

**SUBMITTAL TO THE BOARD OF DIRECTORS OF THE
REDEVELOPMENT AGENCY
COUNTY OF RIVERSIDE, STATE OF CALIFORNIA**



126

SUBMITTAL DATE:
March 3, 2011

FROM: Redevelopment Agency

SUBJECT: Rubidoux Child Development Center – Public Hearing, Findings, Plans, and Specifications

RECOMMENDED MOTION: That the Board of Directors:

1. Conduct a public hearing in accordance with Health and Safety Code Section 33679;
2. Make the following findings pursuant to Health and Safety Code Section 33445:
 - a. The construction of the Rubidoux Child Development Center Project is of benefit to the Jurupa Valley Redevelopment Project Area by providing a much needed daycare center within the project area;

No other reasonable means of financing the cost of the project are available to the community due to the fact that the current economic crisis has substantially reduced the community's revenues to fund the project;

Reviewed by
CIP TEAM
Christopher Hays
(Signed)

Robert Field

Robert Field
Executive Director

FINANCIAL DATA	Current F.Y. Total Cost:	\$ 11,467,500	In Current Year Budget:	Yes
	Current F.Y. Net County Cost:	\$ 0	Budget Adjustment:	No
	Annual Net County Cost:	\$ 0	For Fiscal Year:	2010/11

COMPANION ITEM ON BOARD OF SUPERVISORS AGENDA: Yes

SOURCE OF FUNDS: Jurupa Valley Redevelopment Capital Improvement Funds and First 5 Grant monies in the amount of \$750,000	Positions To Be Deleted Per A-30	<input type="checkbox"/>
	Requires 4/5 Vote	<input type="checkbox"/>

C.E.O. RECOMMENDATION: APPROVE
BY: *Jennifer L. Sargent*
County Executive Office Signature

MINUTES OF THE BOARD OF DIRECTORS OF THE REDEVELOPMENT AGENCY

On motion of Supervisor Tavaglione, seconded by Supervisor Stone and duly carried, IT WAS ORDERED that the above matter is approved as recommended.

Ayes: Buster, Tavaglione, Stone and Benoit
Nays: None
Absent: Ashley
Date: April 5, 2011
xc: RDA, EDA, CIP, Auditor, COB

Kecia Harper-Ihem
Clerk of the Board
By: *Kecia Harper-Ihem*
Deputy

(Comp. Item 9.11)

Prev. Agn. Ref.: 4.8 of 7/15/08

District: 2

Agenda Number:

4.7

FISCAL PROCEDURES APPROVED
 PAUL ANGULO, CPA, AUDITOR-CONTROLLER
 BY: *Samuel Wong* 3/24/11
 SAMUEL WONG
 FORM APPROVED COUNTY COUNSEL
 BY: *Marshall Victor* 3/10/11
 MARSHALL VICTOR

Policy
 Policy
 Consent
 Consent
 Dept's Recomm.:
 Per Exec. Ofc.:

RECOMMENDED MOTION: (Continued)

- c. The payment of funds for the construction of the project is consistent with the Implementation Plan for the project area and is necessary to effectuate the purpose of the project area's Redevelopment Plan, which identifies community and daycare facilities as needed facilities;
3. Adopt the California Environmental Quality Act (CEQA) Initial Study/Mitigated Negative Declaration and Mitigation Monitoring and Reporting Program (MMRP) prepared for the project;
4. Approve the plans and specifications for the construction of the project;
5. Upon completion of the bid process for the construction of the Rubidoux Child Development Center, authorize the Executive Director of the Redevelopment Agency to submit the contract for award of the bid to the lowest responsive and responsible bidder to the Chairman of the Board, and authorize the Chairman to execute the agreement on behalf of the Board; Provided that, if any of the following occur, the award will be submitted to the Board for action: there is a bid protest, the lowest bid exceeds the estimated construction budget, the low bidder is disqualified, two or more bids are the same and are the lowest, or a bidder requests relief from its bid due to an error.
6. Approve the total project budget of \$11,467,500; and,
7. Authorize the Clerk of the Board to advertise the Notice of Inviting Bids for the project.

