and J. W. Winterbourne
1966 A Study of Primitive Man in Orange County and Some of Its Coastal Areas. *Pacific Coast Archaeological Society Quarterly* 2(1):5–52.

Bailey, Robert G.
1995 Description of the Ecoregions of the United States, 2nd edition., Miscellaneous Publication Number 1391 (rev), Washington D.C.: USDA Forest Services. pp. 56

Bean, Lowell John, and Charles R. Smith
1978 Gabrielino. In *California,* edited by Robert F. Heizer, pp. 538–549. Handbook of North American Indians, Vol. 8, William C. Sturtevant, general editor, Smithsonian Institution, Washington, D.C.

Bettinger, Robert L.
1974 The Dead Dog Site (4-Riv-202). In *Perris Reservoir Archeology: Late Prehistoric Demographic Change in Southeast California*, edited by James F. O'Connell, Philip J. Wilke, Thomas F. King, and Carol L. Mix, pp. 79–93. California Department of Parks and Recreation, Archaeological Reports 14.

California Highways
2004 Trails and Roads: De Anza Trail. Electronic documents, www.cahighways.org and http://www.pacificnet.net/~faigin/CA WYS/deanza.html, accessed February 2, 2004.

Campbell, Elizabeth W. C., and William H. Campbell
1935 The Pinto Basin Site: An Ancient Aboriginal Camping Ground in the California Desert. *Southwest Museum Papers* 9:1–51.

Caughey, John, and LaRee Caughey
1977 *Los Angeles Biography of a City.* University of California Press, Berkeley and Los Angeles.

City of Los Angeles
2001 City of Los Angeles General Plan, Conservation Element. Electronic document: http://cityplanning.lacity.org/cwd/gnlpln/consvelt.pdf, pp. II-3 – II-6, accessed October 29, 2008.

Cottrell, Marie, and Kathleen Del Chario
1981 *Archaeological Investigations of the Tomato Springs Sites.* Report on file, South Central Coastal Information Center, California State University, Fullerton.

County of Los Angeles
1999 History of Los Angeles County. Electronic document, www.lacounty.info/history.htm, accessed April 5, 2006.

de Barros, Philip
1996 *San Joaquin Hills Transportation Corridor: Results of Testing and Data recovery at CA-ORA-1357.* Report on file, South Central Coastal Information Center, California State University, Fullerton.

Demcak, Carol R.
1981 Fused Shale As a Time Marker in Southern California: Review and Hypothesis. Unpublished Master's Thesis, Department of Anthropology, California State University, Long Beach.

Dillon, Brian D.
2002 California Paleo-Indians: Lack of Evidence, or Evidence of a Lack? In *Essays in California Archaeology: A Memorial to Franklin Fenenga*, edited by William J. Wallace and Francis A. Riddell, pp. 110–128. Contributions of the University of California Archaeological Research Facility, No. 60, Berkeley.

Dixon, E. James
1968 Cogged Stones and Other Ceremonial Cache Artifacts in Stratigraphic Context at ORA-58, a Site in the Lower Santa Ana River Drainage, Orange County. *Pacific Coast Archaeological Society Quarterly* 4(3):57–68.

Drover, Christopher E.
1971 Three Fired-Clay Figurines from 4-Ora-64, Orange County, California. *Pacific Coast Archaeological Society Quarterly* 7(4):73–86.

1975 Early Ceramics from Southern California. *The Journal of California Anthropology* 2(1):101–107.

Drover, Christopher E., Henry C. Koerper, and Paul E. Langenwalter II
1983 Early Holocene Adaptation on the Southern California Coast: A Summary Report of Investigations at the Irvine Site (CA-ORA-64), Newport Bay, Orange County, California. *Pacific Coast Archaeological Society Quarterly* 19(2,3):1–84.

Dumke, Glenn S.
1944 *The Boom of the Eighties in Southern California.* Huntington Library Publications, San Marino, California.

Eberhart, Hal
1961 The Cogged Stones of Southern California. *American Antiquity* 26:361–370.

Erlandson, Jon M.
1991 Early Maritime Adaptations on the Northern Channel Islands. In *Hunter-Gatherers of Early Holocene Coastal California,* edited by J. M. Erlandson and R. Colten. Perspectives in California Archaeology, Vol. 1. Institute of Archaeology, University of California, Los Angeles.

Erlandson, Jon M., Theodore Cooley, and Richard Carrico
1987 A Fluted Projectile Point Fragment from the Southern California Coast: Chronology and Context at CA-SBA-1951. *Journal of California and Great Basin Anthropology* 9:120–128.

Glassow, Michael A.
1997 Middle Holocene Cultural Development in the Central Santa Barbara Channel Region. In *Archaeology of the California Coast during the Middle Holocene*, edited by J. M. Erlandson

and M. A. Glassow, pp.73–90. Perspectives in California Archaeology, Vol. 4. Institute of Archaeology, University of California, Los Angeles.

Glassow, Michael A, L. Wilcoxen, and J. M. Erlandson
1988 Cultural and Environmental Change during the Early Period of Santa Barbara Channel Prehistory. In *The Archaeology of Prehistoric Coastlines*, edited by G. Bailey and J. Parkington pp. 64–77. Cambridge University Press, Cambridge.

Governor's Office of Planning and Research
1998 CEQA, California Environmental Quality Act Statutes and Guidelines. Governor's Office of Planning and Research, Sacramento, California. Electronic document, http://ceres.ca.gov/ceqa/rev/approval.html.

Grant, Campbell
1978 Chumash: Introduction. In *California,* edited by Robert F. Heizer, pp. 505–508. Handbook of North American Indians, Vol. 8, William C. Sturtevant, general editor, Smithsonian Institution, Washington, D.C.

Grenda, Donn R.
1995 *Prehistoric Game Monitoring on the Banks of Mill Creek: Data Recovery at CA-RIV-2804, Prado Basin, Riverside County, California.* Statistical Research Technical Series No. 52. Statistical Research, Inc., Tucson, Arizona.

1997 *Continuity and Change: 8,500 Years of Lacustrine Adaptation on the Shores of Lake Elsinore*. Statistical Research Technical Series No. 59. Statistical Research, Inc., Tucson, Arizona.

Grunsky, F. R.
1989 *Pathfinders of the Sacramento Region*. Elk Grove Library, California.

Hall, Matthew C.
1988 For the Record: Notes and Comments on "Obsidian Exchange in Prehistoric Orange County." *Pacific Coast Archaeological Society Quarterly* 24(4):34–48.

Harrington, John
1942 Culture Element Distributions. XIX. Central California Coast. *University of California Anthropological Records* 7:1–46.

Heizer, Robert F.
1978 Introduction. In *California*, edited by Robert F. Heizer, pp. 1–6. Handbook of North American Indians, Vol. 8, William G. Sturtevant, general editor, Smithsonian Institution, Washington D.C.

Herring, Alika
1968 Surface Collections from ORA-83, a Cogged Stone Site at Bolsa Chica, Orange County, California. *Pacific Coast Archaeological Society Quarterly* 4(3):3–37.

Johnson, J. R., T. W. Stafford, Jr., H. O. Ajie, and D. P. Morris
2002 Arlington Springs Revisited. In *Proceedings of the Fifth California Islands Symposium*, edited by Browne, D., K. Mitchell, and H. Chaney, pp. 541–545. USDI Minerals Management Service and The Santa Barbara Museum of Natural History, Santa Barbara, California.

Jones, Terry L., Richard T. Fitzgerald, Douglas J. Kennett, Charles Miksicek, John L. Fagan, John Sharp, and Jon M. Erlandson
2002 The Cross Creek Site and Its Implications for New World Colonization. *American Antiquity* 67:213–230.

King, Chester, and Thomas C. Blackburn
1978 Tataviam. In *California,* edited by Robert F. Heizer, pp. 535-537. Handbook of North American Indians, Vol. 8, William C. Sturtevant, general editor, Smithsonian Institution, Washington, D.C.

King, Chester, and John R. Johnson
1999 The Chumash Social Political Groups in the Santa Monica Mountains. In *Cultural Affiliation and Lineal Descent of Chumash Peoples in the Channel Islands and the Santa Monica Mountains, Volume 1,* edited by Sally McLendon and John R. Johnson, pp. 67–92. Prepared for the Archaeology and Ethnography Program, National Park Service.

Koerper, Henry C.
1995 *The Christ College Project: Archaeological Investigations at CA-ORA-378, Turtle Rock, Irvine, California, Volume II.* Report on file, South Central Coastal Information Center, California State University, Fullerton.

Koerper, Henry C., and Christopher E. Drover
1983 Chronology Building for Coastal Orange County: The Case from CA-ORA-119-A. *Pacific Coast Archaeological Society Quarterly* 19(2):1–34.

Koerper, Henry C., Roger D. Mason, and Mark L. Peterson
2002 Complexity, Demography, and Change in Late Holocene Orange County. In *Catalysts to Complexity: Late Holocene Societies of the California Coast*, edited by Jon M. Erlandson and Terry L. Jones, pp. 63–81. Perspectives in California Archaeology, Vol. 6, Costen Institute of Archaeology, University of California, Los Angeles.

Kowta, Makoto
1969 The Sayles Complex, A Late Milling Stone Assemblage from the Cajon Pass and the Ecological Implications of its Scraper Planes. *University of California Publications in Anthropology* 6:35–69. Berkeley, California.

Kroeber, Alfred J.
1925 *Handbook of the Indians of California*. Bureau of American Ethnology Bulletin 78. Dover Publications, Inc., New York.

Langenwalter, Paul E., II, and James Brock
1985 *Phase II Archaeological Studies of the Prado Basin and the Lower Santa Ana River.* Report on file, U.S. Army Corps of Engineers, Los Angeles District.

Los Angeles County Department of Public Works
2008 Los Angeles River Watershed. Electronic document, http://ladpw.org/wmd/watershed/LA/, accessed on October 27, 208.

Los Angeles County Parks and Recreation
2008 El Cariso Park. Electronic document, http://www.lacountyparks.org/Parkinfo.asp?URL=cms1_033256.asp&Title=El%20Cariso, accessed on October 27, 2008.

Macko, Michael E.
1998a *The Muddy Canyon Archaeological Project: Results of Phase II Test Excavations and Phase III Data Recovery Excavations at Archaeological Sites within the Crystal Cove Planned Community, Phase IV, Tentative Tract 15447, San Joaquin Hills, Orange County, California.* Report on file, South Central Coastal Information Center, California State University, Fullerton.

1998b Neolithic Newport. In *Executive Summary: Results of Implementing Mitigation Measures Specified in the Operation Plan and Research Design for the Proposed Newporter North Residential Development at ORA-64.* Report on file, South Central Coastal Information Center, California State University, Fullerton.

Mason, Roger E., Brant A. Brechbiel, Mark L. Peterson, Clay A. Singer, Paul E. Langenwalter II, and Robert O. Gibson
1991 *Newport Coast Archaeological Project: Results of Data Recovery at the Late Small Rockshelters, CA-ORA-674, CA-ORA-677, CA-ORA-678, CA-ORA-1206, CA-ORA-1210, CA-ORA-676, CA-ORA-682, CA-ORA-679, and CA-ORA-1204*. Report on file, South Central Coastal Information Center, California State University, Fullerton.

Mason, Roger D., Brant A. Brechbiel, Clay A. Singer, Patricia A. Singer, Wayne H. Bonner, Robert O. Gibson, Mark L. Peterson, and Lisa Panet Klug
1992 *Newport Coast Archaeological Project: Results of Data Recovery at the French Flat Complex Sites, CA-ORA-232, CA-ORA-233, CA-ORA-671, CA-ORA-672, and CA-ORA-1205*. Report on file, South Central Coastal Information Center, California State University, Fullerton.

Mason, Roger D., Brant A. Brechbiel, Clay A. Singer, Mark L. Peterson, Linda Panet Klug, Wayne H. Bonner, Robert O. Gibson, and Patricia A. Singer
1993 *Newport Coast Archaeological Project: Results of Data Recovery at the Pelican Hills Sites, CA-ORA-662, CA-ORA-677, CA-ORA-678, CA-ORA-1206, CA-ORA-1210, CA-ORA-676 and CA-ORA-1203*, Volume 1. Report on file, South Central Coastal Information Center, California State University, Fullerton.

Mason, Roger D., and Mark L. Peterson
1994 *Newport Coast Archaeological Project: Newport Coast Settlement Systems–Analysis and Discussion*, *Volume 1, part 1 of 2.* Prepared by The Keith Companies. Report on file, the South Central Coastal Information Center, California State University, Fullerton.

Mason, Roger D., Henry C. Koerper, and Paul E. Lagenwalter II
1997 Middle Holocene adaptations on the Newport Coast of Orange County. In *Archaeology of the California Coast during the Middle Holocene*, edited by Jon M. Erlandson and Michael A. Glassow, pp. 35–60. UCLA Institute of Archaeology, Los Angeles.

McCawley, William
1996 *The First Angelinos: The Gabrielino Indians of Los Angeles.* Malki Museum/Ballena Press Cooperative Publication, Banning or Novato, California.

Meighan, Clement W.
1954 A Late Complex in Southern California Prehistory. *Southwestern Journal of Anthropology* 10(2):215–227.

Mithun, Marianne
1999 *The Languages of Native North America*. Cambridge University Press, Cambridge, Massachusetts.

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

Moriarty, James R., III
1966 Cultural phase divisions suggested by typological change coordinated with stratigraphically controlled radiocarbon dating in San Diego. *The Anthropological Journal of Canada* 4(4):20–30.

Nadeau, Remi
1997 *The Water Seekers.* Revised 4th edition. Crest Publishers, Santa Barbara, California.

O'Neil, Stephen
2002 *The Acjachemen in the Franciscan Mission System: Demographic Collapse and Social Change*. Master's thesis, Department of Anthropology, California State University, Fullerton.

Peterson, Mark L.
2000 *Bonita Mesa Archaeological Project. The Intermediate: A Non-Traditional Approach to a Revised Interpretation of Human Settlement Systems of the Newport Bay and San Joaquin Hills Region of Orange County, California. Volume I.* Report on file, South Central Coastal Information Center, California State University, Fullerton.

Reinman, Fred M.
1964 Maritime Adaptations on San Nicolas Island, California. *University of California Archaeological Survey Annual Report 1963-1964*:47–80.

Rick, Torben C., Jon M. Erlandson, and René Vellanoweth
2001 Paleocoastal Marine Fishing on the Pacific Coast of the Americas: Perspectives from Daisy Cave, California. *American Antiquity* 66:595–613.

Rogers, David B.
1929 *Prehistoric Man of the Santa Barbara Coast*. Santa Barbara Museum of Natural History, Santa Barbara, California. Edited by Richard F. Pourade. Union Tribune Publishing Company, San Diego.

Rogers, Malcom J.
1939 Early Lithic Industries of the Lower Basin of the Colorado River and Adjacent Desert Areas. *San Diego Museum of Man Papers* 3.

1945 An Outline of Yuman Prehistory. *Southwestern Journal of Anthropology* 1(2):167–198.

Rolle, Andrew
2003 *California A History.* Revised and expanded Sixth Edition. First Edition published 1963. Harlan Davidson, Inc., Wheeling, Illinois.

Sawyer, William A.
2006 Report of Testing and Data Recovery at Sites within the Muddy Canyon Archaeological District, San Joaquin Hills, Orange County, California (provisional title). Report in progress, LSA Associates, Inc.

Sawyer, William A., and James Brock
1999 *Archaeology of Foothill Ranch, El Toro, California*. Report on file, South Central Coastal Information Center, California State University, Fullerton.

Sawyer, William A., and Henry C. Koerper
2006 The San Joaquin Hills Venus: A Ceramic Figurine from CA-ORA-1405-B. In *Contributions from Orange County Presented in Remembrance of John Peabody Harrington*, edited by Henry C. Koerper, pp. 13–34. *Coyote Press Archives of California Prehistory*, Number 53. Coyote Press, Salinas, California.

Shipley, William F.
1978 Native Languages of California. In *California*, edited by Robert F. Heizer, pp. 80–90. Handbook of North American Indians, Vol. 8, William G. Sturtevant, general editor, Smithsonian Institution, Washington D.C.

Strudwick, Ivan H.
2004 The Use of Fired Clay Daub from CA-ORA-269 in the Identification of Prehistoric Dwelling Construction Methods, San Joaquin Hills, Orange County, California. Paper presented at the meeting of the Southern California Academy of Sciences, California State University, Long Beach, May 15, 2004.

Sutton, Mark Q.
1993 On the Subsistence Ecology of the "Late Inland Millingstone Horizon" in Southern California. *Journal of California and Great Basin Anthropology* 15(1):134–140.

Sylmar Chamber of Commerce
2008 History. Electronic document, http://www.thetransitcoalition.us/sylmarcc/history.htm, accessed October 23, 2008.

Taşkiran, Ayşe
1997 Lithic Analysis. In *Hunting the Hunters: Archaeological Testing at CA-RIV-653 and CA-RIV-1098, Riverside County, California*, edited by Donn R. Grenda and Deborah W. Gray, pp. 41–53. Statistical Research Technical Series No. 65. Statistical Research, Inc., Tucson, Arizona.

Towner, Ronald H., Keith B. Knoblock, and Alex V. Benitez
1997 Flaked and Ground Stone Analyses. In *Continuity and Change: 8,500 Years of Lacustrine Adaptation on the Shores of Lake Elsinore,* edited by Donn R. Grenda, pp. 167–248. Statistical Research Technical Series No. 59. Statistical Research, Inc., Tucson, Arizona.

True, Delbert L.
1958 An Early Complex in San Diego County, California. *American Antiquity* 23:255–263.

1993 Bedrock Milling Elements as Indicators of Subsistence and Settlement Patterns in Northern San Diego County, California. *Pacific Coast Archaeological Society Quarterly* 29(2):1–26.

Van Bueren, Thad M., L. Mark Raab, and Elizabeth Skinner
1986 *Archaeological Investigations at CA-RIV-2803 and -2804, Prado Flood Control Basin, California*. INFOTEC Research, Inc., Sonora, California. Submitted to the Army Corps of Engineers, Los Angeles District.

Van Bueren, Thad M., Susan K. Goldberg, Michael J. Moratto, Portia Lee, and Jerrel H. Sorrenson
1989 *Inventory and Evaluation of Cultural Resources: Bolsa Chica Mesa and Huntington Beach Mesa, Orange County, California*. Prepared by Infotech Research, Inc. Copies on file at the South Central Coastal Information Center, California State University, Fullerton.

Wallace, William
1955 Suggested Chronology for Southern California Coastal Archaeology. *Southwestern Journal of Anthropology* 11:214–230.

1978 Post-Pleistocene Archaeology, 9000 to 2000 B.C. In *California*, edited by Robert F. Heizer, pp. 25–36. Handbook of North American Indians, Vol. 8, William G. Sturtevant, general editor, Smithsonian Institution, Washington D.C.

Warren, Claude N.
1967 The San Dieguito Complex: A Review and Hypothesis. *American Antiquity* 32:233–236.

1968 Cultural Tradition and Ecological Adaptation on the Southern California Coast. In *Archaic Prehistory in the Western United States*, edited by Cynthia Irwin-Williams, pp. 1–14. Eastern New Mexico University Contributions in Anthropology No. 1. Portales.

Warren, Claude N., and D. L. True
1961 The San Dieguito Complex and its Place in California Prehistory. *Archaeological Survey Annual Report for 1960-1961*: 246–337. University of California, Los Angeles.

1984 The Desert Region. In *California Archaeology*, edited by Michael J. Moratto, with contributions by D.A. Fredrickson, C. Raven, and C. N. Warren, pp. 339–430. Academic Press, Orlando.

Wilke, Philip J.
1974 The Peppertree Site (4-Riv-463). In *Perris Reservoir Archeology: Late Prehistoric Demographic Changes in Southeastern California*, edited by James F. O'Connell, Philip J. Wilke, Thomas F. King, and Carol L. Mix, pp.49–63. California Department of Parks and Recreation Archeology Reports 14.

1978 Late Prehistoric Human Ecology at Lake Cahuilla, Coachella Valley, California. *Contributions of the University of California Archaeological Research Facility* No. 38.

Wright, T. L.
1991 Structural Geology and Tectonic Evolution of the Los Angeles Basin, California. In *Active Margin Basins.* AAPG Memoir 52:135–184.

Yerkes, R. F., T. H. McCulloh, J. E. Schoellhamer, and J. G. Vedder
1965 Geology of the Los Angeles Basin California—an Introduction. *Geological Survey Professional Paper* 420-A, 57 pp.

APPENDIX A:
South Central Coastal Information Center Bibliography

South Central Coastal Information Center
California State University, Fullerton
Department of Anthropology MH-426
800 North State College Boulevard
Fullerton, CA 92834-6846
714.278.5395 / FAX 714.278.5542
anthro.fullerton.edu/sccic.html - sccic@fullerton.edu
California Historical Resources Information System
Orange, Los Angeles, and Ventura Counties

October 20, 2008 SCCIC #8954.5951

Ms. Caprice Harper
SWCA Environmental Consultants
625 Fair Oaks Ave, Suite 190
South Pasadena, CA 91030
626-240-0587

RE: Records Search for El Cariso Community Regional Park Improvement Project (Project #14955)

Dear Ms. Harper,

As per your request received on October 8, 2008, a records search was conducted for the above referenced project. The search includes a review of all recorded archaeological sites within a 1-mile radius of the project site as well as a review of cultural resource reports on file. In addition, the California Points of Historical Interest (PHI), the California Historical Landmarks (CHL), the California Register of Historical Resources (CR), the National Register of Historic Places (NR), the California State Historic Resources Inventory (HRI), and the City of Los Angeles Historic-Cultural Monuments listings were reviewed for the above referenced project. The following is a discussion of the findings.

San Fernando, CA. USGS 7.5' Quadrangle

ARCHAEOLOGICAL RESOURCES:

One archaeological site (19-000799) has been identified within a 1-mile radius of the project site. No archaeological sites are located within the project site. No sites are listed on the Archaeological Determination of Eligibility (DOE) list. No isolates have been identified within a 1-mile radius of the project site. No isolates are located within the project site.

HISTORIC RESOURCES:

Copies of our historic maps - Fernando (1900) and San Fernando (1900, 1940) 15' USGS - are enclosed for your review.

The California Point of Historical Interest of the Office of Historic Preservation, Department of Parks and Recreation, lists no properties within a 1-mile radius of the project site.

The California Historical Landmarks of the Office of Historic Preservation, Department of Parks and Recreation, lists no properties within a 1-mile radius of the project site.

The California Register of Historic Places lists no properties within a 1-mile radius of the project site. These are properties determined to have a National Register of Historic Places Status of 1 or 2, a California Historical Landmark numbering 770 and higher, or a Point of Historical Interest listed after 1/1/1998.

The National Register of Historic Places lists no properties within a 1-mile radius of the project site.

The City of Los Angeles Historic-Cultural Monuments lists no properties within a 1-mile radius of the project site.

The California Historic Resources Inventory lists no properties that have been evaluated for historical significance within a 1-mile radius of the project site.

PREVIOUS CULTURAL RESOURCES INVESTIGATIONS:

Twenty-three studies (LA384*, LA395, LA455*, LA464, LA589, LA622, LA977, LA1428, LA1589, LA1691, LA1692, LA1746, LA1999, LA2110, LA2146, LA4265, LA4498, LA7005, LA7015*, LA9191, LA9193, LA10005, and LA10011) have been conducted within a 1-mile radius of the project site. Of these, three are located within the project site. There are 21 additional investigations located on the San Fernando, CA. 7.5' USGS Quadrangle that are potentially within a 1-mile radius of the project site. These reports are not mapped due to insufficient locational information.
(= Located within the project site)*

Please forward a copy of any resulting reports from this project to the office as soon as possible. Due to the sensitive nature of archaeological site location data, we ask that you **do not include** resource location maps and resource location descriptions in your report if the report is for public distribution. If you have any questions regarding the results presented herein, please contact the office at 714.278.5395 Monday through Thursday 9:00 am to 3:30 pm.

Should you require any additional information for the above referenced project, reference the SCCIC number listed above when making inquiries. Requests made after initial invoicing will result in the preparation of a separate invoice.

Sincerely,
SCCIC

Michelle Galaz
Staff Researcher

Enclosures:

(X) Maps – 7.5' USGS Quadrangle, 15' USGS Quadrangle – 7 pages
(X) Bibliography – 8 pages
(X) Bibliography of Unmapped Reports – 8 pages
(X) Site Records – (19-000799) – 5 pages
(X) Survey Reports – (LA384, LA455, LA7015) – 77 pages
(X) Confidentiality Form
(X) Invoice #8954.5951

SCCIC Bibliography: El Cariso Community Regional Park Improvement Project, Project #14955

IC ID#: LA10005 **DATE:** 2005 **PAGES:** 4

AUTHOR: Schmidt, June A.

FIRM: Compass Rose Archaeological, Inc.

TITLE: D.W.O. 6059-4800; A.I. 5-4818: Vaterens A1 16 kV Deteriorated Pole Replacement Project, Los Angeles County.

AREA: 1 ac

SITES: None

QUADNAME: San Fernando

MEMO:

IC ID#: LA10011 **DATE:** 2004 **PAGES:** 14

AUTHOR: Waldarski, Robert

FIRM: Historical, Environmental, Archaeological, Research, Team

TITLE: A Phase 1 Archaeological Study and Paleontological Survey for Two Lots east and west of Gridley Street, 13441-13247 Foothill Boulevard City of Los Angeles, Los Angeles County, California

AREA: 2 ac

SITES: None

QUADNAME: San Fernando

MEMO:

IC ID#: LA1428 **DATE:** 1984 **PAGES:** 6

AUTHOR: Colby, Susan M.

FIRM: University of California, Los Angeles Archaeological Survey

TITLE: An Archaeological Survey and Impact Assessment of A 630' X 350 Parcel at 13684 Foothill Boulevard in the San Fernando Valley, Los Angeles County

AREA: 1 ac

SITES: None

QUADNAME: San Fernando

MEMO:

SCCIC Bibliography: El Cariso Community Regional Park Improvement Project, Project #14955

IC ID#: LA1589 DATE: 1986 PAGES: 8
AUTHOR: Romani, Gwendolyn R.
FIRM: Greenwood and Associates
TITLE: Archaeological Investigation: Tentative Tract No. 36182 Sylmar, Los Angeles County, California
AREA: 10 ac
SITES: None

QUADNAME: San Fernando
MEMO:

IC ID#: LA1691 DATE: 1988 PAGES: 8
AUTHOR: Wessel, Richard L.
FIRM: U.S. Forest Service
TITLE: Archaeological Reconnaissance Report: Homenetmen Land Exchange
AREA: 182 ac
SITES: None

QUADNAME: San Fernando
MEMO:

IC ID#: LA1692 DATE: 1988 PAGES: 7
AUTHOR: Wessel, Richard L.
FIRM: U.S. Forest Service
TITLE: Archaeological Reconnaissance Report: Divide Fire Rehab
AREA: 101 ac, 13 li mi
SITES: None

QUADNAME: San Fernando
Sunland
MEMO:

SCCIC Bibliography: El Cariso Community Regional Park Improvement Project, Project #14955

IC ID#: LA1746 **DATE:** 1989 **PAGES:** 12
AUTHOR: Blodgett, Leslie M.
FIRM:
TITLE: Cultural Resource Survey and Impact Assessment for the City of Los Angeles Department of Water and Power Proposed Maclay Water Storage Tanks, Los Angeles, California
AREA: 15 ac
SITES: None

QUADNAME: San Fernando
MEMO:

IC ID#: LA1999 **DATE:** 1976 **PAGES:** 21
AUTHOR: McIntyre, Michael J.
FIRM: Northridge Archaeological Research Center, CSUN
TITLE: Assessment of the Archaeological Impact by the Development of Tract No. 31408
AREA: 60 ac
SITES: None

QUADNAME: San Fernando
MEMO:

IC ID#: LA2110 **DATE:** 1989 **PAGES:** 60
AUTHOR: Dillon, Brian D.
FIRM: Scientific Resource Surveys, Inc.
TITLE: Cultural Resource Investigation Maclay Ranch Limekilin Canyon San Fernando, California
AREA:
SITES: 19-000799H

QUADNAME: San Fernando
MEMO:

SCCIC Bibliography: El Cariso Community Regional Park Improvement Project, Project #14955

IC ID#: LA2146 **DATE:** 1990 **PAGES:** 7

AUTHOR: Alexander, Molly B.

FIRM: Archaeological Associates, Ltd.

TITLE: An Archaeological Survey of Six-Acre Property Located on Hubbard Street, Sylmar, Los Angeles County

AREA: 6 ac

SITES: None

QUADNAME: San Fernando

MEMO:

IC ID#: LA384 **DATE:** 1977 **PAGES:** 65

AUTHOR: Martz, Patricia

FIRM:

TITLE: Description and Evaluation of the Cultural Resources Within Haines Debris Basin, Hadsen Dam, Lopez Dam, and Selpulveda Dam, Los Angeles County, Los Angeles County

AREA: 3663 ac

SITES: 19-000300,19-000111,19-000345,19-000167

QUADNAME: Burbank,Canoga Park
San Fernando

MEMO:

IC ID#: LA395 **DATE:** 1978 **PAGES:** 6

AUTHOR: Singer, Clay A.

FIRM: C.A. Singer & Associates, Inc.

TITLE: Cultural Resource Survey and Impact Assessment for a 10 Acre Parcel in Sylmar (Tentative Tract No. 36182), Los Angeles County, California

AREA: 10 ac

SITES: None

QUADNAME: San Fernando

MEMO:

SCCIC Bibliography: El Cariso Community Regional Park Improvement Project, Project #14955

✓ **IC ID#:** LA4265 **DATE:** 1978 **PAGES:** 16

AUTHOR: McIntyre, Michael J.

FIRM: Angeles National Forest

TITLE: Archaeological Reconnaissance Report: Veteran Administration Hospital Land Disposal

AREA: 0.7 ac

✓ **SITES:** None

QUADNAME: San Fernando

MEMO:

✓ **IC ID#:** LA4498 **DATE:** 1999 **PAGES:** 23

AUTHOR: Wlodarski, Robert J.

FIRM: Historical, Environmental, Archaeological, Research, Team

TITLE: A Phase I Archaeological Study: A Proposed Senior Housing Project Located at 13574 Foothill Boulevard, City of Sylmar, Los Angeles County, California

AREA: < 2 ac

✓ **SITES:** None

QUADNAME: San Fernando

MEMO:

✓ **IC ID#:** LA455 **DATE:** 1979 **PAGES:** 10

AUTHOR: Van Horn, David M.

FIRM: Archaeological Associates, Ltd.

