15 September 2003

Tony Coe, City Engineer
City of Lafayette
P.O. Box 1968
3675 Mount Diablo Boulevard, Suite 210
Lafayette, California 94549-1968

RE: Addendum Geotechnical Investigation and Report
Proposed City Library
Parcel at the Southeast Corner of Mt. Diablo Boulevard and First Street
Lafayette, California

Dear Mr. Coe:

At your request, we have completed our addendum geotechnical investigation for the new city library proposed to be constructed on the property located at the southeast corner of Mt. Diablo Boulevard and First Street in Lafayette, California. Five copies of the addendum report are enclosed.

Please note that the subsurface investigation, geotechnical analyses, and report were completed based on the current conceptual-level design information available to us. Should the actual configuration of the project change from that indicated in the report, we should be consulted to determine if additional subsurface exploration, testing, and/or analyses are warranted based on the changes.

We trust this report provides you with the information required to proceed. If you have any questions, please call us.

Yours truly,

CAL ENGINEERING & GEOLOGY, INC.

Phillip Gregory, P.E., G.E.
Principal Engineer

ADDENDUM FOUNDATION EXPLORATION REPORT
NEW LAFAYETTE CITY LIBRARY
MT. DIABLO BOULEVARD AND FIRST STREET
LAFAYETTE, CALIFORNIA

prepared for

City of Lafayette
Engineering Department

by

Cal Engineering & Geology, Inc.
1870 Olympic Boulevard, Suite 100
Walnut Creek, California 94596

15 September 2003

Phillip Gregory, P.E., G.E.
Principal Engineer

Stephen Watry, C.E.G., G.E.
Senior Geologist/Engineer

TABLE OF CONTENTS

INTRODUCTION

The City of Lafayette is planning to construct a new city library on the property located at the southeast corner of Mt. Diablo Boulevard and First Street and bordered to the south by Golden Gate Way in Lafayette, California. A Foundation Exploration Report was prepared by Cal Engineering & Geology, Inc. and is dated 21 May 2003. The 21 May 2003 report addressed geologic and geotechnical concerns regarding the construction of an approximately 20,000 square foot library over one and two stories of basement parking. The remaining portions of the site will be improved with landscaping. The purposes of our 21 May 2003 investigation were to develop information regarding the surface and subsurface conditions in the vicinity of the proposed improvements and to provide geotechnical recommendations for site grading and design and construction of the building foundation system and pavements. The reader should review the 21 May 2003 report for geologic information and geotechnical design parameters for shoring, foundations, retaining walls, slabs, and paving.

The current plans indicate that the planned library facility will incorporate the adjoining parcels (3488 and 3486 Golden Gate Way) to the southeast of the original property. Approximately 4,000 square foot of additional space is proposed at the southeast corner of the originally proposed library. A deck will be located on the upper level of this area and parking will be located on the middle level. A ramp, accessing the lower level parking, will be located on the lower floor along with delivery/storage and mechanical rooms. It is our understanding that the lower level of this newly added areas will be at or near the elevation of Golden Gate Way. Retaining walls will be required along the north side of the extension where it encroaches into an existing 2H:1V cut slope. Shoring will be required to support the ascending cut slope in the vicinity of this area. The 18 August 2003 plans for the library prepared by Killefer Flammang Architects suggest that a new retaining wall may be constructed along the extreme north edge of the parcels at the top of the slope. A level parking area, that will be accessed from Golden Gate Way, is planned to the east of the proposed library. The new parking area may require a new retaining wall along its north side to replace an existing concrete block wall if the wall proposed along the north edge of the property is not constructed. Depending on the extent of the encroachment of the new parking lot into the existing slope, shoring may be required.

SCOPE OF WORK

Our scope of work for this addendum report has included a review of our previous 21 May 2003 report, evaluation of the type, depth, and physical properties of the soil materials in the vicinity of the proposed library extension and parking area, laboratory testing of selected samples recovered from the exploratory drilling, engineering analyses, and completion of this geotechnical report. The subsurface soil conditions at the site were explored by drilling and sampling four additional test borings in the vicinity of the proposed library and parking area (Figure 1). The results of our geologic research, exploratory borings, laboratory testing, and engineering analyses are summarized in this report.

We have not been asked to evaluate the possible presence of surface or subsurface hazardous materials at the site. Our investigation has been specifically limited to developing information regarding the soil conditions within the vicinity of the proposed library extension and parking area.