BACKGROUND:

On July 15, 2008, the Board of Directors for the Redevelopment Agency (RDA) for the County of Riverside approved an agreement between the RDA and Ruhnau Ruhnau Clark and Associates, Inc., for design and construction management services for the Rubidoux Child Development Center. The design plans and specifications for the project have been completed.

The proposed project is located at 3865 Riverview Drive in Rubidoux, just south of Mission Boulevard, on the same site as the new Louis Rubidoux Library. The project will provide a 14,335 square foot Child Development Center located on approximately 1.5 acres. The facility will provide 168 licensed child care slots for children ages zero through five (24 infants/toddlers and 144 preschoolers). The facility will also include an outdoor play area and a full service kitchen for food preparation. This project will comply with Board Policy H-29: Sustainable Building Policy, which establishes the use of sustainable practices using Leadership in Energy and Environmental Design (LEED) criteria.

The Notice of Determination, The California Environmental Quality Act (CEQA) documentation, and findings are being presented to the Board approval as "Attachment A". In accordance with CEQA (Public Resources Code Section 21000-21177), an initial study was prepared to analyze the proposed project to determine any potential significant impacts upon the environment that would result from construction and implementation of the project.

(Continued)

BACKGROUND: (Continued)

On December 23, 2010, the State of California Governor's Office of Planning and Research (OPR), notified the county that the Initial Study/Mitigated Negative Declaration (IS/MND) complies with the requirements of CEQA. Pursuant to CEQA Section 15074, the county shall consider all comments received during the review period prior to adoption of the IS/MND. The comment letters are included in the IS/MND.

The analysis contained in the initial study demonstrates that the project would not have any significant impacts on the environment with implementation of the mitigation measure contained in the initial study. The Initial Study/Mitigated Negative Declaration (IS/MND) was prepared and circulated for the mandated 30-day public review and comment period from November 23, 2010, to December 24, 2010.

Pursuant to CEQA (Public Resources Code Section 21081.6) the county is required to adopt a reporting and monitoring plan for the mitigation measures identified in the IS/MND to mitigate or avoid significant effects on the environment. The Mitigation Monitoring and Reporting Program (MMRP), contained in the final IS/MND presented to the Board for adoption, is designed to ensure compliance during project implementation.

The development of the project is consistent with RDA's Implementation Plan, which calls for the building of community facilities for area residents. A Summary Report for the project was prepared and available for review and noticed in the Press Enterprise as required by Health and Safety Code 33679. Estimated construction cost of the project is \$11,467,500 and has been allocated as follows:

Project Budget:

Construction	\$6,500,000
Project Management	\$175,000
Testing, Inspection, and Miscellaneous Costs	\$800,000
Fixtures, Furniture, & Equipment	\$800,000
Information Technology	\$800,000
Utility Relocation and Development Fees	\$1,000,000
Construction Management Costs	\$250,000
County Counsel Fees	\$100,000
Project Contingency	\$1,042,500
Total:	\$11,467,500

Source of Funds: First 5 Grant monies in the amount of \$750,000 and Jurupa Valley Redevelopment Capital Improvement Funds in the amount of \$10,717,500.

In order to keep the project moving forward and meet project schedule commitments, staff recommends the Board of Directors authorize the Executive Director of the RDA for the County of Riverside to determine award of the project, and authorize the Chairman of the Board to execute the agreement on behalf of the Board of Directors, provided that the lowest bid/award falls within the parameters as specified in Motion 5. Staff recommends that the Board conduct a public hearing regarding the proposed project, make the aforementioned findings, adopt the Mitigated Negative Declaration, approve the plans and specifications, and authorize the Clerk of the Board to advertise the Notice of Inviting Bids.



OFFICE OF
CLERK OF THE BOARD OF SUPERVISORS
1st FLOOR, COUNTY ADMINISTRATIVE CENTER
P.O. BOX 1147, 4080 LEMON STREET
RIVERSIDE, CA 92502-1147
PHONE: (951) 955-1060
FAX: (951) 955-1071

KECIA HARPER-IHEM
Clerk of the Board of Supervisors

KIMBERLY A. RECTOR
Assistant Clerk of the Board

April 5, 2011

THE PRESS ENTERPRISE
ATTN: LEGALS
PO BOX 792
RIVERSIDE, CA 92501

FAX (951) 368-9018
E-MAIL: legals@pe.com

RE: NOTICE INVITING BIDS: RUBIDOUX CHILD DEVELOPMENT CENTER

To Whom It May Concern:

Attached is a copy for publication in your newspaper for **TWO (2) TIMES:**
Thursdays: April 7 and 14, 2011.