TITLE: Archaeological Survey Report: A 100+ Acre Parcel Located Adjacent to San Fernando Near the Pacoima Dam in the County of Los Angeles, California

AREA: 100 ac

SITES: Historic

QUADNAME: San Fernando

MEMO:

SCCIC Bibliography: El Cariso Community Regional Park Improvement Project, Project #14955

✓

IC ID#: LA464 **DATE:** 1979 **PAGES:** 23

AUTHOR: Foster, John M. and Louis J. Tartaglia

FIRM: Tartaglia Archaeological Consulting

TITLE: Cultural Resource Inventory of Tentative Tract 36183 EIR Case No. 98-79ZC (SUB)

AREA: 58 ac

✓**SITES:** none

QUADNAME: San Fernando

MEMO:

✓

IC ID#: LA589 **DATE:** 1979 **PAGES:** 5

AUTHOR: Van Horn, David M.

FIRM: Archaeological Associates, Ltd.

TITLE: Archaeological Survey Report: A 97.5 ACRE Parcel LOCATED ADJACENT TO SAN FERNANDO NEAR the PACOIMA DAM in the COUNTY of LOS ANGELES, CA

AREA: 98 ac

✓**SITES:** none

QUADNAME: San Fernando

MEMO:

✓

IC ID#: LA622 **DATE:** 1979 **PAGES:** 6

AUTHOR: Singer, Clay A.

FIRM: C.A. Singer & Associates, Inc.

TITLE: Cultural Resource Survey and Impact Assessment for Tentative TRACT NO. 35525 in SYLMAR, Los Angeles County, CALIF.

AREA: 1 ac

✓ **SITES:** none

QUADNAME: San Fernando

MEMO:

SCCIC Bibliography: El Cariso Community Regional Park Improvement Project, Project #14955

IC ID#: LA7005 **DATE:** 2002 **PAGES:** 5

AUTHOR: Schneyder-Case, Stacy

FIRM: Jones & Stokes

TITLE: Daly Water Conveyance System Angeles (Special Use Permit Issuance #LAR675001) Angeles National Forest, Los Angeles County, California

AREA: 1 ac

SITES: None

QUADNAME: San Fernando

MEMO: ARR Number 05-01-00753

IC ID#: LA7015 **DATE:** 2002 **PAGES:** 67

AUTHOR: McKenna, Jeanette A., Charles R. Ferguson

FIRM: McKenna et al.

TITLE: Results of a Phase I Cultural Resources Investigation for a Proposed Expansion of Los Angeles Mission College in the Community of Sylmar, Los Angeles County, California

AREA: 20 ac

SITES: None

QUADNAME: San Fernando

MEMO:

IC ID#: LA9191 **DATE:** 2007 **PAGES:** 12

AUTHOR: Bonner H. Wayne

FIRM: Michael Brandman Associates

TITLE: Cultural Resources Records Search and Site Visit Results for T-Mobile Candidate SV1I413A (MacLay Tanks), 13601 West Astoria Street, Sylmar, Los Angeles County, California

AREA:

SITES:

QUADNAME: San Fernando

MEMO:

SCCIC Bibliography: El Cariso Community Regional Park Improvement Project, Project #14955

IC ID#: LA9193 **DATE:** 2007 **PAGES:** 12

AUTHOR: Bonner H. Wayne

FIRM: Michael Brandman Associates

TITLE: Cultural Resources Records Search and Site Visit Results for T-Mobile Candidate SV11376A (North Valley Storage), 13043 Foothill Boulevard, Sylmar, Los Angeles County, California

AREA:

SITES: 12685 Foothill Blvd.

QUADNAME: San Fernando

MEMO:

IC ID#: LA977 **DATE:** 1979 **PAGES:** 26

AUTHOR: Foster, John M.

FIRM: NARC

TITLE: Assessment of the Impact UPon Archaeological Resources BY the PROPOSED DEVELOPMENT of the HUBBARD-ELDREDGE SITE #3

AREA:

SITES: none

QUADNAME: San Fernando

MEMO:

APPENDIX B:
Native American Consultation

STATE OF CALIFORNIA Arnold Schwarzenegger, Governor

NATIVE AMERICAN HERITAGE COMMISSION
915 CAPITOL MALL, ROOM 364
SACRAMENTO, CA 95814
(916) 653-6251
Fax (916) 657-5390
Web Site www.nahc.ca.gov
e-mail: ds_nahc@pacbell.net

October 15, 2008

Ms. Caprice D. (Kip) Harper
SWCA ENVIRONMENTAL CONSULTANTS
625 Fair Oaks Avenue, Suite 190
South Pasadena, CA 91030

Sent by FAX to: 626-240-0607
No. of Pages: 2

Re: Request for a Sacred Lands File records search and Native American Contacts list for the proposed **El Cariso Community Regional Park Improvement Project #14955** located in the San Fernando Valley; Los Angeles County, California

Dear Ms. Harper:

The Native American Heritage Commission was able to perform a record search of its Sacred Lands File (SLF) for the affected project area/area of potential effect (APE). The SLF 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 guarantee the absence of cultural resources in any project area.

Early consultation with Native American tribes in your area is the best way to avoid unanticipated discoveries once a project is underway. Enclosed are the names of culturally-affiliated Native American Contacts that may have knowledge of cultural resources in the project area. A list of Native American contacts is attached to assist you. It is advisable to contact the persons listed; if they cannot supply you with specific information about the impact on cultural resources, they may be able to refer you to another tribe or person knowledgeable of the cultural resources in or near the affected project area. A local tribe or Native American individual may be the only source of a Native American cultural resource.

Lead agencies should consider avoidance, as defined in Section 15370 of the California Environmental Quality Act (CEQA) when significant cultural resources could be affected by a project. Also, Public Resources Code Section 15064.5(f) and Section 15097.98 and Health & Safety Code Section 7050.5 provide for provisions for accidentally discovered archeological resources during construction and mandate the processes to be followed in the event of an accidental discovery of any human remains in a project location other than a 'dedicated cemetery. Discussion of these should be included in your environmental documents, as appropriate.

If you have any questions about this response to your request, please do not hesitate to contact me at (916) 653-6251.

Sincerely,

Dave Singleton, Program Analyst

Attachment: Native American Contact List

Native American Contacts
Los Angeles County
October 15, 2008

Charles Cooke
32835 Santiago Road
Acton , CA 93510
(661) 733-1812 - cell
suscol@intox.net
Chumash
Fernandeno
Tataviam
Kitanemuk

San Fernando Band of Mission Indians
John Valenzuela, Chairperson
P.O. Box 221838
Newhall , CA 91322
tsen2u@msn.com
(661) 753-9833 Office
(760) 885-0955 Cell
(760) 949-1604 Fax
Fernandeño
Tataviam
Serrano
Vanyume
Kitanemuk

Beverly Salazar Folkes
1931 Shadybrook Drive
Thousand Oaks , CA 91362
805 492-7255
(805) 558-1154 - cell
folkes9@msn.com
Chumash
Tataviam
Fernandeño

Randy Guzman - Folkes
4577 Alamo Street, Unit C
Simi Valley , CA 93063
ndnrandy@hotmail.com
(805) 905-1675 - cell
Chumash
Fernandeño
Tataviam
Shoshone Paiute
Yaqui

Fernandeno Tataviam Band of Mission Indians
William Gonzalaes, Cultural/Environ Depart
601 South Brand Boulevard, Suite 102
San Fernando , CA 91340
ced@tataviam.org
(818) 837-0794 Office
(818) 581-9293 Cell
(818) 837-0796 Fax
Fernandeno
Tataviam

Kitanemuk & Yowlumne Tejon Indians
Delia Dominguez
981 N. Virginia
Covina , CA 91722
(626) 339-6785
Yowlumne
Kitanemuk

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 Resources Code and 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 El Cariso Community Regional Park Improvement Project 14955; located in the San Fernando Valley; Los Angeles County for which a Sacred Lands File search and Native American Contacts list were requested.

SWCA®
ENVIRONMENTAL CONSULTANTS
Sound Science. Creative Solutions.

Pasadena Office
625 Fair Oaks Avenue, Suite 190
South Pasadena, CA 91030
Tel 626.240.0587 Fax 626.240.0607
www.swca.com

October 22, 2008

Charles Cooke
32835 Santiago Road
Acton, CA 93510

Sent Via U.S. Mail

RE: El Cariso Community Park Improvement Project

Dear Mr. Cooke:

SWCA Environmental Consultants has been retained to conduct a cultural resources assessment for the El Cariso Community Regional Park Improvement Project in the City of Los Angeles, Los Angeles County, California. As part of the process of identifying cultural resource issues for this project the Native American Heritage Commission (NAHC) was contacted by SWCA to conduct a Sacred Lands File search and to provide a list of Native American individuals and/or tribal organizations that may have knowledge of cultural resources in or near the project area. The NAHC search failed to indicate the presence of Native American cultural resources in the immediate vicinity of the project area, but did recommend that we consult with you directly regarding your knowledge of the presence of cultural resources that may be impacted by this project.

The County of Los Angeles Department of Parks and Recreation proposes to construct and operate a new gymnasium and community building at the El Cariso Community Regional Park in the community of Sylmar (City of Los Angeles) in Los Angeles County, California. The proposed project would include demolition of an existing administration building, construction of an additional 57 parking spaces, landscaping improvements, and upgrades to walkways. The project area, which occupies approximately 79 acres of land, is depicted on the *San Fernando*, California 7.5′ U.S. Geological Survey Quadrangle in an unsectioned portion of Township 3 North, Range 15 West. El Cariso Community Regional Park is approximately one mile east of the Foothill Freeway (I-210), located at 13100 Hubbard Street between Simshaw and Eldridge Avenues (see enclosed map).

If you have any knowledge of cultural resources that may exist within or near the project area and wish to have your concerns considered, please contact Caprice (Kip) Harper at (626) 240-0587, kharper@swca.com, or at the above address at your earliest convenience. Thank you for your assistance.

This consultation is project-specific and is not intended to constitute as SB 18 consultation, should that be required for this project.

Sincerely,

Kip Harper

Caprice D. (Kip) Harper, M.A., RPA
Project Manager – Cultural Resources

Enclosures: Project Location Map

SWCA®
ENVIRONMENTAL CONSULTANTS
Sound Science. Creative Solutions.

Pasadena Office
625 Fair Oaks Avenue, Suite 190
South Pasadena, CA 91030
Tel 626.240.0587 Fax 626.240.0607
www.swca.com

October 22, 2008

Delia Dominguez
Kitanemuk & Yowlumne Tejon Indians
981 North Virginia
Covina, CA 91722

Sent Via U.S. Mail

RE: El Cariso Community Park Improvement Project

Dear Ms. Dominguez:

SWCA Environmental Consultants has been retained to conduct a cultural resources assessment for the El Cariso Community Regional Park Improvement Project in the City of Los Angeles, Los Angeles County, California. As part of the process of identifying cultural resource issues for this project the Native American Heritage Commission (NAHC) was contacted by SWCA to conduct a Sacred Lands File search and to provide a list of Native American individuals and/or tribal organizations that may have knowledge of cultural resources in or near the project area. The NAHC search failed to indicate the presence of Native American cultural resources in the immediate vicinity of the project area, but did recommend that we consult with you directly regarding your knowledge of the presence of cultural resources that may be impacted by this project.

The County of Los Angeles Department of Parks and Recreation proposes to construct and operate a new gymnasium and community building at the El Cariso Community Regional Park in the community of Sylmar (City of Los Angeles) in Los Angeles County, California. The proposed project would include demolition of an existing administration building, construction of an additional 57 parking spaces, landscaping improvements, and upgrades to walkways. The project area, which occupies approximately 79 acres of land, is depicted on the *San Fernando*, California 7.5′ U.S. Geological Survey Quadrangle in an unsectioned portion of Township 3 North, Range 15 West. El Cariso Community Regional Park is approximately one mile east of the Foothill Freeway (I-210), located at 13100 Hubbard Street between Simshaw and Eldridge Avenues (see enclosed map).

If you have any knowledge of cultural resources that may exist within or near the project area and wish to have your concerns considered, please contact Caprice (Kip) Harper at (626) 240-0587, kharper@swca.com, or at the above address at your earliest convenience. Thank you for your assistance.

This consultation is project-specific and is not intended to constitute as SB 18 consultation, should that be required for this project.

Sincerely,

Kip Harper

Caprice D. (Kip) Harper, M.A., RPA
Project Manager – Cultural Resources

Enclosures: Project Location Map

SWCA®
ENVIRONMENTAL CONSULTANTS
Sound Science. Creative Solutions.

Pasadena Office
625 Fair Oaks Avenue, Suite 190
South Pasadena, CA 91030
Tel 626.240.0587 Fax 626.240.0607
www.swca.com

October 22, 2008

Beverly Salazar Folkes
1931 Shadybrook Drive
Thousand Oaks, CA 91362

Sent Via U.S. Mail

RE: El Cariso Community Park Improvement Project

Dear Ms. Folkes:

SWCA Environmental Consultants has been retained to conduct a cultural resources assessment for the El Cariso Community Regional Park Improvement Project in the City of Los Angeles, Los Angeles County, California. As part of the process of identifying cultural resource issues for this project the Native American Heritage Commission (NAHC) was contacted by SWCA to conduct a Sacred Lands File search and to provide a list of Native American individuals and/or tribal organizations that may have knowledge of cultural resources in or near the project area. The NAHC search failed to indicate the presence of Native American cultural resources in the immediate vicinity of the project area, but did recommend that we consult with you directly regarding your knowledge of the presence of cultural resources that may be impacted by this project.

The County of Los Angeles Department of Parks and Recreation proposes to construct and operate a new gymnasium and community building at the El Cariso Community Regional Park in the community of Sylmar (City of Los Angeles) in Los Angeles County, California. The proposed project would include demolition of an existing administration building, construction of an additional 57 parking spaces, landscaping improvements, and upgrades to walkways. The project area, which occupies approximately 79 acres of land, is depicted on the *San Fernando*, California 7.5′ U.S. Geological Survey Quadrangle in an unsectioned portion of Township 3 North, Range 15 West. El Cariso Community Regional Park is approximately one mile east of the Foothill Freeway (I-210), located at 13100 Hubbard Street between Simshaw and Eldridge Avenues (see enclosed map).

If you have any knowledge of cultural resources that may exist within or near the project area and wish to have your concerns considered, please contact Caprice (Kip) Harper at (626) 240-0587, kharper@swca.com, or at the above address at your earliest convenience. Thank you for your assistance.

This consultation is project-specific and is not intended to constitute as SB 18 consultation, should that be required for this project.

Sincerely,

Kip Harper

Caprice D. (Kip) Harper, M.A., RPA
Project Manager – Cultural Resources

Enclosures: Project Location Map

SWCA®
ENVIRONMENTAL CONSULTANTS
Sound Science. Creative Solutions.

Pasadena Office
625 Fair Oaks Avenue, Suite 190
South Pasadena, CA 91030
Tel 626.240.0587 Fax 626.240.0607
www.swca.com

October 22, 2008

William Gonzalaes
Fernandeno Tataviam Band of Mission Indians
601 South Brand Boulevard, Suite 102
San Fernando, CA 91340

Sent Via U.S. Mail

RE: El Cariso Community Park Improvement Project

Dear Mr. Gonzalaes:

SWCA Environmental Consultants has been retained to conduct a cultural resources assessment for the El Cariso Community Regional Park Improvement Project in the City of Los Angeles, Los Angeles County, California. As part of the process of identifying cultural resource issues for this project the Native American Heritage Commission (NAHC) was contacted by SWCA to conduct a Sacred Lands File search and to provide a list of Native American individuals and/or tribal organizations that may have knowledge of cultural resources in or near the project area. The NAHC search failed to indicate the presence of Native American cultural resources in the immediate vicinity of the project area, but did recommend that we consult with you directly regarding your knowledge of the presence of cultural resources that may be impacted by this project.

The County of Los Angeles Department of Parks and Recreation proposes to construct and operate a new gymnasium and community building at the El Cariso Community Regional Park in the community of Sylmar (City of Los Angeles) in Los Angeles County, California. The proposed project would include demolition of an existing administration building, construction of an additional 57 parking spaces, landscaping improvements, and upgrades to walkways. The project area, which occupies approximately 79 acres of land, is depicted on the *San Fernando*, California 7.5′ U.S. Geological Survey Quadrangle in an unsectioned portion of Township 3 North, Range 15 West. El Cariso Community Regional Park is approximately one mile east of the Foothill Freeway (I-210), located at 13100 Hubbard Street between Simshaw and Eldridge Avenues (see enclosed map).

If you have any knowledge of cultural resources that may exist within or near the project area and wish to have your concerns considered, please contact Caprice (Kip) Harper at (626) 240-0587, kharper@swca.com, or at the above address at your earliest convenience. Thank you for your assistance.

This consultation is project-specific and is not intended to constitute as SB 18 consultation, should that be required for this project.

Sincerely,

Kip Harper

Caprice D. (Kip) Harper, M.A., RPA
Project Manager – Cultural Resources

Enclosures: Project Location Map

SWCA®
ENVIRONMENTAL CONSULTANTS
Sound Science. Creative Solutions.

Pasadena Office
625 Fair Oaks Avenue, Suite 190
South Pasadena, CA 91030
Tel 626.240.0587 Fax 626.240.0607
www.swca.com

October 22, 2008

Randy Guzman - Folkes
4577 Alamo Street, Unit C
Simi Valley, CA 93063

Sent Via U.S. Mail

RE: El Cariso Community Park Improvement Project

Dear Mr. Guzman - Folkes:

SWCA Environmental Consultants has been retained to conduct a cultural resources assessment for the El Cariso Community Regional Park Improvement Project in the City of Los Angeles, Los Angeles County, California. As part of the process of identifying cultural resource issues for this project the Native American Heritage Commission (NAHC) was contacted by SWCA to conduct a Sacred Lands File search and to provide a list of Native American individuals and/or tribal organizations that may have knowledge of cultural resources in or near the project area. The NAHC search failed to indicate the presence of Native American cultural resources in the immediate vicinity of the project area, but did recommend that we consult with you directly regarding your knowledge of the presence of cultural resources that may be impacted by this project.

The County of Los Angeles Department of Parks and Recreation proposes to construct and operate a new gymnasium and community building at the El Cariso Community Regional Park in the community of Sylmar (City of Los Angeles) in Los Angeles County, California. The proposed project would include demolition of an existing administration building, construction of an additional 57 parking spaces, landscaping improvements, and upgrades to walkways. The project area, which occupies approximately 79 acres of land, is depicted on the *San Fernando*, California 7.5′ U.S. Geological Survey Quadrangle in an unsectioned portion of Township 3 North, Range 15 West. El Cariso Community Regional Park is approximately one mile east of the Foothill Freeway (I-210), located at 13100 Hubbard Street between Simshaw and Eldridge Avenues (see enclosed map).

If you have any knowledge of cultural resources that may exist within or near the project area and wish to have your concerns considered, please contact Caprice (Kip) Harper at (626) 240-0587, kharper@swca.com, or at the above address at your earliest convenience. Thank you for your assistance.

This consultation is project-specific and is not intended to constitute as SB 18 consultation, should that be required for this project.

Sincerely,

Kip Harper

Caprice D. (Kip) Harper, M.A., RPA
Project Manager – Cultural Resources

Enclosures: Project Location Map

SWCA®
ENVIRONMENTAL CONSULTANTS
Sound Science. Creative Solutions.

Pasadena Office
625 Fair Oaks Avenue, Suite 190
South Pasadena, CA 91030
Tel 626.240.0587 Fax 626.240.0607
www.swca.com

October 22, 2008

John Valenzuela
San Fernando Band of Mission Indians
P.O. Box 221838
Newhall, CA 91322

Sent Via U.S. Mail

RE: El Cariso Community Park Improvement Project

Dear Mr. Valenzuela:

SWCA Environmental Consultants has been retained to conduct a cultural resources assessment for the El Cariso Community Regional Park Improvement Project in the City of Los Angeles, Los Angeles County, California. As part of the process of identifying cultural resource issues for this project the Native American Heritage Commission (NAHC) was contacted by SWCA to conduct a Sacred Lands File search and to provide a list of Native American individuals and/or tribal organizations that may have knowledge of cultural resources in or near the project area. The NAHC search failed to indicate the presence of Native American cultural resources in the immediate vicinity of the project area, but did recommend that we consult with you directly regarding your knowledge of the presence of cultural resources that may be impacted by this project.

The County of Los Angeles Department of Parks and Recreation proposes to construct and operate a new gymnasium and community building at the El Cariso Community Regional Park in the community of Sylmar (City of Los Angeles) in Los Angeles County, California. The proposed project would include demolition of an existing administration building, construction of an additional 57 parking spaces, landscaping improvements, and upgrades to walkways. The project area, which occupies approximately 79 acres of land, is depicted on the *San Fernando*, California 7.5′ U.S. Geological Survey Quadrangle in an unsectioned portion of Township 3 North, Range 15 West. El Cariso Community Regional Park is approximately one mile east of the Foothill Freeway (I-210), located at 13100 Hubbard Street between Simshaw and Eldridge Avenues (see enclosed map).

If you have any knowledge of cultural resources that may exist within or near the project area and wish to have your concerns considered, please contact Caprice (Kip) Harper at (626) 240-0587, kharper@swca.com, or at the above address at your earliest convenience. Thank you for your assistance.

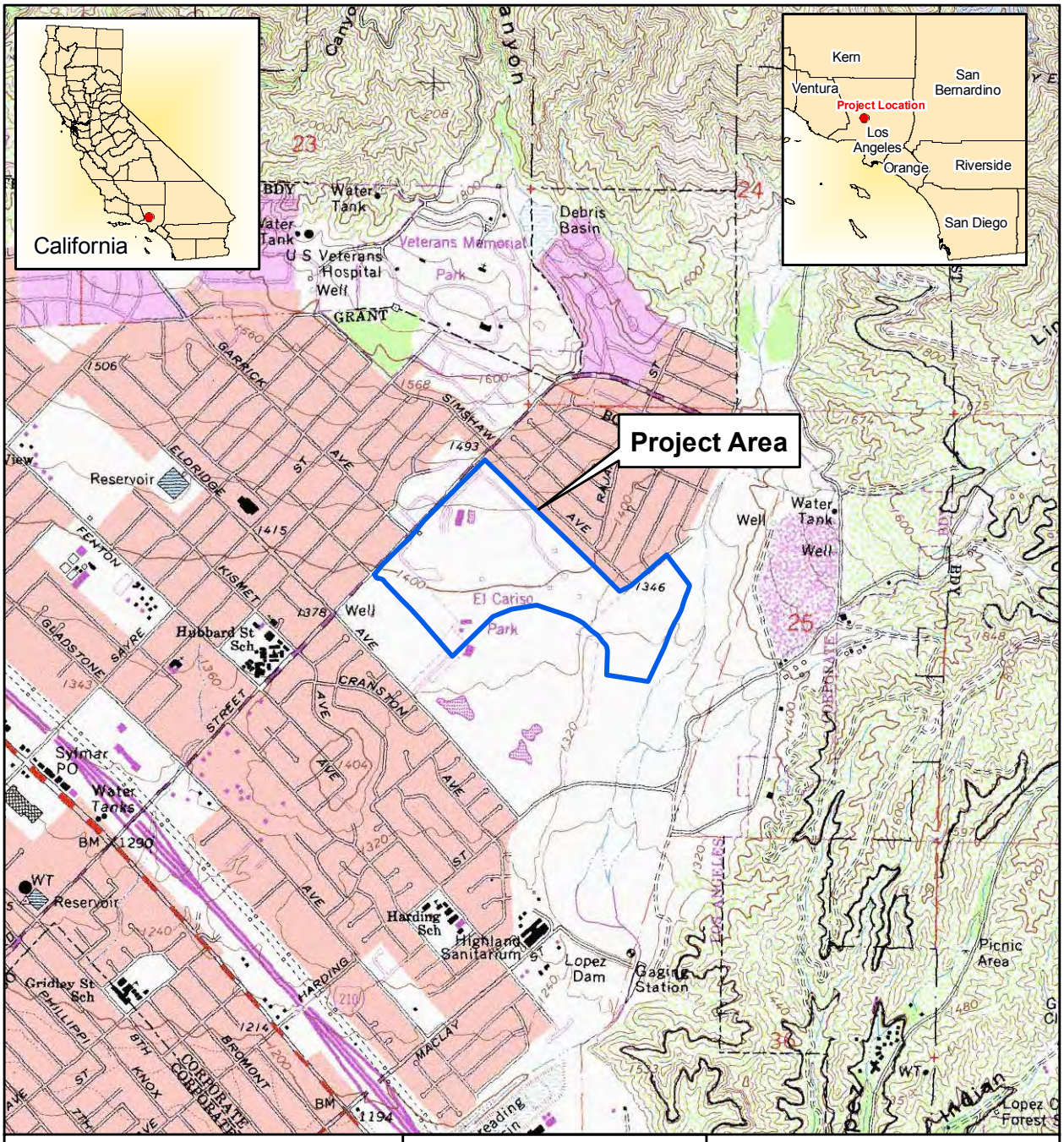
This consultation is project-specific and is not intended to constitute as SB 18 consultation, should that be required for this project.

Sincerely,

Kip Harper

Caprice D. (Kip) Harper, M.A., RPA
Project Manager – Cultural Resources

Enclosures: Project Location Map



SWCA ENVIRONMENTAL CONSULTANTS

Project Location Map

El Cariso Park Gymnasium and Community Building Project

Figure 1

Rev. 1

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

NATIVE AMERICAN HERITAGE COMMISSION
915 CAPITOL MALL, ROOM 364
SACRAMENTO, CA 95814
(916) 653-6251
Fax (916) 657-5390
Web Site www.nahc.ca.gov
ds_nahc@pacbell.net

December 15, 2011

Ms. Rosemarie Crisologo
Parsons
100 W. Walnut Street, Suite B4
Pasadena, CA 91124

Sent by FAX to: 626-440-6200
No. of Pages: 4

Re: Sacred Lands File Search and Native American Contacts list for the **"Proposed El Cariso Park Gymnasium and Community Building Project #14955;"** located in the Sylmar Area of the San Fernando Valley; Los Angeles County, California

Dear Ms. Crisologo:

The Native American Heritage Commission (NAHC) conducted a Sacred Lands File search of the 'area of potential effect,' (APE) based on the USGS coordinates provided and **Native American cultural resources were not identified** in the project area of potential effect (e.g. APE): you specified. Also, please note; the NAHC Sacred Lands Inventory is not exhaustive and does not preclude the discovery of cultural resources during any project groundbreaking activity.

California Public Resources Code §§5097.94 (a) and 5097.96 authorize the NAHC to establish a Sacred Land Inventory to record Native American sacred sites and burial sites. These records are exempt from the provisions of the California Public Records Act pursuant to. California Government Code §6254 (r). The purpose of this code is to protect such sites from vandalism, theft and destruction.

In the 1985 Appellate Court decision (170 Cal App 3rd 604), the court held that the NAHC has jurisdiction and special expertise, as a state agency, over affected Native American resources, impacted by proposed projects including archaeological, places of religious significance to Native Americans and burial sites

The California Environmental Quality Act (CEQA – CA Public Resources Code §§ 21000-21177, amendments effective 3/18/2010) requires that any project that causes a substantial adverse change in the significance of an historical resource, that includes archaeological resources, is a 'significant effect' requiring the preparation of an Environmental Impact Report (EIR) per the CEQA Guidelines defines a significant impact on the environment as 'a substantial, or potentially substantial, adverse change in any of physical conditions within an area affected by the proposed project, including ...objects of historic or aesthetic significance." In order to comply with this provision, the lead agency is required to assess whether the project will have an adverse impact on these resources within the 'area of potential effect (APE), and if so, to mitigate that effect. CA Government Code §65040.12(e) defines "environmental justice" provisions and is applicable to the environmental review processes.

Early consultation with Native American tribes in your area is the best way to avoid unanticipated discoveries once a project is underway. Local Native Americans may have knowledge of the religious and cultural significance of the historic properties of the proposed project for the area (e.g. APE). Consultation with Native American communities is also a matter of environmental justice as defined by California Government Code §65040.12(e). We urge consultation with those tribes and interested Native Americans on the list the NAHC has attached in order to see if your proposed project might impact Native American cultural resources. Lead agencies should consider avoidance as defined in §15370 of the CEQA Guidelines when significant cultural resources as defined by the CEQA Guidelines §15064.5 (b)(c)(f) may be affected by a proposed project. If so, Section 15382 of the CEQA Guidelines defines a significant impact on the environment as "substantial," and Section 2183.2 which requires documentation, data recovery of cultural resources.

The 1992 *Secretary of the Interiors Standards for the Treatment of Historic Properties* were revised so that they could be applied to all historic resource types included in the National Register of Historic Places and including cultural landscapes. Also, federal Executive Orders Nos. 11593 (preservation of cultural environment), 13175 (coordination & consultation) and 13007 (Sacred Sites) are helpful, supportive guides for Section 106 consultation. The aforementioned Secretary of the Interior's *Standards* include recommendations for all 'lead agencies' to consider the historic context of proposed projects and to "research" the cultural landscape that might include the 'area of potential effect.'

Partnering with local tribes and interested Native American consulting parties, on the NAHC list, should be conducted in compliance with the requirements of federal NEPA (42 U.S.C 4321-43351) and Section 106 4(f), Section 110 (f)(k) of federal NHPA (16 U.S.C. 470 *et seq*), 36 CFR Part 800.3 (f) (2) & .5, the President's Council on Environmental Quality (CSQ, 42 U.S.C 4371 *et seq.* and NAGPRA (25 U.S.C. 3001-3013) as appropriate. The 1992 *Secretary of the Interiors Standards for the Treatment of Historic Properties* were revised so that they could be applied to all historic resource types included in the National Register of Historic Places and including cultural landscapes. Also, federal Executive Orders Nos. 11593 (preservation of cultural environment), 13175 (coordination & consultation) and 13007 (Sacred Sites) are helpful, supportive guides for Section 106 consultation. The NAHC remains concerned about the limitations and methods employed for NHPA Section 106 Consultation.

Also, California Public Resources Code Section 5097.98, California Government Code §27491 and Health & Safety Code Section 7050.5 provide for provisions for accidentally discovered archeological resources during construction and mandate the processes to be followed in the event of an accidental discovery of any human remains in a project location other than a 'dedicated cemetery', another important reason to have Native American Monitors on board with the project.

To be effective, consultation on specific projects must be the result of an ongoing relationship between Native American tribes and lead agencies, project proponents and their contractors, in the opinion of the NAHC. An excellent way to reinforce the relationship between a project and local tribes is to employ Native American Monitors in all phases of proposed projects including the planning phases.