SITE CONDITIONS

The site for the proposed library extension and parking area consists of two graded, developed parcels (3488 and 3486 Golden Gate Way), located southeast of the main library site at the corner of the intersection of Mt. Diablo Boulevard with First Street in Lafayette, California. The south edge of these parcels faces onto Golden Gate Way.

Prior to development, a subtle, south trending bedrock ridge was present on the properties. The ridge extended gently down to the south toward Lafayette Creek located about 150 feet south of Golden Gate Way.

Past grading on the property appears to have consisted primarily of cutting to create a near level pad utilized for parking areas. A 2:1 cut slope ascends from the north side of the level parking areas to an adjoining property where an asphalt paved parking lot and store are located. The lot and store on the adjoining property are accessed from Mt. Diablo Boulevard. The parking lot and store are about 18 to 20 feet higher than the parking areas on the subject property. The south edge of most of the offsite parking lot is retained by 5-foot high wood-lagged retaining wall that in turn is supported by concrete columns tied by a grade beam. We were not able to locate any permits or plans for the construction of this wall during our research at the City of Lafayette and the Contra Costa County Building Department.

Approximately the western 65 feet of the toe of the south-facing slope located on the north side of the parking areas on the subject property is supported by a 3-foot high wood retaining wall. The remainder of the toe of the slope is supported by a 4½ to 7-foot high concrete block retaining wall.

Some weeds and a few trees are present on the slope along the north side of the subject parcels. A narrow planter area is present between the sidewalk and the asphalt paved parking area on 3486 Golden Gate Way.

Drainage from the slope above the parking areas is down to the south toward the toe of the slope retaining walls. Slope drainage is able to flow through the wood retaining wall. Some slope drainage ponds behind the concrete block retaining wall. Drainage from the parking areas occurs as sheetflow to the south toward the street.

CONDITION OF EXISTING STRUCTURES

The concrete block retaining wall located on the north side of the parking area at 3486 Golden Gate Way appears to be in fair repair with no extensive cracking or lean. The short wood retaining wall on the north side of the parking area at 3488 Golden Gate Way is in a deteriorated state due to prolonged exposure to moisture.

The asphalt parking areas are in good to poor condition. Borings excavated for this exploration reveal that the pavement is only 1 to 1½ inches thick. The majority of the cracks in the asphalt pavement appear to be the result of long-term subgrade failure.

SOIL AND GEOLOGIC CONDITIONS

The earth materials encountered in the borings excavated for this addendum report are similar to that observed in the borings excavated for the original report. The reader is referred to the 21 May 2003 report for descriptions of the soil and geologic conditions on the subject parcels.

SUBSURFACE EXPLORATION PROGRAM

GENERAL

The subsurface conditions at the site for this addendum exploration were investigated by drilling and sampling four exploratory borings. The borings were drilled using a truck mounted drill rig equipped with 4½ -inch diameter flight augers. The borings were drilled to depths ranging between 6 feet and 19 feet below grade. Drive samples of the site materials were obtained using both Standard Penetration Test (SPT) and California Modified (CM) samplers. Samples obtained from the borings were retained for laboratory testing and analyses. The approximate locations of the borings are shown on Figure 1 along with our interpretation of the geologic conditions underlying the site.

The materials encountered in the borings were logged on 8 September 2003 by Stephen Watry, Senior Engineer. The soils were visually classified in the field and office, using the Unified Soil Classification System. The logs of the borings and a key for the Unified Soil Classification System are included in Appendix A.

SUBSURFACE CONDITIONS

Soil and Bedrock Materials

The exploratory borings revealed that the level parking area in the vicinity of the proposed library extension is underlain by bedrock at very shallow depths. Boring B-8, excavated in the central section of the proposed parking area encountered bedrock just below the thin asphalt paving. Boring B-9, excavated near the northeast corner of the addition encountered bedrock at a depth of ½ foot, just below the asphalt paving and base. Boring B-10, excavated near the southeast corner of the proposed library extension encountered bedrock at a depth of 4 feet below the existing pavement surface. Boring B-11, located near the center of the south wall of the library extension encountered bedrock at a depth of 2½ feet. The bedrock generally consists of fine-grained sandstone with some beds of siltstone and pebbly sandstone. A thin veneer of clayey silt soil was encountered overlying the bedrock in borings B-10 and B-11. The soil likely thickens to the south and west and grades to alluvium.