We require your affidavit of publication immediately upon completion of the last publication.

Your invoice must be submitted to this office in duplicate, WITH TWO CLIPPINGS OF THE PUBLICATION.

NOTE: PLEASE COMPOSE THIS PUBLICATION INTO A SINGLE COLUMN FORMAT.

Thank you in advance for your assistance and expertise.

Sincerely,

Mcgil

Cecilia Gil, Board Assistant to
KECIA HARPER-IHEM, CLERK OF THE BOARD

Gil, Cecilia

From: PE Legals [legals@pe.com]
Sent: Tuesday, April 05, 2011 11:29 AM
To: Gil, Cecilia
Subject: RE: FOR PUBLICATION: Rubidoux Child Development Center

Received for publication on April 7 and 14

Thank You!

enterpris@media

Publisher of the Press-Enterprise

Maria G. Tinajero • Legal Advertising Department

1-800-880-0345 • Fax: 951-368-9018 • email: legals@pe.com

Please Note: Deadline is 10:30 AM two (2) business days prior to the date you would like to publish.
Additional days required for larger ad sizes

From: Gil, Cecilia [<mailto:CCGIL@rcbos.org>]
Sent: Tuesday, April 05, 2011 11:05 AM
To: PE Legals
Subject: FOR PUBLICATION: Rubidoux Child Development Center

Good Morning! Attached is a Notice Inviting Bids, for publication for 2 Thursdays: April 7 and 14, 2011. Please confirm. THANK YOU!

Cecilia Gil

Board Assistant to the
Clerk of the Board of Supervisors
951-955-8464

**THE COUNTY ADMINISTRATIVE CENTER IS CLOSED EVERY FRIDAY UNTIL FURTHER NOTICE.
PLEASE CONSIDER THE ENVIRONMENT BEFORE PRINTING.**



OFFICE OF
CLERK OF THE BOARD OF SUPERVISORS
1st FLOOR, COUNTY ADMINISTRATIVE CENTER
P.O. BOX 1147, 4080 LEMON STREET
RIVERSIDE, CA 92502-1147
PHONE: (951) 955-1060
FAX: (951) 955-1071

KECIA HARPER-IHEM
Clerk of the Board of Supervisors

KIMBERLY A. RECTOR
Assistant Clerk of the Board

April 5, 2011

RIVERSIDE COUNTY RECORD
ATTN: LEGALS
PO BOX 3187
RIVERSIDE, CA 92519

FAX (951) 685-2961
E-MAIL: recordmde@aol.com

RE: NOTICE INVITING BIDS: RUBIDOUX CHILD DEVELOPMENT CENTER

To Whom It May Concern:

Attached is a copy for publication in your newspaper for **TWO (2) TIMES:**
Thursdays: April 7 and 14, 2011.

We require your affidavit of publication immediately upon completion of the last publication.

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Thank you in advance for your assistance and expertise.

Sincerely,

McGil

Cecilia Gil, Board Assistant to
KECIA HARPER-IHEM, CLERK OF THE BOARD

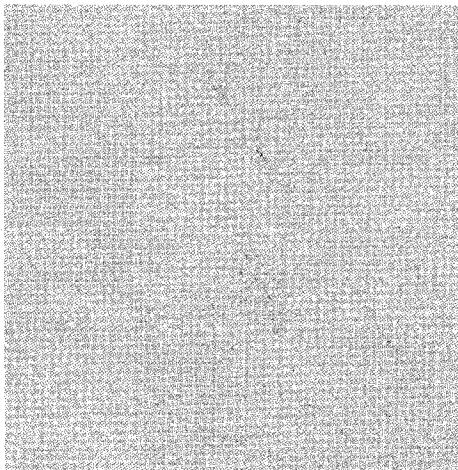
Gil, Cecilia

From: recordmde@aol.com
Sent: Tuesday, April 05, 2011 11:21 AM
To: Gil, Cecilia
Subject: Re: FOR PUBLICATION: Rubidoux Child Development Center