Confidentiality of "historic properties of religious and cultural significance" may also be protected under Section 304 of he NHPA or at the Secretary of the Interior discretion if not eligible for listing on the National Register of Historic Places. The Secretary may also be advised by the federal Indian Religious Freedom Act (cf. 42 U.S.C., 1996) in issuing a decision

on whether or not to disclose items of religious and/or cultural significance identified in or near the APE and possibility threatened by proposed project activity.

If you have any questions about this response to your request, please do not hesitate to contact me at (916) 653-6251.

Sincerely,

Dave Singleton

Attachment Native American Contact List

California Native American Contacts
Los Angeles County
December 15, 2011

Charles Cooke
32835 Santiago Road
Acton , CA 93510
suscol@intox.net

(661) 733-1812 - cell
suscol@intox.net

Chumash
Fernandeno
Tataviam
Kitanemuk

Tongva Ancestral Territorial Tribal Nation
John Tommy Rosas, Tribal Admin.
Private Address
,
tattnlaw@gmail.com
310-570-6567

Gabrielino Tongva

Beverly Salazar Folkes
1931 Shadybrook Drive
Thousand Oaks, CA 91362
folkes@msn.com
805 492-7255
(805) 558-1154 - cell
folkes9@msn.com

Chumash
Tataviam
Ferrnandeño

Kitanemuk & Yowlumne Tejon Indians
Delia Dominguez, Chairperson
981 N. Virginia
Covina , CA 91722
deedominguez@juno.com
(626) 339-6785

Yowlumne
Kitanemuk

Fernandeno Tataviam Band of Mission Indians
Ronnie Salas, Cultural Preservation Department
601 South Brand Boulevard, Suite 102
San Fernando CA 91340
rsalas@tataviam-nsn.gov
(818) 837-0794 Office

(818) 837-0796 Fax

Fernandeno
Tataviam

San Fernando Band of Mission Indians
John Valenzuela, Chairperson
P.O. Box 221838
Newhall , CA 91322
tsen2u@hotmail.com
(661) 753-9833 Office
(760) 885-0955 Cell
(760) 949-1604 Fax

Fernandeño
Tataviam
Serrano
Vanyume
Kitanemuk

LA City/County Native American Indian Comm
Ron Andrade, Director
3175 West 6th St, Rm. 403
Los Angeles , CA 90020
randrade@css.lacounty.gov
(213) 351-5324
(213) 386-3995 FAX

Randy Guzman - Folkes
6471 Cornell Circle
Moorpark , CA 93021
ndnRandy@yahoo.com
(805) 905-1675 - cell

Chumash
Fernandeño
Tataviam
Shoshone Paiute
Yaqui

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of the statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is applicable for contacting local Native Americans with regard to cultural resources for the proposed El Cariso Community Regional Park Improvement Project (Gymnasium and Community Building); located in Sylmar in Los Angeles County, California for which a Sacred Lands File search and Native American Contacts list were requested.

ATTACHMENT 2:
CORRESPONDENCE FROM STEVE ORTEGA OF THE FERNANDEÑO TATAVIUM BAND OF MISSION INDIANS DATED JULY 2, 2009

Tomfar Rudy J. Ortega Sr.
Tribal President

Fernandeño Tataviam Band of Mission Indians

Tribal Historic & Cultural Preservation

July 2, 2009

To Rosemarie Crisologo
Cultural Resources

Re: El Cariso Community Regional Park Gymnasium

We appreciate the opportunity to be able to provide comments on the proposed of the Gymnasium Project. The Fernandeño Tataviam Band of Mission Indians (Tribe) is a California Native American Indian government in the northern Los Angeles County. Recognized by the State of California trustee agency for Native American Cultural Resources, the Native American Heritage Commission designated the Tribe as the local trustee agency within northern Los Angeles County by limits of its tribal historic boundaries. In accordance to California Government Code §65352.3 (SB18), and California Environmental Quality Act (CEQA) the Tribe fully engages to extent of the respected governing laws to protect and maintain all interested historic and cultural sites.

After careful review of the information that you have provided, the Tribe have concluded that there may be immediate concern that cultural resources might be impacted during the course of soil disturbance. The area of the proposed project site is considered sensitive of Native American Cultural Resources due to the fact it has been a traditional habitation, near the Pacoima Watershed that was a prime resource for the Tataviam Indians. The Tataviam are believed to have arrived sometime around AD 450. Numerous archaeological sites have been documented in the Northeast San Fernando Valley area. Due to this extent the Tribe understands that there is a possibility of Cultural Resources that may be disturbed in the project. The Tribe also understands that the project area is an existing disturbed area, however with new building regulations creates a possibility of Culture Resources being discovered.

Sincerely

Steve Ortega
THCP Committee Member

601 South Brand Boulevard, Suite 102 | San Fernando | California 91340 | (818) 837-0794 | Fax (818) 837-0796

APPENDIX C

GEOTECHNICAL INVESTIGATION REPORT

UPDATED GEOTECHNICAL INVESTIGATION

PROPOSED PARK IMPROVEMENTS
EL CARISO PARK
13100 HUBBARD STREET
LOS ANGELES, CALIFORNIA

GEOCON
WEST, INC.

GEOTECHNICAL
ENVIRONMENTAL
MATERIALS

PREPARED FOR

COUNTY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS
ALHAMBRA, CALIFORNIA

PROJECT NO. A8559-06-38A

OCTOBER 2, 2012

Project No. A8559-06-38A
October 2, 2012

County of Los Angeles
Department of Public Works
900 S. Fremont Street, 5th Floor
Alhambra, CA 91803

Attention: Mr. Sam Shadab

Subject: UPDATED GEOTECHNICAL INVESTIGATION
PROPOSED PARK IMPROVEMENTS
EL CARISO PARK
13100 HUBBARD STREET
SYLMAR DISTRICT OF THE CITY OF LOS ANGELES, CALIFORNIA

Reference: Geotechnical Investigation, Proposed Park Improvements, El Cariso Park, 13100 Hubbard Street, Sylmar, California, Project No. A8559-06-38, prepared by Geocon West, Inc., dated November 22, 2010.

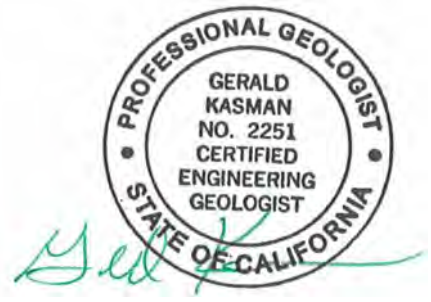
Dear Mr. Shadab:

In accordance with your authorization of our proposal dated September 19, 2012, we have performed a geotechnical investigation for the proposed park improvements within El Cariso Park located at 13100 Hubbard Street in Sylmar District of the City of Los Angeles, California. It is our understanding that the locations of the improvements addressed in the referenced geotechnical investigation have been revised. The accompanying report presents the findings of our study, and our conclusions and recommendations pertaining to the geotechnical aspects of design and construction of proposed improvements. Based on the results of our investigation, it is our opinion that the site can be developed as proposed, provided the recommendations in this report are followed and implemented during construction.

If you have any questions regarding this report, or if we may be of further service, please contact the undersigned.

Very truly yours,
GEOCON WEST, INC.

Harry Derkalousdian
PE 79694



Gerald A. Kasman
CEG 2251

Neal D. Berliner
GE 2576

(4+1 CD) Addressee

TABLE OF CONTENTS

1. PURPOSE 1

2. SITE DESCRIPTION 1

3. GEOLOGIC SETTING 2

4. SOIL AND GEOLOGIC CONDITIONS 2
   - 4.1 Artificial Fill 2
   - 4.2 Alluvial Fan 3

5. GROUNDWATER 3

6. GEOLOGIC HAZARDS 3
   - 6.1 Surface Fault Rupture 3
   - 6.2 Seismicity 4
   - 6.3 Estimation of Peak Ground Accelerations 5
   - 6.3.1 Deterministic Analysis 5
   - 6.3.2 Probabilistic Analysis 6
   - 6.4 Seismic Design Criteria 6
   - 6.5 Liquefaction Potential 7
   - 6.6 Landslides 8
   - 6.7 Earthquake-Induced Flooding 8
   - 6.8 Tsunamis, Seiches and Flooding 8
   - 6.9 Oil Fields & Methane Potential 8
   - 6.10 Subsidence 9

7. CONCLUSIONS AND RECOMMENDATIONS 9
   - 7.1 General 9
   - 7.2 Mandatory Building Code Statement 11
   - 7.3 Minimum Resistivity, pH and Water-Soluble Sulfate 11
   - 7.4 Soil and Excavation Characteristics 11
   - 7.5 Grading 12
   - 7.6 Shrinkage 14
   - 7.7 Foundation Design 14
   - 7.8 Lateral Design 15
   - 7.9 Deepened Foundations 16
   - 7.10 Deepened Foundation Installation 16
   - 7.11 Miscellaneous Foundations 17
   - 7.12 Conventional Foundation Settlement 18
   - 7.13 Concrete Slabs-on-Grade 18
   - 7.14 Pavement Recommendations 19
   - 7.15 Storm Water Infiltration 20
   - 7.16 Temporary Excavations 21
   - 7.17 Surface Drainage 22
   - 7.18 Plan Review 22

LIMITATIONS AND UNIFORMITY OF CONDITIONS

LIST OF REFERENCES

TABLE OF CONTENTS (Continued)

MAPS, TABLES, AND ILLUSTRATIONS
- Figure 1, Vicinity Map
- Figure 2, Site Plan
- Figure 3, California Fault Map
- Figure 4, California Seismicity Map
- Figure 5, Probability of Exceedance
- Table 1, Faults within 60 Miles of the Site – Deterministic Site Parameters

APPENDIX A
- FIELD INVESTIGATION
- Figures A-1 through A-11, Logs of Borings

APPENDIX B
- LABORATORY TESTING
- Figures B1 through B3, Direct Shear Test Results
- Figures B4, Laboratory Test Results
- Figure B5, Corrosivity Test Results

APPENDIX C
- BORING LOGS, SITE PLAN, AND LABORATORY TEST DATA FROM PREVIOUS REPORT

GEOTECHNICAL INVESTIGATION

1. PURPOSE

This report presents the results of a geotechnical investigation for the proposed park improvements within El Cariso Park located at 13100 Hubbard Street in Sylmar District of the City of Los Angeles, California (see Figure 1, Vicinity Map). The purpose of this investigation was to evaluate subsurface soil conditions in the areas of proposed improvements and, based on conditions encountered, to provide conclusions and recommendations pertaining to the geotechnical aspects of design and construction.

The scope of our investigation included reviewing our previous geotechnical investigation, as well as conducting supplemental field explorations, laboratory testing, engineering analysis, and the preparation of this report. The site was previously explored on October 28, 2010 by excavating fourteen borings to depths between 5½ and 15½ feet below the ground surface. The boring logs, site plan, and pertinent laboratory data are presented in Appendix C. The site was further explored on September 25, 2012 by excavating eleven 8-inch diameter borings utilizing a truck-mounted hollow stem-auger drilling machine to gather information in previously unexplored area where improvements are now proposed. The borings were advanced to depths between 9½ and 25½ feet below the ground surface. Percolation testing for the design of a storm water infiltration system was performed in two of the borings. The approximate locations of the exploratory excavations are depicted on the Site Plan (see Figure 2). A detailed discussion of the field investigation, including boring logs, is presented in Appendix A. Where applicable, existing data from the previous geotechnical investigation was utilized as well as supplemental data gathered during this investigation.

Laboratory tests were performed on selected soil samples obtained during the investigation to determine pertinent physical soil properties. Appendix B presents a summary of the laboratory test results.

The recommendations presented herein are based on analysis of the data obtained during the investigation and our experience with similar soil and geologic conditions. References reviewed to prepare this report are provided in the *List of References* section.

2. SITE DESCRIPTION

The area for the park improvements is situated within El Cariso Park located at 13100 Hubbard Street in Sylmar District of the City of Los Angeles, California. The park is bounded by Hubbard Street to the northwest, by residential homes to the northeast, by a golf course to the southwest, and by Los Angeles Mission College to the southwest.

Based on the plans provided to us, it is our understanding that the Los Angeles Department of Public Works intends on constructing improvements to the existing park consisting of: a 280 x 325 square-foot artificial turf soccer field with bleachers and light standards, a 120 x 180 square-foot natural grass soccer field with light standards, an ADA compliant on-grade restroom building, six picnic areas with metal shade structures,

a universally accessible playground, shade canopies for existing play areas, enlargement of the existing northern parking lot, new pathways, as well as upgrades and replacement of existing walkways for ADA compliancy. In addition, an infiltration system is proposed beneath the proposed artificial turf soccer field. The locations of the proposed improvements are indicated on the Site Plan (see Figure 2).

Due to the preliminary nature of the design at this time, wall and column loads were not made available. It is estimated that wall loads for the proposed structures could be up to 2 kips per linear foot, and column loads may be up to 25 kips.

Once the design phase proceeds to a more finalized plan, the recommendations within this report should be reviewed and revised, if necessary. Any changes in the design, location or elevation of any improvement, as outlined in this report, should be reviewed by this office. Geocon should be contacted to determine the necessity for review and possible revision of this report.

3. GEOLOGIC SETTING

The site is located at the northeastern margin of the San Fernando Valley situated along the southwestern edge of the San Gabriel Mountains (Hitchcock & Wills, 2000). The San Fernando Valley is an alluvial-filled basin, approximately 23 miles wide and 12 miles long. The alluvium within the San Fernando Valley is mainly derived from the Santa Monica Mountains to the south, the Santa Susana Mountains to the north, the Simi Hills to the west, the San Gabriel Mountains to the northeast, and the Verdugo Mountains to the east.

Regionally, the site is located in the Transverse Ranges geomorphic province. The province is bounded by the Big Pine Fault on the north, the San Andreas Fault Zone on the east, the Pacific Ocean on the west, and the Santa Monica, Raymond, Sierra Madre and Cucamonga Faults on the south. The province is characterized by east-west trending mountain ranges that include the Santa Ynez, San Gabriel, San Bernardino, and nearby Santa Monica Mountains.

4. SOIL AND GEOLOGIC CONDITIONS

Based on our field investigation and published geologic maps of the area, the site is underlain by artificial fill overlying Pleistocene Age alluvial fan deposits generally consisting of unconsolidated sand, silt, clay, and gravel (Hitchcock & Wills, 2000). General soil profiles are provided on the Boring Logs in Appendix A. The soil and geologic units encountered at the site are discussed below.

4.1 Artificial Fill

Minor amounts of artificial fill were encountered throughout the subject site. The fill was observed in our field explorations to a maximum depth of 2 ½ feet below existing ground surface. The fill generally consists of brown silty sand with varied amounts of gravel. The artificial fill is characterized as slightly moist to moist and loose to medium dense. The fill is likely the result of past grading and demolition

activities at the site. Deeper fill may exist between excavations and in other portions of the site that were not directly explored.

4.2 Alluvial Fan

The fill is underlain by unconsolidated Pleistocene Age older alluvial fan deposits consisting of light brown to brown silty sand and well graded sand with varied amounts gravel. The alluvial fan deposits are primarily slightly moist and loose to medium dense, and become denser with increased depth. These older alluvial fan deposits are derived from the nearby San Gabriel Mountains.

5. GROUNDWATER

Based on a review of the Seismic Hazard Evaluation Report of the San Fernando Quadrangle (California Division of Mines and Geology, 1998) the historic high groundwater level beneath the site ranges between 110 feet to 150 feet below the ground surface. Groundwater information presented in this report is generated from data collected in the early 1900's to present. Groundwater was not encountered during our current site exploration drilled to a maximum depth of 25½ feet beneath the existing ground surface. However, it is not uncommon for groundwater levels to vary seasonally or for groundwater conditions to develop where none previously existed, especially in impermeable fine-grained silts which are heavily irrigated or after seasonal rainfall. Proper surface drainage of irrigation and precipitation will be critical to future performance of the project. Recommendations for drainage are provided in the S*urface Drainage* of this report (see Section 7.17).

6. GEOLOGIC HAZARDS

6.1 Surface Fault Rupture

The numerous faults in Southern California include active, potentially active, and inactive faults. The criteria for these major groups are based on criteria developed by the California Geological Survey (formerly known as California Division of Mines and Geology (CDMG)) for the Alquist-Priolo Earthquake Fault Zone Program (Hart, 1999). By definition, an active fault is one that has had surface displacement within Holocene time (about the last 11,000 years). A potentially active fault has demonstrated surface displacement during Quaternary time (approximately the last 1.6 million years), but has had no known Holocene movement. Faults that have not moved in the last 1.6 million years are considered inactive.

The site is not within a currently established Alquist-Priolo Earthquake Fault Zone for surface fault rupture hazards. No active or potentially active faults with the potential for surface fault rupture are known to pass directly beneath the site. Therefore, the potential for surface rupture due to faulting occurring beneath the site during the design life of the proposed development is considered low. The site, however, is located in the seismically active Southern California region, and could be subjected to moderate to strong ground shaking in the event of an earthquake on one of the many active Southern California faults. The faults in the vicinity of the site are shown in Figure 3, Regional Fault Map.

The closest surface trace of an active fault to the site is the San Fernando Fault located approximately 3,300 feet south of the site (CDMG, 1979). Other nearby active faults are the Olive View Fault, the San Gabriel Fault, the Verdugo Fault, the Northridge Fault and the Sierra Madre Fault located approximately 0.9 mile west (CDMG, 1979), 3.0 miles northeast, 3.8 miles south, 6.0 miles south-southwest and 7.2 miles southeast of the site, respectively (Ziony and Jones, 1989). The active San Andreas Fault Zone is located approximately 22 miles northeast of the site.

The closest potentially active fault to the site is the Santa Susana Fault located approximately 4.6 miles west of the site (Ziony and Jones, 1989). Other nearby potentially active faults is the Holser Fault and the Simi Fault located approximately 12½ miles northwest and 15 miles west of the site, respectively (Ziony and Jones, 1989).

Several buried thrust faults, commonly referred to as blind thrusts, underlie the Los Angeles Basin at depth. These faults are not exposed at the ground surface and are typically identified at depths greater than 3.0 kilometers. The October 1, 1987 M_w 5.9 Whittier Narrows earthquake, and the January 17, 1994 M_w 6.7 Northridge earthquake were a result of movement on the buried thrust faults. These thrust faults are not exposed at the surface and do not present a potential surface fault rupture hazard; however, these active features are capable of generating future earthquakes.

6.2 Seismicity

As with all of Southern California, the site has experienced historic earthquakes from various regional faults. The seismicity of the region surrounding the site was formulated based on research of an electronic database of earthquake data. The epicenters of recorded earthquakes with magnitudes equal to or greater than 4.0 within a radius of 60 miles of the site are depicted on Figure 4, Regional Seismicity Map. A number of earthquakes of moderate to major magnitude have occurred in the Southern California area within the last 100 years. A partial list of these earthquakes is included in the following table.

LIST OF HISTORIC EARTHQUAKES

Earthquake (Oldest to Youngest)	Date of Earthquake	Magnitude	Distance to Epicenter (Miles)	Direction to Epicenter
Lake Elsinore area	May 15, 1910	6.0	72	SE
San Jacinto-Hemet area	April 21, 1918	6.8	90	SE
Near Redlands	July 23, 1923	6.3	70	ESE
Long Beach	March 10, 1933	6.4	55	SE
Tehachapi	July 21, 1952	7.5	58	NW
San Fernando	February 9, 1971	6.6	7	S
Whittier Narrows	October 1, 1987	5.9	26	SE
Sierra Madre	June 28, 1991	5.8	24	ESE
Landers	June 28, 1992	7.3	113	E
Big Bear	June 28, 1992	6.4	91	E
Northridge	January 17, 1994	6.7	10	SW
Hector Mine	October 16, 1999	7.1	124	ENE

The site could be subjected to strong ground shaking in the event of an earthquake. However, this hazard is common in Southern California and the effects of ground shaking can be mitigated if the proposed structures are designed and constructed in conformance with current building codes and engineering practices.

6.3 Estimation of Peak Ground Accelerations

The seismic exposure of the site may be investigated in two ways. The deterministic approach recognizes the Maximum Earthquake, which is the theoretical maximum event that could occur along a fault. The deterministic method assigns a maximum earthquake to a fault derived from formulas that correlate the length and other characteristics of the fault trace to the theoretical maximum magnitude earthquake. The probabilistic method considers the probability of exceedance of various levels of ground motion and is calculated by consideration of risk contributions from regional faults.

6.3.1 Deterministic Analysis

Table 1 provides a list of known faults within a 60 mile radius of the site. The maximum earthquake magnitude is indicated for each fault. In order to measure the distance of known faults to the site, the computer program *EQFAULT*, (Blake, 2000), was utilized.

Principal references used within *EQFAULT* in selecting faults to be included are Jennings (1994), Anderson (1984) and Wesnousky (1986). For this investigation, the ground motion generated by maximum earthquakes on each of the faults is assumed to attenuate to the site per the attenuation relation by Sadigh et al. (1997). The resulting calculated peak horizontal accelerations at the site are indicated on Table 1. These values are one standard deviation above the mean.

Using this methodology, the maximum earthquake resulting in the highest peak horizontal accelerations at the site would be a magnitude 6.7 event on the Sierra Madre (San Fernando) Fault. Such an event would be expected to generate peak horizontal accelerations at the site of 1.09g.

While listing of peak accelerations is useful for comparison of potential effects of fault activity in a region, other considerations are important in seismic design, including the frequency and duration of motion and the soil conditions underlying the site.

The site could be subjected to moderate to severe ground shaking in the event of a major earthquake on any of the faults referenced above or other faults in Southern California. With respect to seismic shaking, the site is considered comparable to the surrounding developed area.

6.3.2 Probabilistic Analysis

The computer program *FRISKSP* (Blake, 2000) was used to perform a site-specific probabilistic seismic hazard analysis. The program is a modified version of FRISK (McGuire, 1978) that models faults as lines to evaluate site-specific probabilities of exceedance for given horizontal accelerations for each line source. Geologic parameters not included in the deterministic analysis are included in this analysis. The program operates under the assumption that the occurrence rate of earthquakes on each mapped Quaternary Fault is proportional to the faults' slip rate. The program accounts for fault rupture length as a function of earthquake magnitude, and site acceleration estimates are made using the earthquake magnitude and closest distance from the site to the rupture zone.

Uncertainty in each of following are accounted for: (1) earthquake magnitude, (2) rupture length for a given magnitude, (3) location of the rupture zone, (4) maximum magnitude of a given earthquake, and (5) acceleration at the site from a given earthquake along each fault. After calculating the expected accelerations from all earthquake sources, the program then calculates the total average annual expected number of occurrences of the site acceleration greater than a specified value. Attenuation relationships suggested by Sadigh et al. (1997) were utilized in the analysis. The Maximum Considered Earthquake Ground Motion (MCE) is the level of ground motion that has a 2 percent chance of exceedance in 50 years, with a statistical return period of 2,500 years. According to 2010 California Building Code and ASCE 7-05, the MCE is to be utilized for the design of critical structures such as schools and hospitals.

The Design-Basis Earthquake Ground Motion (DBE) is the level of ground motion that has a 10 percent chance of exceedance in 50 years, with a statistical return period of 475 years. The DBE is typically used for the design of non-critical structures. Based on the computer program *FRISKSP* (Blake, 2000), the MCE and DBE is expected to generate motions at the site of approximately 1.24g and 0.79g, respectively. Graphical representation of the analysis is presented on Figure 5.

6.4 Seismic Design Criteria

The following table summarizes site-specific design criteria obtained from the 2010 California Building Code (CBC; Based on the 2009 International Building Code [IBC]), Chapter 16 Structural Design, Section 1613 Earthquake Loads. The values were derived using the computer program Seismic Hazard Curves and Uniform Hazard Response Spectra, provided by the USGS. The short spectral response uses a period of 0.2 second.

CBC SEISMIC DESIGN PARAMETERS

Parameter	Value	2010 CBC Reference
Site Class	D	Table 1613.5.2
Spectral Response – Class B (short), S_S	0.908g	Figure 1613.5(3)
Spectral Response – Class B (1 sec), S_1	0.317g	Figure 1613.5(4)
Site Coefficient, F_a	1.0	Table 1613.5.3(1)
Site Coefficient, F_v	1.5	Table 1613.5.3(2)
Maximum Considered Earthquake Spectral Response Acceleration (short), S_{MS}	1.033g	Section 1613.5.3 (Eqn 16-36)
Maximum Considered Earthquake Spectral Response Acceleration – (1 sec), S_{M1}	0.560g	Section 1613.5.3 (Eqn 16-37)
5% Damped Design Spectral Response Acceleration (short), S_{DS}	0.689g	Section 1613.5.4 (Eqn 16-38)
5% Damped Design Spectral Response Acceleration (1 sec), S_{D1}	0.373g	Section 1613.5.4 (Eqn 16-39)

6.5 Liquefaction Potential

Liquefaction involves a sudden loss in strength of saturated, cohesionless soils that are subject to ground vibration and results in temporary transformation of the soil to a fluid mass. If the liquefying layer is near the surface, the effects are much like that of quicksand for any structure located on it. If the layer is deeper in the subsurface, it may provide a sliding surface for the material above it.

The current standard of practice, as outlined in the "Recommended Procedures for Implementation of DMG Special Publication 117A, Guidelines for Analyzing and Mitigating Liquefaction in California" requires liquefaction analysis to a depth of 50 feet below the lowest portion of the proposed structure. Liquefaction typically occurs in areas where the soils below the water table are composed of poorly consolidated, fine- to medium-grained, primarily sandy soil. In addition to the requisite soil conditions, the ground acceleration and duration of the earthquake must also be of a sufficient level to induce liquefaction.

Based on a review of the County of Los Angeles Seismic Safety Element (Leighton, 1990) and the City of Los Angeles Seismic Safety Element (1996) the site is not located within an area identified as having a potential for liquefaction. In addition, according to the State of California Seismic Hazard Zone, San Fernando Quadrangle Map (1999) the site is not located in an area designated as "liquefiable."

As previously stated, the historically highest groundwater in the area is in excess of 110 feet beneath the ground surface and groundwater was not encountered during our site explorations which were drilled to a maximum depth of 25½ feet beneath the existing ground surface. Based on these considerations, it is our opinion that the potential for liquefaction of the site soils is very low. Further, no surface manifestations of liquefaction are expected at the subject site.

6.6 Landslides

According to the Los Angeles County Seismic Safety Element (Leighton, 1990), the site is not within an area identified as having a potential for slope instability. Additionally, according to the California Geological Survey (1998), the site is not located within an area identified as having a potential for seismic slope instability. There are no known landslides near the site, nor is the site in the path of any known or potential landslides. We do not consider the potential for a landslide to be a hazard to this project.

6.7 Earthquake-Induced Flooding

Earthquake-induced flooding is inundation caused by failure of dams or other water-retaining structures due to earthquakes. Based on a review of the Los Angeles County Seismic Safety Element (Leighton, 1990), the site is not located within an inundation boundary. The probability of earthquake-induced inundation is considered very low.

6.8 Tsunamis, Seiches and Flooding

The site is not located within a coastal area. Therefore, tsunamis, seismic sea waves, are not considered a significant hazard at the site.

Seiches are large waves generated in enclosed bodies of water in response to ground shaking. No major water-retaining structures are located immediately up gradient from the project site. Flooding from a seismically-induced seiche is considered unlikely.

The site is in an area of minimal flooding potential (Zone X) as defined by the Federal Emergency Management Agency (FEMA 2012).

6.9 Oil Fields & Methane Potential

Based on a review of the California Division of Oil, Gas and Geothermal Resources (DOGGR) Oil and Gas Well Location Map W1-2, the site is not located within the boundaries of an oilfield. No oil wells are located in the immediate vicinity of the site. However, due to the voluntary nature of record reporting by the oil well drilling companies, wells may be improperly located or not shown on the location map. Other wells could be encountered during construction. Any wells encountered will need to be properly abandoned in accordance with the current requirements of the DOGGR.

The site is not located within a Methane Zone as defined by the City of Los Angeles, therefore, the potential for the presence of methane is considered low.

6.10 Subsidence

Subsidence occurs when a large portion of land is displaced vertically, usually due to the withdrawal of groundwater, oil, or natural gas. Soils that are particularly subject to subsidence include those with high silt or clay content. The area surrounding the site is not within an area of known ground subsidence. No large-scale extraction of groundwater, gas, oil, or geothermal energy is occurring or planned at the site. There appears to be little or no potential for ground subsidence due to withdrawal of fluids or gases at the site.

7. CONCLUSIONS AND RECOMMENDATIONS

7.1 General

7.1.1 It is our opinion that neither soil nor geologic conditions were encountered during the investigation that would preclude the construction of the proposed improvements provided the recommendations presented herein are followed and implemented during construction.

7.1.2 The depth of artificial fill encountered during field exploration was observed to be variable, with a maximum depth of 2½ feet. The existing fill encountered is believed to be the result of past grading and/or construction activities at the site. Deeper fill may exist in other areas of the site that were not directly explored.

7.1.3 The results of laboratory testing indicate that the existing site soils (fill materials and alluvial soils) to a depth of approximately 2 feet are not suitable for support of proposed foundations or floor slabs. These soils, and any soils disturbed during demolition activities, should be excavated, well blended and properly compacted for support of proposed foundations and slabs. Deeper excavations should be conducted as necessary to remove existing fill or unsuitable soils at the direction of the Geotechnical Engineer (a representative of Geocon). However, the existing site soils are suitable for re-use as engineered fill provided the recommendations in the *Grading* section of this report are followed. Recommendations for grading and earthwork are provided in Section 7.5.

7.1.4 Based on these considerations, a conventional foundation system may be utilized for support of the proposed field bleachers and restroom buildings, provided foundations derive support in the newly placed engineered fill. As a minimum, it is recommended that the upper 4 feet of existing site soils in the field bleachers and restroom buildings footprint areas be excavated and properly compacted for foundation and slab support. Excavations should be conducted as necessary to remove all existing fill in the field bleachers and restroom buildings footprint areas at the direction of the Geotechnical Engineer (a representative of Geocon). The excavation for the restroom buildings and field bleachers pad areas should extend laterally a minimum distance of 3 feet beyond the building footprint area or for a distance equal to the depth of fill below the foundation, whichever is greater. Recommendations for earthwork are provided in the *Grading* section of this report (see Section 7.5).

7.1.5 A deepened foundation system consisting of drilled cast-in-place concrete friction piles or end bearing piers deriving support in undisturbed alluvial soils may be utilized for support of the proposed picnic shelters, ,and soccer/football field and basketball court light poles. Recommendations for design and installation of deepened foundations are provided in the *Deepened Foundations* section of this report (see Section 7.9).