Groundwater

Groundwater was not encountered in the four borings excavated for this addendum report. Groundwater was encountered in some of the borings excavated for the original report.

LABORATORY TESTING PROGRAM

Our laboratory testing program was directed toward a quantitative evaluation of the mechanical properties of the soil samples recovered from the subsurface exploration program. Tests were completed in general accordance with ASTM standards or contemporary practices of the geotechnical engineering profession. Tests performed included moisture content, dry unit weight, and Atterberg Limits. The results of the laboratory tests are included on the attached boring logs in Appendix A. The results of testing of samples obtained during our previous site investigation for the library are contained in the 21 May 2003 report.

An Atterberg Limits test was performed on a sample of soil from boring B-10 at 2½ feet. The testing yielded a liquid limit of 43 and a plasticity index of 27.

Empirically derived relationships between plasticity and expansion potential suggest that the soil has a moderate to high expansion potential. Testing performed on samples during our original exploration indicate that the alluvium in the vicinity has a high expansion potential and that some portions of the weathered bedrock have a very high expansion potential.

CONCLUSIONS

GENERAL

Based on the results of our addendum geotechnical investigation, it is our opinion that the site is suitable for construction of the proposed library extension and surface parking from a geologic and geotechnical point of view. This opinion is contingent upon the recommendations presented herein and in the 21 May 2003 geotechnical report being adhered to and implemented during the design and construction phases of the project.

GEOTECHNICAL AND CONSTRUCTION CONSIDERATIONS

The primary geotechnical concern with the proposed library construction, as noted in our 21 May 2003 report, is the encountering of dissimilar earth materials (alluvium and bedrock) at the elevation of the proposed basement. Differential settlement/movement of conventional foundations founded both in bedrock and alluvium would likely occur. This adverse condition can be mitigated by the use of deepened foundations in the southern and western portion of the basement building area of the main portion of the library where alluvium is present at the basement elevation. The deepened foundations can consist of drilled cast-in-place friction piles that extend through the alluvium and into the bedrock. Conventional spread footings may be used in the northern and eastern portions of the main portion of the library where the basement will encounter bedrock.

Our exploration for the proposed library extension indicates that bedrock suitable for foundation support is present at the existing ground surface to about 4 feet below the ground surface. The depth to bedrock increases to the south toward Golden Gate Way and to the west toward the property

originally explored where the main body of the proposed library is proposed. It is our opinion that the library extension can be supported on conventional spread footings that extend into dense bedrock. The sandstone bedrock that is located below the library extension footprint is considered suitable for basement slab support. Should fill or soft natural soil be encountered at the basement subgrade, it should be removed to firm soil or dense bedrock and recompacted to a minimum of 90 percent of the maximum density. Should the basement subgrade excavation expose expansive weathered bedrock or soil, a stiffer basement slab design may be required. The basement slab design can be reduced if the expansive weathered bedrock and soil sections are removed to a depth of 3 feet below the slab subgrade and replaced with select fill derived from excavations in the sandstone bedrock. Foundation and basement slab recommendations are contained in the 21 May 2003 report.

Groundwater was not encountered in the test borings excavated for the addendum report, but was encountered in some borings excavated for the original report. Basement walls and the basement floor slab should be provided with drainage systems to provide for effective long-term control of the site drainage conditions.

Shoring piles will be required where the north side of the basement of the library extension extends into the existing slope along the north side of the parcel. The shoring piles along the north side of the proposed library extension will encounter bedrock which can be utilized to resist the lateral loads imposed on the shoring piles. It is recommended that the shoring in this area be designed for an equivalent fluid pressure of 40 pcf/ft to account for surcharge loading from the ascending slope and from the offsite retaining wall that supports the perimeter of the parking lot above. The permanent basement walls for the library extension can be designed for equivalent fluid pressures of 50 pcf/ft and 80 pcf/ft for unrestrained and restrained loading conditions, respectively. The shoring and basement retaining wall values listed above are unfactored loads and should have the appropriate safety factors applied by the structural engineer.