Hello Again,
I have also received the notice inviting bids.
Thanks, Mike

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

From: Gil, Cecilia <CCGIL@rcbos.org>
To: recordmde <recordmde@aol.com>
Sent: Tue, Apr 5, 2011 7:05 am
Subject: FOR PUBLICATION: Rubidoux Child Development Center



Good Morning! Attached is a Notice Inviting Bids, for publication for 2 Thursdays: April 7 and 14, 2011. Please confirm.
THANK YOU!

Cecilia Gil
Board Assistant to the
Clerk of the Board of Supervisors
951-955-8464

*THE COUNTY ADMINISTRATIVE CENTER IS CLOSED EVERY FRIDAY UNTIL FURTHER NOTICE.
PLEASE CONSIDER THE ENVIRONMENT BEFORE PRINTING.*

NOTICE INVITING BIDS

The Redevelopment Agency for the County of Riverside, herein called Owner, invites sealed proposals for the construction of:

A Child Development Center at 3865 Riverview Drive, Riverside, CA 92509, including site work, on-site driveway and storage yard, site utilities, and off-site improvements as shown on Drawings and Specifications.

Proposal should be delivered to the Clerk of the Board, County of Riverside 4080 Lemon Street, 1st Floor, Riverside, CA 92501, not later than 2:00 PM, on Monday, May 9, 2011, to be promptly opened in public at said address.

Each proposal shall be in accordance with Plans, Specifications and other Contract Documents dated February 2, 2011 and prepared by Ruhnau Ruhnau, Clarke, whose address is 3775 Tenth Street, Riverside, CA 92501. The Plans, Specifications and other Contract Documents may be obtained at A&I Reprographics, 898 Via Lata, Suite L, Colton, CA 92324 ph:(800)233-8435 for a NON-REFUNDABLE charge for each set of plans and specifications picked up or a request can be sent via email bid@aandirepro.com. Bidders requesting that sets be mailed or shipped to them will be charged the full cost of shipping. Make checks payable to A&I Reprographics.

In Compliance with California Contract Code, Section 20103.7 electronic copies will be made available to contractor plan services upon their request.

The Contract General Conditions for this project will contain provisions allowing successful contractor to substitute securities for monies withheld by the Agency to ensure performance (Public Contract Code 22300. A performance Bond and Payment Bond shall be required for this Project.

Pursuant to the Labor Code, the Governing Board of the Owner has obtained from the Director of Industrial Relations, State of California, his determination of general prevailing rates of per dime wages applicable to work, and for holiday and overtime work, including employee payments or health and welfare, pension, vacation and similar purposes, as set forth on schedule which is on file at the principal office of the Owner, and which will be made available to any interested person upon request.

To be considered, a potential bidder must have a Class B license, as required under provisions of the Public Contracts Code Section 3300, and the California Business and Professions Code, for work covered in its proposal when bid is submitted. This includes a joint venture formed to submit a bid. **A mandatory pre-bid job walk will be held on Monday, April 18th, 2011 at 8:30 AM., meeting on site at 3865 Riverview Drive, Riverside, CA 92509.**

Request For Information deadline is April 28th, 2011 at 10:00 AM.

NO BIDS WILL BE ACCEPTED FROM BIDDERS WHO HAVE NOT ATTENDED THE PRE-JOB WALK

For Further information, contact Tony Resendez at the Redevelopment Agency for the County of Riverside located at 3403 10th Street, Suite 500, Riverside CA 92501 whose phone number is (951)955-5781 or Gloria Perez at (951)955-9056.