7.1.6 Foundations for small outlying structures, such as block walls less than 6 feet high, planter walls or trash enclosures, which will not be tied-in to proposed buildings, may be supported on conventional foundations bearing on a minimum of 12 inches of newly placed engineered fill. Where excavation and compaction cannot be performed, such as adjacent to existing amenities or utilities, foundations may bear in the undisturbed alluvial soils at or below a depth of 2 feet. If the soils exposed in the excavation bottom are soft, compaction of the soft soils will be required prior to placing steel or concrete. Compaction of the foundation excavation bottom is typically accomplished with a compaction wheel or mechanical whacker and must be observed and approved by a Geocon representative.

7.1.7 Percolation testing of the site soils indicates that the soils are capable of infiltration. Recommendations for infiltration are provided in the *Storm Water Infiltration* section of this report (see Section 7.15).

7.1.8 Where new paving is to be placed it is recommended that all existing fill soils and soft alluvial soils be excavated and properly compacted for paving support. The client should be aware that excavation and compaction of all existing fill and soft alluvial soils in the area of new paving is not required; however, paving constructed over existing uncertified fill or soft alluvial soils may experience increased settlement and/or cracking, and may therefore have a shorter design life and increased maintenance costs. As a minimum, the upper twelve inches of subgrade should be scarified and properly compacted. Paving recommendations are provided in *Pavement Recommendations* section of this report (see Section 7.14).

7.1.9 Once the design and foundation loading configuration proceeds to a more finalized plan, the recommendations within this report should be reviewed and revised, if necessary. If the proposed structural loads will exceed those presented herein, the potential for settlement should be reevaluated by this office.

7.1.10 Any changes in the design, location or elevation of improvements, as outlined in this report, should be reviewed by this office. Geocon should be contacted to determine the necessity for review and possible revision of this report.

7.2 Mandatory Building Code Statement

7.2.1 This statement is made in accordance with Section 111 of the County of Los Angeles Building Code. It is the opinion of this office, based on the findings of this investigation, provided our recommendations are followed and properly maintained, (1) the proposed improvements will be safe for their intended use against hazard from landslide, settlement or slippage and (2) the proposed grading and development will have no adverse effect on the stability of the site or adjoining properties.

7.3 Minimum Resistivity, pH and Water-Soluble Sulfate

7.3.1 Potential of Hydrogen (pH) and resistivity testing as well as chloride content testing were performed on representative samples of soil to generally evaluate the corrosion potential to surface utilities. The tests were performed in accordance with California Test Method Nos. 643 and 422 and indicate that a potential for corrosion of buried ferrous metals exists on site. The results are presented in Appendix B (Figure B8) and should be considered for design of underground structures.

7.3.2 Laboratory tests were performed on representative samples of the site materials to measure the percentage of water-soluble sulfate content. Results from the laboratory water-soluble sulfate tests are presented in Appendix B (Figure B8) and indicate that the on-site materials possess “negligible” sulfate exposure to concrete structures as defined by 2010 CBC Section 1904.3 and ACI 318-08 Sections 4.2 and 4.3.

7.3.3 Geocon West, Inc. does not practice in the field of corrosion engineering. If corrosion sensitive improvements are planned, it is recommended that a corrosion engineer be retained to evaluate corrosion test results and incorporate the necessary precautions to avoid premature corrosion on buried metal pipes and concrete structures in direct contact with the soils.

7.4 Soil and Excavation Characteristics

7.4.1 The in-situ soils can be excavated with moderate effort using conventional excavation equipment. Caving should be expected in deep unshored excavations and where loose or granular soils are exposed.

7.4.2 It is the responsibility of the contractor to ensure that all excavations and trenches are properly shored and maintained in accordance with applicable OSHA rules and regulations in order to maintain safety and the stability of adjacent improvements.

7.4.3 All onsite excavations must be conducted in such a manner that potential surcharges from existing structures, construction equipment, and vehicle loads are resisted. The surcharge area may be defined by a 1:1 projection down and away from the bottom of an existing foundation or vehicle load. Penetrations below this 1:1 projection will require special excavation measures.

7.4.4 Remolded samples of the upper site soils, representing engineered fill, and undisturbed alluvial soils at foundation elevations exhibit a "very low" expansive potential (EI=13 and 1), and the soils are classified as "non-expansive" based on the 2010 California Building Code (CBC) Section 1803.5.3. Recommendations presented herein assume that the building foundations and slabs will derive support in these materials.

7.5 Grading

7.5.1 Earthwork should be observed, and compacted fill tested by representatives of Geocon West, Inc. The existing fill encountered during exploration is suitable for re-use as an engineered fill, provided any encountered oversize material (greater than 6 inches) and any encountered deleterious debris is removed.

7.5.2 A preconstruction conference should be held at the site prior to the beginning of grading operations with the owner, contractor, civil engineer and geotechnical engineer in attendance. Special soil handling requirements can be discussed at that time.

7.5.3 Grading should commence with the removal of all existing vegetation, paving, and existing improvements from the area to be graded. Once a clean excavation bottom has been established it must be approved by the Geotechnical Engineer (a representative of Geocon West, Inc.). Deleterious debris such as wood and root structures should be exported from the site and should not be mixed with the fill soils. Asphalt and concrete should not be mixed with the fill soils unless approved by the Geotechnical Engineer. All existing underground improvements planned for removal should be completely excavated and the resulting depressions properly backfilled in accordance with the procedures described herein.

7.5.4 As a minimum, it is recommended that the upper 4 feet of existing earth materials within the proposed field bleachers and restroom buildings footprint areas be excavated and properly compacted for foundation and slab support. The excavation should extend laterally a minimum distance of 3 feet beyond the proposed improvement area or for a distance equal to the depth of fill below the foundation, whichever is greater. Deeper excavations should be conducted as necessary to remove existing fill or unsuitable soils at the direction of the Geotechnical Engineer (a representative of Geocon). All excavation bottoms must be observed and approved by the Geotechnical Engineer (a representative of Geocon) prior to placing and compacting fill.

7.5.5 It is recommended that all existing fill and or any soft or disturbed alluvial soils be excavated and properly compacted within the proposed restroom buildings, universally accessible playground, field bleacher areas, and picnic shelter areas. Deeper excavations should be conducted as necessary to remove existing fill or unsuitable soils at the direction of the Geotechnical Engineer (a representative of Geocon). All excavation bottoms must be observed and approved by the Geotechnical Engineer (a representative of Geocon) prior to placing and compacting fill.

7.5.6 Foundations for small outlying structures, such as block walls less than 6 feet high, planter walls or trash enclosures, which will not be tied-in to proposed buildings, may be supported on conventional foundations bearing on a minimum of 12 inches of newly placed engineered fill which extends laterally at least 12 inches beyond the foundation area. Where excavation and proper compaction cannot be performed, such as adjacent to existing amenities or utilities, foundations may bear in the undisturbed alluvial soils at or below a depth of 2 feet below the existing grade, and should be deepened as necessary to maintain a minimum 12 inch embedment into the undisturbed alluvial soil. If the soils exposed in the excavation bottom are soft or loose, compaction of the soils will be required prior to placing steel or concrete. Compaction of the foundation excavation bottom is typically accomplished with a compaction wheel or mechanical whacker and must be observed and approved by a Geocon representative.

7.5.7 All imported fill shall be observed, tested and approved by Geocon West, Inc. prior to importing to the site. Rocks larger than six inches in diameter shall not be used in the fill. If necessary, import soils to be used in the building pad areas should have an expansion index of less than 20 and corrosive characteristics that are equally or less detrimental than that of the existing onsite soils (see Figure B7). If import soils will be utilized in the building pad, the soils must be placed uniformly and at equal thickness at the direction of the Geotechnical Engineer (a representative of Geocon West, Inc.).

7.5.8 All fill and backfill soils should be placed in horizontal loose layers approximately 6 to 8 inches thick, moisture conditioned to near optimum moisture content, and properly compacted to a minimum of 90 percent relative compaction, as determined by ASTM Test Method D 1557 (latest edition).

7.5.9 Utility trenches should be properly backfilled in accordance with the requirements of the Green Book (latest edition). The pipe should be bedded with clean sands (Sand Equivalent greater than 30) and shaded with clean sands to a depth of at least one foot over the pipe. The use of gravel is not acceptable unless used in conjunction with filter fabric to prevent the gravel from having direct contact with soil. The remainder of the trench backfill may be derived from onsite soil or approved import soil, compacted as necessary, until the required compaction is obtained. The use of 2-sack slurry is also acceptable. Prior to placing any bedding materials or pipes, the

excavation bottom must be observed and approved in writing by the Geotechnical Engineer (a representative of Geocon).

7.5.10 Where new paving is to be placed, it is recommended that all existing fill and soft alluvial soils be excavated and properly compacted for paving support. As a minimum, the upper twelve inches of soil should be scarified and compacted to at least 95 percent relative compaction for paving support. The client should be aware that excavation and compaction of all existing fill and soft alluvial soils in the area of new paving is not required; however, paving constructed over existing uncertified fill or soft alluvial soils may experience increased settlement and/or cracking, and may therefore have a shorter design life and increased maintenance costs. As a minimum, the upper twelve inches of subgrade should be scarified and properly compacted. Paving recommendations are provided in *Pavement Recommendations* section of this report (see Section 7.14).

7.5.11 All excavation bottoms must be observed and approved by the Geotechnical Engineer (a representative of Geocon), prior to placing bedding materials fill, steel, gravel or concrete.

7.6 Shrinkage

Shrinkage results when a volume of material removed at one density is compacted to a higher density. A shrinkage factor of between 10 and 20 percent should be anticipated when excavating and compacting the existing earth materials on the site to an average relative compaction of 92 percent.

7.7 Foundation Design

7.7.1 Subsequent to the recommended grading, a conventional shallow foundation system may be utilized for support of the proposed field bleachers and restroom buildings provided foundations derive support in the newly placed engineered fill.

7.7.2 Continuous footings may be designed for an allowable bearing capacity of 2,000 pounds per square foot, and should be a minimum of 12 inches in width and 18 inches in depth below the lowest adjacent grade, and 12 inches into the recommended bearing material.

7.7.3 Isolated spread foundations may be designed for an allowable bearing capacity of 2,200 pounds per square foot, and should be a minimum of 12 inches in width, 18 inches in depth below the lowest adjacent grade, and 12 inches into the recommended bearing material.

7.7.4 The soil bearing pressure above may be increased by 250 psf and 500 psf for each additional foot of foundation width and depth, respectively, up to a maximum allowable soil bearing pressure of 3,200 psf.

7.7.5 The allowable bearing pressure may be increased by one-third for transient loads due to wind or seismic forces.

7.7.6 If depth increases are utilized for the exterior wall footings, this office should be provided a copy of the final construction plans so that the excavation recommendations presented herein could be properly reviewed and revised if necessary.

7.7.7 Continuous footings should be reinforced with four No. 4 steel reinforcing bars, two placed near the top of the footing and two near the bottom. Reinforcement for spread footings should be designed by the project structural engineer.

7.7.8 The above foundation dimensions and minimum reinforcement recommendations are based on soil conditions and building code requirements only, and are not intended to be used in lieu of those required for structural purposes.

7.7.9 The moisture content in the engineered fill should be maintained prior to placement of concrete and the slab and foundation subgrade should be sprinkled as necessary to maintain a moist condition.

7.7.10 Foundation excavations should be observed by the Geotechnical Engineer (a representative of Geocon West, Inc.), prior to the placement of reinforcing steel and concrete to verify that the excavations and exposed soil conditions are consistent with those anticipated. If unanticipated soil conditions are encountered, foundation modifications may be required.

7.7.11 This office should be provided a copy of the final construction plans so that the excavation recommendations presented herein could be properly reviewed and revised if necessary.

7.8 Lateral Design

7.8.1 Resistance to lateral loading may be provided by friction acting at the base of foundations, slabs and by passive earth pressure. An allowable coefficient of friction of 0.40 may be used with the dead load forces in the properly compacted engineered fill or undisturbed alluvium.

7.8.2 Passive earth pressure for the sides of foundations and slabs poured against properly compacted engineered fill and undisturbed alluvium may be computed as an equivalent fluid having a density of 300 pcf with a maximum earth pressure of 3,000 pcf. When combining passive and friction for lateral resistance, the passive component should be reduced by one-third.

7.9 Deepened Foundations

7.9.1 A deepened foundation system consisting of drilled cast-in-place concrete friction piles or end bearing piers deriving support in undisturbed alluvial soils may be utilized for support of the proposed picnic shelters and shade canopies for existing playgrounds. Piles should be a minimum of 24 inches in diameter, and should be embedded a minimum of six feet in depth below the ground surface and 4 feet into undisturbed alluvium. If the excavation bottom is cleaned of all loose soils the end bearing properties of the soils may be utilized and foundation may be designed for an allowable bearing capacity of 2,500 pounds per square foot. The allowable soil bearing pressure above may be increased 500 psf for each additional foot of foundation depth, up to a maximum allowable soil bearing pressure of 3,500 psf.

7.9.2 Soccer/football field and basketball court light poles may be supported on drilled cast-in-place friction piles deriving support in undisturbed alluvial soils. For drilled cast-in-place friction piles, the coefficient of friction may be taken as 0.40 based on uniform contact between the concrete and undisturbed alluvium. The piles may be designed based on a skin friction capacity of 300 pounds per square foot, and do not require the complete removal of all loose earth materials from the bottom of the excavation, since end-bearing capacity is not being considered. However, a cleanout of the excavation bottom will be required. Piles may be assumed fixed at an embedment depth of 5 feet below the ground surface. A one-third increase in the capacity may be used for wind or seismic loads.

7.9.3 For design purposes, an allowable passive value for the soils below the bottom plane of excavation may be assumed to be 300 pounds per square foot per foot with a maximum allowable passive earth pressure is 3,000 pcf. The allowable passive value may be doubled for isolated piles placed more than twice the diameter. To develop the full lateral value, provisions should be implemented to assure firm contact between the piles and the undisturbed soils.

7.9.4 All drilled pile excavations should be continuously observed by personnel of this firm to verify adequate penetration into the recommended bearing materials. The capacity presented is based on the strength of the soils. The compressive and tensile strength of the pile sections should be checked to verify the structural capacity of the piles.

7.10 Deepened Foundation Installation

7.10.1 Casing will likely be required since caving is expected in the granular soils during deep excavation. The contractor should have casing available and should be prepared to use it. If casing is used, extreme care should be employed so that the pile is not pulled apart as the casing is withdrawn. At no time should the distance between the surface of the concrete and the bottom of the casing be less than five feet. Continuous observation of the drilling and pouring of the piles by the Geotechnical Engineer (a representative of Geocon West, Inc.), is required.

7.10.2 Seepage was not encountered in the borings and is not anticipated during construction; however, if significant seepage is encountered after heavy rains, piles placed below the water level require the use of a tremie to place the concrete into the bottom of the hole. A tremie shall consist of a water-tight tube, with a hopper at the top. The tube shall be equipped with a device that will close the discharge end and prevent water from entering the tube while it is being charged with concrete. The tremie shall be supported so as to permit free movement of the discharge end over the entire top surface of the work and to permit rapid lowering when necessary to retard or stop the flow of concrete. The discharge end shall be closed at the start of the work to prevent water entering the tube and shall be entirely sealed at all times, except when the concrete is being placed. The tremie tube shall be kept full of concrete. The flow shall be continuous until the work is completed and the resulting concrete seal shall be monolithic and homogeneous. The tip of the tremie tube shall always be kept about five feet below the surface of the concrete and definite steps and safeguards should be taken to insure that the tip of the tremie tube is never raised above the surface of the concrete.

7.10.3 A special concrete mix should be used for concrete to be placed below water. The design shall provide for concrete with a strength of 1,000 psi over the initial job specification. An admixture that reduces the problem of segregation of paste/aggregates and dilution of paste shall be included. The slump shall be commensurate to any research report for the admixture, provided that it shall also be the minimum for a reasonable consistency for placing when water is present. Extreme care should be employed so that the pile is not pulled apart as the casing is withdrawn. At no time should the distance between the surface of the concrete and the bottom of the casing be less than 5 feet. Continuous observation of the drilling and pouring of the piles by a representative of this firm is required.

7.10.4 Closely spaced piles should be drilled and filled alternately, with the concrete permitted to set at least eight hours before drilling an adjacent hole. Pile excavations should be filled with concrete as soon after drilling and inspection as possible; the holes should not be left open overnight.

7.11 Miscellaneous Foundations

7.11.1 Foundations for small outlying structures, such as block walls less than 6 feet high, planter walls or trash enclosures, may be supported on conventional foundations bearing on a minimum of 12 inches of newly placed engineered fill. Where excavation and compaction cannot be performed, such as adjacent to existing amenities or utilities, foundations may bear in the undisturbed alluvial soils at or below a depth of 2 feet.

7.11.2 Miscellaneous foundations may be designed for a bearing value of 1,500 pounds per square foot, and should be a minimum of 12 inches in width, 24 inches in depth below the lowest adjacent grade and 12 inches into the recommended bearing material. Should the soils

exposed in the excavation bottom be soft, compaction of the soft soils will be required prior to placing steel or concrete. Compaction of the foundation excavation bottom is typically accomplished with a compaction wheel or mechanical whacker. As an alternative, excavations should be deepened as necessary to extend into satisfactory soils.

7.11.3 Foundation excavations should be observed by the Geotechnical Engineer (a representative of Geocon West, Inc.), prior to the placement of reinforcing steel and concrete to verify that the excavations and exposed soil conditions are consistent with those anticipated.

7.12 Conventional Foundation Settlement

7.12.1 The maximum expected static settlement for a structure supported on a conventional foundation system deriving support in newly placed engineered fill or competent alluvium below a depth of 2 feet is estimated to be less than ½ inch and occur below the heaviest loaded structural element. Settlement of the foundation system is expected to occur on initial application of loading. Differential settlement is not expected to exceed ½ inch over a distance of twenty feet.

7.12.2 The maximum expected static settlement for a deepened foundation (pier or pile) supported improvement deriving support in undisturbed alluvium is estimated to be less than ½ inch.

7.12.3 Once the design and foundation loading configuration proceeds to a more finalized plan, the recommendations within this report should be reviewed and revised, if necessary. If the proposed building loads will exceed those presented herein, the potential for settlement should be reevaluated by this office.

7.13 Concrete Slabs-on-Grade

7.13.1 Concrete slabs-on-grade subject to vehicle loading should be designed in accordance with the recommendations in the *Pavement Recommendations* section of this report (Section 7.14).

7.13.2 Concrete slabs-on-grade for structures, not subject to vehicle loading, should be underlain by a minimum of 12 inches of newly placed engineered fill in accordance with the recommended grading. The slab should be a minimum of 4-inches thick and minimum slab reinforcement should consist of No. 3 steel reinforcing bars placed 18 inches on center in both horizontal directions.

7.13.3 Slabs that may receive moisture-sensitive floor coverings or may be used to store moisture-sensitive materials should be underlain by a vapor retarder placed directly beneath the slab. The vapor retarder used should be specified by the project architect or developer based on the type of floor covering that will be installed. The vapor retarder design should be consistent with the

guidelines presented in Section 9.3 of the American Concrete Institute's (ACI) *Guide for Concrete Slabs that Receive Moisture-Sensitive Flooring Materials* (ACI 302.2R-06) and should be installed in general conformance with ASTM E 1643-98 and the manufacturer's recommendations. If California Green Code requirements apply to this project, the vapor retarder should be underlain by 4 inches of ½-inch clean aggregate and the vapor retarder should be in direct contact with the concrete slab. It is important that the vapor retarder be puncture resistant since it will be in direct contact with angular gravel.

7.13.4 For seismic design purposes, a coefficient of friction of 0.40 may be utilized between concrete slabs and subgrade soils without a moisture barrier, and 0.15 for slabs underlain by a moisture barrier.

7.13.5 Exterior slabs, not subject to traffic loads, should be at least 4 inches thick and reinforced with No. 3 steel reinforcing bars placed 24 inches on center in both horizontal directions, positioned near the slab midpoint. Prior to construction of slabs, the upper 12 inches of subgrade should be moisture conditioned to near optimum moisture content and properly compacted to at least 95 percent relative compaction, as determined by ASTM Test Method D 1557 (latest edition). Crack control joints should be spaced at intervals not greater than 10 feet and should be constructed using saw-cuts or other methods as soon as practical following concrete placement. Crack control joints should extend a minimum depth of one-fourth the slab thickness. The project structural engineer should design construction joints as necessary.

7.13.6 The recommendations of this report are intended to reduce the potential for cracking of slabs due to settlement. However, even with the incorporation of the recommendations presented herein, foundations, stucco walls, and slabs-on-grade may exhibit some cracking due to minor soil movement and/or concrete shrinkage. The occurrence of concrete shrinkage cracks is independent of the supporting soil characteristics. Their occurrence may be reduced and/or controlled by limiting the slump of the concrete, proper concrete placement and curing, and by the placement of crack control joints at periodic intervals, in particular, where re-entrant slab corners occur.

7.14 Pavement Recommendations

7.14.1 Where new paving is to be placed, it is recommended that all existing fill and soft alluvial soils be removed and properly recompacted for paving support. The client should be aware that removal and recompaction of all existing fill and soft alluvial soils in the area of new paving is not required, however, paving constructed over existing uncertified fill or unsuitable alluvial soils may experience increased settlement and/or cracking, and may therefore have a shorter design life and increased maintenance costs. As a minimum, the upper twelve inches of paving subgrade should be scarified and properly compacted to at least 95 percent relative compaction, as determined by ASTM Test Method D 1557 (latest edition).

7.14.2 The following pavement sections are based on a site specific R-Value of 30. Pavement thicknesses were determined following procedures outlined in the *California Highway Design Manual* (Caltrans).

PRELIMINARY PAVEMENT DESIGN SECTIONS

Location	Estimated Traffic Index (TI)	Asphalt Concrete (inches)	Class 2 Aggregate Base (inches)
Automobile Parking	3.5	3	4
Driveways	5	3	7
Trash Truck & Fire Lanes	7	4	12

7.14.3 Asphalt concrete should conform to Section 203-6 of the "*Standard Specifications for Public Works Construction"* (Green Book). Class 2 aggregate base materials should conform to Section 26-1.02A of the "*Standard Specifications of the State of California, Department of Transportation"* (Caltrans).

7.14.4 Unless specifically designed by a qualified structural engineer, where concrete paving will be utilized for support of vehicles, it is recommended that the concrete be a minimum of 5 inches thick and reinforced with No. 3 steel reinforcing bars placed 18 inches on center in both horizontal directions. Concrete paving supporting vehicular traffic should be underlain by a minimum of 4 inches of aggregate base and a properly compacted subgrade. The subgrade and base material should be compacted to at least 95 percent relative compaction, as determined by ASTM Test Method D 1557 (latest edition).

7.14.5 The performance of pavements is highly dependent upon providing positive surface drainage away from the edge of pavements. Ponding of water on or adjacent to the pavement will likely result in saturation of the subgrade materials and subsequent cracking, subsidence and pavement distress. If planters are planned adjacent to paving, it is recommended that the perimeter curb be extended at least 12 inches below the bottom of the aggregate base to minimize the introduction of water beneath the paving.

7.15 Storm Water Infiltration

7.15.1 During the site exploration program, Borings P1 and P2 were utilized to perform percolation testing. The borings were advanced to the depths listed in the table below. Slotted casing was placed in each boring, which was then filled with water to pre-saturate the soils. On September 26, 2012, On January 26, 2011, the casings were refilled with water to a depth of at least 1 foot above the excavation bottom. . Based on the test results, the average infiltration rate (adjusted percolation rate) per boring for the earth materials encountered is listed in the following table.

BORING	INFILTRATION DEPTH (ft.)	AVERAGE INFILTRATION RATE (in/hr)
P1	4-6	3.38
P2	4-6	4.70

7.15.2 The results of the percolation testing indicate that the alluvial soils as indicated in the tables above are conductive to infiltration. It is our opinion that the granular soil zones encountered at the depths and locations as listed in the table above are capable of percolating water.

7.15.3 It is our opinion that based on the consolidated nature of the site soils; the introduction of stormwater at depths and locations as indicated in the table above will not induce hydro-consolidation, will not create perched water conditions, and will not increase the potential for liquefaction. Resulting settlements from storm water infiltration are anticipated to be less than ¼ inch, and are not expected to affect proposed or existing surface structures or improvements.

7.15.4 Stormwater infiltration should be kept a minimum of 10 feet horizontally from adjacent foundations. Additional property line or foundation setbacks may be required by the governing jurisdiction and should be incorporated into the stormwater infiltration system design as necessary.

7.15.5 A drainage system is recommended beneath the proposed soccer fields. The drainage system would typically consist of perforated pipes placed in trenches filled with freely draining granular soils or gravel. The pipes and gravel are typically wrapped with filter fabric to prevent direct contact with the soil and the entire area is covered over with 4 to 12 inches of freely draining granular soils or gravel. Water collected in drainage pipes should be directed to infiltration systems which can introduce the water into the sandy soils below a depth of 4 feet or should be directed to a location suitable to the building official. The conduit for conveying water from the surface to the deeper soils may simply consist of fabric-lined gravel chimneys or trenches placed throughout the field.

7.15.6 The design drawings should be reviewed and approved by the Geotechnical Engineer. The installation of the stormwater infiltration system should be observed and approved by the Geotechnical Engineer (a representative of Geocon).

7.16 Temporary Excavations

7.16.1 Excavations on the order of 4 feet in vertical height will be required during grading operations. The excavations are expected to expose artificial fill and alluvial soils, which are suitable for vertical excavations up to five feet where loose soils or caving sands are not present.

7.16.2 Vertical excavations greater than 5 feet will require sloping measures in order to provide a stable excavation. It is anticipated that sufficient space is available to complete the required earthwork for this project using sloping measures. If necessary, shoring and/or alternative temporary excavation recommendations will be provided in an addendum.

7.16.3 Where sufficient space is available, temporary unsurcharged embankments could be sloped back at a uniform 1:1 slope gradient or flatter. A uniform slope does not have a vertical portion.

7.16.4 Where sloped embankments are utilized, the top of the slope should be barricaded to prevent vehicles and storage loads at the top of the slope within a horizontal distance equal to the height of the slope. If the temporary construction embankments are to be maintained during the rainy season, berms are suggested along the tops of the slopes where necessary to prevent runoff water from entering the excavation and eroding the slope faces. Our personnel should inspect the soils exposed in the cut slopes during excavation so that modifications of the slopes can be made if variations in the soil conditions occur. All excavations should be stabilized within 30 days of initial excavation.

7.17 Surface Drainage

7.17.1 Proper surface drainage is critical to the future performance of the project. Uncontrolled infiltration of irrigation excess and storm runoff into the supporting soils can adversely affect the performance of the planned improvements. Saturation of a soil can cause it to lose internal shear strength and increase its compressibility, resulting in a change in the original designed engineering properties. Proper drainage should be maintained at all times.

7.17.2 Drainage should not be allowed to pond anywhere on the site, and especially not against any foundations. Drainage should not be allowed to flow uncontrolled over any descending slope.

7.17.3 Positive site drainage should be provided away from structures, pavement, and the tops of slopes to swales or other controlled drainage structures. The track and field areas should be fine graded such that water is not allowed to pond.

7.18 Plan Review

7.18.1 Grading, foundation and shoring plans should be reviewed by the Geotechnical Engineer (a representative of Geocon West, Inc.), prior to finalization to verify that the plans have been prepared in substantial conformance with the recommendations of this report and to provide additional analyses or recommendations.

LIMITATIONS AND UNIFORMITY OF CONDITIONS

1. The recommendations of this report pertain only to the site investigated and are based upon the assumption that the soil conditions do not deviate from those disclosed in the investigation. If any variations or undesirable conditions are encountered during construction, or if the proposed construction will differ from that anticipated herein, Geocon West, Inc., should be notified so that supplemental recommendations can be given. The evaluation or identification of the potential presence of hazardous or corrosive materials was not part of the scope of services provided by Geocon West, Inc.

2. This report is issued with the understanding that it is the responsibility of the owner, or of his representative, to ensure that the information and recommendations contained herein are brought to the attention of the architect and engineer for the project and incorporated into the plans, and the necessary steps are taken to see that the contractor and subcontractors carry out such recommendations in the field.

3. The findings of this report are valid as of the present date. However, changes in the conditions of a property can occur with the passage of time, whether they are due to natural processes or the works of man on this or adjacent properties. In addition, changes in applicable or appropriate standards may occur, whether they result from legislation or the broadening of knowledge. Accordingly, the findings of this report may be invalidated wholly or partially by changes outside our control. Therefore, this report is subject to review and should not be relied upon after a period of three years.

LIST OF REFERENCES

Anderson, J.G., 1984, Synthesis of Seismicity and Geologic Data in California, U.S. Geological Survey Open File Report 84-424.

Applied Technology Council, 1978, *Tentative Provisions for Development of Seismic Regulations for Buildings*, ATC Publication ATC 3-06, NBS Special Publication 510, NSF Publication 78-8.

Blake, T.F., 2000, EQFAULT, *A Computer Program for the Deterministic Prediction of Peak Horizontal Acceleration from Digitized California Faults*, Version 2.20.

Blake, T.F., 2000, EQSEARCH, *A Computer Program for the Estimation of Peak Horizontal Acceleration from California Historical Earthquake Catalogs*, Version 2.20.

Blake, T.F., 2000, FRISKSP, *A Computer Program for the Probabilistic Estimation of Uniform-Hazard Spectra Using 3-D Faults as Earthquake Sources.*

Boore, D.M., Joyner, W.B., and Fumal, T.E., 1997, *Equations for Estimating Horizontal Response Spectra and Peak Acceleration from Western North American Earthquakes,* A *Summary of Recent Work*, Seismological Research Letters, Vol. 68, No. 1, pp. 128-153.

California Department of Conservation, Division of Mines and Geology: *Digital Images of Official Maps of Alquist-Priolo Earthquake Fault Zones of California, Central Coast Region, DMG,* CD 2000-004.

California Division of Mines and Geology, 1999, *Seismic Hazard Zone San Fernando 7.5-Minute Quadrangle, Los Angeles County, California*.

California Division of Mines and Geology, 1998, *Seismic Hazard Evaluation of the San Fernando 7.5-Minute Quadrangle, Los Angeles County, California*, Open File Report 98-06.

California Division of Mines and Geology, 1979, *Alquist-Priolo Special Studies Zones, San Fernando 7.5-Minute Quadrangle, Los Angeles County, California*.

California Division of Oil, Gas and Geothermal Resources, 2001; Oil and Gas Well Location Map, Map Number W1-5.

Chang, S.W., et al., 1994, Ground Motions and Local Site Effects, University of California at Berkeley Earthquake Engineering Research Center, Report No. UCB/EERC-94/08, p.28.