The existing, deteriorated wood retaining wall at the toe of the ascending slope on the parcel will almost entirely be eliminated by the construction of the library. We do not have any information regarding the design or construction of the existing concrete block retaining wall. The concrete block retaining wall has open head joints for drainage and appears to be performing adequately. It is our opinion that the existing concrete block retaining wall can be utilized for future support of the slope from a geotechnical standpoint. It is recommended that if the this wall is maintained that a surface swale be constructed behind the wall to collect surface drainage and direct it to an approved location.

A new retaining wall, if constructed along the north edge of the property adjacent to the offsite retaining wall supporting the parking area above, will need to be constructed utilizing shoring piles. It may be feasible to incorporate the shoring piles into a permanent wall design. It is recommended that the shoring in this area be designed for an equivalent fluid pressure of 40 pcf/ft. For the purposes of evaluation of the site design, it is recommended that a new retaining wall constructed along the north property line be designed for an equivalent fluid pressure of 50 pcf/ft.

New shorter retaining walls located near the alignment of the existing walls may be supported on conventional foundations in the bedrock. These walls may be designed for an equivalent fluid

pressure of 50 pcf/ft. It is recommended that new conventionally supported retaining wall sections placed along the same alignment of the existing concrete block retaining wall or behind the alignment of the existing retaining wall be constructed in slots to prevent the loss of lateral support for the ascending slope. The shoring and isolated retaining wall values listed above are unfactored loads and should have the appropriate safety factors applied by the structural engineer.

The proposed asphalt parking surface, if constructed at or near the existing grade, will largely encounter bedrock at its subgrade elevation. The bedrock can be considered to have an "R" value of 25. A thin veneer of fill, soil, and/or alluvium may be encountered at the extreme south edge of the parking area. Fill, soft soil and/or alluvium should be removed to firm soil or bedrock and recompacted to a minimum of 90 percent of the maximum density. Compacted fill derived from clayey silt soil can be assumed to have an "R" value of 6. Compacted fill derived from the sandstone bedrock can be assumed to have an "R" value of 15. It is recommended that paving sections over bedrock and select fill derived from sandstone bedrock consist of a minimum of 3 inches of asphalt over 4 inches of base. It is recommended that paving sections over clayey compacted fill or firm natural soil consist of a minimum of 3 inches of asphalt over 8 inches of base.

Design parameters for shoring, foundations, retaining walls, slabs, exterior decking, and drainage as outlined in the 21 May 2003 report should be incorporated into this addendum report.

LIMITATIONS

The conclusions and recommendations of this report are based upon information provided to us regarding the proposed improvements, subsurface conditions encountered at the boring locations, our geologic reconnaissance, the results of the laboratory testing program, and professional judgement. We have employed accepted geotechnical engineering and engineering geologic procedures, and our professional opinions and conclusions are made in accordance with generally accepted geotechnical engineering and engineering geologic principles and practices. This standard is in lieu of all other warranties, either expressed or implied.

It is the city's responsibility to make sure that the recommendations contained in the report are brought to the attention of the architect, engineers, and contractors working on this project. Furthermore, it is the city's responsibility to make sure that these recommendations are included in the design and construction of the project.

The locations of the exploratory borings were determined by taping from established site features and other points of reference and are considered to be approximate only. Site conditions described in the text are those existing at the time of our last field exploration and reconnaissance in September 2003, and are not necessarily representative of such conditions at other times or locations.

Unanticipated soil conditions are frequently encountered during construction and cannot be fully determined by drilling and sampling a limited number of exploratory borings. Additional expenditures may be required during the construction phases of the project as conditions vary. It is recommended that a contingency fund be established to cover potential adverse soil conditions which may be encountered during grading. If it is found during construction that subsurface

conditions differ from those described on the boring logs, then the conclusions and recommendations in this report shall be considered invalid, unless the changes are reviewed and the conclusions and recommendations modified or approved in writing by Cal Engineering & Geology, Inc.

It should be noted that this report was prepared based on the conceptual level design of the library extension as of August 2003. If the actual configuration of the project changes significantly, it is possible that additional subsurface exploration and geotechnical analyses may be warranted.

Cal Engineering & Geology, Inc. should be accorded the opportunity to review the final plans and specifications to determine if the recommendations of this report have been implemented in those documents. The review would be acknowledged in writing.

Field observation and testing services are essential parts of the proposed project. It is important that Cal Engineering & Geology, Inc. be retained to observe the earthwork, footing excavations, and other relevant construction operations. The recommendations of this report are contingent upon this stipulation.

Evaluation of the site with regard to hazardous or toxic materials was not within the scope of this investigation.

