

DRAFT Project Specific Water Quality Management Plan

For: Mt. SAC South Campus Improvements – West Parcel

**1100 N. Grand Ave.
Walnut, CA 91789**

Prepared for:

Mt. San Antonio College
1100 North Grand Avenue
Walnut, CA 91789
Telephone: 909-274-7500

Prepared by:

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OWNER’S CERTIFICATION

This project-specific Water Quality Management Plan (WQMP) has been prepared for Mt. San Antonio College by Psomas for the project known as South Campus Improvements - West Parcel at 1100 N. Grand Ave., Walnut, CA 91789.

This WQMP is intended to comply with the requirements of the County of Los Angeles which includes the requirement for the preparation and implementation of a project-specific WQMP.

The undersigned, while owning the property/project described in the preceding paragraph, shall be responsible for the implementation of this WQMP and will ensure that this WQMP is amended as appropriate to reflect up-to-date conditions on the site. This WQMP will be reviewed with the facility operator, facility supervisors, employees, tenants, maintenance and service contractors, or any other party (or parties) having responsibility for implementing portions of this WQMP. At least one copy of this WQMP will be maintained at the project site or project office in perpetuity.

The undersigned is authorized to certify and to approve implementation of this WQMP. The undersigned is aware that implementation of this WQMP may be enforceable under County of Los Angeles Water Quality Ordinance.

If the undersigned transfers its interest in the subject property/project, its successor in interest the undersigned shall notify the successor in interest of its responsibility to implement this WQMP.

"I, the undersigned, certify under penalty of law that the provisions of this WQMP have been reviewed and accepted and that the WQMP will be transferred to future successors in interest."

Owner’s Signature

Mikaela Klein

Owner’s Printed Name

Date

Senior Facilities Planner

Owner’s Title/Position

Mt. San Antonio College
1100 North Grand Avenue
Walnut, CA 91789
Telephone: 909-274-7500

Contents

Section	Page
I PROJECT DESCRIPTION	A-2
II SITE CHARACTERIZATION	A-4
III POLLUTANTS OF CONCERN	A-5
IV HYDROLOGIC CONDITIONS OF CONCERN	A-6
V BEST MANAGEMENT PRACTICES	A-7
V.1 Site Design BMPs	A-8
V.2 Source Control BMPs	A-12
V.3 Treatment Control BMPs	A-13
V.4 Equivalent Treatment Control Alternatives	A-16
V.5 Regionally-Based Treatment Control BMPs	A-16
VI OPERATION AND MAINTENANCE RESPONSIBILITY FOR TREATMENT CONTROL BMPs	A-17
VII FUNDING	A-18

APPENDICES

- A. VICINITY MAP, WQMP SITE PLAN, AND RECEIVING WATERS MAP
- B. SUPPORTING DETAIL RELATED TO HYDRAULIC CONDITIONS OF CONCERN
- C. EDUCATIONAL MATERIALS
- D. SOILS REPORT (FOR FILL PLACEMENT ONLY AT THIS TIME)
- E. TREATMENT CONTROL BMP SIZING CALCULATIONS AND DESIGN DETAILS
- F. AGREEMENTS (WHEN AVAILABLE) – CC&RS, COVENANT AND AGREEMENTS AND/OR OTHER MECHANISMS FOR ENSURING ONGOING OPERATION, MAINTENANCE, FUNDING AND TRANSFER OF REQUIREMENTS FOR THIS PROJECT-SPECIFIC WQMP

I. Project Description

Project Owner: Mt. San Antonio College
1100 North Grand Avenue
Walnut, CA 91789
Telephone: 909-274-7500

WQMP Preparer: Michael Mulgrew, Project Engineer
Psomas
555 South Flower St., Suite 4300
Los Angeles, CA 90071-2405
Telephone: 213-223-1400

Project Site Address: 1100 North Grand Avenue
Walnut, CA 91789

Development Name: Mt. San Antonio College

APN Number(s): 8709-023-917

Thomas Bros. Map: 639 G4

Project Watershed: San Gabriel River

Sub-watershed: San Jose Creek Reach 2

Project Site Size: 27 acres

Standard Industrial Classification (SIC) Code: N/A

Formation of Home Owners' Association (HOA) or Property Owners Association (POA):

Y N

Additional Permits/Approvals required for the Project

AGENCY	Permit required
State Department of Fish and Game, 1602 Streambed Alteration Agreement	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>
State Water Resources Control Board, Clean Water Act (CWA) section 401 Water Quality Certification	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>
US Army Corps of Engineers, CWA section 404 permit	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>
US Fish and Wildlife, Endangered Species Act section 7 biological opinion	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>
Other <i>(please list in the space below as required)</i>	

The Mt. SAC South Campus West Parcel project consists of rough grading activities, a new access roadway from an existing driveway, and associated drainage improvements on a 27-acre portion of the campus in order to construct an approximate 10-acre pad for a future solar array; no other structures are proposed for the project site. No materials will be stored on site; no waste is anticipated to be generated by project activities.

Mt. SAC is located in the San Gabriel Valley in southeast Los Angeles County, California, approximately 1.5 miles south of Interstate 10 and 2.5 miles west of State Route 57. The college is situated near the intersection of North Grand and Temple Avenues in the City of Walnut. It is within unsectioned land, Township 2 South, Range 9 East on the U.S. Geological Survey 7.5-minute San Dimas quadrangle map. Refer to Appendix A for a Vicinity Map, Site Plan, and Receiving Waters Exhibit identifying the following:

- Project site location and surrounding areas
- Location and identification of all structural BMPs
- Landscaped areas
- Paved areas
- Location of existing and proposed public and private storm drainage facilities
- Location of Receiving Waters to which the project directly or indirectly discharges
- Post-project topography

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II. Site Characterization

Land Use Designation or Zoning: School

Current Property Use: Undeveloped

Proposed Property Use: Solar array

Availability of Soils Report: Y* N

Phase 1 Site Assessment: Y N

*Soils Report available for fill placement only

Receiving Waters for Urban Runoff from Site

Receiving Waters	303(d) List Impairments	Designated Beneficial Uses	Proximity to RARE Beneficial Use
San Jose Creek Reach 2	Coliform Bacteria	MUND (P*) GWR (I) WARM (I) WILD (E)	N/A

MUND – Municipal and Domestic Supply
 GWR – Ground Water Recharge
 WARM – Warm Freshwater Habitat
 WILD – Wildlife Habitat

(P) – Potential, asterisk denotes designation under SB 88-63 and RB 89-03
 (I) – Intermittent
 (E) - Existing

III. Pollutants of Concern

General Work Activity/ Products With Potential Stormwater Pollutants	Specific Work Activity/Products With Potential Stormwater Pollutants	Pollutant Categories
Adhesives	<ul style="list-style-type: none"> • Adhesives, glues, resins, epoxy synthetics, PVC cement • Caulks, sealers, putty, sealing agents and • Coal tars (naphtha, pitch) 	Oil and Grease, Synthetic Organics ¹
Asphalt paving/curbs	<ul style="list-style-type: none"> • Hot and cold mix asphalt 	Oil and Grease
Cleaners	<ul style="list-style-type: none"> • Polishes (metal, ceramic, tile) • Etching agents • Cleaners, ammonia, lye, caustic sodas, bleaching agents and chromate salts 	Metals, Synthetic Organics
Concrete / Masonry	<ul style="list-style-type: none"> • Cement and brick dust • Colored chalks • Concrete curing compounds • Glazing compounds • Surfaces cleaners • Saw cut slurries • Tile cutting 	Metals, Synthetic Organics
Liquid waste	<ul style="list-style-type: none"> • Wash waters • Irrigation line testing/flushing 	Metals, Synthetic Organics
Planting / Vegetation Management	<ul style="list-style-type: none"> • Vegetation control (pesticides/herbicides) • Planting • Plant maintenance • Vegetation removal 	Nutrients, Metals, Synthetic Organics
Plumbing	<ul style="list-style-type: none"> • Solder (lead, tin), flux (zinc chloride), pipe fitting • Galvanized metal in nails, fences, and electric wiring 	Metals, Synthetic Organics
Sanitary waste	<ul style="list-style-type: none"> • Portable toilets • Disturbance of existing sewer lines. 	Nutrients
Soil preparation/amendments	<ul style="list-style-type: none"> • Use of soil additives/amendments 	Nutrients
Solid waste	<ul style="list-style-type: none"> • Litter, trash and debris • Vegetation 	Gross Pollutants
Utility line testing and flushing	<ul style="list-style-type: none"> • Hydrostatic test water • Pipe flushing 	Synthetic Organics
Vehicle and equipment use	<ul style="list-style-type: none"> • Equipment operation • Equipment maintenance • Equipment washing • Equipment fueling 	Oil and Grease

¹ Synthetic Organics are defined in Table 1.2 of the CASQA *Stormwater BMP Handbook Portal: Construction* as adhesives, cleaners, sealants, solvents, etc. These are generally categorized as VOCs or SVOCs.

IV. Hydrologic Conditions of Concern

Impacts to the hydrologic regime resulting from the project may include increased runoff volume and velocity; reduced infiltration; increased flow frequency, duration, and peaks; faster time to reach peak flow; and water quality degradation. These changes have the potential to permanently impact downstream channels and habitat integrity. A change to the hydrologic regime of a Project’s site would be considered a hydrologic condition of concern if the change would have a significant impact on downstream erosion compared to the pre-development condition or have significant impacts on stream habitat, alone or as part of a cumulative impact from development in the watershed.

This project-specific WQMP must address the issue of Hydrologic Conditions of Concern unless one of the following conditions are met:

- **Condition A:** Runoff from the Project is discharged directly to a publicly-owned, operated and maintained MS4; the discharge is in full compliance with Co-Permittee requirements for connections and discharges to the MS4 (including both quality and quantity requirements); the discharge would not significantly impact stream habitat in proximate Receiving Waters; and the discharge is authorized by the Co-Permittee.
- **Condition B:** The project disturbs less than 1 acre. The disturbed area calculation should include all disturbances associated with larger plans of development.
- **Condition C:** The project’s runoff flow rate, volume, velocity and duration for the post-development condition do not exceed the pre-development condition for the 2-year, 24-hour and 10-year 24-hour rainfall events. This condition can be achieved by minimizing impervious area on a site and incorporating other site-design concepts that mimic pre-development conditions. This condition must be substantiated by hydrologic modeling methods acceptable to the Co-Permittee.

This Project meets the following condition: **Condition A.**

Supporting engineering calculations are included in Appendix B.

	50 year – 24 hour		100 year – 24 hour	
	Precondition	Post-condition	Precondition	Post-condition
Discharge (cfs)	90	90	105	105
Volume (cubic feet)	217,407	217,407	260,077	260,077

V. Best Management Practices

V.1 SITE DESIGN BMPs

Project proponents shall implement Site Design concepts that achieve each of the following:

- 1) Minimize Urban Runoff
- 2) Minimize Impervious Footprint
- 3) Conserve Natural Areas
- 4) Minimize Directly Connected Impervious Areas (DCIAs)

Project scheduling included the development of a written plan that includes sequencing of construction activities and the implementation of BMPs while taking local climate (rainfall, wind, etc.) into consideration. The purpose was to reduce the amount and duration of soil exposed to erosion by wind, rain, runoff, and vehicle tracking, and to perform the construction activities and control practices in accordance with the planned schedule.

The landscape and site design was performed such that preservation of existing vegetation was maximized. Suitable applications include the following:

- Areas within the site where no construction activity occurs, or occurs at a later date. This BMP is especially suitable to multi-year projects where grading can be phased.
- Areas where natural vegetation exists and is designated for preservation. Such areas often include steep slopes and watercourse.
- Areas where local, state, and federal government require preservation. These areas are designated on a separate biological study.
- Areas where vegetation designated for ultimate removal can be temporarily preserved and be utilized for erosion control and sediment control.

Table 1. Site Design BMPs

Design Concept	Technique	Specific BMP	Included		
			Yes	No	N/A
Site Design Concept 1	<i>Minimize</i>	Maximize the permeable area.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Incorporate landscaped buffer areas between sidewalks and streets.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Maximize canopy interception and water conservation by preserving existing native trees and shrubs, and planting additional native or drought tolerant trees and large shrubs.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<i>Urban</i>	Use natural drainage systems.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	<i>Runoff</i>	Where soils conditions are suitable, use perforated pipe or gravel filtration pits for low flow infiltration.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Construct onsite ponding areas or retention facilities to increase opportunities for infiltration consistent with vector control objectives.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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Table 1. Site Design BMPs (Cont.)

Design Concept	Technique	Specific BMP	Included		
			Yes	No	N/A
<i>Site Design Concept 2</i>	<i>Minimize Impervious Footprint</i>	Maximize the permeable area.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Construct walkways, trails, patios, overflow parking lots, alleys, driveways, low-traffic streets and other low -traffic areas with open-jointed paving materials or permeable surfaces, such as pervious concrete, porous asphalt, unit pavers, and granular materials.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
		Construct streets, sidewalks and parking lot aisles to the minimum widths necessary, provided that public safety and a walk able environment for pedestrians are not compromised.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
		Reduce widths of street where off-street parking is available.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
		Minimize the use of impervious surfaces, such as decorative concrete, in the landscape design.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Site Design Concept 3</i>	<i>Conserve Natural Areas</i>	Other comparable and equally effective site design concepts as approved by the Co-Permittee (Note: Additional narrative required describing BMP and how it addresses Site Design concept).	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
		Conserve natural areas.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Maximize canopy interception and water conservation by preserving existing native trees and shrubs, and planting additional native or drought tolerant trees and large shrubs.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Use natural drainage systems.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
		Other comparable and equally effective site design concepts as approved by the Co-Permittee.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Table 1. Site Design BMPs (Cont.)

Design Concept	Technique	Specific BMP	Included		
			Yes	No	N/A
Site Design Concept 4		Residential and commercial sites must be designed to contain and infiltrate roof runoff, or direct roof runoff to vegetative swales or buffer areas, where feasible.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
		Where landscaping is proposed, drain impervious sidewalks, walkways, trails, and patios into adjacent landscaping.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
		Increase the use of vegetated drainage swales in lieu of underground piping or imperviously lined swales.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<i>Minimize</i> Rural swale system: street sheet flows to vegetated swale or gravel shoulder, curbs at street corners, culverts under driveways and street crossings.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
		<i>Directly</i> Urban curb/swale system: street slopes to curb; periodic swale inlets drain to vegetated swale/biofilter.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
		<i>Connected</i> Dual drainage system: First flush captured in street catch basins and discharged to adjacent vegetated swale or gravel shoulder, high flows connect directly to MS4s.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
		<i>Impervious Areas</i> Design driveways with shared access, flared (single lane at street) or wheel strips (paving only under tires); or, drain into landscaping prior to discharging to the MS4.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
		<i>(DCIAs)</i> Uncovered temporary or guest parking on private residential lots may be paved with a permeable surface, or designed to drain into landscaping prior to discharging to the MS4.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
		Where landscaping is proposed in parking areas, incorporate landscape areas into the drainage design.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
		Overflow parking (parking stalls provided in excess of the Co-Permittee's minimum parking requirements) may be constructed with permeable paving.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Other comparable and equally effective design concepts as approved by the Co-Permittee.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		

Non-applicable Site Design BMPs:

There are no natural drainage systems on the project site that can be utilized, however, the City storm drain this project is tributary to discharges to Snow Creek, a natural drainage course located on the opposite side of Grand Avenue from the project site.

On-site ponding and retention was not proposed due to the fill being placed at the project site in order to create the 10-acre pad. Water should not be retained or infiltrated into engineered fill due to stability concerns.

There are no proposed streets, parking areas, sidewalks, site paving, or building structures associated with this project, therefore none of the Site Design BMPs that deal with those items are applicable.

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V.2 SOURCE CONTROL BMPs

Table 2. Source Control BMPs

BMP Name	Check One		If not applicable, state brief reason
	Included	Not Applicable	
Education for Property Owners, Operators, Tenants, Occupants, or Employees	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Activity Restrictions	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Irrigation System and Landscape Maintenance	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Common Area Litter Control	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Street Sweeping Private Streets and Parking Lots	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No streets or parking lots
Drainage Facility Inspection and Maintenance	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
MS4 Stenciling and Signage	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Landscape and Irrigation System Design	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Protect Slopes and Channels	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Provide Community Car Wash Racks	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No car wash facilities
Properly Design:			
Fueling Areas	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No fueling areas
Air/Water Supply Area Drainage	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No air/water supply
Trash Storage Areas	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No trash storage
Loading Docks	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No loading docks
Maintenance Bays	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No maintenance bays
Vehicle and Equipment Wash Areas	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No wash areas
Outdoor Material Storage Areas	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No material storage
Outdoor Work Areas or Processing Areas	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No work areas
Provide Wash Water Controls for Food Preparation Areas	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No food preparation

The following additional source control post construction BMPs are proposed for the project site:

- Soil Binders - Soil binders consist of applying and maintaining a soil stabilizer to exposed soil surfaces. Soil binders are materials applied to the soil surface to prevent water induced erosion of soils. Soil binders also prevent wind erosion.
- Earth Dikes - An earth dike is a berm or ridge of compacted soil used to divert runoff or channel water to a desired location. Earth dikes are proposed on this project to divert runoff from stabilized areas and newly constructed slopes, and to direct runoff into the storm drain system.
- Landscape Irrigation Practices - Irrigation runoff provides a pathway for pollutants (i.e., nutrients, bacteria, organics, sediment) to enter the storm drain system. By effectively irrigating, less runoff is produced resulting in less potential for pollutants to enter the storm drain system.

Appendix D includes copies of the educational materials that will be used in implementing this project-specific WQMP.

V.3 TREATMENT CONTROL BMPs

Vegetated Swales have been proposed to be integrated into the overall site design and accommodate the layout of the proposed solar array. Vegetated swales are open, shallow channels with low-lying vegetation covering the side slopes and bottom that collect and slowly convey stormwater runoff to a downstream stormwater quality control measure, storm drain system, or receiving water.

Vegetated swales also provide pollutant removal through settling and filtration in the vegetation (usually grasses) lining the channels, provide the opportunity for stormwater runoff volume reduction through infiltration and evapotranspiration, and reduce the flow velocity. An effective vegetated swale achieves uniform sheet flow over and through a densely vegetated area for a period of several minutes.

Vegetated swales that are integrated into a project may use turf or other more intensive landscaping while swales that are located on the project perimeter, within a park, or close to an open space area may be planted with native plants.

Sizing criteria for vegetated swales shall be Urban Runoff quality design flow (QBMP).

Appendix E includes an outline of maintenance procedures necessary to sustain BMP effectiveness.

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**Water Quality Management Plan (WQMP)
Mt. SAC South Campus Improvements – West Parcel**

Table 3: Treatment Control BMP Selection Matrix ⁽¹⁾

Pollutant of Concern	Treatment Control BMP Categories ⁽²⁾							
	Veg. Swale & Veg. Filter Strips ⁽³⁾	Detention Basins ⁽⁴⁾	Infiltration Basins, Infiltration Trenches, & Porous Pavement ⁽⁵⁾	Wet Ponds or Wetlands ⁽⁶⁾	Sand Filter or Media Filters	Water Quality Inlets	Hydrodynamic Separator Systems ⁽⁷⁾	Manufactured/ Proprietary Devices ⁽⁸⁾
Sediment/Turbidity Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	H/M <input checked="" type="checkbox"/>	M <input type="checkbox"/>	H/M <input type="checkbox"/>	H/M <input type="checkbox"/>	H/M <input type="checkbox"/>	L <input type="checkbox"/>	H/M (L for turbidity) <input type="checkbox"/>	U <input type="checkbox"/>
Nutrients Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	L <input type="checkbox"/>	M <input type="checkbox"/>	H/M <input type="checkbox"/>	H/M <input type="checkbox"/>	L/M <input type="checkbox"/>	L <input type="checkbox"/>	L <input type="checkbox"/>	U <input type="checkbox"/>
Organic Compounds Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	U <input type="checkbox"/>	U <input type="checkbox"/>	U <input type="checkbox"/>	U <input type="checkbox"/>	H/M <input type="checkbox"/>	L <input type="checkbox"/>	L <input type="checkbox"/>	U <input type="checkbox"/>
Trash & Debris Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	L <input type="checkbox"/>	M <input type="checkbox"/>	U <input type="checkbox"/>	U <input type="checkbox"/>	H/M <input type="checkbox"/>	M <input type="checkbox"/>	H/M <input type="checkbox"/>	U <input type="checkbox"/>
Oxygen Demanding Substances Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	L <input type="checkbox"/>	M <input type="checkbox"/>	H/M <input type="checkbox"/>	H/M <input type="checkbox"/>	H/M <input type="checkbox"/>	L <input type="checkbox"/>	L <input type="checkbox"/>	U <input type="checkbox"/>
Bacteria & Viruses Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	U <input checked="" type="checkbox"/>	U <input type="checkbox"/>	H/M <input type="checkbox"/>	U <input type="checkbox"/>	H/M <input type="checkbox"/>	L <input type="checkbox"/>	L <input type="checkbox"/>	U <input type="checkbox"/>
Oils & Grease Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	H/M <input type="checkbox"/>	M <input type="checkbox"/>	U <input type="checkbox"/>	U <input type="checkbox"/>	H/M <input type="checkbox"/>	M <input type="checkbox"/>	L/M <input type="checkbox"/>	U <input type="checkbox"/>
Pesticides (non-soil bound) Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	U <input type="checkbox"/>	U <input type="checkbox"/>	U <input type="checkbox"/>	U <input type="checkbox"/>	U <input type="checkbox"/>	L <input type="checkbox"/>	L <input type="checkbox"/>	U <input type="checkbox"/>
Metals Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	H/M <input type="checkbox"/>	M <input type="checkbox"/>	H <input type="checkbox"/>	H <input type="checkbox"/>	H <input type="checkbox"/>	L <input type="checkbox"/>	L <input type="checkbox"/>	U <input type="checkbox"/>

Abbreviations:

L: Low removal efficiency H/M: High or medium removal efficiency U: Unknown removal efficiency

Notes:

- (1) Periodic performance assessment and updating of the guidance provided by this table may be necessary.
- (2) Project applicants should base BMP designs on the Los Angeles County Stormwater Quality Best Management Practice Design Handbook. However, project applicants may also wish to reference the California Stormwater BMP Handbook – New Development and Redevelopment (www.cabmphandbooks.com). The Handbook contains additional information on BMP operation and maintenance.
- (3) Includes grass swales, grass strips, wetland vegetation swales, and bioretention.
- (4) Includes extended/dry detention basins with grass lining and extended/dry detention basins with impervious lining. Effectiveness based upon minimum 36-48-hour drawdown time.
- (5) Projects that will utilize infiltration-based Treatment Control BMPs (e.g., Infiltration Basins, Infiltration Trenches, Porous Pavement, etc.) must include a copy of the property/project soils report as Appendix E to the project-specific WQMP. The selection of a Treatment Control BMP (or BMPs) for the project must specifically consider the effectiveness of the Treatment Control BMP for pollutants identified as causing an impairment of Receiving Waters to which the project will discharge Urban Runoff.
- (6) Includes permanent pool wet ponds and constructed wetlands.
- (7) Also known as hydrodynamic devices, baffle boxes, swirl concentrators, or cyclone separators.
- (8) Includes proprietary stormwater treatment devices as listed in the CASQA Stormwater Best Management Practices Handbooks, other stormwater treatment BMPs not specifically listed in this WQMP, or newly developed/emerging stormwater treatment technologies.

V.4 EQUIVALENT TREATMENT CONTROL ALTERNATIVES

Not applicable, refer to the Los Angeles County WQMP.

V.5 REGIONALLY-BASED TREATMENT CONTROL BMPs

Not applicable, refer to the Los Angeles County WQMP.

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VI. Operation and Maintenance Responsibility for Treatment Control BMPs

Operation and maintenance (O&M) requirements for all structural Source Control and Treatment Control BMPs will be identified in this project-specific WQMP at a future date. This project-specific WQMP shall address the following:

- Identification of each BMP that requires O&M.
- Description of O&M activities, the O&M process, and the handling and placement of any wastes.
- BMP start-up dates.
- Schedule of the frequency of O&M for each BMP.
- Identification of the parties (name, address, and telephone number) responsible for O&M, including a written agreement with the entities responsible for O&M.
- Self-inspections and record-keeping requirements for BMPs, including identification of responsible parties for inspection and record-keeping.
- Thorough descriptions of water quality monitoring, if required by the Co-Permittee.

A plan for the post construction funding and maintenance of these BMPs will be developed to address a period of five years, at a minimum, following construction.

VII. Funding

A funding source or sources for the O&M of each Treatment Control BMP identified in the project-specific WQMP will be identified at a future date. By certifying the project-specific WQMP, the Project applicant is certifying that the funding responsibilities have been addressed and will be transferred to future owners.

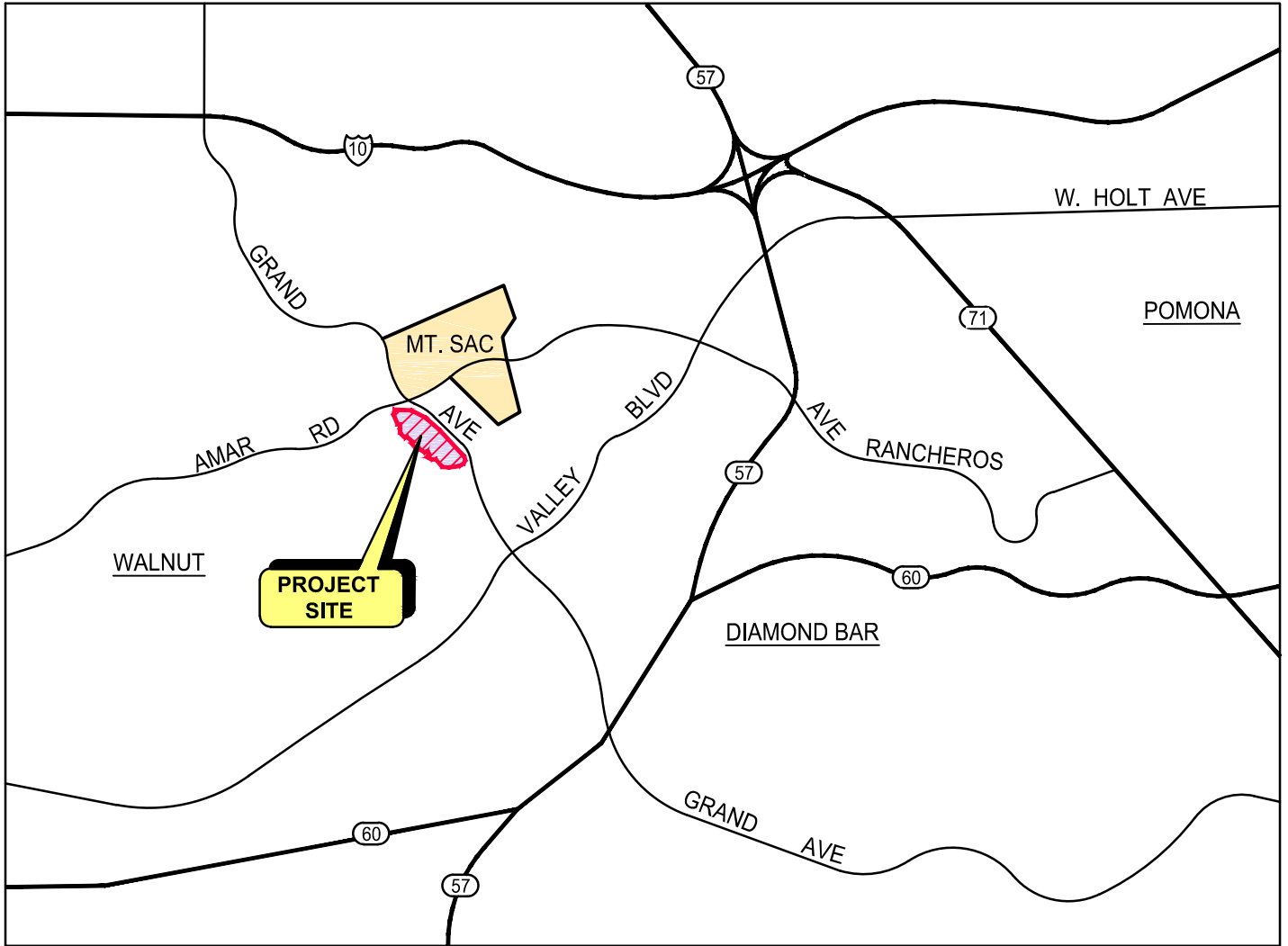
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Appendix A

Vicinity Map, WQMP Site Plan, and Receiving Waters Map

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w:\Mt_SAC\1HMC017000\ENGR\EXHIB\WQ-01_Vicinity Map.dwg Wed, 24 Jun 2015 - 2:39pm Plotted by: dhewlett



Vicinity Map



NORTH
NOT TO SCALE

Mt. SAC

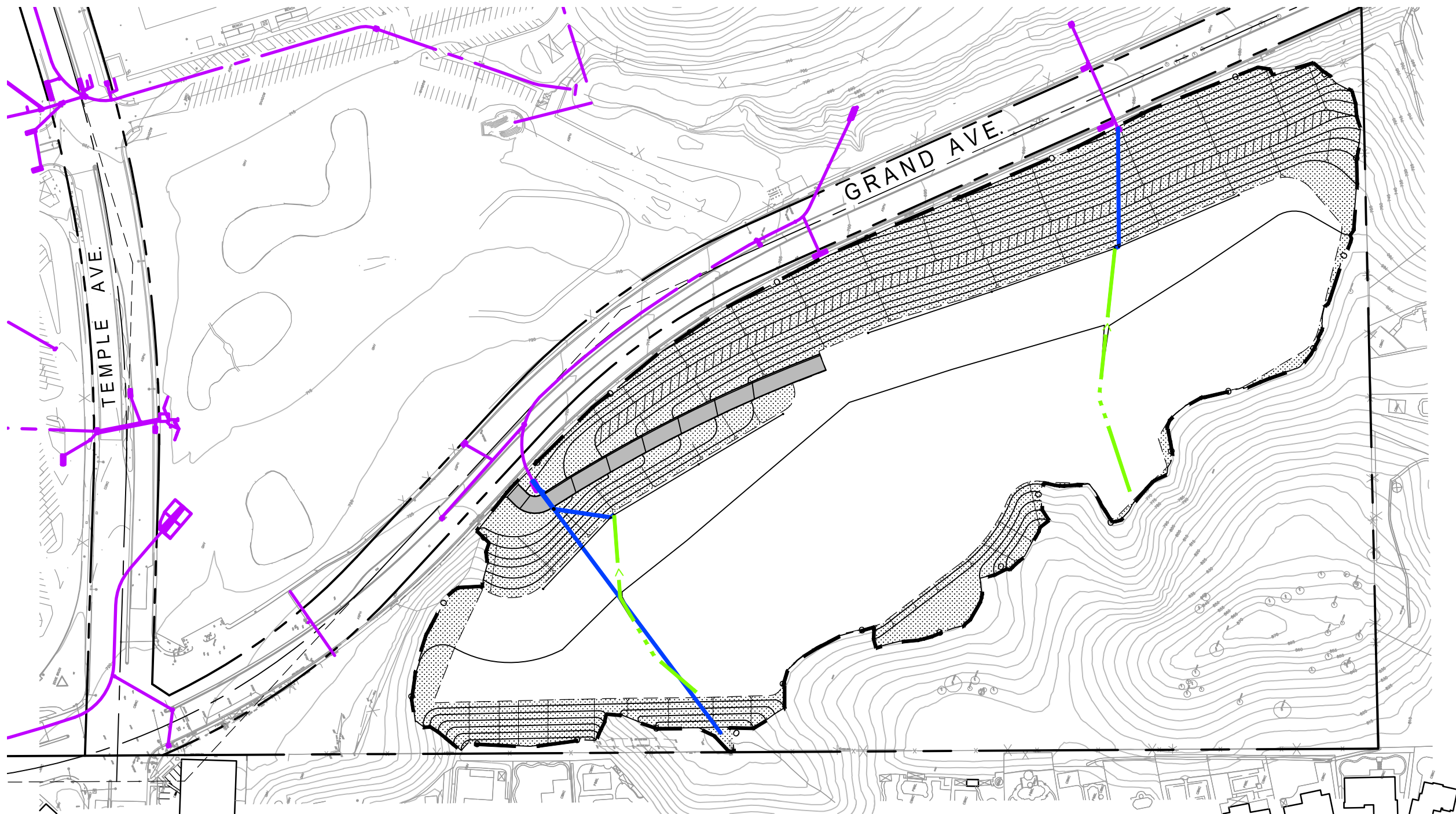
PSOMAS

DATE: 06-23-2015 REVISED ON:
JOB No:1HMC017000








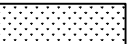
SHEET 1 OF 3

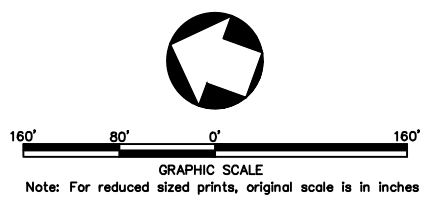
WQ-01

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LEGEND:

-  LIMIT OF WORK
-  PROPERTY LINE
-  RIGHT OF WAY LINE
-  EXISTING STORM DRAIN
-  NEW STORM DRAIN
-  NEW VEGETATED SWALE
-  PAVED AREA
-  LANDSCAPE AREA

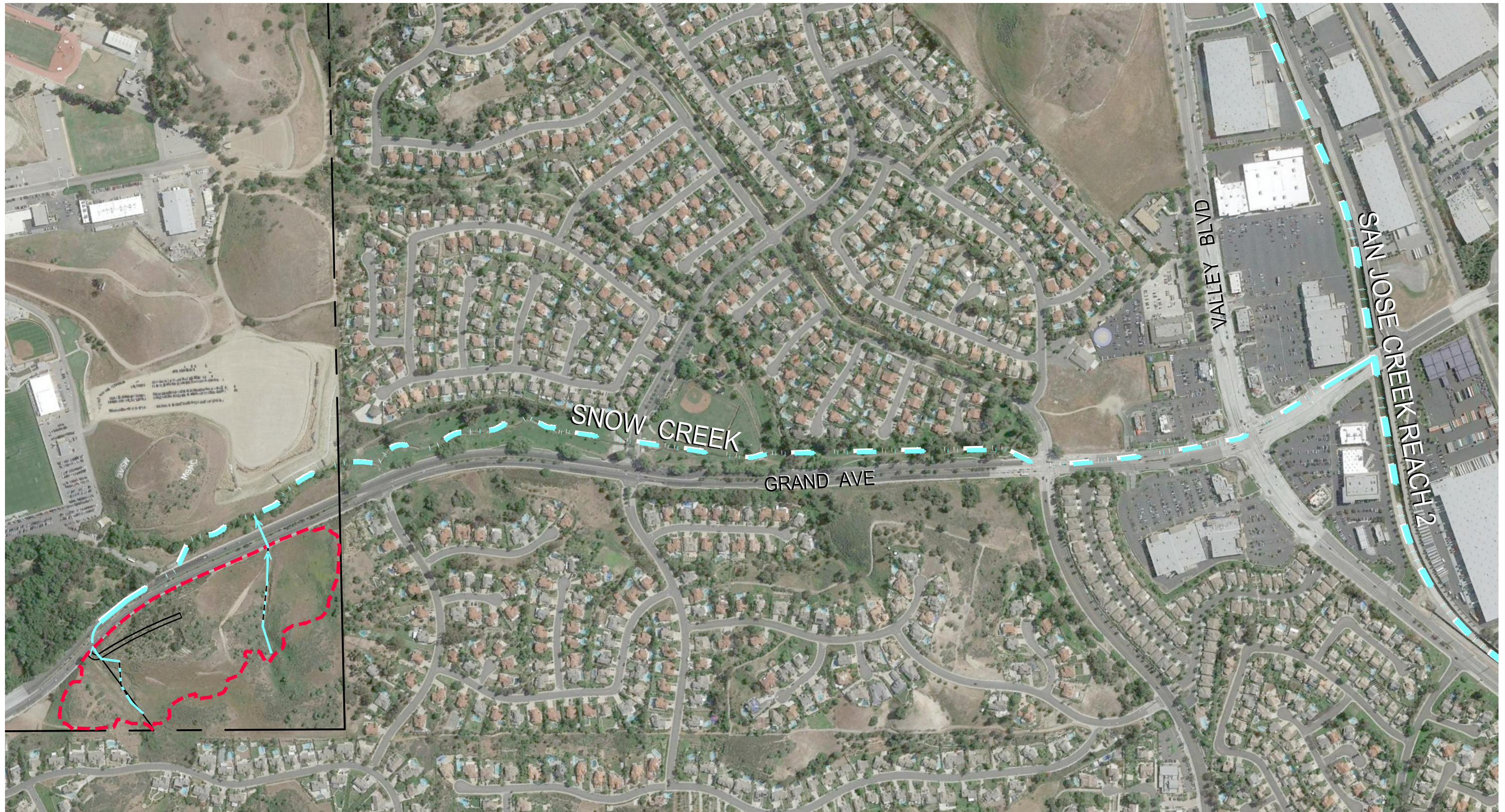


Site Plan Exhibit

PSOMAS

DATE: 06-23-2015 REVISED ON:
JOB No:1HMC017000

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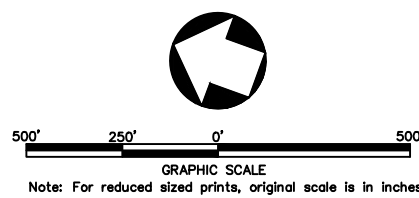
LEGEND:

-  PROJECT SITE
-  WATER CONVEYANCE

Receiving Waters Exhibit

PSOMAS

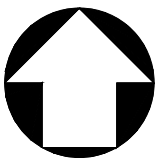
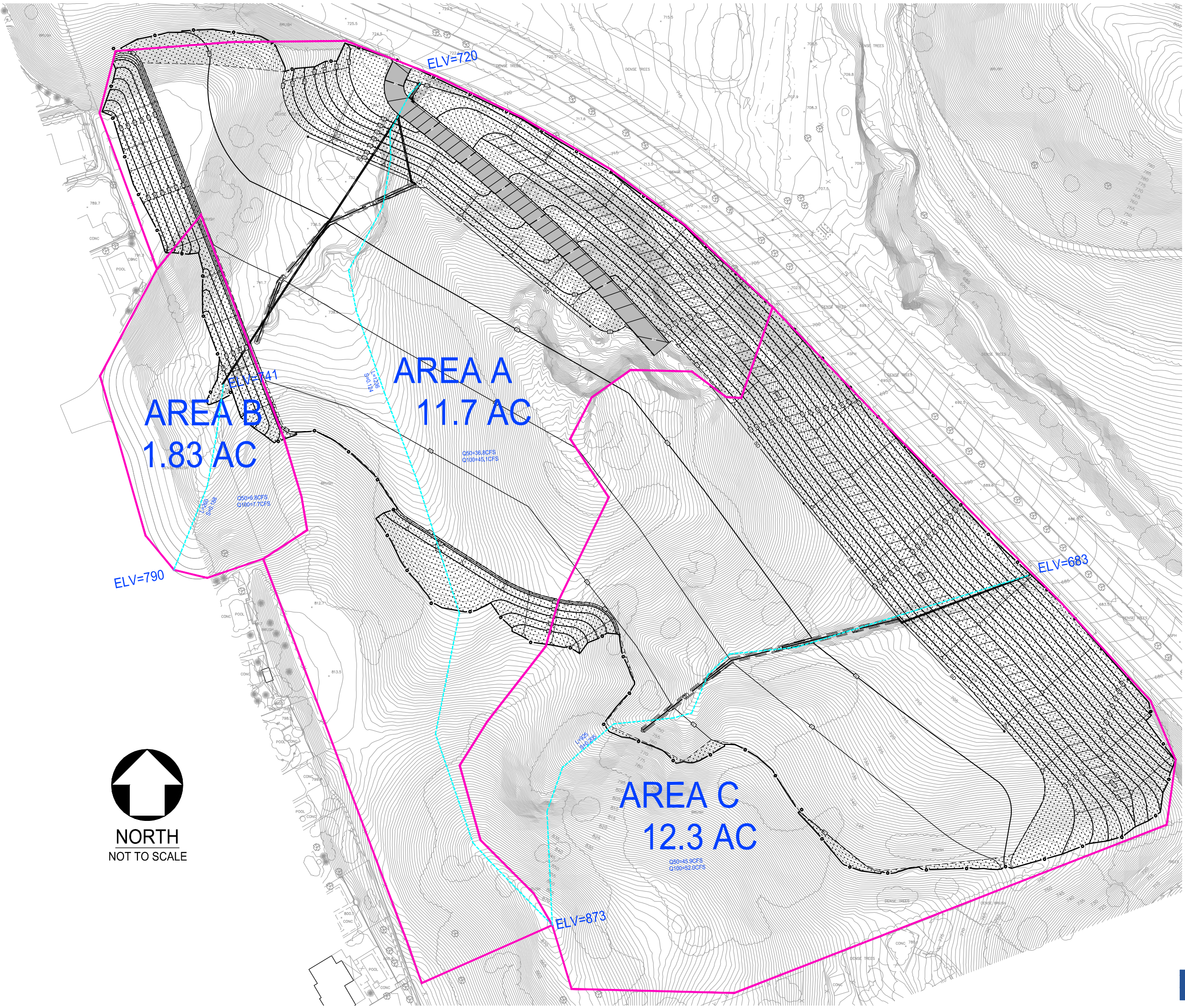
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JOB No:1HMC017000



Appendix B

Supporting Detail Related to Hydraulic Conditions of Concern

DRAFT



NORTH
NOT TO SCALE

Peak Flow Hydrologic Analysis

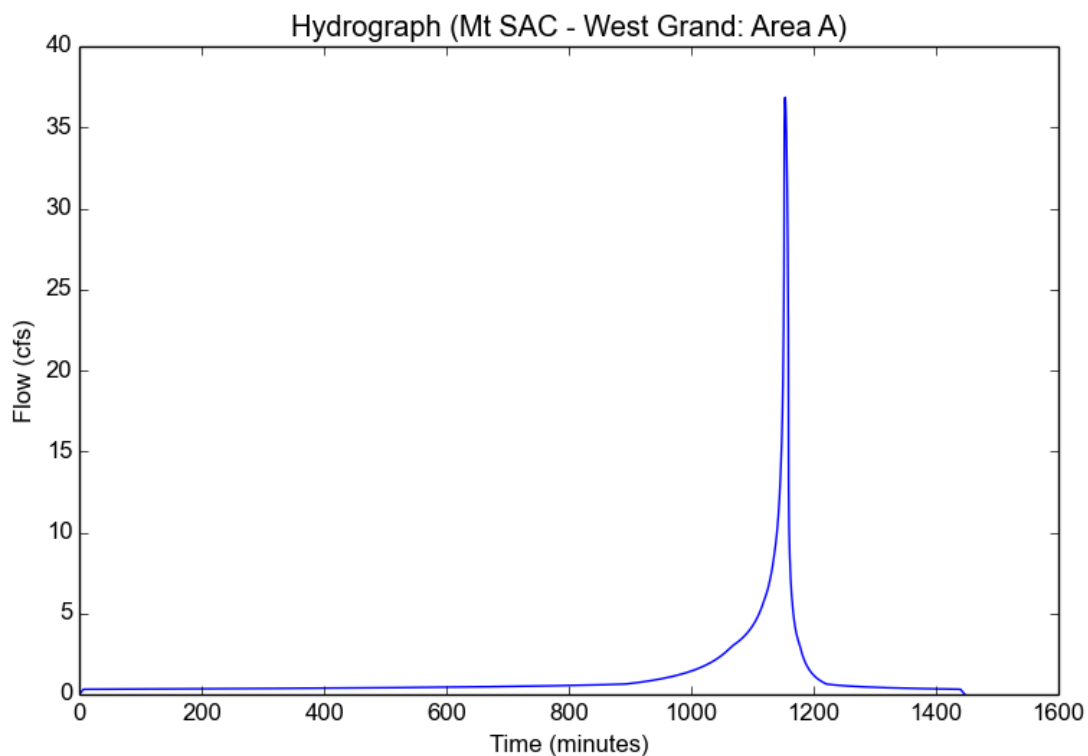
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Version: HydroCalc 0.2.0-beta

Input Parameters

Project Name	Mt SAC - West Grand
Subarea ID	Area A
Area (ac)	11.7
Flow Path Length (ft)	1236.0
Flow Path Slope (vft/hft)	0.124
50-yr Rainfall Depth (in)	6.8
Percent Impervious	0.1
Soil Type	17
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	6.8
Peak Intensity (in/hr)	3.4636
Undeveloped Runoff Coefficient (Cu)	0.9103
Developed Runoff Coefficient (Cd)	0.9093
Time of Concentration (min)	7.0
Clear Peak Flow Rate (cfs)	36.8481
Burned Peak Flow Rate (cfs)	36.8481
24-Hr Clear Runoff Volume (ac-ft)	2.2605
24-Hr Clear Runoff Volume (cu-ft)	98468.9067



Peak Flow Hydrologic Analysis

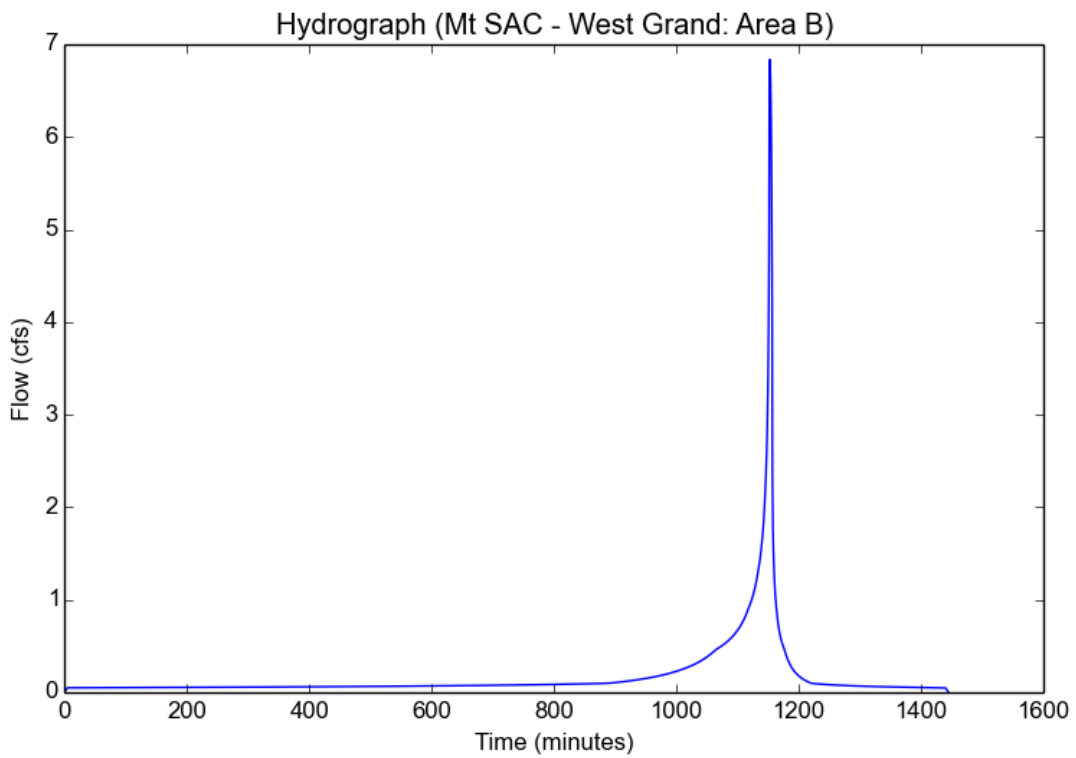
File location: W:/Mt_SAC/1HMC017000/ENGR/CALCS/Hydrology/Mt SAC - West Grand - Area B_50yr.pdf
Version: HydroCalc 0.2.0-beta

Input Parameters

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Output Results

Placeholder for output results, consisting of six horizontal gray bars.



Peak Flow Hydrologic Analysis

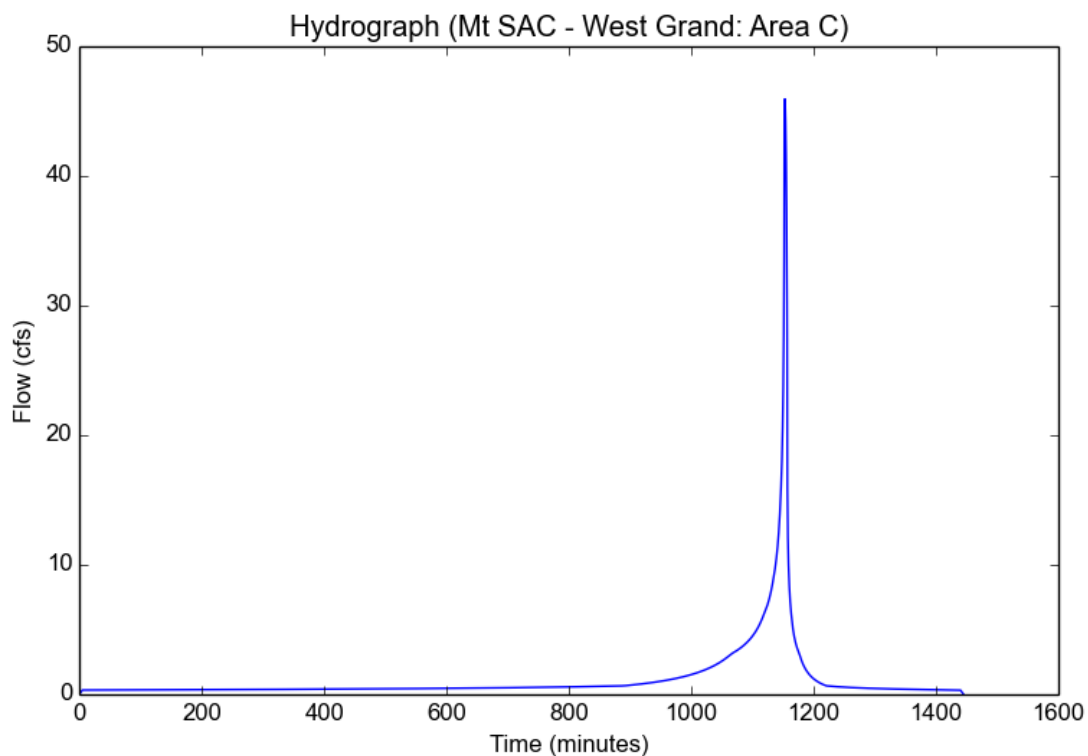
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Version: HydroCalc 0.2.0-beta

Input Parameters

Project Name	Mt SAC - West Grand
Subarea ID	Area C
Area (ac)	12.3
Flow Path Length (ft)	925.0
Flow Path Slope (vft/hft)	0.205
50-yr Rainfall Depth (in)	6.8
Percent Impervious	0.1
Soil Type	17
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	6.8
Peak Intensity (in/hr)	4.0571
Undeveloped Runoff Coefficient (Cu)	0.9229
Developed Runoff Coefficient (Cd)	0.9206
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	45.9413
Burned Peak Flow Rate (cfs)	45.9413
24-Hr Clear Runoff Volume (ac-ft)	2.3768
24-Hr Clear Runoff Volume (cu-ft)	103534.2861



Peak Flow Hydrologic Analysis

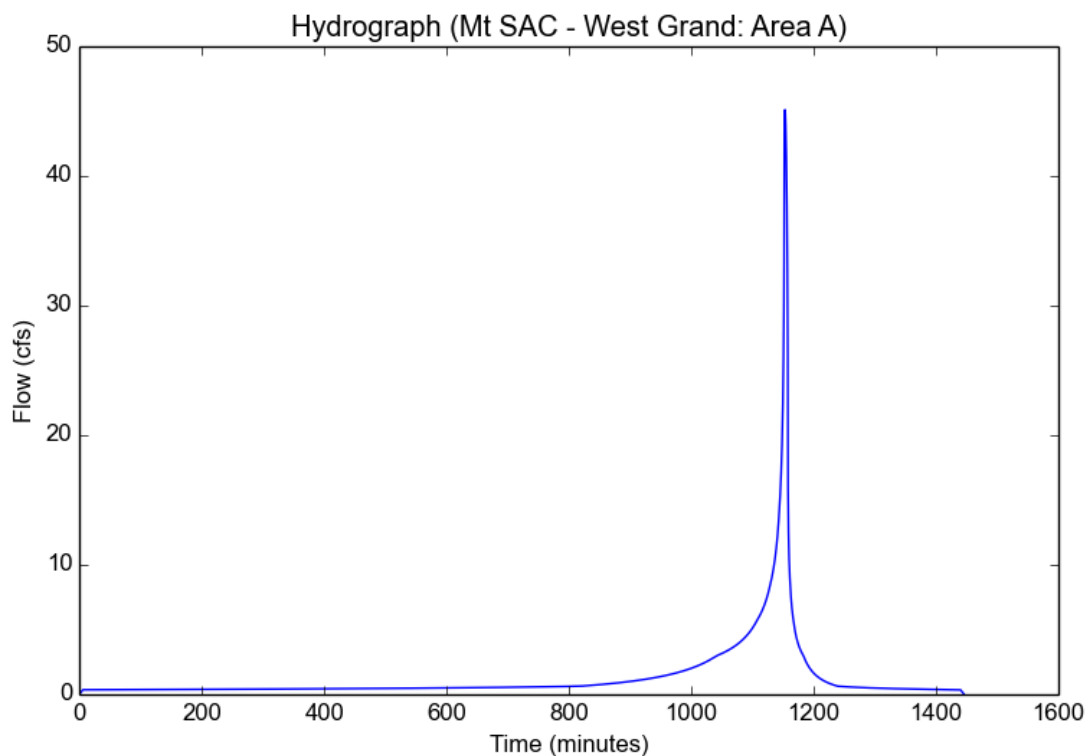
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Version: HydroCalc 0.2.0-beta

Input Parameters

Project Name	Mt SAC - West Grand
Subarea ID	Area A
Area (ac)	11.7
Flow Path Length (ft)	1236.0
Flow Path Slope (vft/hft)	0.124
50-yr Rainfall Depth (in)	6.8
Percent Impervious	0.1
Soil Type	17
Design Storm Frequency	100-yr
Fire Factor	0
LID	False

Output Results

Modeled (100-yr) Rainfall Depth (in)	7.6296
Peak Intensity (in/hr)	4.1782
Undeveloped Runoff Coefficient (Cu)	0.9254
Developed Runoff Coefficient (Cd)	0.9228
Time of Concentration (min)	6.0
Clear Peak Flow Rate (cfs)	45.1125
Burned Peak Flow Rate (cfs)	45.1125
24-Hr Clear Runoff Volume (ac-ft)	2.7043
24-Hr Clear Runoff Volume (cu-ft)	117799.1085



Peak Flow Hydrologic Analysis

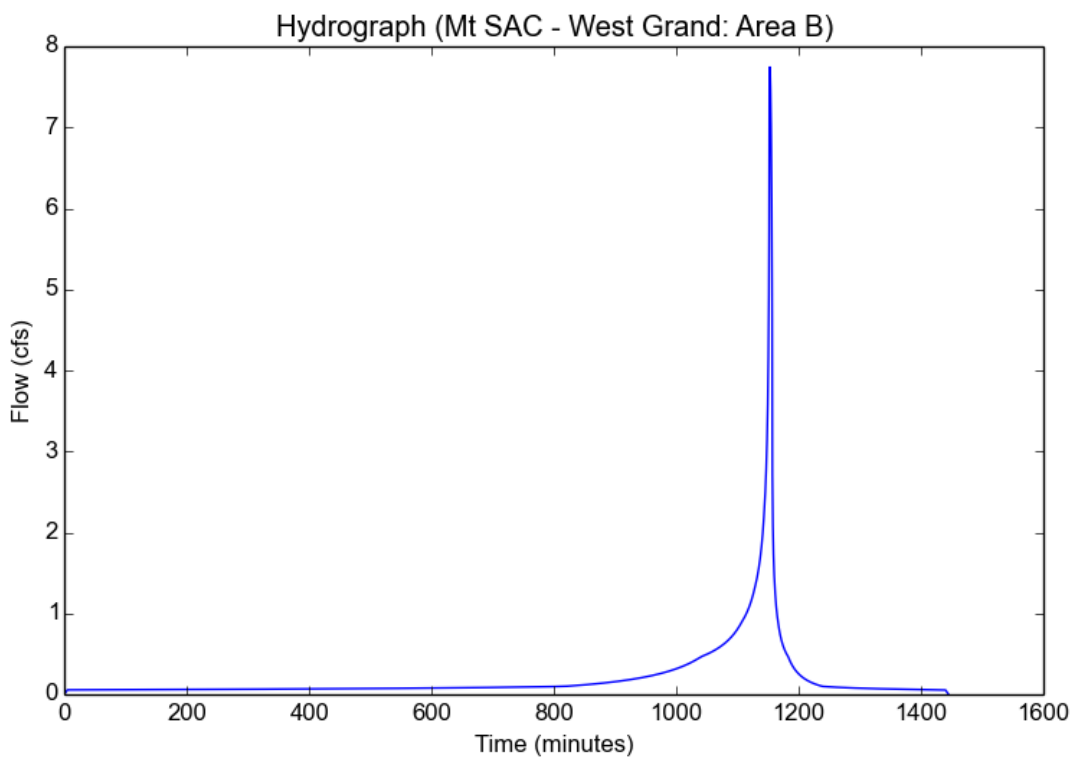
File location: W:/Mt_SAC/1HMC017000/ENGR/CALCS/Hydrology/Mt SAC - West Grand - Area B_100yr.pdf
Version: HydroCalc 0.2.0-beta

Input Parameters

Project Name	Mt SAC - West Grand
Subarea ID	Area B
Area (ac)	1.83
Flow Path Length (ft)	260.0
Flow Path Slope (vft/hft)	0.188
50-yr Rainfall Depth (in)	6.8
Percent Impervious	0.1
Soil Type	17
Design Storm Frequency	100-yr
Fire Factor	0
LID	False

Output Results

Modeled (100-yr) Rainfall Depth (in)	7.6296
Peak Intensity (in/hr)	4.552
Undeveloped Runoff Coefficient (Cu)	0.9329
Developed Runoff Coefficient (Cd)	0.9296
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	7.7438
Burned Peak Flow Rate (cfs)	7.7438
24-Hr Clear Runoff Volume (ac-ft)	0.423
24-Hr Clear Runoff Volume (cu-ft)	18426.6236



Peak Flow Hydrologic Analysis

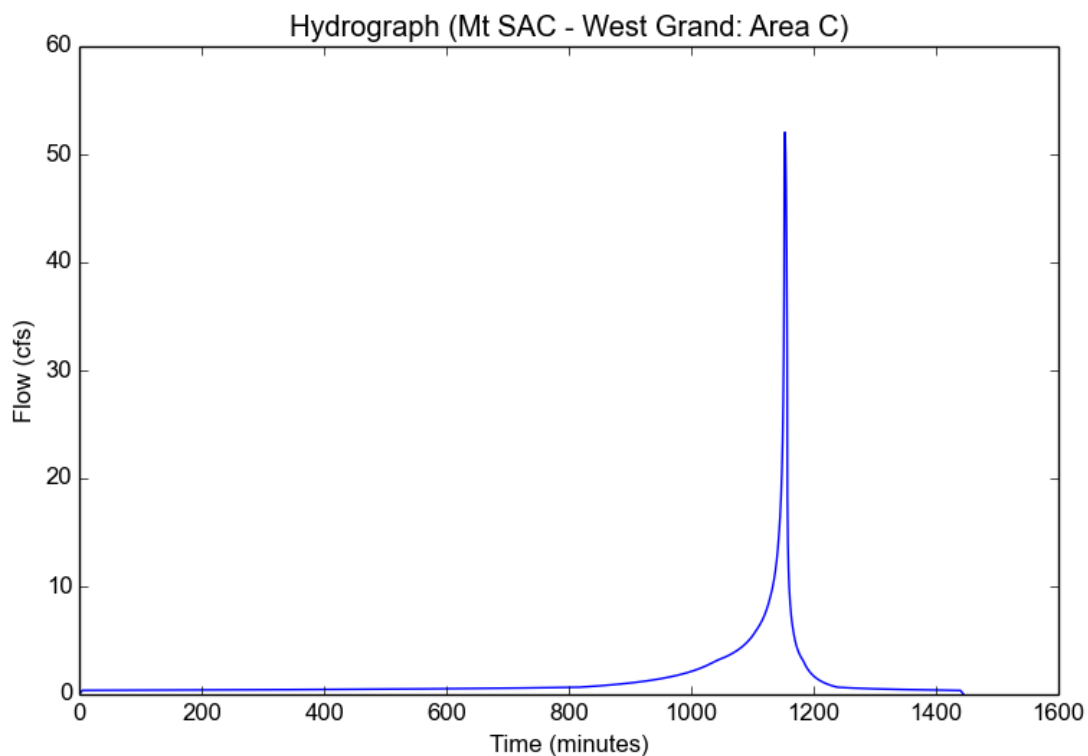
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Version: HydroCalc 0.2.0-beta

Input Parameters

Project Name	Mt SAC - West Grand
Subarea ID	Area C
Area (ac)	12.3
Flow Path Length (ft)	925.0
Flow Path Slope (vft/hft)	0.205
50-yr Rainfall Depth (in)	6.8
Percent Impervious	0.1
Soil Type	17
Design Storm Frequency	100-yr
Fire Factor	0
LID	False

Output Results

Modeled (100-yr) Rainfall Depth (in)	7.6296
Peak Intensity (in/hr)	4.552
Undeveloped Runoff Coefficient (Cu)	0.9329
Developed Runoff Coefficient (Cd)	0.9296
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	52.0485
Burned Peak Flow Rate (cfs)	52.0485
24-Hr Clear Runoff Volume (ac-ft)	2.8432
24-Hr Clear Runoff Volume (cu-ft)	123851.0766












Appendix C

Educational Materials






DRAFT

How can you help in your community? Como puedes ayudar en tu comunidad?