Crook, R., Jr., Allen, C. R., Kamb, B., Payne, C. M., and Proctor, R. J., 1987, *Recent Reverse Faulting in the Transverse Ranges, California*, U.S. Geological Survey Professional Paper 1339.

FEMA and ESRI, 2012, Online Flood Hazard Maps, http://www.esri.com/hazards/index.html.

Hart, E.W., 1973, revised 1999, *Fault-Rupture Hazard Zones in California, Alquist-Priolo Earthquake Fault Zoning Act with Index to Earthquake Fault Zone Maps*, California Division of Mines and Geology Special Publication 42.

LIST OF REFERENCES (Continued)

Hauksson, E., 1992, *Seismicity, Faults, and Earthquake Potential in Los Angeles, Southern California*, Engineering Geology Practice in Southern California, Special Publication No. 4, Association of Engineering Geologists.

Hitchcock, C.S., and Wills, C.J., 2000, *Quaternary Geology of the San Fernando Valley, Los Angeles County, California*, California Division of Mines and Geology Map Sheet 50.

Ishihara, K., 1985, Stability of Natural Deposits During Earthquakes, Proceedings of the Eleventh International Conference on Soil Mechanics and Foundation Engineering, A. A. Balkema Publishers, Rotterdam, Netherlands, vol. 1, pp. 321-376.

Jennings, C.W., 2010, *Fault Activity Map of California and Adjacent Areas with Locations and Ages of Recent Volcanic Eruptions*, California Division of Mines and Geology Map No. 6.

Leighton and Associates, Inc., 1990, *Technical Appendix to the Safety Element of the Los Angeles County General Plan*, Hazard Reduction in Los Angeles County.

Los Angeles, City of, 2004, *Methane and Methane Buffer Zones*, City of Los Angeles Department of Public Works.

Los Angeles, City of, 1996, Safety element of the General Plan.

Martin, G.R., and Lew, M., 1999, Co-chairs and Editors of the Implementation Committee, *Recommended Procedures for Implementation of DMG Special Publication 117, Guidelines for Analyzing and Mitigating Liquefaction Hazards in California*, Organized through the Southern California Earthquake Center, University of Southern California.

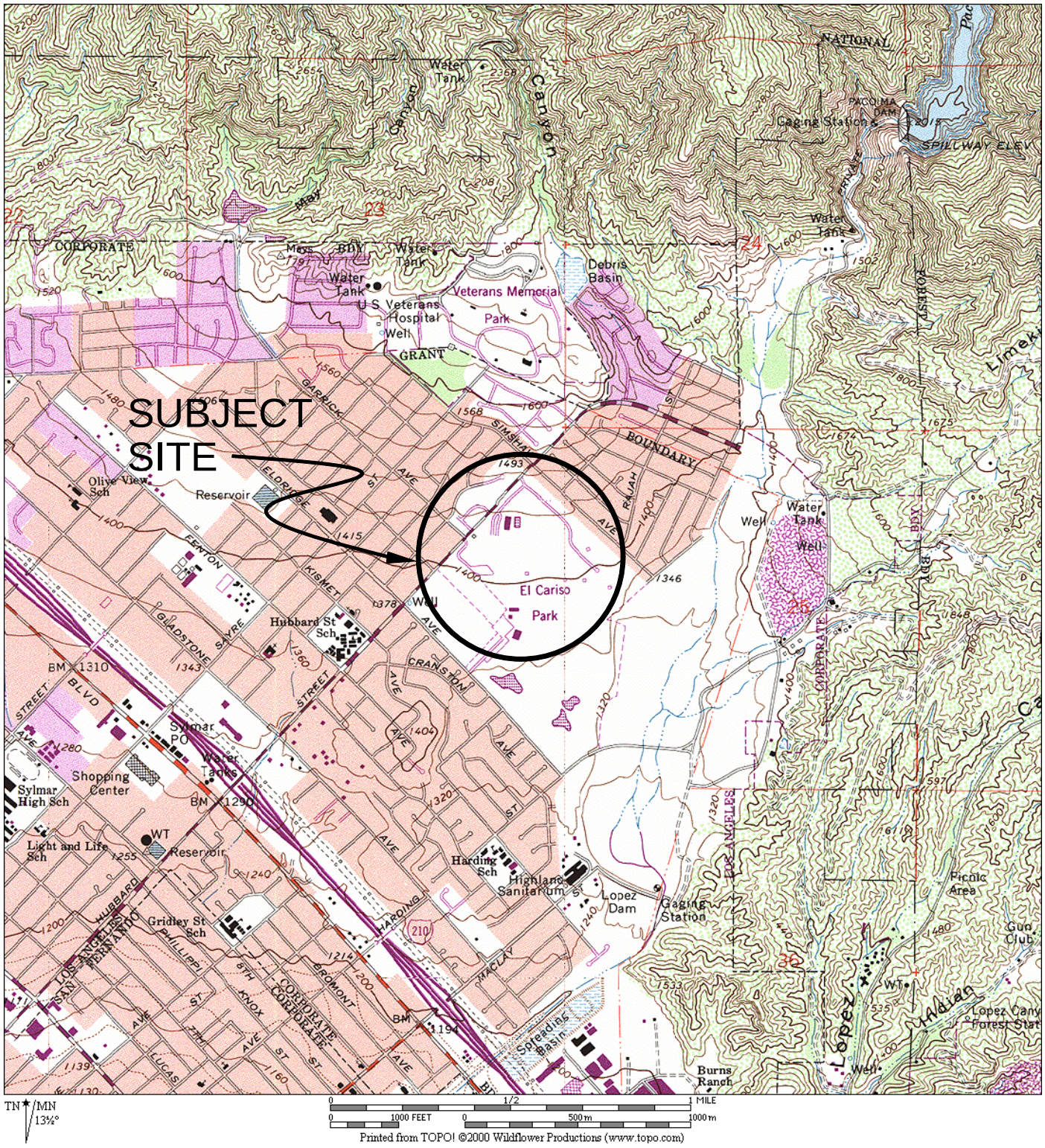
Sadigh, K., Chang, C.Y., Egan, J.A., Makdisi, F., and Youngs, R. R., 1997, Attenuation Relationships for Shallow Crustal Earthquakes Based on California Strong Motion Data, Seismological Research Letters, Vol. 68, No. 1.

Seed, H.B., Idriss, I.M., and Arango, I., 1983, Evaluation of Liquefaction Potential Using Field Performance Data, Journal of the Geotechnical Engineering Division, American Society of Civil Engineers, vol. 109, no. 3, pp. 458-482.

Tinsley, J.C., Youd, T.L., Perkins, D.M., and Chen, A.T.F., 1985, *Evaluating Liquefaction Potential in Evaluating Earthquake Hazards in the Los Angeles Region-An Earth Science Perspective*, U.S. Geological Survey Professional Paper 1360, edited by J.I. Ziony, U.S. Government Printing Office, pp. 263-315.

U.S. Geological Survey, 1972, *San Fernando 7.5-Minute Topographic Map*.

Wesnousky, S.G., 1986, *Earthquakes, Quaternary Faults and Seismic Hazard in California*, Journal of Geophysical Research, Vol. 91, No. B12, pp. 12,587–12,631.Ziony, J.I., and Jones, L.M., 1989, *Map Showing Late Quaternary Faults and 1978–1984 Seismicity of the Los Angeles Region, California*, U.S. Geological Survey Miscellaneous Field Studies Map MF-1964.



REFERENCE: U.S.G.S. TOPOGRAPHIC MAPS, 7.5 MINUTE SERIES, SAN FERNANDO, CA QUADRANGLE

GEOCON WEST, INC.

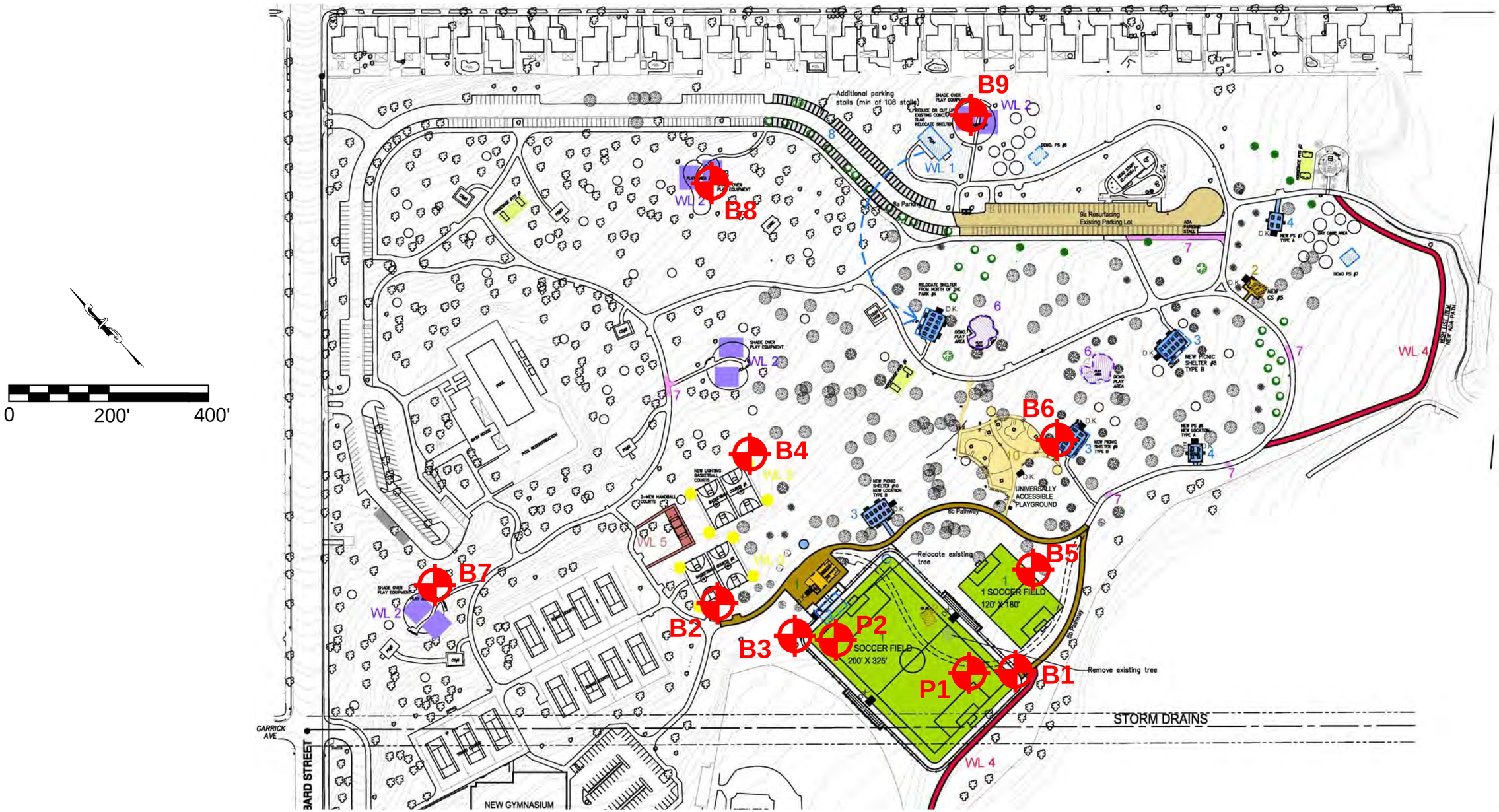
ENVIRONMENTAL GEOTECHNICAL MATERIALS
3303 N. SAN FERNANDO BLVD. - SUITE 100 - BURBANK, CA 91504
PHONE (818) 841-8388 - FAX (818) 841-1704

CHL		8000

VICINITY MAP

EL CARISO PARK IMPROVEMENTS
COUNTY OF LOS ANGELES DEPT. OF PUBLIC WORKS
13100 HUBBARD STREET
SYLMAR, CALIFORNIA

OCT. 2, 2012	PROJECT NO. A8559-06-38A	FIG. 1



LEGEND

B9 Approximate Location of Boring

P2 Approximate Location of Percolation Boring

GEOCON WEST, INC.

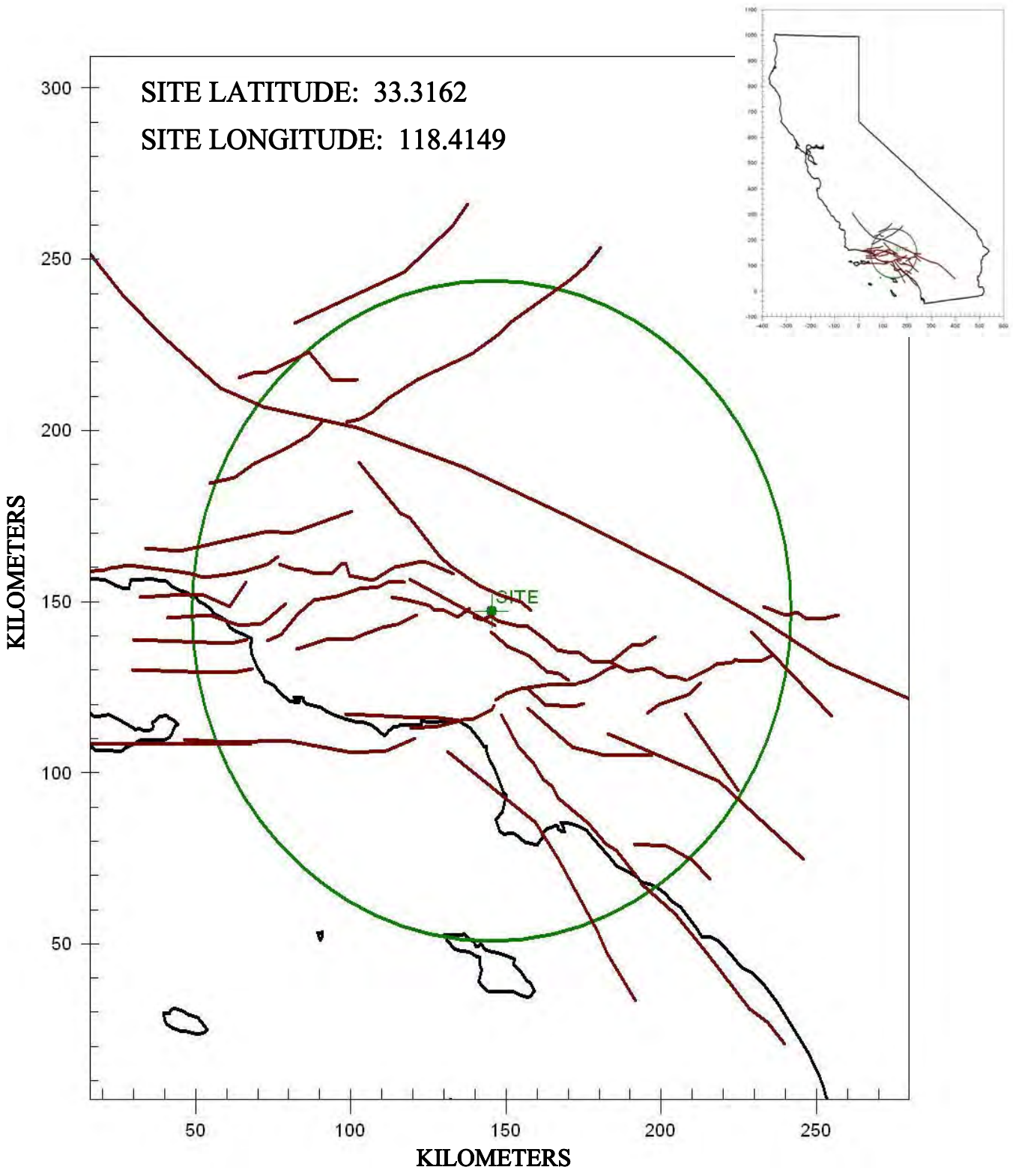
ENVIRONMENTAL GEOTECHNICAL MATERIALS
3303 N. SAN FERNANDO BLVD. - SUITE 100 - BURBANK, CA 91504
PHONE (818) 841-8388 - FAX (818) 841-1704

HHD		8000

SITE PLAN

EL CARISO PARK IMPROVEMENTS
COUNTY OF LOS ANGELES DEPT. OF PUBLIC WORKS
13100 HUBBARD STREET
SYLMAR, CALIFORNIA

OCT. 2, 2012	PROJECT NO. A8559-06-38A	FIG. 2



GEOCON
W E S T, I N C.

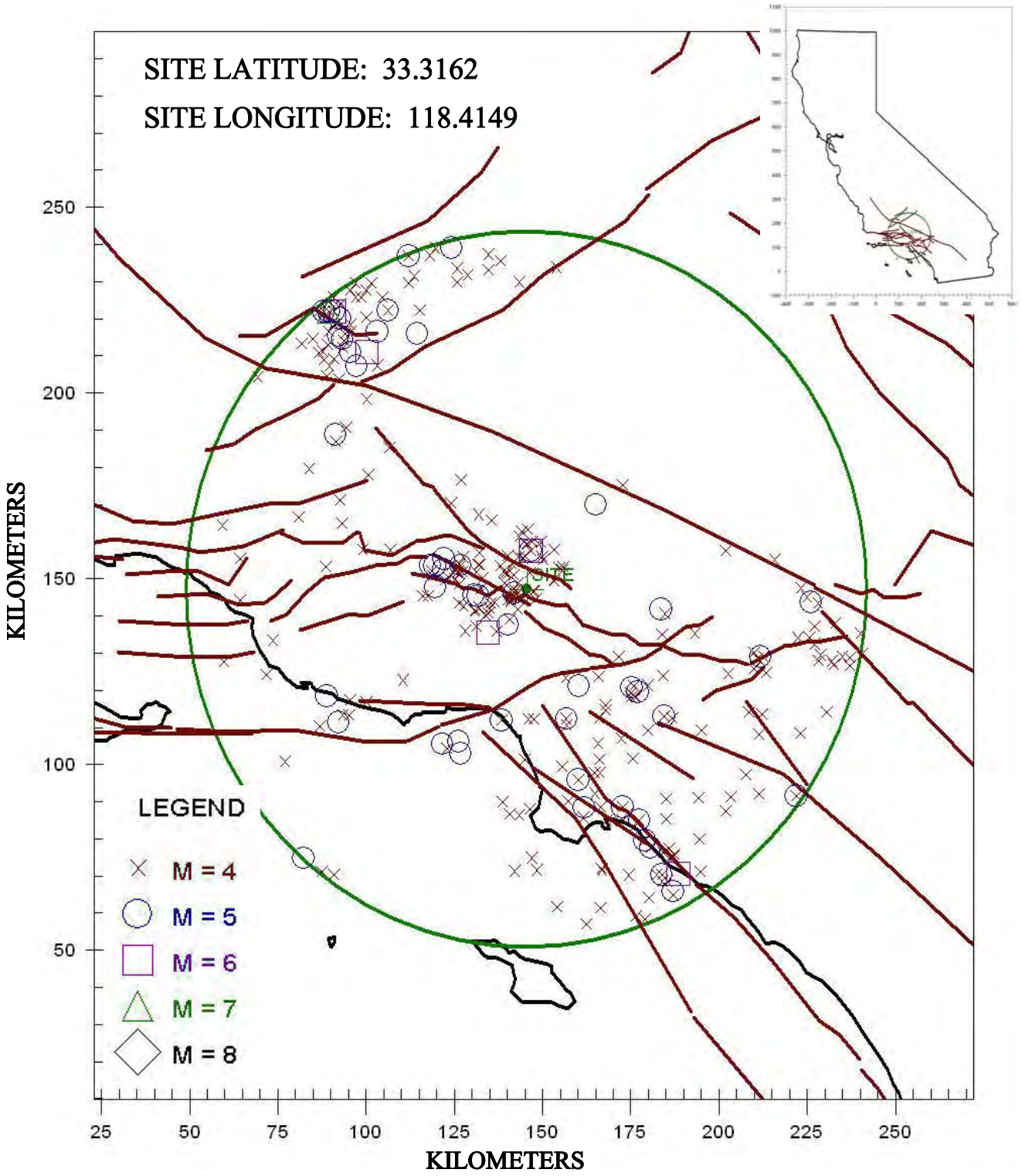
ENVIRONMENTAL GEOTECHNICAL MATERIALS
3303 N. SAN FERNANDO BLVD. - SUITE 100 - BURBANK, CA 91504
PHONE (818) 841-8388 - FAX (818) 841-1704

CHL		8000

REGIONAL FAULT MAP

EL CARISO PARK IMPROVEMENTS
COUNTY OF LOS ANGELES DEPT. OF PUBLIC WORKS
13100 HUBBARD STREET
SYLMAR, CALIFORNIA

OCT. 2, 2012	PROJECT NO. A8559-06-38A	FIG. 3



GEOCON
W E S T, I N C.

ENVIRONMENTAL GEOTECHNICAL MATERIALS
3303 N. SAN FERNANDO BLVD. - SUITE 100 - BURBANK, CA 91504
PHONE (818) 841-8388 - FAX (818) 841-1704

CHL		8000

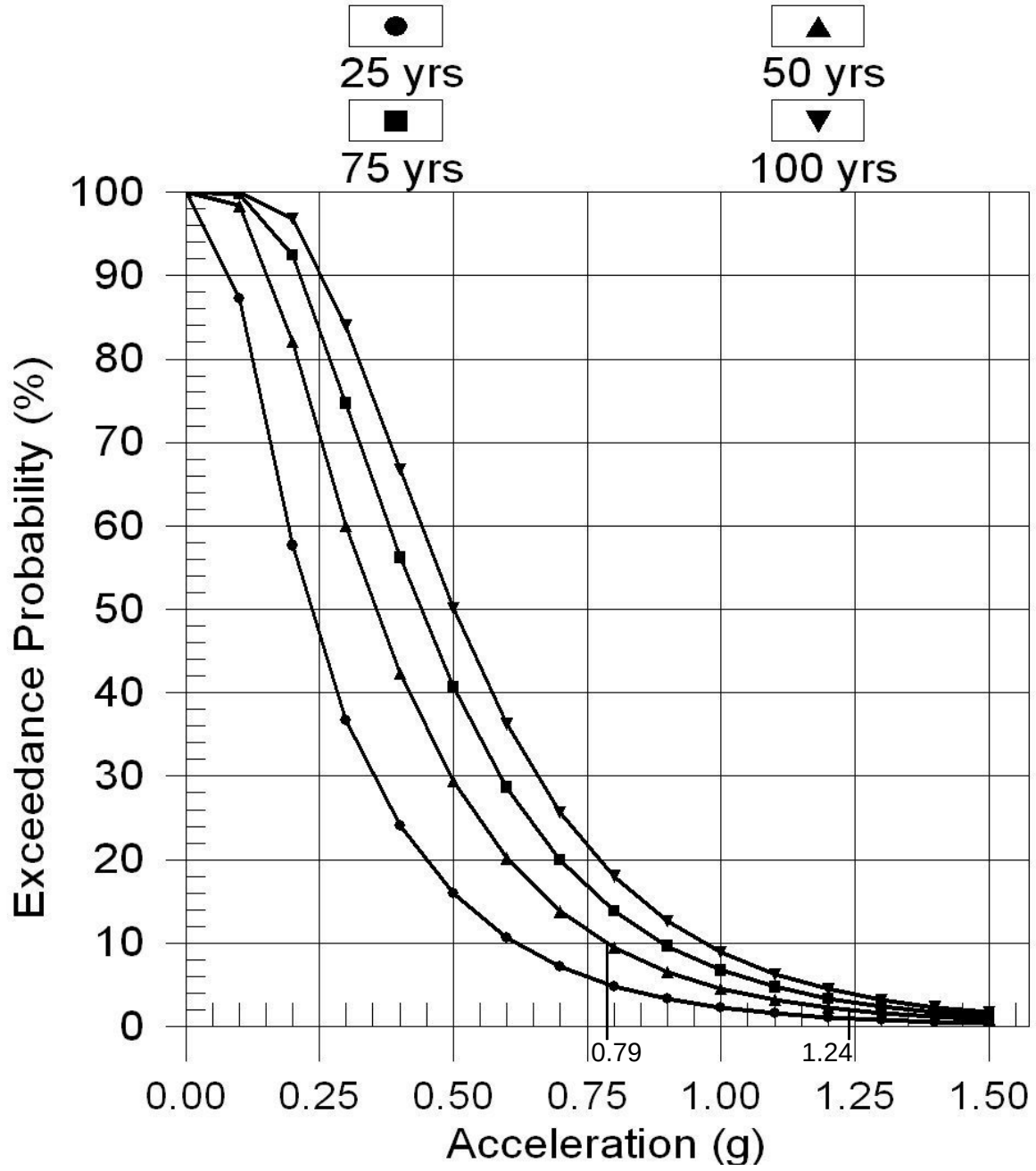
REGIONAL SEISMICITY MAP

EL CARISO PARK IMPROVEMENTS
COUNTY OF LOS ANGELES DEPT. OF PUBLIC WORKS
13100 HUBBARD STREET
SYLMAR, CALIFORNIA

OCT. 2, 2012	PROJECT NO. A8559-06-38A	FIG. 4

PROBABILITY OF EXCEEDANCE

SADIGH ET AL. (1997) DEEP SOIL 1



GEOCON WEST, INC.

ENVIRONMENTAL GEOTECHNICAL MATERIALS
3303 N. SAN FERNANDO BLVD. - SUITE 100 - BURBANK, CA 91504
PHONE (818) 841-8388 - FAX (818) 841-1704

CHL		8000

PROBABILITY OF EXCEEDANCE

EL CARISO PARK IMPROVEMENTS
COUNTY OF LOS ANGELES DEPT. OF PUBLIC WORKS
13100 HUBBARD STREET
SYLMAR, CALIFORNIA

OCT. 2, 2012	PROJECT NO. A8559-06-38A	FIG. 5

GEOCON

TABLE 1

FAULTS WITHIN 60 MILES OF THE SITE

DETERMINISTIC SITE PARAMETERS

ABBREVIATED FAULT NAME	APPROXIMATE DISTANCE mi (km)	ESTIMATED MAX. EARTHQUAKE EVENT: MAXIMUM EARTHQUAKE MAG.(Mw)	ESTIMATED MAX. EARTHQUAKE EVENT: PEAK SITE ACCEL. g	ESTIMATED MAX. EARTHQUAKE EVENT: EST. SITE INTENSITY MOD.MERC.
SIERRA MADRE (San Fernando)	0.6 (0.9)	6.7	1.090	XI
VERDUGO	3.0 (4.9)	6.9	0.811	XI
SAN GABRIEL	3.3 (5.3)	7.2	0.640	X
NORTHRIDGE (E. Oak Ridge)	3.8 (6.1)	7.0	0.757	XI
SANTA SUSANA	4.6 (7.4)	6.7	0.684	XI
SIERRA MADRE	7.6 (12.3)	7.2	0.585	X
HOLSER	10.2 (16.4)	6.5	0.395	X
HOLLYWOOD	14.2 (22.9)	6.4	0.276	IX
SIMI-SANTA ROSA	15.2 (24.5)	7.0	0.333	IX
UPPER ELYSIAN PARK BLIND THRUST	15.5 (25.0)	6.4	0.253	IX
SANTA MONICA	17.0 (27.4)	6.6	0.256	IX
RAYMOND	17.0 (27.4)	6.5	0.245	IX
PUENTE HILLS BLIND THRUST	17.8 (28.7)	7.1	0.305	IX
OAK RIDGE (Onshore)	18.4 (29.6)	7.0	0.280	IX
NEWPORT-INGLEWOOD (L.A.Basin)	18.9 (30.4)	7.1	0.225	IX
MALIBU COAST	20.2 (32.5)	6.7	0.224	IX
CLAMSHELL-SAWPIT	21.0 (33.8)	6.5	0.195	VIII
SAN CAYETANO	21.5 (34.6)	7.0	0.240	IX
SAN ANDREAS - Mojave M-1c-3	21.9 (35.2)	7.4	0.231	IX
SAN ANDREAS - 1857 Rupture M-2a	21.9 (35.2)	7.8	0.284	IX
SAN ANDREAS - Whole M-1a	21.9 (35.2)	8.0	0.312	IX
SAN ANDREAS - Cho-Moj M-1b-1	21.9 (35.2)	7.8	0.284	IX
ANACAPA-DUME	25.7 (41.4)	7.5	0.269	IX
SAN ANDREAS - Carrizo M-1c-2	27.0 (43.4)	7.4	0.189	VIII
PALOS VERDES	27.1 (43.6)	7.3	0.177	VIII
WHITTIER	32.0 (51.5)	6.8	0.109	VII
SANTA YNEZ (East)	33.4 (53.7)	7.1	0.124	VII
SAN JOSE	35.1 (56.5)	6.4	0.097	VII
CUCAMONGA	37.3 (60.1)	6.9	0.122	VII
VENTURA - PITAS POINT	41.5 (66.8)	6.9	0.107	VII
CHINO-CENTRAL AVE. (Elsinore)	42.1 (67.7)	6.7	0.093	VII
GARLOCK (West)	43.6 (70.1)	7.3	0.104	VII
M.RIDGE-ARROYO PARIDA-SANTA ANA	44.2 (71.1)	7.2	0.122	VII
PLEITO THRUST	44.9 (72.3)	7.0	0.103	VII
BIG PINE	48.6 (78.2)	6.9	0.068	VI
OAK RIDGE(Blind Thrust Offshore)	49.2 (79.2)	7.1	0.099	VII
CHANNEL IS. THRUST (Eastern)	49.4 (79.5)	7.5	0.132	VIII
OAK RIDGE MID-CHANNEL STRUCTURE	49.5 (79.6)	6.6	0.070	VI
RED MOUNTAIN	49.7 (80.0)	7.0	0.090	VII
SAN JOAQUIN HILLS	51.0 (82.1)	6.6	0.067	VI
SAN JACINTO-SAN BERNARDINO	52.0 (83.7)	6.7	0.055	VI
SAN ANDREAS - SB-Coach. M-1b-2	52.3 (84.2)	7.7	0.110	VII
SAN ANDREAS - San Bernardino M-1	52.3 (84.2)	7.5	0.096	VII
SAN ANDREAS - SB-Coach. M-2b	52.3 (84.2)	7.7	0.110	VII
CLEGHORN	54.2 (87.3)	6.5	0.045	VI
ELSINORE (GLEN IVY)	54.7 (88.0)	6.8	0.054	VI
NEWPORT-INGLEWOOD (Offshore)	57.7 (92.8)	7.1	0.062	VI
WHITE WOLF	58.5 (94.1)	7.3	0.092	VII

48 FAULTS FOUND WITHIN THE SPECIFIED SEARCH RADIUS.
THE SIERRA MADRE (San Fernando) FAULT IS CLOSEST TO THE SITE.
IT IS ABOUT 0.6 MILES (0.9 km) AWAY.
LARGEST MAXIMUM-EARTHQUAKE SITE ACCELERATION: 1.0900 g

APPENDIX A

FIELD INVESTIGATION

The site was explored on September 25, 2012 and September 26, 2012 by excavating eleven borings to depths between 9½ and 25½ feet below the existing ground surface utilizing a truck-mounted hollow-stem auger drilling machine. Representative and relatively undisturbed samples were obtained by driving a 3 inch O. D., California Modified Sampler into the "undisturbed" soil mass with blows from a 140-lbs. hammer falling 30 inches. The California Modified Sampler was equipped with 1-inch high by 2⅜-inch diameter brass sampler rings to facilitate removal and testing. A bulk sample was also obtained. Infiltration testing was performed in two of the borings.