Dated: April 5, 2011

KECIA HARPER-IHEM
Clerk of the Board
By: Cecilia Gil, Board Assistant

THE PRESS-ENTERPRISE PE.com

THE BUSINESS PRESS SoCal

LA PRENSA WEEKLY

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① BILLING PERIOD | ② ADVERTISING/CLIENT NAME
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 ⑤ BILLING DATE | FOR BILLING INFORMATION CALL | ④ PAGE NO
 04/14/11 | (951) 368-9713 | 1
 ③ TOTAL AMOUNT DUE | * UNAPPLIED AMOUNT | ⑥ TERMS OF PAYMENT
 392.50 | | Due Upon Receipt

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 RIVERSIDE, CA 92502-2209

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 BOARD OF SUPERVISORS
 COUNTY OF RIVERSIDE
 P.O. BOX 1147
 RIVERSIDE CA 92502

⑥ BILLED ACCOUNT NUMBER | REP NO
 045202 | LE04

Statement #: 56591279 Amount Paid \$ _____ Your Check # _____

PLEASE DETACH AND RETURN UPPER PORTION WITH YOUR REMITTANCE

① DATE	① REFERENCE	② ③ ④ DESCRIPTION-OTHER COMMENTS/CHARGES	⑤ SAU SIZE ⑥ BILLED UNITS	⑦ RATE	⑧ GROSS AMOUNT	⑨ NET AMOUNT
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04/14	4287820 CO	NIB RUBIDOUX CHILD DEVELOPMENT Class : 10 Ctext Ad# 10610654 Placed By : Cecilia Gil	157 L	1.20		188.40

*Redem.
4.70 of 04/05/11
1 hr*

2011 APR 20 PM 2:36
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④ CURRENT NET AMOUNT DUE	② 30 DAYS	60 DAYS	OVER 90 DAYS	* UNAPPLIED AMOUNT	⑨ PLEASE PAY THIS AMOUNT
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BILLING PERIOD		BILLED ACCOUNT NUMBER		ADVERTISER/CLIENT NUMBER		ADVERTISER/CLIENT NAME					
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4/15/2011 4.7

THE PRESS-ENTERPRISE

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Riverside CA 92501-3878
951-684-1200
951-368-9018 FAX

**PROOF OF PUBLICATION
(2010, 2015.5 C.C.P.)**

Press-Enterprise

PROOF OF PUBLICATION OF

Ad Desc.: NIB Rubidoux Child Development Ctr

I am a citizen of the United States. I am over the age of eighteen years and not a party to or interested in the above entitled matter. I am an authorized representative of THE PRESS-ENTERPRISE, a newspaper of general circulation, printed and published daily in the County of Riverside, and which newspaper has been adjudicated a newspaper of general circulation by the Superior Court of the County of Riverside, State of California, under date of April 25, 1952, Case Number 54446, under date of March 29, 1957, Case Number 65673 and under date of August 25, 1995, Case Number 267864; that the notice, of which the annexed is a printed copy, has been published in said newspaper in accordance with the instructions of the person(s) requesting publication, and not in any supplement thereof on the following dates, to wit:

04-07-11
04-14-11

I Certify (or declare) under penalty of perjury that the foregoing is true and correct.

Date: Apr. 14, 2011
At: Riverside, California



BOARD OF SUPERVISORS

P.O. BOX 1147
COUNTY OF RIVERSIDE
RIVERSIDE CA 92502

Ad #: 10610654

PO #:

Agency #: _____

Ad Copy:

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Pursuant to the Labor Code, the Governing Board of the Owner has obtained from the Director of Industrial Relations, State of California, his determination of general prevailing rates of per diem wages applicable to work, and for holiday and overtime work, including employee payments or health and welfare, pension, vacation and similar purposes, as set forth on schedule which is on file at the principal office of the Owner, and which will be made available to any interested person upon request.

To be considered, a potential bidder must have a Class B license, as required under provisions of the Public Contracts Code Section 3300, and the California Business and Professions Code, for work covered in its proposal when bid is submitted. This includes a joint venture formed to submit a bid. A mandatory pre-bid job walk will be held on Monday, April 18th, 2011 at 8:30 AM, meeting on site at 3865 Riverview Drive, Riverside, CA 92509.

Request For Information deadline is April 28th, 2011 at 10:00 AM.

NO BIDS WILL BE AC-

**CEPTED FROM BID-
DERS WHO HAVE NOT
ATTENDED THE PRE-
JOB WALK**

For Further information,
contact Tony Resendez at
the Redevelopment
Agency for the County of
Riverside located at 3403
10th Street, Suite 500, Riv-
erside CA 92501 whose
phone number is (951)955-
5781 or Gloria Perez at
(951)955-9056.