Home & Garden Casa y Jardines

-  Properly use and store all hazardous household products, including cleaners, solvents and paints.
Use y almacene de manera adecuada productos domésticos peligrosos, incluyendo limpiadores, solventes, y pinturas.
-  Be an environmentally aware consumer. Buy non-toxic products for use in your home and garden whenever possible.
Sea un consumidor consciente del medio ambiente. Compre productos que no sean tóxicos para su casa o jardín.
-  Use pesticides, herbicides and fertilizers carefully and sparingly.
Use pesticidas, herbicidas y fertilizantes cuidadosamente y a la medida justa.
-  Conserve water and reduce the amount of runoff by not over-watering your lawn and garden.
Conserve el agua y reduzca la cantidad de derrame no sobre-regando el y jardín.
-  Use a broom rather than a hose to clean up garden clippings, dirt and litter from sidewalks, patios and driveways.
Use una escoba en vez de la manguera al limpiar tierra y basura de las aceras, patios y caminos de entrada.
-  Compost yard trimmings and leaves. Do not sweep them into the streets or catch basins.
Convierta ramas y hojas en abono. No las barra a la calle o drenajes.
-  Divert rain spouts and other sources of runoff onto grass or vegetation.
Desvíe los caños y otros recursos de derrame hacia el césped o la vegetación.
-  Dispose of pet waste in trash cans. Leaving it on the lawn sends harmful bacteria into the storm drains whenever you water or when it rains.
Deseche el excremento de los animales en botes de basura. Si se dejan en el césped, estos crearan bacterias dañinas que irán hacia los drenajes cuando se riega o cuando llueva.
-  Donate unwanted paint, fertilizer, etc. to friends or community organizations.
Regale pintura, fertilizante, etc. a sus amistades u organizaciones comunitarias.

Automotive Automóviles

-  When changing car fluids, use a drip pan to collect any spills. If a spill occurs, soak it up using an absorbent material such as kitty litter or sawdust and dispose of it properly.
Quando cambie lubricantes, use un envase debajo del goteo para contener cualquier derrame. Si un derrame ocurriera, límpielo usando cualquier material absorbente, como aserrín o "kitty litter", luego deseche de manera apropiada.
-  Wash your car with biodegradable soap using as little water as possible. Shut off the hose while washing your car and then rinse.
Lave su vehículo con jabón biodegradable usando la menor cantidad de agua posible. Cierre la llave del agua mientras lo lave y luego enjuágelo.
-  Keep a trash bag in the car and use it! Do not throw anything out the window.
¡Mantenga una bolsa de basura dentro del carro y úsela! No arroje nada por la ventana.
-  Keep up car maintenance to reduce leakage of oil, anti-freeze and other fluids.
Dé un buen mantenimiento a su carro para reducir derrames de aceite, anticongelante u otros lubricantes.
-  Buy batteries, anti-freeze and motor oil from stores that will recycle used products, or
Take these items to a local Household Hazardous Waste roundup.
Compre baterías, anticongelantes y aceites para motores en tiendas que reciclen los productos que ha usado, ó lleve estos productos a su centro de colección local de desechos domésticos peligrosos.

SPILL RESPONSE AGENCIES AGENCIAS PARA EL CONTROL DE DERRAMES

City of Los Angeles
Stormwater Program Hotline
(800) 974-9794

Los Angeles County
(888) CLEAN-LA / 253-2652

RECYCLING & HAZARDOUS WASTE DISPOSAL RECICLAGE Y DESECHO DE DESPERDICIOS PELIGROSOS

City of Los Angeles
Small Business Hazardous Waste Hotline
(800) 98-TOXIC / 988-6942

City of L.A. Recycling
(800) 773-CITY

Los Angeles County
Department of Public Works
(888) CLEAN-LA / 253-2652

TO REPORT ILLEGAL DUMPING PARA REPORTAR ARROJOS ILEGALES

City of Los Angeles
Stormwater Program Hotline
(800) 974-9794

Los Angeles County
Department of Public Works
Illegal Dumping Hotline
(888) CLEAN-LA / 253-2652

TO REPORT CLOGGED CATCH BASINS PARA REPORTAR DRENAJES TAPADOS

City of Los Angeles
Stormwater Program Hotline
(800) 974-9794

Los Angeles County
Department of Public Works
(888) CLEAN-LA / 253-2652

THE OCEAN BEGINS El Oceano Empieza



IN YOUR NEIGHBORHOOD En Su Vecindad



www.LAstormwater.org

Illustration and Design: Oscar Amaro

Printed on  Recycled Paper

As a covered entity under Title II of the Americans with Disabilities Act, the City of Los Angeles does not discriminate on the basis of disability and, upon request, will provide reasonable accommodation to ensure equal access to its programs, services, and activities.



How So?

Water running off your yard, sidewalk or street flows down gutters to curbside openings called **catch basins**.



Curbside catch basin

Anything carried by this runoff — pesticides, pet waste, oil and anti-freeze from leaky cars and trucks, foam containers and plastic bags — ends up trashing the beaches, polluting the ocean, and harming wildlife... and humans. This contaminated flow is the reason some of our most scenic beaches are closed to the public after a heavy rainstorm.

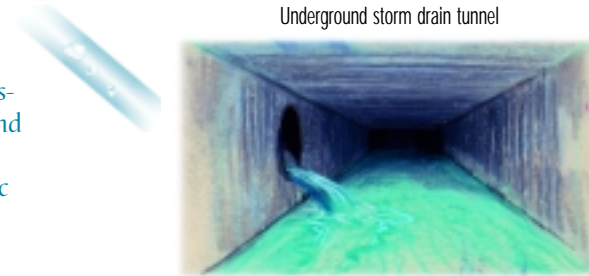
Just one quart of used motor oil dumped into a catch basin can pollute 250,000 gallons of ocean water!

Unlike the wastewater from inside homes and businesses that flows to sewers and treatment plants, outside runoff water flows to the ocean untreated. That's because the storm drain system was designed to prevent flooding during heavy rains by quickly diverting billions of gallons of rainwater to the ocean.

The open portions of this system are called flood control channels.

Even during the driest day in Southern California, we produce tens of millions of gallons of runoff, the result of activities such as car washing, lawn watering and yard cleanup.

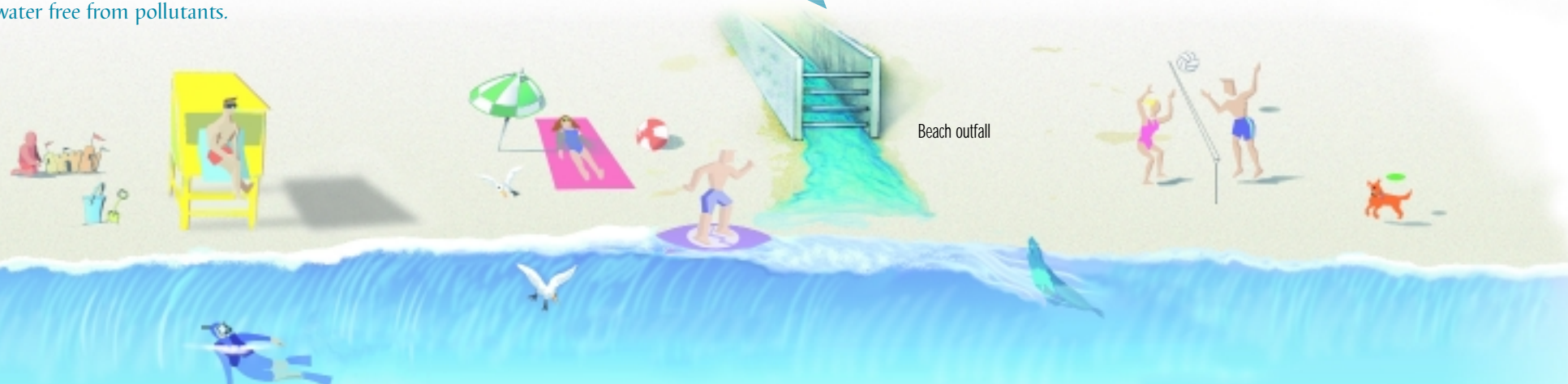
For our own protection, and for a cleaner ocean, we need to keep trash off the streets, out of catch basins, and runoff water free from pollutants.



Underground storm drain tunnel



Flood control channel



Beach outfall

¿Cómo Puede Ser?

El agua que se desborda en jardines, aceras y calles se vierte a las cunetas, las cuales la transportan hacia las aperturas en las calzadas llamadas alcantarillas.

De allí, es vaciada al sistema del alcantarillado pluvial, el cual es una gran red de tuberías y canales que eventualmente terminan en el océano.

Cualquier cosa acarreada por este flujo, como por ejemplo pesticidas, excremento de animales, aceite o anticongelante derramados de carros y envases plásticos terminan ensuciando las playas, contaminando el océano, dañando a la fauna y al mismo tiempo a los humanos. Este flujo contaminado es la razón del cierre al público de algunas de nuestras playas más hermosas luego de una tormenta severa.

¡Basta un cuarto de galón de aceite de automóvil arrojado dentro del drenaje para contaminar 250,000 galones de agua marina!

A diferencia de las aguas que fluyen de las casas y negocios por medio del sistema de desagüe hacia las plantas de tratamiento, el agua que fluye por las calles va al océano sin ser tratada. El sistema de drenaje de lluvias es diseñado para prevenir inundaciones durante tormentas severas. Este sistema recoge rápidamente billones de galones de agua de las calles llevándolos directamente al océano.

Aún durante el día más seco en el sur de California se producen decenas de millones de galones de agua que fluyen por las calles como resultado de actividades tales como el lavado de carros, o riego y limpieza de jardines y patios.

Por nuestra propia protección debemos impedir que la basura llegue a nuestras calles y colectores de lluvia, así como asegurar que el agua que fluye hacia las calles, esté libre de contaminantes.

BIO-DEGRADATION TIMELINE

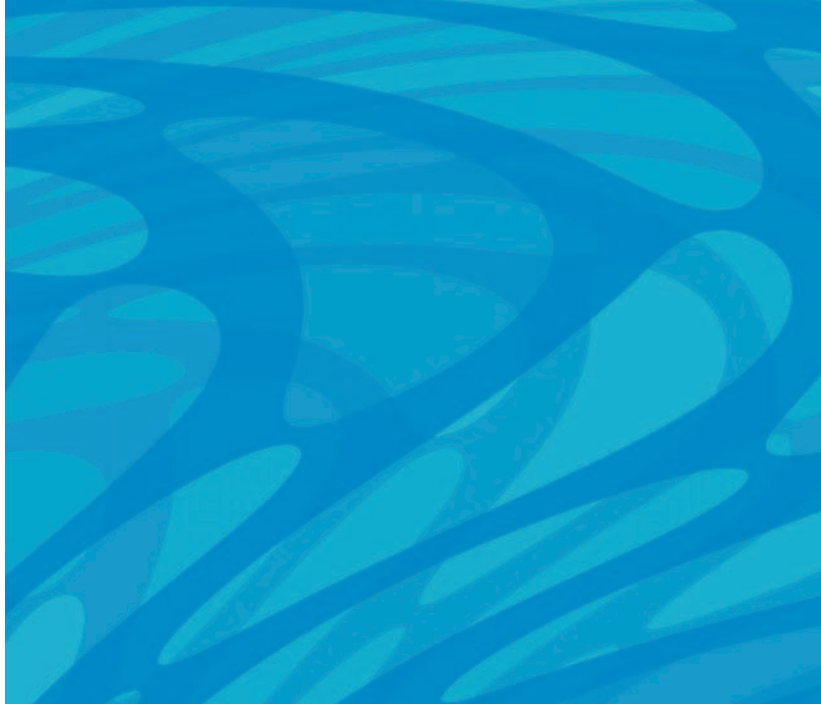
Depending upon their composition, products take different lengths of time to break down (bio-degrade) in the environment. Here are average times for these products.

Según la composición de los productos, estos varían en la cantidad de tiempo para descomponerse en el medio ambiente. Los siguientes son los periodos promedios para esos productos.



- Every year, over 40 tons of trash washes up on our beaches.
- Approximately 80% of that trash could have been recycled.
- An average of 870,000 cigarette butts are tossed into the streets every month. These eventually wash into the storm drain system and onto the beaches and ocean. Fish and birds swallow cigarette butts often mistaking them for food, and die.
- The County of Los Angeles spends an average of \$1.3 million cleaning the beaches after rainstorms every year.





Erase the
waste

BROUGHT TO YOU BY THE CALIFORNIA WATER BOARDS

Dear Resident:

As a Los Angeles area resident, we know that you care about your community, and want your children to grow up in clean and safe neighborhoods. But too often our local parks and playgrounds are tarnished by pollution – litter, fast food wrappers, cigarette butts and pet waste – and our beaches are closed due to the trash, pesticides, motor oil and other debris that are left in the streets to wash down the storm drains and out to our waterways, creating unsafe conditions. This problem – known as storm water pollution – is one that we must and can do something about.

The California Water Boards – the state and regional agencies responsible for protecting California’s waters – have made reducing storm water pollution in Los Angeles County a top priority by sponsoring a two-year, \$5 million storm water public education program, called *Erase the Waste*. This campaign uses advertising, news stories, special events and partnerships with local retailers, schools and community groups to inform and educate residents about the dangers of pollution, how it affects their neighborhoods and how it ultimately affects our waterways and our environment, as it makes its way from local storm drains directly into nearby creeks, rivers and the ocean. Residents can get involved and be part of the solution – with the ultimate goal of reducing pollution and improving the environment of our coastal and inland communities.

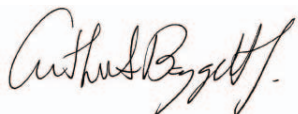
As part of this campaign, we are pleased to present you with the *Erase the Waste* Neighborhood Action Kit – an interactive resource that we hope will empower you to join our effort to erase the waste and take back your community from pollution and the associated risks that can threaten the health and safety of your family, community and area waters.

Why should you care about storm water pollution? Because with a population of almost 10 million residents in L.A. County, pollution is likely a part of your daily experience. Recent research estimates, that every month L.A. County residents drop almost one million cigarette butts in streets, parks and playgrounds and toss 830,000 pieces of trash on the ground, while dog owners fail to pick up after their pets 82,000 times. The fact is, nobody knows your community as well as you. And with your support, we can reduce these alarming statistics and lessen the amount of pollution in the Los Angeles area.

This *Erase the Waste* Neighborhood Action Kit contains a wide range of information and tools. Inside, you will find everything from tips on how to create a trash-free event, adopt your local park or neighborhood, or organize a clean up event with your family and neighbors, along with simple activities you can do with your children, and public speaking pointers, so that you can make a presentation on the issue to your local PTA or homeowners association.

If each of us commits to performing simple, preventive acts every day such as putting litter in the trash can and cigarette butts in ashtrays, picking up pet waste, using fertilizers and pesticides sparingly, using non-toxic products whenever possible and becoming involved in community clean ups, we would have a great chance of succeeding at our goal of ridding our neighborhoods of pollution.

The California Water Boards hope you find the tips and tools in this Neighborhood Action Kit (also available at www.erasethewaste.com) useful and appropriate for your family, neighborhood or organization, and that it motivates you to reduce pollution by erasing the waste.



Arthur G. Baggett, Jr.
Chair
California Water Boards

NEIGHBORHOOD ACTION KIT AT-A-GLANCE

THE KIT IS COMPRISED OF SIX SECTIONS:

SECTION 1 – CAMPAIGN BACKGROUND AND STORM WATER POLLUTION PREVENTION INFORMATION

This section contains:

- Background on the California Water Boards' *Erase the Waste* campaign
- Information and facts on the storm water pollution problem
- Profiles of those who pollute in L.A. County
- Good housekeeping practices that will help prevent pollution

SECTION 2 – HOW TO GET INVOLVED TO ERASE THE WASTE

This section focuses on pollution prevention information ranging from "Simple Tips for Individual Action," to neighborhood events, and from activities to do with children, to "Ideas for Large Groups and Organizations." Tips for organizing a successful clean up or pollution prevention event are included, as well as pre-event and day-of-event planning checklists. This section also includes a how-to sheet for developing partnerships and for reducing graffiti in your neighborhood.

This section also contains a template event flyer that can be adapted to individual events, a sample letter to solicit event partners and a sample release and indemnification form.

SECTION 3 – SPEAKING OUT TO ERASE THE WASTE

For many people, speaking in front of an audience is one of their worst fears. In "Speaking Out to Erase the Waste," the Neighborhood Action Kit provides:

- Ways to make speaking easier, by showing you how to develop a speech
- Pointers for speakers
- Basic facts and figures for your key messages

For large organizations, there is a how-to sheet for creating a formalized speakers bureau.

SECTION 4 – WORKING WITH MEDIA TO ERASE THE WASTE

The media can be a big asset in spreading the pollution prevention word, as well as helping gain support and resources for anti-pollution efforts.

"Working With Media to Erase the Waste" provides:

- Checklists for publicizing events and programs, and for maintaining media relationships.
- Information about a wide variety of media materials and activities, including a media advisory and release, pitch letter, letter to the editor, opinion-editorial (op-ed) article, calendar announcement, public service announcement, public affairs/news talk shows, media conferences and editorial board meetings. Templates and samples of many of these materials can be found at the end of this section.

SECTION 5- INFORMATIONAL MATERIALS TO ERASE THE WASTE

This section contains:

- Informational materials such as, flyers and posters that can be used to educate your neighbors and family about storm water pollution. Materials include:

Erase the Waste posters that relate to: (1) picking up pet waste; (2) putting cigarettes in ashtrays; (3) putting litter in the trash can; and (4) doing home improvement activities safely.

Flyers covering: (1) pet waste; (2) safe gardening; (3) litter prevention; and (4) safe home improvement.

SECTION 6 – ADDITIONAL RESOURCES TO ERASE THE WASTE

The final section of the Neighborhood Action Kit is a resource list that provides you with further information about a variety of topics under pollution prevention. The list is divided into eight categories:

- General Campaign Information
- Organizations That Hold Clean Up Events
- General Environmental and Storm Water Pollution Information
- Regulatory/Government Agencies
- *Erase the Waste* Community Advisory Council
- State, County and City Pollution Prevention Events
- L.A. County Household Hazardous Waste Events
- L.A. County Household Hazardous Waste Centers

TABLE OF CONTENTS

CAMPAIGN BACKGROUND AND STORM WATER POLLUTION PREVENTION INFORMATION I

- Fact Sheets
 - Los Angeles County Storm Water Pollution Prevention Solutions Education Campaign
 - Storm Water Pollution Basics
 - A Profile of Los Angeles County Residents Who Pollute
 - 10 Ways You Can Erase the Waste and Prevent Storm Water Pollution

HOW TO GET INVOLVED TO ERASE THE WASTE 7

- Why People Litter
- Why Get Involved In *Erase the Waste*
- Every Person and Every Action Counts: Simple Tips for Individual Action
- Every Person and Every Action Counts: Ideas and Actions for Your Neighborhood
- Every Person and Every Action Counts: Ideas for Large Groups and Organizations
- Tips for Organizing a Successful Activity
- Developing Partnerships/Sponsorships
- Pre-Event Planning Checklist
- Day-of-Event Planning Checklist
- Anti-Litter and Beautification Activities to Do With Children
- Things You Can Do to Help Reduce Graffiti
- Template/Sample Materials
 - Release and Indemnification Form
 - Planning, Evaluation and Reporting Form
 - Event/Community Clean Up Flyer
 - E-mail and Fax Blasts
 - Partnership Letter

SPEAKING OUT TO ERASE THE WASTE 27

- Introduction to Speaking In Public
- Creating an Organizational Speakers Bureau
- Pointers for Speakers
- How to Develop Your Speech
- Sample Speech
- Key Messages: Littering, Pollution and You
 - Erase the Waste* Public Education Campaign
 - Storm Water Pollution
 - Littering and Recycling
 - Pet Waste
 - Graffiti

WORKING WITH MEDIA TO ERASE THE WASTE 35

- Types of Media Outlets
- What Is News
- From the Media Perspective
- How to Find Your Local Media Outlets
- Compiling a Media List
- Media Relationships Checklist
- Checklist: Publicizing Your Program or Event
- Core Materials for Your Media Relations Toolkit
- Additional Materials to Add to Your Media Relations Toolkit
- Handling Calls from Reporters
- Working With Ethnic Media
- Media Spokespersons: Interview Preparation
- Template/Sample Materials
 - Letters to the Editor News Release
 - Opinion-Editorial Calendar Advisory
 - Media Advisory PSAs

INFORMATIONAL MATERIALS TO ERASE THE WASTE 53

- Posters
 - People Who Harm Our Communities Often Leave a Trail
 - When Nature Calls, Make Sure You Pick Up
 - Cigarettes Can Be Harmful Even After They're Put Out
 - Improve Your Home Without Harming Your Community
- Flyers
 - Keep Our Neighborhoods and Beaches Healthy and Clean
 - When Nature Calls, Make Sure You Pick Up
 - Keep Your Yard Green Without Harming Your Community
 - Improve Your Home Without Harming Your Community

ADDITIONAL RESOURCES TO ERASE THE WASTE . . . 61

- General Campaign Information
- Organizations That Hold Clean Up Events/How to Get Involved
- General Environmental and Storm Water Pollution Information
- Regulatory/Government Agencies
- *Erase the Waste* Community Advisory Council
- State, County and City Pollution Prevention Events
- 2004 L.A. County Household Hazardous Waste Collection Events
- Permanent Household Hazardous Waste Centers





SECTION I

CAMPAIGN BACKGROUND AND STORM WATER POLLUTION PREVENTION INFORMATION

ERASE THE WASTE

LOS ANGELES COUNTY STORM WATER POLLUTION SOLUTIONS EDUCATION CAMPAIGN

BACKGROUND

Storm water pollution is a serious problem in Los Angeles County, with significant impacts on the region's water quality, environmental resources, plants and wildlife, and public health and safety. The issue also has significant economic impacts – as clean up measures are extremely costly, and poor water quality and unsafe beach conditions threaten Los Angeles' tourism-driven revenues.

To address this critical issue, the California Water Boards are sponsoring a comprehensive, two-year, \$5 million public education program to measurably reduce storm water pollution in Los Angeles County. The Water Boards' primary mandate is to preserve, enhance and restore the quality of California's waters. This campaign – the first countywide storm water public education campaign under the Water Boards' auspices – is a further demonstration of the State's commitment to protect our inland, coastal and ground water sources and its priority focus to improve water quality to the benefit of Los Angeles County's nearly 10 million residents. Total campaign funding comes from California's Cleanup and Abatement Account (CAA), which derives funds from court judgments and administrative sanctions levied against corporate, government and industry polluters. All CAA funds, by law, must be used for clean water purposes, and do not represent taxpayer dollars.

CAMPAIGN OVERVIEW

The Water Boards' Los Angeles County-focused storm water public education effort is built around the theme, *Erase the Waste* – a positive, empowering theme that encourages all residents and stakeholders to take ownership of their communities, and help reduce and prevent storm water pollution in the local landscape.

The multifaceted, multiethnic campaign primarily reaches out to the region's "greatest polluters most likely to change their polluting behaviors" – an audience of more than seven million residents, approximately 72 percent of the total county population. This group represents all ethnicities, genders and levels of socio-economic status. The campaign also includes multiple opportunities to engage school-aged children, business and environmental stakeholders, and a diverse group of community-based organizations.

The *Erase the Waste* campaign conveys action-oriented pollution prevention messages to residents where they live, work, shop and play. The campaign places an emphasis on priority regional pollutants including trash, cigarette butts, animal waste, pesticides and fertilizers. The campaign also underscores the State of California's commitments to environmental justice and integrated environmental school education.

KEY CAMPAIGN ELEMENTS

- *Advertising* – A multi-media paid advertising campaign offers the first venue to deliver *Erase the Waste* messages to a mass audience. The campaign employs English and Spanish print, radio and television advertisements – including use of the first paid, network television advertising to address the storm water issue in the Los Angeles media market. The campaign uses a combination of dramatic and humorous approaches to illustrate the compelling human consequences of pollution and encourage pollution-reducing actions.

- *Community Outreach* – The campaign includes culturally relevant strategies and materials in multiple languages to reach diverse segments of L.A. County's population. Also, the campaign has taken a collaborative approach to educating the public by actively engaging key community leaders and organizations to be part of the campaign's development and implementation. *Erase the Waste* encourages residents to take action in preventing storm

water pollution through its resource-based campaign Web site www.erasethewaste.com, the availability of this Neighborhood Action Kit, attendance at large-scale community fairs and festivals, and assistance from the *Erase the Waste* Water Improvement Network – a network of community-based organizations serving as local campaign "messengers."

THE ERASE THE WASTE
CAMPAIGN CONVEYS ACTION-
ORIENTED POLLUTION
PREVENTION MESSAGES TO
RESIDENTS WHERE THEY LIVE,
WORK, SHOP AND PLAY.

- *Strategic Partnerships* – Innovative partnerships with retailers, corporations, municipalities and non-profit organizations, such as The Home Depot, Lowe’s, Petco, 99 Ranch Markets, Los Angeles and San Gabriel Rivers Watershed Council and Heal the Bay, have been developed to increase the reach of campaign messages. Through these public-private partnerships, the campaign has invaluable opportunities to educate its partners’ members and customers on storm water pollution issues through joint mailings, point-of-purchase displays, in-store promotions, distribution of campaign collateral and special discount programs.
- *Media Relations* – Ongoing strategic outreach is conducted to general market, environmental and ethnic news outlets to bring the issue of storm water pollution to the forefront of media coverage in Los Angeles. To keep this issue highly visible, outreach to the media includes development of policy-oriented news stories as events occur, seasonal tie-ins to the storm water issue and storm water pollution reduction resource articles. This effort underscores the California Water Boards’ perspective on local and statewide storm water issues and raises visibility of the campaign’s pollution prevention messages and educational efforts.
- *Youth Education* – Outreach to the youth of Los Angeles County serves as a vital segment of the campaign. Children can be powerful catalysts for change within their schools, homes and communities. By providing educational information on storm water pollution prevention, they will be able to create a long-term, positive change in the fight to prevent pollution. The campaign’s efforts include the development and promotion of integrated water based education modules, as well as other means to reach children outside of the schools, including service learning projects and a public watershed education exhibit.
- *Business and Stakeholder Outreach* – Outreach is conducted to key business, political and environmental stakeholders to educate them on key storm water issues and keep them apprised of and engaged in campaign efforts.
- *Statewide Resources* – To support future storm water efforts statewide, the campaign is working with other environmental stakeholders to develop a Web-based statewide resource directory of storm water pollution prevention strategies and materials. This will be an important, sustainable tool for use by other municipalities, and will capture, categorize, evaluate and promote use of the “best of the best” in currently available storm water materials from throughout California.



THE WATER BOARDS’ LOS ANGELES COUNTY-FOCUSED STORM WATER PUBLIC EDUCATION EFFORT IS BUILT AROUND THE THEME, *ERASE THE WASTE* - A POSITIVE, EMPOWERING THEME THAT ENCOURAGES ALL RESIDENTS AND STAKEHOLDERS TO TAKE OWNERSHIP OF THEIR COMMUNITIES, AND HELP REDUCE AND PREVENT STORM WATER POLLUTION IN THE LOCAL LANDSCAPE.

What is Storm Water Pollution and How is it Created?

Storm water pollution is a major environmental and public health issue in Los Angeles County, leading to unsanitary living environments, unhealthy surface waters, such as lakes, creeks and rivers, unhealthy ocean and beach conditions, and street and neighborhood flooding during the rainy season. It's created when trash, cigarette butts, animal waste, pesticides, motor oil and other contaminants left on the ground are washed or thrown directly into storm drains. This pollution mixes with millions of gallons of rainwater and flows untreated into local creeks, rivers and the ocean – polluting our waterways, as well as degrading neighborhoods and other natural resources.

How Big is the Storm Water Pollution Problem In Los Angeles?

With nearly 10 million people living in Los Angeles County, each resident's contribution to storm water pollution adds up quickly to create a serious public health situation. In a 1997 study conducted by Pelegrin Research Group, an estimate of the number of times per month that Los Angeles County residents engage in polluting activities was established, known as pollution volumetrics. According to an updated 2001 study, it is conservatively estimated that each month in L.A. County, residents:

- Drop cigarette butts on the ground nearly 915,000 times
- Drop litter on the ground or out a car window more than 830,000 times
- Allow paper or trash to blow into the street more than 800,000 times
- Throw something in the gutter or down a storm drain nearly 280,000 times
- Empty a car ashtray into the street more than 40,000 times
- Hose leaves or dirt off a driveway or sidewalk into the street nearly 420,000 times
- Wash off paint brushes under an outdoor faucet more than 130,000 times
- Spray the garden or lawn with pesticide more than 210,000 times
- Walk a dog without picking up the droppings more than 82,000 times

**STORM WATER POLLUTION IS
CREATED WHEN TRASH,
CIGARETTE BUTTS, ANIMAL
WASTE, PESTICIDES, MOTOR OIL
AND OTHER CONTAMINANTS
LEFT ON THE GROUND ARE
WASHED OR THROWN DIRECTLY
INTO STORM DRAINS.**

In L.A. County, approximately 100 million gallons of contaminated water and debris drain through the storm drain system each dry day. That would fill the Rose Bowl 1.2 times. (On rainy days the flow can increase to 10 billion gallons per day).

What Are the Effects of Storm Water Pollution?

Public Health Risk – Serious health risks to people swimming or fishing in the Santa Monica or San Pedro Bay, especially within 400 yards of storm drain outlets.

- A study conducted by the Santa Monica Bay Restoration Project found that storm water pollution in the ocean leads to increased risk of viral infections, earaches, sinus problems, fever, flu and skin rashes and viral diseases such as hepatitis for those swimming in the ocean close to storm drain outfalls, especially following a rainstorm when litter and contaminants are flushed into the storm drain system. The Governor's Clean Beaches Initiative (CBI), funded by portions of four voter-approved bond measures, has already begun the clean up effort statewide through construction of diversion and treatment facilities.
- The Los Angeles County Department of Health Services recognizes the increased health danger associated with storm water pollution and has a standing rain advisory that "recommends that beach users avoid contact with ocean water, especially near flowing storm drains, creeks and rivers for a period of 3 days after rainfall ends."
- Heal the Bay's 2002-2003 Annual Beach Report Card on the health of Los Angeles County's beaches gave 56 percent of monitored beaches a failing grade during wet weather, meaning the conditions were hazardous to human health and would have adverse health effects to swimmers who enter the water.
- When bacteria levels exceed the State Standards, a warning sign is posted and swimmers are encouraged not to enter the water. Storm water contaminants are one of the main causes of increased bacteria levels at our local beaches. During 2002, there were 269 warnings posted on Los Angeles County beaches for a total of 1,181 days where the ocean was too polluted for human use.

STORM WATER POLLUTION BASICS FACT SHEET

Degradation of Natural Resources – Research conducted by regional agencies, respected environmental non-profit organizations and academic institutions have identified storm water pollution and urban runoff as the leading sources of pollutants to Los Angeles County's inland rivers, creeks, the ocean and beaches along the area's coastline. The widespread critical issue has reached a level that has prompted local, state and federal policymakers and regulatory agencies to enact and enforce more stringent storm water permit regulations, financial penalties and other compliance measures.

Economic Impacts – Beach attendance has dropped by 56 percent since 1983. The recreation and tourism industry is one of the top employers in the nation, and is a particularly valuable part of the Los Angeles coastal economy. Each year, Americans take more than 1.8 billion trips to water destinations, largely for recreation, spending money and creating jobs in the process. Activities related to the county's \$2 billion annual tourism industry depend largely on the access and enjoyment of clean waters. If the perception of our beaches deteriorates, it poses broader implications for the region's financial growth.

Neighborhood Value and Involvement – When storm drains become clogged with trash and debris, it can result in street and neighborhood flooding during the rainy season. This water backup can lead to closed roads and increased traffic, and create an unhealthy environment of smelly and unsanitary conditions in communities, worsening local aesthetics and lowering property values. The cleanliness of communities has a further impact on the financial and personal investment residents make in their property, and contributes to the overall sense of community pride and civic engagement.

Ways to Reduce Storm Water Pollution

With the large population of L.A. County, even small, individual action steps to reduce storm water pollution can add up to big changes. Here are a few simple actions residents can take:

- ♦ **THROW TRASH IN A TRASH CAN OR RECYCLING BIN (AS APPROPRIATE), NOT ON THE GROUND OR INTO THE STORM DRAIN**
- ♦ **CLEAN UP AFTER YOUR DOG EVERY TIME**
- ♦ **ALWAYS PUT YOUR CIGARETTE BUTTS IN AN ASHTRAY**
- ♦ **JOIN OR ORGANIZE A COMMUNITY CLEAN UP TO HELP PROTECT YOUR NEIGHBORHOOD**
- ♦ **REDUCE, REUSE AND RECYCLE MATERIALS WHENEVER POSSIBLE**
- ♦ **LEARN MORE WAYS TO REDUCE STORM WATER POLLUTION – LOG ON TO [HTTP://WWW.ERASETHEWASTE.COM](http://www.erasethewaste.com) OR CALL 1(888)CLEAN-LA.**



WITH THE LARGE POPULATION OF L.A. COUNTY, EVEN SMALL, INDIVIDUAL ACTION STEPS CAN ADD UP TO BIG CHANGES. LEARN MORE WAYS TO REDUCE STORM WATER POLLUTION – LOG ON TO [WWW.ERASETHEWASTE.COM](http://www.erasethewaste.com) OR CALL 1(888)CLEAN-LA.

A PROFILE OF LOS ANGELES COUNTY RESIDENTS WHO POLLUTE

LOS ANGELES COUNTY RESIDENTS ARE...

- Overall, interested and concerned about neighborhood pollution and water quality
- Often unknowingly engage in polluting behaviors
- Willing to change behaviors that contribute to storm water pollution if given a good reason and simple action steps
- Highly motivated by the human consequences of pollution – particularly the health and safety of children – and a sense of personal responsibility

To maximize campaign resources and potential reductions in storm water pollution, the California Water Boards' *Erase the Waste* campaign focuses on three primary audience groups that comprise Los Angeles County's "greatest polluters most likely to change their polluting behaviors." Collectively, these residents make up approximately 72 percent of the L.A. County population, and represent all ethnicities, genders and levels of socio-economic status.



NEAT NEIGHBORS*

- Approximately 50 percent of Los Angeles County residents
- 4.5 million adults
- Middle to high income, home-owning, family-oriented professionals
- Avid recyclers, who want to keep their neighborhoods neat and clean
 - Hose off their driveways into the storm drains more than 200,000 times a month
 - Drop their cigarette butts on the ground nearly 375,000 times per month

RUBBISH REBELS*

- Approximately nine percent of Los Angeles County residents
- 405,000 adults
- Predominately single males in their teens and twenties
- This small group accounts for a disproportionately large amount of pollution, mainly due to blatant polluting behaviors
 - Dump their ashtrays in the street more than 20,000 times per month, accounting for 42 percent of all ashtrays dumped in the streets
 - Throw litter from their cars nearly 575,000 times per month
 - Drop trash directly into the storm drains more than 125,000 times per month

FIX IT FOUL UPS*

- Approximately 13 percent of Los Angeles County residents
- 1.2 million adults
- Devoted do-it-yourselfers, responsible for a large amount of pollution mainly related to working on their cars, homes and gardens
 - Fail to recycle used motor oil and other car fluids more than 124,000 times a month
 - Spray yards with pesticides that wash into the storm drains nearly 100,000 times a month
 - Hose down their driveways into the street more 85,000 times a month

* These audiences were originally identified (and given their nicknames) in a landmark population segmentation study conducted by Pelegrin Research Group (Glendale, California, May 1997). Pollution volumetrics – quantifiable estimates of each audience's polluting behaviors per month – were also identified and tracked through evaluation studies from 1997-2001.

COLLECTIVELY, THESE RESIDENTS MAKE UP APPROXIMATELY 72 PERCENT OF THE L.A. COUNTY POPULATION, AND REPRESENT ALL ETHNICITIES, GENDERS AND LEVELS OF SOCIO-ECONOMIC STATUS.

10 WAYS YOU CAN ERASE THE WASTE AND PREVENT STORM WATER POLLUTION



Storm water pollution is a serious issue in Los Angeles County – one that leads to increased health risks, neighborhood flooding, unsanitary living environments and unsafe ocean and beach conditions – as well as high costs to clean up tons of pollution each year. Storm water pollution is created when litter, animal waste, cigarette butts, pesticides, motor oil and other contaminants left on the ground are washed or thrown directly into storm drains, where this toxic soup clogs gutters, causing neighborhood flooding and pollution of our local rivers, creeks and the Pacific Ocean.

Through the *Erase the Waste* storm water pollution prevention campaign, the California Water Boards encourage all Los Angeles County residents to take the following simple, everyday actions to improve our region’s water quality and quality of life:

- | | | |
|--|--|---|
| <p>1. Throw your litter in the trash can or recycling bin (as appropriate), not the street and never into the storm drain. Dispose of all trash properly – fast food wrappers, Styrofoam cups, bottles and paper – every time.</p> | <p>5. Take action. Organize or join in the clean up of a beach, river or community. Join with your neighbors to adopt a local park or playground and organize a clean up event. Do your part to keep your community and waterways healthy and clean and encourage others to participate. Get involved and beautify your neighborhood!</p> | <p>8. Make it a practice to purchase non-toxic or less-toxic products for home and garden use. Dispose of all leftover toxic products (paint, household cleaners, pesticides, etc.) at a free monthly Household Hazardous Waste Collection Event. Call 1(888)CLEAN-LA to find an event near you.</p> |
| <p>2. Always put your cigarette butts in ashtrays, not on the streets. Remember – our parks, playgrounds and beaches are not ashtrays. “Hold on to your butts” and help keep these places clean and safe for Los Angeles’ children and families to enjoy.</p> | <p>6. Reduce, Reuse and Recycle materials whenever possible. By following the Three R’s, you will be creating less waste that could end up on our streets and contribute to further storm water pollution.</p> | <p>9. Recycle your used motor oil and other automotive fluids by taking them to a certified used oil recycling center where it can be disposed of properly. For a location near you in Los Angeles County, call 1(888)CLEAN-LA.</p> |
| <p>3. Empty automobile ashtrays into the trash, not out your car window. Keep these toxic butts from polluting our waterways... while also minimizing the risk that children and pets will ingest, choke on or get burned from these dangerous pollutants. It will also minimize the risk of fires.</p> | <p>7. Limit use of pesticides and fertilizers year-round – especially during the rainy season. Excess pesticides and fertilizers applied to your garden and yard will wash away in the rain, straight into the storm drain system. Apply lawn and garden chemicals sparingly and follow directions.</p> | <p>10. Rake or sweep up sidewalks and driveways, rather than hosing them down. Using a hose forces debris and chemical residues into storm drains, which can clog gutters and lead to street flooding and polluted waterways.</p> |
| <p>4. Pick up after your dog and dispose of waste in trash cans or the toilet. Bring extra bags on your walk to share with other pet owners. You can help cut down on the spread of disease carried by animal waste and maintain clean and healthy neighborhoods, beaches and waterways.</p> | <p style="text-align: center;">FIND MORE POLLUTION PREVENTION TIPS AND ENVIRONMENTAL RESOURCES ON WWW.ERASETHEWASTE.COM</p> | |



SECTION 2

**HOW TO GET INVOLVED TO
ERASE THE WASTE**

HOW TO GET INVOLVED TO...

In the 1960s, a major advertising campaign was launched to help in the fight to reduce litter in our communities. Laws were also enacted that stiffened fines for littering and illegal dumping. However, 40 years later, the problem remains, and has caused significant impacts to our environment and waters.

Under the “cause” and “effect” scenario, litter and other pollutants that are left on the ground and in the streets, are carried into the storm drains and then deposited into creeks, rivers, lakes and the ocean. The effect is costly, unsightly and unhealthy.

WHY PEOPLE LITTER

- Lack of knowledge about the problem
- Cost and convenience
- Attitudes
 - People don't feel a sense of ownership, even though areas such as parks and beaches are public property.
 - People believe someone else – park, maintenance or highway crews – will pick up after them.
 - People see that litter has already accumulated and figure a little more won't make a difference.

WHY GET INVOLVED IN ERASE THE WASTE

Litter is anything that should be recycled or put in a trash can, but instead ends up on sidewalks, streets, parking lots, roads, highways, the countryside or anywhere else it doesn't belong. It ranges from candy wrappers and beverage containers to cigarette butts, unwanted appliances and animal waste. Fighting litter requires each of us to play a very simple, but important role because:

- Children can injure themselves or become ill handling litter. And, litter ingested by pets and wildlife on land, and in water, threatens their lives. Litter provides a breeding ground for disease-carrying rats and insects.
- Litter is a serious problem that impacts public health, business and tourism.
- Litter discourages economic development because it impacts property values. Stores and businesses will not locate in a community that lacks the pride to effectively control litter and pollution. Litter reduces property value, because it sends a message that the community no longer takes pride in its appearance.
- Litter destroys the beauty of your neighborhood.
- Local and state agencies spend millions of taxpayer dollars on education and clean up activities, in an effort to combat the litter and pollution problem.
- Litterbugs are found among people of every age, sex, race and ethnic origin, at every level of society and in all geographic locations. Unfortunately, almost everyone is a litterbug at some time.

**IF YOU ... OWN A HOME,
RUN A BUSINESS,
DRIVE A CAR,
JOG, HIKE OR BIKE,
SWIM IN THE OCEAN,
PAY TAXES, OR
CARE ABOUT GOOD HEALTH,
YOU SHOULD KNOW THAT LITTER AND
OTHER POLLUTION IS MORE THAN AN
EYESORE. IT IS UNSAFE, UNHEALTHY
AND COSTLY.
YOU CAN COVER YOUR EYES AND
PRETEND IT'S NOT THERE...OR DO
SOMETHING ABOUT IT.**

EVERY PERSON AND EVERY ACTION COUNTS:

SIMPLE TIPS FOR INDIVIDUAL ACTION

Here are a few simple tips to do your part on a daily basis. Further in this Neighborhood Action Kit, you will find more information, ideas, activities and resources to fight litter and storm water pollution in your community.



LITTER REDUCTION

- Make a resolution not to litter – and keep it! Always put your trash in a proper container. If one is not available, hold on to your trash until you find one.
- If you are a smoker, always put your cigarette butts in an ashtray or trash container, not on the ground. Butts are toxic and polluting, to say nothing about being dangerous to children and pets that might ingest them, choke or get burned.
- Always keep a trash bag in your car and use it. Grocery and produce bags work well.
- If you see rubbish, abandoned vehicles/furniture/appliances, graffiti or other pollutants, make a note of it and immediately report it to your city's public works or sanitation department.
- Report any illegal dumping of litter, debris or contaminants into local storm drain inlets, by calling 1(888)CLEAN-LA (1(888)253-2652).
- Set a good example. Don't be a litterbug. Inform others about the costs and dangers of littering.

REDUCE, REUSE, RECYCLE

- Participate in recycling programs. Curbside, drop-off and/or buy-back programs are available in every community.



PET WASTE

- Pick up after your pet every single time. Grocery and produce bags will work, plus there are many special bags and containers available in pet stores to make this job easier. This will help cut down on the spread of disease carried by animal waste and keep neighborhoods clean and healthy. Picking up dog waste is a County Ordinance and pet owners disregarding this law may be fined.

**PET WASTE SHOULD ALWAYS
BE PUT IN THE TRASH OR
FLUSHED IN THE TOILET.
NEVER WASH IT INTO THE
GUTTER OR STORM DRAIN.**

- Carry extra bags when walking your pet and share with other pet owners.
- Pet waste should always be put in the trash or flushed in the toilet. Never wash it into the gutter or storm drain.
- Carry extra bags in your car, so you are prepared when you travel with your pet.
- Post a friendly message in your yard or neighborhood park, reminding pet owners to pick up after their pets.



GARDENING AND LAWN CARE

- Limit use of pesticides and fertilizers year-round, but especially during the rainy season. Follow the directions on the packaging carefully.
- Never over water your yard after applying pesticides and fertilizers, and don't apply chemicals just before a rain. Both will cause excess pesticides and fertilizers to wash from the yard and into storm drains, contaminating our waterways.
- Never rake, blow or hose yard waste into the gutter. Soggy yard waste is a major contributor to clogged storm drains, and street and neighborhood flooding.
- Make it a practice to purchase non-toxic or less-toxic products for home and garden use. Buy only what you need. Store left-over products in leak-proof containers and clearly mark the contents. Dispose of all toxic products at a free monthly Household Hazardous Waste Collection Event. Call 1(888)CLEAN-LA (1(888)253-2652) to find an event near you.
- Use California-friendly plants in your yard or garden that use two-thirds less water than other plants. There are more than 6,000 native California-friendly plants. To get information about these plants and where to buy them, log on to <http://www.bewaterwise.com>.

INDIVIDUAL ACTION



HOME IMPROVEMENT PROJECTS

- Use water-based paints whenever possible and buy only the amount you need.
- Wash paint brushes in an inside sink, not outside where the dirty paint water runs into the gutter.

DISPOSE OF ALL LEFT-OVER TOXIC PRODUCTS, SUCH AS PAINT, HOUSEHOLD CLEANERS AND FERTILIZERS, AT A FREE MONTHLY HOUSEHOLD HAZARDOUS WASTE COLLECTION EVENT.

- If you have left-over paint, turpentine, glue or other toxic home improvement products take them to a Household Hazardous Waste Collection Event. Your old paint will be donated to a graffiti paint-out effort.
- Use non-toxic or less-toxic cleaning products as much as possible.



VEHICLE MAINTENANCE AND USE

- Make sure your car doesn't leak fluids on the driveway or streets.
- Always recycle your used motor oil and filter. Dumping motor oil and other toxic products down the storm drain is illegal. Call 1(888)CLEAN-LA for the location of a free Household Hazardous Waste Collection Event or an auto repair shop that recycles vehicle fluids.
- Whenever viable, wash your car on a surface that will absorb the water, or take your car to a car wash.
- Properly maintain your vehicle, and perform smog checks as governed by law. This will improve your car's performance, and limit the amount of pollutants that enter the air, and ultimately fall to the pavement, and wash into waterways.
- Carpool, walk or ride your bike, when possible. Limiting vehicle use reduces pollution.



GRAFFITI

- Erase or report graffiti quickly. Statistics show that the faster graffiti is erased, the slower it is to return. One of the best uses of old paint is graffiti removal. Donate your old paint to local graffiti abatement programs or take it to a Household Hazardous Waste Collection Event, where your paint will be used for graffiti removal purposes.

STATISTICS SHOW THAT THE FASTER GRAFFITI IS ERASED, THE SLOWER IT IS TO RETURN.

- Landscaping can also slow down the occurrences of graffiti vandalism. There are a variety of shrubs and vines that can be planted against walls and buildings. For example, the City of Long Beach has a Graffiti Landscape Grant Program from which residents and businesses can apply for financial assistance to plant these types of foliage.

EVERY PERSON AND EVERY ACTION COUNTS:

IDEAS AND ACTIONS FOR YOUR NEIGHBORHOOD

If you want to take a hands-on role in keeping your neighborhood clean and getting your neighbors involved as well, think about organizing a neighborhood clean up, a community garage sale, charitable donation drive or any one of a variety of ideas outlined in this Neighborhood Action Kit.

Information about the activities and organizations mentioned on this sheet can be found in the resources section of this kit.

RIVER/BEACH CLEAN UPS

Any organization or individual can participate in programs that collect and remove debris from creeks, rivers, beaches and shorelines. This type of activity is designed to clean the area and raise general public awareness of marine debris pollution. Other clean up programs go beyond simply collecting and removing debris. Some programs record data on the numbers and types of debris and pollutants being found. Data collected from clean ups can be extremely important in convincing politicians to actively solve the marine waste problem and are useful at all levels of government.

The top 10 most frequently found marine debris items in the United States during the International Coastal Clean Up are: cigarette butts (23%); plastic pieces (6%); foamed plastic pieces and food bags/plastic wrappers (5% each); paper pieces, plastic lids and caps and glass pieces (4% each); glass beverage bottles and straws (3% each); and beverage cans and plastic beverage bottles (2% each).

Volunteer for a river or beach clean up. Some of these annual events and organizations include: Heal the Bay, California Water Boards' Clean Water Team, Santa Clarita River Rally, Friends of Los Angeles River Annual Clean Up, Ballona Creek Renaissance and California Coastal Clean Up. Other clean up events and organizations can be found in the resources section of this kit.

See the "Sample Planning, Evaluation and Reporting Form" later in this section for information about collecting data on your clean up event.

COMMUNITY CLEAN UPS AND BEAUTIFICATION

Neighborhood clean ups can be a fun, easy and much needed activity that will make a positive impact in your community. Neighborhood clean ups can involve collecting litter and recyclables, painting out graffiti, planting trees and flowers, creating a mural and hauling away bulky items. Think in terms of an old fashioned block party or a block spring clean. What a great way to spend time with neighbors and friends, get some exercise and at the same time accomplish a worthwhile activity.

If you don't want to organize a neighborhood clean up, join an existing one. An example of an existing clean up program you and your neighbors can join is the City of Los Angeles' Operation Clean Sweep. L.A.'s Operation Clean Sweep conducts ongoing clean up programs in neighborhoods across the city every week. Check your respective city's Web site or call your public works department to see if your city has an organized beautification program you can join.

See the "Sample Planning, Evaluation and Reporting Form" later in this section for information about collecting data on your clean up event and where to send the final report.

DOGGIE DO AT DOG PARKS

Whenever you hear about the possibility of creating a dog park in your neighborhood, get out and support it. If you already have a dog park in your neighborhood, make sure you and your family use it. These parks provide not only a safe place for your pet to run and play, but also makes cleaning up after your pet much easier. If there is not a dog park nearby, make sure you carry a bag when you are out with your pet to pick up

after it. Also, carry extra bags to give others you see on your walks who might not have a bag. If your neighborhood park doesn't carry complimentary bags, think about getting the neighbors together to campaign before the local city council for park doggie do bags.

WATER MONITORING

Volunteer water quality monitoring can be an important component in a comprehensive water quality monitoring program. Volunteers can gather technical data to determine the environmental health of a watershed. Water quality monitoring by volunteers gives students and others practical experience, involves them in the monitoring and management of their watershed, and increases the knowledge of stakeholders about area waterways.

When volunteers receive proper training and proper quality assurance procedures are followed, volunteer monitoring data can be as reliable as data collected by professionals. There are several local water quality organizations that train and certify volunteers to collect and analyze the water quality at monitoring locations throughout the watershed.

Some of the water monitoring groups around Los Angeles County include: the Arroyo Seco Stream Team; Los Angeles River Water Quality Monitor; Heal the Bay; and San Gabriel River Watershed Water Quality Sampling. Information about these programs can be found in the resources section of this kit.



YOUR NEIGHBORHOOD



ADOPT-A-STREET CORNER, PARK, PLAYGROUND OR STORM DRAIN

Residents can adopt a public site near their home or business and routinely pick up litter and/or clean off graffiti when it appears at their adopted location. Since neighbors are the first to see graffiti and can remove it immediately, this approach is the most effective way to clean up this unsightly problem. You and your neighbors can care for your adopted spot during a weekly walk or as part of a scheduled neighborhood gathering. One example of an adopt-a-site program is Adopt-a-Beach sponsored by the California Coastal Commission.

YARD SIGNAGE

With the rising amount of home computers and simple desktop publishing software, more and more people have the capability to generate simple signs on 8½" x 11" paper (or smaller) that can be laminated. These simple signs can be staked or posted in your yard to remind dog walkers to "Please pick up after your dog" or passers-by to "Please don't litter my yard. It is not a trash can." You can use the verbiage on the posters and flyers included in the "Informational Materials to Erase the Waste" section of this kit for your yard signs. Sometimes this type of signage can be purchased at home improvement stores or nurseries.

PARTICIPATION IN LOCAL RETAILER EDUCATION EVENTS

Many nurseries and home improvement stores hold regular customer workshops. Talk to local retailers about the possibility of including workshop topics involving environmental protection. This would help supplement your own education efforts in the

local community. Topics might include the following: safe use of fertilizers and pesticides for beautiful lawns and gardens; alternative products and practices for healthy lawns and gardens; environmentally safe car repairs; and simple and easy home repairs. Most of these workshop programs are free to customers and usually don't last more than a few hours on the weekend. Make time to suggest these alternative workshop themes to local retailers and encourage your neighbors to attend them to learn useful tips that help the environment.

CURBSIDE COLLECTION

Most communities in Los Angeles County have curbside collection or tree recycling programs. However, not everyone uses these services. Items such as Christmas trees or large objects shouldn't be placed in trash containers, and neighbors should be reminded to utilize services the local waste hauler has in place. Send out a handwritten reminder to your neighbors and friends about curbside collection or tree collection events. You can get this information by calling your city's public works or sanitation department.

COMMUNITY GARAGE OR RUMMAGE SALES

A community garage sale involves setting a designated date on which each household on your block (or designated area) holds their own garage sale. If multiple households are involved, the cost of signs, newspaper ads and other expenses can be split between all the participating households.

Community rummage sales are generally fundraisers for local charities. Community members contribute items to the event, and volunteers help staff booths to sell these

items. Talk to your local library, schoolyard, park or retailer with a large parking lot for an event location.

By doing either of these activities you can reduce the amount of garbage that is sent to landfills or is improperly discarded, support your favorite charity and give your old possessions a new life with a different family.

DONATION DRIVES

Your neighborhood can encourage its residents to donate materials to their favorite charities. This might motivate infrequent donors to make a special effort to dig through garages and closets in search of reusable materials. It also encourages those who never donate to get involved. One kind of left-over product that can be put to good use is paint. Paint that is donated to graffiti reduction programs is used to paint-out graffiti in public places. Check the yellow pages under "Human Services Organizations," "Non-profit Organizations," or "Charities" for groups accepting donations, or call your city's public works department to find a graffiti abatement program for your paint.

Information about the activities and organizations mentioned on this sheet can be found in the resources section of this kit.

"Tips for Organizing a Successful Event," a "Pre-Event Planning Checklist," and a "Day-of-Event Checklist" can be found at the end of the "Getting Involved to Erase the Waste" section of this Neighborhood Action Kit.

See the "Sample Planning, Evaluation and Reporting Form" later in this section for information about collecting data on your clean up event and where to send the final report. Individuals who return this form will receive a Certificate of Recognition from the California Water Boards. Return by fax to (916) 341-5252; Attn: Tom Mays.

EVERY PERSON AND EVERY ACTION COUNTS:

IDEAS FOR LARGE GROUPS AND ORGANIZATIONS

Community-based organizations with a large membership can implement on a larger scale any of the activities discussed in the “Ideas and Actions for Your Neighborhood” section, and with additional resources and outreach, larger activities can be considered. Any or all of these events can be conducted to coincide with major events such as Earth Day (April), America Recycles Day (November) or Pollution Prevention Week (September).

Information about the activities and organizations mentioned on this sheet can be found in the resources section of this kit.

Some of these larger-scale activities include:


STORM DRAIN STENCILING

Have your organization stencil storm drain inlets in your neighborhood with a storm water pollution prevention message. A stenciling effort requires coordination with your city’s public works department for permission to paint on sidewalks or streets. Many municipalities have a pre-approved stencil pattern that you must use. Your organization should also find out about specialty paints and application techniques. Call Heal the Bay at 1(800) HEAL-BAY (1(800) 432-5229) for information on their neighborhood stenciling program and to learn how to get involved.

ADOPT-A-BEACH OR WATERWAY, FORM A WATER MONITORING TEAM

This effort is similar to the activity described under the neighborhood activities, but with an organization behind you, it can grow in scope. With a large organization, an ongoing schedule can be established or a larger area can be “adopted” or monitored.

See the “Sample Planning, Evaluation and Reporting Form” later in this section for information about collecting data on your clean up event and where to send a final report.



**MANY OF YOUR
ORGANIZATION’S MEMBERS
MOST LIKELY WORK IN AN
OFFICE. ENCOURAGE EACH
OF THESE MEMBERS TO
ORGANIZE AN OFFICE
CLEAN UP EVENT IN THEIR
RESPECTIVE PLACE OF WORK.**

OFFICE CLEAN UP EVENTS

A large amount of bulky goods are generated from businesses and offices, including used paper. The U.S. Conference of Mayors sponsors its annual Clean Your Files Day to encourage offices to reuse and recycle paper (some communities also focus on other office supplies and equipment). Your office can also organize a swap meet or “white elephant sale” during Second Chance Week, a week created to encourage the reuse of these materials.

Many of your organization’s members most likely work in an office. Encourage each of these members to organize an office clean up event in their respective place of work.

CURBSIDE EXCHANGES

Your organization might consider conducting a curbside exchange event, where a group of residents or businesses leave reusable goods on the curb to be picked up and put to use by other residents or businesses. Another location option for your “curbside” exchange is a local parking lot, such as a library or local business, where all goods can be brought to a single area. When developing your plans for an exchange event, don’t forget to have a plan for proper disposal of goods remaining on the curb or in the parking lot.

A flyer with a signup sheet can be walked around to homes and businesses within a specific area. A follow-up flyer with a list of participating houses/businesses, the timeframe for the event, and the ground rules can be distributed the week prior to your curbside exchange. Think about distributing the follow-up flyer beyond the boundary of the participating area to attract a wider audience. Don’t forget to remove your flyers after the event concludes.



LARGE GROUPS & ORGANIZATIONS



ELECTRONICS RECYCLING

More than 12 million computers are scrapped every year in the United States and many more old computers are being stored in closets and garages. With HDTV being implemented universally in 2006, and computer technology becoming obsolete every 18 months, the problem will continue to accelerate. Non-profit organizations can partner with city departments or computer retail stores for an electronics collection event. Usable equipment can be donated to schools or charitable organizations, unusable equipment can be taken to an e-waste collection event.

MORE THAN 12 MILLION COMPUTERS ARE SCRAPPED EVERY YEAR IN THE UNITED STATES AND MANY MORE OLD COMPUTERS ARE BEING STORED IN CLOSETS AND GARAGES.

USED BUILDING MATERIALS COLLECTION EVENTS

Windows, doors, lumber, plumbing fixtures and appliances can be reused for new construction and for refurbishing older buildings and homes. For example, Habitat for Humanity has established ReStores, a thrift shop that recycles quality surplus, new and used building materials. There are four ReStores in Southern California. Developing a used building materials event is an idea worth investigating.

ReStores in Southern California:

167 Lambert Street
Oxnard, CA 93030
(805) 485-6065

770 North Fair Oaks Avenue
Pasadena, CA 91103
(626) 792-3838

2121 Atlanta Avenue
Riverside, CA 92507-2441
(909) 784-9474

2165 South Grand Avenue
Santa Ana, CA 92705-5204
(714) 434-6202



HABITAT FOR HUMANITY HAS ESTABLISHED ReSTORES, A THRIFT SHOP THAT RECYCLES QUALITY SURPLUS, NEW AND USED BUILDING MATERIALS.

"Tips for Organizing a Successful Event," a "Pre-Event Planning Checklist," and a "Day-of-Event Checklist" can be found at the end of the "Getting Involved to Erase the Waste" section of this Neighborhood Action Kit.

A checklist of publicity activities your organization can undertake to publicize your efforts can be found in the "Working with Media to Erase the Waste" section.

TIPS FOR ORGANIZING A SUCCESSFUL ACTIVITY

As the organizer of a community event, you want to have a successful event without spending all your free time to do it. Here are some simple steps that all event organizers should consider to maximize their time and the success of their event.

1. Pick an activity that is well-suited to your neighborhood, community or organization.

In selecting an activity, think about what the major problems are in your area. If you are uncertain about the major pollution issues in your community, contact your public works department, neighborhood action committee or local environmental group. This will help you select the activity that will make the biggest difference.

Concentrate on littered or graffiti'd areas not normally reached by ongoing programs.

Your area should be of workable size. It is important that you achieve total clean up with your available time and resources.

2. Spend ample time in the planning stage.

It will save you time later. Invite a few neighbors for coffee or snacks, or have a staff or membership meeting. Brainstorm about tasks, resource needs (equipment and people), local business participation, and roles and responsibilities.

Clearly define the goals of your event. For example, how many volunteers you would like to recruit, how large of an area to clean, how many pounds of trash to collect, etc. The satisfaction of a job well done starts with knowing exactly what you want to accomplish.

Dependent upon the area(s) you've selected to clean up, you might need to obtain permission from the property owner or the City. At minimum, let your local law enforcement agency know your group will be conducting a clean up.

Determine who will handle and dispose of the litter, yard waste, charitable donations and used equipment at the end of your event. Your city public works or sanitation department, waste hauler, recycling center or nearby charity store might be able to help. This resource may also help you weigh and/or sort your trash for record keeping purposes and for sharing with the California Water Boards.

See the "Sample Planning, Evaluation and Reporting Form" later in this section for information about collecting data on your clean up event and where to send a final report.

3. Get help from fellow residents, local businesses and other organizations.

You need volunteers to do the planning work and the day-of-event work. Local businesses might be willing to help with trash containers, plastic bags, paint and paint brushes, hoes, rakes and refreshments. But you need to pick up the phone and ask.

Here are some ideas for local partners and how they can get involved:

Hardware stores: Tips on safe use and storage of paints and chemicals; donations of tools and/or materials

Home improvement stores: Demonstrations on safe use of lawn products and proper home improvement practices; donations of tools and/or materials

Nurseries and gardening supply stores: Demonstrations on safe use of lawn products

Waste haulers and recycling centers: Help in clean up of waste gathered at your events

Fast food restaurants and donut shops: Advertising on paper cups and bags and at their establishment; refreshments for your event

Grocery and convenience stores: Advertising on grocery bags

Business associations/improvement districts: Funding, advertising or resources for your event

Environmental or other non-profit organizations: Organizing resources, advertising, networking opportunities, or developing handouts for your event

City/County public works and sanitation departments: Funding, organizing resources, or advertising your event

More information about forming partnerships is included in this section of the Neighborhood Action Kit.