APPENDIX A - EXPLORATORY BORINGS

UNIFIED SOIL CLASSIFICATION SYSTEM (ASTM D-2487)

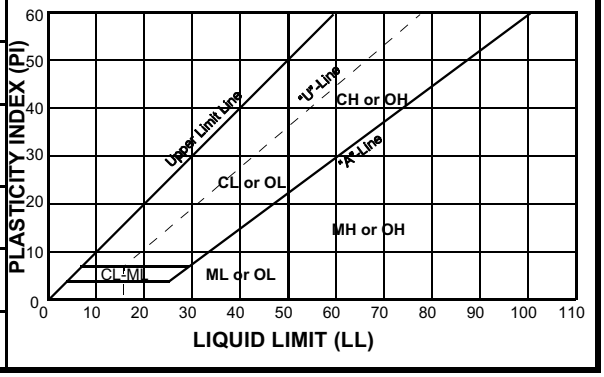
Field Identification			Group Symbol	Typical Names	Laboratory Classification Criteria	
Coarse-Grained Soils More than 50% of material is retained on the No. 200 sieve.	**Gravels** More than 50% coarse fraction retained on the No. 4 sieve	**Clean Gravels** < 5% Fines	**GW**	Well-graded gravels, gravel-sand mixtures, little or no fines	$C_U = D_{60} \div D_{10} \geq 4$ and $C_C = (D_{30})^2 \div (D_{10} \times D_{60}) \geq 1$ & ≤ 3	
			GP	Poorly graded gravels, gravel-sand mixtures, little or no fines	$C_U = D_{60} \div D_{10} < 4$ and/or $C_C = (D_{30})^2 \div (D_{10} \times D_{60}) < 1$ & > 3	
		Gravels with Fines >12% Fines	**GM**	Silty gravels, poorly graded gravel-sand-silt mixtures	Fines classify as ML or MH	If fines classify as CL-ML, use dual symbol GC/GM
			GC	Clayey gravels, poorly graded gravel-sand-clay mixtures	Fines classify as CL or CH	
	Sands More than 50% coarse fraction passes the No. 4 sieve	**Clean Sands** < 5% Fines	**SW**	Well-graded sands, gravelly sands, little or no fines	$C_U = D_{60} \div D_{10} \geq 6$ and $C_C = (D_{30})^2 \div (D_{10} \times D_{60}) \geq 1$ & ≤ 3	
			SP	Poorly graded sands, gravelly sands, little or no fines	$C_U = D_{60} \div D_{10} < 6$ and/or $C_C = (D_{30})^2 \div (D_{10} \times D_{60}) < 1$ & > 3	
		Sands with Fines >12% Fines	**SM**	Silty sands, poorly graded sand-silt mixtures	Fines classify as ML or MH	If fines classify as CL-ML, use dual symbol SC/SM
			SC	Clayey sands, poorly graded sand-clay mixtures	Fines classify as CL or CH	
Fine-Grained Soils More than 50% of material passes the No. 200 sieve.	**Identification Procedures on Percentage Passing the No. 40 Sieve**					
	Silts & Clays Liquid Limit less than 50%		**ML**	Inorganic silts, very fine sands, rock flour, silty or clayey fine sands with slight plasticity		
			CL	Inorganic clays of low to medium plasticity, gravelly, sandy, and/or silty clays, lean clays		
			OL	Organic silts, organic silty clays of low plasticity		
	Silts & Clays Liquid Limit greater than 50%		**MH**	Inorganic silts, micaceous or diatomaceous fine sandy/-silty soil, elastic silts		
			CH	Inorganic clays of high plasticity, fat clays		
			OH	Organic clays of medium to high plasticity		
HIGHLY ORGANIC SOILS			**PT**	Peat and other highly organic soils		

CLASSIFICATION OF GRAVELS & SANDS WITH 5% TO 12% FINES REQUIRES DUAL SYMBOLS
GW/GM or GP/GM: Gravel/Silty Gravel
GW/GC or GP/GC: Gravel/Clayey Gravel
SW/SM or SP/SM: Sand/Silty Sand
SW/SC or SP/SC: Sand/Clayey Sand

PLASTICITY CHART

For Classification of Fine-Grained Soils and Fine-Grained Fraction of Coarse-Grained Soils