Dated: April 5, 2011

KECIA HARPER-IHEM,
Clerk of the Board

By: Cecilia Gil, Board
Assistant 4/7, 14

5011 8. 2011 4/7/14



The Riverside County Record Newspaper

Western Riverside County's Only Hometown Newspaper

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e-mail: recorddhh@aol.com

INVOICE

April 7, 2011

Riverside County
Clerk of the Board
4080 Lemon Street, 1st Floor
P.O. Box 1147
Riverside, CA 92502- 1147

Legal Advertising

Notice Inviting Bids

Your: Child Development Center
Our #0262

12.50 column inches x \$8.94 = \$111.75 x 2 = \$223.50

Publish two (2) week: April 7, 14, 2011

Amount Due: \$223.50

Thank You,

Cathy Sypin-Barnes

Redev.
4.7 of 04/05/11

2011 APR 18 PM 12:58

RECEIVED RIVER
CLERK OF SUPERIOR COURT

Affidavit of Publication

(2015.5 C.C.P.)

County of Riverside

State of California

Catherine Sypin-Barnes, being first duly sworn, deposes and says: That all times hereinafter, mentioned that she was a citizen of the United States over the age of eighteen years, and a resident of said County, and was and during all said times the principal clerk of the printer and publisher of The Riverside County Record-News, a newspaper of general circulation adjudicated by court decree, printed and published weekly in said County of Riverside, State of California, that said Riverside County Record-News is and was at all times herein mentioned, a newspaper of general circulation as that term is defined in section 4460 of the Political Code, and, as provided by that section, is published for the dissemination of local and telegraphic news and intelligence of a general character, having a bona fide subscriber list of paying subscribers, and is not devoted to nor published for the interest, entertainment or instruction of a particular class, profession, trade, call or race of denominations; that at all said time said newspaper has been established, printed and published in said County and State at regular intervals more than one year preceding the date of publication of the notice herein mentioned; that said notice was set in type not smaller than nonpareil and preceded with words printed in black face type not smaller than nonpareil describing and expressing in general terms the purport and character of notice intended to be given; that the

RIVERSIDE COUNTY RECORD NEWSPAPER

of which the annexed is a printed copy, published and printed in said newspaper in at least 2 weekly issues, as follows:

April 7, 14, 2011

I certify (or declare) under penalty of perjury that the foregoing is true and correct.



Signature

Dated: April 14, 2011 at
Riverside, California

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Dated: April 5, 2011

KECIA HARPER-IHEM

Clerk of the Board

By: Cecilia Gil, Board Assistant

RCR0262

Pub: April 7, 14, 2011.

**Rubidoux Child
Development Center
Riverside, California**

FOR

**Redevelopment Agency for the County of Riverside
Riverside, California**

Approval

3-75-41

February 2, 2011

PROJECT MANUAL for
Rubidoux Child Development Center
3865 Riverview Drive
Rubidoux, California

Owner

Redevelopment Agency for the County of Riverside

3403 Tenth Street, Suite 400
Riverside, California 92501
(951) 955-8916

FAX (951) 955-6686

Architect

RUHNAU · RUHNAU · CLARKE

3775 Tenth Street
Riverside, CA 92501
(951)684-4664

FAX (951) 684-6276

Ruhnau Ruhnau Clarke
Project No. 3-75-41

February 2, 2011

FORM APPROVED COUNTY COUNSEL
BY: MR. VICTOR
MARSHAL VICTOR
DATE: 3/25/11

DOCUMENT 00007 - SIGNATURE AND APPROVALS

ARCHITECT

Ruhnau · Ruhnau · Clarke
3775 Tenth Street
Riverside, California 92501-3669

Roger Clarke, Architect of Record C-21340

STRUCTURAL

KNA Consulting Engineers, Inc.
9931 Muirlands Blvd.
Irvine, CA 92618

Larry Kaprielian S-2795

MECHANICAL

T-Squared Engineering
1340 Specialty Drive, Ste E
Vista, CA 92081

Farzad Tadayon M-

ELECTRICAL

FBA Engineering
3420 Irvine Avenue, Suite 200
Newport Beach, California 92660-3189