If you need more resources than your immediate neighborhood or organization can provide, here are some organizations that may offer volunteer support:

Youth — Boy Scouts, Girl Scouts, Campfire Girls, 4-H clubs, Future Farmers of America, faith-based groups

Service — Lions, Rotary, Kiwanis

Environmental — Sierra Club, TreePeople, Heal the Bay, Conservation Corps

ORGANIZING ACTIVITIES

Schools — PTA, community colleges, trade schools, adult development centers

Recreational — bass and fishing clubs, rowing clubs, soccer and softball leagues

Marinas — yacht club members

Business — chambers of commerce, trade associations, local retailers

Homeowners — Homeowner and resident associations

A simple flyer or handwritten invitation can be used to recruit your immediate neighbors to join the effort. (A flyer template can be found at the end of this section.) For larger-scale activities involving any of the organizations listed above, let the organization recruit and coordinate their members and give you a report on the numbers you can expect. You can also draft a press release and send it to the local newspaper for placement in the community calendar section.

Prior to the event, all volunteers should receive information about what to wear (type of clothes, shoes, hat, gloves and sunscreen); time and location of designated meeting place; and tools to bring (if they have access to them). After the event, everyone should receive a thank-you note.

See the “Working with Media to Erase the Waste” section in this kit for the proper formats for media materials.

4. Get the word out. Organizers of small neighborhood clean ups (one to two blocks) should tell their neighborhood weekly paper what they are doing to call attention to the problem and to draw volunteer support. After the event, they should also be contacted with a success story of the event. Facts and figures will interest every newspaper – how many people participated, how large of an area you cleaned, how many pounds or bags collected, number of bulky items removed, etc. You can find which papers publish in your neighborhood by looking in the free racks at the grocery store, outside convenience stores, in street containers and at neighborhood restaurants. Inside each paper you will find contact information for the publisher and who to contact.

To generate greater media coverage or involvement for large-scale events, see the “Working with Media to Erase the Waste” section of this kit.


Another way to get the word out is by posting signs and flyers. You can use the ideas provided in the templates in this Neighborhood Action Kit. Also, make sure someone is assigned to remove the signs after the event concludes.

A final idea is to send “blast e-mails” or “blast faxes.” This is usually a single page of information sent (or “blasted”) to a list of people in groups. For example, if you have an e-mail address list for a group of neighbors, you can send a single e-mail to the entire group. The same type of list creation can be done for organizations, partners, businesses and media.

A sample blast e-mail/fax can be found at the end of this section.

5. Measure What You Collect and Tell the California Water Boards. The Water Boards are very interested in hearing about the success of your event and the data you were able to collect. The “Planning, Evaluation and Reporting Form” at the end of this section can assist you in all phases of your event planning and reporting of data. The Water Boards will welcome receiving this form and learning about your clean up efforts. They will send you a Certificate of Recognition as an appreciation for your participation and interest in cleaning our environment.

See the “Sample Planning, Evaluation and Reporting Form” later in this section for information about collecting data on your clean up event and where to send the final report.



**ORGANIZERS OF SMALL NEIGHBORHOOD
CLEAN UPS SHOULD TELL THEIR
NEIGHBORHOOD WEEKLY PAPER WHAT
THEY ARE DOING TO CALL ATTENTION
TO THE PROBLEM AND TO DRAW
VOLUNTEER SUPPORT.**

DEVELOPING PARTNERSHIPS/SPONSORSHIPS

A partner in any of your pollution prevention activities can help in a number of ways including:

- Spreading the word about the problem and the event
- Providing in-kind services, products or funds
- Increasing your resources and budget
- Providing endorsement and support, particularly partnerships with elected officials
- Reinforcing working relationships
- Providing resources
- Producing how-to workshops for do-it-yourselfers and gardeners

STEPS TO DEVELOPING A SUCCESSFUL PARTNERSHIP

Step 1 — Decide what you want or need, then prioritize; for example, volunteer support, products, and endorsements.

Step 2 — Brainstorm with neighbors, staff or friends about potential partners. Create a list of potential partners based on your list of prioritized needs. Also, brainstorm on ways to acknowledge or recognize your partners' efforts and assign someone to ensure the acknowledgement or recognition happens. Here are some ideas of what you can give a partner: recognition in all publicity materials (e.g., flyer, media release); signage at the registration area; and/or acknowledgment from the city council or the homeowners association. At minimum, every partner should receive a personal thank-you note after the event that tells what their contribution accomplished.

See if anyone in your brainstorming group knows someone who works for a listed potential partner or has information that can help you contact the potential partner.

Find out everything you can about the potential partner's business; why should this particular business be interested in the problem or your activity.

Step 3 — Ask for Assistance. You can ask for bottles of water, volunteers, trash bags, publicity and/or money, or other services and supplies. Requests can be made by phone, introductory letter or e-mail. The approach is dependent on whether you (or someone else) know the potential partner and/or whether the partner knows about your effort or organization.

Before you make the contact, know exactly what you want to say, concisely:

- Who you are
- What you want (have specific ideas and a backup wish list)
- Why you want it
- What the partner gets out of it

Be prepared to be flexible. Leave the options open. Engage the potential partner in a discussion that can lead to new and different ideas.

Step 4 — If you are successful in securing a partner — get it in writing. Write a simple letter of understanding that both of you sign. It should state exactly what the partner has agreed to, what the timeframe is and what the partner will be given in return.

Make sure that you provide the partner with all the promised benefits; recognize their support through a thank-you letter or proclamation or other public acknowledgement. Send them copies of any media coverage about the event or activity.

A sample partnership letter can be found at the end of this section.

SAY CONCISELY WHO YOU ARE,
WHAT YOU WANT, WHY YOU WANT IT,
AND WHAT THE PARTNER
GETS OUT OF IT.

PRE-EVENT PLANNING CHECKLIST

Individuals and organizations can use the comprehensive list below in planning a variety of events. Select the tasks that apply to your event and ignore the remainder of the list.

Apply for available grants (this requires several months of lead time). Neighborhood groups or non-profit associations may apply to local, regional or state organizations for funds to use in clean up activities. The U.S. Environmental Protection Agency has an on-line grant-writing tutorial at <http://www.epa.gov/seahome/grants/src/msieopen.htm>.

While grant application requirements vary from agency to agency, they all require the following information: Name of group, contact person, type of activity, who or what the activity benefits, how many people are involved, a task or activities plan, what quantifiable outcomes are expected, how much money is being requested and what specific activities will be covered under the grant.

Form an organizing group that includes neighbors; friends; members of your agency's staff; representative(s) of your partners including a waste hauler, participating organizations and/or a representative of the area targeted for clean up.

Select a site location(s) for the clean up and estimate the types and amount of litter that needs to be removed.

Determine the number of volunteers needed.

Set goals that can be measured and recorded. For example, the number of volunteers involved; the number of trash bags filled; the number of bags of recyclables redeemed.

The sample reporting form at the end of this section can be used for both planning and reporting. In the first column you can write your target goal numbers (e.g., volunteers, sponsors) and in the second column, after the event, you can write what you actually accomplished.

You or your organization will receive a certificate of acknowledgement from the California Water Boards if you fax the completed form to the Water Boards after the event. Fax to (916) 341-5252; Attn: Tom Mays.

Confer with site residents/occupants about what will be involved.

Contact potential partners.

Tips for developing partnerships and a sample partnership letter can be found at the end of this section.

Obtain a permit(s) or entry permission if either is required.

Collect lists of organizations with potential volunteers.

Contact organizations and request a specific number of volunteers (if more help is needed).

Plan your publicity (media, speakers bureau, flyers, posters).

Write and create promotional materials (e.g., flyers, media advisory, media release). Don't forget to remove any signs or flyers you post.

An *Erase the Waste* neighborhood clean up flyer template can be found at the end of this section and media material templates can be found at the end of the "Working with Media to Erase the Waste" section.

Order volunteer giveaways (if budgeted).

Inform local law enforcement about your clean up effort.

Arrange for trash disposal and prepare for recyclables (CalMAX, charity shops, charitable organizations).

Plan for refreshments.

Plan for restroom facilities (if needed).

Select a meeting point or main registration area for the day of the event.

Prepare and send media advisories, public service announcements and stories to the local media. Make follow-up phone calls.

Communicate with volunteers and/or organizations providing volunteers to inform everyone about: what to wear (type of clothes, shoes, hat, sunscreen); time and location of designated meeting place; and tools to bring (if they have access to them).

Arrange for first-aid supplies or personnel to be on hand.

Decide if you want or need to take pictures. These can be used on your Web site, in newsletters, for future publicity, grant and award applications, or just for fun.

DAY-OF-EVENT PLANNING CHECKLIST

Individuals and organizations can use the comprehensive list below for day-of-event tasks. Use the tasks that apply to your event and ignore the remainder of the list.

Arrive early to set up the registration area and greet participants. Place directional signage if needed. Volunteers at large events should complete a registration sheet with detailed contact information and sign a release and indemnification form. (A sample form can be found at the end of this section.)

Have your permit or written entry permission available if needed.

Make sure your waste hauler has trash and recyclable containers and weight scales in position and is available for assistance.

Give volunteers the following instructions (oral and written):

- Project goals and project area description.
- Restroom locations (if needed).
- General safety rules:
 - Use caution when working along public streets. Work facing oncoming traffic.
 - Do not trespass on private property or neighbors' yards.
 - Do not pick up or touch: hypodermic needles, medical waste, condoms, chemical containers, dead animals or sharp items. Contact the event organizer and identify these materials for him/her.
 - Do not lift heavy/bulky items without assistance.
 - Drink plenty of water.
- Location to receive empty bags and drop-off full bags of litter/recyclables.
- Who to contact in case of emergency.
- Where first-aid supplies are located.
- When the event will conclude.
- Where the water and/or other refreshments will be located.

Give volunteers other options in case they finish early.

Make sure all trash and recyclables are disposed of properly.

Take pictures.

Thank volunteers and distribute giveaways (if purchased). If possible, send a post-event thank-you letter to each volunteer.

Complete the reporting form in this kit.

The sample reporting form at the end of this section can be used for both planning and reporting. In the first column you can write your target goal numbers (e.g., number of volunteers, number of sponsors) and in the second column, after the event, you can write what you actually accomplished. You or your organization will receive a Certificate of Recognition from the California Water Boards if you fax the completed form to the Water Boards after the event. Fax to (916) 341-5252; Attn: Tom Mays.



**THE WATER BOARDS ARE VERY
INTERESTED IN HEARING ABOUT
YOUR EVENT. LET US KNOW
ABOUT THE CLEAN UP ACTIVITIES
HAPPENING IN YOUR
COMMUNITY.**

ACTIVITIES FOR KIDS

ANTI-LITTER AND BEAUTIFICATION ACTIVITIES TO DO WITH CHILDREN

LITTER

1. When you take your children for walks or to the park or beach, help them pick up trash such as paper, cups and food wrappers, and throw them in the nearest trash can. Teach them about dangerous litter, and to avoid handling these items.
2. Organize a neighborhood or park clean up with your children. Do it as part of a spring and fall cleaning schedule. If you don't want to organize a clean up, participate in one that someone else organizes.
3. If you are involved with your child's school, help organize a "litter drive" around the school as a recess or after-school activity.
4. Challenge your children and their friends to a photo contest. You can use inexpensive disposable cameras that will be recycled after processing. The objective is to take pictures of places with litter or graffiti that can be cleaned and fixed up.
5. If you have a pet, take a "pet pledge" with your children. Each of you pledges to always pick up after your pet. On your computer, or with crayons, create a pledge form that each of you can sign on behalf of your pet.
6. As a home art project, have your kids make litter bags for your car.

REUSE AND RECYCLING

1. On your walks, bring along a bag to collect recyclables, such as bottles and cans, and then take a trip to the nearest recycling center so your children can redeem them for piggy bank money.
2. When your child tires of or outgrows toys or clothes, talk to them about donating them to a charitable organization or giving them to someone who might need them and love them as much as your child did. Take your child with you to the donation center and let him/her help you unload the car. With your child, talk to the attendant about what happens to the donations and who benefits from them.
3. If you and your children have a lot of reusable items and want to make some money for their education fund, have your children help organize a garage sale. Involve your neighbors and their children.
4. Remind your children there are two sides of the paper when they draw and write, and encourage them to use both sides before recycling it. You can do the same with your grocery lists and telephone note pads.
5. Give your child a "cool" lunch box for school and use this instead of paper bags. Pack sandwiches and other lunch items in reusable plastic containers instead of wrapping them in paper or plastic wrap.

OTHER ENVIRONMENTAL LESSONS

1. Rule of thumb: Show your children by doing. Be a good example for them.
2. Add books and stories about nature and the environment to your children's reading library. Read the books to and with them.
3. Take your child to a local nursery or gardening center to pick out a shrub or tree to plant in a pot or in your yard. Planting a shrub or tree is fun and can help stop soil erosion by securing the soil with its roots. (Loose soil can get into waterways, and create pollution known as sedimentation.) They also provide beauty, shade, attract birds and will reduce carbon dioxide in the air. Native trees are especially good because they require fewer environmental resources, such as water. Every year, the tree or shrub will grow, giving your child a sense of accomplishment.
4. Grow small greenery in your house and have your children help care for them. Salad greens, flowers and herbs are easy to grow in containers on a sunny window sill.
5. Join a nature conservancy or environmental group and get involved with your child on group outings.
6. Attend a public hearing on an environmental issue. Take your children along with you.
7. If your child is in a scouting program, help them earn their nature/environmental badge(s).
8. Take family trips to parks, gardens, aquariums and natural history museums.

9. Help your child participate in his or her school science fair. Plan a project that demonstrates environmental health and safety.
10. Involve your child's school. The sooner positive environmental habits are instilled in children, the better our environment will become over the long term. Even on school campuses, many fun environmental activities can be undertaken by teachers and students, such as starting on-campus lunch recycling programs or conducting on-site water pollution monitoring programs. Through these activities, students see first-hand the benefits of environmental action and understand that they can make a difference. Go to <http://www.swrcb.ca.gov> and click on "water education" for more information about environmental resources for schools. Or for more education ideas and materials, go to <http://www.treepeople.org>, <http://www.healthebay.org> and <http://www.projectwet.org>.
11. For teachers – Jiminy Cricket's Environmentality Challenge provides an opportunity for your class and all other fifth grade classes in the State of California to "think green." It's a challenging and fun hands-on experience that will help fifth graders learn more about their environment and allows the State of California to show them why "it's cool to care" about the earth. The purpose is to encourage students to think and act environmentally at school, at home and in their community. In California, Jiminy Cricket's Environmentality Challenge is a partnership between The Walt Disney Company and the State of California's Environmental Education Interagency Network (CEEIN). CEEIN includes representatives from the California Environmental Protection Agency (including the California Water Boards), the Department of Education, the Department of Food and Agriculture, the State and Consumer Services Agency, the Resources Agency and the United States Fish and Wildlife Service. To learn more about this program, you can call the hotline at 1(800)290-0299 or visit the Web site <http://www.oehha.ca.gov/ceein/jim/index.htm>.

ANTI-GRAFFITI

THINGS YOU CAN DO TO HELP REDUCE GRAFFITI

1. Get educated. Learn about graffiti, how it impacts your community, and who is responsible for graffiti prevention and clean up in your area.
2. Donate your old, left-over paint to a graffiti abatement program in your neighborhood or take it to a Household Hazardous Waste Collection Event where it will be used to wipe out graffiti. Never dispose of paint down the drain or in the trash or street.
3. Report graffiti immediately to the appropriate authorities. Statistics show the faster graffiti is removed, the slower it is to return.
4. Organize a paint-out. Local paint dealers are often willing to donate paint and brushes for volunteers to use for graffiti clean up.
5. Plan a mural to cover a wall plagued with graffiti.
6. Coordinate a graffiti awareness campaign at your school or in the community.
7. Make a presentation on graffiti prevention to your school class or neighborhood group.
8. "Adopt-a-wall" in your school or community and make sure it stays clean and free of graffiti.
9. Plant trees or other greenery near a graffiti-plagued wall. Landscaping can also slow down the occurrences of graffiti vandalism. There are a variety of shrubs and vines that can be planted against walls and buildings. For example, the City of Long Beach has a Graffiti Landscape Grant Program from which residents and businesses can apply for financial assistance to plant these types of foliage.
10. Ask your community to install lighting in areas that are dark and often hit with graffiti.
11. For graffiti removal in the unincorporated areas of Los Angeles County, call 1 (800) 675-4357. The hotline is answered 24 hours a day, seven days a week and the County strives for a 48-hour response time. The hotline can also provide information about other agencies that provide graffiti removal when it is not the responsibility of Los Angeles County. These include: Parks and Recreation, Caltrans, Metropolitan Transit Authority (MTA), Metrolink, United States Post Office, Southern California Edison and the 88 cities within the county.

SAMPLE RELEASE AND INDEMNIFICATION FORM

(This form is provided for guidance only. It should not be considered as legal advice or taken in place of legal consultation.)

I, _____, am a volunteer for the (EVENT NAME) being conducted by (ORGANIZING BODY [IES]) on (DATE) at (LOCATION).

I understand that I voluntarily assume all risk of accident, injury or damage, and release and forever discharge the producers, co-sponsors, employees, agents or representatives of the (ORGANIZING BODY [IES]) from any and all liability for personal injury or property damage of any kind sustained in association with or during participation in this event, regardless of whether such personal injury or property damage is caused by negligence of the producers, co-sponsors, employees, agents or representatives of the (ORGANIZING BODY [IES]).

I agree to indemnify and hold harmless the producers, co-sponsors, employees, agents or representatives of the (ORGANIZING BODY [IES]) from all liability, loss and expense, including, but not limited to damages, legal expenses and cost of defense in any matter arising during or from the participation in the (EVENT).

I further agree that I will abide by all applicable rules and regulations promulgated by the producers, co-sponsors, employees, agents or representatives of the (ORGANIZING BODY [IES]) and agree to follow the instructions of all volunteer supervisors who are connected with the (EVENT).

Participant (signature)

Participant (please print)

Date

SAMPLE PLANNING, EVALUATION AND REPORTING FORM

COMMUNITY BEAUTIFICATION/CLEAN UP EVENT

(This form can be used as a planning, evaluation and reporting tool.)

Fax final report to (916) 341-5252; Attn: Tom Mays. You or your organization will receive a Certificate of Recognition from the California Water Boards.

Name of event: _____

Type of event: _____

Date: _____

Location: _____

Contact person: _____

Phone: _____ E-mail: _____

GOAL	PRE-EVENT PLANNING <small>(the number you need or would like to obtain)</small>	POST-EVENT ACTUAL <small>(the number you actually obtained and counted after the event was over)</small>
Number of volunteers		
Total amount of partner/sponsor money raised or in-kind contributions	\$ Potential list:	\$ Actual list:
Number of blocks cleaned OR size of area cleaned		
Number of bags of litter collected		
Number of pounds of litter collected		
Number of bags of recyclables collected		
Number of pounds of recyclables collected		
Number of incidents of graffiti painted over		
Amount of bulky items removed (appliances, furniture, etc.)		
Storm drain stenciling – number of stencils painted		

SAMPLE PLANNING, EVALUATION AND REPORTING FORM — PAGE 2

COMMUNITY BEAUTIFICATION/CLEAN UP EVENT QUESTIONS

1. What was the most common type(s) of trash found?

- a)** cans **b)** tires **c)** packaging
d) fast food containers **e)** plastic bags **f)** bottles

Other (please specify): _____

2. Does it appear the site may be used as an illegal dumping spot (presence of appliances, tires, bags or trash, etc.), or do the trash items appear to have collected here at random? Share your findings with local public works staff and specify below:

3. Did you encounter any items that may pose a threat to human health? (e.g., medical waste, pet waste, diapers, human waste, pesticides, ponded-water in open cans or tires that breed mosquitoes, broken glass, etc.) Share with local public works staff, local authorities and specify below:

4. Does it appear that the trash can be traced to a particular group, organization, business or activity (e.g., restaurant litter, homeless encampments, etc.)? Use this information to contact your local public works department and/or local businesses, organizations for assistance. They might help develop an education program with you, or intervene on matters involving public health or safety.

5. List locations of the following (If applicable):

Graffiti removal: _____

Stenciling: _____

6. Has this site been the subject of a clean up effort in the past? If yes, please rate the level of site cleanliness prior to the event based on earlier clean ups:

- a)** major improvement **b)** some improvement
(Less than half the amount of trash) (Less than one-quarter the amount of trash)

- c)** same **d)** worse

7. If the site is cleaner than in the past, please list what education efforts your group has done to make a difference (circle all that apply):

- a)** door-to-door canvassing **b)** community flyers
c) media coverage **d)** business/partner
e) diversion (recycling efforts, etc.) cooperation

Notes: _____

Answer these additional questions for streamside clean ups near creeks, rivers, lakes, bays and the ocean

1. Please describe the waterway by smell:

- a)** rotten egg **b)** musky **c)** petroleum
d) no odor **e)** other: _____

2. The top of the water is:

- a)** foamy **b)** scummy
c) oil sheen **d)** covered with pond weed
e) covered with algae **f)** other: _____
(if so, color: _____)

3. The water itself is:

- a)** muddy **b)** milky
c) brown **d)** clear
e) other: _____

4. How deep is the water? _____

5. Do you see any creek life in or around the waterway? If yes, list below (e.g., crayfish, birds, insects):

6. Describe the waterway (circle all that apply):

- a)** shaded with tall trees **b)** grass **c)** tall brush
d) back yards **e)** no trees
f) other (specify): _____

Note to clean up teams: The Water Boards encourage you to revisit your site periodically to conduct clean ups, evaluate your effectiveness, work with local government, businesses and organizations to erase the waste.

Help Erase the Waste for our Kids' Sake

**Community Clean Up
Event Will Make Our
Neighborhoods Safer for
Children and Families**



YOU'RE INVITED!

Help prevent pollution in our neighborhood and in our local waters by joining **[sponsoring organization]** as we host an *Erase the Waste* event.

Come and learn about ways to be a part of the solution and take action to prevent pollution.

Always throw trash in a trash can or recycling container, put cigarette butts in an ashtray and pick up after your dog every time.

Meet your neighbors and join us as we help protect the health of our neighborhood.

**[MEETING PLACE]
[DATE] [TIME]
[ADDRESS]**

**Contact: [NAME]
[ORGANIZATION]
[PHONE NUMBER]**

For more information about how to erase the waste in our community and waters, log on to www.erasethewaste.com or call 1 (888) CLEAN-LA.

Printed on recycled paper.

SAMPLE E-MAIL AND FAX BLASTS

* Community Clean Up Event in Our Area *

[DATE]

HELP ERASE THE WASTE FOR HEALTHIER FAMILIES AND A HEALTHIER COMMUNITY

Community Clean Up Event Spotlights the Importance of Pollution Prevention

The *Erase the Waste* campaign aims to teach local residents about the simple steps we all can take to reduce storm water pollution in our community. Join community leaders, local youth groups and elected officials in a day of outdoor fun as we clean up our park and learn about the role each of us plays in keeping our community healthy and safe.

The *Erase the Waste* campaign encourages L.A. County's nearly 10 million residents to take ownership of their communities, help reduce storm water pollution by cleaning trash and pollution from the local landscape, and be part of the "pollution solution." For more information about how to erase the waste in your community, log on to www.erasethewaste.com or call 1 (888) CLEAN-LA.

The event begins at 10 a.m. and will run approximately two hours.
Refreshments will be served.

Location
[ADDRESS]

Directions
[Provide directions such as: Enter Longwood Park from Grant Avenue, near the intersection with Shallow Hill Way. Follow the *Erase the Waste* signs to the Picnic Area]

Contact Information
[Name, Phone Number, Extension]

SAMPLE PARTNERSHIP LETTER

[DATE]

[CONTACT NAME]

[NAME OF ORGANIZATION/BUSINESS, ADDRESS OF ORGANIZATION/BUSINESS]

Dear [CONTACT]:

Partnering with Erase the Waste is a great way to show your [CUSTOMERS/MEMBERS] that you care about the health of our community!

If [ORGANIZATION/BUSINESS] would like to:

- Demonstrate its commitment to the communities it serves
- Align itself with an important issue that impacts all of us
- Define itself as environmentally responsible

...then partnering with *Erase the Waste* is a great fit for your company/organization.

The State of California has made reducing storm water pollution in Los Angeles County a top priority. Storm water pollution is the greatest danger to water quality in Southern California and poses significant threats to public health and safety, natural resources and the region's economic vitality. With a high-density population of almost 10 million residents, the region creates an overwhelming volume of trash that ends up polluting our neighborhoods and waterways.

The *Erase the Waste* campaign encourages L.A. County's residents to take ownership of their communities, help reduce storm water pollution by cleaning trash and pollution from the local landscape, and be part of the "pollution solution." Among other tips, the campaign encourages residents to: throw trash in a trash can or recycling container, always put cigarette butts in an ashtray, pick up after their dog every time and join or organize a community clean up to help protect their neighborhood.

Let's work together to educate your customers on ways to Erase the Waste.

[Company/Organization] can help spread the word about storm water pollution prevention to the community by partnering with the *Erase the Waste* campaign. I'd like to invite you to consider:

- **Hosting a Community Clean Up** – organize, publicize and bring your group to a local event where we'll:
 - Beautify a local beach, park or playground
 - Share information on recycling and preventing pollution
- **Publicity** – Can you help us get the word out by running an announcement about our clean up on your Web site, in employee communications materials or placing a posting on your bulletin board?
- **In-Kind Donations** – Can your company/organization donate or lend equipment that can be used for our clean up, such as:
 - Brooms and rakes
 - Buckets, gloves and bags
 - Tables, chairs and microphones
 - Printing and advertising resources

We all share a responsibility for the health of L.A. County's communities, neighborhoods and beaches. Please join us in doing your part. For more information about how to erase the waste in your community, log on to www.erasethewaste.com or call 1 (888) CLEAN-LA.

We are eager to build a partnership with your company/organization. We will follow up with you in the next few weeks to discuss this opportunity. In the meantime, please feel free to call me at [TELEPHONE NUMBER] with any questions you may have.

Sincerely,

[NAME]

[NAME OF ORGANIZATION]



SECTION 3

**SPEAKING OUT TO
ERASE THE WASTE**

SPEAKING OUT TO...

Speaking to others about pollution prevention is a very effective way to encourage them to take action to keep their neighborhood healthy and clean. However, chances are you have read or heard that public speaking is one of our greatest fears, but it really doesn't have to be. You'll find that if you start by speaking to a small group of people who are interested in learning about something you are passionate about, it's not that hard. Once you get comfortable with small groups, you can start expanding to larger groups.

Start out talking to your neighbors and don't forget to include your children and their friends.

Here are several ideas for small group talks with familiar people:

- Your neighbors during a homeowners association meeting or other neighborhood gathering
- Your child's Boy or Girl Scout troop, or similar organization meeting
- Your child's school class
- PTA meetings
- Your child's soccer or little league baseball team (you can use this opportunity to promote a litter-free event)
- Your place of worship
- A networking or civic group to which you belong

Here are a few ideas for subjects:

- Plan a neighborhood clean up. Tell them why it's important, how much time it will take and what they need to do.
- Share a community clean up/beautification success story. Talk about what you learned and what could be done next.
- Relate a personal experience(s) or things you've seen (piles of bulky items, excessive littering, reoccurring graffiti). Share your concerns about the health and safety of the community, your children and the environment.
- Talk about how the neighborhood can increase its recycling of Household Hazardous Waste, electronics and building materials.
- Provide ideas for a litter-free event.
- Describe approaches to reducing graffiti and tagging in your neighborhood. Talk about methods of removing graffiti from various surfaces.

- Have seasonal conversations about:

Spring gardens and yards – water conservation, effective fertilizing and pesticide use, recycling yard waste and safe storage of hazardous materials and supplies.

Winter – recycling Christmas trees; using less and reuse of holiday wrapping; how to reduce, reuse and recycle during the holiday period; New Year's resolutions to fight litter; keeping your neighborhood clean; using less toxic products around the house.

Back-to-school – purchasing school supplies made with recycled content; using lunch boxes with reusable sandwich containers instead of paper bags and disposable wrappers.

Once you've developed a comfort level in speaking to the neighbors, your friends and smaller groups of people, here are some organizations/groups you can contact to find other speaking opportunities or to join their speakers bureau:

- Chambers of commerce
- Visitors and convention bureaus
- Environmental groups
- Lawn and garden clubs
- Museums
- Rotary clubs
- Public hearings and meetings

ONCE YOU GET COMFORTABLE SPEAKING WITH SMALL GROUPS ABOUT POLLUTION PREVENTION, YOU CAN START EXPANDING TO LARGER GROUPS.

CREATING AN ORGANIZATIONAL SPEAKERS BUREAU


Speakers bureaus are groups of specially-trained representatives who can knowledgeably talk about a specific topic, process or program. Speakers bureau members can be organization staff members, or experts who come from the community as volunteer speakers. Speakers bureau members speak to public and private organizations and groups on educational topics, issues of concern, specific projects, programs or planning activities.

SPEAKERS BUREAU MEMBERS CAN:

- Provide in-depth information and expertise to the general public in a personal format.
- Put a human “face” on the organization.
- Listen to people’s concerns.
- Answer questions.
- Build relationships with community members.

SPEAKERS BUREAUS ARE USEFUL AND COST-EFFECTIVE

- They expand possibilities for community education and participation.
- Speakers can also expand the distribution and public understanding of printed materials.
- Speakers bureaus can be integrated into a larger effort with a variety of other public involvement techniques.
- Speakers bureaus can address a wide variety of groups from civic to social, from professional to neighborhood, and from youth to special interest groups.
- Speakers bureaus help the community understand the organization and its work.



TIME – AS OPPOSED TO MONEY – IS THE LARGEST INVESTMENT INVOLVED IN DEVELOPING AND MAINTAINING A SPEAKERS BUREAU.

YES! IT’S EASY TO ORGANIZE A SPEAKERS BUREAU

Time – as opposed to money – is the largest investment involved in developing and maintaining a speakers bureau. In reality, the greatest time investment comes in the development stage. Once the speakers bureau has been developed, maintenance time can be minimal as long as the bureau manager keeps records on a regular basis.

Setting up and running a speakers bureau can be accomplished in six steps:

Step 1 — Determine who will be the manager of the speakers bureau

One person should be designated as the overall manager for the bureau to ensure accountability. The manager can then designate staff persons to assist or be responsible for activities.

Step 2 — Select the speech topics

It is recommended that you focus on four to five overarching topics. These can be advertised in your promotional materials to the general public. Within each of these topics, you can tailor sub-topics for each group.

Step 3 — Identify speakers for each topic

Since speakers are perceived as representatives of an organization, it is important that your organization selects and/or recruits people who are (1) knowledgeable about the topic and (2) willing to do the job. Speakers function as ambassadors and their work should represent an organization’s best efforts. Remember, they become the “face” of the organization, reflecting its enthusiasm, attitude and expertise.

Step 4 — Prepare speakers and materials

You need to train and equip speakers for their presentations. Don’t assume that because a person is knowledgeable about the subject, that they don’t need a little training specific to presenting this knowledge to a group of listeners. In successful presentations the words are prepare, prepare,

SPEAKERS BUREAU

prepare, regardless of how well the speaker knows the subject. Prepare a core presentation or key talking points, as well as collateral materials to distribute at speaking engagements (e.g., fact sheets, tips, reprinted articles).

Step 5 — Promote your speakers bureau

Opportunities to promote your speakers bureau include: sending a media advisory to your local newspaper and public access TV station; adding a promotional page to your Web site; including a simple advertisement/notice in your organization's newsletter; posting a flyer on bulletin boards in public places; and sending reminder e-mails to your membership list, friends and colleagues.

A publicity flyer and blast fax/e-mail template, which can be used for bureau publicity, can be found at the end of the "Getting Involved to Erase the Waste" section.

A checklist of publicity activities for the speakers bureau can be found in the "Working with Media to Erase the Waste" section of this kit.

Step 6 — Schedule and track presentations

The initial task is to let groups and organizations know an expert speaker is available and willing to speak to the group. General categories of potential groups are listed earlier in this section. The best and easiest way to arrange speeches is to target existing meetings. These meetings have set formats and offer an existing audience.

Use letters or phone calls to arrange speaking opportunities. Note: if you send an initial letter, it should be followed up with a phone call. If you start with a phone call, you should confirm your phone conversation in a letter. Scheduling – as well as solicitation – is an ongoing process.

It is important to track the presentations made, so that you are able to make a complete report at the end of each quarter or year. You can also use this schedule to post on your Web site, as well as for use in funding applications for public education grants.

POINTERS FOR SPEAKERS

1. The single best way to have a successful presentation is to prepare properly.
2. The frequency of practice is better than the length of practice session.
3. Focus on what you have to say – not on the fact that you are saying it.
4. Using conversational language is the best way to assure common understanding among the members of the audience. Be careful about the use of jargon and slang. Be sure that everyone will understand what you mean.
5. Concentrate on clear, crisp articulation throughout the presentation.
6. It is not just what you say that counts...it's how you say it. If you mean what you say...say it like you mean it.
7. The expression on your face must match the meaning of the words you are using.
8. Always give the audience eye contact because: (1) it involves your audience; (2) it keeps you aware of their reactions to what you say; and (3) it helps you identify friends and foes.
9. An audience's initial impression of a speaker is made within the first three to four seconds the audience sees him or her.
10. Use visuals when appropriate – a picture can be worth a thousand words; however, if you don't want to talk about something, don't put it on a visual.
11. Stay with one major subject per visual.
12. If you want the audience to look at the visual, you look at it. If you want the audience to look at you, you look at them.
13. Find the farthest object in the room and project your voice to that object.
14. Don't handout materials or samples during your presentation.
15. Choose your questioners from varying positions in the room. Give the person asking the question your full attention. If you don't understand a question, make the questioner repeat it. Don't guess about the question or the answer.
16. Repeat all questions in your own words. This ensures you understand the question being asked and gives the rest of the audience a chance to hear the question. Repeating the question also gives you time to mentally compose the best answer.

For information about how to improve your public speaking skills, you can visit organizations such as Toastmasters at <http://www.toastmasters.org>.

HOW TO DEVELOP YOUR SPEECH

1. Decide why you are talking to the group.
 - Are you selling an idea? (“Let’s have a community clean up.”)
 - Are you delivering information? (“We need to get the litter out of the streets and gutters, so it doesn’t clog the storm drains and pollute the Los Angeles River.”)
 - Are you explaining technical information? (“The Los Angeles River has high levels of bacteria due to the amount of animal waste being carried to it through urban runoff.”)
2. Identify the people who will be listening.
 - Who are they?
 - Why are they there?
 - What are their interests?
 - What motivates them?
3. Pre-think what’s important to the listeners (health, safety, convenience, noise, cost, time constraints).
4. Know what you want the listeners to do.
 - Say yes or no.
 - Sign up for a task.
 - Give an opinion or provide input.
 - Approve something.
5. What’s your message?
 - This is the most important part of the presentation.
 - The message is what the listeners know, think or do after you have completed your speech.

BLUEPRINT FOR BUILDING YOUR SPEECH

WHAT IS YOUR MESSAGE?

For example... “The vacant lot on our block is dangerous for our children because it is full of tall weeds and trash. The litter is blowing into the street, clogging the storm drains and being carried to the Santa Clara River, polluting it. It is making our whole street look ugly and rundown.”

SUPPORT YOUR MESSAGE WITH FACTS...

“There is a pile of broken bottles that can seriously injure a child.”

“The weeds are providing cover for stray animals including rats, which are attracted to litter.”

“The litter is blowing into our yards and into the street. I picked up a garbage bag full in my yard this week.”

“Mr. and Mrs. Smith have their house on the market and a nearby dirty lot is creating a bad impression for buyers. This hurts the value of all of our houses.”

CLOSE WITH YOUR MESSAGE AND ASK FOR WHAT YOU WANT...

“We have a serious problem as long as the vacant lot is overgrown and full of trash. I am concerned for my child’s health and safety. And, I don’t want the value of my house to suffer or see the neighborhood decline.”

“I think we should take one hour this weekend and, as a group, do a clean up at the vacant lot.”

“If we all bring trash bags, gloves and some yard equipment, we can make it look better and be safer in no time. Who will join me this weekend?”

SAMPLE SPEECH BASED ON THIS OUTLINE

Audience: Members of a homeowners association, annual meeting

Speaker: Homeowner, member of association

Good evening. My name is John Thomas and I live at 123 Morning Glory Circle.

I asked to be on tonight's agenda because I am concerned about the vacant lot on our block that is full of weeds, trash and possibly animals like rats. I have two children, ages eight and 10. I have told them not to play in that lot, but I realize it is tempting for them...as well as for some of your children. They play together and sometimes the temptation to explore is greater than my warnings.

In addition to my concern about our children's safety, I am also concerned about the way it makes our neighborhood look...and about the fact that some of the litter is blowing into other yards and into the street, which clogs the storm drains. Sometimes it is carried down the storm drain channel and then it ends up in the Santa Clara River, making it polluted and look ugly. Last year at the Santa Clara River Rally, more than 100 pounds of trash was collected. A lot of this trash is coming from neighborhoods just like ours. Once it enters the nearby waterways, it creates further problems by harming fish, wildlife, plants and water quality.

From personal experience in the past month, I have collected a 30-gallon trash bag of litter coming from the lot into my yard.

Lastly...Mr. and Mrs. Smith have put their house on the market and this lot is creating a bad image to potential buyers. Not only does this hurt the Smith's house, but it could also hurt the value of our own houses if it appears that we don't care about the way our neighborhood looks.

I believe this is a serious problem as long as the vacant lot is overgrown and full of trash. I am concerned for my child's health and safety. And, I don't want the value of my house to suffer or see the neighborhood decline.

I would like to propose that we organize a small neighborhood clean up event on Saturday, May 8. If everyone would commit one hour, we could have the lot cleaned up in no time.

I will volunteer to find the owner of the lot and get permission to pick up trash, mow it, trim the bushes and paint-out the graffiti on the fence posts.

Who will volunteer to help? [Pass around a signup sheet]

Who can bring litter bags? Clippers? A lawn mover?

Who has left-over paint in their garage and a paint brush?

Who will volunteer to dispose of the trash? And the recyclables?

Can everyone meet at 10 o'clock Saturday morning? I'm certain we can be done by noon. If enough people are interested, maybe we could conclude the morning with a picnic lunch.

This is a great response. Thank you. I will call everyone on the list the Wednesday before the 8th and touch base with you. See you on Saturday the 8th.

KEY MESSAGES: LITTERING, POLLUTION AND YOU

These are some important facts, figures and messages that you can share with your neighbors and contacts. Additional information about how to erase the waste in your community can be found at <http://www.erasethewaste.com>, 1 (888)CLEAN-LA or at any of the Web sites listed in the resources section of this kit.

ERASE THE WASTE STORM WATER PUBLIC EDUCATION CAMPAIGN

- The *Erase the Waste* campaign is the first State-funded countywide storm water public education campaign. The outreach includes Spanish and English paid television, radio and print media, media relations, outreach to community-based organizations, promotions with retailers and school-based environmental education.
- The *Erase the Waste* campaign is designed to primarily reach those residents identified through research as the “greatest polluters most likely to change their behaviors.” This group comprises 72 percent of the county’s population, more than seven million residents, representing all ethnicities, genders and socio-economic levels.
- The *Erase the Waste* campaign encourages L.A. County’s nearly 10 million residents to take ownership of their communities and help reduce storm water pollution.

Among other tips, the campaign encourages residents to: throw trash in a trash can or recycling container; always put cigarette butts in an ashtray; pick up after their dog every time; fix leaking vehicles; practice safe gardening and home improvement activities; join or organize a community clean up to help protect their neighborhood.

- The *Erase the Waste* campaign is being funded in its entirety by corporate and industry polluter fines through California’s Cleanup and Abatement Account. No taxpayer funds are being used to underwrite this campaign.

**THE ERASE THE WASTE CAMPAIGN
ENCOURAGES L.A. COUNTY’S
NEARLY 10 MILLION RESIDENTS TO
TAKE OWNERSHIP OF THEIR
COMMUNITIES AND HELP REDUCE
STORM WATER POLLUTION.**

STORM WATER POLLUTION

- In Los Angeles County, approximately 100 million gallons of contaminated water and debris drain through the storm drain system each dry day. That would fill the Rose Bowl 1.2 times. On rainy days the flow can increase to 10 billion gallons per day.
- Local Los Angeles County beaches, Santa Monica Bay and the Pacific Ocean suffer dramatically from the effects of storm water pollution. With storm drain outlets flowing directly into the ocean, millions of gallons of polluted water heads unfiltered to our beautiful beaches and bays each day. Storm water pollution increases bacteria levels at our local beaches, making ocean water too polluted for human use, leading to beach advisories, warnings and closures and creating serious health risks to people swimming or fishing in these areas.
- A study conducted by the Santa Monica Bay Restoration Project found that storm water pollution in the ocean leads to increased risk of viral infections, earaches, sinus problems, fever, flu, skin rashes and viral diseases such as hepatitis for those swimming in the ocean close to storm drain outfalls, especially following a rainstorm when litter and contaminants are flushed into the storm drain system.*
- Fifty-six percent of monitored L.A. County beaches received a failing grade during wet weather in Heal the Bay’s 2002-2003 Beach Report Card, and beach attendance has also dropped 56 percent in the past 20 years – threatening tourist-related revenues.
- During 2002, bacteria levels at Los Angeles County beaches exceeded State water quality standards at numerous locations, leading to 269 warnings posted on Los Angeles County beaches for a total of 1,181 days where the ocean was too polluted for human use.
- Remember, whatever is discharged into the street or on the ground flows to a storm drain and eventually makes its way to the ocean. Never put anything but clean water into a gutter, open drainage ditch or down a storm drain. These all lead to our rivers, creeks, lakes and the ocean, with no water quality treatment along the way.

* Note: Scientific research data related to storm water pollution can be found at <http://www.santamonicabay.org/uploads/library/texts/epistudyexecsumm.pdf>

KEY MESSAGES

LITTERING AND RECYCLING

- Everyone's actions count when it comes to erasing the waste. There are nearly 10 million people residing in Los Angeles County and the small, individual actions by each of us to reduce litter and other pollution can add up to big changes.
- According to research, every month L.A. County residents:
 - Toss 830,000 pieces of trash on the ground
 - Allow paper or trash to blow into the street more than 800,000 times
 - Drop cigarette butts on the ground nearly 915,000 times
 - Empty a car ashtray into the street more than 40,000 times (cigarette butts pose imminent risks to child health and safety including the risk of swallowing, choking or burning themselves with discarded, toxin-laden butts)

PET WASTE

- According to research, every month L.A. County residents walk a dog without picking up the droppings more than 82,000 times.
- Animal waste contains disease-causing pathogens and harmful chemicals and nutrients, that when left on the ground, wash down storm drains and contaminate local waterways and beaches. There is a County Ordinance, which bans dog owners from leaving animal waste on public or private property. An owner disregarding this law may be fined.
- Throw away pet waste in the garbage – or flush it down the toilet; never wash it out into the street or into the storm drain. Carry extra bags when walking your dog and make them available to other pet owners.

GRAFFITI

- Old, partially-used paint that you want to discard is a valuable tool in fighting graffiti. Don't throw away your old paint; donate it to a local graffiti abatement program or take it to a Household Hazardous Waste Collection Event. They will use it to paint over graffiti.

- Graffiti communicates: gangs, drugs, crime, danger, a run-down neighborhood. Not only is graffiti unattractive, it lowers property values and encourages other types of crime and littering in neighborhoods. It visually demonstrates that the residents and businesses in the area do not care about the community's appearance and environment.
- Survey data shows that the quicker graffiti is eliminated, the slower it is to return. Most graffiti abatement programs have a goal of elimination in under 24 hours. Most cities have graffiti abatement teams that will remove graffiti from public property. You just need to report it.
- California State Law:
 - Graffiti damage up to \$400 is punishable by up to one year in jail, a \$10,000 fine or both.
 - Graffiti damage of \$400 or more can be punished as a felony – even if the vandal is a minor – by up to three years in state prison and a fine of up to \$50,000.
 - Graffiti on a place of worship can be treated as a felony punishable by up to three years in state prison.
 - Graffiti with acid or caustic substances can be punishable by up to three years in state prison and fines up to \$50,000.
- Parents and guardians of minors who commit graffiti:
 - May be prosecuted for failing to supervise their children and sentenced to one year in jail and/or fined \$2,500.
 - Are responsible for damage caused by willful misconduct of their children – including repairs and attorney fees up to \$10,000.
 - Are liable for up to \$25,000 in damages when a minor's willful misconduct results in injury to the property of another.
 - Can be ordered to maintain specific property graffiti-free for up to 240 days.



SECTION 4

**WORKING WITH MEDIA TO
ERASE THE WASTE**

WORKING WITH MEDIA TO...

One of the best ways to build awareness of the pollution problem, and gain support and resources for anti-pollution efforts is ongoing media coverage of the problem and solutions being undertaken by committed citizens groups and organizations.

It is not necessary to get on national television or in major daily newspapers. Local media and news outlets are always looking for local story ideas.

The following media material samples and templates can be found at the end of this section: media release and advisory; calendar advisory; public service announcements (PSAs); letters to the editor; op-ed piece.

TYPES OF MEDIA OUTLETS

- Newspapers
 - Daily
 - Weekly (many of these are free)
- Television
- Radio
- Newsletters
- Web sites

WHAT IS NEWS

News can be any type of story that is of interest to your local media outlets. The key when considering sending a news story to the media is does it have local impact? Your local media is only interested in stories for or about the community reader, listener or viewer.

News stories can be:

- An announcement or account of a local event (e.g., River Rally clean up event).
- What will or has happened to a local person or people (e.g., Jane Smith honored as Citizen of the Year for organizing 25 river clean ups over the past 10 years).
- Local information people need (e.g., More than 100 tons of litter are collected in the annual River Rally each year. This can be prevented if everyone puts litter in the trash can, instead of in the street.).

FROM THE MEDIA PERSPECTIVE

When you work with media on a larger scale by pitching stories or writing op-ed pieces, it is important to consider things from the media perspective. Here are some of the things an editor, reporter or news director will consider when assessing the value of your story:

- Impact or consequence – How many people does the event or idea affect, and how seriously does it affect them? To what extent is the information useful to their readership? Does anyone care?

- Proximity or locality – It is news only if it's happening within the media outlet's circulation or viewership area. If it's in another city or county, there is less interest.
- Timeliness – Today's news may be stale tomorrow. However, some issues of great impact are timeless. So, the best time to tell an important story is as soon as possible.
- Prominence – Names don't always make news. Still, happenings that involve well-known people or institutions are likely to be interesting even if not important.
- Novelty or drama – The unusual makes news. Firsts make news. Bizarre makes news. "When a dog bites a man it is not news because it happens often. But, if a man bites a dog, that's news."
- Conflict – Many reporters spend most of their time covering conflict – whether lawsuits, politics, crime or sports. Conflict is both a contributing and complicating factor in news.

HOW TO FIND YOUR LOCAL MEDIA OUTLETS

There are several ways to find out what local media covers your neighborhood and how you can contact them. Some of these include:

- In news racks
 - Affixed to sidewalks
 - In convenience stores and local eating establishments
 - At supermarkets and grocery stores
- Yellow Pages under "Newspapers," "Radio Stations," "Broadcast Companies" and "Television"
- Local library
- Civic and business organizations' newsletters
- Internet search engines such as Yahoo, Google, Alta Vista or others

COMPILING A MEDIA LIST

If you or your organization plans to conduct ongoing media relations or publicize regularly scheduled events or activities, create and maintain a list of local media outlets that cover environmental issues. A good media list should have the following information:

- Reporter/editor's name
- Title/position
- Name of publication or media outlet
- Mailing address
- Phone number
- Fax number
- E-mail address
- Preferred method of receiving information
- Deadline information

When compiling your media list be sure to include print (newspapers and magazines) and electronic media (television, radio and Internet) in general and ethnic markets. Some examples include daily and weekly papers; wire services (e.g., Associated Press), local television affiliates, radio news programs, local radio and television talk shows and targeted magazines. Remember to include alternative media outlets, such as newsletters and Web sites published by groups including the local chamber of commerce, community service organizations or environmental advocacy organizations.

At the end of this section, you will find media material templates including: a media advisory/alert, media release, pitch letter, letter to the editor, calendar announcement and public service announcements (PSAs).

MEDIA RELATIONSHIPS CHECKLIST

To develop and maintain a good working relationship with the media:

1. Make their jobs easy
 - Give them information that is accurate, thorough and within their deadline.
 - Schedule phone interviews at convenient times or in-person interviews at accessible locations.
 - Provide additional resources or references when appropriate.
2. Make sure spokespersons are accessible when needed. The spokespersons should:
 - Always know what the facts are at the time.
 - Never lie when they don't want to reveal the answer. To a reporter, an official caught in a lie makes a better story than the truth.
3. Make sure all of your contact information is accurate and that someone will respond.
4. Keep the media informed of relevant news about your organization or issue.

The following actions guarantee a bad relationship with the media:

1. Don't respond quickly (or at all) to their inquiries.
2. Fail to respect their deadlines.
3. Provide inaccurate or incomplete information.
4. Send them irrelevant news or "fluff."
5. Call them repeatedly about your event or story.

PUBLICITY

CHECKLIST: PUBLICIZING YOUR PROGRAM OR EVENT

A good publicity program will help you recruit participants, partners and sponsors, as well as call attention to the pollution issue and what your group or organization is doing to fix the problem. A good publicity program can also demonstrate to the general public that the organization is concerned about the effects of pollution and litter and their effects on city beautification and public health/environmental protection.

Here are some pointers for designing and implementing your publicity program:

1. If you schedule your clean up campaign or program in conjunction with another major event (e.g., Earth Day or California Coastal Clean Up), you can take advantage of publicity that is already being generated.
2. Distribute a media calendar announcement well in advance of the event or program launch telling “Who, What, When, Where, Why and How.” In addition to your regular media list, don’t forget to include Web sites, newsletters, or high school and college newspapers. You can also register your event on related Web sites such as <http://www.choose2reuse.org> and/or on your partner/sponsors’ Web sites.
3. Prepare a flyer explaining the event or program and distribute it widely. Make the “call to action” and contact information visible and easy to understand. Your distribution list should include: media outlets, libraries, public bulletin boards, chambers of commerce, schools, youth centers, businesses, public counters and places of worship.
4. Talk to your local newspaper, radio and cable television station about running public service announcements and stories several days before the event.
5. To aid the media in preparing a story, develop fact sheets specific to the problem and solution, distribute a media release, and/or write a pitch letter with an already-written or “canned” story.
6. Send an e-mail to friends, colleagues and organization staff asking them to announce the event or program at all meetings they attend. Notify your city government officials. Make sure you remind your speakers bureau members to include announcements in their presentations. Obtain a proclamation from your mayor or city council. These proclamations can commemorate the day, or recognize the neighborhood or an individual’s efforts.



**A GOOD PUBLICITY
PROGRAM WILL HELP YOU
RECRUIT PARTICIPANTS,
PARTNERS AND SPONSORS,
AS WELL AS CALL ATTENTION
TO THE POLLUTION ISSUE.**

CORE MATERIALS FOR YOUR MEDIA RELATIONS TOOLKIT

The most common types of materials you will use when working with the media are:

- Media advisories or alerts
- Media releases
- “Canned” articles
- Pitch letters
- Letters to the editor and opinion-editorial pieces
- Media information kits

MEDIA ADVISORY OR ALERT

The purpose of a media advisory or alert is to notify reporters of important information being announced or the date of a press conference or media event. Sent out in advance of the announcement or event, the alert briefly and clearly summarizes “Who, What, When, Where, Why and How.”

For daily publications or broadcasts, you should follow-up with reporters or editors one to two days before the announcement or event to pitch the story, or confirm their interest or attendance. For weekly publications or cable TV shows, follow-up at least one week in advance.

MEDIA RELEASE

The purpose of a press release is to generate media coverage of an event, announcement or new development, or to provide insight or additional information about an ongoing issue, product or policy. Distributing a media release allows you to package the information, story and quotes the way you would like them covered.

For events or breaking news, the release is typically issued the same day as the news occurs (at a press conference, by fax or e-mail), although you may issue it in advance of the event. For issues, product or policy updates, the release should be timed to maximize effectiveness of the message.

Four tips for writing a media release:

1. Define your purpose. What message do you want to send to the community about storm water pollution? (Samples of key messages/facts and figures can be found in the “Speaking Out to Erase the Waste” section of the Neighborhood Action Kit.)
2. Before you write the release, identify the core information: “Who, What, When, Where, Why and How.” This information should be in the first and second paragraph of your release. Many times, if the reporter doesn’t see the importance of the story in these paragraphs, he or she stops reading and throws it away.
3. Details. Write down the supporting key points for your core information, such as background information on littering and pollution or your organization’s work in this area. This information is in paragraphs three and four. Quotes from a

main spokesperson can and should be used to provide or support the details. (Your spokesperson can be a member of your speakers bureau.)

4. Be sure to include:

- Contact information – identify the organization issuing the release with a current contact name, phone number and e-mail address. Make sure the person will always be available and that the phone number and e-mail address are correct. You also should include your organization’s Web site address.
- Description of your organization – this should be standard information included as the last paragraph of any release you distribute.

PITCH LETTER

The purpose of a pitch letter is to explain to a reporter, editor or news director why he or she should cover your story or address your issue. A pitch letter is not used for breaking news stories. With that in mind, you should not expect instant coverage in the next day’s paper or on the evening news.

Two tips for writing a pitch letter:

1. It should make the case of how your story relates to their audience, why it is interesting or relevant and how it is newsworthy.
2. The pitch letter may be a follow-up to a phone conversation with a reporter and generally accompanies other written materials such as fact sheets, case studies, press releases or other program materials that serve as background information for the reporter.

LETTERS TO THE EDITOR AND OPINION-EDITORIAL PIECES

Another way to reach opinion leaders and educate your community about pollution prevention is to submit letters to the editor and opinion-editorial (op-ed) pieces. Op-ed pieces and letters to the editor should be written in the same fashion as a media release, with the most important information at the beginning of the letter. For maximum impact, a senior member of your organization should sign letters to the editor and op-ed articles.

Letters to the editor are usually written in response to specific news articles, current local community issues or a publication's coverage of a particular issue or news event.

Five tips for writing a letter to the editor:

1. Call your local paper to inquire about guidelines on length, deadlines and whether the letter will be edited. Editors will likely choose a few short letters rather than a long one. Be brief.
2. Write immediately when you see a topic that catches your eye, or one that can be tied to storm water pollution or related environmental issues.
3. The letter should be factual. Support statements with localized statistics or facts.
4. Stick to the issue. Avoid partisan or divisive remarks.
5. Don't send generic letters. Editors are less likely to print them.

Opinion editorials are written to frame and position specific issues from a particular point of view, and are not a direct response to an article. However, the subject of an op-ed must be timely and of relative importance to the newspaper's readers.

Five tips for writing an op-ed piece:

1. Offer a forceful opinion.
2. Provide well-documented, well-researched facts and arguments.
3. Make sure your essay adds to the public's knowledge of storm water pollution issues.
4. Provide insight on issues that are relevant to the local area.
5. Make sure the essay is clear, organized and interesting.

"Letters to the Editor" and "Op-Ed Article" templates are provided at the end of this section.

PRE-WRITTEN OR "CANNED" ARTICLES

Small local publications that don't have a large reporting staff may accept a pre-written or "canned" article and run it with little editing. In larger local publications, however, the "canned" article may be used to spur a reporter to cover your story. In this case, your pre-written article may provide the basic facts for the reporter's story, but he or she may develop their own angle. Remember weekly and monthly publications require a much longer lead-time than daily publications. Be sure to contact the publication to determine submission deadlines.

MEDIA INFORMATION KITS

Media kits are packets of information that can be distributed at a press conference or event, or given to a reporter to provide

background information for an interview or news story. The information included should be relevant, brief and easy to scan for the main ideas. Make sure the information included in media kits is always kept current and before you hand over a kit to a reporter, reconfirm that all the information is correct, relevant and current.

Media kits can include:

- Media release
- Fact sheet on the event, issue and/or project
- Fact sheet on latest relevant statistics and research
- Photographs, slides or electronic art of appropriate logos, images or diagrams
- Brochures and other printed program materials
- Relevant media coverage from other noted publications
- Statistical data or studies related to storm water pollution and/or the story being covered by the reporter
- Current contact information, in case a reporter has a need for further information. This should include your Web site address, if you have a site dedicated to storm water pollution information.

ADDITIONAL MATERIALS TO ADD TO YOUR MEDIA RELATIONS TOOLKIT

In addition to the key media tools just detailed, there are several other tools you can use in your media relations outreach. These include:

- Press conferences and media events
- Calendar announcements/bulletin boards
- Feature stories
- Radio and television: public affairs shows/news talk shows/commentaries
- Commentaries/editorials
- Public service announcements (PSAs)
- Web sites and e-mails

PRESS CONFERENCES AND MEDIA EVENTS

Hosting a press conference or event should be used strategically, particularly in or near large metropolitan areas. Much of your media outreach can be handled by issuing press releases and directly contacting reporters. However, if your announcement is particularly newsworthy or visual, then holding a press conference or inviting the media to attend your event might be appropriate.

How can you tell if a media conference or media event is the right move for other forms of neighborhood involvement? Do you have something breaking to announce; will it be worth the reporters' time to travel there; do you have great visuals with lots of color and interesting speakers; and can you accomplish the same results through a phone call, pitch letter or media release?

One good example of a visually interesting event is a large-scale neighborhood or river clean up, where you have hundreds of volunteers in action, and key speakers, such as elected officials, providing good sound bites for local reporters.

When planning a press conference or media event, consider:

- The location of the event *
- The time it is held *
- What other newsworthy events are happening on that day or time *
- Will the location help tell your story? (i.e., in front of a storm drain clogged with litter)
- Is it centrally located, easy to find and reach?
- Is there plenty of accessible parking?
- Can signage be displayed?
- Will television and radio stations be able to transmit clear signals to their studios?
- For television and print photographers, is the location visually appealing? Are there visuals you can add, such as littered gutters or waterways, clean up activities, etc.?
- Is there enough room for reporters and broadcast equipment, as well as, enough electrical outlets?
- Do you need to bring in a public address system, chairs, risers or tables?
- What directional or information signage do you need?
- Is there wind or background noise (airplanes, traffic) that may make it difficult for radio or television outlets to hear your spokespeople?

* These issues are critical in determining if and/or when to hold a press conference in large metropolitan areas, such as Los Angeles County. Distances are great, time is limited and competition is fierce for news coverage. On any given day, 30 to 40 media events or announcements occur.

CALENDAR ANNOUNCEMENTS

To increase the visibility of your meetings, events or public participation forums, consider submitting location information for local media outlet calendar listings. The calendar listings (also referred to as announcements or bulletin boards) are the

section of the newspaper, or a time slot on radio/television where community events and activities are listed or announced. To increase the likelihood of having your meeting included in the calendar section, send your announcement well ahead of the event.

FEATURE STORIES

The key distinction between a feature story and a news story or editorial is that a feature story has the purpose of both informing and entertaining the reader and does not advocate a position.

Features can be profile stories on people or places or they can take a strong human-interest angle. A good human-interest story is built around the premise that the reader can easily identify with the subject or event. It involves a fellow human being and a situation that could happen to, or involve, the reader. However, the human-interest aspect of the story outweighs its value as a straight news story.

Often community publications don't have a lot of staff and usually can't send a reporter or photographer to cover your event or take pictures. However, it is always a good idea to take pictures of your local efforts and include those with the information sent to the smaller papers.

PUBLIC AFFAIRS AND NEWS TALK SHOWS

Equivalent to the editorial pages of a newspaper are the public affairs and talk shows on radio and television. When deciding if radio or television is an appropriate medium for your issue, consider what makes your topic newsworthy or air-able. Again, comparable to print media, your messages should be clear, concise, timely, interesting and relevant to listeners. It helps if your representative is a well-known community leader or an expert.

Radio and television public affairs and news talk shows can be forums for in-depth discussions of issues affecting your community. The first step in getting on the air is to familiarize yourself with the public affairs and news talk programs on radio and television stations in your area. Most are on AM radio or cable television stations. Be sure to acquaint yourself with the format of the programs, noting whether they feature in-studio guests, live call-ins, panel discussions or taped programming.

COMMENTARIES/EDITORIALS

Some local radio and cable television stations accept commentaries/editorials from listeners. For on-air commentaries, call the radio, cable or television station and ask them if they accept commentaries/editorials from listeners/viewers. Find out their protocol. Do they want to see a script; what are their commentary length requirements (30-60 seconds); and how do they want to receive it (fax, regular mail, e-mail, etc.)?

PUBLIC SERVICE ANNOUNCEMENTS (PSAs)

PSAs are free “mentions,” usually on radio stations, that give concise information about an event (date, time, location, contact information) or a “tip” that is of benefit to the public (e.g., pick up after your pet; this type of pollution can be a health risk to your children).

Thirty seconds is usually the maximum length a radio station will run a PSA, however, call the station to obtain the station's PSA requirements, including length and lead-time.

PSAs can be submitted in written format, to be read by the station's announcer, or pre-recorded on an audio or digital tape (this can be expensive and must follow the electronic needs dictated by the station).