The soil conditions encountered in the borings were visually examined, classified and logged in general accordance with the Unified Soil Classification System (USCS). Logs of the excavations are presented on Figures A-1 through A-11. The logs depict the soil and geologic conditions encountered and the depth at which samples were obtained. The approximate locations of the excavations are shown on the Site Plan, Figure 2.

PROJECT NO. A8559-06-38A

BORING 1

ELEV. (MSL.) - - DATE COMPLETED **9/25/12**

EQUIPMENT **HOLLOW STEM AUGER** BY: **HHD**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT)*	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0					**ARTIFICIAL FILL** Silty Sand, medium dense, slightly moist to moist, brown, fine-grained, trace fine-gravel, trace rootlets			
2	B1@2'				**ALLUVIAL FAN DEPOSITS** Silty Sand, dense, slightly moist, brown to dark brown, fine- to coarse-grained, trace fine-gravel	67	127.1	4.8
4					-Medium dense, fine- to medium-grained, some fine-gravel			
6	B1@5'					44	113.7	6.1
8	B1@8'				-Loose, fine-grained, trace fine-gravel	16	115.0	9.1
10				SM	-Medium dense, brown			
12	B1@11'					29	115.1	9.5
14	B1@14'				-Trace coarse-gravel	35	119.3	6.8
16								
18	B1@17'				-Fine- to coarse-grained	27	101.9	18.4
20	B1@20'			SW	Sand, well graded, medium dense, slightly moist, brown to light brown	23	110.9	6.6
22				SM	Silty Sand, medium dense, slightly moist, brown, fine-grained, trace fine-gravel			
24	B1@25'				-Some fine-gravel	44	119.5	4.3
					End at 25.5 feet. Artificial fill to 1 foot. No groundwater encountered. Backfilled and tamped with soil cuttings. *Penetration resistance for 140 pound hammer falling 30 inches by auto-hammer.			

A8559-06-38A BORING LOGS.GPJ

Figure A1,
Log of Boring 1, Page 1 of 1

SAMPLE SYMBOLS

- ☐ ... SAMPLING UNSUCCESSFUL
- ◧ ... STANDARD PENETRATION TEST
- ■ ... DRIVE SAMPLE (UNDISTURBED)
- ⊠ ... DISTURBED OR BAG SAMPLE
- ◪ ... CHUNK SAMPLE
- ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. A8559-06-38A

BORING 2

ELEV. (MSL.) - - DATE COMPLETED **9/25/12**

EQUIPMENT **HOLLOW STEM AUGER** BY: **HHD**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT)*	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0					**ARTIFICIAL FILL** Silty Sand, medium dense, slightly moist to moist, brown, fine-grained, trace fine-gravel			
2	B2@2'				**ALLUVIAL FAN DEPOSITS** Silty Sand, dense, slightly moist, brown to dark brown, fine-grained with trace coarse-grained, trace fine-gravel	70	116.8	3.5
4	B2@4'				-Medium dense, fine- to coarse-grained, some fine-gravel	32	120.2	4.3
6					-Brown			
8	B2@7'			SM	-Loose, fine-grained, trace fine-gravel	31	110.2	8.0
10	B2@10'					17	119.9	13.0
12					-Medium dense			
14	B2@13'					21	115.2	9.3
16	B2@16'			SW-SM	Sand with Silt, well graded, medium dense, slightly moist, light brown to brown, trace fine-gravel	48	118.1	6.1
18					Silty Sand, medium dense, slightly moist, brown, fine-grained, trace fine-gravel			
20	B2@20'			SM		47	113.9	6.1
22								
24								
	B2@25'					18	113.3	5.6
					End at 25.5 feet. Artificial fill to 1.5 feet. No groundwater encountered. Backfilled and tamped with soil cuttings. *Penetration resistance for 140 pound hammer falling 30 inches by auto-hammer.			

A8559-06-38A BORING LOGS.GPJ

Figure A2,
Log of Boring 2, Page 1 of 1

SAMPLE SYMBOLS

- ☐ ... SAMPLING UNSUCCESSFUL
- ◧ ... STANDARD PENETRATION TEST
- ■ ... DRIVE SAMPLE (UNDISTURBED)
- ⊠ ... DISTURBED OR BAG SAMPLE
- ◪ ... CHUNK SAMPLE
- ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

GEOCON

PROJECT NO. A8559-06-38A

BORING 3

ELEV. (MSL.) - - DATE COMPLETED **9/25/12**

EQUIPMENT **HOLLOW STEM AUGER** BY: **HHD**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT)*	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0					**ARTIFICIAL FILL** Silty Sand, medium dense, slightly moist to moist, brown, fine-grained, trace fine-gravel			
2	B3@2'				**ALLUVIUAL FAN DEPOSITS** Silty Sand, very dense, slightly moist, brown, fine- to coarse-grained, trace fine-gravel	80	128.4	3.8
4	B3@4'				-Medium dense, some fine-gravel, trace rootlets	30	111.3	3.5
6				SM	-Fine-grained, trace fine-gravel			
8	B3@7'				-Fine- to coarse-grained, some fine-gravel, no rootlets	37	118.1	4.5
10	B3@10'					30	115.1	3.3
12					Sand with Silt and Gravel, well graded, medium dense, slightly moist, brown to light brown, fine-gravel			
14	B3@13'			SW-SM		24	118.7	4.2
16	B3@16'					45	119.0	3.4
18				SM	Silty Sand, medium dense, slightly moist, brown, fine- to coarse-grained, trace fine-gravel			
20	B3@20'			SW	Sand with Gravel, well graded, medium dense, slightly moist, brown to light brown, fine-gravel	50	89.9	7.1
22					Silty Sand, medium dense, slightly moist, brown, fine- to coarse-grained, some fine-gravel			
24				SM				
	B3@25'				-Fine-grained, trace coarse-gravel	38		
					End at 25.5 feet. Artificial fill to 1 foot. No groundwater encountered. Backfilled and tamped with soil cuttings. *Penetration resistance for 140 pound hammer falling 30 inches by auto-hammer.			

A8559-06-38A BORING LOGS.GPJ

Figure A3,
Log of Boring 3, Page 1 of 1

SAMPLE SYMBOLS

- ☐ ... SAMPLING UNSUCCESSFUL
- ◧ ... STANDARD PENETRATION TEST
- ■ ... DRIVE SAMPLE (UNDISTURBED)
- ⊠ ... DISTURBED OR BAG SAMPLE
- ◪ ... CHUNK SAMPLE
- ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. A8559-06-38A

BORING 4

ELEV. (MSL.) - - DATE COMPLETED **9/25/12**

EQUIPMENT **HOLLOW STEM AUGER** BY: **HHD**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT)*	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0					**ARTIFICIAL FILL** Silty Sand, medium dense, slightly moist to moist, brown, fine-grained, trace frine-gravel, trace rootlets			
2	B4@2'			SM	**ALLUVIAL FAN DEPOSITS** Silty Sand, medium dense, slightly moist, fine-grained, trace fine-gravel, trace rootlets	34	119.7	5.0
4					-Some fine-gravel, trace coarse-gravel			
6	B4@5'			SW	Sand with Gravel, well graded, medium dense, slightly moist, light brown, fine-gravel	48	124.3	3.9
8	B4@8'			SM	Silty Sand, medium dense, slightly moist, brown, fine-grained with trace coarse-grained, trace fine-gravel	44	110.0	5.1
10					-No gravel			
12	B4@11'				-Some coarse-gravel	30	94.6	4.7
14	B4@14'				-Trace coarse-gravel	45	118.5	8.5
16	B4@17'			SW	Sand with Gravel, well graded, medium dense, slightly moist, brown to light brown, fine-gravel	42	115.9	12.7
20	B4@20'					60	117.4	4.6
22								
24								
	B4@25'			SM	Silty Sand, medium dense, slightly moist, brown, fine-grained with trace coarse-grained, trace fine-gravel		125.9	2.8
					End at 25.5 feet. Artificial fill to 1 foot. No groundwater encountered. Backfilled and tamped with soil cuttings.			

*Penetration resistance for 140 pound hammer falling 30 inches by

A8559-06-38A BORING LOGS.GPJ

Figure A4,
Log of Boring 4, Page 1 of 2

SAMPLE SYMBOLS

- ☐ ... SAMPLING UNSUCCESSFUL
- ◧ ... STANDARD PENETRATION TEST
- ■ ... DRIVE SAMPLE (UNDISTURBED)
- ⊠ ... DISTURBED OR BAG SAMPLE
- ◪ ... CHUNK SAMPLE
- ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

GEOCON

PROJECT NO. A8559-06-38A

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	**BORING 4** ELEV. (MSL.) - - DATE COMPLETED **9/25/12** EQUIPMENT **HOLLOW STEM AUGER** BY: **HHD**	PENETRATION RESISTANCE (BLOWS/FT)*	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
					MATERIAL DESCRIPTION			
					auto-hammer.			

Figure A4,
Log of Boring 4, Page 2 of 2

A8559-06-38A BORING LOGS.GPJ

SAMPLE SYMBOLS

- ☐ ... SAMPLING UNSUCCESSFUL
- ◧ ... STANDARD PENETRATION TEST
- ■ ... DRIVE SAMPLE (UNDISTURBED)
- ⊠ ... DISTURBED OR BAG SAMPLE
- ◪ ... CHUNK SAMPLE
- ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. A8559-06-38A

BORING 5

ELEV. (MSL.) - - DATE COMPLETED **9/25/12**

EQUIPMENT **HOLLOW STEM AUGER** BY: **HHD**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT)*	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0					**ARTIFICIAL FILL** Silty Sand, medium dense, slightly moist to moist, brown, fine-grained, trace fine-gravel, trace rootlets			
2	B5@2'				**ALLUVIAL FAN DEPOSITS** Silty Sand, medium dense, slightly moist, brown, fine-grained with trace coarse-grained, trace fine-gravel	37	116.1	4.5
4	B5@4'				-Some coarse-grained, some fine-gravel, trace rootlets	40	113.0	4.0
6								
8	B5@7'					52	112.1	3.8
10	B5@10'				-Trace coarse-grained, trace fine-gravel	36	119.3	3.2
12				SM	-Dark brown			
14	B5@13'					23	114.1	14.8
16								
18	B5@17'				-Trace coarse-gravel	37	119.9	5.9
20	B5@20'					38	121.8	10.0
22					Sand with Silt, well graded, dense, slightly moist, brown, some fine- to coarse-gravel			
24				SW-SM				
	B5@25'					62	121.0	2.5
					End at 25.5 feet. Artificial fill to 0.5 feet. No groundwater encountered. Backfilled and tamped with soil cuttings. *Penetration resistance for 140 pound hammer falling 30 inches by auto-hammer.			

A8559-06-38A BORING LOGS.GPJ

Figure A5,
Log of Boring 5, Page 1 of 1

SAMPLE SYMBOLS

- ☐ ... SAMPLING UNSUCCESSFUL
- ◧ ... STANDARD PENETRATION TEST
- ■ ... DRIVE SAMPLE (UNDISTURBED)
- ⊠ ... DISTURBED OR BAG SAMPLE
- ◪ ... CHUNK SAMPLE
- ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

GEOCON

PROJECT NO. A8559-06-38A

BORING 6

ELEV. (MSL.) - - DATE COMPLETED **9/25/12**

EQUIPMENT **HOLLOW STEM AUGER** BY: **HHD**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT)*	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0					**ARTIFICIAL FILL** Silty Sand, medium dense, slightly moist to moist, brown, fine-grained, trace fine-gravel, trace rootlets			
2					**ALLUVIAL FAN DEPOSITS** Silty Sand, medium dense, slightly moist, brown, fine-grained			
4	B6@3'			SM	-Trace coarse-grained, trace fine-gravel	43	110.1	5.8
6	B6@6'					17	118.4	12.3
8								
	B6@9'			SW-SM	Sand with Silt and Gravel, well graded, medium dense, slightly moist, brown to light brown, fine-gravel	22	112.7	4.4

End at 9.5 feet.
Artificial fill to 1 foot.
No groundwater encountered.
Backfilled and tamped with soil cuttings.

*Penetration resistance for 140 pound hammer falling 30 inches by auto-hammer.

A8559-06-38A BORING LOGS.GPJ

Figure A6,
Log of Boring 6, Page 1 of 1

SAMPLE SYMBOLS

- ☐ ... SAMPLING UNSUCCESSFUL
- ◧ ... STANDARD PENETRATION TEST
- ■ ... DRIVE SAMPLE (UNDISTURBED)
- ⊠ ... DISTURBED OR BAG SAMPLE
- ◪ ... CHUNK SAMPLE
- ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

GEOCON

PROJECT NO. A8559-06-38A

BORING 7

ELEV. (MSL.) - - DATE COMPLETED **9/25/12**

EQUIPMENT **HOLLOW STEM AUGER** BY: **HHD**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT)*	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0					**ARTIFICIAL FILL** Silty Sand, medium dense, slightly moist, brown, fine-grained with trace coarse-grained, trace rootlets			
2	B7@2'					81	129.2	3.3
4					**ALLUVIAL FAN DEPOSITS** Silty Sand, dense, slightly moist, brown, fine- to coarse-grained, trace fine-gravel			
6	B7@6'			SM	-Fine- to medium-grained with some coarse-grained	28	115.9	4.2
8					Sand with Silt and Gravel, poorly graded, medium dense, slightly moist, brown to light brown, fine-gravel			
10	B7@10'			SP-SM		49	118.7	3.1
					End at 10.5 feet. Artificial fill to 2.5 feet. No groundwater encountered. Backfilled and tamped with soil cuttings. *Penetration resistance for 140 pound hammer falling 30 inches by auto-hammer.			

A8559-06-38A BORING LOGS.GPJ

Figure A7,
Log of Boring 7, Page 1 of 1

SAMPLE SYMBOLS

- ☐ ... SAMPLING UNSUCCESSFUL
- ◧ ... STANDARD PENETRATION TEST
- ■ ... DRIVE SAMPLE (UNDISTURBED)
- ⊠ ... DISTURBED OR BAG SAMPLE
- ◪ ... CHUNK SAMPLE
- ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

GEOCON

PROJECT NO. A8559-06-38A

BORING 8

ELEV. (MSL.) - - DATE COMPLETED **9/25/12**

EQUIPMENT **HOLLOW STEM AUGER** BY: **HHD**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT)*	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0					**ARTIFICIAL FILL** Silty Sand, medium dense, slightly moist, brown, fine-grained with trace coarse-grained, trace fine-gravel, trace rootlets			
2	B8@2'			SM	**ALLUVIAL FAN DEPOSITS** Silty Sand, medium dense, slightly moist, brown, fine-grained with trace coarse-grained	38	113.7	3.9
4								
6	B8@6'				-Fine- to medium-grained with some coarse-grained, some fine-gravel	32	111.7	5.9
8				SW-SM	Sand with Silt and Gravel, well graded, dense, slightly moist, brown, fine-gravel with trace coarse-gravel			
10	B8@10'					63	122.8	2.5

End at 10.5 feet.
Artificial fill to 1 foot.
No groundwater encountered.
Backfilled and tamped with soil cuttings.

*Penetration resistance for 140 pound hammer falling 30 inches by auto-hammer.

A8559-06-38A BORING LOGS.GPJ

Figure A8,
Log of Boring 8, Page 1 of 1

SAMPLE SYMBOLS

- ☐ ... SAMPLING UNSUCCESSFUL
- ◧ ... STANDARD PENETRATION TEST
- ■ ... DRIVE SAMPLE (UNDISTURBED)
- ⊠ ... DISTURBED OR BAG SAMPLE
- ◪ ... CHUNK SAMPLE
- ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

GEOCON

PROJECT NO. A8559-06-38A

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	**BORING 9** ELEV. (MSL.) - - DATE COMPLETED **9/25/12** EQUIPMENT **HOLLOW STEM AUGER** BY: **HHD**	PENETRATION RESISTANCE (BLOWS/FT)*	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
					MATERIAL DESCRIPTION			
0					**ARTIFICIAL FILL** Silty Sand, loose, slightly moist to moist, brown, fine-grained, trace fine-gravel			
2	B9@2'					16	119.6	6.3
4				SM	**ALLUVIAL FAN DEPOSITS** Silty Sand, loose, slightly moist, brown, fine-grained with trace coarse-grained, trace fine-gravel			
6	B9@6'			SW	Sand, well graded, medium dense, slightly moist, brown to light brown, some fine-gravel with trace coarse-gravel	47	126.4	1.7
8								
10	B9@10'				-Trace fine- to coarse-gravel	21	111.1	2.1
					End at 10.5 feet. Artificial fill to 2.5 feet. No groundwater encountered. Backfilled and tamped with soil cuttings. *Penetration resistance for 140 pound hammer falling 30 inches by auto-hammer.			

A8559-06-38A BORING LOGS.GPJ

Figure A9,
Log of Boring 9, Page 1 of 1

SAMPLE SYMBOLS

- ☐ ... SAMPLING UNSUCCESSFUL
- ◧ ... STANDARD PENETRATION TEST
- ■ ... DRIVE SAMPLE (UNDISTURBED)
- ⊠ ... DISTURBED OR BAG SAMPLE
- ◪ ... CHUNK SAMPLE
- ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

GEOCON

PROJECT NO. A8559-06-38A

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	**PERCOLATION 1** ELEV. (MSL.) - - DATE COMPLETED **9/25/12** EQUIPMENT **HAND AUGER** BY: **HHD**	PENETRATION RESISTANCE (BLOWS/FT)*	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
					MATERIAL DESCRIPTION			
0					**ARTIFICIAL FILL** Silty Sand, medium dense, slightly moist, brown, fine-grained, trace fine-gravel			
2				SM	**ALLUVIAL FAN DEPOSITS** Silty Sand, dense, slightly moist, brown ti dark brown, fine-grained, trace fine-gravel			
4					-Medium dense, some fine-gravel			
6					End at 6 feet. Artificial fill to 1 foot. No groundwater encountered Percolation tested from 4 to 6 feet. Backfilled and tamped with soil cuttings.			

A8559-06-38A PERC LOGS.GPJ

Figure A10,
Log of Percolation 1, Page 1 of 1

SAMPLE SYMBOLS

- ☐ ... SAMPLING UNSUCCESSFUL
- ◧ ... STANDARD PENETRATION TEST
- ■ ... DRIVE SAMPLE (UNDISTURBED)
- ⊠ ... DISTURBED OR BAG SAMPLE
- ◪ ... CHUNK SAMPLE
- ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

GEOCON

PROJECT NO. A8559-06-38A

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	**PERCOLATION 2** ELEV. (MSL.) - - DATE COMPLETED **9/25/12** EQUIPMENT **HAND AUGER** BY: **HHD**	PENETRATION RESISTANCE (BLOWS/FT)*	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
					MATERIAL DESCRIPTION			
0					**ARTIFICIAL FILL** Silty Sand, medium dense, slightly moist to moist, fine-grained, trace fine-gravel			
2				SM	**ALLUVIAL FAN DEPOSITS** Silty Sand, medium dense, slightly moist, brown, fine- to coarse-grained, trace fine-gravel			
4								
6					End at 6 feet. Artificial fill to 1 foot. No groundwater encountered. Percolation tested from 4 to 6 feet. Backfilled and tamped with soil cuttings.			

A8559-06-38A PERC LOGS.GPJ

Figure A11,
Log of Percolation 2, Page 1 of 1

SAMPLE SYMBOLS

- ☐ ... SAMPLING UNSUCCESSFUL
- ◧ ... STANDARD PENETRATION TEST
- ■ ... DRIVE SAMPLE (UNDISTURBED)
- ⊠ ... DISTURBED OR BAG SAMPLE
- ◪ ... CHUNK SAMPLE
- ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

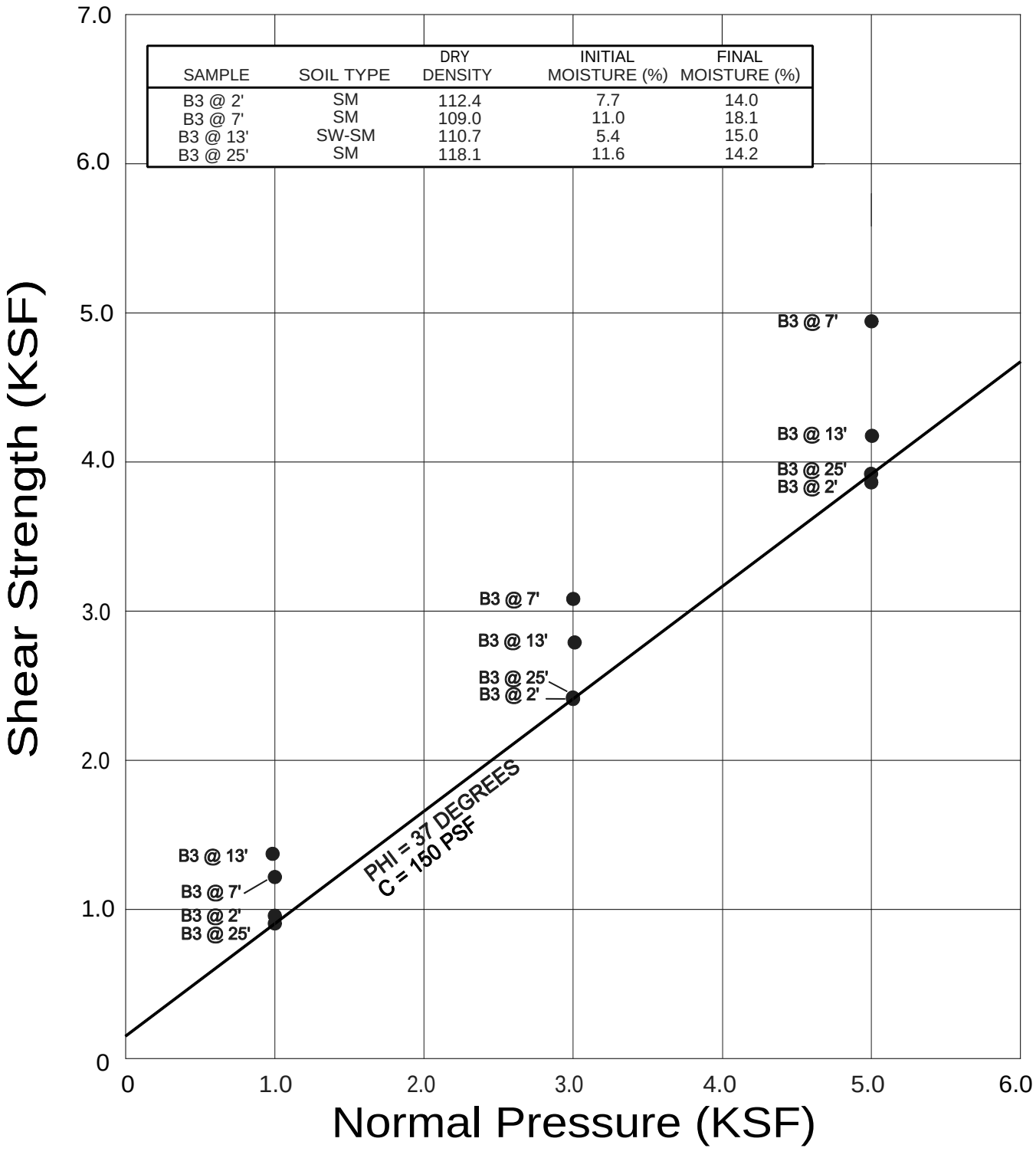
GEOCON

APPENDIX B

LABORATORY TESTING

Laboratory tests were performed in accordance with generally accepted test methods of the American Society for Testing and Materials (ASTM), or other suggested procedures. Selected samples were tested for direct shear strength, expansion characteristics, corrosivity, in-place dry density and moisture content. The results of the laboratory tests are summarized in Figures B1 through B5. The in-place dry density and moisture content of the samples tested are presented on the test pit logs in Appendix A.

SAMPLE	SOIL TYPE	DRY DENSITY	INITIAL MOISTURE (%)	FINAL MOISTURE (%)
B3 @ 2'	SM	112.4	7.7	14.0
B3 @ 7'	SM	109.0	11.0	18.1
B3 @ 13'	SW-SM	110.7	5.4	15.0
B3 @ 25'	SM	118.1	11.6	14.2



GEOCON
WEST, INC.

ENVIRONMENTAL GEOTECHNICAL MATERIALS
3303 N. SAN FERNANDO BLVD. - SUITE 100 - BURBANK, CA 91504
PHONE (818) 841-8388 - FAX (818) 841-1704

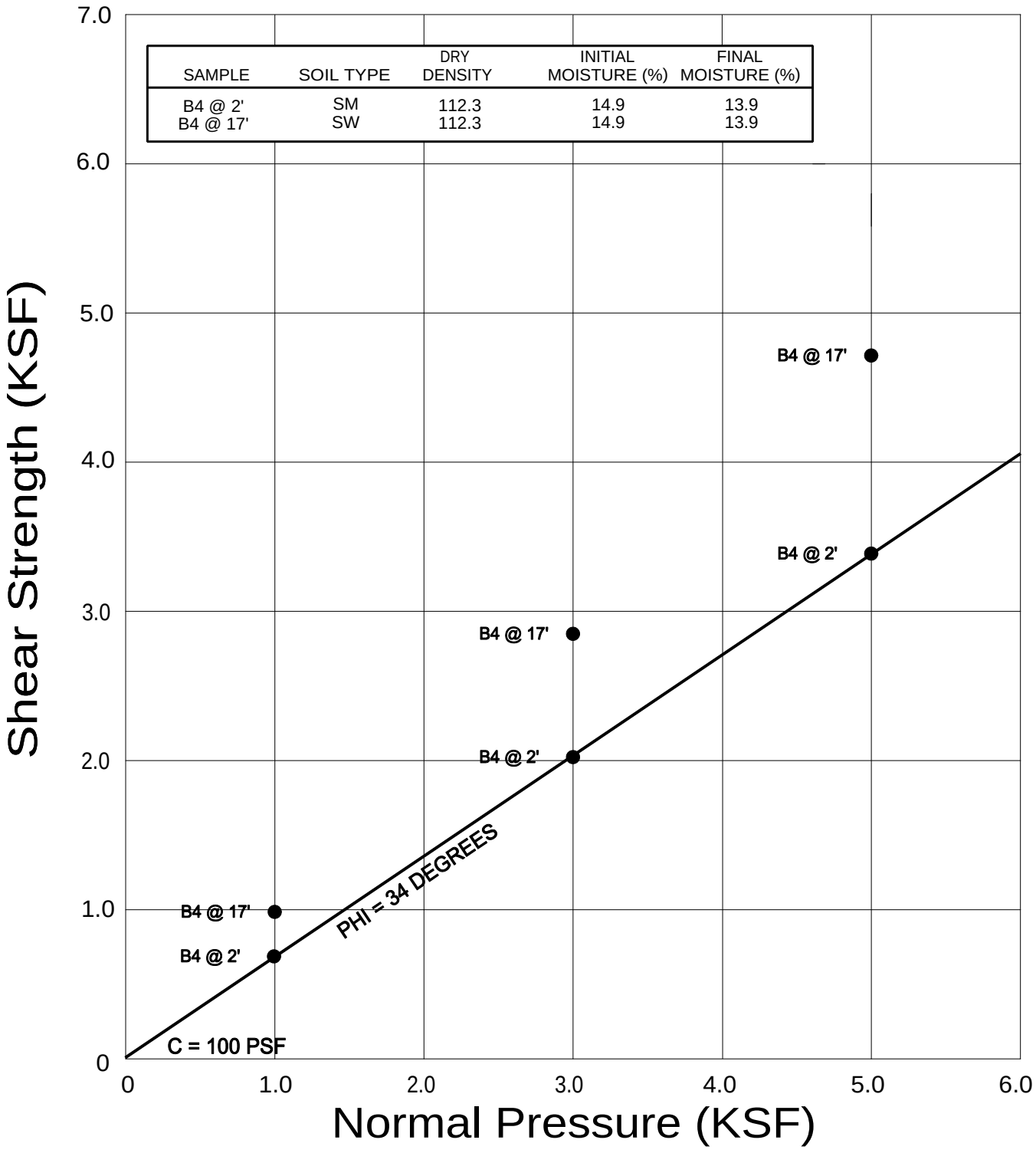
RG		8000

DIRECT SHEAR TEST RESULTS

EL CARISO PARK IMPROVEMENTS
COUNTY OF LOS ANGELES DEPT. OF PUBLIC WORKS
13100 HUBBARD STREET
SYLMAR, CALIFORNIA

OCT. 2, 2012	PROJECT NO. A8559-06-38A	FIG. B1

SAMPLE	SOIL TYPE	DRY DENSITY	INITIAL MOISTURE (%)	FINAL MOISTURE (%)
B4 @ 2'	SM	112.3	14.9	13.9
B4 @ 17'	SW	112.3	14.9	13.9



● Direct Shear, Saturated

GEOCON WEST, INC.