Stephen R. Zajicek E-10372

END OF DOCUMENT

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DOCUMENT 00 010 – TABLE OF CONTENTS

DOCUMENT/SECTION No. – TITLE

INTRODUCTORY DOCUMENTS

00 000 – PROJECT MANUAL COVER
00 001 – TITLE PAGE
00 007 – SIGNATURE AND APPROVALS
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DOCUMENT 00 020 - PROJECT DIRECTORY

1.0 PROJECT SITE

A. Project Address:

**Rubidoux Child Development Center
3865 Riverview Drive
Rubidoux, California 92509**

2.0 OWNER AND OWNER'S CONSULTANTS

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DOCUMENT 00 320 - GEOTECHNICAL DATA

1.1 SUBSURFACE INVESTIGATIONS

- A. Soil and subsurface investigations were conducted at the Site by Converse Consultants, the results of which are in the report:
 - 1. "PRELIMINARY GEOTECHNICAL INVESTIGATION REPORT PROPOSED RUBIDOUX DAY CARE CENTER" (Report No. 09-81-137-01), dated June 23, 2009.
- B. A copy of this report is bound in this Project Manual.

1.2 INTERPRETATION

- A. The report identified above is not part of the Contract Documents. Soil and subsurface investigations were conducted for the purpose of design only. Subsurface investigation information is made available to the Contractor solely as a matter of convenience and general information.
- B. The Owner and Architect disclaim all responsibility for the accuracy of information prepared by others. The Owner and Architect disclaim all responsibility for the information prepared by others to be completely representative of conditions and materials which may be encountered and as being adequate for the purposes of construction.
- C. The Owner and Architect further disclaim responsibility for interpretation by Contractor and others of soil and subsurface investigation information, such as in projecting soil-bearing values, rock profiles, presence and scope of boulders and cobbles, soil stability and the presence, level and extent of underground water.
- D. Conditions found after execution of the Agreement to be materially different from those reported and which are not customarily encountered in the geographic area shall be governed by provisions of the General Conditions and Supplementary Conditions for unforeseen conditions.

1.3 SOIL AND SUBSURFACE INVESTIGATIONS BY CONTRACTOR

- A. The Contractor is encouraged to review the report of subsurface investigation for the Project site and similar sites in the area.
- B. The Contractor is also encouraged to examine the site, make additional tests, borings and other exploratory operations as they deem appropriate, and make an independent determination as to the nature, character and extent of the materials and conditions to be found.
- C. All additional tests, borings and other exploratory operations shall be performed with no change in the Contract Sum and Contract Sum.
- D. Additional on-site tests, borings and other exploratory operations may be performed prior to execution of the Contract only if approved in advance, in writing, by the Owner. Make requests through the Architect. All such Work must name as additionally insured parties the Owner and other such entities as the Owner directs.

- E. Upon conclusion of additional on-site tests, borings and other exploratory operations, restore the site to its original state, to the satisfaction of the Owner.

END OF DOCUMENT

**PRELIMINARY GEOTECHNICAL INVESTIGATION REPORT
PROPOSED RUBIDOUX DAY CARE CENTER**

Approximately 1.5-acre Site
3865 Riverview Drive
Area of Rubidoux, Riverside County, California

June 23, 2009

Converse Project No. 09-81-137-01



Converse Consultants

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

June 23, 2009

Mr. Mike Blazek
Ruhnau Ruhnau Clarke
3775 10th Street
Riverside, CA 92501

Subject: **PRELIMINARY GEOTECHNICAL INVESTIGATION REPORT
PROPOSED RUBIDOUX DAY CARE CENTER**
Approximately 1.5-acre Site
3865 Riverview Drive
Area of Rubidoux, Riverside County, California
Converse Project No. 09-81-137-01


Dear Mr. Blazek:

Enclosed is the geotechnical investigation report performed by Converse Consultants (Converse) for the proposed one-story Rubidoux Day Care Center building in the Rubidoux area of Riverside County, California. The purpose of the investigation was to provide foundation design, construction and earthwork recommendations for the subject project. Our services were performed in accordance with our revised proposal dated April 10, 2009 and the agreement with Ruhnau Ruhnau Clarke dated June 8, 2009.