Five tips for writing a PSA:

1. Give the radio station a choice of two or three lengths (e.g., 10 seconds, 20 seconds, 30 seconds). Make sure you accurately time your PSA, whether it is submitted in writing or pre-recorded.
2. Make sure you have taken the “service” approach and are providing specific and valuable information for the local listening audience.
3. Limit your PSA to one main topic. Avoid extra words, particularly adjectives.
4. Close your PSA by asking people to take an action whenever possible.
5. If you submit a pre-recorded PSA, use a professional recording studio with broadcast-quality equipment. Home tape recorders aren't good enough for producing broadcast-quality tapes.

Important reminder: Don't forget your non-English stations for all of these radio and television public affairs and public service opportunities. The ideal is to send in-language materials to non-English outlets. However, if that is not possible, it is recommended you check with your respective media outlets to find out their policies pertaining to this subject.

WEB SITES AND E-MAIL

The Internet provides another important medium to increase public awareness of your issue. While Internet access for all socio-economic groups is still a concern, the so-called “digital divide” is rapidly closing and most media have Internet access and e-mail boxes.

Include your organization's Web address on all your communication materials. The Web site can include storm water pollution prevention facts, what your organization is doing to

prevent pollution, business regulations and information, copies of media and other educational materials, a place for commentary, frequently asked questions, links to other related Web sites and a host of other important information. Be sure to keep your Web site up-to-date by adding current information and materials regularly.

Other features of your Web site could include:

- Links to other resources related to littering or water pollution
- “Contact us” links to your media liaison and your speakers bureau manager

E-mail can be a very cost-effective means to contact media. E-mail addresses should be researched and included on your media list. Dependent upon your computer's mail manager, you might be able to set up a media e-mail group.

HANDLING CALLS FROM REPORTERS

When you get a call from a reporter working on a story, it can be tempting to answer his or her questions immediately. However, even seasoned media spokespeople can run into trouble when they try to do an interview “cold.”

Instead, when a reporter calls, get as much information as possible about:

1. The news outlet (if you are not familiar with it)
2. The angle of the story he or she is working on
3. A list of questions the reporter would like answered
4. Who else has been interviewed
5. The reporter's deadline

Tell the reporter that you need this background, so that you can be sure to give him or her the most appropriate information. In some cases, after listening to the reporter's needs, you may determine that you are not the best spokesperson for the interview, or that another person who is an expert on the subject matter should join you for the interview. Make sure you (or the designated spokesperson) calls the reporter back well before the deadline with the information they requested. Before returning the call, take time to organize your key messages and practice saying them. Pull together pertinent facts and figures, so that you have them in front of you when you do the interview. If the reporter has questions you cannot answer, or if you need more time to gather information, call the reporter back well before the deadline and tell to them.

For tracking and internal record-keeping, it is important to document both proactive and reactive media contacts.

WORKING WITH ETHNIC MEDIA

Southern California is culturally and ethnically rich. Therefore, approaches used to inform the media must also be diverse. Local communities have ethnic- and language-specific newspapers, television channels, radio stations and magazines that should be utilized and seen as partners in your media relations outreach.

TAILORING YOUR MESSAGES FOR ETHNIC MEDIA

Keep in mind that ethnic media has a specific audience. This should be considered when developing a message for that particular community. What works for the general market media might not be as effective within ethnic communities.


CONTACTING ETHNIC MEDIA

Although ethnic media utilizes general industry resources (e.g., wire services) to learn about news stories, specific publications and television and radio programs should be targeted when trying to reach a particular ethnic community.

While most reporters at ethnic print and broadcast media outlets speak English, it is advisable, and sometimes required for your radio and television spokesperson to speak the language of the listening or viewing audience. Additionally, if possible and/or needed, adapt your key media informational pieces such as releases, fact sheets or pitch letters into the language of the media outlet. If this is not possible, it is important to check with the outlet to ask about their policy on this matter.

If you choose to invite ethnic media to your press conference or event, make sure that you have the same materials and resources available in the appropriate languages (if possible and/or needed). Try to have at least one spokesperson fluent in those languages to address the ethnic media. To assist you in this effort, you might also consider seeking the support of a translating service.

If someone within your organization cannot accurately adapt media materials, check your local listings for translation services. Be sure to have a native speaker review your translated documents to ensure that your messages don't get lost in the translation.




KEEP IN MIND THAT ETHNIC MEDIA HAS A SPECIFIC AUDIENCE. A MESSAGE THAT WORKS FOR THE GENERAL MARKET MEDIA MIGHT NOT BE AS EFFECTIVE WITHIN AN ETHNIC COMMUNITY. WORK TO DEVELOP A MESSAGE THAT WILL RESONATE WITH THAT PARTICULAR COMMUNITY.

MEDIA SPOKESPERSONS: INTERVIEW PREPARATION

Use the following tips when presenting key messages in interviews and presentations:

1. Be prepared and knowledgeable. Prior to the interview or meeting, write down your main messages and memorize a few statistics or examples to support your messages.
2. Give your main message point first in a concise, positive, complete sentence. Illustrate your point whenever possible with a few brief statistics. Follow with two or three of your other major message points.
3. Keep answers as concise and focused as possible, but not so brief as to be uninformative or appear evasive. Don't ramble or go off on tangents.
4. Position yourself as an expert source. Make sure that your credentials and years of experience are known.
5. Use your organization's name whenever possible instead of generic pronouns, such as "we" or "our."
6. Always tell the truth. Be as direct and concise as possible when answering questions. Don't give out information that you think may be true; it could cause embarrassment if discovered later to be false. Say "I don't know the answer now..." and get back with additional information if possible.
7. Assume everything is on the record. Assume everything you say will be used in a news story. Even the way you decline to answer can convey information to a reporter.
8. Keep your audience in mind. Avoid slang/technical jargon that the audience will not understand.
9. Keep your cool. Do not be ruffled or upset by questions. Keep control of the interview or presentation; politely correct inaccurate information and do not allow yourself to become defensive.
10. Don't repeat a negative question in your answer. Use positive words with which you feel comfortable.
11. Don't try to fill up silence. When finished answering a question, wait for the next one.
12. Assist the reporters. Help put reporters in touch with experts. Make an extra effort to give them background or additional materials. Make sure you provide the information they need in a timely fashion. If you do not have something they need, tell them when you can get it to them or refer them to where they can find it.



HELP PUT REPORTERS IN TOUCH WITH EXPERTS. MAKE AN EXTRA EFFORT TO GIVE THEM BACKGROUND OR ADDITIONAL MATERIALS. MAKE SURE YOU PROVIDE THE INFORMATION THEY NEED IN A TIMELY FASHION. IF YOU DO NOT HAVE SOMETHING THEY NEED, TELL THEM WHEN YOU CAN GET IT TO THEM OR REFER THEM TO WHERE THEY CAN FIND IT.

SAMPLE LETTERS TO THE EDITOR

SAMPLE LETTER #1

Dear Editor:

Thank you for your coverage of the [community clean up] held on [date]. Events such as this have a dual purpose: they make our neighborhoods cleaner and safer and they let the members of our community know that by working together, we can keep our community clean, healthy and safe. And, by cleaning up our neighborhoods, we also keep these pollutants from entering the storm drains and polluting our nearby waters.

Storm water pollution poses a danger to community and family health. When water quality in Southern California is allowed to decline, it creates significant threats to fish, wildlife, public health and safety, natural resources and the region's economic vitality. In other words, everyone is affected negatively by storm water pollution: kids, families and even business owners and the environment.

But we don't have to put up with pollution, as events such as the one recently held in our community prove. By changing selfish behaviors such as dropping cigarette butts in streets, parks and playgrounds, tossing trash on the ground and out car windows, and failing to pick up after dogs, we can make our community healthier. But it's up to each of us to be aware that we are a major part of the problem, and can easily be a major part of the solution.

Sincerely,

[NAME]

[TITLE, ORGANIZATION (if applicable)]

SAMPLE LETTER #2

Dear Editor:

Regarding your recent article about water quality in our area [title of article, date], I'd like to suggest that one of the reasons we are experiencing a decrease in water quality in Southern California can be found in our own neighborhoods.

With the large population of Los Angeles County, even small, individual actions to reduce storm water pollution can add up to big changes. When we throw our trash on the ground or fail to pick up after our animals, we increase our children and families' risk because trash and animal waste carry harmful, disease-spreading bacteria to children and families in their local neighborhoods. The pollution also ends up in our storm drains, which lead directly to our waterways. This is known as storm water pollution.

The California Water Boards recently launched a campaign, called *Erase the Waste*, aimed at reducing storm water pollution and safeguarding the health of L.A. County residents. Among other tips, the campaign encourages residents to throw trash in a trash can or recycling container, always put cigarette butts in an ashtray, pick up after their dog every time and join or organize a community clean up to help protect their neighborhood.

For more information about how to erase the waste in your community, log on to www.erasethewaste.com or call 1 (888) CLEAN-LA.

Sincerely,

[NAME]

[TITLE, ORGANIZATION (if applicable)]

SAMPLE LETTERS TO THE EDITOR

SAMPLE LETTER #3

Dear Editor:

Regarding your article on the decision to ban smoking on public beaches [title of article, date], I'd like to draw your attention to another benefit besides clean air.

It's estimated that L.A. County residents improperly dispose of 915,000 cigarettes butts each month. That means kids are at risk of swallowing, choking or burning themselves with discarded, toxin-laden butts. It also means that our environment is affected, as cigarette butts end up in the water, causing harm to fish and wildlife.

Even seemingly harmless acts such as using the sand as an ashtray have a ripple effect on the health of our community, the health of our children and the health of our environment. For more information about how to erase the waste in your community, log on to www.erasethewaste.com or call 1 (888) CLEAN-LA.

Sincerely,

[NAME]

[TITLE, ORGANIZATION (if applicable)]

SAMPLE OPINION-EDITORIAL

REDUCING STORM WATER POLLUTION IS EVERYONE'S RESPONSIBILITY

Would you believe that small, everyday actions can make or break the health of a community? Each day, millions of poor decisions ranging from stubbing out a cigarette on the ground to pouring used motor oil down a storm drain have a negative cumulative effect on the health of our communities and our waters. But thanks to an innovative campaign by the California Water Boards, called *Erase the Waste*, residents of L.A. County are learning about their role in safeguarding the health of our families and our communities by keeping our water, beaches and neighborhoods clean.

According to research, every month L.A. County residents drop 915,000 cigarette butts in streets, parks and playgrounds, toss 830,000 pieces of trash on the ground, and dog owners fail to pick up their dog's droppings 82,000 times. Why should you care? Because on land, trash and animal waste carry harmful, disease-spreading bacteria to children and families in their local neighborhoods. Once it passes from the land to the storm drain system, and enters the waterways, those who come into contact with the water may face an increased risk of viral infections, earaches, flu, skin rashes and viral infections such as hepatitis. The water pollution also threatens fish, wildlife and the environment.

The State of California has made reducing storm water pollution in L.A. County a top priority. Storm water pollution is the greatest danger to water quality in Southern California and poses significant threats to public and environmental health and safety, natural resources and the region's economic vitality. With a high-density population of almost 10 million residents, the region produces an overwhelming volume of storm water pollution.

The *Erase the Waste* campaign encourages L.A. County's nearly 10 million residents to take ownership of their communities, help reduce storm water pollution by keeping the local landscape free of litter and pollution, and becoming part of the "pollution solution." Among other tips, the campaign encourages residents to: throw trash in a trash can or recycling container, always put cigarette butts in an ashtray, pick up after their dog every time and join or organize a community clean up to help protect their neighborhood.

Here in [NAME OF YOUR AREA], we already have hosted several community clean up days and are planning to hold more. [INSERT INFORMATION ABOUT THE PARTICULAR ACTIVITY SUCH AS HOW MANY ATTENDED AND HOW MANY POUNDS OF WASTE WERE DISPOSED OF, ETC.]

We all share a responsibility for the health of L.A. County's communities, neighborhoods and beaches. Please join us in doing your part. For more information about how to erase the waste in your community, log on to www.erasethewaste.com or call 1 (888) CLEAN-LA.

[An organization staff member or director should sign the editorial.]

SAMPLE MEDIA ADVISORY

*** MEDIA ALERT * MEDIA ALERT * MEDIA ALERT ***

[NAME OF AREA] CLEAN UP DAY LETS RESIDENTS
BE PART OF THE POLLUTION SOLUTION

Simple behavior changes can reap big rewards for kids' health

WHAT: To help safeguard the health of children in our community, the [NAME OF ORGANIZATION] is hosting a community clean up day in [NAME OF CITY] as part of L.A. County's *Erase the Waste* campaign (www.erasethewaste.com). In addition to pitching in to remove litter, discarded cigarette butts and other trash, residents will learn about how small, simple actions such as littering can contribute to inland and storm water pollution. They will also get tips on how to change their polluting ways.

WHY: Trash and animal waste carry harmful, disease-spreading bacteria to children and families in their local neighborhoods. According to research, every month L.A. County residents drop 915,000 cigarette butts in streets, parks and playgrounds; toss 830,000 pieces of trash on the ground; and dog owners fail to pick up their dog's droppings 82,000 times. Once this pollution reaches the waterways through the storm drain system, it affects fish, wildlife and water quality.

WHERE: [NAME OF PARK]
[Intersection or Address]

WHEN: [DATE] [TIME]

WHO: [NAME OF COMMUNITY GROUP OR ORGANIZATION]
[LIST STAFF NAMES, TITLES], Mayor Mary Doe, concerned residents

VISUALS: Piles of trash collected, kids and adults removing trash from our park

CONTACT: [NAME]
[NAME OF ORGANIZATION]
(XXX) XXX-XXXX

#

SAMPLE NEWS RELEASE

[Organization Letterhead]

FOR IMMEDIATE RELEASE

CONTACT: [NAME]
(XXX) XXX-XXXX

[ORGANIZATION NAME] HOSTS SUCCESSFUL *ERASE THE WASTE* COMMUNITY CLEAN UP

*Event Reclaims Community from Polluters, Inspires Local Residents to Play an Active Role In
the Health of Their Community and Their Families*

LOS ANGELES [DATE] – [ORGANIZATION NAME] today hosted a community clean up event at a local park to beautify the area and to illustrate the concept that everyone can play a role in neighborhood protection and storm water pollution prevention. More than [NUMBER] pitched in, collecting over [NUMBER] bags of trash.

“The California Water Boards have made reducing storm water pollution in Los Angeles County a top priority. Not only is it the greatest danger to water quality in Southern California, it also poses significant threats to public health and safety, natural resources and the region’s economic vitality,” said [NAME, TITLE].

Participants not only picked up litter, they also learned about actions they can take in the future to make a difference in their community, such as used oil recycling, adopt-a-playground, holiday tree recycling and graffiti paint-outs. Today’s event is part of the Water Boards’ *Erase the Waste* campaign, which encourages L.A. County residents to take ownership of their communities, help reduce storm water pollution by cleaning the local landscape and becoming part of the “pollution solution.”

-more-

[ORGANIZATION NAME] Hosts Successful Community Clean Up

Page 2

“With the large population of Los Angeles County, even small, individual actions to reduce storm water pollution can add up to big changes,” said [NAME, TITLE]. “We’re asking everyone to do their part for the health of the community.”

With a high-density population of almost 10 million residents, the region has an overwhelming volume of storm water pollution contributed to by residents. According to research, every month L.A. County residents, conservatively: drop 915,000 cigarette butts in streets, parks and playgrounds; toss 830,000 pieces of trash on the ground; and dog owners fail to pick up their dog’s droppings 82,000 times. Storm water pollution has been linked to increased risk of viral infections, earaches, flu, skin rashes and viral infections like hepatitis, in those who come into contact with the polluted water.

Among other tips, the campaign encourages residents to: throw trash in a trash can or recycling container (as appropriate); always put extinguished cigarette butts in an ashtray; pick up after their dog every time and; join or organize a community clean up to help protect their neighborhood and local waters. For more information about how to erase the waste in your community, log on to www.erasethewaste.com or call 1 (888) CLEAN-LA.

Erase the Waste is the California Water Boards’ two-year, \$5 million storm water public education campaign to reduce storm water pollution in L.A. County and improve the environment of its coastal and inland communities. The campaign is the first State-funded countywide storm water public education campaign and includes the first use of paid advertising addressing the issue in Los Angeles.

###

SAMPLE CALENDAR ADVISORY

CALENDAR ADVISORY • CALENDAR ADVISORY • CALENDAR ADVISORY

***[ORGANIZATION NAMES] Team Up for a Community Clean Up
at [NAME OF AREA]***

*Community Clean Up Event Will Make Our Neighborhoods Safer for
Children and Families*

WHAT: Help prevent pollution in our neighborhood and waters by joining [SPONSORING ORGANIZATIONS] as they host an *Erase the Waste* clean up event. Come and learn about ways to help be a part of the solution, by always throwing trash in a trash can or recycling container, putting cigarette butts in an ashtray and picking up after your dog every time. Meet your neighbors and join us as we help protect the health of our neighborhood.

WHY: Storm water pollution is created when litter, animal droppings, cigarette butts, motor oil, fertilizers, pesticides and other pollutants end up on the ground and are washed into the storm drains. This pollution mixes with millions of gallons of rainwater and flows untreated into local creeks, rivers and the Pacific Ocean, polluting our waterways, as well as degrading neighborhoods and other natural resources.

VISUALS: [ORGANIZATION NAMES], families and community members picking up trash, sorting recyclables and handing out *Erase the Waste* information packets.

WHEN: [DATE] [TIME]

WHERE: [LOCATION]

BACKGROUND: *Erase the Waste* is the California Water Boards' two-year, \$5 million storm water public education campaign to reduce storm water pollution in L.A. County and improve the environment of its coastal and inland communities. The campaign is the first State-funded countywide storm water public education campaign and includes the first use of paid advertising addressing the issue in Los Angeles. For more information about how to erase the waste in your community, log on to www.erasethewaste.com or call 1 (888) CLEAN-LA.

CONTACT: [NAME]
[NAME OF ORGANIZATION]
(XXX) XXX-XXXX

#

SAMPLE PUBLIC SERVICE ANNOUNCEMENTS

30 SECONDS

You're invited to a community clean up on [DATE], at [LOCATION] in [NAME OF AREA]. It's part of *Erase the Waste*, a program that encourages L.A. County's nearly 10 million residents to take ownership of their communities, help reduce storm water pollution in our neighborhoods, and be part of the "pollution solution." Remember, all of us share the responsibility for keeping our children, families and neighborhoods healthy and our waters pollution-free. For more information about how to erase the waste in your community, log on to www.erasethewaste.com or call 1 (888) CLEAN-LA.

10 SECONDS

L.A. County's *Erase the Waste* campaign reminds you that all of us share the responsibility for keeping our children, families, neighborhoods and waters healthy. For more information about how to reduce harmful pollution in your community, log on to www.erasethewaste.com or call 1 (888) CLEAN-LA.



SECTION 5
INFORMATIONAL MATERIALS
TO ERASE THE WASTE

**People who harm our
communities often leave a trail.**



Use a garbage can for trash and recycle reusable materials. Never throw trash on the street or out your car window. To learn more ways to keep your neighborhood and waters healthy, clean and pollution free, visit www.erasethewaste.com or call **1(888) CLEAN-LA.**

**Erase the
waste** **PROJECT
Pollution
PREVENTION**

Brought to you by the
California Water Boards



**When nature calls,
make sure you
pick up.**

Clean up after your dog every single time. Do your part to keep your neighborhood and waters clean, healthy and pollution free. For more tips, visit www.erasethewaste.com or call **1(888) CLEAN LA.**

**Erase the
waste**

**PROJECT
Pollution
PREVENTION**

Brought to you by the
California Water Boards

Cigarettes can be harmful even after they're put out.



Make sure to place your extinguished cigarette butts in an ashtray or garbage can every single time. To learn more ways to keep your neighborhood and waters healthy, clean and pollution free, visit www.erasethewaste.com or call **1(888) CLEAN LA.**

**Erase the
waste** **PROJECT
Pollution
PREVENTION**
Brought to you by the
California Water Boards

Improve your home without harming your community.



Home improvement products such as paint, fertilizers and pesticides contain toxic chemicals that can be harmful to your neighborhood and waters. Use these products sparingly and according to directions. When cleaning up after a project, make sure to dispose of them safely and properly at a free Household Hazardous Waste Collection Event. To find an event near you, visit www.erasethewaste.com or call **1 (888) CLEAN-LA.**

**Erase the
waste** **PROJECT
Pollution
PREVENTION**
Brought to you by the
California Water Boards

Keep our neighborhoods and waters healthy and clean.

Every month, LA County residents drop litter on the ground almost 1 million times. Things like litter, cigarette butts and animal waste left on the street create dirty neighborhoods and cause a health threat to the community. They can also wash into storm drains, leading to flooding and pollution of local waterways. Prevent pollution in your community and waters by following these simple tips:

- ❑ Reduce, Reuse, Recycle.
- ❑ Throw extinguished cigarette butts in an ashtray and trash in a trash can every single time.
- ❑ Clean up your pet's waste by throwing it in the trash.
- ❑ Organize or join in the clean up of a beach, river or community.
- ❑ Use pesticides and fertilizers sparingly and never apply them prior to rainstorms.
- ❑ Take unwanted paints, yard chemicals and automotive fluids to a free Household Hazardous Waste Collection Event. Visit www.erasethewaste.com or call **1(888) CLEAN-LA** to locate an event near you.

To learn more ways to keep your neighborhood and waters healthy and clean, visit www.erasethewaste.com

**Erase the
waste**

Brought to you by the
California Water Boards

**PROJECT
Pollution
PREVENTION**



Printed on recycled paper.

When nature calls, make sure you pick up.

LA County has 3 million dog owners. Imagine how unhealthy LA would be if no one picked up after their pets. Dog waste carries bacteria, and if left on the ground, can make people sick. It can also wash into storm drains, polluting your community and local waterways. Dog owners can help prevent pollution by taking these simple steps:

- Pick up after your pet every single time. Check with your pet store for products that make picking up easy.
- Throw away pet waste in the garbage; never wash it into the gutter or storm drain.
- Carry extra bags in your car, so you are prepared when you travel with your pet.
- Get involved in a pet group and remind others to pick up after their pets.

To learn more ways to keep your neighborhood and waters healthy and clean, visit www.erasethewaste.com or call **1 (888) CLEAN LA**

**Erase the
waste**

Brought to you by the
California Water Boards

**PROJECT
Pollution
PREVENTION**



Printed on recycled paper.

Keep your yard green without harming your community.

Each month, LA County residents spray their yards with pesticide more than 210,000 times. Without proper use and disposal, pesticides and fertilizers used in your yard can cause a health threat to neighborhoods, families and waters. These products can run off into storm drains, leading to pollution of your community and local waterways. Prevent pollution by taking these easy steps:

- Use pesticides and fertilizers sparingly, by spot applying. Consider using non-toxic or less-toxic products.
- Avoid over watering after applying pesticides or fertilizers.
- Never apply pesticides or fertilizers before it rains.
- Bag or compost yard waste.
- Take unwanted products to a free Household Hazardous Waste Collection Event. Visit **www.erasethewaste.com** or call **1 (888) CLEAN-LA** to locate an event near you.

To learn more ways to keep your neighborhood and waters healthy and clean, visit **www.erasethewaste.com**

**Erase the
Waste**

Brought to you by the
California Water Boards

**PROJECT
Pollution
PREVENTION**



Printed on recycled paper.

Improve your home without harming your community.

Each month, LA County residents wash off paintbrushes under an outdoor faucet more than 130,000 times. Toxic paint products rinsed or dumped outside can result in a health threat to your neighborhood and waters. These products can run off into storm drains, leading to pollution of your community and local waterways. When cleaning up after a painting project, prevent pollution by following these easy steps:

- Never dump paint or related products into the gutter or storm drain.
- Clean water-based paint from brushes in any sink, never outside with a hose.
- Clean oil-based paint from brushes with paint thinner, which can be filtered and reused.
- Donate unused paint to local anti-graffiti organizations or reuse it for touch ups.
- Take unwanted paint or related products to a free Household Hazardous Waste Collection Event. Visit www.erasethewaste.com or call **1(888) CLEAN-LA** to locate an event near you.

To learn more ways to keep your neighborhood and waters healthy and clean, visit www.erasethewaste.com

**Erase the
Waste**

Brought to you by the
California Water Boards

**PROJECT
Pollution
PREVENTION**



Printed on recycled paper.



SECTION 6

ADDITIONAL RESOURCES TO ERASE THE WASTE

ADDITIONAL RESOURCES TO ...

GENERAL CAMPAIGN INFORMATION

California Water Boards – State and regional government boards that strive to protect water quality and beneficial uses for the state of California.

Erase the Waste Public Education Campaign
Public Affairs Office **Phone: (916) 341-5263**
1001 I Street
P.O. Box 100
Sacramento, CA 95812
Fax: (916) 341-5252
E-mail: tmays@exec.swrcb.ca.gov
Web site: <http://www.erasethewaste.com>

ORGANIZATIONS THAT HOLD COMMUNITY CLEAN UP EVENTS NEAR YOU/HOW TO GET INVOLVED

Ballona Lagoon Marine Preserve – Provides education about natural resource protection.
P.O. Box 9244 **Phone: (310) 306-6744**
Marina del Rey, CA 90295
Fax: (310) 306-6744
E-mail: myrna-d@attbi.com

California Coastal Commission – Hosts Coastal Clean Up Day and COASTWEEKS.
Public Education Department **Phone: (800) 262-7848**
45 Fremont Street **or (415) 904-5200**
San Francisco, CA 94105-2219
Fax: (415) 904-5400
Web site: <http://www.coastal.ca.gov>

Earth Resource Foundation – Hosts the Great Earth Walk and numerous “Hold on to Your Butt” beach clean ups.
230 East 17th Street #208 **Phone: (949) 645-5163**
Costa Mesa, CA 92627
Fax: (949) 645-5173
E-mail: sbarger@trixaxis.com
Web site: <http://www.earthresource.org>

Heal the Bay – Committed to providing workable solutions to the problems threatening Santa Monica Bay and all of Southern California’s coastal waters; sponsors monthly beach clean up events and Beach Emergency Response clean ups.
3220 Nebraska Avenue **Phone: (800) HEAL-BAY**
Santa Monica, CA 90404 **or (310) 453-0395**
Fax: (310) 453-7927
or (310) 496-1902 (10 pages or more)
General programs information e-mail:
programs@healthebay.org
Information e-mail: info@healthebay.org
Web site: <http://www.healthebay.org>

Hollywood Beautification Team – Local chapter that participates in the Great American Clean Up.
P.O. Box 931090 **Phone: (323) 463-5180**
Hollywood, CA 90093
Fax: (323) 463-2619
Web site: <http://www.hbteam.org>

Keep California Beautiful – Hosts the Great American Clean Up, which is the nation’s largest organized litter prevention, beautification and community improvement event.
3914 Murphy Canyon Road **Phone: (858) 505-9936**
Suite A-218
San Diego, CA 92123
Fax: (858) 505-9940
E-mail: kcbeee@aol.com
Web site: <http://www.keepcaliforniabeautiful.com>

Keep Downey Beautiful – Local Keep America Beautiful chapter that participates in the Great American Clean Up.
Carol Rowland – Coordinator **Phone: (562) 904-7159**
Fax: (562) 869-7365
E-mail: crowland@downeyca.org

Keep Glendale Beautiful – Local Keep America Beautiful chapter that participates in the Great American Clean Up.
Sandra Rodriguez **Phone: (818) 548-2877**
Public Education Specialist
141 North Glendale Avenue, Room 118
Glendale, CA 91206-4996
Fax: (818) 240-7239
E-mail: sanrodriguez@ci.glendale.ca.us
Web site: <http://www.ci.glendale.ca.us/government/cdh/ns/cleanup.asp>

Los Angeles & San Gabriel Rivers Watershed Council – An organization of community groups, government agencies, business and academia working cooperatively to solve problems in the watershed.
700 North Alameda Street **Phone: (213) 229-9945**
Los Angeles, CA 90012
Fax: (213) 229-9952
Web site: <http://www.lasgrwc.org/contact.html>

TreePeople – Inspires the people of Los Angeles to take personal responsibility for the urban forest and local environment by training and supporting them as they plant and care for trees and improve the neighborhoods in which they live. They also host several environmental and tree care events.
12601 Mulholland Drive **Phone: (818) 753-4600**
Beverly Hills, CA 90210
Fax: (818) 753-4635
E-mail: info@treepeople.org
Web site: <http://www.treepeople.org>

30-Minute Beach Clean Up – Hosts monthly clean up events and participates in the annual Coastal Clean Up event.
5209 The Toledo #1 **Phone: (562) 439-2681**
Long Beach, CA 90803
Fax: (562) 439-2681
E-mail: JustinRudd@aol.com
Web site: <http://www.beachcleanup.org>

GENERAL ENVIRONMENTAL AND STORM WATER POLLUTION INFORMATION

California Water Boards – State and regional government boards that strive to protect water quality and beneficial uses for the state of California.
Erase the Waste Public Education Campaign
Public Affairs Office **Phone: (916) 341-5263**
1001 I Street
P.O. Box 100
Sacramento, CA 95812
Fax: (916) 341-5252
E-mail: tmays@exec.swrcb.ca.gov
Web site: <http://www.erasethewaste.com>

Arroyo Seco Foundation – Involved in the Arroyo Seco restoration.
539 East Villa Street #2 **Phone: (626) 584-9902**
Pasadena, CA 91101
Fax: (209) 633-5510
E-mail: info@arroyoseco.org
Web site: <http://www.arroyoseco.org>

Ballona Creek Renaissance – Plants trees during Earth Day and hosts clean up events.
P.O. Box 1068 **Phone: (310) 839-6896**
Culver City, CA 90232
E-mail: jim.lamm@ballonacreek.org
Web site: <http://www.ballonacreek.org>

California Materials Exchange – Conserves energy, resources and landfill space, by helping businesses find markets for non-hazardous materials they have traditionally discarded.
E-mail: calmax@ciwmb.ca.gov **Phone: (877) 520-9703**
Web site: <http://www.ciwmb.ca.gov/calmax>

California Regional Environmental Education Community (CREEC) Network – Resource for environmental education programs and also hosts several environmental events.
Cherylin Leong **Phone: (818) 623-4876**
12601 Mulholland Drive
Beverly Hills, CA 90210
Fax: (818) 753-4645
E-mail: cleong@treepeople.org
Web site: <http://www.creec.org/region11>

Clean Water Team – Citizen monitoring program of the California Water Boards.
Erick Burren **Phone: (213) 576-6788**
E-mail Address: eburren@rb4.swrcb.ca.gov
Web site: <http://www.swrcb.ca.gov/nps/mission.html>

County of Los Angeles Materials Exchange Program – Provides free service to help people find markets to properly discard surplus material.
Jennifer Nguyen **Phone: (626) 458-3580**
County of Los Angeles Department of Public Works
Environmental Programs Division
900 South Fremont Avenue, 3rd Floor Annex
Alhambra, CA 91803-1331
Fax: (626) 458-3593
E-mail: jenguyen@dwp.co.la.ca.us
Web site: <http://www.ladpw.org/epd/lacomax>

ADDITIONAL RESOURCES

Earth 911 – Provides information about conserving resources and the environment.
7301 East Helm, Building D **Phone: (480) 889-2650**
Scottsdale, AZ 85260
Fax: (480) 889-2660
Web site: <http://www.earth911.org>

Green Seal – Promotes products and services that cause less pollution and provides valuable environmental resources.
1001 Connecticut Avenue, NW **Phone: (202) 872-6400**
Suite 827
Washington, DC 20036-5525
Fax: (202) 872-4324
E-mail: green Seal@green Seal.org
Web site: <http://www.green Seal.org>

Ocean Conservancy – Additional information on beach clean ups, including the newsletter Coastal Connection.
1725 DeSales Street, NW **Phone: (202) 429-5609**
#600
Washington, DC 20036
Fax: (202) 872-0619
Web site: <http://www.cmc-ocean.org>

People for Parks – Advocacy group enhancing recreational opportunities and preserving the public park system.
3250 Ocean Park Boulevard **Phone: (310) 399-9719**
#300
Santa Monica, CA 90401
Fax: (310) 399-9716
E-mail: info@peopleforparks.org
Web site: <http://www.peopleforparks.org>

Recycled Products Purchasing Cooperative (RPPC) – Seeks to conserve natural resources by providing recycled copy paper and products at competitive prices.
Phone: (800) 694-8355
E-mail: information@recycledproducts.org
Web site: <http://www.recycledproducts.org>

Santa Monica BayKeeper – Hosts environmental clean up events and promotes water pollution prevention methods to preserve the local coastal waters.
P.O. Box 10096 **Phone: (310) 305-9645**
Marina del Rey, CA 90295
Fax: (310) 305-7985
E-mail: info@smbaykeeper.org
Web site: <http://www.smbaykeeper.org>

Santa Monica Bay Restoration Commission – Seeks to restore and protect the Santa Monica Bay and its resources; hosts environmental education workshops.
320 West 4th Street, Suite 200 **Phone: (213) 576-6615**
Los Angeles, CA 90013
Fax: (213) 576-6646
E-mail: smbrc@rb4.swrcb.ca.gov
Web site: <http://www.santamonibay.org>

Santa Monica Mountains Conservancy – Seeks to preserve, protect, restore and enhance treasured pieces of Southern California.
570 West Avenue 26 **Phone: (323) 221-8900**
Suite 100
Los Angeles, CA 90065
Fax: (323) 221-9001
Web site: <http://www.smmc.ca.gov>

Santa Monica Mountains National Recreation Area – Hosts events and recruits volunteers to protect and preserve natural resources.
401 West Hillcrest Drive **Phone: (805) 370-2301**
Thousand Oaks, CA 91360
Fax: (805) 370-1850
Web site: <http://www.nps.gov/samo>

Sierra Club, Los Angeles Chapter – Serves as a resource for local environmental programs and environmental current events.
3435 Wilshire Boulevard, #320 **Phone: (213) 387-4287**
Los Angeles, CA 90010-1904
Fax: (213) 387-5383
E-mail: info@angeles.sierraclub.org
Web site: <http://www.angeles.sierraclub.org>

REGULATORY/GOVERNMENT AGENCIES

California Water Boards – State and regional government boards that strive to protect water quality and beneficial uses for the state of California.
Erase the Waste Public Education Campaign
Public Affairs Office **Phone: (916) 341-5263**
1001 I Street
P.O. Box 100
Sacramento, CA 95812
Fax: (916) 341-5252
E-mail: tmays@exec.swrcb.ca.gov
Web site: <http://www.erasethewaste.com>

California Department of Water Resources – Manages the water resources of California.
1416 Ninth Street **Phone: (916) 653-5791**
Sacramento, CA 95814
Fax: (916) 653-4684
Web site: <http://www.dwr.water.ca.gov>

California Environmental Protection Agency (CAL/EPA) – California voice for Environmental Protection Agency seeks to restore, protect and enhance the environment.
1001 I Street
P.O. Box 2815
Sacramento, CA 98512-2815
Web site: <http://www.calepa.ca.gov>

California Integrated Waste Management Board – Promotes a zero waste California in partnership with local government, industry and the public.
1001 I Street **Phone: (916) 341-6000**
P.O. Box 4025
Sacramento, CA 95812-4025
<http://www.ciwmb.ca.gov>

City of Los Angeles Department of Water and Power – Regional agency that supports environmental efforts that will improve the quality of life in the City of Los Angeles.
Green LA **Phone: (800)GREEN LA**
Energy Efficiency for a Green LA
L.A. Department of Water and Power
111 North Hope Street
Los Angeles, CA 90012
Web Site: http://www.ladwp.com/library/statichtml/homepage_greenla.html

County of Los Angeles Department of Public Works – Responsible for environmental services and programs, the design, construction, operation, maintenance and repair of roads, bridges, airports, sewers, water supply, flood control and water conservation facilities.
900 South Fremont Avenue **Phone: (888) CLEAN-LA**
Alhambra, CA 91803
Web site: <http://www.888cleanla.com>

L.A. Regional Water Quality Control Board – Protects ground and surface water quality in the Los Angeles Region.
320 West 4th Street **Phone: (213) 576-6600**
Suite 200
Los Angeles, CA 90013
Fax: (213) 576-6640
Web site: <http://www.swrcb.ca.gov/~rwqcb4>

United States Environmental Protection Agency – Office of Water Resources – National entity that protects human health and safeguards the natural environment: air, water and land.
Ariel Rios Building **Phone: (202) 272-0167**
1200 Pennsylvania Avenue, NW
Washington, DC 20460
Web site: <http://www.epa.gov/ow/index.html>

ERASE THE WASTE COMMUNITY ADVISORY COUNCIL (CAC)

Members of the CAC offer counsel on the strategic direction of the community engagement component of the California Water Boards' *Erase the Waste* public education campaign.

Asian Pacific Islander Small Business Program
Cooke Sunoo, Director **Phone: (213) 473-1603**
231 East Third Street, Suite G106
Los Angeles, CA 90013
Fax: (213) 473-1601

Association of Community Organizations for Reform Now
John Jackson, Head Organizer **Phone: (213) 747-4211**
3655 South Grand Avenue
Los Angeles, CA 90007
Fax: (213) 747-4221

Clinica Monseñor Oscar Romero
Angel Fabian **Phone: (213) 201-1778**
Community Center Director
123 South Alvarado Street, Suite 132
Los Angeles, CA 90057
Fax: (213) 201-1797

Families In Good Health
Lillian Lew, Director **Phone: (562) 491-9100**
Veasna Ek, Project Assistant
411 East Tenth Street, Suite 207
Long Beach, CA 90813
Fax: (562) 491-9824

First African Methodist Episcopal Church
Peggy Hill, Director **Phone: (323) 730-7760**
Brenda Carter, Staff
2241 South Hobart Boulevard
Los Angeles, CA 90018
Fax: (323) 737-0292

L.A. Free Clinic

Kevin Swanson
Public Relations and Marketing Manager
6043 Hollywood Boulevard
Los Angeles, CA 90028
Fax: (323) 462-6731

Phone: (323) 337-1720

Magic Johnson Foundation

Shane Taylor Jenkins
Program Director
9100 Wilshire Boulevard, Suite 700 East Tower
Beverly Hills, CA 90212
Fax: (310) 246-1106

Phone: (310) 246-4400

Multicultural Area Health Education Center

Luis Mata
President/CEO
5051 East Third Street
Los Angeles, CA 90022
Fax: (323) 780-7646

Phone: (323) 780-7640

Proyecto Pastoral/Dolores Mission Women's Cooperative

Gabriel Balna
Executive Director
135 North Mission Road
Los Angeles, CA 90033
Fax: (323) 268-7228

Phone: (323) 881-0016

EVENT RESOURCES

STATE, COUNTY AND CITY POLLUTION PREVENTION EVENTS (PARTIAL LIST)

JUNE 2004

L.A. Works Day: June 5, 2004

570 West Avenue 26, Suite 400
Los Angeles, CA 90065
Phone: (323) 224-6510
Fax: (323) 224-6518
E-mail: info@laworks.com
Web site: <http://www.laworks.com>

SEPTEMBER 2004

Coastal Clean Up Day: September 18, 2004

Haan-Fawn Chau
Heal the Bay
3220 Nebraska Avenue
Santa Monica, CA 90404
Phone: (800) HEAL-BAY
or (310) 453-0395
Fax: (310) 453-7927
E-mail: info@healthebay.org or hfchau@healthebay.org
Web site: <http://www.healthebay.org/volunteer/ccd>

Pollution Prevention Week

Department of Toxic Substances Control
Office of Pollution Prevention & Technology Development
P.O. Box 806
Sacramento, CA 95812-0806
Phone: (916) 322-3670
Fax: (916) 327-4494
Web site:
<http://www.dtsc.ca.gov/pollutionprevention/index.html>

OCTOBER 2004

Annual Second Chance Week

Choose2Reuse
Web site: <http://www.choose2reuse.org>

NOVEMBER 2004

America Recycles Day: November 15, 2004

Steve Kullen
ARD National Program Manager
1325 G Street, NW, Suite 1025
Washington, DC 20005
Phone: (202) 347-0450
ext. 25
E-mail: stevek@nrc-recycle.org
Web site: <http://www.americarecyclesday.org>

MARCH 2005

Great American Clean Up: March 1- May 31, 2005

Keep America Beautiful
1010 Washington Boulevard
Stamford, CT 06901
Phone: (203) 323-8987
Fax: (203) 325-9199
Web site: <http://www.kab.org>

APRIL 2005

Earth Day Los Angeles: April 16, 2005

1247 Lincoln Boulevard, #253
Santa Monica, CA 90401
Phone: (310) 390-4366
or (888) 295-8372
Fax: (310) 362-8400
E-mail: info@earthdayla.org
Web site: <http://www.earthdayla.org/>

MAY 2005

Annual River Clean Up: May 7, 2005

Friends of the Los Angeles River
570 West Avenue 26 #250
Los Angeles, CA 90065
Phone: (323) 223-0585
E-mail: mail@folar.org
Web site: <http://www.folar.org>

Ocean Day: May 20, 2005

The Malibu Foundation for
Environmental Education
1471 South Bedford Street # 3
Los Angeles, CA 90035
Phone: (310) 652-4324
Fax: (310) 652-5169
Web site: <http://www.malibufoundation.org>

The Great Earth Walk

The Earth Institute
6033 West Century Boulevard, Suite 400
Los Angeles, CA 90045
Phone: (877) GEW-2004
Fax: (310) 861-5333
Web site: <http://www.theearthinstitute.org/upcoming.htm>

Note: Although these events have specific dates for this and the upcoming year, most take place annually on the same month as listed above.

HOUSEHOLD HAZARDOUS WASTE RESOURCES

The time for all events is 9:00 a.m. to 3:00 p.m., unless otherwise noted.

Some examples of what you CAN bring to a collection event:

- Motor oil, filters, brake fluid
- Paint, paint thinner, turpentine
- Cleaners with acid or lye
- Pesticides or herbicides
- Household batteries or car batteries
- Pool chemicals

What you CANNOT bring to a collection event:

- Explosives
- Ammunition
- Radio active materials
- Trash
- Tires
- Business waste

How should you prepare?

- Bring the items you wish to dispose of in a sturdy box preferably in their original, labeled containers
- Do not ever mix products together
- It is illegal to transport more than 15 gallons or 125 pounds of hazardous waste in your personal vehicle
- Be prepared to leave your containers. Because of permitting requirements, and the volume of people that utilize the program, items such as gasoline will not be returned

Note: For the most updated list of collection events, please visit <http://www.888cleanla.com>.

2004 L.A. COUNTY HOUSEHOLD HAZARDOUS WASTE COLLECTION EVENTS

Date	City	Location
06/06/04	Agoura	Calabasa Landfill 5300 Lost Hills Road
06/12/04	Torrance	American Honda 1919 Torrance Boulevard
06/19/04	Irwindale	Department of Public Works- Flood Control Maintenance Yard 160 East Longden Avenue
06/26/04	Culver City	West Los Angeles College 4800 Freshman Drive Parking lot 7
07/17/04	Rancho Palos Verdes	Rancho Palos Verdes City Hall 30940 Hawthorne Boulevard
07/17/04	Woodland Hills	Pierce College* 6201 Winnetka Avenue Parking lot 4
07/18/04	Woodland Hills	Pierce College* 6201 Winnetka Avenue Parking lot 4
08/07/04	Unincorporated Whittier	Rio Hondo College 3600 Workman Mill Road Parking lot A
08/14/04	Arcadia	Santa Anita Race Track Gate 6, Colorado Place
08/21/04	Glendora	Citrus College Stadium parking lot Barranca Avenue (North of Alosta Avenue)
08/28/04	Carson	Joint Water Pollution Control Plant West Maintenance Building parking lot 24501 South Figueroa Street

** Events conducted by the City of Los Angeles*

PERMANENT HOUSEHOLD HAZARDOUS WASTE CENTERS

The following S.A.F.E. (Solvents/Automotive/Flammables/Electronics) Recycling and Disposal Centers are open to the public. More information is available by calling 1(800) 98-TOXIC.

San Pedro

S.A.F.E. Center
1400 North Gaffey Street
San Pedro, CA 90021
Hours of Operation: Friday, Saturday and Sunday
9:00 a.m. – 3:00 p.m.

Playa Del Rey

Hyperion Treatment Plant S.A.F.E. Center
7660 West Imperial Highway, Gate B
Playa del Rey, CA 90293
Hours of Operation: Saturdays and Sundays
9:00 a.m. – 3:00 p.m.

Sun Valley

Randall Street S.A.F.E. Center
11025 Randall Street
Sun Valley, CA 91352
Hours of Operation: Saturday, Sunday and Monday
9:00 a.m. – 3:00 p.m.

Boyle Heights

S.A.F.E. Center
2649 East Washington Boulevard
Los Angeles, CA 90021
Hours of Operation: Friday, Saturday and Sunday
9:00 a.m. – 3:00 p.m.

West Los Angeles

U.C.L.A. S.A.F.E. Center
550 Charles E. Young Drive West
Los Angeles, CA 90095
Hours of Operation: Thursday, Friday and Saturday
8:00 a.m. – 2:00 p.m.

Appendix D

Soils Report (for fill placement only at this time)

DRAFT



Converse Consultants

Geotechnical Engineering, Environmental & Groundwater Science, Inspection & Testing Services

**GEOTECHNICAL STUDY REPORT
Proposed Fill Placement at the West Parcel
Mount San Antonio College
Walnut, California**

Converse Project No. 13-31-339-01

December 19, 2014

Prepared For:

Mount San Antonio College
Facilities Planning & Management
1100 North Grand Avenue, Building No. 23
Walnut, California 91789

Prepared By:

Converse Consultants
222 East Huntington Drive, Suite 211
Monrovia, California 91016



Converse Consultants

Geotechnical Engineering, Environmental & Groundwater Science, Inspection & Testing Services

December 19, 2014

Ms. Mikaela (Mika) Klein, AIA, LEED AP
Facilities Planner
Mt. San Antonio College
Facilities Planning & Management
1100 North Grand Avenue, Building 23
Walnut, California 91789

Subject: **GEOTECHNICAL STUDY REPORT**
Proposed Fill Placement for the West Parcel
Mount San Antonio College
Walnut, California
Converse Project No. 13-31-339-01

Dear Ms. Klein:

Converse Consultants (Converse) has prepared this geotechnical study report to present the findings, conclusions and recommendations of our geotechnical investigation for the proposed placement of fill to create a large pad area at elevation 761 feet within the west parcel on the campus of Mt. San Antonio College, in Walnut, California. The purpose of this study was to explore and evaluate the soil, bedrock and groundwater conditions beneath the project area of the proposed west parcel, with the ultimate objective of creating large buildable pads for possible solar arrays. It should be advised that this report is not intended for DSA and CGS review submittal and not for design of future structures. Our services were performed in accordance with our proposal dated December 6, 2013.

Based on our field exploration, laboratory testing, geologic evaluation, and geotechnical analysis, the site is suitable from a geotechnical standpoint for the site grading and earthwork proposed projects, provided our conclusions and recommendations are implemented during construction.

We appreciate the opportunity to be of continued service to Mt. San Antonio College. If you should have any questions, please do not hesitate to contact us at (626) 930-1200.

Sincerely,

CONVERSE CONSULTANTS

William H. Chu, P.E., G.E.
Senior Vice President/Principal Engineer

Dist: 5/Addressee
MM/MBS/SKS/WHC/jjl

PROFESSIONAL CERTIFICATION

This report has been prepared for Mount San Antonio College for the Proposed Fill Placement at the West Parcel by the staff of Converse under the professional supervision of the individuals whose seals and signatures appear hereon.

The findings, recommendations, specifications or professional opinions contained in this report were prepared in accordance with generally-accepted professional engineering and engineering geologic principles and practice in this area of Southern California. There is no warranty, either expressed or implied.



Mohammad-Saad Malim, E.I.T.
Staff Engineer



Mark B. Schluter, C.E.G.
Senior Engineering Geologist



William H. Chu, P.E., G.E.
Senior Vice President/Principal Engineer



Siva K. Sivathasan, PhD, PE, GE, DGE,
QSD, F. ASCE
Vice President/Principal Engineer



EXECUTIVE SUMMARY

The following is a summary of our geotechnical investigation, conclusions and recommendations, as presented in the body of this report. Please refer to the appropriate sections of the report for complete conclusions and recommendations. In the event of a conflict between this summary and the report, or an omission in the summary, the report shall prevail.

- The proposed developments for the West Parcel consists of the removal of approximately the top 55 feet of the hillside, canyon cleanouts and placement of fill in the areas between the hillsides to create a large pad area at elevation 761 feet to be used for proposed solar arrays. Fill soils from proposed development areas on campus (hilltop removal on west side of track stadium, parking structure excavation, etc.) are planned be imported and used to raise the West Parcel to create a building pad for the future solar arrays.
- Our subsurface exploration consisted of drilling, logging and sampling twenty-one (21) hollow-stem auger borings from May 5 to May 9, 2014 extending between depths of approximately 10 to 51.5 feet below the existing ground surface (bgs), and one (1) bucket auger boring (BH-13) on May 19, 2014 to a depth of 31 feet (bgs).
- The earth materials encountered during our investigation consist of existing fill soils in the northernmost portion of the project site at the Christmas Tree Lot, natural alluvial and colluvial soils, and sedimentary bedrock of the Sycamore Formation.
- Undocumented fill was encountered during exploration of the West Parcel site, to a depth of five (5) feet in Boring BH-3 in the area of the Christmas Tree lot. Deeper fill may occur elsewhere on the site. The fill at the site consists of primarily silty sand with some gravels.
- The project site is not located within a currently designated State of California Earthquake Fault Zone (formerly Alquist-Priolo Special Studies Zones) for surface fault rupture.
- The sites are partially located within potential liquefaction zones per the State of California Seismic Hazard Zones Map for the San Dimas Quadrangle. Based on our liquefaction potential analyses, the project sites are not susceptible to liquefaction and seismically-induced settlement is considered to be negligible.
- Localized zones of groundwater were encountered during subsurface exploration, ranging in depths at approximately 16 feet bgs in boring BH-15 to 44 feet bgs in Boring BH-14. Localized perched groundwater seepage should be anticipated during excavation in these locations.



- Based on our field exploration, laboratory testing, and analyses of subsurface conditions at the site, remedial grading, including cut-and-fill operations, is required to prepare the planned fill pads for support of the future developments.
- The fill slope on the east side of the site along Grand Avenue will include a maximum proposed fill height of approximately 80 feet. Existing slopes within the project area will be completely removed or reduced to a 2:1 (H:V) gradient during the proposed grading operations placed over underlying hard sandstone pebble conglomerate bedrock. In the absence of significantly steep slopes, the potential for seismically-induced landslides to affect the proposed site is considered to be very low.
- The earth materials at the site consisting of soil should be excavatable with conventional heavy-duty earth moving and trenching equipment. Earth materials consisting of conglomerate bedrock will be considerably harder to excavate. The on-site materials contain about 5 to 30 percent gravel up to 3 inches in maximum dimension. Larger gravels, cobbles and possible boulders may exist at the site. Earthwork should be performed with suitable equipment for gravelly materials.

Results of our investigation indicate that the site is suitable from a geotechnical standpoint for the proposed development, provided that the recommendations contained in this report are incorporated into the design and construction of the project.



TABLE OF CONTENTS

1.0 INTRODUCTION	1
2.0 SITE AND PROJECT DESCRIPTION	1
2.1 SITE DESCRIPTION	1
2.2 PROJECT DESCRIPTION	2
3.0 SCOPE OF WORK.....	3
3.1 SITE RECONNAISSANCE	3
3.2 SUBSURFACE EXPLORATION AND ACCESS ROAD GRADING	3
3.3 LABORATORY TESTING.....	4
3.4 ANALYSES AND REPORT.....	4
3.5 LOCATING HIGH-PRESSURE GAS LINE	4
4.0 GEOLOGIC CONDITIONS.....	4
4.1 REGIONAL GEOLOGY	4
4.2 SUBSURFACE PROFILE OF SUBJECT SITE	5
4.3 GROUNDWATER	7
4.4 SUBSURFACE VARIATIONS.....	7
5.0 FAULTING AND SEISMIC HAZARDS	8
5.1 SEISMIC CHARACTERISTICS OF NEARBY FAULTS	8
5.2 SEISMIC HISTORY	10
5.3 SEISMIC HAZARDS	10
6.0 SEISMIC ANALYSIS.....	13
6.1 CBC SEISMIC DESIGN PARAMETERS	13
6.2 SITE-SPECIFIC GROUND MOTION RESPONSE SPECTRUM	13
7.0 GEOTECHNICAL EVALUATIONS AND CONCLUSIONS	16
8.0 EARTHWORK AND SITE GRADING RECOMMENDATIONS	17
8.1 GENERAL EVALUATION.....	17
8.2 OVER-EXCAVATION/REMOVAL	17
8.3 CANYON BOTTOM SUBDRAINS	19
8.4 STRUCTURAL FILL	20
8.5 EXCAVATABILITY AND RIPPABILITY	22
8.6 EXPANSIVE SOIL.....	23
8.7 SHRINKAGE AND BULKING	23
8.8 SUBGRADE PREPARATION	24
9.0 PRELIMINARY DESIGN RECOMMENDATIONS.....	24
9.1 SHALLOW FOUNDATIONS.....	24
9.2 PIER FOUNDATIONS	25
9.3 MODULUS OF SUBGRADE REACTION	26



9.4	LATERAL EARTH PRESSURE	26
9.5	FLEXIBLE PAVEMENT	27
9.6	RIGID PAVEMENT.....	28
9.7	SITE DRAINAGE	29
10.0	CONSTRUCTION RECOMMENDATIONS	29
10.1	TEMPORARY EXCAVATIONS	29
10.2	GEOTECHNICAL SERVICES DURING CONSTRUCTION	30
11.0	CLOSURE	31
12.0	REFERENCES	32

TABLES

	Page Number
Table No. 1, <i>Summary of Regional Faults</i>	9
Table No. 2, <i>CBC Seismic Design Parameters</i>	13
Table No. 3, <i>2013 CBC Mapped Acceleration Parameters</i>	14
Table No. 4, <i>Site-Specific Response Spectrum Data</i>	15
Table No. 5, <i>CBC Seismic Design Parameters</i>	15
Table No. 6, <i>Caltrans Class 2 Permeable Material Grading</i>	20
Table No. 7, <i>Lateral Earth Pressures for Retaining Wall Design</i>	27
Table No. 8, <i>Flexible Pavement Structural Sections</i>	28
Table No. 9, <i>Rigid Pavement Structural Sections</i>	28
Table No. 10, <i>Slope Ratios for Temporary Excavation</i>	29

DRAWINGS

	Following Page Number
Drawing No. 1, <i>Site Location Map</i>	1
Drawing No. 2, <i>Site Plan and Approximate Locations of Borings</i>	At End of Report
Drawing No. 3, <i>Regional Geologic Map</i>	5
Drawing No. 4, <i>Cross Section A-A', B-B', C-C' and D-D'</i>	At End of Report
Drawing No. 5, <i>Southern California Regional Fault Map</i>	8
Drawing No. 6, <i>Epicenters Map of Southern California Earthquakes (1800-1999)</i>	10
Drawing No. 7, <i>Seismic Hazard Zones Map</i>	10
Drawing No. 8, <i>Site Specific Design Response Spectrum</i>	14

APPENDICES

Appendix A.....	<i>Field Exploration for Proposed Driving Range Fill</i>
Appendix B.....	<i>Laboratory Testing Program for Proposed Driving Range Parcel</i>
Appendix C	<i>Liquefaction Settlement Analysis</i>
Appendix D	<i>Earthwork Specifications</i>



1.0 INTRODUCTION

This report contains the findings and recommendations of our geotechnical study performed at the site of the proposed *Fill Placement at West Parcel Project*, located west of Grand Avenue on the campus of Mount San Antonio College, in the City of Walnut, California, as shown on Drawing No. 1, *Site Location Map*.

The purpose of this investigation was to explore and evaluate the soil, bedrock, and groundwater conditions of the existing West Parcel hillside site with soil borings to further determine the excavatability, rippability, and grading considerations for removal of approximately the top 55 feet of the hillside and placement of fill in the canyon areas between the hillsides to create a large pad area at elevation 761 feet to be used for future solar arrays. Conditions of particular concern include the depth of groundwater, the liquefaction potential of natural soils and the stability of the proposed fill slope on the east side along Grand Avenue with a maximum proposed fill height of approximately 80 feet.

We have used proposed preliminary site plans provided to us by your office, titled "Grand Avenue Parcel Earthwork, Exhibit D-5" dated 11/04/13 and a revised drawing annotated by Necomb/Anderson/McCormick dated 01/07/14 as references for this project. The site plan is included in this report as Drawing No. 2, *Site Plan and Approximate Locations of Borings*. Plans for the proposed future buildings and structures were not available or reviewed in the preparation of this geotechnical study. When such plans are made available, additional geotechnical studies, reviews and recommendations may be warranted.

This report is written for the project described herein and is intended for use solely by Mount San Antonio College and its design team. This report is not intended for submittal to the Department of the State Architect (DSA) or the California Geological Survey (CGS). It should not be used as a bidding document but may be made available to the potential contractors for information on factual data only. For bidding purposes, the contractors should be responsible for making their own interpretation of the data contained in this report.

2.0 SITE AND PROJECT DESCRIPTION

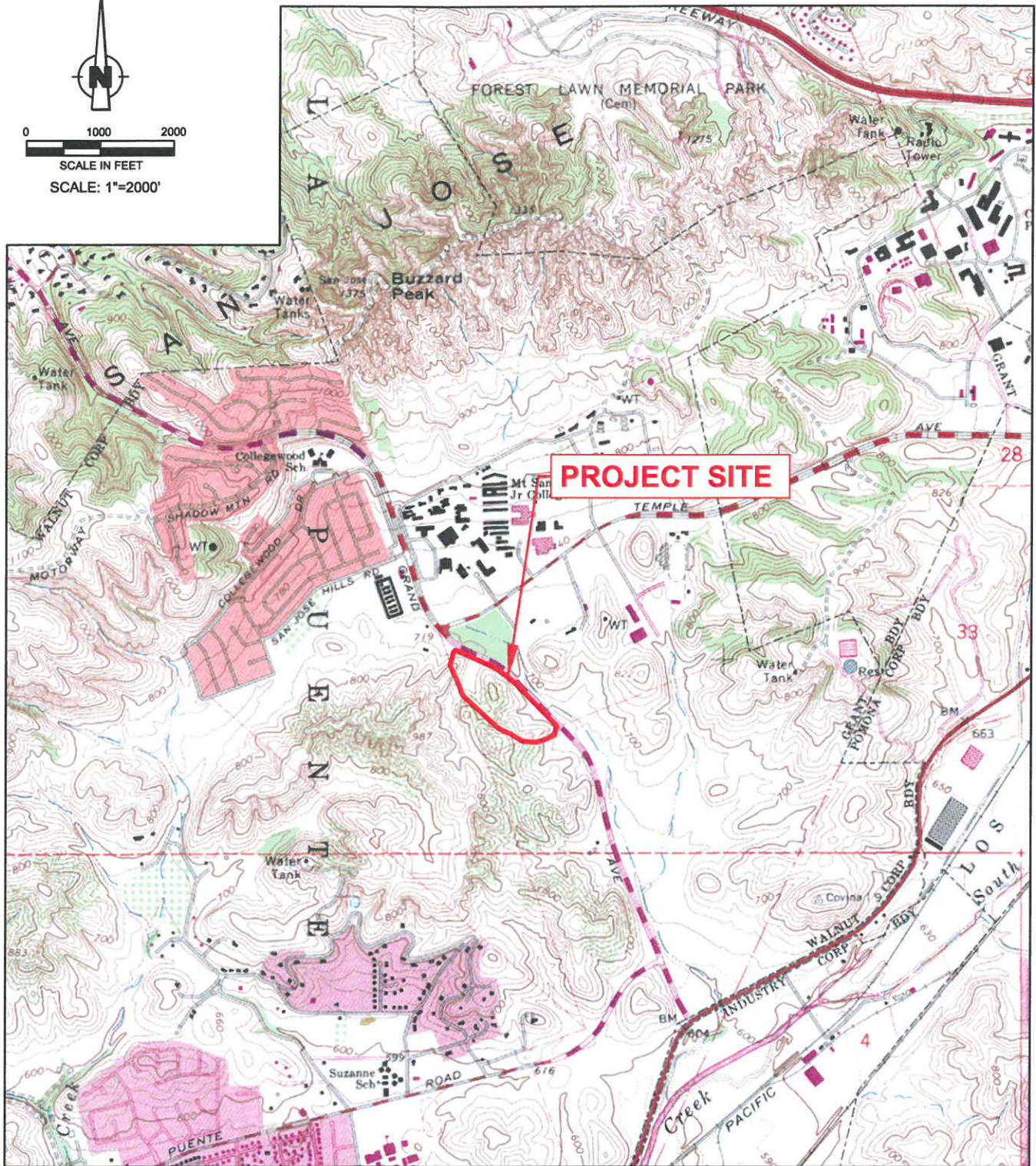
2.1 Site Description

The project site for the proposed West Parcel is primarily located within a natural drainage area and includes four gentle bedrock hilltops located at the southwest portion of the campus as shown on Drawing No. 2, *Site Plan and Approximate Locations of Borings*. The West Parcel is located southwest of Amar Road/Temple Avenue and Grand Avenue. The site dimensions are approximately 1100 feet east-west by 1900 feet





0 1000 2000
SCALE IN FEET
SCALE: 1"=2000'



REFERENCE: USGS MAP
SAN DIMAS QUADRANGLE 1966 PHOTO REVISED 1981

SITE LOCATION MAP

MT. SAN ANTONIO COLLEGE
WEST PARCEL
WALNUT, CALIFORNIA

Project No.

13-31-339-01

Drawing No.

1



Converse Consultants

north-south. The site is bordered by Amar Road to the north, Grand Avenue to the east, and single family residential housing tracts to the west and south. The top of the hilltop in the central portion of the site is at an elevation of approximately 815 feet relative to mean-sea-level (MSL) and rises about 105 feet above the road along Grand Avenue. The site coordinates are: North latitude: 34.0398 degrees, West longitude: 117.8452 degrees.