Equation of "A"-Line: PI = 4 @ LL = 4 to 25.5, then PI = 0.73 × (LL – 20)
Equation of "U"-Line: LL = 16 @ PI = 0 to 7, then PI = 0.9 × (LL – 8)



KEY TO SAMPLER TYPES AND OTHER LOG SYMBOLS

CS	California Standard Sampler
CM	California Modified Sampler
SPT	Standard Penetration Test Sampler
SHL	Shelby Tube Sampler
BU	Bulk Sample
LL	Liquid Limit of Sample (ASTM D-4318)
PI	Plasticity Index of Sample (ASTM D-4318)
Q_U	Unconfined Compression Test (ASTM D-2166)
▽	Depth at which Groundwater was Encountered During Drilling
▼	Depth at which Groundwater was Measured After Drilling
PP	Pocket Penetrometer Test
PTV	Pocket Torvane Test
-#200	% of Material Passing the No. 200 Sieve Test (ASTM D-1140)
PSA	Particle-Size Analysis (ASTM D-422 & D-1140)
C	Consolidation Test (ASTM D-2435)
TXUU	Unconsolidated Undrained Compression Test (ASTM D-2850)

KEY TO SAMPLE INTERVALS

CS	Length of Sampler Interval with a CS Sampler
CM	Length of Sampler Interval with a CM Sampler
SPT	Length of Sampler Interval with a SPT Sampler
SHL	Length of Sampler Interval with a SHL Sampler
BU	Bulk Sample Recovered for Interval Shown (i.e., cuttings)
▯	Length of Coring Run with Core Barrel Type Sampler
NR	No Sample Recovered for Interval Shown

CE&G
CAL ENGINEERING & GEOLOGY

UNIFIED SOIL CLASSIFICATION SYSTEM AND KEY TO BORING LOG

FIGURE **A-1**

DRILL RIG: Mobile B24	LOGGED BY: SW	BORING LOG OF
BORING TYPE: 4.5" SOLID FLIGHT	ELEVATION: N/A	B-8
DATE DRILLED: 9-8-03	HAMMER WT./DROP: 140#/30"	

SOIL DESCRIPTION	DEPTH FT.	SAMPLE	SYMBOL	BLOWS PER 6"	WATER CONTENT %	DRY DENSITY pcf	OTHER TESTS
1-1/2" ASPHALT CONCRETE.							
SILTY SANDSTONE, green-brown, moderately hard, some siltstone interbeds, (BEDROCK).	1						
	2	B8-1		38	14.7	118.1	
	3			50/4"			
	4						
	5			30			
	6			50/6"			
BORING TERMINATED AT 6.0 FEET. NO GROUNDWATER ENCOUNTERED. BORING BACKFILLED WITH PORTLAND CEMENT.	7						
	8						
	9						
	10						
	11						
	12						
	13						
	14						
	15						
	16						
	17						
	18						
	19						
	20						

CE&G
CAL ENGINEERING & GEOLOGY
1870 Olympic Blvd.
Suite 100
Walnut Creek, CA 94596
Phone: (925) 935-9771

LAFAYETTE LIBRRARY
MOUNT DIABLO BOULEVARD
LAFAYETTE, CALIFORNIA

DRAWN BY: TR	JOB: 030401	FIGURE A-2
CHECKED BY: MW		

DRILL RIG: Mobile B24	LOGGED BY: SW	BORING LOG OF
BORING TYPE: 4.5" SOLID FLIGHT	ELEVATION: N/A	B-9
DATE DRILLED: 9-8-03	HAMMER WT./DROP: 140#/30"	

SOIL DESCRIPTION	DEPTH FT.	SAMPLE	SYMBOL	BLOWS PER 6"	WATER CONTENT %	DRY DENSITY pcf	OTHER TESTS
1-1/2" ASPHALT CONCRETE OVER 4" CLASS II BASEROCK							
SILTY SANDSTONE, green-brown, moist, moderately hard, (BEDROCK).	1	B9-1		11 22 50/3.5"	13.1	109.3	
-Very hard drilling @ 4.0 feet.	2						
	3						
	4						
	5			48/6"			
SILTY SANDSTONE, blue-gray, slightly moist, moderately hard to hard, (BEDROCK).	6						
	7						
	8			70/5"			
	9						
BORING TERMINATED AT 9.0 FEET. NO GROUNDWATER ENCOUNTERED. BORING BACKFILLED WITH PORTLAND CEMENT.	10						
	11						
	12						
	13						
	14						
	15						
	16						
	17						
	18						
	19						
	20						