ENVIRONMENTAL GEOTECHNICAL MATERIALS
3303 N. SAN FERNANDO BLVD. - SUITE 100 - BURBANK, CA 91504
PHONE (818) 841-8388 - FAX (818) 841-1704

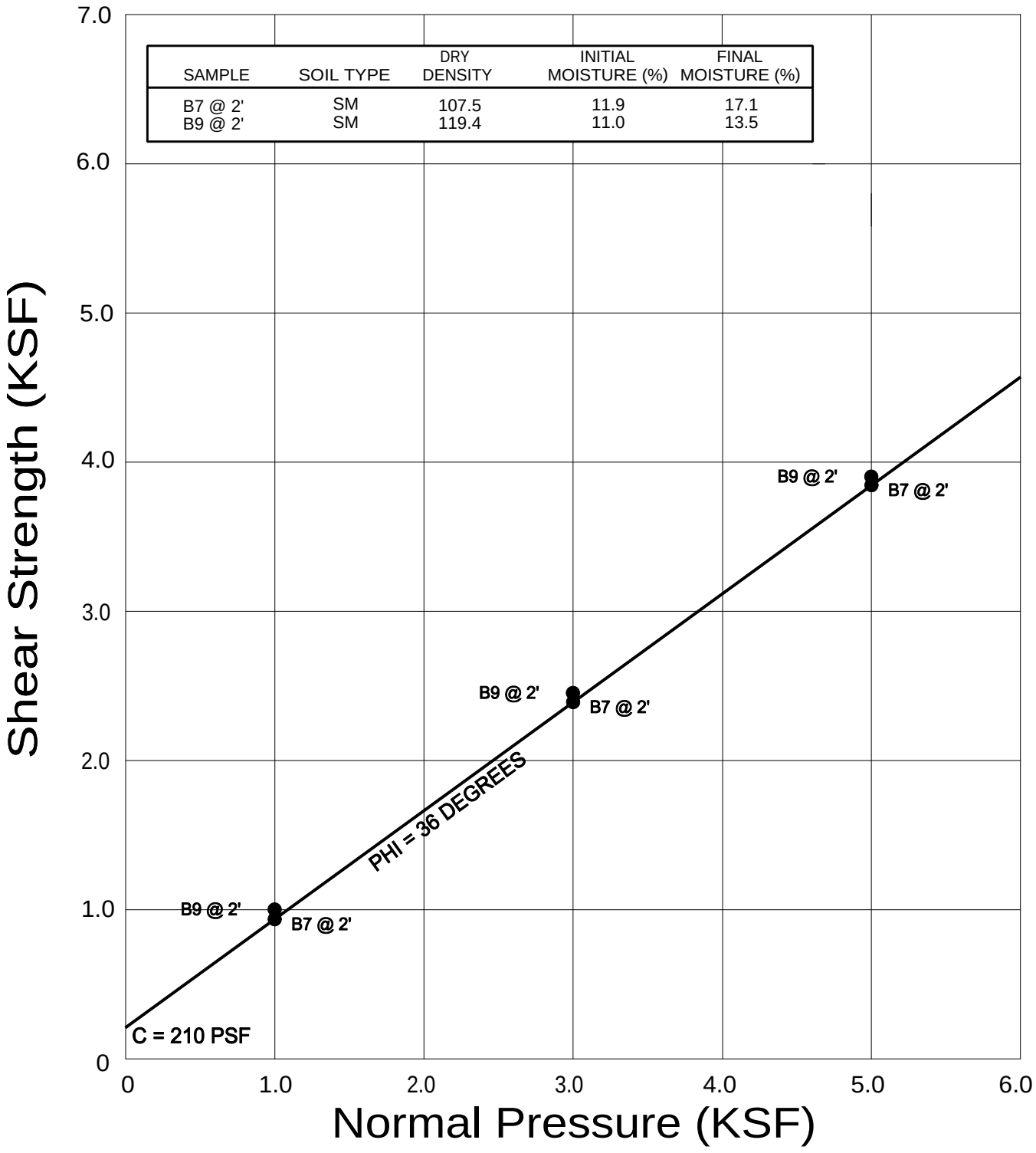
RG		8000

DIRECT SHEAR TEST RESULTS

EL CARISO PARK IMPROVEMENTS
COUNTY OF LOS ANGELES DEPT. OF PUBLIC WORKS
13100 HUBBARD STREET
SYLMAR, CALIFORNIA

OCT. 2, 2012	PROJECT NO. A8559-06-38A	FIG. B2

SAMPLE	SOIL TYPE	DRY DENSITY	INITIAL MOISTURE (%)	FINAL MOISTURE (%)
B7 @ 2'	SM	107.5	11.9	17.1
B9 @ 2'	SM	119.4	11.0	13.5



● Direct Shear, Saturated

GEOCON WEST, INC.

ENVIRONMENTAL GEOTECHNICAL MATERIALS
3303 N. SAN FERNANDO BLVD. - SUITE 100 - BURBANK, CA 91504
PHONE (818) 841-8388 - FAX (818) 841-1704

RG		8000

DIRECT SHEAR TEST RESULTS

EL CARISO PARK IMPROVEMENTS
COUNTY OF LOS ANGELES DEPT. OF PUBLIC WORKS
13100 HUBBARD STREET
SYLMAR, CALIFORNIA

OCT. 2, 2012	PROJECT NO. A8559-06-38A	FIG. B3

SUMMARY OF LABORATORY EXPANSION INDEX TEST RESULTS
ASTM D 4829-08A

Sample No.	Moisture Content (%)		Dry Density (pcf)	Expansion Index	*UBC Classification	**CBC Classification
	Before	After				
B6 @ 0-5'	6.0	16.4	118.1	13	Very Low	Non-Expansive

* Reference: 1997 Uniform Building Code, Table 18-I-B.

** Reference: 2010 California Building Code, Section 1803.5.3

SUMMARY OF LABORATORY MAXIMUM DENSITY AND AND OPTIMUM MOISTURE CONTENT TEST RESULTS
ASTM D 1557-12

Sample No.	Soil Description	Maximum Dry Density (pcf)	Optimum Moisture (%)
B6 @ 0-5'	Brown Sandy Silt with Gravel	135.0	8.5

GEOCON WEST, INC.
ENVIRONMENTAL GEOTECHNICAL MATERIALS
3303 N. SAN FERNANDO BLVD. - SUITE 100 - BURBANK, CA 91504
PHONE (818) 841-8388 - FAX (818) 841-1704

RG | | 8000

LABORATORY TEST RESULTS

EL CARISO PARK IMPROVEMENTS
COUNTY OF LOS ANGELES DEPT. OF PUBLIC WORKS
13100 HUBBARD STREET
SYLMAR, CALIFORNIA

OCT. 2, 2012 | PROJECT NO. A8559-06-38A | FIG. B4

SUMMARY OF LABORATORY POTENTIAL OF HYDROGEN (pH) AND RESISTIVITY TEST RESULTS CALIFORNIA TEST NO. 643

Sample No.	pH	Resistivity (ohm centimeters)
B6 @ 0-5'	7.14	4400 (Moderately Corrosive)

SUMMARY OF LABORATORY CHLORIDE CONTENT TEST RESULTS EPA NO. 325.3

Sample No.	Chloride Ion Content (%)
B6 @ 0-5'	0.007

SUMMARY OF LABORATORY WATER SOLUBLE SULFATE TEST RESULTS CALIFORNIA TEST NO. 417

Sample No.	Water Soluble Sulfate (% SO_4)	Sulfate Exposure*
B6 @ 0-5'	0.006	Negligible

*Reference: 2010 California Building Code, Section 1904.3 and ACI 381 Section 4.3.

GEOCON WEST, INC.
ENVIRONMENTAL GEOTECHNICAL MATERIALS
3303 N. SAN FERNANDO BLVD. - SUITE 100 - BURBANK, CA 91504
PHONE (818) 841-8388 - FAX (818) 841-1704

RG | | 8000

CORROSIVITY TEST RESULTS

EL CARISO PARK IMPROVEMENTS
COUNTY OF LOS ANGELES DEPT. OF PUBLIC WORKS
13100 HUBBARD STREET
SYLMAR, CALIFORNIA

OCT. 2, 2012 | PROJECT NO. A8559-06-38A | FIG. B5

APPENDIX C

BORING LOGS, SITE PLAN, AND LABORATORY TEST DATA FROM PREVIOUS REPORT

PROJECT NO. A8559-06-38

BORING 1

ELEV. (MSL.) _____ DATE COMPLETED **10/28/10**

EQUIPMENT **HOLLOW STEM AUGER** BY: **RG**

DEPTH IN FEET	SAMPLE NO>	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT)*	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0					**ASPHALT: 5.5" BASE: 8"**			
					ARTIFICIAL FILL			
2	B1@2				Silty Sand, loose, slightly moist, brown, fine- to medium-grained, trace fine gravel	15	119.3	9.7
					ALLUVIAL FAN DEPOSITS			
4					Silty Sand, loose, slightly moist, brown, fine- to medium-grained, some fine- to coarse-gravel			
	B1@5				-Decrease in gravel content	17	118.4	7.9
6				SM				
	B1@7					17	115.6	3.8
8					-Increase in sand content			
10	B1@10				-Dense, brown to light brown, some fine- to coarse-gravel	72	113.6	2.6
					End at 10.5 feet.			
					Fill to 2 feet.			
					No groundwater encountered.			
					Backfilled and tamped with soil cuttings.			
					Capped with asphalt patch.			
					*Penetration resistance for 140 pound hammer falling 30 inches.			

A8559-06-38 BL A1-A14 110810.GPJ

Figure A-1,
Log of Boring 1, Page 1 of 1

SAMPLE SYMBOLS

- ☐ ... SAMPLING UNSUCCESSFUL
- ◧ ... STANDARD PENETRATION TEST
- ■ ... DRIVE SAMPLE (UNDISTURBED)
- ⊠ ... DISTURBED OR BAG SAMPLE
- ◪ ... CHUNK SAMPLE
- ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

GEOCON

PROJECT NO. A8559-06-38

BORING 2

ELEV. (MSL.) _____ DATE COMPLETED **10/28/10**

EQUIPMENT **HOLLOW STEM AUGER** BY: **RG**

DEPTH IN FEET	SAMPLE NO>	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT)*	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0					**ASPHALT: 1.5" BASE: 7"**			
					ARTIFICIAL FILL			
2	B2@2				Silty Sand, loose, slightly moist, brown, fine- to medium-grained, trace fine-gravel	18	120.2	9.4
					ALLUVIAL FAN DEPOSITS			
4					Silty Sand, loose, slightly moist, brown, fine- to medium-grained, trace fine-to coarse-gravel, trace cobbles			
	B2@5					10	110.0	12.8
6				SM	-Decrease in silt content, some cobbles			
	B2@7				-Medium dense	22	110.0	5.3
8								
10	B2@10					22	119.6	3.2
					End at 10.5 feet.			
					Fill to 2 feet.			
					No groundwater encountered.			
					Backfilled and tamped with soil cuttings.			
					Capped with asphalt patch.			

*Penetration resistance for 140 pound hammer falling 30 inches.

A8559-06-38 BL A1-A14 110810.GPJ

Figure A-2,
Log of Boring 2, Page 1 of 1

SAMPLE SYMBOLS

- ☐ ... SAMPLING UNSUCCESSFUL
- ◧ ... STANDARD PENETRATION TEST
- ■ ... DRIVE SAMPLE (UNDISTURBED)
- ⊠ ... DISTURBED OR BAG SAMPLE
- ◥ ... CHUNK SAMPLE
- ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

GEOCON

PROJECT NO. A8559-06-38

BORING 3

ELEV. (MSL.) _____ DATE COMPLETED **10/28/10**

EQUIPMENT **HOLLOW STEM AUGER** BY: **RG**

DEPTH IN FEET	SAMPLE NO>	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT)*	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0					**ARTIFICIAL FILL** Silty Sand, loose, slightly moist, brown, fine- to medium-grained, trace fine- to coarse-gravel			
2	B3@2				**ALLUVIAL FAN DEPOSITS** Silty Sand, loose, slightly moist, brown, fine- to medium-grained, trace fine- to coarse-gravel, some cobbles	13	123.5	11.4
4								
6	B3@5			SM		11	120.2	9.8
8	B3@7				-Decrease in silt content	12	103.7	10.5
10	B3@10					14	115.0	13.9
					End at 10.5 feet. Fill to 1.5 feet. No groundwater encountered. Backfilled and tamped with soil cuttings. Capped with asphalt patch.			

*Penetration resistance for 140 pound hammer falling 30 inches.

A8559-06-38 BL A1-A14 110810.GPJ

Figure A-3,
Log of Boring 3, Page 1 of 1

SAMPLE SYMBOLS

- ☐ ... SAMPLING UNSUCCESSFUL
- ◧ ... STANDARD PENETRATION TEST
- ■ ... DRIVE SAMPLE (UNDISTURBED)
- ⊠ ... DISTURBED OR BAG SAMPLE
- ◪ ... CHUNK SAMPLE
- ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

GEOCON

PROJECT NO. A8559-06-38

BORING 4

ELEV. (MSL.) _____ DATE COMPLETED **10/28/10**

EQUIPMENT **HOLLOW STEM AUGER** BY: **RG**

DEPTH IN FEET	SAMPLE NO>	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT)*	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0					**ARTIFICIAL FILL**			
	B4@1				Silty Sand, medium dense, slightly moist, brown, fine- to medium-grained, trace fine-gravel, trace rootlets	56	101.2	2.7
2					**ALLUVIAL FAN DEPOSITS**			
	B4@3				Silty Sand, dense, slightly moist, brown, fine- to coarse-grained, some fine- to coarse-gravel, trace rootlets	18	118.1	7.0
4					-Loose, some cobbles			
6	B4@6				-Medium dense, trace fine- to coarse-gravel	21	123.5	10.2
8				SM				
10	B4@10					24	118.5	12.9
					-Brown to light brown, some fine- to coarse-gravel			
12	B4@12					28	123.4	4.2
14								
	B4@15				-Dense, decrease in silt content	61	130.8	3.0
					End at 15.5 feet.			
					Fill to 1 foot.			
					No groundwater encountered.			
					Backfilled and tamped with soil cuttings.			
					Capped with asphalt patch.			

*Penetration resistance for 140 pound hammer falling 30 inches.

A8559-06-38 BL A1-A14 110810.GPJ

Figure A-4,
Log of Boring 4, Page 1 of 1

SAMPLE SYMBOLS

- ☐ ... SAMPLING UNSUCCESSFUL
- ◧ ... STANDARD PENETRATION TEST
- ■ ... DRIVE SAMPLE (UNDISTURBED)
- ⊠ ... DISTURBED OR BAG SAMPLE
- ◪ ... CHUNK SAMPLE
- ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

GEOCON

PROJECT NO. A8559-06-38

BORING 5

ELEV. (MSL.) _____ DATE COMPLETED **10/28/10**

EQUIPMENT **HOLLOW STEM AUGER** BY: **RG**

DEPTH IN FEET	SAMPLE NO>	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT)*	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0					**ARTIFICIAL FILL** Silty Sand, loose, slightly moist, brown, fine- to medium-grained, trace fine- to coarse-gravel			
2	B5@1					15	119.2	3.7
4	B5@3				**ALLUVIAL FAN DEPOSITS** Silty Sand, loose, slightly moist, brown, fine- to medium-grained, trace fine- to coarse-gravel, trace rootlets	14	112.2	3.4
6	B5@6			SM	-Medium dense, decrease in silt content	19	104.5	8.1
8								
10	B5@10				-Loose	17	103.4	13.0
					End at 10.5 feet. Fill to 1 foot. No groundwater encountered. Backfilled and tamped with soil cuttings. Capped with asphalt patch.			

*Penetration resistance for 140 pound hammer falling 30 inches.

A8559-06-38 BL A1-A14 110810.GPJ

Figure A-5,
Log of Boring 5, Page 1 of 1

SAMPLE SYMBOLS

- ☐ ... SAMPLING UNSUCCESSFUL
- ◧ ... STANDARD PENETRATION TEST
- ■ ... DRIVE SAMPLE (UNDISTURBED)
- ⊠ ... DISTURBED OR BAG SAMPLE
- ◪ ... CHUNK SAMPLE
- ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

GEOCON

PROJECT NO. A8559-06-38

BORING 6

ELEV. (MSL.) _____ DATE COMPLETED **10/28/10**

EQUIPMENT **HOLLOW STEM AUGER** BY: **RG**

DEPTH IN FEET	SAMPLE NO>	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT)*	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0					**ARTIFICIAL FILL**			
	B6@1				Silty Sand, medium dense, slightly moist, brown, fine- to medium-grained, trace fine- to coarse-gravel, trace rootlets	37	119.5	4.4
2					**ALLUVIAL FAN DEPOSITS**			
	B6@3				Silty Sand, loose, slightly moist, brown, fine- to medium-grained, some fine- to coarse-gravel	28	117.6	5.6
4								
6	B6@6				-Loose, decrease in gravel content	12	109.7	5.0
8								
	B6@9			SM	-Medium dense, decrease in silt content	34	118.0	3.7
10								
12	B6@12					32	118.5	3.6
					-Brown to light brown			
14								
	B6@15					48	109.7	3.7
					End at 15.5 feet. Fill to 1.5 feet. No groundwater encountered. Backfilled and tamped with soil cuttings. Capped with asphalt patch.			

*Penetration resistance for 140 pound hammer falling 30 inches.

A8559-06-38 BL A1-A14 110810.GPJ

Figure A-6,
Log of Boring 6, Page 1 of 1

SAMPLE SYMBOLS

- ☐ ... SAMPLING UNSUCCESSFUL
- ◧ ... STANDARD PENETRATION TEST
- ■ ... DRIVE SAMPLE (UNDISTURBED)
- ⊠ ... DISTURBED OR BAG SAMPLE
- ◪ ... CHUNK SAMPLE
- ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

GEOCON

PROJECT NO. A8559-06-38

DEPTH IN FEET	SAMPLE NO>	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	**BORING 7** ELEV. (MSL.) _____ DATE COMPLETED **10/28/10** EQUIPMENT **HOLLOW STEM AUGER** BY: **RG** MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT)*	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0					**ARTIFICIAL FILL** Silty Sand, medium dense, slightly moist, brown, fine- to medium-grained, trace fine-gravel, trace rootlets			
2	B7@2				**ALLUVIAL FAN DEPOSITS** Silty Sand, dense, slightly moist, brown, fine- to medium-grained, trace fine-gravel	81	122.0	4.4
4								
6	B7@5			SM	-Medium dense	30	121.0	4.6
8	B7@7				-Loose, no gravel	17	116.8	4.5
10	B7@10				-Decrease in silt content	20	118.1	4.1
					End at 10.5 feet. Fill to 1 foot. No groundwater encountered. Backfilled and tamped with soil cuttings. Capped with asphalt patch. *Penetration resistance for 140 pound hammer falling 30 inches.			

A8559-06-38 BL A1-A14 110810.GPJ

Figure A-7,
Log of Boring 7, Page 1 of 1

SAMPLE SYMBOLS

☐ ... SAMPLING UNSUCCESSFUL
◧ ... STANDARD PENETRATION TEST
■ ... DRIVE SAMPLE (UNDISTURBED)
⊠ ... DISTURBED OR BAG SAMPLE
◪ ... CHUNK SAMPLE
▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

GEOCON

PROJECT NO. A8559-06-38

BORING 8

ELEV. (MSL.) _____ DATE COMPLETED **10/28/10**

EQUIPMENT **HOLLOW STEM AUGER** BY: **RG**

DEPTH IN FEET	SAMPLE NO>	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT)*	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0					**ARTIFICIAL FILL**			
	B8@1				Silty Sand, medium dense, slightly moist, brown, fine- to medium-grained, trace rootlets	20	93.0	23.9
2					**ALLUVIAL FAN DEPOSITS**			
	B8@3				Silty Sand, medium dense, slightly moist, brown, fine- to medium-grained, trace fine-gravel, trace rootlets	43	124.6	6.3
4								
6	B8@6				-Trace fine- to coarse-gravel	35	115.5	3.5
8				SM				
	B8@9				-Loose, brown to light brown	9	117.2	7.5
10								
12	B8@12				-Medium dense, decrease in silt content	49	122.5	4.9
14								
	B8@15					41	119.0	6.2
					End at 15.5 feet. Fill to 1 foot. No groundwater encountered. Backfilled and tamped with soil cuttings. Capped with asphalt patch.			

*Penetration resistance for 140 pound hammer falling 30 inches.

A8559-06-38 BL A1-A14 110810.GPJ

Figure A-8,
Log of Boring 8, Page 1 of 1

SAMPLE SYMBOLS

- ☐ ... SAMPLING UNSUCCESSFUL
- ◧ ... STANDARD PENETRATION TEST
- ■ ... DRIVE SAMPLE (UNDISTURBED)
- ⊠ ... DISTURBED OR BAG SAMPLE
- ◪ ... CHUNK SAMPLE
- ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

GEOCON

PROJECT NO. A8559-06-38

DEPTH IN FEET	SAMPLE NO>	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	**BORING 9** ELEV. (MSL.) _____ DATE COMPLETED **10/28/10** EQUIPMENT **HOLLOW STEM AUGER** BY: **RG**	PENETRATION RESISTANCE (BLOWS/FT)*	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
					MATERIAL DESCRIPTION			
0					**ARTIFICIAL FILL** Silty Sand, medium dense, slightly moist, brown, fine- to medium-grained, trace rootlets			
2	B9@2				**ALLUVIAL FAN DEPOSITS** Silty Sand, medium dense, slightly moist, brown, fine- to medium-grained, trace fine-gravel	40	111.4	4.5
4								
6	B9@5			SM		30	114.3	5.1
8	B9@7				-Decrease in silt content, trace coarse gravel	31	105.9	4.6
10	B9@10					34	116.6	4.0
					End at 10.5 feet. Fill to 1 foot. No groundwater encountered. Backfilled and tamped with soil cuttings. Capped with asphalt patch. *Penetration resistance for 140 pound hammer falling 30 inches.			

A8559-06-38 BL A1-A14 110810.GPJ

Figure A-9,
Log of Boring 9, Page 1 of 1

SAMPLE SYMBOLS

☐ ... SAMPLING UNSUCCESSFUL
◧ ... STANDARD PENETRATION TEST
■ ... DRIVE SAMPLE (UNDISTURBED)
⊠ ... DISTURBED OR BAG SAMPLE
◥ ... CHUNK SAMPLE
▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

GEOCON

PROJECT NO. A8559-06-38

BORING 10

ELEV. (MSL.) _____ DATE COMPLETED **10/28/10**

EQUIPMENT **HOLLOW STEM AUGER** BY: **RG**

DEPTH IN FEET	SAMPLE NO>	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT)*	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0					**ARTIFICIAL FILL** Silty Sand, medium dense, moist, brown, fine- to medium-grained			
2	B10@2				**ALLUVIAL FAN DEPOSITS** Silty Sand, loose, moist, brown, fine- to medium-grained, trace fine-gravel, moderate plasticity	13	128.3	11.5
4								
6	B10@5				-Very loose	7	117.7	13.4
8	B10@7			SM		7	117.1	12.4
10	B10@10				-Brown to light brown, decrease in silt content	7	118.2	12.7
12	B10@12				-Medium dense	33	132.1	8.5
14								
	B10@15					38	112.6	16.4
					End at 11.5 feet. Fill to 1 foot. No groundwater encountered. Backfilled and tamped with soil cuttings. Capped with asphalt patch.			

*Penetration resistance for 140 pound hammer falling 30 inches.

A8559-06-38 BL A1-A14 110810.GPJ

Figure A-10,
Log of Boring 10, Page 1 of 1

SAMPLE SYMBOLS

☐ ... SAMPLING UNSUCCESSFUL ◧ ... STANDARD PENETRATION TEST ■ ... DRIVE SAMPLE (UNDISTURBED)

⊠ ... DISTURBED OR BAG SAMPLE ◪ ... CHUNK SAMPLE ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

GEOCON

PROJECT NO. A8559-06-38

DEPTH IN FEET	SAMPLE NO>	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	**BORING 11** ELEV. (MSL.) _____ DATE COMPLETED **10/28/10** EQUIPMENT **HOLLOW STEM AUGER** BY: **RG**	PENETRATION RESISTANCE (BLOWS/FT)*	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
					MATERIAL DESCRIPTION			
0					**ARTIFICIAL FILL** Silty Sand, loose, slightly moist, brown, fine-to medium-grained, trace rootlets			
2	B11@2.5			SM	**ALLUVIAL FAN DEPOSITS** Silty Sand, loose, slightly moist, brown, fine- to medium-grained, trace fine-gravel, trace rootlets	12	99.6	5.1
4	B11@5				-Medium dense	27	104.7	7.0
					End at 5.5 feet. Fill to 1 foot. No groundwater encountered. Backfilled and tamped with soil cuttings. Capped with asphalt patch.			

*Penetration resistance for 140 pound hammer falling 30 inches.

A8559-06-38 BL A1-A14 110810.GPJ

Figure A-11,
Log of Boring 11, Page 1 of 1

SAMPLE SYMBOLS

- ☐ ... SAMPLING UNSUCCESSFUL
- ◧ ... STANDARD PENETRATION TEST
- ■ ... DRIVE SAMPLE (UNDISTURBED)
- ⊠ ... DISTURBED OR BAG SAMPLE
- ◥ ... CHUNK SAMPLE
- ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

GEOCON

PROJECT NO. A8559-06-38

BORING 12

ELEV. (MSL.) _____ DATE COMPLETED **10/28/10**

EQUIPMENT **HOLLOW STEM AUGER** BY: **RG**

DEPTH IN FEET	SAMPLE NO>	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT)*	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0					**ARTIFICIAL FILL** Silty Sand, medium dense, slightly moist, brown, fine-to medium-grained, trace rootlets, trace fine gravel			
2	B12@2				**ALLUVIAL FAN DEPOSITS** Silty Sand, loose, slightly moist, brown, fine- to medium-grained, trace fine-gravel, trace rootlets	17	125.1	9.8
4								
6	B12@5			SM		12	121.3	8.4
8	B12@7				-Medium dense	23	119.9	14.3
10	B12@10					22	114.8	5.4
					End at 10.5 feet. Fill to 1 foot. No groundwater encountered. Backfilled and tamped with soil cuttings. Capped with asphalt patch.			

*Penetration resistance for 140 pound hammer falling 30 inches.

A8559-06-38 BL A1-A14 110810.GPJ

Figure A-12,
Log of Boring 12, Page 1 of 1

SAMPLE SYMBOLS

- ☐ ... SAMPLING UNSUCCESSFUL
- ◧ ... STANDARD PENETRATION TEST
- ■ ... DRIVE SAMPLE (UNDISTURBED)
- ⊠ ... DISTURBED OR BAG SAMPLE
- ◪ ... CHUNK SAMPLE
- ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

GEOCON

PROJECT NO. A8559-06-38

BORING 13

ELEV. (MSL.) _____ DATE COMPLETED **10/28/10**

EQUIPMENT **HOLLOW STEM AUGER** BY: **RG**

DEPTH IN FEET	SAMPLE NO>	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT)*	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0					**ARTIFICIAL FILL**			
	B13@1				Silty Sand, medium dense, slightly moist, brown, fine- to medium-grained, trace rootlets	51	111.7	4.9
2					**ALLUVIAL FAN DEPOSITS**			
	B13@3				Silty Sand, medium dense, slightly moist, brown, fine- to medium-grained, trace fine-gravel	31	123.0	5.8
4								
6	B1@6			SM	-Trace fine-to coarse-gravel	30	126.2	9.0
8								
					-Decrease in silt content			
10	B13@10					25	126.8	7.5
					End at 10.5 feet. Fill to 1 foot. No groundwater encountered. Backfilled and tamped with soil cuttings. Capped with asphalt patch.			

*Penetration resistance for 140 pound hammer falling 30 inches.

A8559-06-38 BL A1-A14 110810.GPJ

Figure A-13,
Log of Boring 13, Page 1 of 1

SAMPLE SYMBOLS

☐ ... SAMPLING UNSUCCESSFUL
◧ ... STANDARD PENETRATION TEST
■ ... DRIVE SAMPLE (UNDISTURBED)
⊠ ... DISTURBED OR BAG SAMPLE
◥ ... CHUNK SAMPLE
▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

GEOCON

PROJECT NO. A8559-06-38

BORING 14

ELEV. (MSL.) _____ DATE COMPLETED **10/28/10**

EQUIPMENT **HOLLOW STEM AUGER** BY: **RG**

DEPTH IN FEET	SAMPLE NO>	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT)*	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0					**ARTIFICIAL FILL** Silty Sand, medium dense, slightly moist, brown, fine- to medium-grained, trace rootlets			
2	B14@1					19	122.7	10.1
4				SM	**ALLUVIAL FAN DEPOSITS** Silty Sand, medium dense, slightly moist, brown, fine- to medium-grained, trace fine- to coarse-gravel			
	B14@5					36	110.3	9.3
					End at 5.5 feet. Fill to 1 feet. No groundwater encountered. Backfilled and tamped with soil cuttings. Capped with asphalt patch.			

*Penetration resistance for 140 pound hammer falling 30 inches.