The geographic coordinates provided herein were centered on the subject sites and were used to calculate the earthquake ground motions. Review of the Engineering Geology and Seismology for Public Schools and Hospitals in California, dated August 9, 2005 (page 35) indicates that accuracy to within a few hundred meters of these coordinates is sufficient for the computation of the earthquake ground motion of the project site.

Historical and modern aerial imagery for the project site were reviewed from Google Earth (2013) and the website www.HistoricAerials.com (2009). The aerial imagery shows hillside ridges with intervening canyons that drained eastward through the project site toward Grand Avenue, located along the southwestern property boundary. A roadway that eventually became Grand Avenue cut through the northern portion of the site (in what is known as the Christmas Tree Lot) as early as 1948. Besides this, the project site was generally undisturbed until 1980, when grading of the slope along the eastern portion of the site was conducted during the widening of Grand Avenue. Sometime after this time, the hilltops along the western portion of the site were flattened to an elevation of approximately 795 feet MSL and 815 feet MSL for the hilltop on the north and central portion of the site respectively, possibly as a result of grading operations for the housing tract west of the site. Currently, the site has been used for cattle grazing lands.

2.2 Project Description

The proposed developments for the West Parcel consists of the removal of approximately the top 55 feet of the hillside and placement of fill in the areas between the hillsides to create a large pad area at elevation 761 feet to be used for proposed solar arrays. Fill soils from proposed development areas on campus (proposed hilltop removal on west side of track stadium, parking structure excavation, etc.) are planned be imported and used to raise the West Parcel to create a building pad for future solar arrays. The structural information for the future development is unknown at this time.

The planned fill pad at the project site is expected to be up to approximately 60 feet in thickness above the existing grade. The slopes along the western portion of the proposed fill pad are planned to be placed in a 2:1 (H:V) step-like fashion as depicted in Drawing No. 2, *Site Plan and Approximate Locations of Borings*.



3.0 SCOPE OF WORK

Our scope of work consists of the tasks described in the following subsections.

3.1 *Site Reconnaissance*

A site reconnaissance was conducted on April 02, 2014, during which the surface conditions were noted and the locations of the borings were determined. The borings were located using existing boundary features as a guide and should be considered accurate only to the degree implied by the method used. Underground Service Alert (USA) of Southern California was notified of our proposed drilling locations at least 48 hours prior to initiation of the subsurface field work.

3.2 *Subsurface Exploration and Access Road Grading*

Our subsurface exploration consisted of drilling, logging and sampling twenty-one (21) hollow-stem auger borings from May 5 to May 9, 2014 extending between depths of approximately 10 to 51.5 feet below the existing ground surface (bgs), and one (1) bucket auger boring on May 19, 2014 with downhole observations to a depth of 31 feet (bgs). The borings were advanced using a truck-mounted drill rig with an 8-inch-diameter hollow-stem auger and 24-inch bucket auger drilled within or adjacent to the accessible areas of the planned pad locations.

The grading of a temporary dirt access road was required to provide drill rig access to the proposed boring locations on top of the bedrock hilltop just south of the Christmas Tree Lot and across the hillside to the southern portion of the site. The access road was cut into the sides of the hill, gradually working its way up the slope to the top of the hill. Converse had a representative onsite to observe the access road grading, which was done using a track-mounted dozer (John Deere 650J dozer with sideboard). The access road will be removed during hillside grading.

Subsurface conditions encountered in the borings were continuously logged and classified in the field by visual/manual examination by a Converse engineer and geologist in accordance with the Unified Soil Classification System (USCS). California Modified Sampler ("ring samples"), Standard Penetration Test (SPT) samples, and bulk soil samples were obtained from the borings and were delivered to the laboratory for testing. The bucket auger boring location (BH-13) was utilized for downhole logging. A geologist downhole logged the boring to identify bedrock materials and bedding structure. The bore holes were backfilled with soil cuttings following the completion of drilling.



The approximate locations of the exploratory borings are shown in Drawing No. 2, *Site Plan and Approximate Locations of Borings*. A description of the field exploration and sampling program are presented in Appendix A, *Field Exploration*.

3.3 Laboratory Testing

Representative samples of the site soils were tested in the laboratory to aid in the classification and to evaluate relevant engineering properties. The tests performed included:

- *In Situ* Moisture Contents and Dry Densities (ASTM Standard D2216)
- Grain Size Distribution (ASTM Standard C136)
- Maximum Dry Density and Optimum-Moisture Content Relationship (ASTM Standard D1557)
- Direct Shear (ASTM Standard D3080)
- Consolidation (ASTM Standard D2435)
- Expansion Index (ASTM Standard D4829)

A detailed description of the laboratory test methods and test results are presented in Appendix B, *Laboratory Testing Program*.

3.4 Analyses and Report

Data obtained from the exploratory fieldwork and laboratory-testing program were analyzed and evaluated. This report was prepared to provide the findings, conclusions and recommendations developed during our investigation and evaluation.

3.5 Locating High-Pressure Gas Line

As requested, Converse retained a subcontractor to detect the existing high pressure gas line along the eastern property boundary by using ground penetration radar devices. The location of the referenced high-pressure gas line has been delineated with approximate depths of the line as shown on Drawing No. 2, *Site Plan and Approximate Locations of Borings*.

4.0 GEOLOGIC CONDITIONS

4.1 Regional Geology

The proposed project sites are located in the San Jose Hills along the western edge of the Pomona Valley within the Transverse Ranges geomorphic province of California near the northern terminus of the Peninsular Ranges Province.



The Pomona Valley is situated at the junction of two major convergent fault systems: 1) the northwest-trending, high-angle strike-slip faults of the San Andreas Fault System projecting from the northern terminus of the Peninsular Ranges Province, and 2) east-trending, low-angle reverse or reverse-oblique faults bounding the southern margin of the Transverse Ranges. Faults in the first group include the Palos Verdes, Newport-Inglewood, Whittier-Elsinore, and San Jacinto fault zones. Faults in the second group include the Malibu-Santa Monica, Hollywood, Raymond, Sierra Madre, and Cucamonga fault zones.

The *Geologic Map of the San Dimas and Ontario Quadrangles* prepared by Thomas W. Dibblee, Jr. (DF-91, dated July, 2002) was reviewed during this study. The map shows the location of Mount San Antonio College campus within an alluvial basin surrounded by hillsides consisting of sedimentary bedrock of the Monterey (Puente) and Sycamore Canyon Formations. No faults are shown running through or projecting toward the project sites. The location of the proposed West Parcel is mapped as underlain by the Sycamore Canyon Formation (Tscs). The Sycamore Canyon Formation consists of light gray sandstone and includes some conglomerate consisting of plutonic-derived cobbles and boulders in a light gray sandstone matrix. A portion of the map by Thomas W. Dibblee has been reproduced and is shown as Drawing No. 3, *Regional Geologic Map*.

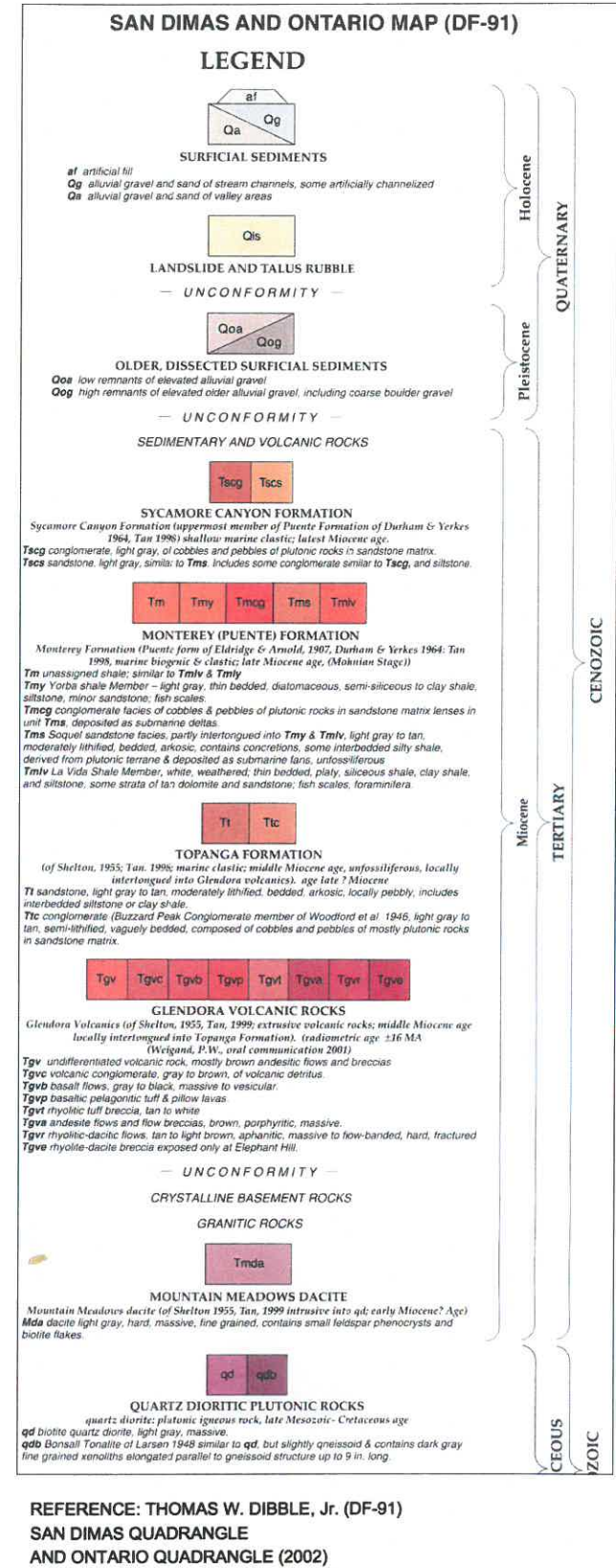
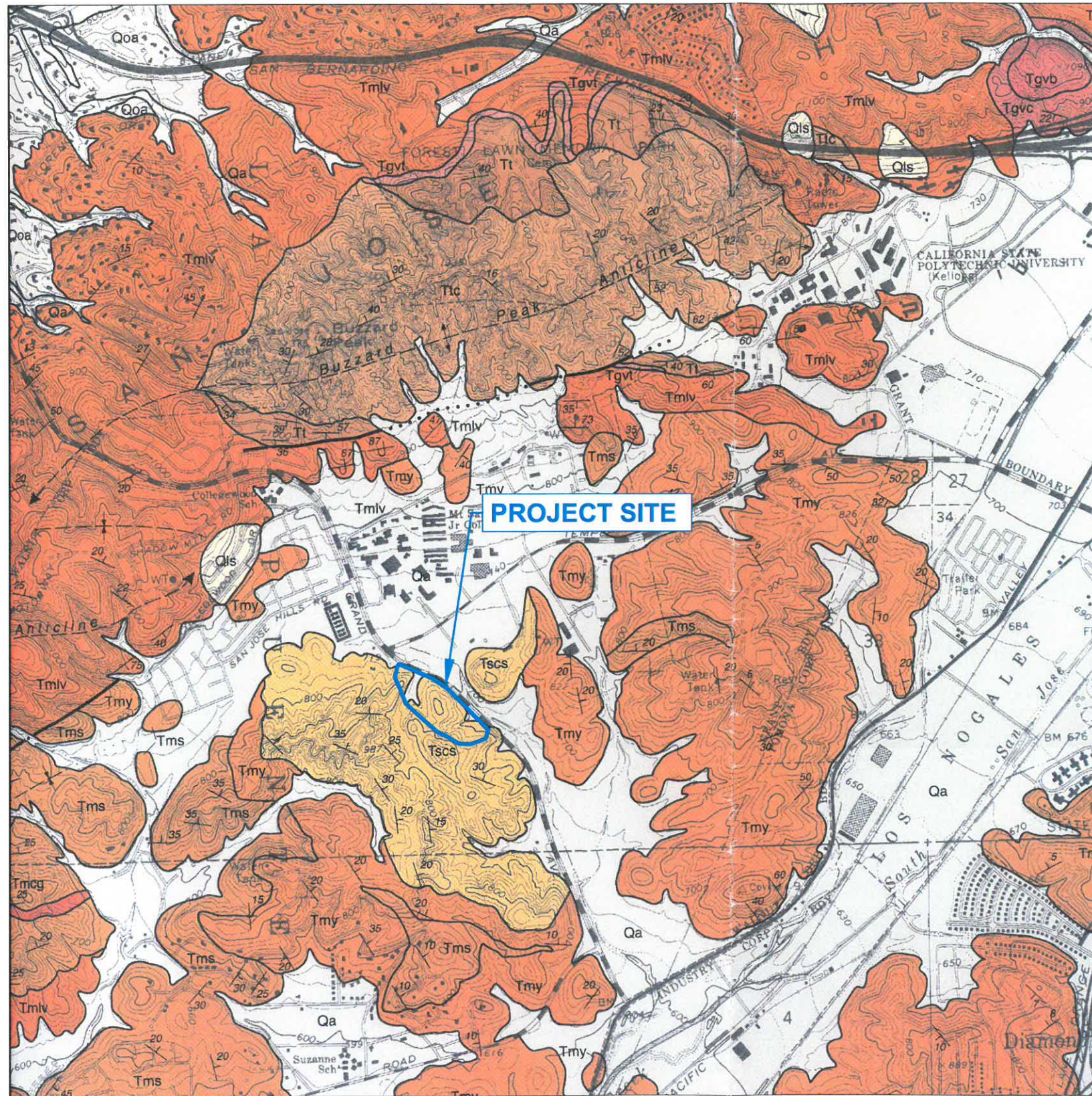
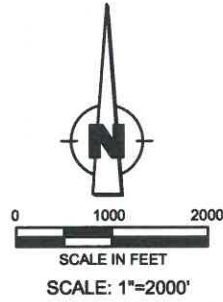
Durham and Yerkes (1964) attribute the Sycamore Canyon Formation to the upper member of the Monterey (Puente) Formation. For the purposes of this report, the bedrock underlying both project sites will be considered as belonging to the Puente Formation.

4.2 Subsurface Profile of Subject Site

The earth materials encountered during our study consist of existing fill soils in the northernmost portion of the project site at the Christmas Tree Lot, natural alluvial and colluvial soils, and sedimentary bedrock of the Sycamore Formation. Existing soil and bedrock materials exhibited moisture contents ranging from as low as 3% up to 55% during the field exploration, while the optimum moisture contents for purposes of compaction range from 9.2% to 16.8%. Thorough moisture conditioning and mixing of soils should be performed to meet the requirements of acceptable fill materials prior to placing as engineered fill.

For the proposed West Parcel, much of the site exposes natural materials at the surface, generally consisting of colluvial soil over bedrock on the hilltop and alluvial soils over bedrock on the gentle swales below. The surficial geologic conditions and locations of borings performed for Site A are shown on Drawing No. 2, *Site Plan and Approximate Locations of Borings*.





REGIONAL GEOLOGIC MAP

Fill Soils

Undocumented fill was encountered during exploration of the West Parcel site, to a depth of five (5) feet in Boring BH-3 in the area of the Christmas Tree lot. Deeper fill may occur elsewhere on the site. The fill at the site consists of primarily silty sand with some gravels.

Alluvium

Alluvial soil was encountered overlying the bedrock at the project site varying in thickness from approximately five (5) feet in Boring BH-7, BH-16, and BH-17 to twenty (20) feet in Boring BH-3. The alluvial soil encountered in the borings consists primarily of mixtures of silty sand and gravelly sand with variable amounts of clay, gravel, and cobbles. The soils also include occasional fragments of weathered bedrock. We expect that cobbles are larger in size than the largest observed, approximately three (3) inches in the maximum dimension, in the hollow-stem-auger soil cuttings. Based on our previous experience and knowledge of the area, and materials encountered during subsurface exploration, cobbles greater than eight (8) inches and occasional boulders may also be buried below the site (Converse 2007). The full thickness of the alluvial soils in the northern portion of the site near the gate and well (Borings BH-1 and BH-2) was not determined, as the full thickness and bottom of the alluvium was not penetrated in the borings.

Colluvium

Residual colluvial soil overlies the bedrock knolls throughout the subject site and was encountered to depths of two (2) feet in Borings BH-5 and BH-6 to five (5) feet in Boring BH-4. The colluvium consists of silty sand with variable amounts of clay, gravel, and cobbles.

Sandstone and Pebble Conglomerate Bedrock of the Sycamore Canyon Formation (Tscg)

The majority of the proposed West Parcel site is underlain by hard, cemented sandstone pebble conglomerate bedrock. The harder conglomerate bedrock consists of gravel and cobble-sized rocks in a cemented sand matrix. The conglomerate is massive and may contain boulder-sized hard rock material. The conglomerate bedrock materials were observed to be very hard during the exploration and will be more difficult to excavate during construction.

For additional information on the subsurface conditions, see the Logs of Boring data in Appendix A, *Field Exploration*.

Subsurface geologic conditions beneath the subject site are depicted on *Geologic Cross-Sections A-A', B-B', C-C' and D-D'* for the site as shown on Drawing No. 4. The geologic



cross-sections show the proposed developments (building pads for solar arrays) and the interpreted extent and limits of the different earth materials encountered during our study.

Downhole geologic observations were performed by an engineering geologist in Boring BH-13. A limited access 24-inch diameter bucket auger was used to drill the boring to a depth of thirty-one (31) feet. Boring BH-13 encountered moderately hard to hard conglomerate bedrock that required coring bits to drill the boring to a depth of thirty-one (31) feet. Bedding attitudes ranged from north 10 to 30 degrees east with bedding dips of 8 to 25 degrees northwest. These bedding attitudes will produce neutral to favorable orientations with respect to proposed cut slopes.

4.3 Groundwater

The West Parcel site is situated within the Puente Basin portion of the larger San Gabriel Valley Groundwater Basin. Localized zones of groundwater were encountered during subsurface exploration, ranging in depths at approximately 16 feet bgs in boring BH-15 to 44 feet bgs in Boring BH-14.

Higher groundwater levels at the south eastern portion of the site are likely attributed to the existing drainage channel, which still transmits water along its historical drainage axis towards Grand Avenue to the existing Snow Creek stream channel located east of Grand Avenue. It appears the groundwater encountered during the current exploration is localized within the axes of historical drainages and is not likely to be encountered in areas away from the drainage channels. Canyon bottom subdrain devices should be installed along the bottom axes of the drainage channels during grading operations, as described herein, to transmit the subsurface water to approved outlet locations.

It should be noted that wet weather periods may produce groundwater seepage in the bedrock fractures and along less permeable layers from infiltration of rainfall. Surface flow and runoff and should be anticipated during grading and construction. In general, groundwater levels fluctuate with the seasons. Groundwater conditions below any given site vary depending on numerous factors including seasonal rainfall, local irrigation, and groundwater pumping.

4.4 Subsurface Variations

Based on results of the subsurface exploration and our experience with the subject area, some variations in the continuity and nature of subsurface conditions within the project site are anticipated. Because of the uncertainties involved in the nature and depositional characteristics of the earth material at the site, care should be exercised in interpolating or extrapolating subsurface conditions between or beyond the boring locations. If, during construction, subsurface conditions different from those presented in this report are encountered, this office should be notified immediately so that recommendations can be modified, if necessary.



5.0 FAULTING AND SEISMIC HAZARDS

The project site is not located within a currently designated State of California Earthquake Fault Zone (formerly Alquist-Priolo Special Studies Zones) for surface fault rupture. The Alquist-Priolo Earthquake Fault Zoning Act requires the California Geological Survey to zone “active faults” within the State of California. An “active fault” has exhibited surface displacement with Holocene time (within the last 11,000 years) hence constituting a potential hazard to structures that may be located across it. Public school structures are required to be set-back at least 50 feet from an active fault. The active fault set-back distance is measured perpendicular from the dip of the fault plane.

5.1 Seismic Characteristics of Nearby Faults

No surface faults are known to project through or towards the site. The closest known faults to the project site with mappable surface expressions are the San Jose Fault (3.9 kilometers to the north) and Chino-Central Avenue (Elsinore) Fault (8.2 kilometers to the east/ southeast). The concealed Puente Hills Blind Thrust Fault (Coyote Hills segment) along with other regional faults was included as active fault sources for the probabilistic seismic hazard analysis for the site. The approximate locations of these local active faults with respect to the project site are tabulated on Table No. 1, *Summary of Regional Faults*, and are shown on Drawing No. 5, *Southern California Regional Fault Map*.

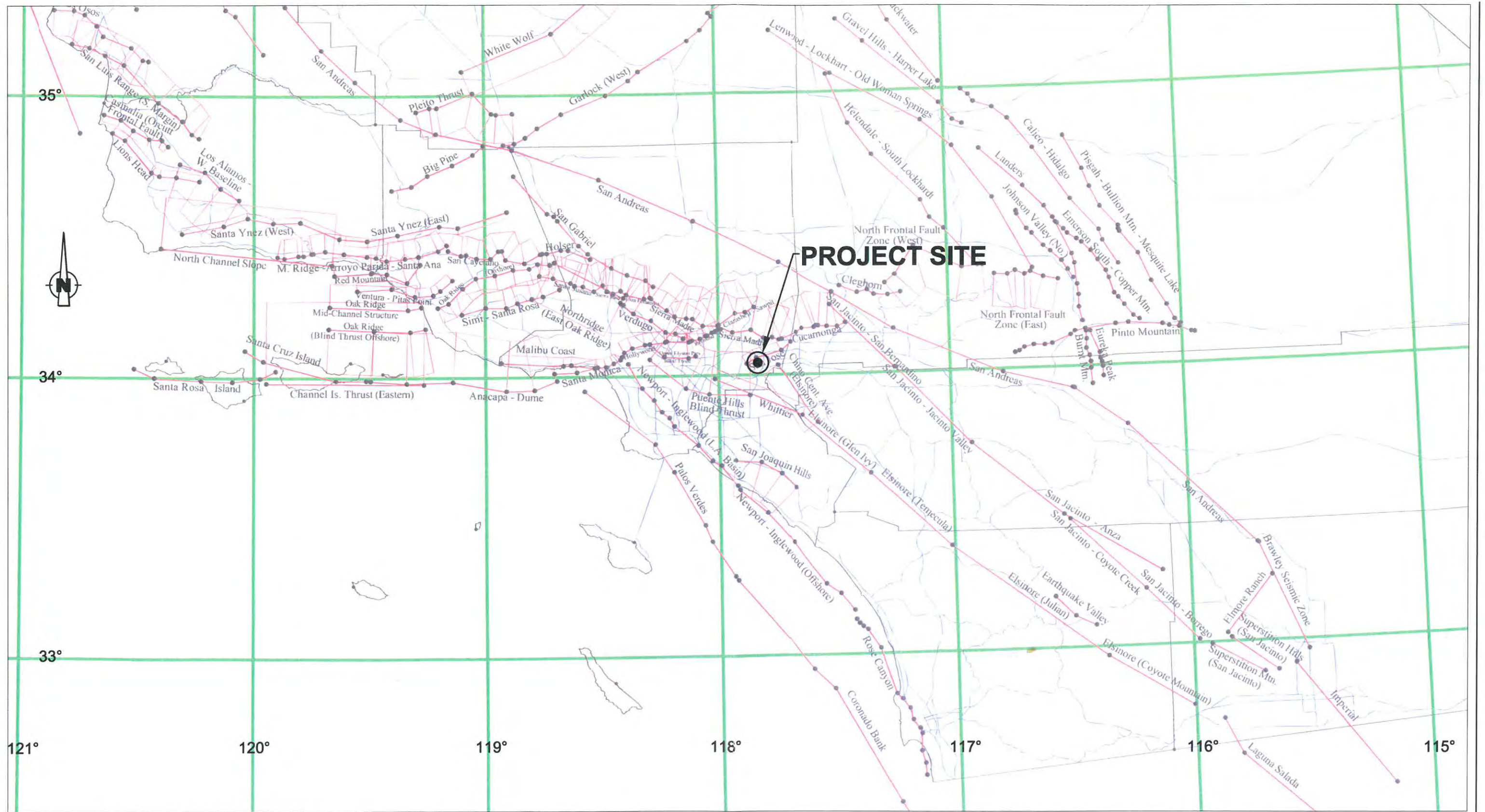
The Pomona Valley Basin is bounded to the north by the San Jose Fault and to the southwest by the Chino-Central Avenue faults. These two fault systems do not exhibit evidence of surface movement within Holocene time and are not considered active based on current geologic information. The San Jose and Chino-Central Avenue faults are considered Late Quaternary, having exhibited displacement and movement within the past 130,000 years.

San Jose Fault



The San Jose Fault lies along the southern flank of the northeast trending San Jose Hills. The fault trends northeast and dips to the north. The mapped trace of the San Jose Fault is located approximately 3.9 kilometer north of the project.

Geotechnical investigations performed on the campus of California State Polytechnic University at Pomona (Geocon, 2001) indicated that the San Jose is an active reverse-separation fault. Because of the lack of success in previous fault trench excavations, Geocon based its conclusions on a series of closely spaced boreholes along several traverses across a subtle topographic bench on the campus. They discovered two shallowly to moderately north-dipping thrust faults with the most recent displacement





REFERENCE: PORTION OF CGS 2002 CALIFORNIA FAULT MODEL
 MODIFIED FOR USE WITH FRISKSP AND EQFAULT
 BY THOMAS F. BLAKE, AUGUST 2004

-  FAULT SOURCES
-  BLIND THRUST FAULT,
POLYGONS INDICATE RUPTURE
PLANES AND DIP DIRECTION

SOUTHERN CALIFORNIA REGIONAL FAULT MAP



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Project No.
 13-31339-01

Drawing No.

5

being about 1 meter and occurred since 3500 yrs. B.P. on the basis of radiocarbon dating of faulted alluvium. These findings would show this segment of the fault is active, but is a reverse separation fault south of the San Jose Hills (Yeats, 2004).

Chino-Central Avenue Faults

The Chino and Central Avenue faults trend northwest along the southwest portion of the Chino Basin. The fault ties along the northeast edge of the Puente Hills. The Chino and Central Avenue faults are considered part of the Elsinore fault which is one of the major right-lateral, strike-slip faults of the Peninsular Ranges geomorphic province. The Elsinore fault splits near Prado Dam into the Chino-Central Avenue and Whittier faults. The Chino-Central Avenue faults are two separate fault strands that strike northwest. The Chino fault dips southwest and is at least 18 km in length. The Central Avenue fault is about 8 km in length and concealed by younger alluvial deposits.

As is the case for most areas of Southern California, ground-shaking resulting from earthquakes associated with nearby and more distant faults may occur at the project site. During the life of the project, seismic activity associated with active faults can be expected to generate moderate to strong ground shaking at the site.

Table No. 1, *Summary of Regional Faults*, summarizes selected data of known faults capable of seismic activity within 50 kilometers of the site. The data presented below was calculated using EQFAULT Version 3.0 with updated fault data from “The Revised 2002 California Probabilistic Seismic Hazard Maps (Cao et al., 2003)”, Appendix A, and other published geologic data.

Table No. 1, Summary of Regional Faults

Fault Name and Section	Approximate * Distance to Site (kilometers)	Max. Moment Magnitude (Mmax)	Slip Rate (mm/yr)
San Jose*	3.9	6.4	0.50
Chino-Central Ave. (Elsinore)	8.2	6.7	1.00
Whittier	12.6	6.8	2.50
Sierra Madre*	13.5	7.2	2.00
Puente Hills Blind Thrust**	14.1	7.3	0.70
Cucamonga*	15.1	6.9	5.00
Elysian Park Blind Thrust*	17.1	6.7	1.50
Raymond	21.6	6.5	1.50
Clamshell-Sawpit	23.6	6.5	0.50
Elsinore-Glen Ivy	28.2	6.8	5.00
Verdugo*	30.1	6.9	0.50
Compton Thrust	31.4	6.8	1.50
Hollywood	37.6	6.4	1.00



Fault Name and Section	Approximate * Distance to Site (kilometers)	Max. Moment Magnitude (Mmax)	Slip Rate (mm/yr)
San Jacinto – San Bernardino	38.0	6.7	12.00
San Andreas – 1857 Rupture*	39.5	7.4	30.00
San Andreas – Mojave*	39.5	7.4	30.00
Newport-Inglewood (L.A. Basin)*	39.7	7.1	1.00
San Andreas – San Bernardino*	41.1	7.5	24.00
San Andreas – Southern*	41.1	7.2	25.00
Cleghorn*	45.7	6.7	2.00

*Review of published geologic data and mapping including Appendix A of the 2002 California Fault Parameters Report (Cao et al., 2003). Distance from the site to nearest subsurface projection, per Shaw et al., 2002.

5.2 Seismic History

An analysis of the seismic history of the site was conducted using the computer program EQSEARCH, (Blake, 2000, updated 2010), and attenuation relationships proposed by Bozorgnia, et al. (1999) for soft rock conditions. The Southern California Earthquake Catalog with the Southern California Earthquake Center was also utilized (SCEC, 2013).

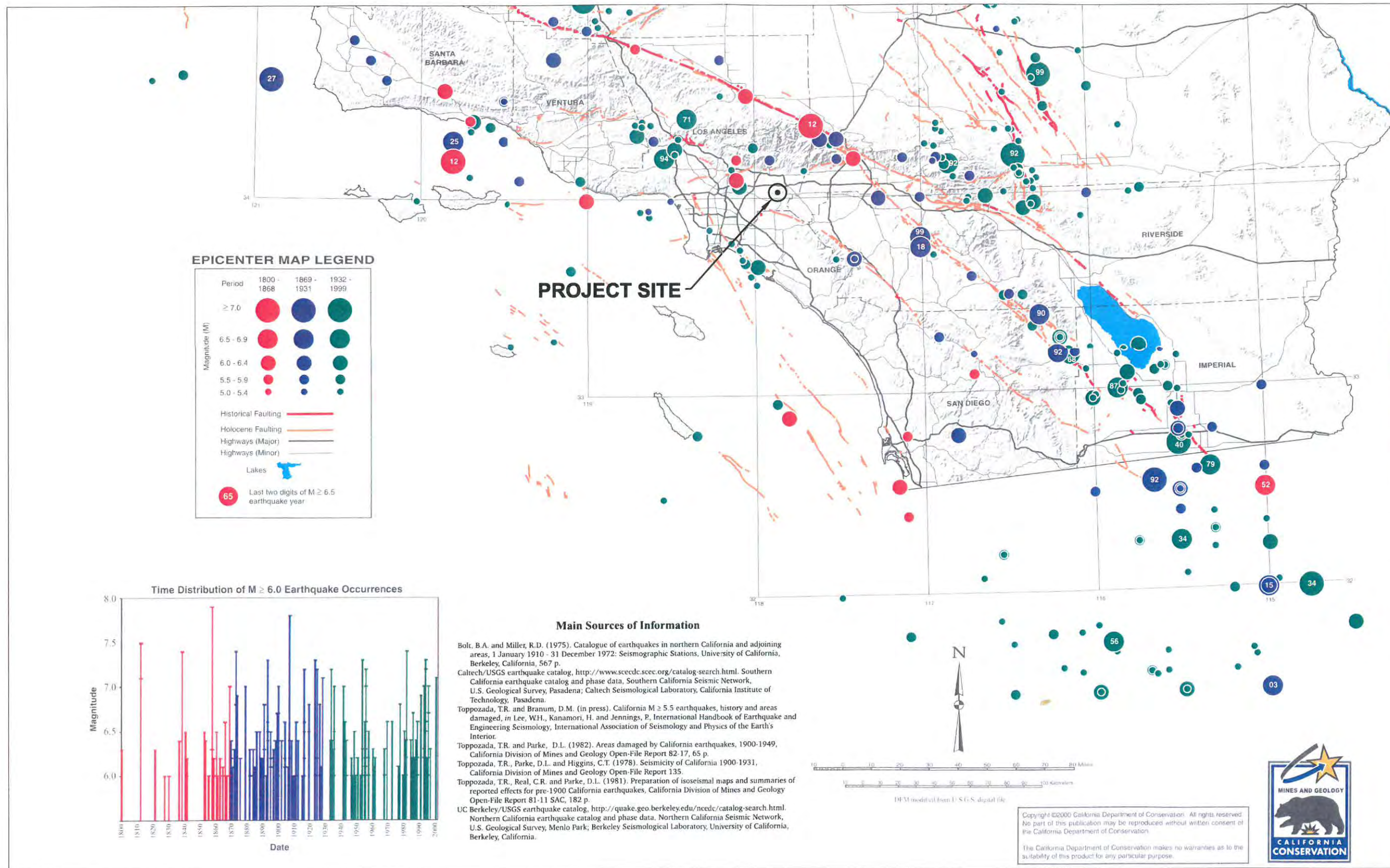
Based on the analysis of seismic history, the number of earthquakes with a moment magnitude of 5.0 or greater occurring within a distance of 100 kilometers was 81 since the year 1800. Based on the analysis, the largest earthquake-induced ground acceleration affecting the site since the year 1800 is a 7.0 magnitude earthquake in 1858 with a calculated ground acceleration of 0.18g at the site.

Review of recent seismological and geophysical publications indicates that the seismic hazard for the Pomona Basin is high. The Pomona Basin is bounded by active regional faults on all sides and underlain by alluvial sediments and buried thrust faults. The seismic hazard for the heavily populated Pomona Basin was illustrated by the 1971 San Fernando, 1987 Whittier Narrows, 1991 Sierra Madre and 1994 Northridge earthquakes. The epicenters for these earthquakes are shown on Drawing No. 6, *Epicenters Map of Southern California Earthquakes (1800-1999)*.

5.3 Seismic Hazards

In addition to direct effects on structures, strong ground shaking from earthquakes can also produce other side effects that include surface fault rupture, soil liquefaction, lateral spreading, seismically-induced settlement, ground lurching, landsliding, earthquake-induced flooding, seiches, and tsunamis. Drawing No. 7, *Seismic Hazard Zones Map*, has been prepared to show the mapped location of potential liquefaction and earthquake-induced landslide areas near the project site. The State of California





REFERENCE: PORTION OF EPICENTERS AND AREAS DAMAGED BY M \geq 5 CALIFORNIA EARTHQUAKES, 1800-1999 CALIFORNIA DEPARTMENT OF CONSERVATION, MAP SHEET 49 DATED 2000.

EPICENTER MAP OF SOUTHERN CALIFORNIA EARTHQUAKES (1800-1999)

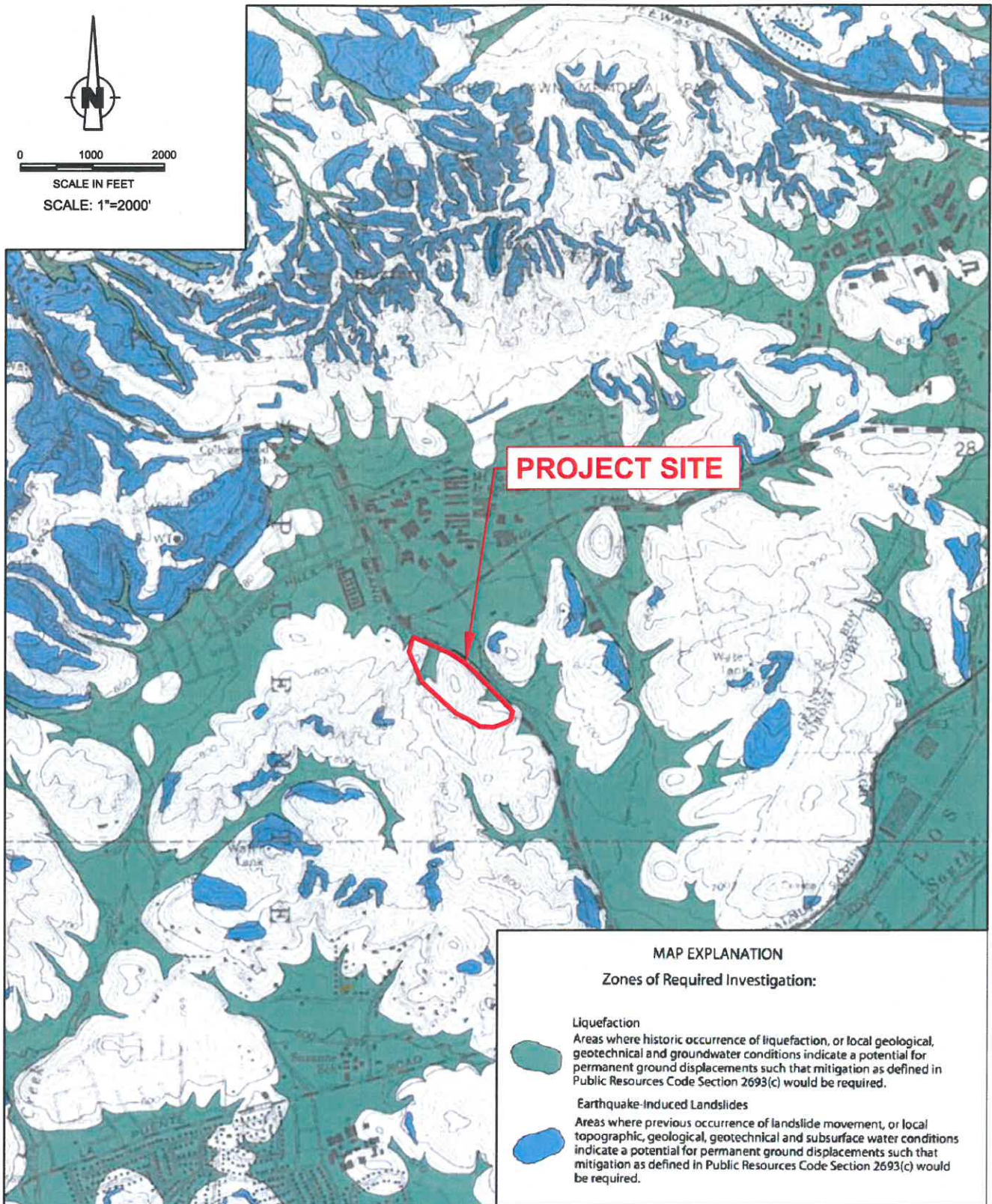


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0 1000 2000

SCALE IN FEET
SCALE: 1"=2000'



MAP EXPLANATION

Zones of Required Investigation:

Liquefaction

Areas where historic occurrence of liquefaction, or local geological, geotechnical and groundwater conditions indicate a potential for permanent ground displacements such that mitigation as defined in Public Resources Code Section 2693(c) would be required.

Earthquake-Induced Landslides

Areas where previous occurrence of landslide movement, or local topographic, geological, geotechnical and subsurface water conditions indicate a potential for permanent ground displacements such that mitigation as defined in Public Resources Code Section 2693(c) would be required.

REFERENCE: SAN DIMAS QUADRANGLE 1999
SEISMIC HAZARD ZONES STATE OF CALIFORNIA

SEISMIC HAZARD ZONES MAP



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WEST PARCEL
WALNUT, CALIFORNIA

Project No.
13-31-339-01

Drawing No.
7

Seismic Hazard Zone Map for the San Dimas Quadrangle (March 25, 1999) shows the project site is located within an area of potential liquefaction and portions of the site indicate areas of potential seismically-induced landsliding.

Results of a site-specific evaluation for each type of possible seismic hazard are explained below:

5.3.1 Surface Fault Rupture

The site is not located within a currently designated State of California Earthquake Fault Zone. Based on a review of existing geologic information, no known active fault zone crosses or projects toward the site. The potential for surface rupture resulting from the movement of the nearby major faults is considered remote.

5.3.2 Liquefaction and Seismically-Induced Settlement

Liquefaction is the sudden decrease in the strength of cohesionless soils due to dynamic or cyclic shaking. Saturated soils behave temporarily as a viscous fluid (liquefaction) and, consequently, lose their capacity to support the structures founded on them. The potential for liquefaction decreases with increasing clay and gravel content, but increases as the ground acceleration and duration of shaking increase. Liquefaction potential has been found to be the greatest where the groundwater level and loose sands occur within 50 feet of the ground surface.

The site is partially located within potential liquefaction zones per the State of California Seismic Hazard Zones Map for the San Dimas Quadrangle. Drawing No. 7, *Seismic Hazard Zones Map*, has been prepared to show the mapped locations of potential liquefaction in relation to the project sites. Groundwater was encountered at 19 feet in BH-1 and BH-2 in the northern portion of the site and at 44 feet and 16 feet respectively in BH-14, BH-15.

The liquefaction potential and seismic settlement analyses were performed utilizing SPT data obtained from boring BH-15 for the upper 50 feet of soil. The detailed results of the liquefaction analysis and a summary of the methods used are presented in Appendix C, *Liquefaction/Seismic Settlement Analysis*. Based on our liquefaction potential analyses, and the firm bedrock materials encountered during the exploration, the project site is not susceptible to liquefaction and seismically-induced settlement is anticipated to be negligible.

5.3.3 Lateral Spreading

Seismically induced lateral spreading involves primarily lateral movement of saturated earth materials due to ground shaking. It differs from the slope failure in that complete ground failure involving large movement does not occur due to the



relatively smaller gradient of the initial ground surface. Lateral spreading is demonstrated by near-vertical cracks with predominantly horizontal movement of the soil mass involved. The topography at the project sites consists of bedrock knolls overlain by relatively-dry and dense colluvial soils and gentle swales below. Under these circumstances, the potential for lateral spreading at the subject site is considered negligible.

5.3.4 Seismically-Induced Slope Instability

Seismically-induced landslides and other slope failures are common occurrences during or soon after earthquakes. Slopes within the project area will be completely removed or reduced to a 2:1 (H:V) gradient during the proposed grading operations. Slopes with a gradient steeper than 2:1 (H:V) would be over underlying hard, cemented sandstone pebble conglomerate bedrock. In the absence of significantly steep slopes, the potential for seismically-induced landslides to affect the proposed site is considered to be very low.

5.3.5 Earthquake-Induced Flooding

Review of the Flood Insurance Rate Map (FIRM), Panel 1725 of 2350, from the FEMA Map Service Center Viewer, indicates that the site is in an area designated as Zone D, "Areas in which flood hazards are undetermined, but possible." Due to the absence of groundwater at shallow depths, distance of the subject site from large bodies of water and regional flood control structures, the potential for flooding at the subject site is considered remote.

5.3.6 Tsunami and Seiches

Tsunamis are seismic sea waves generated by fault displacement or major ground movement. Based on the location of the site from the ocean (over 20 kilometers), tsunamis do not pose a hazard. Seiches are large waves generated in enclosed bodies of water in response to ground shaking. Based on site location away from lakes and reservoirs, seiches do not pose a hazard.

5.3.7 Volcanic Eruption Hazard

There are no known volcanoes near the site. According to Jennings (1994), the nearest potential hazards from future volcanic eruptions is the Amboy Crater-Lavic Lake area located in the Mojave Desert more than 120 miles east/northeast of the site. Volcanic eruption hazards are not present.



6.0 SEISMIC ANALYSIS

6.1 CBC Seismic Design Parameters

Seismic parameters based on the 2013 California Building Code are calculated using the United States Geological Survey *U.S. Seismic Design Maps* website application and the site coordinates (34.0398 degrees North Latitude, 117.8452 degrees West Longitude). These coordinates are in reference to the central portion of the project area. Review of the California Geologic Survey (CGS) publication Engineering Geology and Seismology for Public Schools, Colleges and Hospitals in California, dated August 9, 2005 (page 32) indicates that accuracy to within a few hundred meters of these coordinates is sufficient for the computation of the earthquake ground motion of the project site. Therefore, these coordinates are considered representative of the entire site. The seismic parameters are presented below.

Table No. 2, CBC Seismic Design Parameters

Seismic Parameters	2013 CBC
Site Class	D
Mapped Short period (0.2-sec) Spectral Response Acceleration, S_s	2.177 g
Mapped 1-second Spectral Response Acceleration, S_1	0.776 g
Site Coefficient (from Table 1613.5.3(1)), F_a	1.0
Site Coefficient (from Table 1613.5.3(2)), F_v	1.5
MCE 0.2-sec period Spectral Response Acceleration, S_{MS}	2.177 g
MCE 1-second period Spectral Response Acceleration, S_{M1}	1.163 g
Design Spectral Response Acceleration for short period, S_{DS}	1.451 g
Design Spectral Response Acceleration for 1-second period, S_{D1}	0.776 g
Seismic Design Category	E

6.2 Site-Specific Ground Motion Response Spectrum

The subject site is partially located in a Seismic Hazard Zone. Based on 2013 CBC Section 1616A.1.3, a site-specific ground motion analysis is required. A site-specific response spectrum was developed for the project for a Maximum Considered Earthquake (MCE), defined as a horizontal peak ground acceleration that has a 2 percent probability of being exceeded in 50 years (return period of approximately 2,475 years).

In accordance with ASCE 7-10, Section 21.2 and Code Application Notice (CAN 2-1802A.6.2) the site-specific response spectra can be taken as the lesser of the probabilistic maximum rotated component of MCE ground motion and the 84th percentile of deterministic maximum rotated component of MCE ground motion response spectra. The design response spectra can be taken as 2/3 of site-specific MCE response



spectra, but should not be lower than 80 percent of CBC general response spectra. The risk coefficient C_R has been incorporated at each spectral response period for which the acceleration was computed in accordance with ASCE 7-10, Section 21.2.1.1.

The 2013 CBC mapped acceleration parameters are provided in the following table. These parameters were determined using the United States Geological Survey *U.S. Seismic Design Maps* website application, and in accordance with ASCE 7-10 Sections 11.4, 11.6, 11.8 and 21.2.

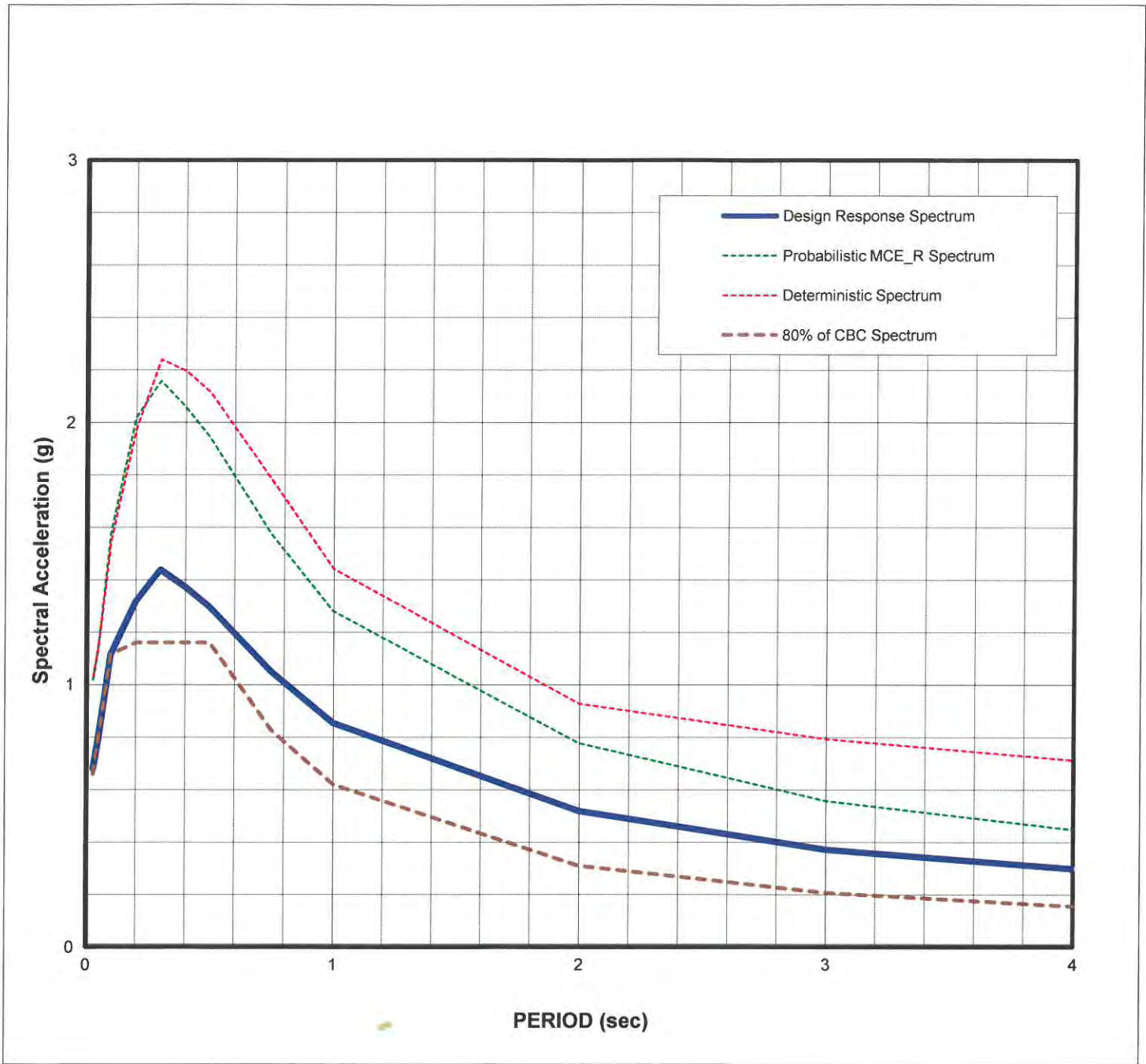
Table No. 3, 2013 CBC Mapped Acceleration Parameters

Site Class	D	Seismic Design Category	E
S_s	2.177	C_{RS}	1.007
S_1	0.776	C_{R1}	1.019
F_a	1	$0.08 F_v/F_a$	0.120
F_v	1.5	$0.4 F_v/F_a$	0.600
S_{MS}	2.177	T_0	0.107
S_{M1}	1.164	T_s	0.535
S_{DS}	1.451	T_L	8
S_{D1}	0.776		

A Site-Specific response analysis, using faults within 100 kilometers of the site, was developed using the computer program EZ-FRISK by Risk Engineering (v. 7.51) and the 2008 USGS Fault Model database. Attenuation relationships proposed by Boore and Atkinson (2008), Campbell and Bozorgnia (2008), Chiou and Youngs (2008) were used in the analysis. These attenuation relationships are based on Next Generation Attenuation (NGA) project model. Maximum rotated components were determined using Huang (2008) method. An average shear wave velocity at upper 30 meters of soil profile (V_{s30}) of 270 meters per second, depth to bedrock of with a shear wave velocity 1,000 meters per second at 50 meters below grade, and depth of bedrock where the shear wave velocity is 2,500 meters per second at 3,000 meters below grade were selected for EZ-Frisk Analysis.

Applicable response spectra data are presented in the table below and on Drawing No. 8, *Site-Specific Design Response Spectrum*. These curves correspond to response values obtained from above attenuation relations for horizontal elastic single-degree-of-freedom systems with equivalent viscous damping of 5 percent of critical damping.





Note: Calculated using EZFRISK program Risk Engineering, version 7.51 and USGS 2008 fault model database.

SITE SPECIFIC DESIGN RESPONSE SPECTRUM

Mt. SAC West Parcel

Project Number:

Mt. San Antonio College, Walnut

13-31-339-01

For : Mt. San Antonio College



Converse Consultants

Drawing No.

8

Table No. 4, Site-Specific Response Spectrum Data

Period (sec)	2% in 50yr Probabilistic Spectral Acceleration (g)	Risk Coefficient C_R	Probabilistic MCE_R Spectral Acceleration (g)	84th Percentile Deterministic MCE Response Spectra, (g)	Deterministic CBC Lower Level, (g)	Site Specific MCE_R Spectral Acceleration (g)	80% CBC Design Response Spectrum	Site Specific Design Spectral Acceleration (g)
0.03	1.013	1.007	1.020	1.032	0.825	1.020	0.660	0.680
0.05	1.130	1.007	1.138	1.146	0.975	1.138	0.790	0.790
0.10	1.567	1.007	1.578	1.550	1.350	1.550	1.116	1.116
0.20	2.005	1.007	2.019	1.976	1.500	1.976	1.161	1.317
0.30	2.140	1.009	2.158	2.240	1.500	2.158	1.161	1.439
0.40	2.039	1.010	2.059	2.197	1.500	2.059	1.161	1.373
0.50	1.922	1.012	1.944	2.116	1.500	1.944	1.161	1.296
0.75	1.551	1.015	1.575	1.782	1.200	1.575	0.828	1.050
1.00	1.258	1.019	1.282	1.442	0.900	1.282	0.621	0.855
2.00	0.764	1.019	0.779	0.929	0.450	0.779	0.310	0.519
3.00	0.548	1.019	0.559	0.794	0.300	0.559	0.207	0.372
4.00	0.440	1.019	0.448	0.714	0.225	0.448	0.155	0.299

Vertical acceleration at the site may be calculated using the ASCE 7-10, Section 12.4.

The site-specific design response parameters are provided in the following table. These parameters were determined from Design Response Spectra presented in table above, and following guidelines of ASCE Section 21.4.

Table No. 5, Site-Specific Seismic Design Parameters

	Design Parameters (5% Damping)	Lower Limit, 80% of CBC Design Spectra
Site-Specific 0.2-second period Spectral Response Acceleration, S_{MS}	1.976	1.742
Site-Specific 1-second period Spectral Response Acceleration, S_{M1}	1.558	0.931
Site-Specific Design Spectral Response Acceleration for short period S_{DS}	1.317	1.161
Site-Specific Design Spectral Response Acceleration for 1-second period, S_{D1}	1.039	0.621



7.0 GEOTECHNICAL EVALUATIONS AND CONCLUSIONS

Based on the results of our background review, subsurface exploration, laboratory testing, geotechnical analyses, and understanding of the planned grading development, it is our opinion that the proposed project is feasible from a geotechnical standpoint, provided the following conclusions and recommendations are incorporated into the project plans, specifications, and are followed during site construction.

The following is a summary of the major geologic and geotechnical factors to be considered for the planned project:

- The site is located partially within a mapped Seismic Hazard Zone for liquefaction. Based on our liquefaction potential analyses, and the firm bedrock materials encountered during the exploration, the project site is not susceptible to liquefaction and seismically-induced settlement is anticipated to be negligible.
- Localized zones of groundwater were encountered during subsurface exploration, ranging in depths at approximately 16 feet bgs in boring BH-15 to 44 feet bgs in Boring BH-14. Localized perched groundwater seepage should be anticipated during excavation in these locations.
- For the West Parcel site, the axes of historical drainage channels should be installed with canyon bottom subdrains to collect any direct subsurface drainage to an approved outlet location.
- Undocumented fill soils up to 5 feet were encountered in boring BH-3 at the northern portion of the site in the Christmas Tree Lot. The fill at the site consists of primarily silty sand with some gravels. Undocumented fill should be excavated and recompacted.
- Based on the proposed plan, cut-and-fill grading operations are required to achieve the planned finished grades.
- The surficial site soils and earth materials generated from excavations of bedrock at both sites exhibit a low expansive potential. These materials should be mitigated if they are to be used for any future structural support.
- On-site silty, clayey soils and siltstone with an expansion index exceeding 20 should not be re-used for compaction within 5 feet below the planned fill pad finish grade or for retaining wall backfill. Soils containing organic materials should not be used as structural fill. The extent of removal should be determined by the geotechnical representative based on soil observation during grading. Based on borings BH-1 and BH-20, the top 5 feet of existing grade exhibits an expansion index greater than 20.
- The planned fill pad at the site is expected to be up to approximately 60 feet in thickness above the existing grade. Long term consolidation ground settlement for



the planned compacted fill pads is expected to be less than 1.5 inches with differential settlement of 0.5 inch over a 30-foot span.

- The earth materials at the site consisting of soil should be excavatable with conventional heavy-duty earth moving and trenching equipment. Earth materials consisting of conglomerate bedrock will be considerably harder to excavate. The on-site materials contain about 5 to 30 percent gravel up to 3 inches in maximum dimension. Larger gravels, cobbles and possible boulders may exist at the site. Earthwork should be performed with suitable equipments for gravelly materials.
- Removals up to approximately 55 feet deep are anticipated.
- The fill slope on the east side of the site along Grand Avenue will include a maximum proposed fill height of approximately 80 feet. Existing slopes within the project area will be completely removed or reduced to a 2:1 (H:V) gradient during the proposed grading operations placed over underlying hard sandstone pebble conglomerate bedrock. In the absence of significantly steep slopes, the potential for seismically-induced landslides to affect the proposed site is considered to be very low.
- Slopes along the western portion of the proposed fill pad are planned to be placed in a 2:1 (H:V) step-like fashion as depicted in Drawing No. 2, *Site Plan and Approximate Locations of Borings*.

8.0 EARTHWORK AND SITE GRADING RECOMMENDATIONS

8.1 General Evaluation

Based on our field exploration, laboratory testing, and analyses of subsurface conditions at the site, remedial grading including cut-and-fill operations is required to prepare the planned fill pads for support of the future developments. To reduce differential settlement, variations in the soil type, degree of compaction, and thickness of the compacted fill, the thickness of compacted fill placed underneath the footings should be kept uniform.

Site grading recommendations provided below are based on our experience with similar projects in the area and our evaluation of this study. Site preparation might involve removal of any existing structures with their foundations and other existing underground manmade structures and utilities.

8.2 Over-Excavation/Removal

The existing undocumented fill materials in their present condition are not considered suitable for supporting the planned additional fill. All undocumented fill should be removed, moisture-conditioned if necessary, and replaced as compacted fill. The actual depth of over-excavation from the existing ground surface will depend on existing depth



of fill placed during site grading. During our explorations in the proposed area, undocumented fill soils up to five (5) feet in thickness below the existing ground surface were encountered in boring BH-3 at the northern portion of the site in the Christmas Tree Lot. The depth of existing fill could be deeper elsewhere onsite.

Unsuitable natural surface soils and alluvium shall be removed, moisture conditioned to near optimum moisture levels, mixed and recompacted as compacted fill to project specifications. Clay top soils that are disturbed and loosened by seasonal cycles of wetting and drying producing desiccation cracks and voids shall be removed and recompacted. Estimated depth of clay top soil removal is approximately three (3) feet. Loose, disturbed or unsuitable alluvial soils encountered in the drainage canyons shall be removed to firm natural soils and/or bedrock and then replaced as compacted fill. Loose and unsuitable alluvial soils shall be cleaned out of the canyon bottoms prior to the placement of compacted fills and canyon bottom subdrains.

Due to the proposed approximately 55 foot removal of bedrock off of the top of hill, the rebound of the cut subgrade of bedrock is expected after the cut is first made. Elastic rebound due to removal of overburden typically occurs for cuts of greater than 50 feet in thickness. The amount of rebound will vary across the site and may result in an uneven ground surface. Therefore, we recommend the hilltop removal portions of the site (cut areas) be over-excavated at least two (2) feet and replaced with a properly compacted fill. This will aid in reducing unevenness in the subgrade below the planned pavement and/or future structures.

Keyways with a minimum width of 25 feet and a minimum embedment depth of 5 feet should be excavated and constructed along the toe of the compacted fill slope for the site. Backdrains should be installed at the bottom of slope with a minimum one percent gradient to outlet pipe. A backdrain consisting of 4-inch diameter perforated PVC pipe (Schedule 40 or equivalent) with perforations down and ends capped encased with 1-cubic-foot $\frac{3}{4}$ -inch gravel per linear foot wrapped with filter fabrics should be installed along the bench. Backdrains should be installed every 15 feet vertically. A Minimum 1 percent gradient to solid outlet pipes is recommended. The outlet pipes should be a minimum of 4-inch diameter PVC pipe (Schedule 40 or equivalent) and be installed every 50 feet horizontal spacing, or minimum two outlets.

All excavations on slopes steeper than a gradient of 10:1 (horizontal: vertical) shall be benched into competent soils or bedrock. Typically the benching should be 2 to 3 feet in height and minimum 3 feet in width.

To minimize the potential of differential settlement, we recommend that over-excavation be kept uniform. The excavation to remove undocumented fill and unsuitable soils should be extended to a minimum of five (5) feet laterally beyond the fill pad limits, where space is available. The actual depth of removal should be determined based on observations and tests made during grading.



The exposed bottom of the over-excavation area should be scarified at least 6 inches; moisture conditioned as needed to near-optimum moisture content, and compacted to 90 percent relative compaction. Over-excavation should not undermine adjacent off-site improvements. Remedial grading should not extend within a projected 1:1 (horizontal to vertical) plane projected down from the outer edge of adjacent off-site improvements.

Existing soil and bedrock materials exhibited moisture contents ranging from as low as 3% up to 55% during the field exploration, while the optimum moisture contents for purposes of compaction range from 9.2% to 16.8%. The grading contractor will need to take efforts to process the soils with thorough moisture conditioning and mixing of soils to meet the requirements of acceptable fill materials prior to placing as engineered fill as stated in the earthwork specifications.

If soft, yielding soil conditions are encountered at the excavation bottom, the following options can be considered:

- a. Over-excavate until reach firm bottom
- b. Over-excavate additional 18 inches deep, and then place at least 18-inch-thick compacted base material (CAB or equivalent) to bridge the soft bottom. Base should be compacted to 95% relative compaction.
- c. Over-excavate additional 18 inches deep, and then place a layer of geofabric (i.e. Marifi HP570, X600 or equivalent), place 18-inch-thick compacted base material (CAB or equivalent) to bridge the soft bottom. Base should be compacted to 95% relative compaction. An additional layer of geofabric may be needed on top of base depending on the actual site conditions.

Site grading may result in transition lines with cut and/or fill conditions. This transition line would require special grading considerations. Detailed site grading recommendations are provided in the following sections.

8.3 Canyon Bottom Subdrains

Canyon bottom subdrain systems should be constructed of a minimum 6-inch diameter, Schedule 80 PVC pipe with glued manufactured pipe fitting and caps. The subdrain pipes should be located in the bottoms of the canyons. The drain pipes should be sloped at a minimum 2% gradient to provide gravity flow to the approved outlet location. Perforated pipes shall be laid with perforations down. Schedule 80 PVC perforated pipe may have to be custom fabricated.