CE&G
CAL ENGINEERING & GEOLOGY
1870 Olympic Blvd.
Suite 100
Walnut Creek, CA 94596
Phone: (925) 935-9771

LAFAYETTE LIBRRARY
MOUNT DIABLO BOULEVARD
LAFAYETTE, CALIFORNIA

DRAWN BY: TR	JOB: 030401	FIGURE A-3
CHECKED BY: MW		

DRILL RIG: Mobile B24	LOGGED BY: SW	BORING LOG OF
BORING TYPE: 4.5" SOLID FLIGHT	ELEVATION: N/A	B-10
DATE DRILLED: 9-8-03	HAMMER WT./DROP: 140#/30"	

SOIL DESCRIPTION	DEPTH FT.	SAMPLE	SYMBOL	BLOWS PER 6"	WATER CONTENT %	DRY DENSITY pcf	OTHER TESTS
1" ASPHALT CONCRETE OVER 4" OF CLAYEY SANDY GRAVEL BASEROCK, orange brown, moist, medium dense.	1						
CLAYEY SILT (ML/MH), brown, moist, firm, (ALLUVIUM).	2	B10-2/B10-1		5 7 10	19.8	105.0	Atterberg Limits: LL=43.3 PL=16.5 PI=26.8
SILTY SANDSTONE, green-brown, slightly moist, medium to moderately hard, fine grained, (BEDROCK).	4						
SANDSTONE, green-brown, hard, medium to coarse grained, (BEDROCK).	5	B10-3		15 26 50/5"	13.4	121.2	
	7						
SANDSTONE, green-brown, slightly moist, hard, minor pebbles, (BEDROCK).	8			32 50/4.5"			
	10						
	11						
	12						
SILTY SANDSTONE, green-brown, slightly moist, hard, (BEDROCK).	13			31 50/5"			
	15						
	16						
	17						
	18			50/6"			
BORING TERMINATED AT 19.0 FEET. NO GROUNDWATER ENCOUNTERED. BORING BACKFILLED WITH PORTLAND CEMENT.	19						
	20						

CE&G
CAL ENGINEERING & GEOLOGY
1870 Olympic Blvd.
Suite 100
Walnut Creek, CA 94596
Phone: (925) 935-9771

LAFAYETTE LIBRRARY
MOUNT DIABLO BOULEVARD
LAFAYETTE, CALIFORNIA

DRAWN BY: TR	JOB: 030401	FIGURE A-4
CHECKED BY: MW		

DRILL RIG: Mobile B24	LOGGED BY: SW	BORING LOG OF
BORING TYPE: 4.5" SOLID FLIGHT	ELEVATION: N/A	B–11
DATE DRILLED: 9–8–03	HAMMER WT./DROP: 140#/30"	

SOIL DESCRIPTION	DEPTH FT.	SAMPLE	SYMBOL	BLOWS PER 6"	WATER CONTENT %	DRY DENSITY pcf	OTHER TESTS
1" ASPHALT CONCRETE OVER GRAVELLY BASEROCK, orange, slightly moist, medium dense.	1						
CLAYEY SILT (ML/MH), brown, moist, stiff, (ALLUVIUM).	2	B11–1		8			
SILTY SANDSTONE, green–brown, slightly moist, medium to moderately hard, (BEDROCK).	3			14 17	14.8	105.1	
	4						
	5						
	6						
	7						
	8						
SILTY SANDSTONE, green–brown, moist, medium to moderately hard, (BEDROCK).	9			5 8 11			
	10						
	11						
	12						
	13			50/6"			
BORING TERMINATED AT 14.0 FEET. NO GROUNDWATER ENCOUNTERED. BORING BACKFILLED WITH PORTLAND CEMENT.	14						
	15						
	16						
	17						
	18						
	19						
	20						

CE&G
CAL ENGINEERING & GEOLOGY
1870 Olympic Blvd.
Suite 100
Walnut Creek, CA 94596
Phone: (925) 935-9771

LAFAYETTE LIBRRARY
MOUNT DIABLO BOULEVARD
LAFAYETTE, CALIFORNIA

DRAWN BY: TR	JOB: 030401	FIGURE A–5
CHECKED BY: MW		