A8559-06-38 BL A1-A14 110810.GPJ

Figure A-14,
Log of Boring 14, Page 1 of 1

SAMPLE SYMBOLS

- ☐ ... SAMPLING UNSUCCESSFUL
- ◧ ... STANDARD PENETRATION TEST
- ■ ... DRIVE SAMPLE (UNDISTURBED)
- ⊠ ... DISTURBED OR BAG SAMPLE
- ◥ ... CHUNK SAMPLE
- ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

GEOCON

LEGEND

B14 Approximate Location of Boring

B10 Approximate Location of Infiltration Boring

1. NEW ADA COMPLIENT CONCRETE WALKWAY
2. NEW PICNIC STATION
3. NEW PLAY AREA
4. NEW COMFORT STATION WITH (2) MALE WC & (4) FEMALE WC
5. NEW BBQ CONCRETE PAD
6. NEW LIGHT POLES
7. NEW SOCCER FIELD & BERM TO ELEVATION
8. NEW 15,000 SF COMMUNITY CENTER / GYM
9. NEW PARKING SPACE
10. NEW SOCCER FIELD LIGHTING
11. NEW ADA COMPLIENT BLEACHER
12. (E) TRANSFORMER & SWITCHGEAR
13. (E) ELECTRICAL DUCTBANK
14. UNIVERSALLY ACCESSIBLE PLAYGROUND (NIC)
15. NEW CONCRETE SITE BENCH
16. NEW DUGOUT
17. UPGRADE (E) WALKWAY TO ADA COMPLIENT WITH NEW HANDRAIL & RAMP
18. UPGRADE (E) WALKWAY TO ADA COMPLIENT WITH REROUTE & REGRADE
19. PAVING
20. PAVED CONNECTION

0 200' 400'

GEOCON WEST, INC.
ENVIRONMENTAL GEOTECHNICAL MATERIALS
3303 N. SAN FERNANDO BLVD. - SUITE 100 - BURBANK, CA 91504
PHONE (818) 841-8388 - FAX (818) 841-1704

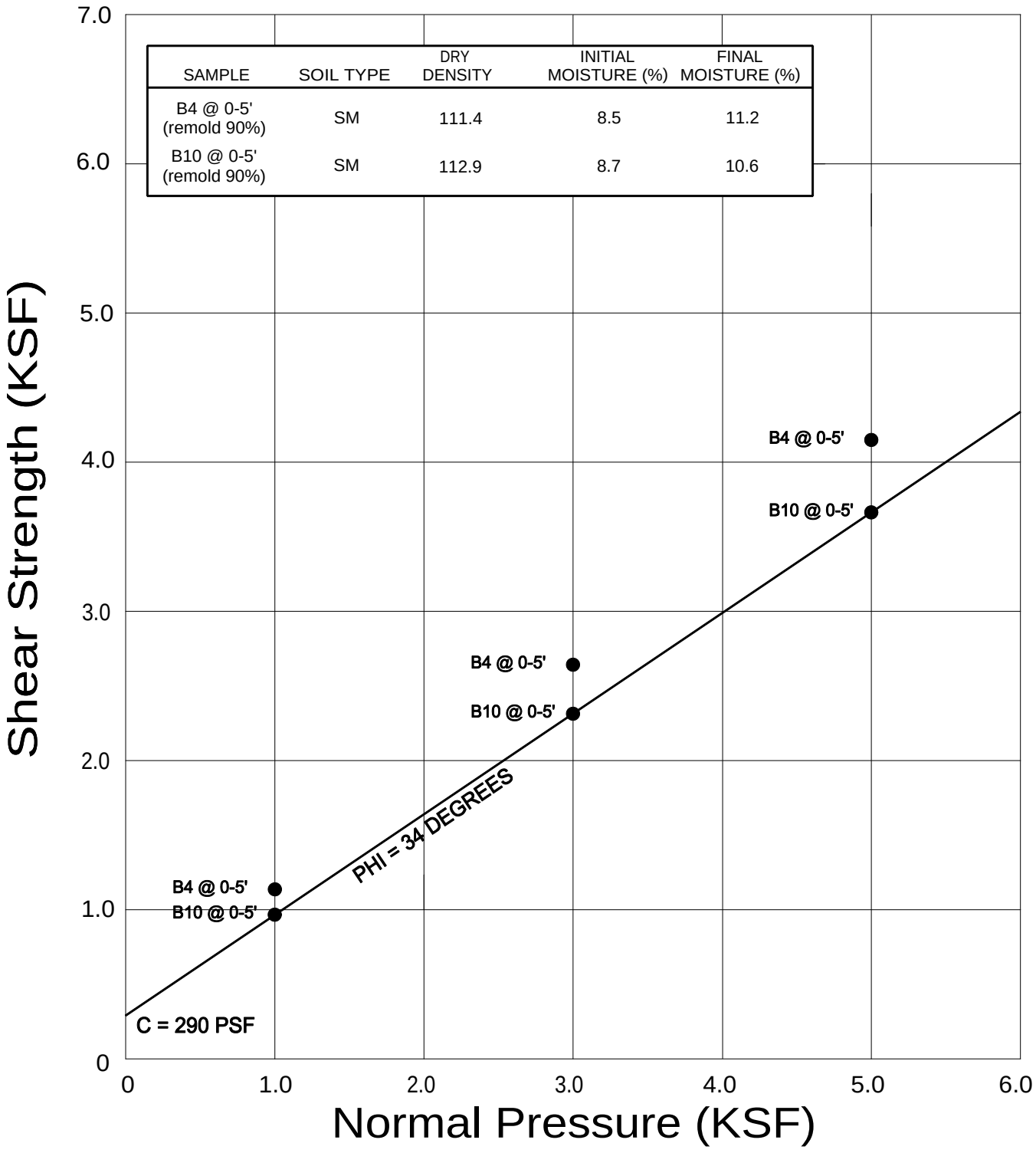
RG		8000

SITE PLAN

EL CARISO PARK IMPROVEMENTS
COUNTY OF LOS ANGELES DEPT. OF PUBLIC WORKS
13100 HUBBARD STREET
LOS ANGELES, CALIFORNIA

NOV. 22, 2010	PROJECT NO. A8559-06-38	FIG. 2

SAMPLE	SOIL TYPE	DRY DENSITY	INITIAL MOISTURE (%)	FINAL MOISTURE (%)
B4 @ 0-5' (remold 90%)	SM	111.4	8.5	11.2
B10 @ 0-5' (remold 90%)	SM	112.9	8.7	10.6



GEOCON WEST, INC.

ENVIRONMENTAL GEOTECHNICAL MATERIALS
3303 N. SAN FERNANDO BLVD. - SUITE 100 - BURBANK, CA 91504
PHONE (818) 841-8388 - FAX (818) 841-1704

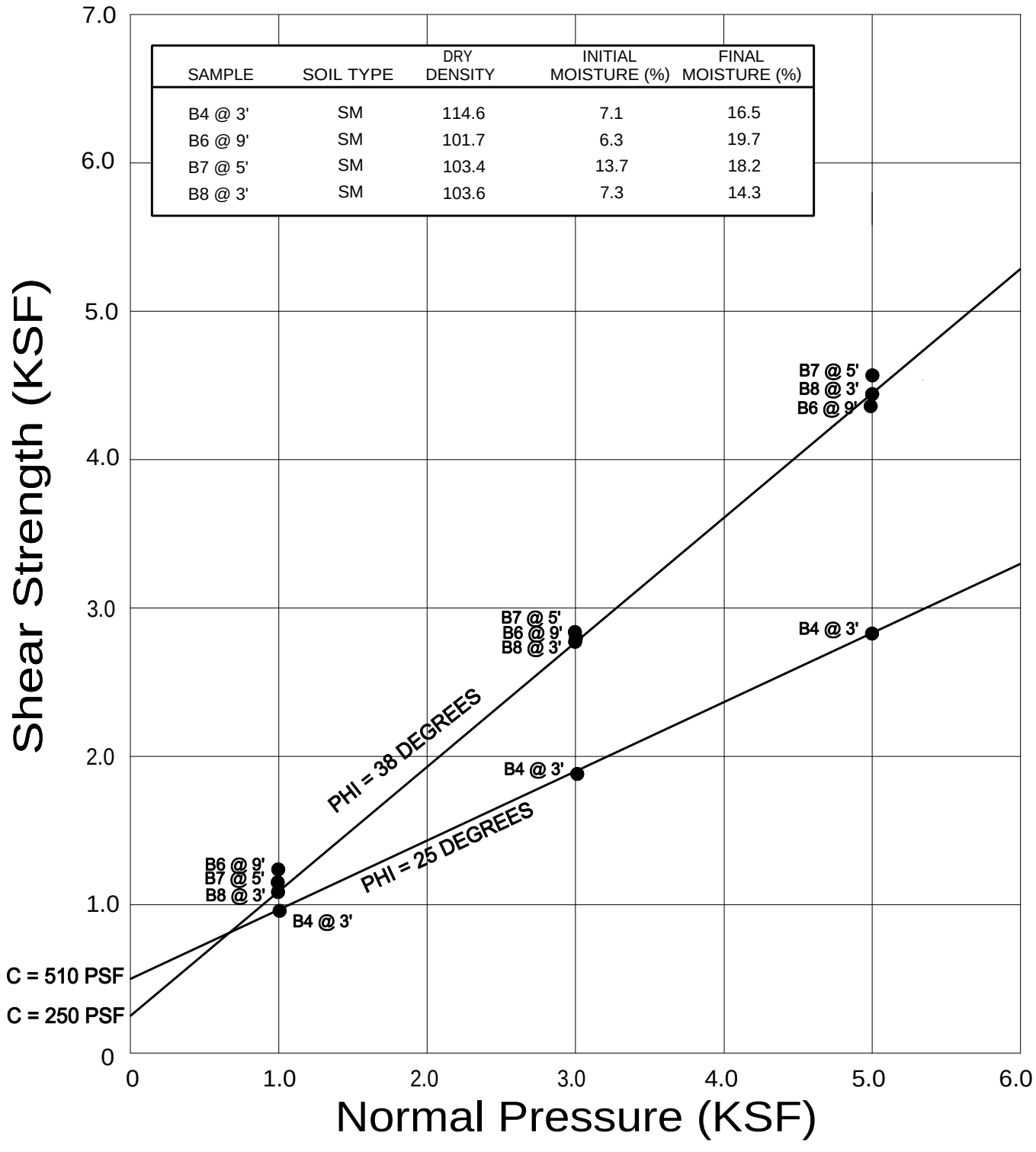
HHD		8000

DIRECT SHEAR TEST RESULTS

EL CARISO PARK IMPROVEMENTS
COUNTY OF LOS ANGELES DEPT. OF PUBLIC WORKS
13100 HUBBARD STREET
LOS ANGELES, CALIFORNIA

NOV. 22, 2010	PROJECT NO. A8559-06-38	FIG. B1

SAMPLE	SOIL TYPE	DRY DENSITY	INITIAL MOISTURE (%)	FINAL MOISTURE (%)
B4 @ 3'	SM	114.6	7.1	16.5
B6 @ 9'	SM	101.7	6.3	19.7
B7 @ 5'	SM	103.4	13.7	18.2
B8 @ 3'	SM	103.6	7.3	14.3



GEOCON
WEST, INC.

ENVIRONMENTAL GEOTECHNICAL MATERIALS
3303 N. SAN FERNANDO BLVD. - SUITE 100 - BURBANK, CA 91504
PHONE (818) 841-8388 - FAX (818) 841-1704

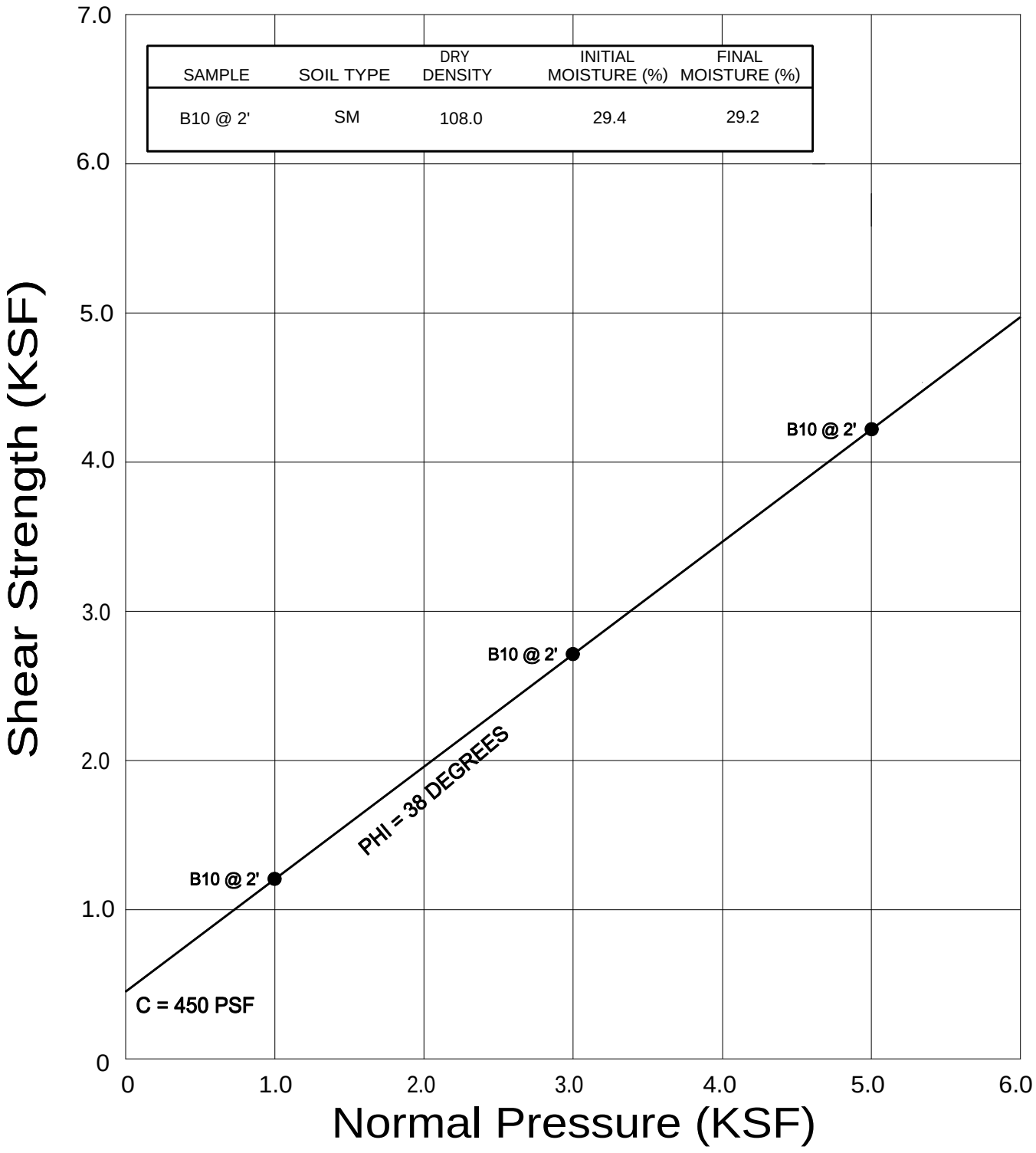
HHD		8000

DIRECT SHEAR TEST RESULTS

EL CARISO PARK IMPROVEMENTS
COUNTY OF LOS ANGELES DEPT. OF PUBLIC WORKS
13100 HUBBARD STREET
LOS ANGELES, CALIFORNIA

NOV. 22, 2010	PROJECT NO. A8559-06-38	FIG. B2

SAMPLE	SOIL TYPE	DRY DENSITY	INITIAL MOISTURE (%)	FINAL MOISTURE (%)
B10 @ 2'	SM	108.0	29.4	29.2



● Direct Shear, Saturated

GEOCON WEST, INC.

ENVIRONMENTAL GEOTECHNICAL MATERIALS
3303 N. SAN FERNANDO BLVD. - SUITE 100 - BURBANK, CA 91504
PHONE (818) 841-8388 - FAX (818) 841-1704

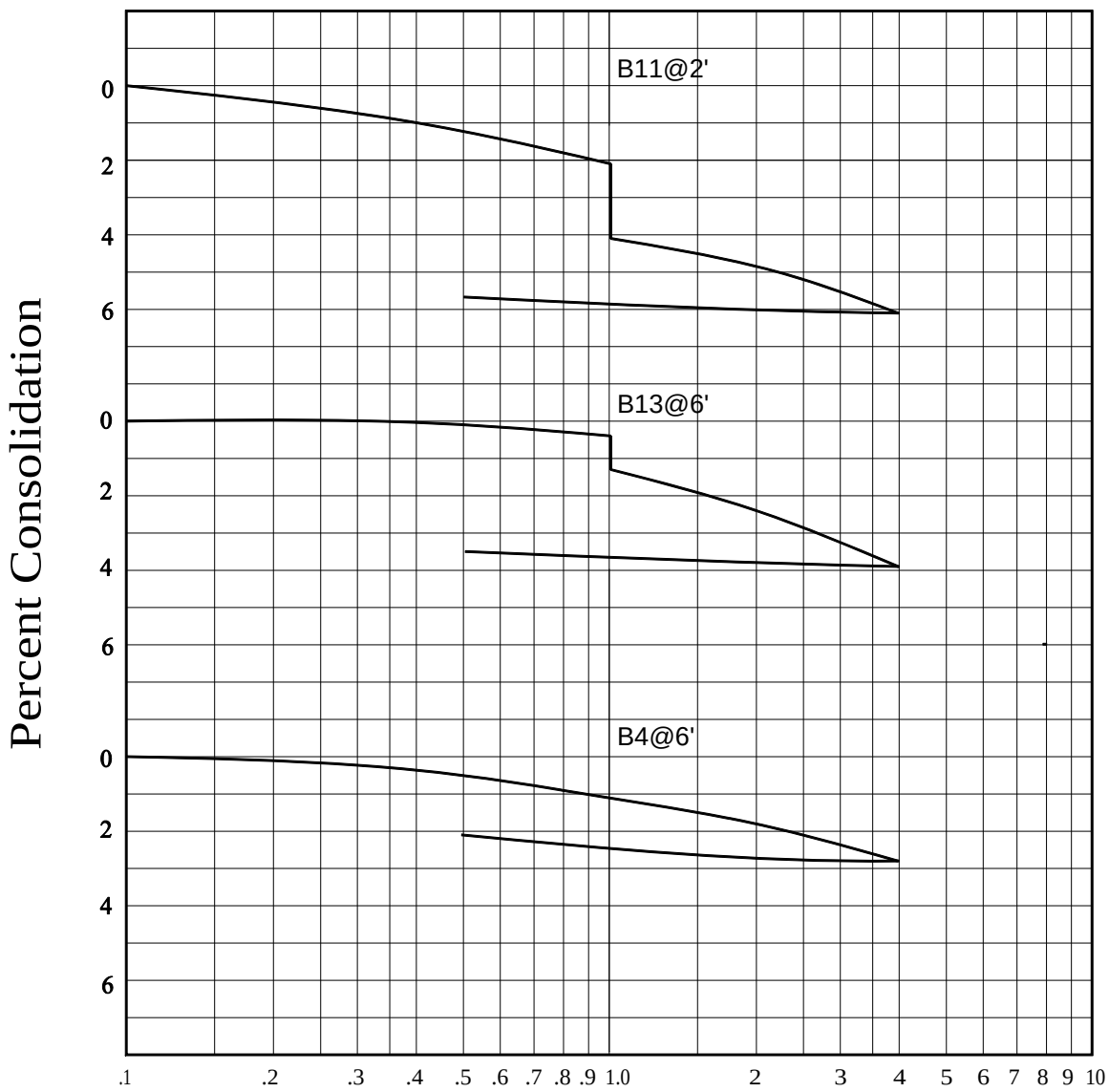
HHD		8000

DIRECT SHEAR TEST RESULTS

EL CARISO PARK IMPROVEMENTS
COUNTY OF LOS ANGELES DEPT. OF PUBLIC WORKS
13100 HUBBARD STREET
LOS ANGELES, CALIFORNIA

NOV. 22, 2010	PROJECT NO. A8559-06-38	FIG. B3

WATER ADDED AT 1 KSF



GEOCON
W E S T, I N C.

ENVIRONMENTAL GEOTECHNICAL MATERIALS
3303 N. SAN FERNANDO BLVD. - SUITE 100 - BURBANK, CA 91504
PHONE (818) 841-8388 - FAX (818) 841-1704

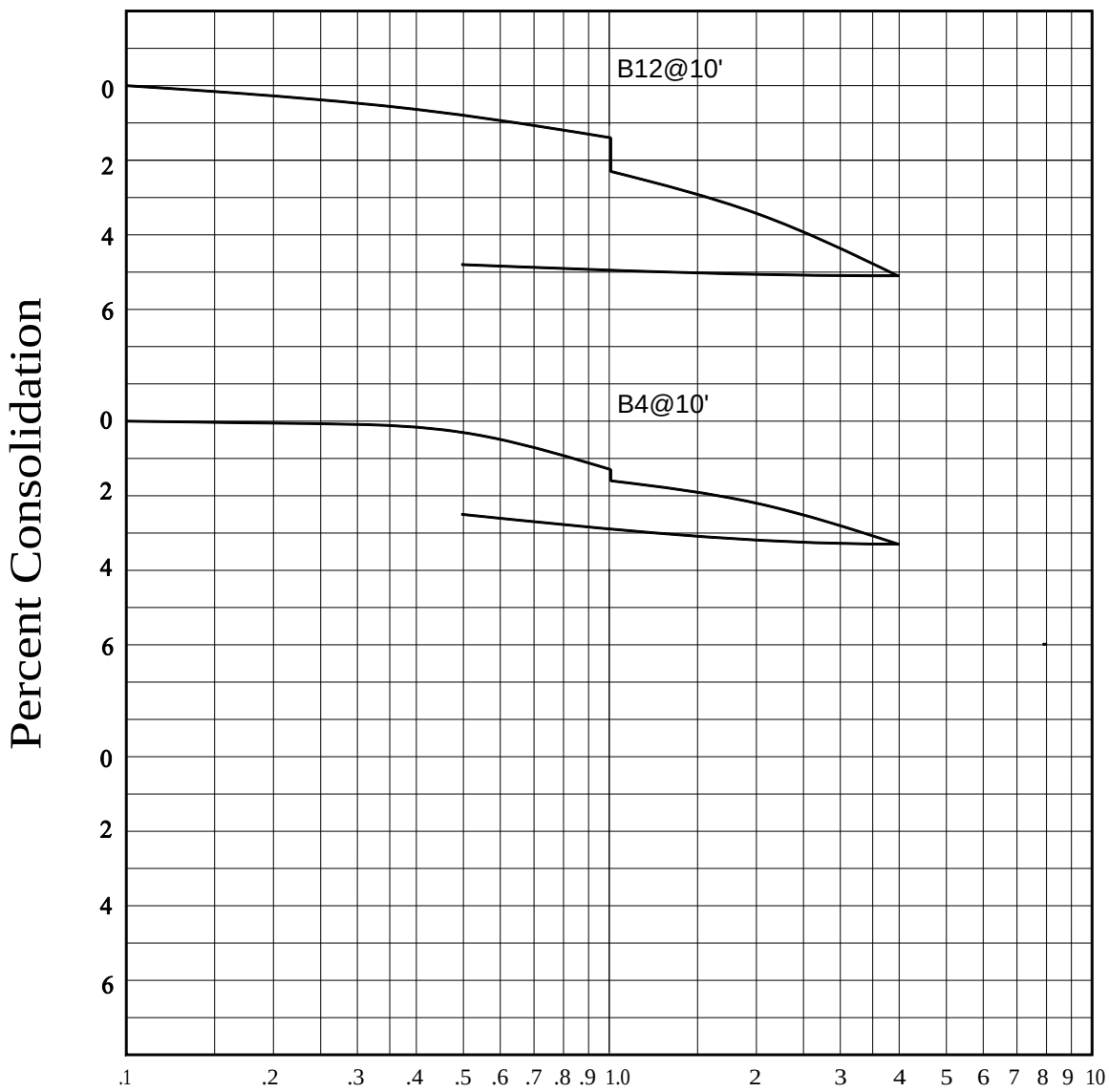
RG		8000

CONSOLIDATION TEST RESULTS

EL CARISO PARK IMPROVEMENTS
COUNTY OF LOS ANGELES DEPT. OF PUBLIC WORKS
13100 HUBBARD STREET
LOS ANGELES, CALIFORNIA

NOV. 22, 2010	PROJECT NO. A8559-06-38	FIG. B4

WATER ADDED AT 1 KSF



GEOCON
W E S T, I N C.

ENVIRONMENTAL GEOTECHNICAL MATERIALS
3303 N. SAN FERNANDO BLVD. - SUITE 100 - BURBANK, CA 91504
PHONE (818) 841-8388 - FAX (818) 841-1704

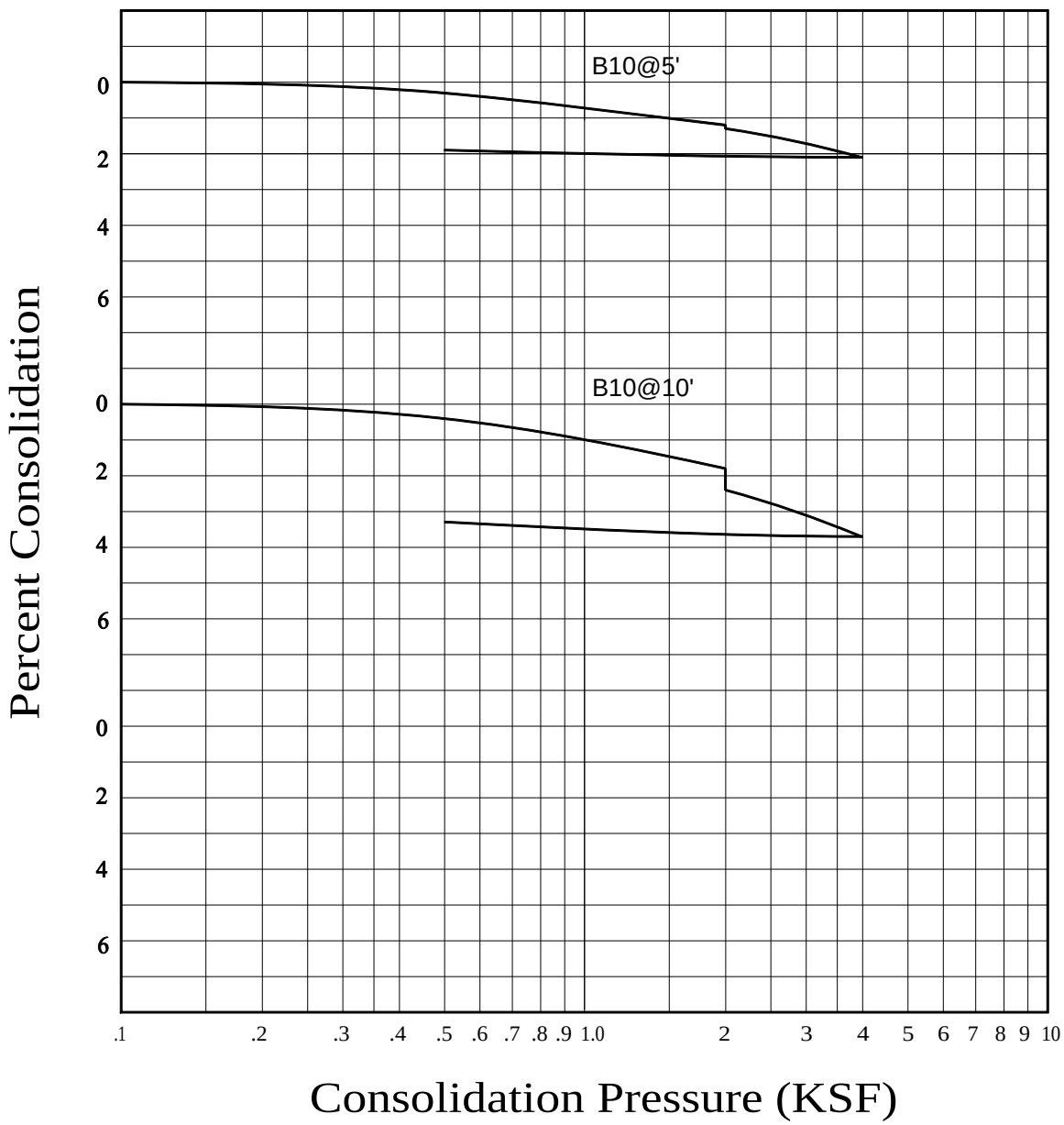
RG		8000

CONSOLIDATION TEST RESULTS

EL CARISO PARK IMPROVEMENTS
COUNTY OF LOS ANGELES DEPT. OF PUBLIC WORKS
13100 HUBBARD STREET
LOS ANGELES, CALIFORNIA

NOV. 22, 2010	PROJECT NO. A8559-06-38	FIG. B5

WATER ADDED AT 2 KSF



GEOCON
W E S T, I N C.

ENVIRONMENTAL GEOTECHNICAL MATERIALS
3303 N. SAN FERNANDO BLVD. - SUITE 100 - BURBANK, CA 91504
PHONE (818) 841-8388 - FAX (818) 841-1704

HHD		8000

CONSOLIDATION TEST RESULTS

EL CARISO PARK IMPROVEMENTS
COUNTY OF LOS ANGELES DEPT. OF PUBLIC WORKS
13100 HUBBARD STREET
LOS ANGELES, CALIFORNIA

NOV. 22, 2010	PROJECT NO. A8559-06-38	FIG. B6

SUMMARY OF LABORATORY EXPANSION INDEX TEST RESULTS
ASTM D 4829-08A

Sample No.	Moisture Content (%)		Dry Density (pcf)	Expansion Index	*UBC Classification	**CBC Classification
	Before	After				
B2 @ 0-3'	8.9	15.1	120.8	9	Very Low	Non-Expansive
B4 @ 0-5'	7.7	15.8	119.2	6	Very Low	Non-Expansive
B10 @ 0-5'	5.4	16.4	116.4	9	Very Low	Non-Expansive

* Reference: 1997 Uniform Building Code, Table 18-I-B.

** Reference: 2007 California Building Code, Section 1802.3.2

SUMMARY OF LABORATORY MAXIMUM DENSITY AND AND OPTIMUM MOISTURE CONTENT TEST RESULTS
ASTM D 1557-02

Sample No.	Soil Description	Maximum Dry Density (pcf)	Optimum Moisture (%)
B1 @ 0-3'	Brown Silty Sand	135.0	8.0
B2 @ 0-3'	Brown Silty Sand	135.0	7.5
B4 @ 0-5'	Brown Silty Sand	131.0	8.5
B10 @ 0-5'	Brown Silty Sand	132.5	9.5

SUMMARY OF LABORATORY R-VALUE TEST RESULTS
ASTM D 2844-01

Sample No.	Soil Description	R-Value
B1 @ 0-3'	Brown Silty Sand	30

GEOCON
WEST, INC.
ENVIRONMENTAL GEOTECHNICAL MATERIALS
3303 N. SAN FERNANDO BLVD. - SUITE 100 - BURBANK, CA 91504
PHONE (818) 841-8388 - FAX (818) 841-1704

HHD | | 8000

LABORATORY TEST RESULTS

EL CARISO PARK IMPROVEMENTS
COUNTY OF LOS ANGELES DEPT. OF PUBLIC WORKS
13100 HUBBARD STREET
LOS ANGELES, CALIFORNIA

NOV. 22, 2010 | PROJECT NO. A8559-06-38 | FIG. B7

SUMMARY OF LABORATORY POTENTIAL OF HYDROGEN (pH) AND RESISTIVITY TEST RESULTS CALIFORNIA TEST NO. 643

Sample No.	pH	Resistivity (ohm centimeters)
B4 @ 1'	7.5	12000 (Mildly Corrosive)
B10 @ 0-5'	7.1	6400 (Moderately Corrosive)

SUMMARY OF LABORATORY CHLORIDE CONTENT TEST RESULTS CALIFORNIA TEST NO. 422

Sample No.	Chloride Ion Content (%)
B4 @ 1'	0.034
B10 @ 0-5'	0.050

SUMMARY OF LABORATORY WATER SOLUBLE SULFATE TEST RESULTS EPA No. 325.3

Sample No.	Water Soluble Sulfate (% SO_4)	Sulfate Exposure*
B4 @ 1'	0.016	Negligible
B10 @ 0-5'	0.019	Negligible

* Reference: 2007 California Building Code, Section 1904.3 and ACI 381 Section 4.3.

GEOCON WEST, INC.
ENVIRONMENTAL GEOTECHNICAL MATERIALS
3303 N. SAN FERNANDO BLVD. - SUITE 100 - BURBANK, CA 91504
PHONE (818) 841-8388 - FAX (818) 841-1704

RG		8000

CORROSIVITY TEST RESULTS

EL CARISO PARK IMPROVEMENTS
COUNTY OF LOS ANGELES DEPT. OF PUBLIC WORKS
13100 HUBBARD STREET
LOS ANGELES, CALIFORNIA

NOV. 22, 2010	PROJECT NO. A8559-06-38	FIG. B8