Surface drain systems should not be connected to the subdrain system. Introduction of surface water in the subdrain system could recharge water into the compacted fill soils. Surface and subsurface drainage systems should be kept separate.



A State of California Department of Transportation (Caltrans) Class 2 Permeable Material is recommended for the permeable drain material. The percentage composition by weight of permeable material in place shall conform to the following gradings:

Table No. 6, Caltrans Class 2 Permeable Material Grading

CALTRANS CLASS 2 PERMEABLE MATERIAL	
Sieve Size	Percentage Passing
1"	100
¾"	90 - 100
3/8"	40 - 100
No. 4	25 - 40
No.8	18 - 33
No. 30	5 - 15
No. 50	0 - 7
No. 200	0 - 3

Note: Class 2 permeable material shall have a Sand Equivalent value of not less than 75.

8.4 Structural Fill

All engineered fill should be placed on competent, scarified and compacted bottom as evaluated by the geotechnical engineer and in accordance with the specifications presented in this section. Generally, excavated site soils, free of deleterious materials and rock particles larger than three (3) inches in the largest dimension, should be suitable for placement as compacted fill. Any proposed import fill should be evaluated and approved by Converse prior to import to the site. Import fill material should have an expansion index less than 20.

Excavated conglomerate bedrock, which consists of sand, gravel, and cobbles may be considered as base material below proposed hardscape, such as the propose access road.

Prior to compaction, fill materials should be thoroughly mixed and moisture conditioned when necessary, within two (2) percent of the optimum moisture for granular soils and at approximately three (3) percent above the optimum moisture for fine-grained soils. Fill soils shall be evenly spread in maximum 8-inch lifts, watered or dried as necessary, mixed and compacted to at least the density specified below. The fill shall be placed and compacted on a horizontal plane, unless otherwise approved by the Geotechnical Engineer.

Fills exceeding five (5) feet in height shall not be placed on native slopes that are steeper than 5:1 horizontal:vertical (H:V). Where native slopes are steeper than 5:1 H:V, and the height of the fill is greater than five (5) feet, the fill shall be keyed and



benched into competent materials. A 2:1 (horizontal to vertical) or flatter slope gradient for the planned new fill pad is recommended. All new fill should be compacted to at least 90 percent of the maximum dry density for the upper 10 feet of fill and 95 percent of the maximum dry density for fill placed 10 feet below proposed finished grade in accordance with the ASTM Standard D1557 test method. Appropriate means and methods of placement will be required to achieve these compaction requirements.

Though we expect most of the bedrock materials to break down to less than 3-inch size materials by the standard grading process, following are recommendations with regards to hard cobble and boulder size clasts that may be encountered in the bedrock materials that do not break down without considerable effort.

Structural fills placed in the top ten (10) feet of the finished graded pads and 2:1 (H:V) fill slopes shall contain sedimentary bedrock particles no larger than three (3) inches in size throughout and be mixed evenly throughout the fill soil matrix.

Deeper structural fills placed below the top ten (10) feet of the graded pad and slope surfaces can contain rock particle sizes from three (3) to twelve (12) inch size provided the following conditions are adhered to during grading:

- The rock materials shall not be nested, stacked or piled on top of each other during placement.
- Rock materials shall be evenly placed and dispersed in controlled lifts and layers throughout the compacted fill soils.
- Granular fine grained soils shall be placed and compacted on all sides of the rock to eliminate void spaces.
- Buried rock materials shall be proof-rolled with loaded heavy rubber tire grading equipment (scrapers, loaders and compactors) to provide the required compaction.
- Compaction and moisture conditioning of the structural fill soils containing rocks shall meet all earthwork specifications for structural fill placement.
- Placement of rock within the structural fill soils shall be performed under the full-time observation and testing of the Geotechnical Soil Consultant.

Placement of natural rock materials larger than twelve (12) inches and less than twenty four (24) inches in deeper structural fills shall require special observation and testing during fill placement. Placement of this rock size in the structural fills shall require prior approval by the Geotechnical Soils Consultant on a case by case basis. The contractor shall demonstrate that rocks of this size cannot be broken down and downsized by conventional grading methods.



Natural oversize rock materials that are resistant and durable can be used as natural rock armor for surface drain outlets, drainage aprons and drainage channels. Rocks should be placed in a controlled, tightly spaced pattern with compacted fill or concrete placed between the rocks to eliminate void spaces. The remaining oversize rocks, if any, could then be placed in specific areas selected by the Geotechnical Soils Consultants and documented on the as-built grading plans. The oversize rock shall be placed in accordance with the same criteria as the three (3) to twelve (12) inch size rock materials in controlled layers and with soil placed and compacted on all sides of the rock to eliminate void spaces.

Rock sizes could be increased from 3-inch to 6-inch size maximum in the top 10 feet if significant quantities of hard rocks were to be encountered. However, we do not anticipate this. The rock materials would have to be spread out in the fills in single layers with no nesting, stacking, or voids and then completely buried by fill soils as stated earlier. Additional re-grading of future building pad or structure areas (i.e., footing, slab and utility trench areas) may be required if rocks larger than 3-inch size are used in the top 10-feet of compacted fills.

If the campus decides to allow up to 6-inch size rocks be used within top 10 feet of fills, it should be reminded that earthwork may need to be redone for future buildings or structures and removal of large size rocks may result in requiring imported soils at that time. Temporary shoring may also be required for excavation deeper than 5 feet or sloping excavation is not feasible in future construction activities.

8.5 Excavatability and Rippability

Based on our field exploration, most of the earth materials at the site should be excavatable and rippable with conventional heavy-duty earth moving equipment in good working condition. However areas of harder, cemented and resistant bedrock units and layers (pebble conglomerates, sandstone layers, siliceous layers, etc.) are anticipated to be encountered during excavation and grading. These areas may require the use of larger heavy-duty dozers, excavators, track-mounted hydraulic breakers and/or single shank rippers to loosen, rip, cross-rip, downsize, crush, breakdown, mix and process the excavated sedimentary bedrock materials into soil size materials suitable for use as structural fill. Every effort shall be made during excavation, transport and grading to reduce the size of the bedrock materials to particle sizes less than three (3) inches in size to be adequately placed as structural fill.

The earth materials generated from the removal of the existing bedrock knoll will contain larger gravels, cobbles and possible boulders. Those materials require screening and/or processing into smaller particles prior to be used for compaction as specified in the section under structural fill.



8.6 Expansive Soil

Based on our laboratory testing results, the on-site silty, clayey earth materials are considered to be expansive. On-site silty, clayey soils and siltstone with an expansion index exceeding 20 should not be re-used for compaction within 5 feet below the planned fill pad finish grade or for retaining wall backfill. Soils containing organic materials should not be used as structural fill. The extent of removal should be determined by the geotechnical representative based on soil observation during grading. Based on borings BH-1 and BH-20, the top 5 feet of existing grade exhibits an expansion index greater than 20.

There are several alternative mitigation measures that can be utilized to improve expansive soils at the site. Some mitigation measures include:

- Placement of 2 feet thick of non-expansive soil below finished subgrade.
- Pre-saturation of on-site compacted subgrade soils to at approximate three (3) percent above optimum moisture content.
- Lime treat the upper two (2) feet of the subgrade soils.

The on-site soil materials will be mixed during the grading and the expansion potential might change. Therefore, the expansion potential of site soils should be verified after the grading.

8.7 Shrinkage and Bulking

The shrinkage and/or bulking would depend on, among other factors, the depth of cut and/or fill, and the grading method and equipment utilized. For preliminary estimation, bulking and shrinkage factors for various units of earth material at the site may be taken as presented below:

- The approximate shrinkage factor for the upper ten (10) feet of alluvial soils is estimated to range from ten (10) to twenty (20) percent.
- The approximate bulking factor for the fill materials generated from the removal of bedrock hilltop is estimated to range from two (2) to five (5) percent, depending on final compaction achieved for the fill materials.

Although these values are only approximate, they represent our best estimates of the factors to be used to calculate lost volume that may occur during grading. If more accurate shrinkage and bulking factors are needed, it is recommended that field-testing using the actual equipment and grading techniques be conducted.



8.8 Subgrade Preparation

Final subgrade soils for structures and roads should be uniform and non-yielding. To obtain a uniform subgrade, soils should be well mixed and uniformly compacted. The subgrade soils should be non-expansive and well-drained. The near-surface site soils should be free draining. We recommend that at least the upper two (2) inches of subgrade soils underneath the slab-on-grade should be comprised of well-drained granular soils such as sands, gravel or crushed aggregate satisfying the following criteria:

- Maximum size \leq 1.5 inches
- Percent passing U.S. #200 sieve \leq 12 percent
- Sand equivalent \geq 30

The subgrade soils should be moisture conditioned before placing concrete.

9.0 PRELIMINARY DESIGN RECOMMENDATIONS

The future development plans on the graded pads presented in this report were not available at this time. However, for planning purposes, we assume the future development will consist of multiple arrays of solar panels without subterranean basement to provide the preliminary design recommendations. Our recommendations provided in this section are based on the assumptions that in preparing the site, the earthwork and site grading recommendations provided in this report will be followed. It should be advised that the design recommendations presented herein are considered preliminary for planning purpose only. Any future development at these project sites shall be further reviewed and provided with project-specific geotechnical recommendations.

9.1 Shallow Foundations

9.1.1 Vertical Capacity

We recommend continuous and square footings be founded at least 18 inches below lowest adjacent final grade on compacted fill on bedrock. A minimum footing width of 24 inches is recommended for square footings and 12 inches for continuous footings. The allowable bearing value for footings with above minimum sizes is 2,000 psf for compacted fill and 2,500 psf for bedrock. The net allowable bearing pressure can be increased by 350 psf for each additional foot of excavation depth and by 250 psf for each additional foot of excavation width up to a maximum value of 4,500 psf.

The net allowable bearing values indicated above are for the dead loads and frequently applied live loads and are obtained by applying a factor of safety of 3.0 to the net ultimate bearing capacity.



9.1.2 Lateral Capacity

Resistance to lateral loads can be provided by friction acting at the base of the foundation and by passive earth pressure. A coefficient of friction of 0.35 may be assumed with normal dead load forces. An allowable passive earth pressure of 300 psf per foot of depth up to a maximum of 3,000 psf may be used for footings poured against properly compacted fill or undisturbed stiff natural soils. The values of coefficient of friction and allowable passive earth pressure include a factor of safety of 1.5.

9.1.3 Settlement

The static settlement of structures supported on continuous and/or spread footings founded on compacted fill will depend on the actual footing dimensions and the imposed vertical loads. Most of the footing settlement at the project site is expected to occur immediately after the application of the load. Based on the maximum allowable net bearing pressures presented above, static settlement is anticipated to be less than 1.0 inch. Differential settlement is expected to be up to one-half of the total settlement over a 30 foot span.

9.1.4 Dynamic Increases

Bearing values indicated above are for total dead load and frequently applied live loads. The above vertical bearing may be increased by 33% for short durations of loading which will include the effect of wind or seismic forces. The allowable passive pressure may be increased by 33% for lateral loading due to wind or seismic forces.

9.2 *Pier Foundations*

As an alternative to conventional shallow foundations, the planned solar arrays can be supported on piers (caissons) provided the following recommendations incorporated into design and construction. The piers can be connected to a grade beam system determined by the project structural engineer to control the deflections of structure under the design tolerance.

9.2.1 Vertical Capacity

Piers should be at least 24-inch in diameter extending at least 8 feet below adjacent final grade on compacted fill or bedrock. Piers can be designed for an allowable skin friction of 250 psf against the perimeter of pier for a minimum embedment of 8 feet below the adjacent grade. The upper two (2) feet of soil skin friction should be neglected in pier capacity calculations.

If end bearing capacity is to be considered for design, the bottom of pier should be cleaned out with appropriate equipment. The allowable end bearing capacity can be



designed for 3,500 psf. However, the diameter of pier may be increased and temporary casing may be required to facilitate cleanout.

9.2.2 Lateral Capacity

Resistance to lateral loads can be provided by friction acting at the base of the foundation and by passive earth pressure. A coefficient of friction of 0.35 may be assumed with normal dead load forces. An allowable passive earth pressure of 300 psf per foot of depth up to a maximum of 3,000 psf may be used for foundations poured against compacted fill or bedrock. The values of coefficient of friction and allowable passive earth pressure include a factor of safety of 1.5. For ground surface restrained by concrete slab, the passive resistance may be calculated from the ground surface. For unrestrained ground condition, the passive resistance of the upper one (1) feet earth material should be neglected in design.

9.2.3 Settlement

The static settlement of structures supported on piers founded on native alluvium will depend on the actual footing dimensions and the imposed vertical loads. Most of the footing settlement at the project site is expected to occur immediately after the application of the load. Based on the maximum allowable net bearing pressures presented above, static settlement is anticipated to be less than 0.5 inch.

9.2.4 Dynamic Increases

Bearing values indicated above are for total dead load and frequently applied live loads. The above vertical bearing may be increased by 33% for short durations of loading which will include the effect of wind or seismic forces. The allowable passive pressure may be increased by 33% for lateral loading due to wind or seismic forces.

9.3 *Modulus of Subgrade Reaction*

For the subject project, design of the structures supported on compacted fill subgrade prepared in accordance with the recommendations provided in this report may be based on a soil modulus of subgrade reaction of (k_s) of 150 pounds per square inch per inch.

9.4 *Lateral Earth Pressure*

Though not anticipated, following are recommendations for retaining walls up to 6 feet in height. The earth pressure behind any buried wall depends primarily on the allowable wall movement, type of backfill materials, backfill slopes, wall inclination, surcharges, and any hydrostatic pressure. The following fluid pressures are recommended for vertical walls with no hydrostatic pressure, no surcharge, and level backfill.



Table No. 7, Lateral Earth Pressures for Retaining Wall Design

Wall Type	Equivalent Fluid Pressure (pcf)
	Level Backfill
Cantilever Wall (Active pressure)	30 (Triangular Distribution)
Restrained Wall (At-rest pressure)	50 (Triangular Distribution)

The recommended lateral pressures assume that the walls are fully back-drained to prevent build-up of hydrostatic pressure. Adequate drainage could be provided by means of permeable drainage materials wrapped in filter fabric installed behind the walls. The drainage system should consist of perforated pipe surrounded by free draining, uniformly graded, ¾ -inch washed, crushed aggregate, and wrapped in filter fabric such as Mirafi 140N or equivalent, and should extend to about 2 feet below the finished grade. The filter fabric should overlap approximately 12 inches or more at the joints. The subdrain pipe should consist of perforated, four-inch diameter, rigid ABS (SDR-35) or PVC A-2000, or equivalent, with perforations placed down. Alternatively, a prefabricated drainage composite system such as the Miradrain G100N or equivalent can be used. The subdrain should be connected to surface drain or sump pump.

In addition, walls with inclined backfill should be designed for an additional equivalent fluid pressure of one (1) pound per cubic foot for every two (2) degrees of slope inclination. Walls subjected to surcharge loads located within a distance equal to the height of the wall should be designed for an additional uniform lateral pressure equal to one-third or one-half the anticipated surcharge load for unrestrained or restrained walls, respectively. These values are applicable for backfill placed between the wall stem and an imaginary plane rising 45 degrees from below the edge (heel) of the wall footings.

9.5 Flexible Pavement

The flexible pavement structural section design recommendations were performed in accordance with the method contained in the *CALTRANS Highway Design Manual*, Chapter 630 without the factor of safety. No specific traffic study was performed to determine the Traffic Index (TI) for the proposed project, therefore a wide range of TI values were evaluated.

Due to various earth materials encountered at the site, flexible pavement structural section recommendations are prepared for both subgrade soils. We recommend that the project structural engineer consider the traffic loading conditions at various locations and select the appropriate pavement sections from the following table:



Table No. 8, Flexible Pavement Structural Sections

Design R-value	Design TI	Asphalt Concrete (AC) Over Aggregate Base (AB) Structural Sections		Full AC Structural Section
		AC (inches)	AB (inches)	AC (inches)
44	4	2	2.5	3
	5	3	3	4.5
	6	4	3.5	5.5
	7	4	6	7
	8	5	6.5	8
	9	6	7	9

Base material shall conform to requirements for Crushed Miscellaneous Base (CMB) or equivalent and should be placed in accordance with the requirements of the Standard Specifications for Public Works Construction (SSPWC, latest Edition).

Asphaltic materials should conform to Section 203-1, "Paving Asphalt," of the Standard Specifications for Public Works Construction (SSPWC, latest Edition) and should be placed in accordance with Section 302-5, "Asphalt Concrete Pavement," of the SSPWC, 2012 edition.

Positive drainage should be provided away from all pavement areas to prevent seepage of surface and/or subsurface water into the pavement base and/or subgrade.

9.6 Rigid Pavement

Rigid pavement design recommendations were provided in accordance with the Portland Cement Association's (PCA) Southwest Region Publication P-14, *Portland Cement Concrete Pavement (PCCP) for Light, Medium, and Heavy Traffic*. We recommend that the project structural engineer consider the loading conditions at various locations and select the appropriate pavement sections from the following table:

Table No. 9, Rigid Pavement Structural Sections

Design R-Value	Design Traffic Index (TI)	PCCP Pavement Section (inches)
44	4.5	5.75
	5.0	6.00
	6.0	6.25
	7.0	6.75
	8.0	7.00
	9.0	7.25

The pavement sections presented in the table are based on a minimum 28-day Modulus of Rupture (M-R) of 550 psi and a compressive strength of 3,000 psi. The third point method of testing beams should be used to evaluate modulus of rupture. The concrete mix design should contain a minimum cement content of 5.5 sacks per cubic yard

9.7 Site Drainage

Adequate positive drainage should be provided away from the structures to prevent ponding and to reduce percolation of water into structural backfill. We recommend that the any landscape area immediately adjacent to the foundation shall be designed sloped away from the structures with a minimum 5% slope gradient for at least 10 feet measured perpendicular to the face structure. Impervious surfaces within 10 feet of the foundation shall be sloped a minimum of 2 percent away from the structure per 2013 CBC.

Planters and landscaped areas adjacent to the any building perimeter should be designed to minimize water infiltration into the subgrade soils. Lower level walkways and open patio areas may require special drainage provisions and sump pumps to provide suitable drainage.

10.0 CONSTRUCTION RECOMMENDATIONS

10.1 Temporary Excavations

Based on the materials encountered in the exploratory borings, sloped temporary excavations may be constructed according to the slope ratios presented in the following table:

Table No. 10, Slope Ratios for Temporary Excavation

Maximum Depth of Cut (feet)	Maximum Slope Ratio* (horizontal: vertical)
0 - 5	vertical
5 - 15	1:1
15+	1.5:1

*Slope ratio assumed to be uniform from top to toe of slope.

Any loose utility trench backfill or other fill encountered in excavations will be less stable than the native soils. Temporary cuts encountering loose fill or loose dry sand should be constructed at a flatter gradient than presented in the table above. Surfaces exposed in slope excavations should be kept moist but not saturated to minimize raveling and sloughing during construction. Adequate provisions should be made to protect the slopes



from erosion during periods of rainfall. Surcharge loads, including construction, should not be placed within five (5) feet of the unsupported excavation edge.

All applicable requirements of the California Construction and General Industry Safety Orders, the Occupational Safety and Health Act of 1987 and current amendments, and the Construction Safety Act should be met. The soils exposed in cuts should be observed during excavation by the project's geotechnical consultant. If potentially unstable soil conditions are encountered, modifications of slope ratios for temporary cuts may be required.

10.2 Geotechnical Services during Construction

This report has been prepared to aid in the foundation plans and specifications, and to assist the architect, civil and structural engineers in the design of the proposed structures. It is recommended that this office be provided an opportunity to review final design drawings and specifications to verify that the recommendations of this report have been properly implemented.

Recommendations presented herein are based upon the assumption that adequate earthwork monitoring will be provided by Converse. Footing excavations should be observed by Converse prior to placement of steel and concrete so that footings are founded on satisfactory materials and excavations are free of loose and disturbed materials. Trench backfill should be placed and compacted with observation and field density testing provided by this office.

During construction, the geotechnical engineer and/or their authorized representatives should be present at the site to provide a source of advice to the client regarding the geotechnical aspects of the project and to observe and test the earthwork performed. Their presence should not be construed as an acceptance of responsibility for the performance of the completed work, since it is the sole responsibility of the contractor performing the work to ensure that it complies with all applicable plans, specifications, ordinances, etc.

This firm does not practice or consult in the field of safety engineering. We do not direct the contractor's operations, and cannot be responsible for other than our own personnel on the site; therefore, the safety of others is the responsibility of the contractor. The contractor should notify the owner if he considers any recommended actions presented herein to be unsafe.



11.0 CLOSURE

The findings and recommendations of this report were prepared in accordance with generally accepted professional engineering and engineering geologic principles and practice. We make no other warranty, either expressed or implied. Our conclusions and recommendations are based on the results of the field and laboratory investigations, combined with an interpolation and extrapolation of soil conditions between and beyond boring locations. If conditions encountered during construction appear to be different from those shown by the borings, this office should be notified.

The preliminary design recommendations given in this report are based on the assumption that the earthwork and site grading recommendations contained in this report are implemented. It should be advised that the design recommendations presented herein are considered preliminary for planning purpose only. Additional consultation may be prudent to interpret Converse's findings for contractors, or to possibly refine these recommendations based upon the review of the final site grading and actual site conditions encountered during construction. If the scope of the project changes, if project completion is to be delayed, or if the report is to be used for another purpose, this office should be consulted.



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APPENDIX A

FIELD EXPLORATION FOR PROPOSED FILL PLACEMENT AT WEST PARCEL



APPENDIX A

FIELD EXPLORATION FOR PROPOSED FILL PLACEMENT AT WEST PARCEL

Our field investigation included a site reconnaissance of the site and a subsurface exploration program consisting of drilling soil borings. During the site reconnaissance on April 2, 2014, the surface conditions were noted and the locations of the borings were determined. The borings were located using existing boundary features as a guide and should be considered accurate only to the degree implied by the method used.

Exploratory Borings

Twenty-one (21) hollow-stem auger borings were drilled from May 5 to May 9, 2014 extending between depths of approximately 10 to 51.5 feet below the existing ground surface (bgs), and one (1) bucket auger boring (BH-13) on May 19, 2014 to a depth of 31 feet (bgs). The borings were drilled using a truck-mounted drill rig equipped with an 8-inch diameter hollow-stem auger for soil sampling. The bucket auger boring location was utilized for downhole logging for detailed classification of bedrock properties. Soils were logged by our engineer/geologist and classified in the field by visual examination in accordance with the Unified Soil Classification System. The field descriptions have been modified where appropriate to reflect the laboratory test results.

Ring samples of the subsurface materials were obtained at frequent intervals in the exploratory borings using a drive sampler (2.4-inches inside diameter and 3.0-inches outside diameter) lined with sample rings. The steel ring sampler was driven into the bottom of the borehole with successive drops of a 140-pound driving weight falling 30 inches, using an automatic hammer. Samples were retained in brass rings (2.4-inches inside diameter and 1.0-inch in height). The central portion of the sample was retained and carefully sealed in waterproof plastic containers for shipment to the Converse laboratory. Blow counts for each sample interval are presented on the logs of borings. Bulk samples of typical soil types were also obtained.

Standard Penetration Tests (SPT) were also performed using a standard (1.4-inches inside diameter and 2.0-inches outside diameter) split-barrel sampler. The mechanically driven hammer for the SPT sampler was 140 pounds, falling 30 inches for each blow. The recorded blow counts for every six inches for a total of 1.5 feet of sampler penetration are shown on the Logs of Borings in the "BLOWS" column. The standard penetration test was performed in accordance with the ASTM Standard D1586 test method. The soil retrieved from the spoon sampler was carefully sealed in waterproof plastic containers for shipment to the laboratory.

It should be noted that the exact depths at which material changes occur cannot always be established accurately. Changes in material conditions that occur between driven samples are indicated in the logs at the top of the next drive sample. A key to soil



symbols and terms is presented as Drawing No. A1, *Soil Classification Chart*. The logs of the exploratory boring are presented in Drawing Nos. *A2 through A23, Log of Borings*.



SOIL CLASSIFICATION CHART

MAJOR DIVISIONS			SYMBOLS		TYPICAL DESCRIPTIONS
			GRAPH	LETTER	
COARSE GRAINED SOILS MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	CLEAN GRAVELS (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
		GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GP	POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
		CLEAN SANDS (LITTLE OR NO FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
		SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		SP	POORLY-GRADED SANDS, GRAVELLY SAND, LITTLE OR NO FINES
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND - SILT MIXTURES
		CLAYEY SANDS, SAND - CLAY MIXTURES		SC	CLAYEY SANDS, SAND - CLAY MIXTURES
		SILTS AND CLAYS LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
		SILTS AND CLAYS LIQUID LIMIT LESS THAN 50		CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
FINE GRAINED SOILS MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS LIQUID LIMIT GREATER THAN 50	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY		OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
		INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
		INORGANIC CLAYS OF HIGH PLASTICITY		CH	INORGANIC CLAYS OF HIGH PLASTICITY
HIGHLY ORGANIC SOILS				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS

BORING LOG SYMBOLS

SAMPLE TYPE

- STANDARD PENETRATION TEST**
Split barrel sampler in accordance with ASTM D-1586-84 Standard Test Method
- DRIVE SAMPLE** 2.42" I.D. sampler.
- DRIVE SAMPLE** No recovery
- BULK SAMPLE**
- GROUNDWATER WHILE DRILLING**
- GROUNDWATER AFTER DRILLING**

LABORATORY TESTING ABBREVIATIONS

TEST TYPE
(Results shown in Appendix B)

CLASSIFICATION

Plasticity	pi
Grain Size Analysis	ma
Passing No. 200 Sieve	wa
Sand Equivalent	se
Expansion Index	ei
Compaction Curve	max
Hydrometer	h

STRENGTH

Pocket Penetrometer	p
Direct Shear	ds
Direct Shear (single point)	ds*
Unconfined Compression	uc
Triaxial Compression	tx
Vane Shear	vs
Consolidation	c
Collapse Test	col
Resistance (R) Value	r
Chemical Analysis	ca
Electrical Resistivity	er

UNIFIED SOIL CLASSIFICATION AND KEY TO BORING LOG SYMBOLS



Converse Consultants

Project Name
**MT. SAN ANTONIO COLLEGE
WEST PARCEL
WALNUT, CALIFORNIA**

Project No. Drawing No.
13-31-339-01 A-1

Log of Boring No. BH- 1

Dates Drilled: 5/6/2014 Logged by: MM Checked By: WHC
 Equipment: 8" HOLLOW STEM AUGER Driving Weight and Drop: 140 lbs / 30 in
 Ground Surface Elevation (ft): 734 Depth to Water (ft): 19.25

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	SAMPLES		BLOWS/FT	MOISTURE (%)	DRY UNIT WT. (pcf)	TEST
			DRIVE	BULK				
		ALLUVIUM (Qa): SILTY SAND (SM): fine to medium-grained, some clay, with gravels up to 1.5" in maximum dimension, brown.						ei
5		-with cobbles			16/19/14	8	99	c
10		-with clay	X		5/5/6			
15		GRAVELLY SAND (SP): medium to coarse-grained, some silt, brown.			14/12/15	26	103	
20			X		12/9/12			
		End of boring at 21.5 feet. Groundwater encountered at 19.25 feet. Borehole backfilled with soil cuttings on 5-6-14.						



Converse Consultants

Project Name
 MT. SAN ANTONIO COLLEGE
 WEST PARCEL
 WALNUT, CALIFORNIA

Project No. Drawing No.
 13-31-339-01 A-2

Log of Boring No. BH- 2

Dates Drilled: 5/6/2014 Logged by: MM Checked By: WHC
 Equipment: 8" HOLLOW STEM AUGER Driving Weight and Drop: 140 lbs / 30 in
 Ground Surface Elevation (ft): 734 Depth to Water (ft): 15.5

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	SAMPLES		BLOWS/FT	MOISTURE (%)	DRY UNIT WT. (pcf)	TEST
			DRIVE	BULK				
5	[Vertical lines]	ALLUVIUM (Qa): SILTY SAND (SM): fine to medium-grained, some clay, with gravels up to 1.5" in maximum dimension, dark brown. -brown	[Black bar]	[Cross-hatched bar]	15/14/13	9	98	
10	[Dotted pattern]	GRAVELLY SAND (SP): medium to coarse-grained, gravels up to 2" in maximum dimension, trace silts, few cobbles, brown.	[Black bar]		11/13/15	13	105	
15	[Dotted pattern with horizontal lines]		[Cross-hatched bar]		17/15/12			
20	[Dotted pattern]	-with cobbles	[Black bar]		50(3")	16	107	
		End of boring at 21.5 feet. Groundwater encountered at 15.5 feet. Borehole backfilled with soil cuttings on 5-6-14.						



Converse Consultants

Project Name
 MT. SAN ANTONIO COLLEGE
 WEST PARCEL
 WALNUT, CALIFORNIA

Project No. Drawing No.
 13-31-339-01 A-3

Log of Boring No. BH- 3

Dates Drilled: 5/5/2014 Logged by: MM Checked By: WHC

Equipment: 8" HOLLOW STEM AUGER Driving Weight and Drop: 140 lbs / 30 in

Ground Surface Elevation (ft): 729 Depth to Water (ft): NOT ENCOUNTERED

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	SAMPLES		BLOWS/FT	MOISTURE (%)	DRY UNIT WT. (pcf)	TEST
			DRIVE	BULK				
5		ALLUVIUM (Qa): SILTY SAND (SM): fine to medium-grained, some clay, few gravels up to 1.5" in maximum dimension, brown.			15/39/49	8	126	max
10					25/33/37	10	126	
15					7/10/13			
20		BEDROCK - SYCAMORE CANYON FORMATION (Tscs): SILTSTONE AND SANDSTONE: weathered, thinly bedded, near vertical bedding, grayish brown.			11/13/18	14	117	
25					6/10/12			
30					9/11/12			
		End of boring at 31.5 feet. No groundwater encountered during drilling. Borehole backfilled with soil cuttings on 5-5-14						



Converse Consultants

Project Name
 MT. SAN ANTONIO COLLEGE
 WEST PARCEL
 WALNUT, CALIFORNIA

Project No. Drawing No.
 13-31-339-01 A-4

Log of Boring No. BH- 4

Dates Drilled: 5/5/2014 Logged by: MM Checked By: WHC
 Equipment: 8" HOLLOW STEM AUGER Driving Weight and Drop: 140 lbs / 30 in
 Ground Surface Elevation (ft): 737 Depth to Water (ft): NOT ENCOUNTERED

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	SAMPLES		BLOWS/FT	MOISTURE (%)	DRY UNIT WT. (pcf)	TEST
			DRIVE	BULK				
5		COLLUVIUM (Qc): SILTY SAND (SM): fine to medium-grained, some clay, few gravels up to 1.5" in maximum dimension, brown.			17/50(6")	7	125	
10		BEDROCK - SYCAMORE CANYON FORMATION (Tscs): SILTSTONE, SANDSTONE: weathered, no apparent bedding, orangish brown.			12/17/32			
15					31/45/50(5")	9	127	
20					10/16/29			
		End of boring at 21.5 feet. No groundwater encountered. Borehole backfilled with soil cuttings on 5-5-14.						



Converse Consultants

Project Name
 MT. SAN ANTONIO COLLEGE
 WEST PARCEL
 WALNUT, CALIFORNIA

Project No. Drawing No.
 13-31-339-01 A-5

Log of Boring No. BH- 5

Dates Drilled: 5/8/2014 Logged by: MM Checked By: WHC
 Equipment: 8" HOLLOW STEM AUGER Driving Weight and Drop: 140 lbs / 30 in
 Ground Surface Elevation (ft): 792 Depth to Water (ft): NOT ENCOUNTERED

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	SAMPLES		BLOWS/FT	MOISTURE (%)	DRY UNIT WT. (pcf)	TEST
			DRIVE	BULK				
5	(Symbol: dots and small circles)	<u>COLLUVIUM (Qc):</u> <u>SILTY SAND (SM):</u> fine to medium-grained, some clay, with gravels up to 3" in maximum dimension and cobbles up to 12" in maximum dimension, yellowish brown. <u>BEDROCK - SYCAMORE CANYON FORMATION (Tscg):</u> <u>CONGLOMERATE WITH SANDSTONE:</u> gravels and cobbles up to 3" in maximum dimension, weathered massive, orangish brown.	(Symbol: cross-hatch)	(Symbol: cross-hatch)	50(4")	4	108	ma (fc=19.9%)
10	(Symbol: dots and small circles)		(Symbol: cross-hatch)	(Symbol: cross-hatch)	50(5")			
15	(Symbol: dots and small circles)		(Symbol: cross-hatch)	(Symbol: cross-hatch)	50(5")	3	117	
20	(Symbol: dots and small circles)		(Symbol: cross-hatch)	(Symbol: cross-hatch)	50(4")			
25	(Symbol: diagonal lines)	<u>BEDROCK - SYCAMORE CANYON FORMATION (Tscs):</u> <u>SANDSTONE, SILTSTONE:</u> severely weathered, no apparent bedding, with gravels up to 3" in maximum dimension, orangish brown.	(Symbol: cross-hatch)	(Symbol: cross-hatch)	50(4")	5	131	
30	(Symbol: diagonal lines)		(Symbol: cross-hatch)	(Symbol: cross-hatch)	50(2")			




Converse Consultants

Project Name
 MT. SAN ANTONIO COLLEGE
 WEST PARCEL
 WALNUT, CALIFORNIA

Project No. 13-31-339-01 Drawing No. A-6a

Log of Boring No. BH- 5

Dates Drilled: 5/8/2014 Logged by: MM Checked By: WHC
 Equipment: 8" HOLLOW STEM AUGER Driving Weight and Drop: 140 lbs / 30 in
 Ground Surface Elevation (ft): 792 Depth to Water (ft): NOT ENCOUNTERED

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	SAMPLES		BLOWS/FT	MOISTURE (%)	DRY UNIT WT. (pcf)	TEST
			DRIVE	BULK				
		<p>BEDROCK - SYCAMORE CANYON FORMATION (Tscs): SANDSTONE, SILTSTONE: severely weathered, no apparent bedding, with gravels up to 3" in maximum dimension, orangish brown.</p> <p>End of boring at 37 feet due to refusal from hard bedrock including cobbles and possible boulders. No groundwater encountered during drilling. Borehole backfilled with soil cuttings on 5-8-14.</p>			50(3")	5	129	



Converse Consultants

Project Name
 MT. SAN ANTONIO COLLEGE
 WEST PARCEL
 WALNUT, CALIFORNIA

Project No. Drawing No.
 13-31-339-01 A-6b

Log of Boring No. BH- 6

Dates Drilled: 5/5/2014 Logged by: MM Checked By: WHC
 Equipment: 8" HOLLOW STEM AUGER Driving Weight and Drop: 140 lbs / 30 in
 Ground Surface Elevation (ft): 793 Depth to Water (ft): NOT ENCOUNTERED

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	SAMPLES		BLOWS/FT	MOISTURE (%)	DRY UNIT WT. (pcf)	TEST
			DRIVE	BULK				
5		<p>COLLUVIUM (Qc): SILTY SAND (SM): fine to medium-grained, some clay, with gravels and cobbles up to 3" in maximum dimension, orangish brown.</p> <p>BEDROCK - SYCAMORE CANYON FORMATION (Tscq): CONGLOMERATE WITH SANDSTONE: gravels and cobbles up to 3" in maximum dimension, weathered massive, orangish brown.</p>	X	X	50(5")	5	113	
10			X	X	41/50(6")	6	111	
15			X	X	50(3")			
20			X	X	50(3")	5	111	
25			X	X	50(5")			
30			X	X	50(2")	6	122	



Converse Consultants
 Project Name
 MT. SAN ANTONIO COLLEGE
 WEST PARCEL
 WALNUT, CALIFORNIA

Project No. 13-31-339-01 Drawing No. A-7a

Log of Boring No. BH- 6

Dates Drilled: 5/5/2014 Logged by: MM Checked By: WHC

Equipment: 8" HOLLOW STEM AUGER Driving Weight and Drop: 140 lbs / 30 in

Ground Surface Elevation (ft): 793 Depth to Water (ft): NOT ENCOUNTERED

Depth (ft)	Graphic Log	<p style="text-align: center;">SUMMARY OF SUBSURFACE CONDITIONS</p> <p>This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.</p>	SAMPLES		BLOWS/FT	MOISTURE (%)	DRY UNIT WT. (pcf)	TEST
			DRIVE	BULK				
40		<p><u>BEDROCK - SYCAMORE CANYON FORMATION (Tscs):</u> <u>SANDSTONE, SILTSTONE:</u> with gravels up to 3" in maximum dimension, no apparent bedding, orangish brown.</p>	X		50(6")			
45			█		50(2")	4	116	
50			X		33/50(2")			
			X		50(2")			
		<p>End of boring at 51.5 feet. No groundwater encountered. Borehole backfilled with soil cuttings on 5-5-14.</p>						



Converse Consultants

Project Name
 MT. SAN ANTONIO COLLEGE
 WEST PARCEL
 WALNUT, CALIFORNIA

Project No. Drawing No.
 13-31-339-01 A-7b

Log of Boring No. BH- 7

Dates Drilled: 5/6/2014 Logged by: MM Checked By: WHC
 Equipment: 8" HOLLOW STEM AUGER Driving Weight and Drop: 140 lbs / 30 in
 Ground Surface Elevation (ft): 744.5 Depth to Water (ft): NOT ENCOUNTERED

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	SAMPLES		BLOWS/FT	MOISTURE (%)	DRY UNIT WT. (pcf)	TEST
			DRIVE	BULK				
5		ALLUVIUM (Qa): SILTY SAND (SM): fine to medium-grained, some clay, few gravels up to 1.5" in maximum dimension, brown.	█	▨	10/11/14	8	103	r
10	▨	BEDROCK - PUENTE FORMATION (Tscs): SANDSTONE, SILTSTONE: weathered, no apparent bedding, with gravels up to 2.5" in maximum dimension, few cobbles, orangish brown.	█		13/33/50(4")	6	115	
15	▨			⊗	27/48/50(5")			
20	▨		█		50(5")	8	112	
		End of boring at 21.5 feet. No groundwater encountered. Borehole backfilled with soil cuttings on 5-5-14.						



Converse Consultants

Project Name
 MT. SAN ANTONIO COLLEGE
 WEST PARCEL
 WALNUT, CALIFORNIA

Project No. Drawing No.
 13-31-339-01 A-8

Log of Boring No. BH- 8

Dates Drilled: 5/6/2014 Logged by: MM Checked By: WHC
 Equipment: 8" HOLLOW STEM AUGER Driving Weight and Drop: 140 lbs / 30 in
 Ground Surface Elevation (ft): 745.5 Depth to Water (ft): NOT ENCOUNTERED

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	SAMPLES		BLOWS/FT	MOISTURE (%)	DRY UNIT WT. (pcf)	TEST
			DRIVE	BULK				
		COLLUVIUM (Qc): SILTY SAND (SM): fine to medium-grained, some clay, few gravels up to 2.5" in maximum dimension, brown.		[Cross-hatched pattern]				
5	[Dotted pattern]	BEDROCK - PUENTE FORMATION (Tscs): SANDSTONE, SILTSTONE: weathered, no apparent bedding, with gravels up to 2.5" in maximum dimension and few cobbles, orangish brown and brown.	[Solid black]		36/41/50(4")	9	114	c
10			[Solid black]		50(6")	6	114	
15			[X-pattern]		50(6")			
20			[X-pattern]		50(4")			
		End of boring at 21.5 feet. No groundwater encountered. Borehole backfilled with soil cuttings on 5-5-14.						



Converse Consultants

Project Name
 MT. SAN ANTONIO COLLEGE
 WEST PARCEL
 WALNUT, CALIFORNIA

Project No. Drawing No.
 13-31-339-01 A-9

Log of Boring No. BH- 9

Dates Drilled: 5/6/2014 Logged by: MM Checked By: WHC
 Equipment: 8" HOLLOW STEM AUGER Driving Weight and Drop: 140 lbs / 30 in
 Ground Surface Elevation (ft): 739 Depth to Water (ft): NOT ENCOUNTERED

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	SAMPLES		BLOWS/FT	MOISTURE (%)	DRY UNIT WT. (pcf)	TEST
			DRIVE	BULK				
		COLLUVIUM (Qc): SILTY SAND (SM): fine to medium-grained, some clay, few gravels up to 2.5" in maximum dimension, brown.		[Cross-hatched pattern]				max,ds
5	[Diagonal lines pattern]	BEDROCK - PUENTE FORMATION (Tscs): SILTSTONE, SANDSTONE: weathered, no apparent bedding, few gravels up to 1" in maximum dimension, orange.	[Solid black]		29/50(4")	16	99	
10	[Diagonal lines pattern]	-olive brown	[Solid black]		33/50(5")	5	107	
15	[Diagonal lines pattern]	BEDROCK - PUENTE FORMATION (Tscg): CONGLOMERATE WITH SANDSTONE: severely weathered, no apparent bedding, gravels and cobbles up to 3" in maximum dimension, massive, olive brown, orangish brown.	[X pattern]		13/10/18			
20	[Diagonal lines pattern]		[Solid black]		50(4")	16	103	
25	[Diagonal lines pattern]		[X pattern]		50(4")			
		End of boring at 26 feet due to refusal from hard bedrock including cobbles and possible boulders. No groundwater encountered. Borehole backfilled with soil cuttings on 5-6-14.						



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Project No. 13-31-339-01 Drawing No. A-10

Log of Boring No. BH-10

Dates Drilled: 5/6/2014 Logged by: MM Checked By: WHC
 Equipment: 8" HOLLOW STEM AUGER Driving Weight and Drop: 140 lbs / 30 in
 Ground Surface Elevation (ft): 757.5 Depth to Water (ft): NOT ENCOUNTERED

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	SAMPLES		BLOWS/FT	MOISTURE (%)	DRY UNIT WT. (pcf)	TEST
			DRIVE	BULK				
5		ALLUVIUM (Qa): SILTY SAND (SM): fine to medium-grained, some clay, few gravels up to 1.5" in maximum dimension, brown.			50(6")	6	112	ma (fc=44%)
10		BEDROCK - PUENTE FORMATION (Tscs): SANDSTONE, SILTSTONE: with gravels up to 2.5" in maximum dimension, weathered, no apparent bedding, orangish brown, grayish brown.			50(6")	6	122	
15		-with cobbles			50(6")			
20					50(2")	12	120	
		End of boring at 21.5 feet. No groundwater encountered. Borehole backfilled with soil cuttings on 5-5-14.						










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Project No. Drawing No.
 13-31-339-01 A-11

Log of Boring No. BH-11

Dates Drilled: 5/8/2014 Logged by: MM Checked By: WHC
 Equipment: 8" HOLLOW STEM AUGER Driving Weight and Drop: 140 lbs / 30 in
 Ground Surface Elevation (ft): 785 Depth to Water (ft): NOT ENCOUNTERED

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	SAMPLES		BLOWS/FT	MOISTURE (%)	DRY UNIT WT. (pcf)	TEST
			DRIVE	BULK				
		COLLUVIUM (Qc): SILTY SAND (SM): fine to medium-grained, some clay, few gravels up to 2" in maximum dimension, light brown.						
5		BEDROCK - PUENTE FORMATION (Tscs): SANDSTONE, SILTSTONE: severely weathered, no apparent bedding, orangish brown, grayish brown. -with cobbles			50(4")	13	95	
10					35/45/50			
15					50(5")	4	107	
20					13/19/38			
25					50(4")	5	114	
		End of boring at 27 feet due to refusal from hard bedrock including cobbles and possible boulders. No groundwater encountered. Borehole backfilled with soil cuttings on 5-5-14.						



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Project No. Drawing No.
 13-31-339-01 A-12

Log of Boring No. BH-12

Dates Drilled: 5/8/2014 Logged by: MM Checked By: WHC
 Equipment: 8" HOLLOW STEM AUGER Driving Weight and Drop: 140 lbs / 30 in
 Ground Surface Elevation (ft): 776.5 Depth to Water (ft): NOT ENCOUNTERED

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	SAMPLES		BLOWS/FT	MOISTURE (%)	DRY UNIT WT. (pcf)	TEST
			DRIVE	BULK				
5		ALLUVIUM (Qa): SILTY SAND (SM) WITH CLAY AND GRAVELS: fine to medium-grained, some clay, few gravels up to 1.5" in maximum dimension, brown			35/42/50	6	125	
10						14/30/47	9	109
15		BEDROCK - PUENTE FORMATION (Tscs): SANDSTONE, SILTSTONE: with gravels up to 2" in maximum dimension, severely weathered, no apparent bedding, orangish brown, brown.			18/20/27			
20						10/12/19	23	93
		End of boring at 21.5 feet. No groundwater encountered. Borehole backfilled with soil cuttings on 5-5-14.						



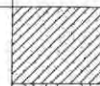








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Project No. Drawing No.
 13-31-339-01 A-13

Log of Boring No. BH-13

Dates Drilled: 5/19/2014 Logged by: MBS/MM Checked By: WHC
 Equipment: 24" BUCKET AUGER Driving Weight and Drop: 800 lbs / 30 in
 Ground Surface Elevation (ft): 786 Depth to Water (ft): NOT ENCOUNTERED

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	SAMPLES		BLOWS/FT	MOISTURE (%)	DRY UNIT WT. (pcf)	TEST
			DRIVE	BULK				
		SILTY SAND (SM) WITH CLAY AND GRAVELS topsoil with round gravels 30%-40%, organics, roots, gray to blackish gray						
5		BEDROCK - PUENTE FORMATION (Tscg): CONGLOMERATE clayey sand with gravels, cobbles and boulders, clay binder, mottled, oxidized rust, weathered, yellowish brown -bedding 5.5, N24E, 22NW, -increased rock, gravels and cobbles-subrounded to rounded (30-40% rock), olive gray to yellowish brown color			20(6") 24(6")	30	99	
10					15(6") 36(6")	28	94	
15		-clayey sandstone, matrix with gravels and cobbles, rocks subrounded to rounded, hard stream rocks, some boulder size rocks -bedding 16.5, N30E, 25W,			17(6") 40(6")	36	91	
20		-increased drilling resistance, gravels and cobbles, cemented conglomerate, weathered, gray to yellowish brown bedding 23.5, N10E, 8NW,			50(6")			
25		-cemented hard, sandstone matrix with gravels and cobbles, olive gray			47(6") 50(5")	6	125	max,ds
30					60(6") 20(2")	6	100	
		End of boring at 31 feet due to refusal from hard bedrock. No groundwater encountered. Borehole backfilled with soil cuttings on 5-19-14.						



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Project No. 13-31-339-01 Drawing No. A-14

Log of Boring No. BH-14

Dates Drilled: 5/8/2014 Logged by: MM Checked By: WHC

Equipment: 8" HOLLOW STEM AUGER Driving Weight and Drop: 140 lbs / 30 in

Ground Surface Elevation (ft): 719.5 Depth to Water (ft): 44

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	SAMPLES		BLOWS/FT	MOISTURE (%)	DRY UNIT WT. (pcf)	TEST
			DRIVE	BULK				
		COLLUVIUM (Qc): SILTY SAND (SM): fine to medium-grained, some clay, few gravels up to 2" in maximum dimension, light brown.		[Cross-hatched pattern]				
5	[Diagonal line pattern]	BEDROCK - PUENTE FORMATION (Tscs): SANDSTONE, SILTSTONE: weathered bedding, nearly horizontal bedding, orangish brown, brown	[Solid black bar]		26/50(6")	5	112	
10			[X pattern]		18/18/19			
15			[Solid black bar]		50(5")	8	102	
20			[X pattern]		15/17/30			
25			[Solid black bar]		50(6")	33	90	
30			[X pattern]		16/17/23			



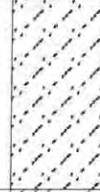


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Project No. Drawing No.
13-31-339-01 A-15a

Log of Boring No. BH-14

Dates Drilled: 5/8/2014 Logged by: MM Checked By: WHC
 Equipment: 8" HOLLOW STEM AUGER Driving Weight and Drop: 140 lbs / 30 in
 Ground Surface Elevation (ft): 719.5 Depth to Water (ft): 44

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	SAMPLES		BLOWS/FT	MOISTURE (%)	DRY UNIT WT. (pcf)	TEST
			DRIVE	BULK				
40		BEDROCK - PUENTE FORMATION (Tscs): SANDSTONE, SILTSTONE: weathered bedding, nearly horizontal bedding, orangish brown, brown	■		14/26/31	11	116	
45		CLAYSTONE, SILTSTONE: severely weathered, laminated bedding, near horizontal bedding, grayish brown, olive brown	X		5/9/14			
46.5		End of boring at 46.5 feet. Groundwater encountered at 44 feet. Borehole backfilled with soil cuttings on 5-8-14.	■		50(6")	37	85	



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 WEST PARCEL
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Project No. 13-31-339-01 Drawing No. A-15b

Log of Boring No. BH-15

Dates Drilled: 5/7/2014 Logged by: MM Checked By: WHC

Equipment: 8" HOLLOW STEM AUGER Driving Weight and Drop: 140 lbs / 30 in

Ground Surface Elevation (ft): 706 Depth to Water (ft): 16

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	SAMPLES		BLOWS/FT	MOISTURE (%)	DRY UNIT WT. (pcf)	TEST
			DRIVE	BULK				
5	[Pattern]	ALLUVIUM (Qa): SILTY SAND (SM): fine to medium-grained, some clay, few gravels up to 1.5" in maximum dimension, brown. -few clays, dark brown	[Pattern]	[Pattern]	10/18/24	20	105	c
10	[Pattern]		[Pattern]	[Pattern]	19/36/30	16	117	
15	[Pattern]	BEDROCK - PUENTE FORMATION (Tscs): SILTSTONE, SANDSTONE: near vertical bedding, few caliche, orange brown, olive brown -thinly bedded at 45°	[Pattern]	[Pattern]	3/4/7			
20	[Pattern]		[Pattern]	[Pattern]	10/15/19	31	89	c
25	[Pattern]		[Pattern]	[Pattern]	5/7/9			
30	[Pattern]	SANDSTONE: with gravels up to 2.5" in maximum dimension, light brown	[Pattern]	[Pattern]	22/41/32			



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Project No. 13-31-339-01 Drawing No. A-16a

Log of Boring No. BH-15

Dates Drilled: 5/7/2014 Logged by: MM Checked By: WHC
 Equipment: 8" HOLLOW STEM AUGER Driving Weight and Drop: 140 lbs / 30 in
 Ground Surface Elevation (ft): 706 Depth to Water (ft): 16

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	SAMPLES		BLOWS/FT	MOISTURE (%)	DRY UNIT WT. (pcf)	TEST
			DRIVE	BULK				
		SANDSTONE: with gravels up to 2.5" in maximum dimension, light brown			50(6")	16	121	
40		SANDSTONE, SILTSTONE: moderately weathered, nearly 40° bedding, gray, orangish brown	X		16/25/23			
45			X		15/28/31			
		End of boring at 46.5 feet. Groundwater encountered at 16 feet. Borehole backfilled with soil cuttings on 5-8-14.						



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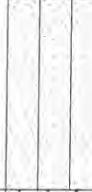







Project No. 13-31-339-01 Drawing No. A-16b

Log of Boring No. BH-16

Dates Drilled: 5/7/2014 Logged by: MM Checked By: WHC

Equipment: 8" HOLLOW STEM AUGER Driving Weight and Drop: 140 lbs / 30 in

Ground Surface Elevation (ft): 706 Depth to Water (ft): NOT ENCOUNTERED

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS <small>This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.</small>	SAMPLES		BLOWS/FT	MOISTURE (%)	DRY UNIT WT. (pcf)	TEST
			DRIVE	BULK				
5		ALLUVIUM (Qa): SILTY SAND (SM): fine to medium-grained, some clay, few gravels up to 1.5" in maximum dimension, light brown.						
10		BEDROCK - PUENTE FORMATION (Tscs): SANDSTONE, SILTSTONE: severely weathered, no apparent bedding, with gravels up to 1.5" in maximum dimension, dark orangish brown.			26/40/50(4")	10	124	
		End of boring at 11.5 feet. Groundwater not encountered. Borehole backfilled with soil cuttings on 5-7-14			50(6")			



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Project No. Drawing No.
 13-31-339-01 A-17

Log of Boring No. BH-17

Dates Drilled: 5/7/2014 Logged by: MM Checked By: WHC

Equipment: 8" HOLLOW STEM AUGER Driving Weight and Drop: 140 lbs / 30 in

Ground Surface Elevation (ft): 695.5 Depth to Water (ft): NOT ENCOUNTERED

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	SAMPLES		BLOWS/FT	MOISTURE (%)	DRY UNIT WT. (pcf)	TEST
			DRIVE	BULK				
5		ALLUVIUM (Qa): SILTY SAND (SM): fine to medium-grained, some clay, few gravels up to 1.5" in maximum dimension, light brown.	-					
10		BEDROCK - PUENTE FORMATION (Tscs): SILTSTONE, SANDSTONE: with gravels up to 1.5" in maximum dimension, slightly weathered, no bedding, yellowish brown			50(5")	10	100	
					50(3")	30	99	
		End of boring at 11.5 feet. Groundwater not encountered. Borehole backfilled with soil cuttings on 5-7-14						



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Project No. 13-31-339-01 Drawing No. A-18

Log of Boring No. BH-18

Dates Drilled: 5/7/2014 Logged by: MM Checked By: WHC
 Equipment: 8" HOLLOW STEM AUGER Driving Weight and Drop: 140 lbs / 30 in
 Ground Surface Elevation (ft): 691 Depth to Water (ft): NOT ENCOUNTERED

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	SAMPLES		BLOWS/FT	MOISTURE (%)	DRY UNIT WT. (pcf)	TEST
			DRIVE	BULK				
5		ALLUVIUM (Qa): SANDY SILT (ML): fine to medium-grained, some clay, few gravels up to 1" in maximum dimension, brown. -with cobbles			21/50(5")	55	67	ma
10		BEDROCK - PUENTE FORMATION (Tscs): SANDSTONE, SILTSTONE: weathered, laminated, near horizontal bedding, olive brown, orangish brown.			22/29/50(3")	30	99	
		End of boring at 11.5 feet. Groundwater not encountered. Borehole backfilled with soil cuttings on 5-7-14						



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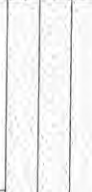




Project No. Drawing No.
 13-31-339-01 A-19

Log of Boring No. BH-19

Dates Drilled: 5/7/2014 Logged by: MM Checked By: WHC

Equipment: 8" HOLLOW STEM AUGER Driving Weight and Drop: 140 lbs / 30 in

Ground Surface Elevation (ft): 694 Depth to Water (ft): NOT ENCOUNTERED

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	SAMPLES		BLOWS/FT	MOISTURE (%)	DRY UNIT WT. (pcf)	TEST
			DRIVE	BULK				
5		ALLUVIUM (Qa): SILTY SAND (SM): fine to medium-grained, some clay, few gravels up to 1" in maximum dimension, brown.			19/29/33	12	122	c
10		BEDROCK - PUENTE FORMATION (Tscs): SANDSTONE, SILTSTONE: weathered, laminated, near horizontal bedding, orangish brown, olive brown.			19/31/50(5")	42	78	
		End of boring at 11.5 feet. Groundwater not encountered. Borehole backfilled with soil cuttings on 5-7-14						



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Project No. 13-31-339-01 Drawing No. A-20

Log of Boring No. BH-20

Dates Drilled: 5/7/2014 Logged by: MM Checked By: WHC
 Equipment: 8" HOLLOW STEM AUGER Driving Weight and Drop: 140 lbs / 30 in
 Ground Surface Elevation (ft): 689 Depth to Water (ft): NOT ENCOUNTERED

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	SAMPLES		BLOWS/FT	MOISTURE (%)	DRY UNIT WT. (pcf)	TEST
			DRIVE	BULK				
5		ALLUVIUM (Qa): SILTY SAND (SM): fine to medium-grained, some clay, few gravels up to 1.25" in maximum dimension, brown. -with cobbles			18/37/32	15	104	ei
10		BEDROCK - PUENTE FORMATION (Tscs): SANDSTONE, SILTSTONE: weathered, laminated, near horizontal bedding, orangish brown, olive brown			15/21/28	13	117	
		End of boring at 11.5 feet. Groundwater not encountered. Borehole backfilled with soil cuttings on 5-7-14						



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Project No. Drawing No.
 13-31-339-01 A-21

Log of Boring No. BH-21

Dates Drilled: 5/7/2014 Logged by: MM Checked By: WHC
 Equipment: 8" HOLLOW STEM AUGER Driving Weight and Drop: 140 lbs / 30 in
 Ground Surface Elevation (ft): 686 Depth to Water (ft): NOT ENCOUNTERED

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	SAMPLES		BLOWS/FT	MOISTURE (%)	DRY UNIT WT. (pcf)	TEST
			DRIVE	BULK				
5		ALLUVIUM (Qa): SILTY SAND (SM): fine to medium-grained, some clay, few gravels up to 1.5" in maximum dimension, brown. -with cobbles			50(2")	17	97	max
10		BEDROCK - PUENTE FORMATION (Tscs): SANDSTONE, SILTSTONE: weathered, laminated, nearly horizontal bedding, orangish brown, olive brown			31/50(3")	24	95	
		End of boring at 11.5 feet. Groundwater not encountered. Borehole backfilled with soil cuttings on 5-7-14						



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Project No. Drawing No.
 13-31-339-01 A-22

Log of Boring No. BH-22

Dates Drilled: 5/7/2014 Logged by: MM Checked By: WHC

Equipment: 8" HOLLOW STEM AUGER Driving Weight and Drop: 140 lbs / 30 in

Ground Surface Elevation (ft): 693 Depth to Water (ft): NOT ENCOUNTERED

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	SAMPLES		BLOWS/FT	MOISTURE (%)	DRY UNIT WT. (pcf)	TEST
			DRIVE	BULK				
5		ALLUVIUM (Qa): SILTY SAND (SM): fine to medium-grained, some clay, few gravels up to 1" in maximum dimension, brown.			13/17/22	14	114	
10		BEDROCK - PUENTE FORMATION (Tscs): SANDSTONE, SILTSTONE: weathered, laminated, near vertical horizontal bedding, orangish brown, olive brown.			14/20/26	31	87	
15					15/21/28	34	84	
		End of boring at 16.5 feet. Groundwater not encountered. Borehole backfilled with soil cuttings on 5-7-14						



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Project No. 13-31-339-01 Drawing No. A-23

APPENDIX B

**LABORATORY TESTING PROGRAM
FOR PROPOSED FILL PLACEMENT AT WEST PARCEL**



APPENDIX B

LABORATORY TESTING PROGRAM

Tests were conducted in our laboratory on representative soil samples for the purpose of classification and evaluation of their relevant physical characteristics and engineering properties. The amount and selection of tests were based on the geotechnical requirements of the project. Test results are presented herein and on the Logs of Borings in Appendix A, *Field Exploration for Proposed Fill Placement at West Parcel*. The following is a summary of the laboratory tests conducted for this project.

Moisture Content and Dry Density

Results of moisture content and dry density tests, performed on relatively undisturbed ring samples were used to aid in the classification of the soils and to provide quantitative measure of the *in situ* dry density. Data obtained from this test provides qualitative information on strength and compressibility characteristics of site soils. For test results, see the Logs of Borings in Appendix A, *Field Exploration for Proposed Fill Placement at West Parcel*.

Grain-Size Analysis

To assist in classification of soils, mechanical grain-size analyses were performed on Three (3) selected samples. Tests were performed in general accordance with the ASTM Standard C136 test method. Grain-size curves are shown in Drawing No. B1, *Grain Size Distribution Results*.

Maximum Dry Density Test

Four (4) laboratory maximum dry density-moisture content relationship tests were performed on one representative bulk sample. The tests were conducted in accordance with ASTM Standard D1557 laboratory procedure. The test results are presented on Drawing No. B2, *Moisture-Density Relationship Results*.

Direct Shear

Direct shear tests were performed on two (2) relatively undisturbed samples at soaked moisture conditions. For each test, three samples contained in brass sampler rings were placed, one at a time, directly into the test apparatus and subjected to a range of normal loads appropriate for the anticipated conditions. The samples were then sheared at a constant strain rate of 0.01 inch/minute. Shear deformation was recorded until a maximum of about 0.50-inch shear displacement was achieved. Ultimate strength was selected from the shear-stress deformation data and plotted to determine the shear



strength parameters. For test data, including sample density and moisture content, see Drawing Nos. B3a through B3b, *Direct Shear Test Results*, and in the following table:

Table No. B-1, Direct Shear Test Results

Boring No.	Depth (feet)	Soil Classification	Peak Strength Parameters	
			Friction Angle (degrees)	Cohesion (psf)
BH-9	0-5	Silty Sand (SM)	32	150
BH-13	25-30	Sedimentary Bedrock-Conglomerate	29	300

Consolidation Test

Consolidation tests were performed on four (4) selected samples. Data obtained from this test performed on a relatively undisturbed soil sample was used to evaluate the settlement characteristics of the foundation soils under load. Preparation for this test involved trimming the sample and placing the one-inch high brass ring into the test apparatus, which contained porous stones, both top and bottom, to accommodate drainage during testing. Normal axial loads were applied to one end of the sample through the porous stones, and the resulting deflections were recorded at various time periods. The load was increased after the sample reached a reasonable state of equilibrium. Normal loads were applied at a constant load-increment ratio, successive loads being generally twice the preceding load. The sample was tested at field and submerged conditions. The test results, including sample density and moisture content, are presented in Drawings Nos. B4a through B4d, *Consolidation Test Results*.

Expansion Index Test

Two (2) representative bulk samples were tested to evaluate the expansion potential of material encountered at the site. The test was conducted in accordance with ASTM D4829 Standard. Test results are presented in the following table:

Table No. B-3, Expansion Index Test Result

Boring No.	Depth (feet)	Soil Description	Expansion Index	Expansion Potential
BH-1	0-5	Silty Sand (SM)	21	Low
BH-20	0-5	Silty Sand (SM)	23	Low



R-value Test

One (1) representative bulk soil sample was tested for resistance value (R-value) in accordance with State of California Standard Method 301-G. This test is designed to provide a relative measure of soil strength for use in pavement design. The test results are shown in the following table:

Table No. B-4, R-value Test Result

Boring No.	Depth (feet)	Soil Classification	Measured R-value
BH-7	0-5	Silty Sand (SM)	44

Sample Storage

Soil samples presently stored in our laboratory will be discarded 30 days after the date of this report, unless this office receives a specific request to retain the samples for a longer period of time.

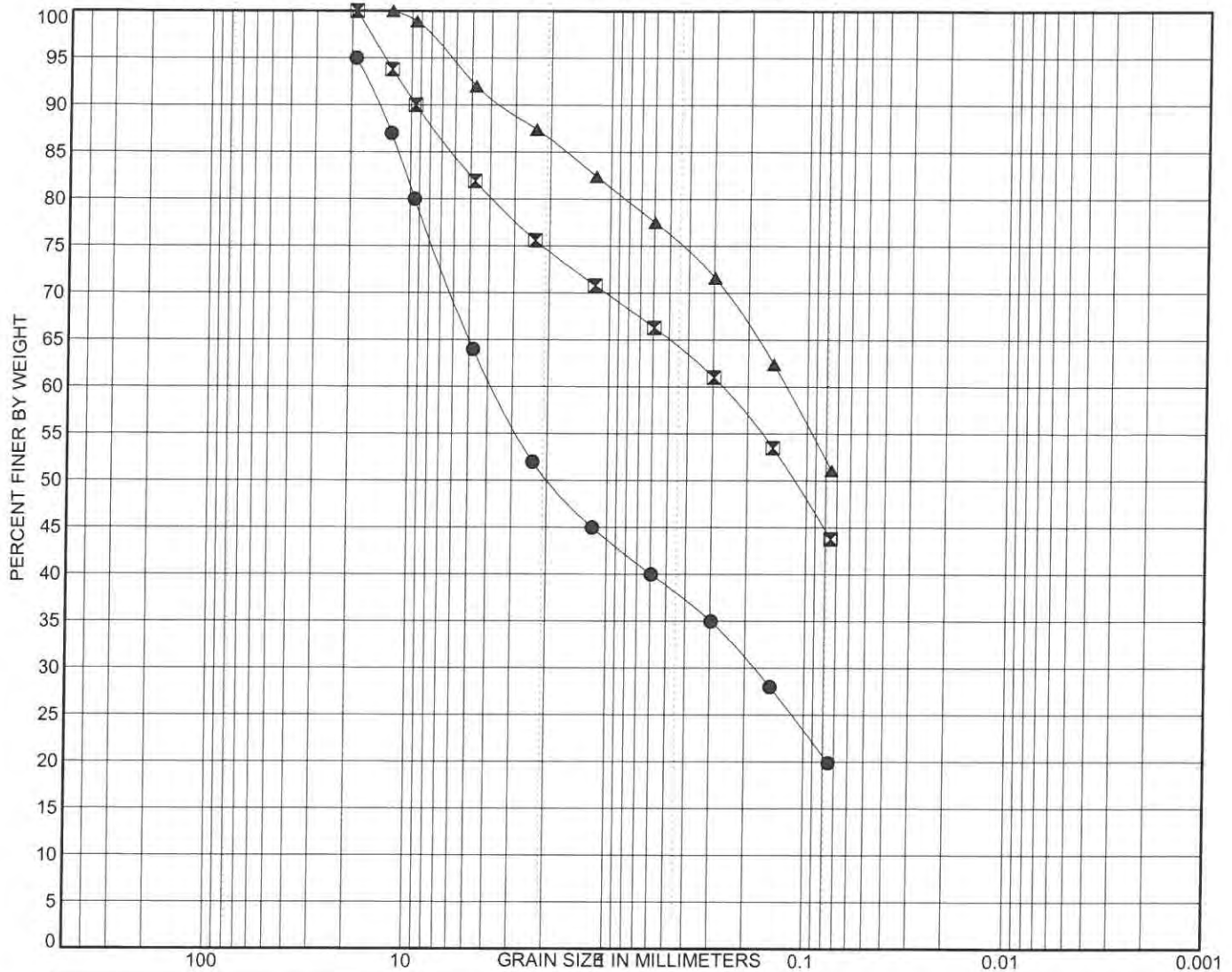


U.S. SIEVE OPENING IN INCHES

U.S. SIEVE NUMBERS

HYDROMETER

6 4 3 2 1.5 1 3/4 1/2 3/8 3 4 6 8 10 14 16 20 30 40 50 60 100 140 200



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Boring No.	Depth (ft)	Description				LL	PL	PI	Cc	Cu
● BH-5	0-5	SILTY SAND (SM)								
☒ BH-10	0-5	SILTY SAND (SM)								
▲ BH-18	0-5	SANDY SILT (ML)								
Boring No.	Depth (ft)	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay	
● BH-5	0-5	19	3.762	0.181		31.0	44.1	19.9		
☒ BH-10	0-5	19	0.271			18.1	38.1	43.8		
▲ BH-18	0-5	12.5	0.129			8.0	40.9	51.1		

GRAIN SIZE DISTRIBUTION RESULTS

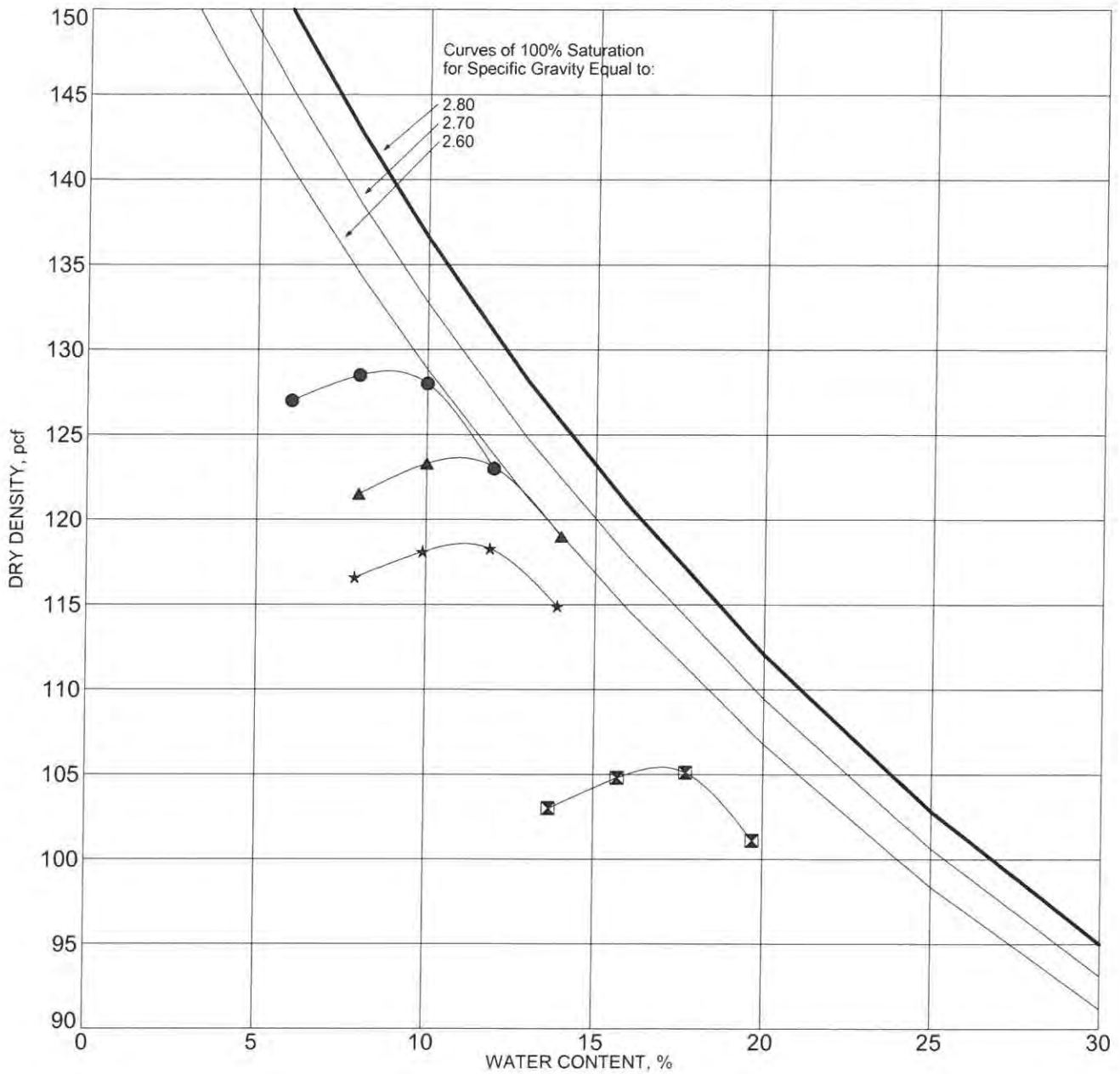


Converse Consultants

Project Name
 MT. SAN ANTONIO COLLEGE
 WEST PARCEL
 WALNUT, CALIFORNIA

Project No.
 13-31-339-01

Drawing No.
 B-1



SYMBOL	BORING NO.	DEPTH (ft)	DESCRIPTION	ASTM TEST METHOD	OPTIMUM WATER, %	MAXIMUM DRY DENSITY, pcf
●	BH- 3	0-5	SILTY SAND (SM)	D1557 Method B	9.2	128.5
⊠	BH- 9	0-5	SILTY SAND (SM)	D1557 Method A	16.8	106
▲	BH-13	0	SILTY SAND (SM) WITH CLAY AND GRAVELS	D1557 Method C	11.2	124
★	BH-21	0-5	SILTY SAND (SM)	D1557 Method A	11	119

NOTE:

MOISTURE-DENSITY RELATIONSHIP RESULTS

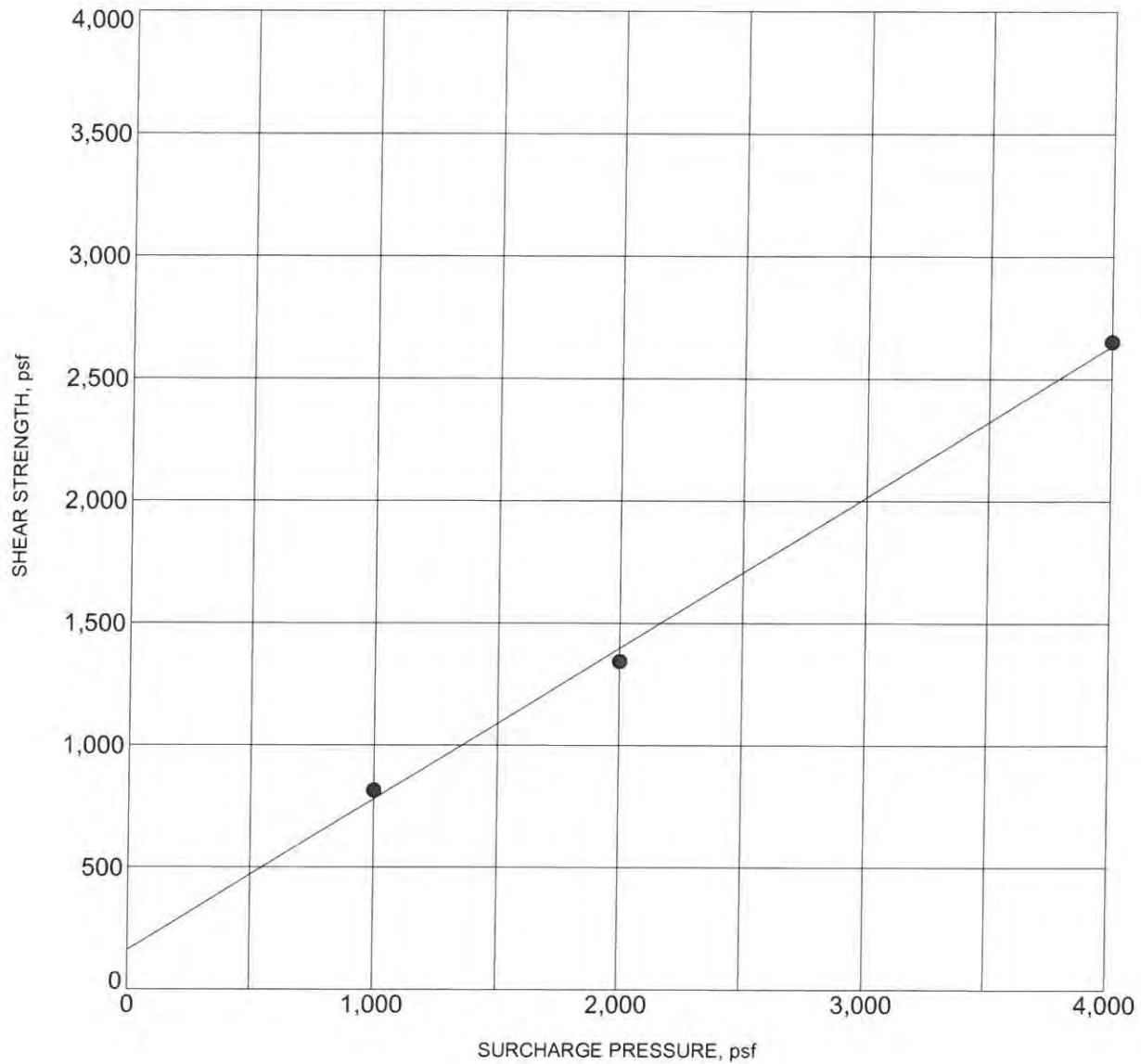


Converse Consultants

Project Name
MT. SAN ANTONIO COLLEGE
WEST PARCEL
WALNUT, CALIFORNIA

Project No.
13-31-339-01

Drawing No.
B-2



BORING NO.	: BH- 9	DEPTH (ft)	: 0-5
DESCRIPTION	: SILTY SAND (SM)		
COHESION (psf)	: 150	FRICITION ANGLE (degrees):	32
MOISTURE CONTENT (%)	: 18.0	DRY DENSITY (pcf)	: 94.5

NOTE: Ultimate Strength.

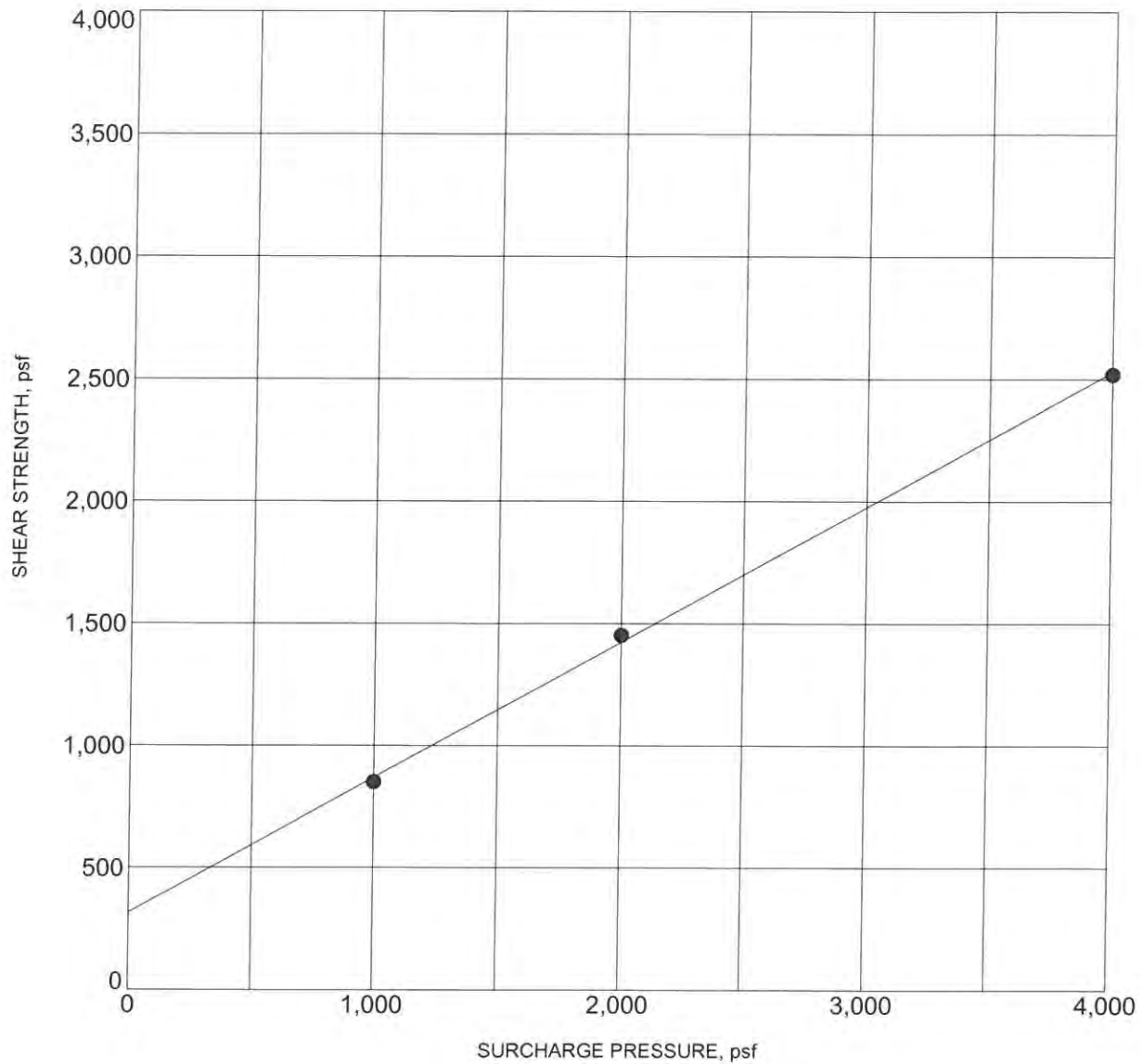
DIRECT SHEAR TEST RESULTS



Converse Consultants

Project Name
 MT. SAN ANTONIO COLLEGE
 WEST PARCEL
 WALNUT, CALIFORNIA

Project No. Drawing No.
 13-31-339-01 B-3a



BORING NO. :	BH-13	DEPTH (ft) :	25-30
DESCRIPTION :	SEDIMENTARY BEDROCK - CONGLOMERATE		
COHESION (psf) :	300	FRICTION ANGLE (degrees):	29
MOISTURE CONTENT (%) :	13.3	DRY DENSITY (pcf) :	109.6

NOTE: Ultimate Strength.

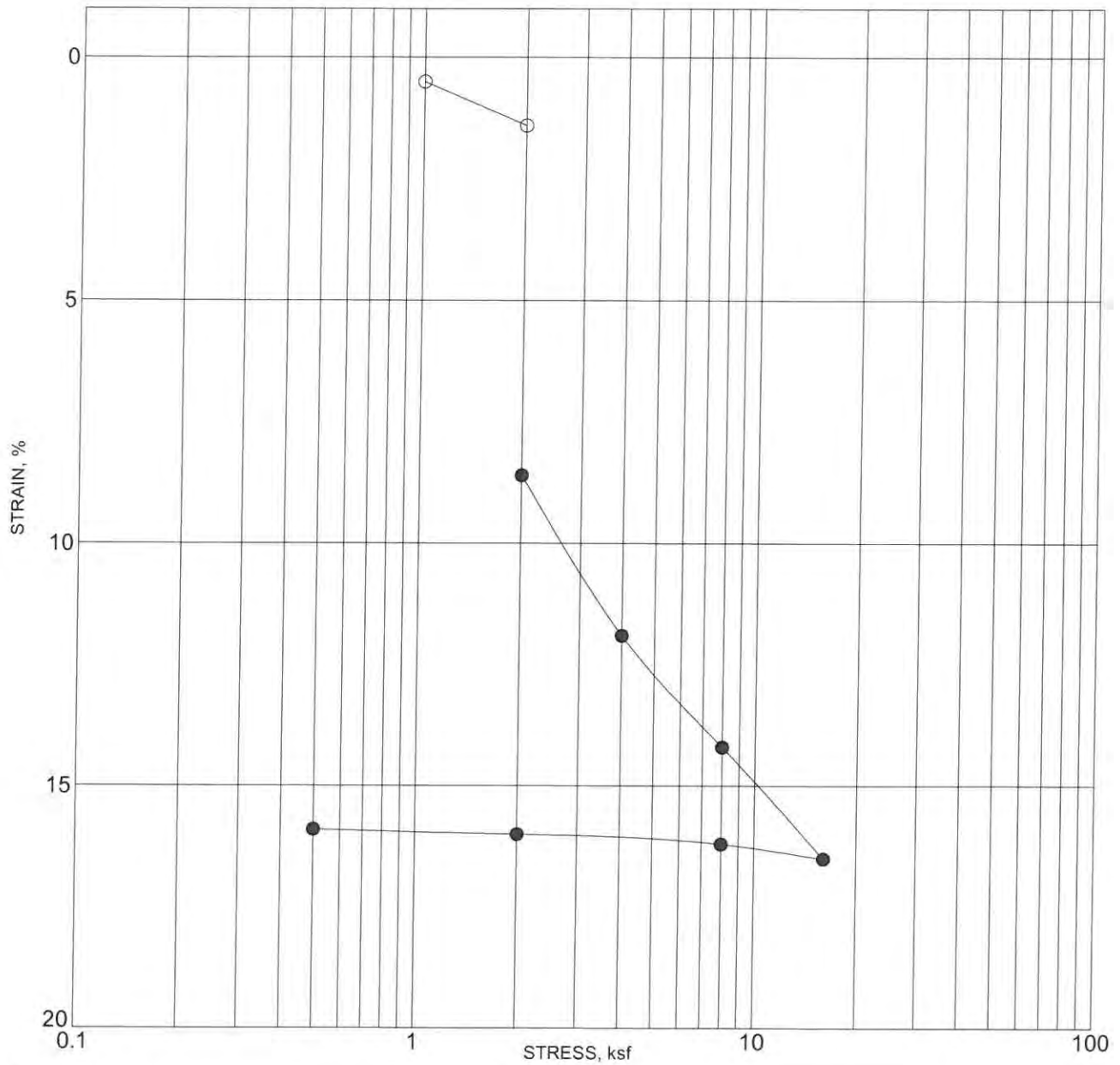
DIRECT SHEAR TEST RESULTS



Converse Consultants

Project Name
 MT. SAN ANTONIO COLLEGE
 WEST PARCEL
 WALNUT, CALIFORNIA

Project No. Drawing No.
 13-31-339-01 B-3b



BORING NO. :		BH- 1		DEPTH (ft) :		5	
DESCRIPTION :		SILTY SAND (SM)					
MOISTURE CONTENT (%)		DRY DENSITY (pcf)		PERCENT SATURATION		VOID RATIO	
INITIAL	8.1	99.1					
FINAL	13.6	114.9					

NOTE: SOLID CIRCLES INDICATE READINGS AFTER ADDITION OF WATER

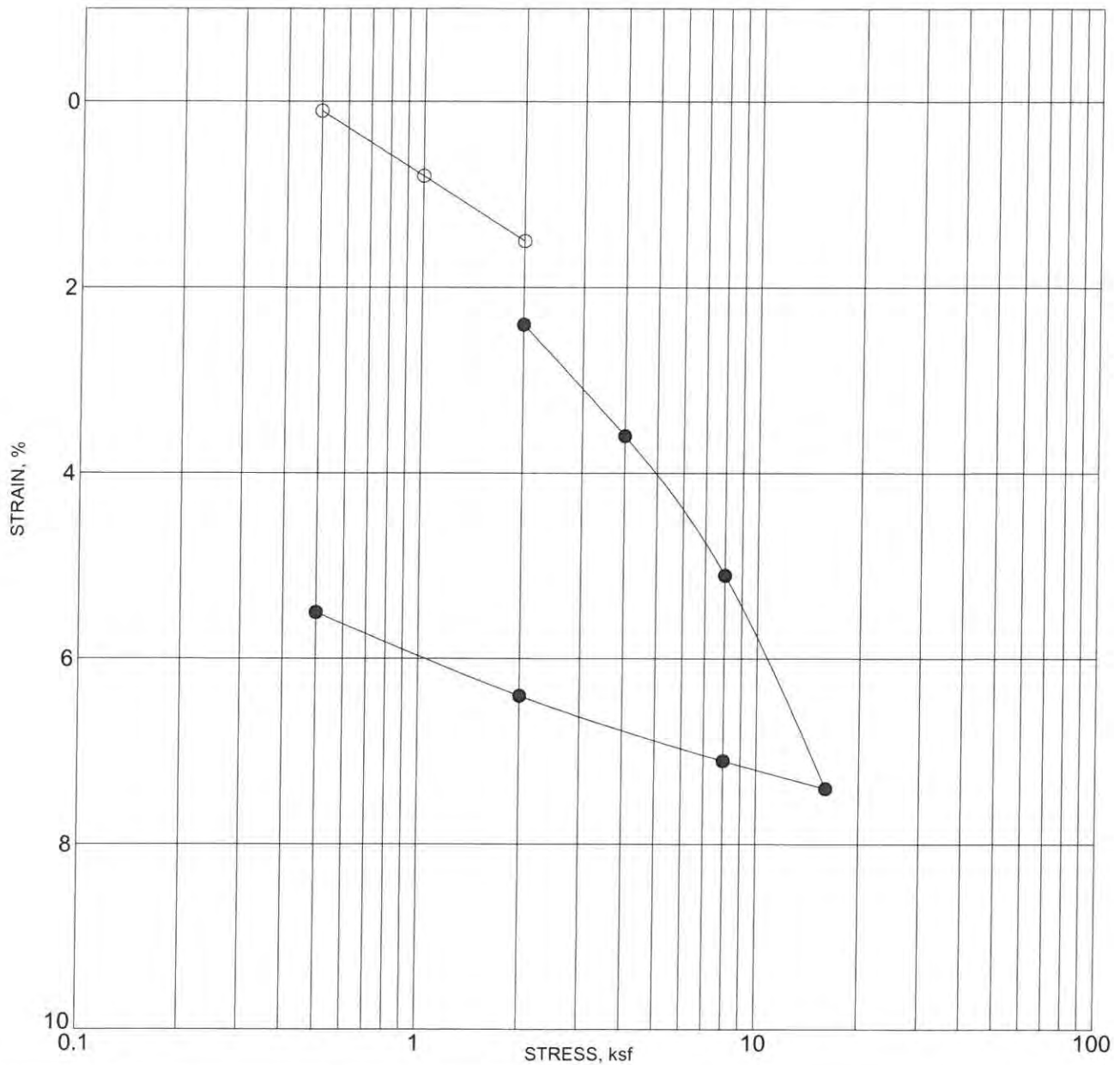
CONSOLIDATION TEST RESULTS



Converse Consultants

Project Name
 MT. SAN ANTONIO COLLEGE
 WEST PARCEL
 WALNUT, CALIFORNIA

Project No. Drawing No.
 13-31-339-01 B-4a



BORING NO. : BH- 8		DEPTH (ft) : 5	
DESCRIPTION : SANDSTONE - SILTSTONE			
MOISTURE CONTENT (%)	DRY DENSITY (pcf)	PERCENT SATURATION	VOID RATIO
INITIAL 8.9	113.9		
FINAL 15.8	120.2		

NOTE: SOLID CIRCLES INDICATE READINGS AFTER ADDITION OF WATER

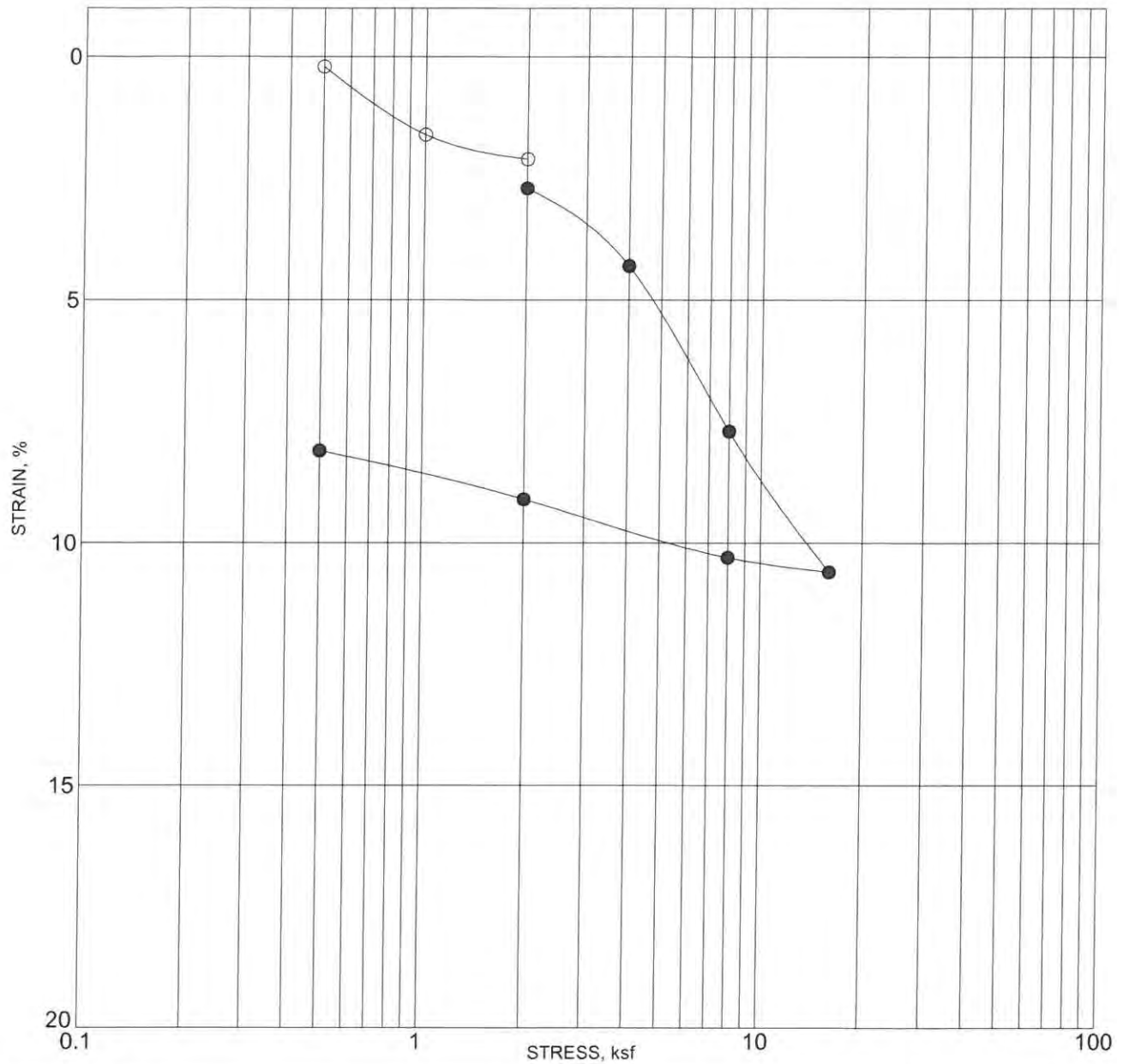
CONSOLIDATION TEST RESULTS



Converse Consultants

Project Name
 MT. SAN ANTONIO COLLEGE
 WEST PARCEL
 WALNUT, CALIFORNIA

Project No. Drawing No.
 13-31-339-01 B-4b



BORING NO. :		BH-15		DEPTH (ft) :		5	
DESCRIPTION :		SILTY SAND (SM)					
MOISTURE CONTENT (%)		DRY DENSITY (pcf)		PERCENT SATURATION		VOID RATIO	
INITIAL	19.5	105					
FINAL	19.8	110.2					

NOTE: SOLID CIRCLES INDICATE READINGS AFTER ADDITION OF WATER

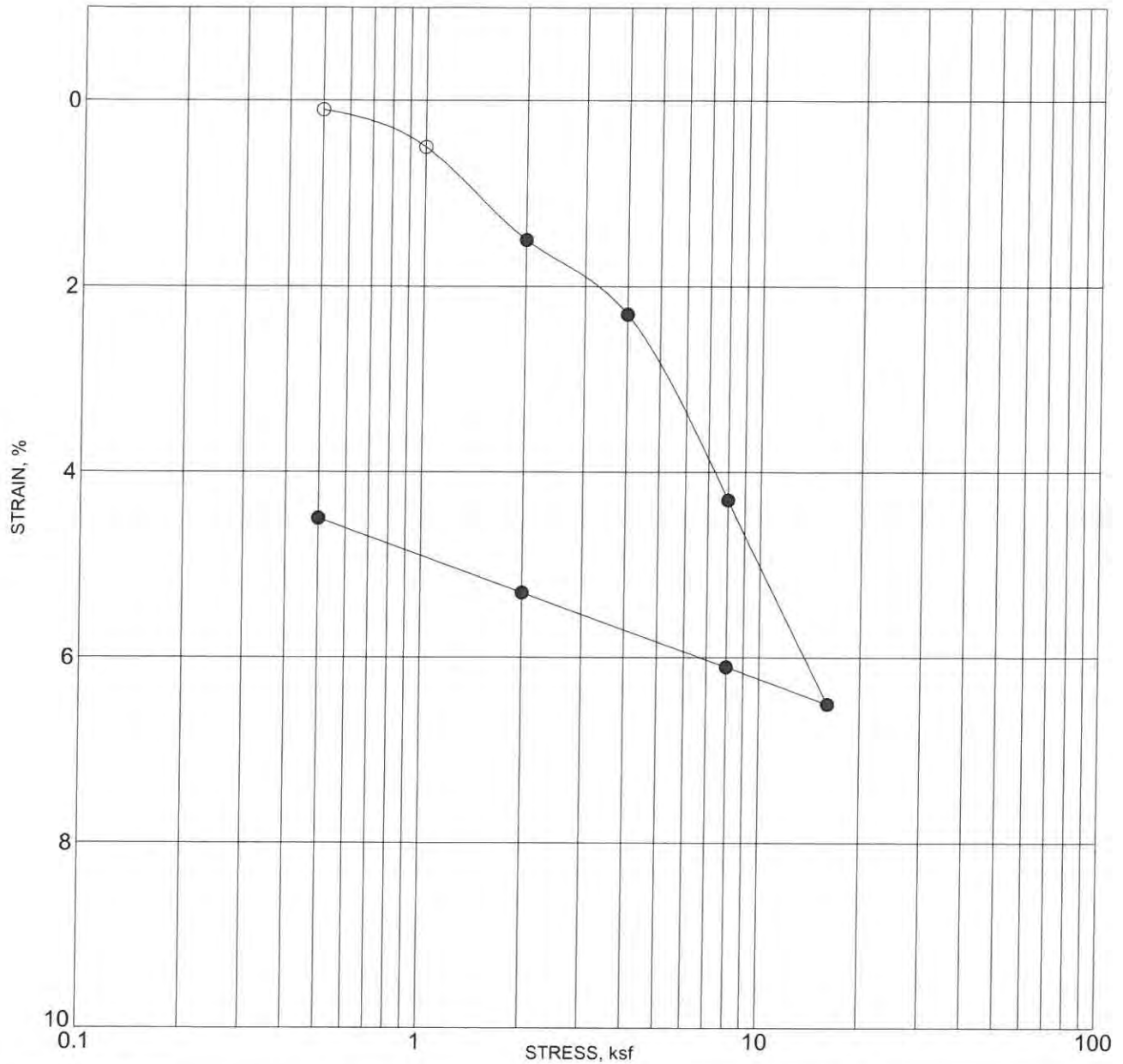
CONSOLIDATION TEST RESULTS



Converse Consultants

Project Name
 MT. SAN ANTONIO COLLEGE
 WEST PARCEL
 WALNUT, CALIFORNIA

Project No. Drawing No.
 13-31-339-01 B-4c



BORING NO. : BH-15		DEPTH (ft) : 20	
DESCRIPTION : SILTY SAND (SM)			
MOISTURE CONTENT (%)	DRY DENSITY (pcf)	PERCENT SATURATION	VOID RATIO
INITIAL 30.9	89		
FINAL 30.5	93		

NOTE: SOLID CIRCLES INDICATE READINGS AFTER ADDITION OF WATER

CONSOLIDATION TEST RESULTS



Converse Consultants

Project Name
 MT. SAN ANTONIO COLLEGE
 WEST PARCEL
 WALNUT, CALIFORNIA

Project No. Drawing No.
 13-31-339-01 B-4d

APPENDIX C

LIQUEFACTION/SEISMIC SETTLEMENT ANALYSIS



APPENDIX C

LIQUEFACTION/SEISMIC SETTLEMENT ANALYSIS

Liquefaction is defined as the phenomenon where a soil mass exhibits a substantial reduction in its shear strength. This strength reduction is due to the development of excess pore pressure in a soil mass caused by earthquake induced ground motions. Saturated soils behave temporarily as a viscous fluid (liquefaction) and, consequently, lose their capacity to support the structures founded on them. The potential for liquefaction decreases with increasing clay and gravel content, but increases as the ground acceleration and duration of shaking increase. Liquefaction potential has been found to be the greatest where the groundwater level and loose sands occur within 50 feet of the ground surface.

Our liquefaction analyses are based on the *Special Publication 117A: Guidelines for Evaluating and Mitigating Seismic Hazards in California (9/2008)*, *Recommended Procedures for Implementation of DMG Special Publication 117, Guidelines for Analyzing and Mitigating Liquefaction Hazards in California (3/1999)*, and *2013 California Building Code*.

The subsurface data obtained from exploratory boring was used to evaluate the liquefaction/seismic settlement potential of the area. The Logs of Borings are presented in Appendix A, *Field Exploration*. The liquefaction potential and seismic settlement analyses were performed utilizing SPT data obtained from boring BH-15 for the upper 46.5 feet of soils, using *LiquefyPro*, Version 5.8d, 2009, by Civil Tech Software. The following seismic parameters are used for liquefaction potential analyses.

Table No. D-1, Seismic Parameters Used in Liquefaction Analysis

Groundwater Depth* (feet)	Earthquake Magnitude** Mw	Peak Ground Acceleration*** (g)
16	6.69	0.77

* Based on Groundwater encountered during field exploration.

** Based on USGS 2008 NSHMP PSHA Interactive Deaggregation web site.

** Based on PGA_M per section 21.5 of ASCE 7-10.

The results of our liquefaction analyses indicate the project site is not susceptible to liquefaction as presented in the attached calculations. The estimated seismic settlement is approximately 0.10 inches with differential settlement of approximately 0.05 inches.

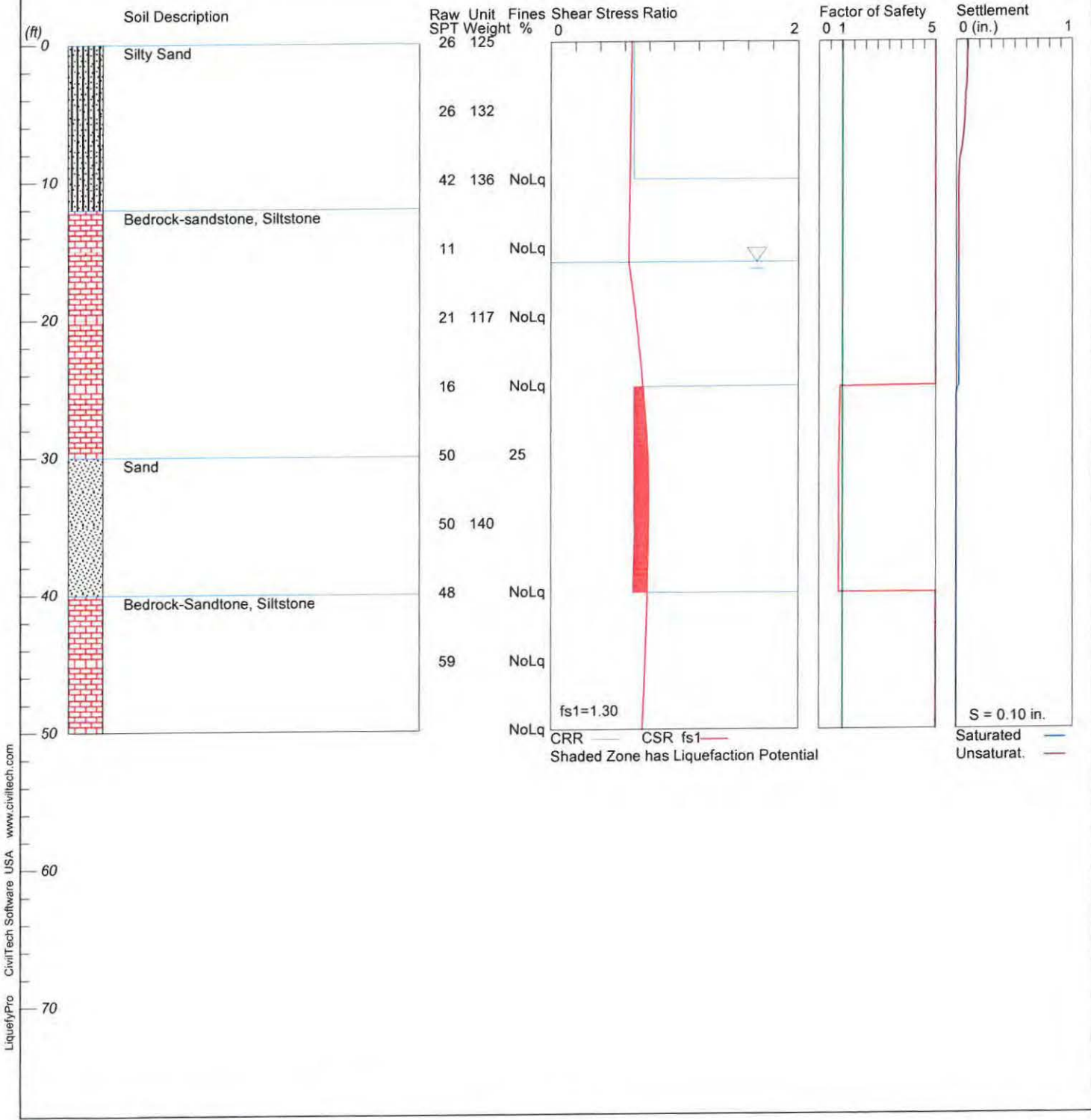


LIQUEFACTION ANALYSIS

MT. SAN ANTONIO COLLEGE

Hole No.=BH-15 Water Depth=16 ft Surface Elev.=706

Magnitude=6.69
Acceleration=0.77g



LiquefyPro CivilTech Software USA www.civiltech.com

LIQUEFACTION ANALYSIS SUMMARY
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 www.civiltech.com

Font: Courier New, Regular, Size 8 is recommended for this report.
 Licensed to , 7/14/2014 4:44:05 PM

Input File Name: E:\Liquefy5\13-31-339-01-BH-15.liq
 Title: MT. SAN ANTONIO COLLEGE
 Subtitle: 13-31-339-01

Surface Elev.=706
 Hole No.=BH-15
 Depth of Hole= 50.00 ft
 Water Table during Earthquake= 16.00 ft
 Water Table during In-Situ Testing= 16.00 ft
 Max. Acceleration= 0.77 g
 Earthquake Magnitude= 6.69

Input Data:

Surface Elev.=706
 Hole No.=BH-15
 Depth of Hole=50.00 ft
 Water Table during Earthquake= 16.00 ft
 Water Table during In-Situ Testing= 16.00 ft
 Max. Acceleration=0.77 g
 Earthquake Magnitude=6.69
 No-Liquefiable Soils: CL, OL are Non-Liq. Soil

1. SPT or BPT Calculation.
 2. Settlement Analysis Method: Tokimatsu/Seed
 3. Fines Correction for Liquefaction: Stark/Olson et al.*
 4. Fine Correction for Settlement: During Liquefaction*
 5. Settlement Calculation in: All zones*
 6. Hammer Energy Ratio, Ce = 1.3
 7. Borehole Diameter, Cb= 1.15
 8. Sampling Method, Cs= 1.12
 9. User request factor of safety (apply to CSR) , User= 1.3
 Plot one CSR curve (fs1=User)
 10. Use Curve Smoothing: Yes*
- * Recommended Options

In-Situ Test Data:

Depth ft	SPT	gamma pcf	Fines %
0.00	26.00	125.00	0.00
5.00	26.00	132.00	0.00
10.00	42.00	136.00	NoLiq
15.00	11.00	136.00	NoLiq
20.00	21.00	117.00	NoLiq
25.00	16.00	117.00	NoLiq
30.00	50.00	117.00	25.00
35.00	50.00	140.00	25.00
40.00	48.00	140.00	NoLiq
45.00	59.00	140.00	NoLiq
50.00	59.00	140.00	NoLiq

Output Results:

Settlement of Saturated Sands=0.02 in.
 Settlement of Unsaturated Sands=0.08 in.
 Total Settlement of Saturated and Unsaturated Sands=0.10 in.
 Differential Settlement=0.049 to 0.065 in.

Depth CRRm CSRfs F.S. S_sat. S_dry S_all

Liquefy.sum						
6.60	0.67	0.64	5.00	0.02	0.04	0.07
6.65	0.67	0.64	5.00	0.02	0.04	0.07
6.70	0.67	0.64	5.00	0.02	0.04	0.07
6.75	0.67	0.64	5.00	0.02	0.04	0.07
6.80	0.67	0.64	5.00	0.02	0.04	0.07
6.85	0.67	0.64	5.00	0.02	0.04	0.06
6.90	0.67	0.64	5.00	0.02	0.04	0.06
6.95	0.67	0.64	5.00	0.02	0.04	0.06
7.00	0.67	0.64	5.00	0.02	0.04	0.06
7.05	0.67	0.64	5.00	0.02	0.04	0.06
7.10	0.67	0.64	5.00	0.02	0.04	0.06
7.15	0.67	0.64	5.00	0.02	0.04	0.06
7.20	0.67	0.64	5.00	0.02	0.04	0.06
7.25	0.67	0.64	5.00	0.02	0.04	0.06
7.30	0.67	0.64	5.00	0.02	0.04	0.06
7.35	0.67	0.64	5.00	0.02	0.04	0.06
7.40	0.67	0.64	5.00	0.02	0.03	0.06
7.45	0.67	0.64	5.00	0.02	0.03	0.06
7.50	0.67	0.64	5.00	0.02	0.03	0.06
7.55	0.67	0.64	5.00	0.02	0.03	0.06
7.60	0.67	0.64	5.00	0.02	0.03	0.05
7.65	0.67	0.64	5.00	0.02	0.03	0.05
7.70	0.67	0.64	5.00	0.02	0.03	0.05
7.75	0.67	0.64	5.00	0.02	0.03	0.05
7.80	0.67	0.64	5.00	0.02	0.03	0.05
7.85	0.67	0.64	5.00	0.02	0.03	0.05
7.90	0.67	0.64	5.00	0.02	0.03	0.05
7.95	0.67	0.64	5.00	0.02	0.02	0.05
8.00	0.67	0.64	5.00	0.02	0.02	0.05
8.05	0.67	0.64	5.00	0.02	0.02	0.05
8.10	0.67	0.64	5.00	0.02	0.02	0.04
8.15	0.67	0.64	5.00	0.02	0.02	0.04
8.20	0.67	0.64	5.00	0.02	0.02	0.04
8.25	0.67	0.64	5.00	0.02	0.02	0.04
8.30	0.67	0.64	5.00	0.02	0.02	0.04
8.35	0.67	0.64	5.00	0.02	0.02	0.04
8.40	0.67	0.64	5.00	0.02	0.01	0.04
8.45	0.67	0.64	5.00	0.02	0.01	0.04
8.50	0.67	0.64	5.00	0.02	0.01	0.04
8.55	0.67	0.64	5.00	0.02	0.01	0.03
8.60	0.67	0.64	5.00	0.02	0.01	0.03
8.65	0.67	0.64	5.00	0.02	0.01	0.03
8.70	0.67	0.64	5.00	0.02	0.01	0.03
8.75	0.67	0.64	5.00	0.02	0.01	0.03
8.80	0.67	0.64	5.00	0.02	0.01	0.03
8.85	0.67	0.64	5.00	0.02	0.01	0.03
8.90	0.67	0.64	5.00	0.02	0.01	0.03
8.95	0.67	0.64	5.00	0.02	0.01	0.03
9.00	0.67	0.64	5.00	0.02	0.01	0.03
9.05	0.67	0.64	5.00	0.02	0.01	0.03
9.10	0.67	0.64	5.00	0.02	0.01	0.03
9.15	0.67	0.64	5.00	0.02	0.01	0.03
9.20	0.67	0.64	5.00	0.02	0.01	0.03
9.25	0.67	0.64	5.00	0.02	0.00	0.03
9.30	0.67	0.64	5.00	0.02	0.00	0.03
9.35	0.67	0.64	5.00	0.02	0.00	0.03
9.40	0.67	0.64	5.00	0.02	0.00	0.03
9.45	0.67	0.64	5.00	0.02	0.00	0.03
9.50	0.67	0.64	5.00	0.02	0.00	0.03
9.55	0.67	0.64	5.00	0.02	0.00	0.03
9.60	0.67	0.64	5.00	0.02	0.00	0.03
9.65	0.67	0.64	5.00	0.02	0.00	0.03
9.70	0.67	0.64	5.00	0.02	0.00	0.02
9.75	0.67	0.64	5.00	0.02	0.00	0.02
9.80	0.67	0.64	5.00	0.02	0.00	0.02
9.85	0.67	0.64	5.00	0.02	0.00	0.02
9.90	0.67	0.64	5.00	0.02	0.00	0.02

Liquefy.sum

23.35	2.00	0.73	5.00	0.02	0.00	0.02
23.40	2.00	0.73	5.00	0.02	0.00	0.02
23.45	2.00	0.73	5.00	0.02	0.00	0.02
23.50	2.00	0.73	5.00	0.02	0.00	0.02
23.55	2.00	0.73	5.00	0.02	0.00	0.02
23.60	2.00	0.73	5.00	0.02	0.00	0.02
23.65	2.00	0.73	5.00	0.02	0.00	0.02
23.70	2.00	0.73	5.00	0.02	0.00	0.02
23.75	2.00	0.73	5.00	0.02	0.00	0.02
23.80	2.00	0.73	5.00	0.02	0.00	0.02
23.85	2.00	0.73	5.00	0.02	0.00	0.02
23.90	2.00	0.73	5.00	0.02	0.00	0.02
23.95	2.00	0.73	5.00	0.02	0.00	0.02
24.00	2.00	0.73	5.00	0.02	0.00	0.02
24.05	2.00	0.73	5.00	0.02	0.00	0.02
24.10	2.00	0.73	5.00	0.02	0.00	0.02
24.15	2.00	0.73	5.00	0.02	0.00	0.02
24.20	2.00	0.73	5.00	0.02	0.00	0.02
24.25	2.00	0.74	5.00	0.02	0.00	0.02
24.30	2.00	0.74	5.00	0.02	0.00	0.02
24.35	2.00	0.74	5.00	0.02	0.00	0.02
24.40	2.00	0.74	5.00	0.02	0.00	0.02
24.45	2.00	0.74	5.00	0.02	0.00	0.02
24.50	2.00	0.74	5.00	0.02	0.00	0.02
24.55	2.00	0.74	5.00	0.02	0.00	0.02
24.60	2.00	0.74	5.00	0.02	0.00	0.02
24.65	2.00	0.74	5.00	0.02	0.00	0.02
24.70	2.00	0.74	5.00	0.02	0.00	0.02
24.75	2.00	0.74	5.00	0.02	0.00	0.02
24.80	2.00	0.74	5.00	0.02	0.00	0.02
24.85	2.00	0.74	5.00	0.02	0.00	0.02
24.90	2.00	0.74	5.00	0.02	0.00	0.02
24.95	2.00	0.74	5.00	0.02	0.00	0.02
25.00	2.00	0.74	5.00	0.02	0.00	0.02
25.05	0.67	0.74	0.90*	0.02	0.00	0.02
25.10	0.67	0.74	0.90*	0.02	0.00	0.02
25.15	0.67	0.74	0.90*	0.02	0.00	0.02
25.20	0.67	0.74	0.90*	0.02	0.00	0.02
25.25	0.67	0.75	0.90*	0.01	0.00	0.01
25.30	0.67	0.75	0.90*	0.01	0.00	0.01
25.35	0.67	0.75	0.90*	0.01	0.00	0.01
25.40	0.67	0.75	0.90*	0.01	0.00	0.01
25.45	0.67	0.75	0.90*	0.01	0.00	0.01
25.50	0.67	0.75	0.90*	0.00	0.00	0.00
25.55	0.67	0.75	0.90*	0.00	0.00	0.00
25.60	0.67	0.75	0.89*	0.00	0.00	0.00
25.65	0.67	0.75	0.89*	0.00	0.00	0.00
25.70	0.67	0.75	0.89*	0.00	0.00	0.00
25.75	0.67	0.75	0.89*	0.00	0.00	0.00
25.80	0.67	0.75	0.89*	0.00	0.00	0.00
25.85	0.67	0.75	0.89*	0.00	0.00	0.00
25.90	0.67	0.75	0.89*	0.00	0.00	0.00
25.95	0.67	0.75	0.89*	0.00	0.00	0.00
26.00	0.67	0.75	0.89*	0.00	0.00	0.00
26.05	0.67	0.75	0.89*	0.00	0.00	0.00
26.10	0.67	0.75	0.89*	0.00	0.00	0.00
26.15	0.67	0.75	0.89*	0.00	0.00	0.00
26.20	0.67	0.75	0.89*	0.00	0.00	0.00
26.25	0.67	0.75	0.89*	0.00	0.00	0.00
26.30	0.67	0.76	0.89*	0.00	0.00	0.00
26.35	0.67	0.76	0.89*	0.00	0.00	0.00
26.40	0.67	0.76	0.89*	0.00	0.00	0.00
26.45	0.67	0.76	0.89*	0.00	0.00	0.00
26.50	0.67	0.76	0.88*	0.00	0.00	0.00
26.55	0.67	0.76	0.88*	0.00	0.00	0.00
26.60	0.67	0.76	0.88*	0.00	0.00	0.00
26.65	0.67	0.76	0.88*	0.00	0.00	0.00

Liquefy.sum						
46.80	2.00	0.75	5.00	0.00	0.00	0.00
46.85	2.00	0.75	5.00	0.00	0.00	0.00
46.90	2.00	0.75	5.00	0.00	0.00	0.00
46.95	2.00	0.75	5.00	0.00	0.00	0.00
47.00	2.00	0.75	5.00	0.00	0.00	0.00
47.05	2.00	0.75	5.00	0.00	0.00	0.00
47.10	2.00	0.75	5.00	0.00	0.00	0.00
47.15	2.00	0.75	5.00	0.00	0.00	0.00
47.20	2.00	0.75	5.00	0.00	0.00	0.00
47.25	2.00	0.75	5.00	0.00	0.00	0.00
47.30	2.00	0.75	5.00	0.00	0.00	0.00
47.35	2.00	0.75	5.00	0.00	0.00	0.00
47.40	2.00	0.75	5.00	0.00	0.00	0.00
47.45	2.00	0.75	5.00	0.00	0.00	0.00
47.50	2.00	0.75	5.00	0.00	0.00	0.00
47.55	2.00	0.75	5.00	0.00	0.00	0.00
47.60	2.00	0.75	5.00	0.00	0.00	0.00
47.65	2.00	0.75	5.00	0.00	0.00	0.00
47.70	2.00	0.75	5.00	0.00	0.00	0.00
47.75	2.00	0.75	5.00	0.00	0.00	0.00
47.80	2.00	0.75	5.00	0.00	0.00	0.00
47.85	2.00	0.75	5.00	0.00	0.00	0.00
47.90	2.00	0.75	5.00	0.00	0.00	0.00
47.95	2.00	0.75	5.00	0.00	0.00	0.00
48.00	2.00	0.75	5.00	0.00	0.00	0.00
48.05	2.00	0.75	5.00	0.00	0.00	0.00
48.10	2.00	0.75	5.00	0.00	0.00	0.00
48.15	2.00	0.75	5.00	0.00	0.00	0.00
48.20	2.00	0.75	5.00	0.00	0.00	0.00
48.25	2.00	0.75	5.00	0.00	0.00	0.00
48.30	2.00	0.75	5.00	0.00	0.00	0.00
48.35	2.00	0.75	5.00	0.00	0.00	0.00
48.40	2.00	0.75	5.00	0.00	0.00	0.00
48.45	2.00	0.75	5.00	0.00	0.00	0.00
48.50	2.00	0.75	5.00	0.00	0.00	0.00
48.55	2.00	0.75	5.00	0.00	0.00	0.00
48.60	2.00	0.75	5.00	0.00	0.00	0.00
48.65	2.00	0.75	5.00	0.00	0.00	0.00
48.70	2.00	0.75	5.00	0.00	0.00	0.00
48.75	2.00	0.75	5.00	0.00	0.00	0.00
48.80	2.00	0.74	5.00	0.00	0.00	0.00
48.85	2.00	0.74	5.00	0.00	0.00	0.00
48.90	2.00	0.74	5.00	0.00	0.00	0.00
48.95	2.00	0.74	5.00	0.00	0.00	0.00
49.00	2.00	0.74	5.00	0.00	0.00	0.00
49.05	2.00	0.74	5.00	0.00	0.00	0.00
49.10	2.00	0.74	5.00	0.00	0.00	0.00
49.15	2.00	0.74	5.00	0.00	0.00	0.00
49.20	2.00	0.74	5.00	0.00	0.00	0.00
49.25	2.00	0.74	5.00	0.00	0.00	0.00
49.30	2.00	0.74	5.00	0.00	0.00	0.00
49.35	2.00	0.74	5.00	0.00	0.00	0.00
49.40	2.00	0.74	5.00	0.00	0.00	0.00
49.45	2.00	0.74	5.00	0.00	0.00	0.00
49.50	2.00	0.74	5.00	0.00	0.00	0.00
49.55	2.00	0.74	5.00	0.00	0.00	0.00
49.60	2.00	0.74	5.00	0.00	0.00	0.00
49.65	2.00	0.74	5.00	0.00	0.00	0.00
49.70	2.00	0.74	5.00	0.00	0.00	0.00
49.75	2.00	0.74	5.00	0.00	0.00	0.00
49.80	2.00	0.74	5.00	0.00	0.00	0.00
49.85	2.00	0.74	5.00	0.00	0.00	0.00
49.90	2.00	0.74	5.00	0.00	0.00	0.00
49.95	2.00	0.74	5.00	0.00	0.00	0.00
50.00	2.00	0.74	5.00	0.00	0.00	0.00

* F.S.<1, Liquefaction Potential Zone

Liquefy.sum

(F.S. is limited to 5, CRR is limited to 2, CSR is limited to 2)

Units: Unit: qc, fs, Stress or Pressure = atm (1.0581tsf); Unit Weight = pcf; Depth = ft; Settlement = in.

1 atm (atmosphere) = 1 tsf (ton/ft²)

CRRm	Cyclic resistance ratio from soils
CSRsf	Cyclic stress ratio induced by a given earthquake (with user request factor of safety)
F.S.	Factor of Safety against liquefaction, F.S.=CRRm/CSRsf
S_sat	Settlement from saturated sands
S_dry	Settlement from Unsaturated Sands
S_all	Total Settlement from Saturated and Unsaturated Sands
NoLiq	No-Liquefy Soils

APPENDIX D
EARTHWORK SPECIFICATIONS



APPENDIX D

EARTHWORK SPECIFICATIONS

D1.1 Scope of Work

The work includes all labor, supplies and construction equipment required to construct the building pads in a good, workmanlike manner, as shown on the drawings and herein specified. The major items of work covered in this section include the following:

- ◆ Site Inspection
- ◆ Authority of Geotechnical Engineer
- ◆ Site Clearing
- ◆ Excavations
- ◆ Preparation of Fill Areas
- ◆ Placement and Compaction of Fill
- ◆ Observation and Testing

D1.2 Site Inspection

1. The Contractor shall carefully examine the site and make all inspections necessary, in order to determine the full extent of the work required to make the completed work conform to the drawings and specifications. The Contractor shall satisfy himself as to the nature and location of the work, ground surface and the characteristics of equipment and facilities needed prior to and during prosecution of the work. The Contractor shall satisfy himself as to the character, quality, and quantity of surface and subsurface materials or obstacles to be encountered. Any inaccuracies or discrepancies between the actual field conditions and the drawings, or between the drawings and specifications must be brought to the Owner's attention in order to clarify the exact nature of the work to be performed.
2. This *Geoseismic/Geotechnical Study Report* by Converse Consultants may be used as a reference to the surface and subsurface conditions on this project. The information presented in this report is intended for use in design and is subject to confirmation of the conditions encountered during construction. The exploration logs and related information depict subsurface conditions only at the particular time and location designated on the boring logs. Subsurface conditions at other locations may differ from conditions encountered at the exploration locations. In addition, the passage of time may result in a change in subsurface conditions at the exploration locations. Any review of this information shall not relieve the



Contractor from performing such independent investigation and evaluation to satisfy himself as to the nature of the surface and subsurface conditions to be encountered and the procedures to be used in performing his work.

D1.3 Authority of the Geotechnical Engineer

1. The Geotechnical Engineer will observe the placement of compacted fill and will take sufficient tests to evaluate the uniformity and degree of compaction of filled ground.
2. As the Owner's representative, the Geotechnical Engineer will (a) have the authority to cause the removal and replacement of loose, soft, disturbed and other unsatisfactory soils and uncontrolled fill; (b) have the authority to approve the preparation of native ground to receive fill material; and (c) have the authority to approve or reject soils proposed for use in building areas.
3. The Civil Engineer and/or Owner will decide all questions regarding (a) the interpretation of the drawings and specifications, (b) the acceptable fulfillment of the contract on the part of the Contractor and (c) the matters of compensation.

D1.4 Site Clearing

1. Clearing and grubbing shall consist of the removal from building areas to be graded of all existing structures, pavement, utilities, and vegetation.
2. Organic and inorganic materials resulting from the clearing and grubbing operations shall be hauled away from the areas to be graded.

D1.5 Excavations

1. Based on observations made during our field explorations, the surficial soils can be excavated with conventional earthwork equipment.

D1.6 Preparation of Fill Areas

1. All organic material, organic soils, incompetent alluvium, undocumented fill soils and debris should be removed from the proposed building areas.
2. In order to provide a relative uniform bearing material below shallow foundations, over-excavation and re-compaction of below the foundations and slab-on-grade are recommended. We recommend a minimum 2 feet of onsite soils below the bottom of foundations should be removed, moisture-conditioned if necessary, and replaced as compacted fill. At least the six (6) inches of soil at bottom of over-excavation, cut and transition areas should be scarified and compacted. All



undocumented fill should be removed and replaced with compacted fill. The excavation to remove unsuitable soils should be extended to five (5) feet beyond the building limits and appendages where space is available. All loose, soft or disturbed earth materials should be removed from the bottom of excavations before placing structural fill. The actual depth of removal should be determined based on observations made during grading. After the required removals have been made, the exposed native earth materials shall be excavated to provide a zone of structural fill for the support of footings, slabs-on-grade, and exterior flatwork. The fill thickness under structures should not vary.

3. The subgrade in all areas to receive fill shall be scarified to a minimum depth of six (6) inches, the soil moisture adjusted within three (3) percent of the optimum moisture for granular soils and at above approximately three (3) percent of the optimum moisture for fine-grained soils, and then compacted to at least 90 percent for the upper 10 feet and 95 percent for fill placed 10 feet below proposed finished grade, of the laboratory maximum dry density as determined by ASTM Standard D1557 test method. Scarification may be terminated on moderately hard to hard, cemented earth materials with the approval of the Geotechnical Engineer.
4. Compacted fill may be placed on native soils that have been properly scarified and recompacted as discussed above.
5. All areas to receive compacted fill will be observed and approved by the Geotechnical Engineer before the placement of fill.

D1.7 Placement and Compaction of Fill

1. Compacted fill placed for the support of footings, slabs-on-grade, exterior concrete flatwork, and driveways will be considered structural fill. Structural fill may consist of approved on-site soils or imported fill that meets the criteria indicated below.
2. Fill consisting of selected on-site earth materials or imported soils approved by the Geotechnical Engineer shall be placed in layers on approved earth materials. Soils used as compacted structural fill shall have the following characteristics:
 - a. All fill soil particles shall not exceed three (3) inches in nominal size, and shall be free of organic matter and miscellaneous inorganic debris and inert rubble.
3. Imported fill materials shall have an Expansion Index (EI) less than 20. All imported fill should be compacted to at least 90 and 95 percent of the laboratory maximum dry density (ASTM Standard D1557) at about three (3) percent above



optimum moisture for fine grained soils, and within three (3) percent of optimum for granular soils.

4. Fill soils shall be evenly spread in maximum 6-inch to 8-inch lifts, watered or dried as necessary, mixed and compacted to at least the density specified below. The fill shall be placed and compacted on a horizontal plane, unless otherwise approved by the Geotechnical Engineer.
5. All fill placed at the site shall be compacted to at least 90 or 95 percent of the laboratory maximum dry density as determined by ASTM Standard D1557 test method. The on-site soils shall be moisture conditioned within three (3) percent of the optimum moisture for granular soils and at above approximately three (3) percent of the optimum moisture for fine-grained soils. At least the upper 12 inches of subgrade soils underneath the concrete apron, pavement and parking areas should be compacted to a minimum of 95 percent relative compaction.
6. Fill exceeding five (5) feet in height shall not be placed on native slopes that are steeper than 5:1 horizontal: vertical (H:V). Where native slopes are steeper than 5:1 H:V, and the height of the fill is greater than five (5) feet, the fill shall be benched into competent materials. The height and width of the benches shall be at least two (2) feet.
7. Representative samples of materials being used, as compacted fill will be analyzed in the laboratory by the Geotechnical Engineer to obtain information on their physical properties. Maximum laboratory density of each soil type used in the compacted fill will be determined by the ASTM Standard D1557 compaction method.
8. Fill materials shall not be placed, spread or compacted during unfavorable weather conditions. When site grading is interrupted by heavy rain, filling operations shall not resume until the Geotechnical Engineer approves the moisture and density conditions of the previously placed fill.
9. It shall be the Grading Contractor's obligation to take all measures deemed necessary during grading to provide erosion control devices in order to protect slope areas and adjacent properties from storm damage and flood hazard originating on this project. It shall be the contractor's responsibility to maintain slopes in their as-graded form until all slopes are in satisfactory compliance with job specifications, all berms have been properly constructed, and all associated drainage devices meet the requirements of the Civil Engineer.



D1.8 Trench Backfill

The following specifications are recommended to provide a basis for quality control during the placement of trench backfill.

1. Trench excavations to receive backfill shall be free of trash, debris or other unsatisfactory materials at the time of backfill placement.
2. Trench backfill shall be compacted to a minimum relative compaction of 90 percent as per ASTM Standard D1557 test method.
3. Rocks larger than one (1) inch should not be placed within 12 inches of the top of the pipeline or within the upper 12 inches of pavement or structure subgrade. No more than 30 percent of the backfill volume shall be larger than 3/4-inch in largest dimension diameter and rocks shall be well mixed with finer soil.
4. The pipe design engineer should select bedding material for the pipe. Bedding materials generally should have a Sand Equivalent (SE) greater than or equal to 30, as determined by the ASTM Standard D2419 test method.
5. Trench backfill shall be compacted by mechanical methods, such as sheepsfoot, vibrating or pneumatic rollers, or mechanical tampers, to achieve the density specified herein. The backfill materials shall be brought to within three (3) percent of optimum moisture content for granular soils and fine-grained soils, then placed in horizontal layers. The thickness of uncompacted layers should not exceed eight (8) inches. Each layer shall be evenly spread, moistened or dried as necessary, and then tamped or rolled until the specified density has been achieved.
6. The contractor shall select the equipment and processes to be used to achieve the specified density without damage to adjacent ground and completed work.
7. The field density of the compacted soil shall be measured by the ASTM Standard D1556 or ASTM Standard D2922 test methods or equivalent.
8. Observation and field tests should be performed by Converse during construction to confirm that the required degree of compaction has been obtained. Where compaction is less than that specified, additional compactive effort shall be made with adjustment of the moisture content as necessary, until the specified compaction is obtained.
9. It should be the responsibility of the Contractor to maintain safe conditions during cut and/or fill operations.
10. Trench backfill shall not be placed, spread or rolled during unfavorable weather

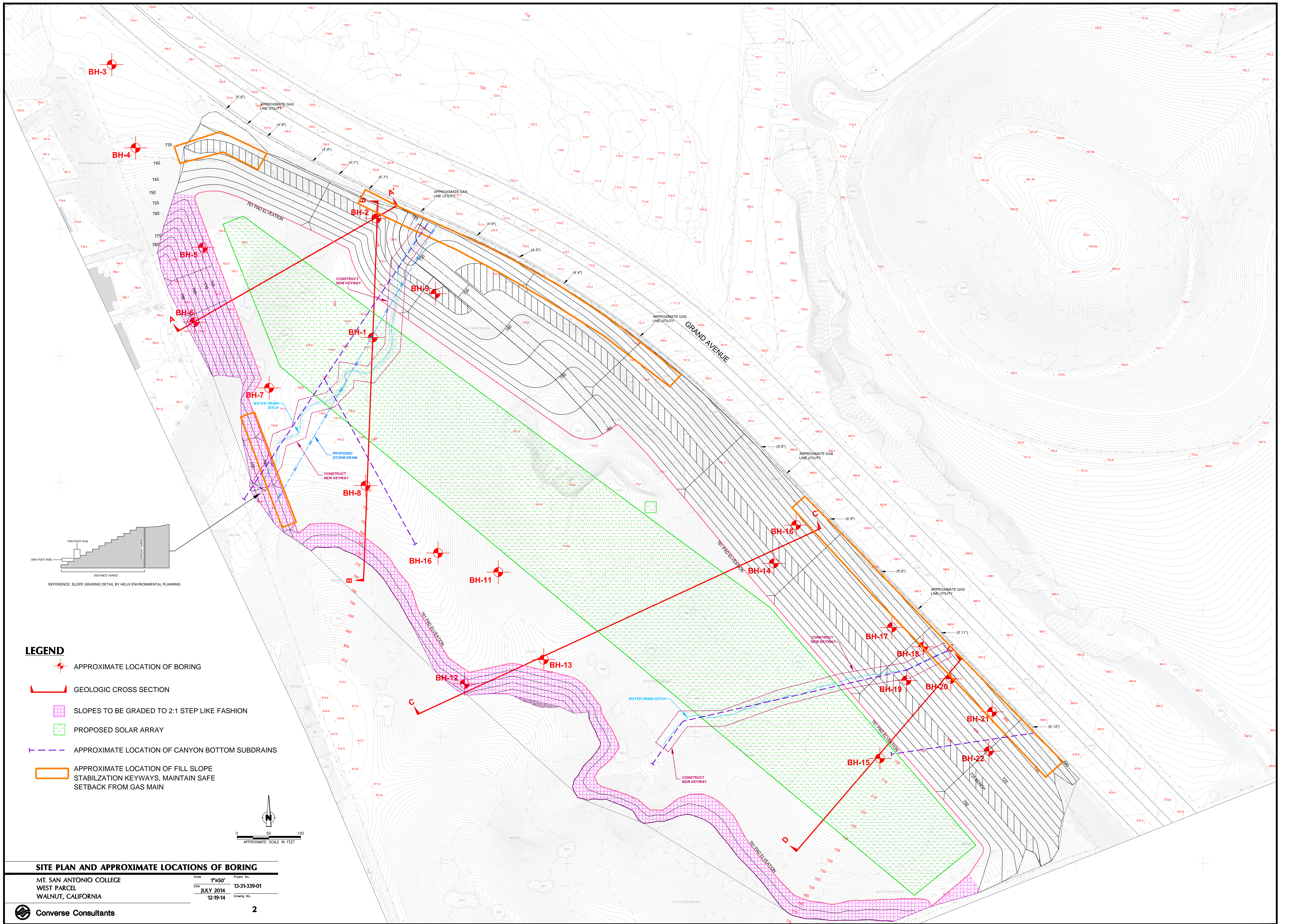


conditions. When the work is interrupted by heavy rain, fill operations shall not be resumed until field tests by the project's geotechnical consultant indicate that the moisture content and density of the fill are as previously specified.

D1.9 Observation and Testing

1. During the progress of grading, the Geotechnical Engineer will provide observation of the fill placement operations.
2. Field density tests will be made during grading to provide an opinion on the degree of compaction being obtained by the contractor. Where compaction of less than specified herein is indicated, additional compactive effort with adjustment of the moisture content shall be made as necessary, until the required degree of compaction is obtained.
3. A sufficient number of field density tests will be performed to provide an opinion to the degree of compaction achieved. In general, density tests will be performed on each one-foot lift of fill, but not less than one for each 500 cubic yards of fill placed.

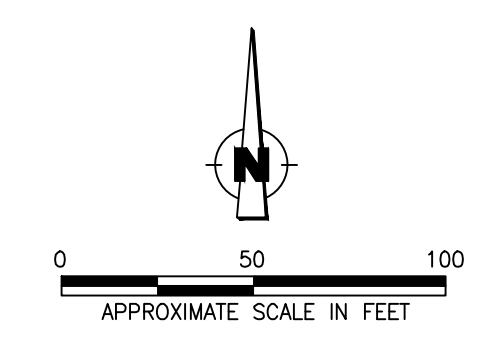


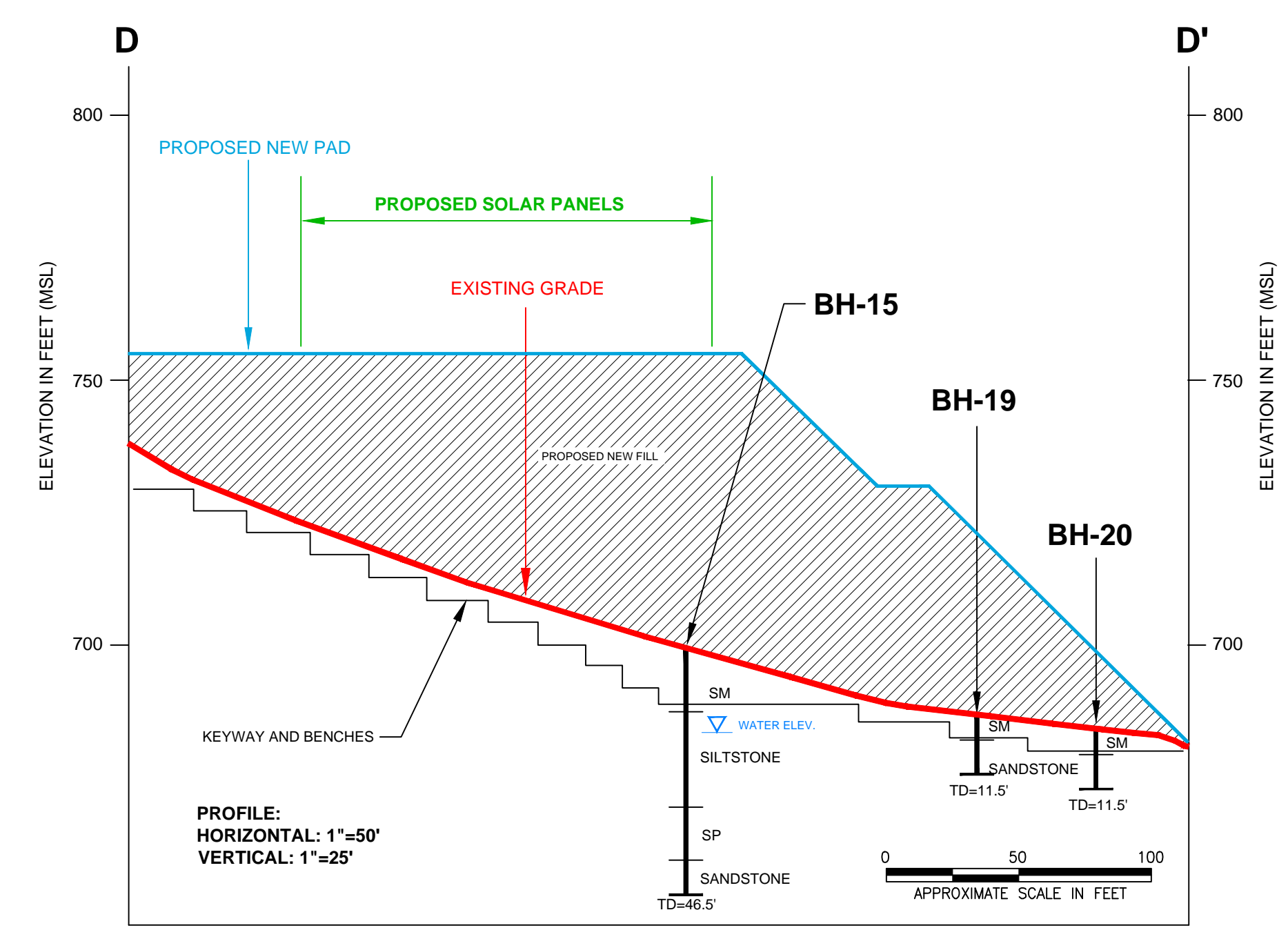
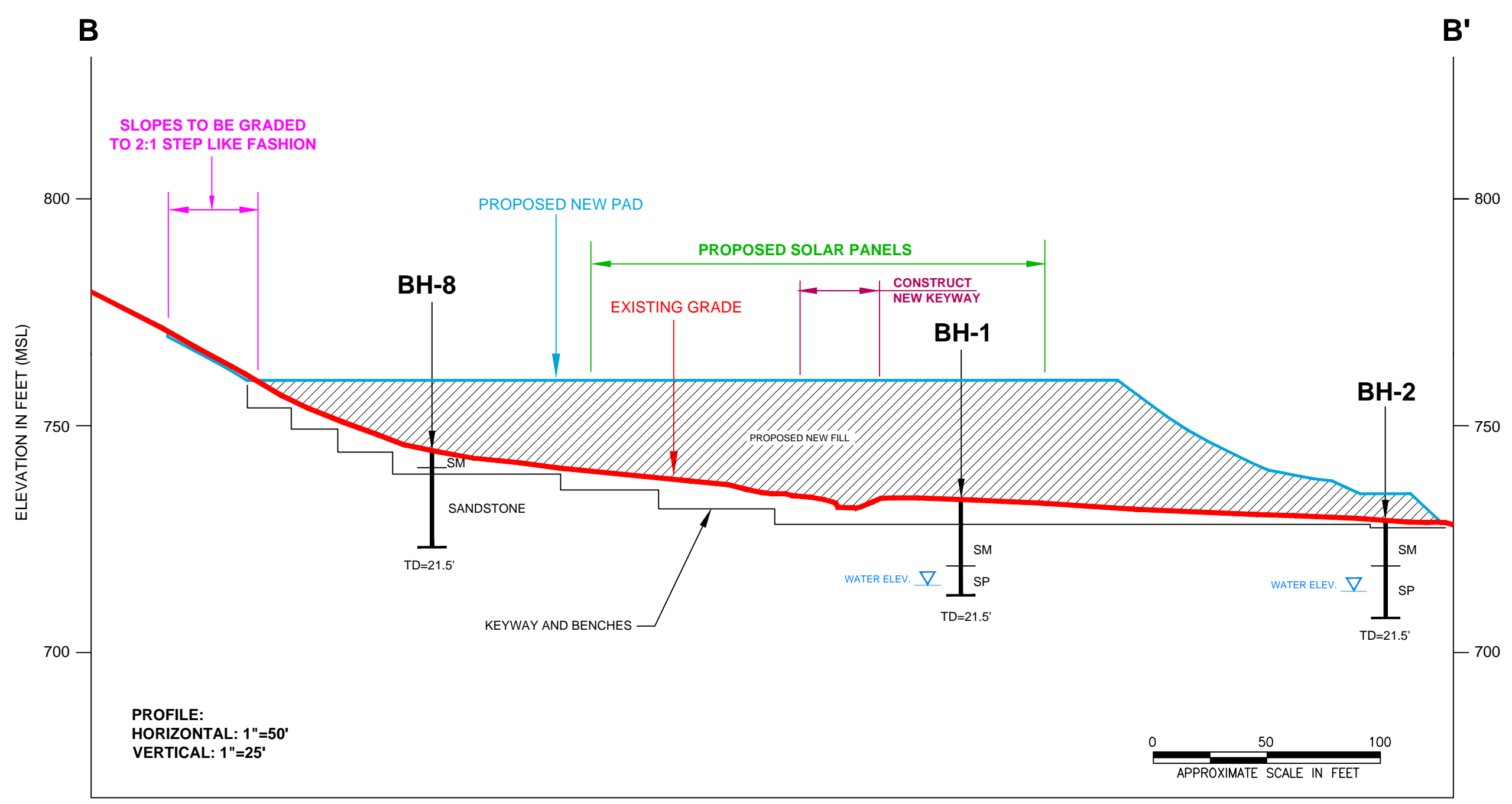
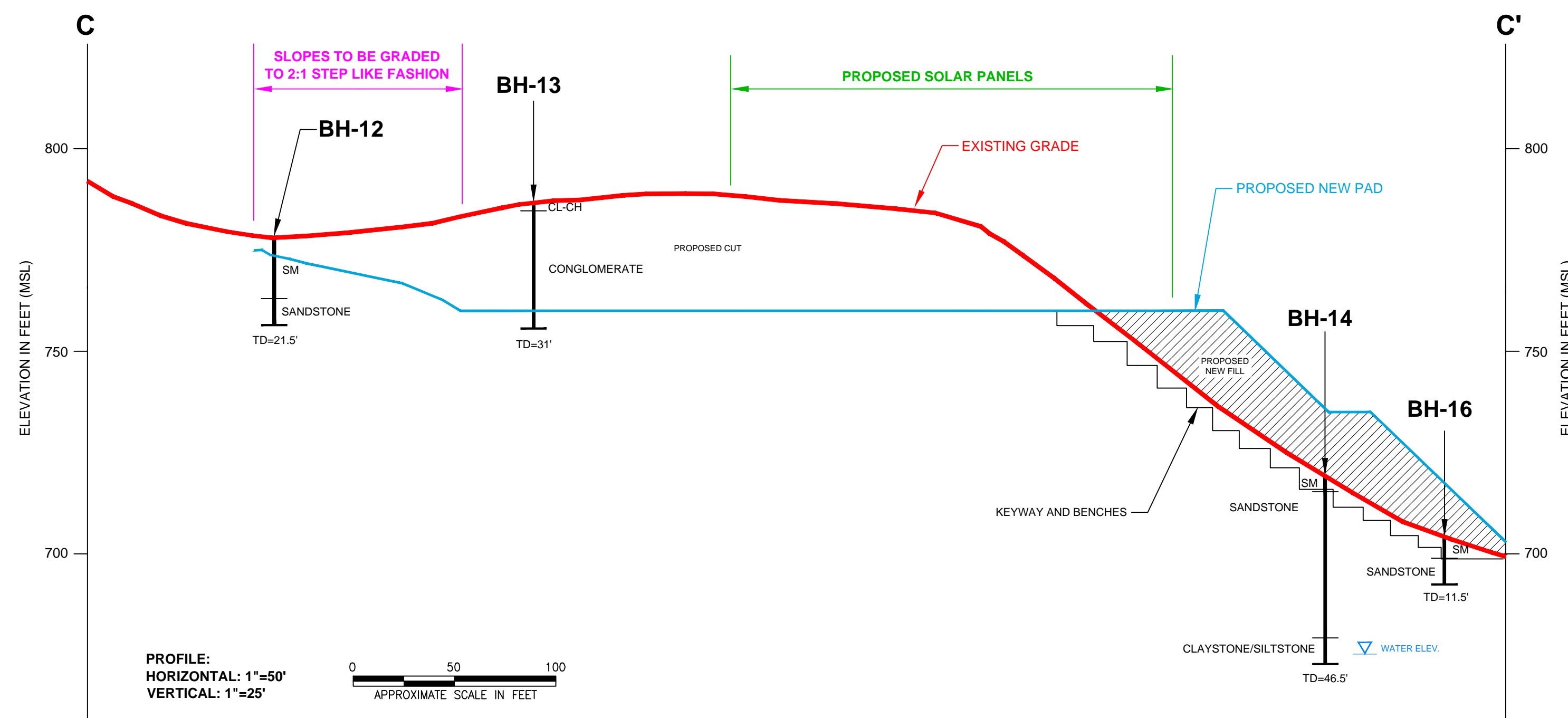
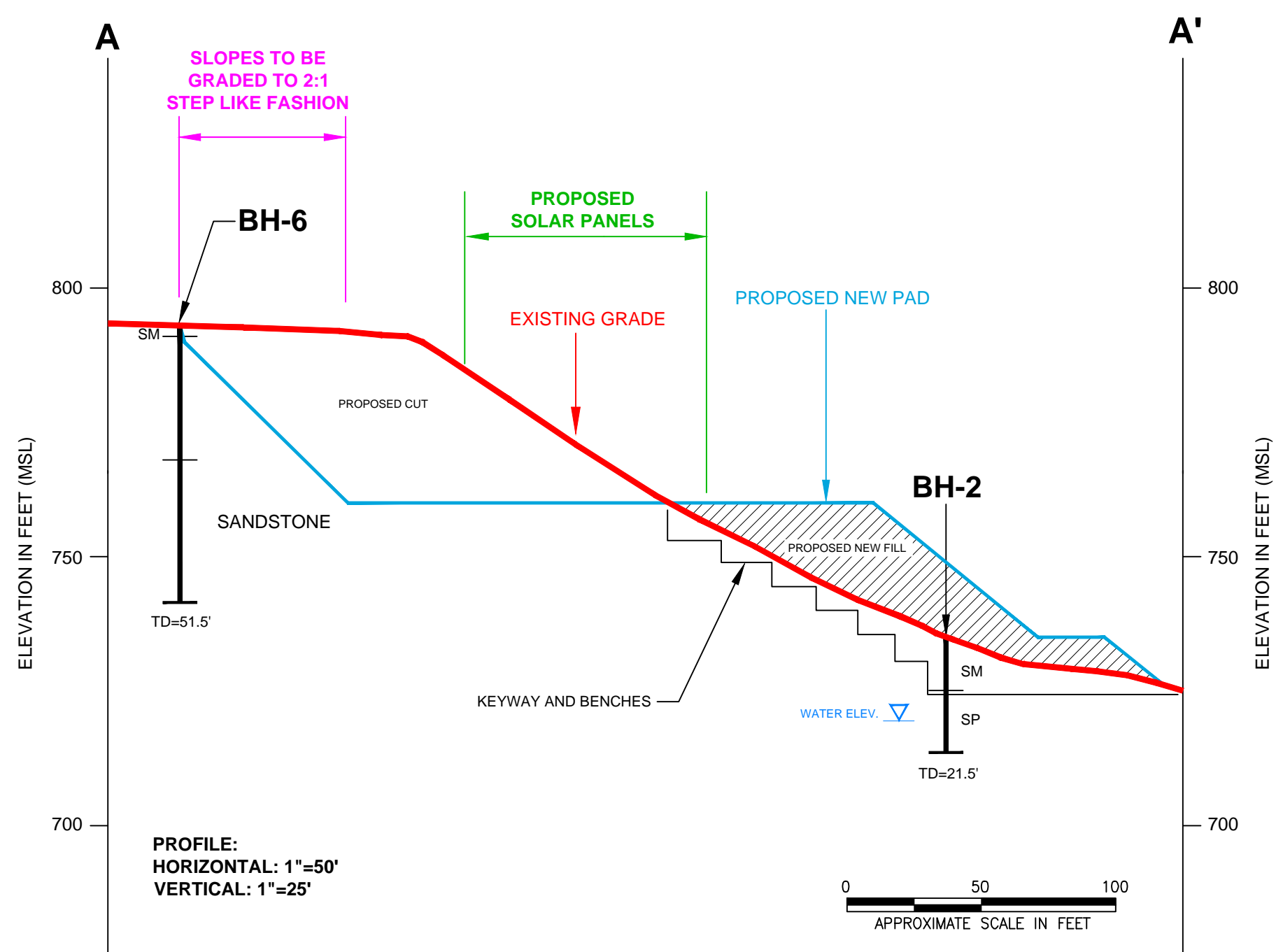


- LEGEND**
- APPROXIMATE LOCATION OF BORING
 - GEOLOGIC CROSS SECTION
 - SLOPES TO BE GRADED TO 2:1 STEP LIKE FASHION
 - PROPOSED SOLAR ARRAY
 - APPROXIMATE LOCATION OF CANYON BOTTOM SUBDRAINS
 - APPROXIMATE LOCATION OF FILL SLOPE STABILIZATION KEYWAYS. MAINTAIN SAFE SETBACK FROM GAS MAIN

SITE PLAN AND APPROXIMATE LOCATIONS OF BORING
 MT. SAN ANTONIO COLLEGE
 WEST PARCEL
 WALNUT, CALIFORNIA

Scale: 1"=50'
 Date: JULY 2014
 13-31-339-01
 Drawing No. 12-19-14





CROSS SECTION A-A', B-B', C-C', D-D'

MT. SAN ANTONIO COLLEGE
WEST PARCEL
WALNUT, CALIFORNIA

Project No. 13-31-339-01
Date JULY 2014
Drawing No.



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Appendix E

Treatment Control BMP Sizing Calculations and Design Details

DRAFT

Vegetated Swale Inspection and Maintenance Checklist

Property Address: 1100 N. Grand Ave., Walnut, CA 91789

Property Owner: Mt. SAC

Treatment Measure No.: _____

Date of Inspection: _____

Type of Inspection: Monthly Pre-Wet Season

After heavy runoff End of Wet Season

Other: _____

Inspector(s): _____

Defect	Conditions When Maintenance Is Needed	Maintenance Needed? (Y/N)	Comments (Describe maintenance completed and if needed maintenance was not conducted, note when it will be done)	Results Expected When Maintenance Is Performed
Sediment Accumulation on Vegetation	Sediment accumulating near culverts and/or in channels builds up to 75 millimeters (3 inches) at any spot, or it covers vegetation			When finished, swale should be level from side to side and drain freely toward outlet. There should be no areas of standing water once inflow has ceased and sediment is disposed of properly.
Standing Water	When water stands in the swale between storms and does not drain within 5 days after rainfall.			There should be no areas of standing water once inflow has ceased. Any of the following may apply: sediment or trash blockages removed, improved grade from head to foot of swale, removed clogged check dams, added underdrains or converted to a wet swale.
Flow spreader (if any)	Flow spreader uneven or clogged so that flows are not uniformly distributed through entire swale width.			Spreader leveled and cleaned so that flows are spread evenly over entire swale width.
Constant Baseflow	When small quantities of water continually flow through the swale, even when it has been dry for weeks, and an eroded, muddy channel has formed in the swale bottom.			No eroded, muddy channel on the bottom. A low-flow pea-gravel drain may be added the length of the swale.
Poor Vegetation Coverage	When planted vegetation is sparse or bare or eroded patches occur in more than 10% of the swale bottom.			Vegetation coverage in more than 90% of the swale bottom. Determine why growth of planted vegetation is poor and correct that condition. Re-plant with plugs of vegetation from the upper slope: plant in the swale bottom at 8-inch intervals, or re-seed into loosened, fertile soil.

Defect	Conditions When Maintenance Is Needed	Maintenance Needed? (Y/N)	Comments (Describe maintenance completed and if any needed maintenance was not conducted, note when it will be done.)	Results Expected When Maintenance Is Performed
Vegetation	When the planted vegetation becomes excessively tall; when nuisance weeds and other vegetation start to take over.			Vegetation mowed per specifications or maintenance plan, or nuisance vegetation removed so that flow is not impeded. Vegetation should never be mowed lower than the design flow depth. Remove clippings from the swale and dispose appropriately.
Excessive Shading	Growth of planted vegetation is poor because sunlight does not reach swale.			Healthy growth of planted vegetation. If possible, trim back over-hanging limbs and remove brushy vegetation on adjacent slopes.
Inlet/Outlet	Inlet/outlet areas clogged with sediment and/or debris.			Material removed so that there is no clogging or blockage in the inlet and outlet areas.
Trash and Debris Accumulation	Trash and debris accumulated in the swale.			Trash and debris removed from swale.
Erosion/ Scouring	Eroded or scoured swale bottom due to flow channelization, or higher flows.			No erosion or scouring in swale bottom. For ruts or bare areas less than 12 inches wide, repair the damaged area by filling with crushed gravel. If bare areas are large, generally greater than 12 inches wide, the swale should be re-graded and re-seeded. For smaller bare areas, overseed when bare spots are evident, or take plugs of grass from the upper slope and plant in the swale bottom at 8-inch intervals.
Miscellaneous	Any condition not covered above that needs attention in order for the vegetated swale to function as designed.			Meet the design specifications.

VEG-4: Vegetated Swales



Description

Vegetated swales are open, shallow channels with low-lying vegetation covering the side slopes and bottom that collect and slowly convey stormwater runoff to a downstream stormwater quality control measure, storm drain system, or receiving water. Vegetated swales also provide pollutant removal through settling and filtration in the vegetation (usually grasses) lining the channels, provide the opportunity for stormwater runoff volume reduction through infiltration and evapotranspiration, and reduce the flow velocity.

An effective vegetated swale achieves uniform sheet flow over and through a densely vegetated area for a period of several minutes. Vegetated swales that are integrated into a project may use turf or other more intensive landscaping while swales that are located on the project perimeter, within a park, or close to an open space area may be planted with native plants. Vegetated swales are typically used to provide pretreatment prior to bioretention, infiltration, and biofiltration devices.

A schematic of a typical vegetated swale is presented in Figure E-11.

LID Ordinance Requirements

Vegetated swales can be used as a stormwater quality control measure to treat stormwater runoff for the following alternative compliance measures:

- Off-site infiltration;
- Groundwater replenishment projects; and
- Off-site retrofit of existing development.

The project applicant must ensure that all pollutants of concern are addressed when using a vegetated swale (see Section 7.4). According to the Los Angeles Regional Water Quality Control Board (Regional Water Board) *Treatment Best Management Practices Performance*, vegetated swales do not treat pollutants of concern to the water quality benchmark (see Table 7-2 of the LID Standards Manual).

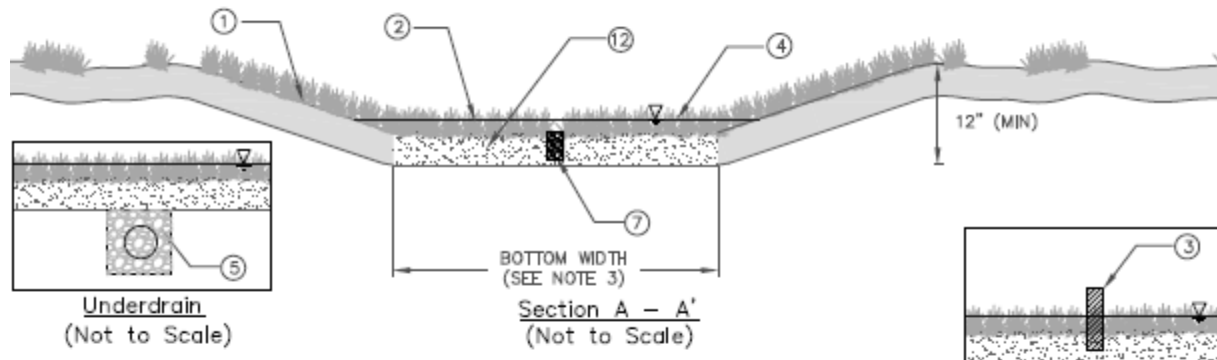
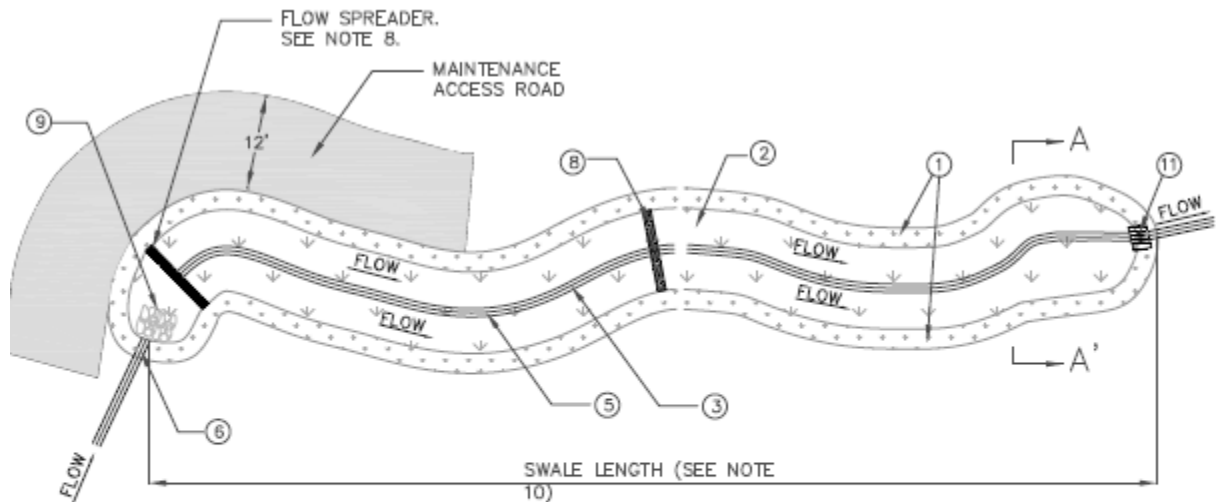
Advantages

- Has a low cost for installation when integrated into site landscaping

- Is suitable for parking lots and sites with limited open area available for stormwater runoff retention
- Reduces peak stormwater runoff flows during small storm events
- Enhances site aesthetics
- Requires little maintenance

Disadvantages

- May not be appropriate for industrial sites or locations with contaminated soils or where spills may occur because of the potential threat to groundwater contamination
- Is not suitable for areas with steep slopes
- May be restricted in use for areas that require curb and gutter systems
- May not be effective and may even erode when flow velocities are high if the grass cover is not properly maintained
- May be difficult to avoid channelization
- Requires irrigation, which may conflict with water conservation ordinances for landscape requirements, to maintain vegetation



NOTES:

- ① VEGETATED SIDE SLOPES AT 2H:1V MAXIMUM SLOPE. MOWED TURF SWALES AT 3H:1V MAXIMUM.
- ② GRASS HEIGHT SHALL BE 4" - 6" HIGH.
- ③ SWALE DIVIDER REQUIRED FOR BOTTOM WIDTHS > 10'. MINIMUM REQUIRED BOTTOM WIDTH IS 2' EXCLUDING WIDTH OF LOW FLOW CHANNEL. MAXIMUM BOTTOM WIDTH WITH DIVIDER IS 16'.
- ④ DEPTH OF FLOW FOR WATER QUALITY TREATMENT MUST NOT EXCEED TWO-THIRDS OF THE GRASS HEIGHT AND NOT GREATER THAN 4" (INFREQUENTLY MOWED) OR 2" (FREQUENTLY MOWED).
- ⑤ 6" PERFORATED UNDERDRAIN IN 9" DEEP COARSE AGGREGATE BED CONNECTED TO STORM DRAIN. REQUIRED FOR SLOPES < 1.5% OR AS NEEDED.
- ⑥ INLET PIPE WITH INLET PROTECTION.
- ⑦ IF NO UNDERDRAIN, LOW FLOW DRAIN SHALL EXTEND ENTIRE LENGTH OF SWALE AND SHALL HAVE A DEPTH OF 6" MINIMUM AND WIDTH NO MORE THAN 5% SWALE BOTTOM WIDTH. ANCHORED PLATE FLOW SPREADER IF USED, SHALL HAVE V-NOTCHES (MAX TOP WIDTH = 5% OF SWALE WIDTH) OR HOLES TO ALLOW PREFERENTIAL EXIT OF LOW FLOWS.
- ⑧ INSTALL CHECK DAMS OR GRADE CONTROL STRUCTURES FOR SLOPES > 6% AT 50' MAXIMUM SPACING TO ACHIEVE A MAXIMUM EFFECTIVE LONGITUDINAL SLOPE OF 6%. FLOW SPREADERS SHALL BE PROVIDED AT INLET AND AT THE BASE OF EACH CHECK DAM SEE FIGURE 3-2.
- ⑨ INSTALL ENERGY DISSIPATOR AT THE INLET OF VEGETATED SWALE.
- ⑩ SWALE LENGTH SHALL BE 100' OR LENGTH REQUIRED TO PROVIDE 10 MINUTES RESIDENCE TIME, WHICH EVER IS GREATER.
- ⑪ INSTALL APPROPRIATE OUTLET STRUCTURE. ACCOMMODATE LOW FLOW CHANNEL AND/OR UNDERDRAIN (IF PRESENT).
- ⑫ AMEND SOILS WITH 2" OF COMPOST TILLED INTO 6" OF NATIVE SOIL UNLESS NATIVE SOIL ORGANIC CONTENT > 10%.

Figure E-11. Vegetated Swale Schematic

General Constraints and Implementation Considerations

- Vegetated swales can be integrated into roadside buffers or parking lot landscaping. For parking lots, if tire curbs are provided and parking stalls are shortened, cars may overhang the vegetated swale.
- Steep terrain and/or a large tributary area may cause erosive flows while limited site slope can cause ponding.
- Vegetated swales should be located in areas without excessive shade to avoid poor vegetation growth. For moderately shaded areas, shade-tolerant plants should be used.
- Vegetated swales should be located away from large trees that may drop leaves or needles. Excessive tree debris may smother the grass or impede the flow through the swale.
- The effectiveness of vegetated swales may be enhanced by adding check dams at approximately 50 foot increments along the length. The check dams maximize retention time within the vegetated swale, decrease flow velocity, and promote particulate settling. However, check dams may not be appropriate if prolonged ponding occurs.
- Vegetated swales need to be connected to downstream stormwater quality control measures. Vegetated swales may also be connected along its length to these features to allow discharge of high flows and stormwater runoff that does not infiltrate.
- Areas to be used for vegetated swales should be clearly marked before site work begins to avoid soil disturbance and compaction during construction. No vehicular traffic, except that specifically used to construct the vegetated swale, should be allowed within 10 feet of the swale areas.
- Stormwater runoff must be diverted around the vegetated swale during the period of vegetation establishment. If diversion is not feasible, the graded and seeded areas should be protected with suitable erosion controls (i.e., silt fences).
- Repair, seed, or re-plant damaged areas immediately.
- The general landscape irrigation system should incorporate the vegetated swale, as applicable.
- Access to the swale inlet and outlet should be safely provided, with ample room for maintenance and operational activities.

Design Specifications

The following sections describe the design specifications for vegetated swales.

Geotechnical

Due to the potential to contaminate groundwater, cause slope instability, and impact surrounding structures, an extensive geotechnical site investigation must be conducted

during the site planning process to verify site suitability for a vegetated swale. All geotechnical investigations must be performed according to the most recent GMED Policy GS 200.1. Soil infiltration rates and the groundwater table depth must be evaluated to ensure that conditions are satisfactory for proper operation of a vegetated swale. The project applicant must demonstrate through infiltration testing, soil logs, and the written opinion of a licensed civil engineer that sufficiently permeable soils exist on-site to allow the construction of a properly functioning vegetated swale.

Vegetated swales can be used wherever local climate and soils permit the establishment and maintenance of an appropriate vegetative cover. Vegetated swales should not be used at sites with a slope greater than 10 percent.

Geometry

- In general, trapezoidal channel shape is assumed for sizing calculations, but a more naturalistic channel cross-section is preferred.
- Vegetated swales designed for water quality treatment purposes only are anticipated to be fairly shallow, generally less than one foot. Therefore, a side slope of 2:1 (H:V) is acceptable. Milder slopes are necessary if turf is used (maximum 3:1 H:V).
- Overall depth from the top of the side walls to the swale bottom shall be at least 12 inches.
- Vegetated swale length can be increased by meandering the swale. Gradual meandering bends in the swale are desirable for aesthetic purposes and to promote slower flow.
- The minimum width of the vegetated swale bottom is two feet to allow for ease of mowing. The maximum width of the vegetated swale bottom is ten feet unless a dividing berm is provided. If a dividing berm is provided, the maximum width of the vegetated swale bottom can be 16 feet.
- The longitudinal slope (along the direction of flow) must be between one and six percent.
 - If the longitudinal slope is less than 1.5 percent and the soils are poorly drained (e.g., silts and clays), then an underdrain must be installed. A soils report to verify soils properties shall be provided for slopes that are less than 1.5 percent.
 - If the longitudinal slope is greater than 6 percent, check dams with vertical drops of 12 inches or less must be provided to achieve a bottom slope of 6 percent or less between the drop structures.
- The lateral slope (horizontal to the direction of flow) is zero (flat) to discourage channelization.

Sizing

The flow capacity of a vegetated swale is a function of the longitudinal slope (parallel to flow), the resistance to flow (e.g., Manning's roughness), and the cross-sectional area. The cross section is normally approximately trapezoidal and the area is a function of the bottom width and side slopes. The vegetated swale should be designed such that the flow does not exceed two-thirds of the height of the vegetation within the swale. Once design specifications have been determined, the resulting flow depth for the design flow is checked. If the depth restriction is exceeded, swale parameters (e.g., longitudinal slope, width) are adjusted to reduce the flow depth.

The following steps are used design a vegetated swale:

Step 1: Calculate the design flow

Vegetated swales must be designed to capture and retain the SWQDv (see Section 6 for SWQDv calculation procedures).

Step 2: Calculate vegetated swale bottom width

The width of the bottom of the vegetated swale is calculated using Manning's equation for open channel flow, as follows:

$$Q = \left(\frac{1.49}{n} \right) \times A \times R^{2/3} \times S^{0.5}$$

Where:

- Q = Design flow rate [ft³/s];
- n = Manning's roughness coefficient;
- A = Flow area [ft²];
- R = Hydraulic radius [ft] = area divided by the wetted perimeter; and
- S = Channel slope [ft/ft].

For shallow flow depths in vegetated swales, channel side slopes are ignored in the calculation of bottom width. Use the following equation (a simplified form of Manning's formula) to estimate the vegetated swale bottom width:

$$b = \frac{Q \times n}{1.49 \times y^{1.67} \times s^{0.5}}$$

Where:

- b = Bottom width of vegetated swale [ft]
- Q = Design flow rate [ft³/s];
- n_s = Manning's roughness coefficient (use 0.2 for shallow conditions);
- y = Design flow depth [ft]; and
- s = Longitudinal slope (along direction of flow) [ft/ft].

Proceed to Step 3 if the calculated bottom width is between two and ten feet. A minimum two-foot bottom width is required. Therefore, if the calculated bottom width is less than two feet, increase the width to two feet, and recalculate the design flow depth, y , using the same Q and n_s , but with b equal to two feet.

The maximum allowable bottom width is ten feet; therefore if the calculated bottom width exceeds ten feet, then one of the following steps is necessary to reduce the design bottom width:

- Increase the longitudinal slope (s) to a maximum of 6 feet in 100 feet (0.06 feet per foot);
- Increase the design flow depth (y) to a maximum of four inches; or
- Place a divider lengthwise along the vegetated swale bottom (see Figure E-) at least three-quarters of the vegetated swale length (beginning at the inlet), without compromising the design flow depth and lateral slope requirements. The vegetated swale width can be increased to a maximum of 16 feet if a divider is provided.

Step 3: Determine the design flow velocity

To calculate the design flow velocity through the vegetated swale, use the flow continuity equation:

$$v = \frac{Q}{Ai}$$

Where:

v = Design flow velocity [ft/s];

Q = Design flow rate [ft³/s]; and

$A = by + Zy^2$ = Cross-sectional area of flow at design depth [ft²] where Z = side slope length per unit height (i.e., $Z = 3$ if side slope is 3:1 H:V) .

If the design flow velocity exceeds 1 ft/s, go back to Step 2 and modify one or more of the design parameters (longitudinal slope, bottom width, or flow depth) to reduce the design flow velocity to 1 ft/s or less. If the design flow velocity is calculated to be less than 1 ft/s, proceed to Step 4. It is ideal to have the design velocity as low as possible to improve treatment effectiveness and reduce vegetated swale length requirements.

Step 4: Calculate vegetated swale length

Use the following equation to determine the length of the vegetated swale to achieve a hydraulic residence time of at least 10 minutes (600 seconds):

$$Li = i60 \times t_{hri} \times vi$$

Where:

L = Minimum allowable swale length [ft];
 t_{hr} = Hydraulic residence time [s]; and
v = Design flow velocity [ft/s].

The minimum length for a vegetated swale is 100 feet. If the calculated length for the vegetated swale is less than 100 feet, increase the length to a minimum of 100 feet and leaving the bottom width unchanged. If a larger vegetated swale can fit on the project site, consider using a greater length to increase the hydraulic residence time and improve pollutant removal. If the calculated length is too long for the project site or if it would cause layout problems, such as encroachment into shaded areas, proceed to Step 5 to further modify the layout. If the length of the vegetated swale can be accommodated on the project site, proceed to Step 6.

Step 5: Adjust vegetated swale layout to fit on-site

If the length of the vegetated swale calculated in Step 4 is too long for the project site, the length can be reduced (minimum of 100 feet) by increasing the bottom width up to a maximum of 16 feet, as long as the 10-minute retention time is maintained. However, the length cannot be increased in order to reduce the bottom width because Manning's depth-velocity-flow rate relationships would not be preserved. If the bottom width is increased to greater than ten feet, a low flow berm is needed to divide the vegetated swale cross-section in half to prevent channelization.

The length can be adjusted by calculating the top area of the vegetated swale and providing an equivalent top area with the adjusted dimensions.

Calculate the top area of the vegetated swale based on its length in Step 4:

$$A_{top} = (b_i + b_{op}) \times L_i$$

Where:

A_{top} = Top area at the design depth [ft²];
 b_i = Bottom width calculated in Step 2 [ft];
 b_{slope} = Additional top width above the side slope for the design depth (for 3:1 H:V side slope and a 4-inch water depth, $b_{slope} = 2$ ft) [ft]; and
 L_i = Initial length calculated in Step 4 [ft].

Use the vegetated swale top area and a reduced swale length, L_f , to increase the bottom width using the following equation:

$$L_f = \frac{A_{top}}{(b_f + b_{op})}$$

Where:

L_f = Reduced vegetated swale length [ft];

A_{top} = Top area at the design depth [ft²];

b_f = Increased bottom width [ft];

b_{slope} = Additional top width above the side slope for the design depth (for 3:1 H:V side slope and a 4-inch water depth, $b_{slope} = 2$ ft) [ft].

Recalculate the design flow velocity according to Step 3 using the revised cross-sectional area based on the increased bottom width. Revise the design as necessary if the design flow velocity exceeds 1 ft/s. If necessary, recalculate to ensure that the 10-minute hydraulic residence time is maintained.

Flow Entrance and Energy Dissipation

An anchored plate flow spreader must be provided at the inlet to the vegetated swale. Equivalent methods for spreading flows evenly throughout the width the swale are acceptable. The specifications for the flow spreader are listed below:

- The top surface of the flow spreader plate shall be level, projecting a minimum of two inches above the ground surface of the vegetated swale, or V-notched with notches six to ten inches on center and one to four inches deep (use shallower notches with closer spacing).
- The flow spreader plate must extend horizontally beyond the bottom width of the vegetated swale to prevent water from eroding the side slope. The horizontal extent should be such that the bank is protected for all flows up to the SWQDv that will enter the swale.
- Flow spreader plates must be securely fixed in place.
- Flow spreader plates may be made of either concrete, stainless steel, or other durable material.
- Anchor posts are constructed of four inches square of concrete, tubular stainless steel, or other material resistant to decay.

The flow spreader will quickly dissipate the entrance velocity and distribute flow uniformly across the whole vegetated swale. If check dams are used to reduce the longitudinal slope, a flow spreader must be installed at the toe of each vertical drop according to the specifications listed in the following section (Check Dams). If flow is to be introduced through LACDPW-approved curb cuts, the pavement should be placed slightly above the elevation of the vegetated areas. Curb cuts should be at least 12 inches wide to prevent clogging.

The maximum SWQDv flow velocity should not exceed 1.0 ft/s in order to promote settling, keep vegetation upright, and prevent scouring or resuspension of deposited sediment.

Check Dams

If check dams are required, they can be designed out of a number of different materials, including riprap, earthen berms, or removal stop logs. Check dams must be placed to achieve the desired slope (less than 6 percent) and desired velocity (less than 1 ft/s for the SWQDv) at a maximum of 50 feet apart. If riprap is used, the material should consist of well-graded stone consisting of a mixture of rock sizes. The following is an example of an acceptable gradation:

Particle Size	% Passing by Weight
24 in	100%
15 in	75%
9 in	50%
4 in	10%

Swale Divider

- If a swale divider is used, the divider should be constructed of a firm material that will resist weathering and not erode, such as concrete or compacted soil seeded with grass. Use of treated wood is prohibited. Selection of divider material must take into account maintenance activities, such as mowing.
- The divider must have a minimum height of one inch greater than the design depth.
- Earthen berms should be no steeper than 2:1(H:V).
- Material other than earth must be embedded to a depth sufficient to be stable.

Water Depth and Dry Weather Flow Drain

- The water depth in the vegetated swale should not exceed four inches (or two-thirds of the expected vegetation height) except for frequently mowed turf swales. For mowed turf swales, the water depth should not exceed two inches.
- A low flow drain must be provided for dry weather flows extending the entire length of the swale. The drain should have a minimum depth of six inches and a width no more than five percent of the calculated bottom swale width. The width of the drain is in addition to the required bottom width. If an anchored plate is used for flow spreading at the swale inlet, the plate wall must have V-notches (maximum top width = five percent of swale width) or holes to allow low flow into the drain. If an underdrain is installed, the vegetated swale does not require a low flow drain.

Underlying Base

Vegetated swale soils must be amended with two inches of well-rotted compost, unless the organic content is already greater than ten percent. The compost must be mixed into the native soils to a depth of six inches to prevent soil layering and washout of compost. The compost must contain no sawdust, green or under-composted material, or any other toxic or harmful substance. It should contain no unsterilized manure, which can result in high levels of pathogen indicators (coliform bacteria) in stormwater runoff.

Underdrain

An underdrain can be installed for a vegetated swale to collect and discharge stormwater runoff that has been filtered through the soil media, but not infiltrated, to another stormwater quality control measure, storm drain system, or receiving water. If an underdrain is provided, the underdrain shall have a mainline diameter of eight inches using slotted PVC SDR 26 or PVC C9000. Slotted PVC allows for pressure water cleaning and root cutting, if necessary. The slotted pipe should have two to four rows of slots cut perpendicular to the axis of the pipe or at right angles to the pitch of corrugations. Slots should be 0.04 to 0.1 inches wide with a length of 1 to 1.25 inches. Slots should be longitudinally-spaced such that the pipe has a minimum of one square inch opening per lineal foot and should face down.

The underdrain should be placed in a gravel envelope (Class 2 Permeable Material per Caltrans Spec. 68-1.025) that measures three feet wide and six inches deep. The underdrain is elevated from the bottom of the vegetated swale by six inches within the gravel envelope to create a fluctuating anaerobic/aerobic zone below the underdrain to facilitate denitrification within the anaerobic/anoxic zone and reduce nutrient concentrations. The top and sides of the underdrain pipe should be covered with gravel to a minimum depth of 12 inches. The underdrain and gravel envelope should be covered with a geomembrane liner to prevent clogging. The following aggregate should be used for the gravel envelope:

Particle Size (ASTM D422)	% Passing by Weight
¾ inch	100%
¼ inch	30-60%
#8	20-50%
#50	3-12%
#200	0-1%

Underdrains should be sloped at a minimum of 0.5 percent, and must drain freely to an acceptable discharge point.

Clean-out risers with diameters equal to the underdrain pipe must be placed at the terminal ends of the underdrain and can be incorporated into the flow spreader and outlet structure to minimize maintenance obstacles in the vegetated swale.

Intermediate clean-out risers may also be placed in the check dams or grade control structures. The clean-out risers shall be capped with a lockable screw cap.

Hydraulic Restriction Layer

A geomembrane liner must be used to wrap the drain rock. The geomembrane liner must meet the minimum requirements presented in Table E-20.

Table E-20. Geomembrane Liner Specifications for Vegetated Swales

Parameter	Test Method	Specification
Trapezoidal Tear	ASTM D4533	40 lbs (minimum)
Permeability	ASTM D4491	0.2 cm/sec (minimum)
AOS (sieve size)	ASTM D4751	#60 – #70 (minimum)
Ultraviolet Resistance	ASTM D4355	>70%

Vegetation

Swales must be vegetated to provide adequate treatment of stormwater runoff. It is important to maximize water contact with vegetation and the soil surface. The swale should be vegetated with a mix of erosion-resistant plant species that effectively bind the soil. A diverse selection of low growing plants that thrive under the specific site, climatic, and watering conditions should be specified. A mixture of dry-area and wet-area grass species that can continue to grow through silt deposits is most effective. Native or adapted grasses are preferred because they generally require less fertilizer and maintenance and are more drought-tolerant than exotic plants. Consult with a landscape or erosion control specialist for project-specific recommendations on grass seed, fertilizer, and mulching applications to ensure healthy grass growth. Suitable plant types can also be found by referring to various online sources such as:

- Calflora (<http://calflora.org>), which is a database of wild California plants that include plant characteristics and photos.
- California Invasive Plant Council (<http://www.cal-ipc.org>), which is a listing of invasive, non-native plants of California.
- Los Angeles River Master Plan Landscaping Guidelines and Plant Palettes (http://ladpw.org/wmd/watershed/LA/LAR_planting_guidelines_webversion.pdf), which is a guidance document providing a listing of native plant communities in the Los Angeles area.
- The Jepson Online Interchange California Floristics (<http://ucjeps.berkeley.edu/interchange.html>), which is a database that provides information on identification, taxonomy, distribution, ecology, relationships, and diversity of California vascular plants.

- VegSpec (<http://catalog.data.gov/dataset/vegspec>), which is a web-based decision support system that assists land managers in the planning and design with vegetative establishment practices.
- United States Department of Agriculture (<http://plants.usda.gov/java>), which is an extensive database of native and non-native plants of the United States with over 100 plant characteristics.

Vegetation should meet the following specifications:

- Above the design elevation, a typical lawn mix or landscape plants can be used provided they do not shade the vegetated swale.
- Drought-tolerant grasses should be specified to minimize irrigation requirements. Irrigation is required if seeds are planted in spring or summer. A permanent irrigation system may provide maximum water quality performance.
- Vegetative cover should be at least four inches in height, although six inches is preferred.

Irrigation System

Provide an irrigation system to maintain viability of vegetation, if applicable. The irrigation system must be designed to local code or ordinance specifications.

Restricted Construction Materials

Use of pressure-treated wood or galvanized metal at or around the vegetated swale is prohibited.

Maintenance Requirements

Maintenance and regular inspections are important for proper function of vegetated swales. The following are general maintenance requirements:

- Inspect vegetated swales for erosion or damage to vegetation after every storm greater than 0.75 inches. Vegetated swales should be checked for debris and litter and areas of sediment accumulation.
- Remove sediment, as needed, if vegetation growth is inhibited in more than ten percent of the swale or if sediment is blocking even distribution and entry of water. Re-plant and/or re-seed vegetation, as needed, following sediment removal activities to reestablish vegetation.
- Remove sediment and debris from the flow spreader if it is blocking flows. Repair splash pads, as needed, to prevent erosion. Check and re-level the flow spreader if necessary.
- Stabilize slopes with appropriate erosion control measures when native soil is exposed or erosion channels are forming.

- Check to ensure that vegetated swales drain within 96 hours following a storm event. If the swale does not drain within 96 hours, till the swale if compaction or clogging occurs and re-vegetate.
- Inspect, and clean if necessary, the underdrain pipe.
- Eliminate standing water to prevent vector breeding.
- Inspect vegetation for health and density to ensure that it is providing sufficient treatment and protecting the underlying soils from erosion. As needed, conduct the following maintenance activities for the vegetation:
 - Replenish mulch as needed to ensure survival of vegetation.
 - Prune vegetation, large shrubs, or trees that interfere with swale operation.
 - Remove fallen leaves and debris from deciduous plant foliage.
 - Mow grassy swales to maintain grass at a height of four to six inches and remove grass clippings.
 - Remove and replace invasive vegetation with native vegetation. For more information on invasive weeds, including biology and control of listed weeds, refer to the “encycloweedia” located at the California Department of Food and Agriculture website (http://www.cdfa.ca.gov/plant/ipc/encycloweedia/encycloweedia_hp.htm) or the California Invasive Plant Council website (www.cal-ipc.org).
 - Remove dead vegetation if greater than ten percent of area coverage or when swale function is impaired. Replace and establish vegetation before the wet season to maintain cover density and control erosion where soils are exposed.
- Inspect, and repair if necessary, check dams that are causing altered water flow and/or channelization. Remove obstructions as needed.
- Remove all trash and debris, sediment, visual contamination (i.e., oils), noxious or nuisance weeds.

A summary of potential problems that may need to be addressed by maintenance activities is presented in Table E-21.

The County requires execution of a maintenance agreement to be recorded by the property owner for the on-going maintenance of any privately-maintained stormwater quality control measures. The property owner is responsible for compliance with the maintenance agreement. A sample maintenance agreement is presented in Appendix H.

VEG-4: Vegetated Swales

Table E-21. Vegetated Swale Troubleshooting Summary

Problem	Conditions When Maintenance Is Needed	Maintenance Required
Sediment Accumulation	Sediment depth exceeds two inches or covers vegetation	Remove sediment without disturbing vegetation. Ensure that the vegetated swale is level from side to side and drains freely to the outlet when sediment is removed.
Trash and Debris	Trash and debris > 5 ft ³ /1,000 ft ²	Remove and dispose of trash and debris.
Standing Water	Standing water observed more than 96 hours after storm event	Inspect, and clean as needed, the underdrain to ensure proper function. Clear clogs as needed. Till surface and re-vegetate if necessary.
Flow Spreader	Flow spreader is uneven or flow is not evenly distributed into the vegetated swale	Remove obstructions. Clean and re-level flow spreader as needed.
Excessive Shading	Poor vegetation growth	Prune overhanging limbs and bushy vegetation
Erosion	Presence of erosion or channelization	Repair ruts or bare areas less than 12 inches wide with crushed gravel. Re-grade channel if necessary. Inspect flow spreader to ensure that flow is evenly distributed. Re-vegetated if necessary.
Contaminants and Pollution	Any evidence of oil, gasoline, contaminants, or other pollutants	Remove any evidence of visual contamination from floatables such as oil and grease.
Vegetation	Overgrown vegetation	Mow and prune vegetation as appropriate.
	Presence of invasive, poisonous, nuisance, or noxious vegetation or weeds	Remove this vegetation and plant native species as needed.
Inlet/Overflow	Inlet/overflow areas clogged with sediment and/or debris	Remove material.
	Overflow pipe blocked or broken	Repair as needed.

Appendix F

**AGREEMENTS (WHEN AVAILABLE) – CC&Rs, COVENANT AND AGREEMENTS AND/OR OTHER
MECHANISMS FOR ENSURING ONGOING OPERATION, MAINTENANCE, FUNDING
AND TRANSFER OF REQUIREMENTS FOR THIS PROJECT-SPECIFIC WQMP**

DRAFT