Based on our field investigation, laboratory testing, geologic evaluation, and geotechnical analysis, the Day Care Center building is suitable from a geotechnical standpoint provided our conclusions and recommendations are implemented during design and construction.

We appreciate the opportunity to be of continued service to Ruhnau Ruhnau Clarke. If you should have any questions, please do not hesitate to contact us at (909) 796-0544.

CONVERSE CONSULTANTS


Hashmi S. E. Quazi, Ph.D., G. E.
Regional Manager/Principal Engineer

Dist: 4/Addressee

JG/HSQ/mjr



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 approximately 1.5 acre site is located at 3865 Riverview Drive about 550 feet south of the intersection of Riverview Drive and Mission Boulevard, in the area of Rubidoux, Riverside County, California.
- ◆ The project site consists of parcel numbers 182-311-001, 182-290-005, 182-290-006, and sections of parcel numbers 182-290-004 and 182-290-007. The site is bounded by the Rubidoux Library on the north, Riverview Drive on the east and south, and an electrical substation and senior center on the west. The site is currently a vacant lot and straddles both the southwest portion of the Rubidoux Library property, as well as a small vacant lot immediately to the south. A small 3-foot high concrete block retaining wall, oriented east to west, currently delineates the boundary between the proposed Rubidoux Day Care Center and the existing Rubidoux Library. Power lines are oriented north to south over the center of the site. At the time of our investigation the southwest portion of the proposed Rubidoux Day Care Center was covered by construction equipment, including several backhoes, a few storage containers, trailers, and construction debris.
- ◆ Topography of this site slopes gently towards Riverview Drive on the east. Drainage is by sheet flow in this direction. The site is relatively flat with a ground elevation of about 800 feet above Mean Sea Level (MSL).
- ◆ The Riverside County Economic Development Agency plans to construct an approximately 12,000 square foot one-story masonry structure to be used as a day care center with associated play apparatus areas, service access road, service yard, outdoor classroom, and landscaping. The building will be founded on shallow foundation with slab-on-grade.
- ◆ A total of six (6) borings (BH-1 through BH-6) were drilled on May 21, 2009, up to a maximum depth of 50.5 feet below existing ground surface (bgs).
- ◆ Groundwater was encountered at fifty (50) feet bgs in boring BH-3. Review of the County of Riverside Safety Element for Liquefaction Susceptibility indicates the project site is located within an area of high liquefaction potential. Review of the Spring 2008 Cooperative Well Management program, indicates depth to groundwater in wells located within a ½-mile of the site ranges from 17 to 47 feet bgs.



- ◆ The site is not located within a currently designated State of California Earthquake Fault Zone or the County of Riverside-designated Earthquake Fault Zone. Based on a review of existing geologic information no known active surface fault zone crosses or projects toward the site. The potential for surface rupture resulting from the movement of the nearby major faults is not known with certainty but is considered very low.
- ◆ The Seismic Design Parameters based on 2007 CBC, are presented in Table No. 2 of this report.
- ◆ The site soils have a "Medium" expansion potential and moderate frictional resistance and may require mitigation.
- ◆ Site soils are "Negligibly" deleterious to concrete. Type II Portland cement may be used for concrete construction. Site soils, in general, are "Corrosive" to ferrous metals.
- ◆ Review of the County of Riverside Safety Element for Liquefaction Susceptibility indicates the project site is located within an area of high liquefaction potential. Review of the County of Riverside Safety Element for Earthquake-Induced Slope Instability indicates the project site is not located in an area of potential seismically-induced landslides.
- ◆ Liquefaction analyses were performed using the SPT data collected from boring BH-3 in accordance with the method suggested in Special Publication No. 117A. The analysis indicates that site is not susceptible to liquefaction due to the dense condition of site granular soils. The dynamic settlement is expected to be negligible.
- ◆ Review of National Flood Insurance Rate Maps (FIRM) indicates that the project site is within Flood Hazard Zone "X". The Zone "X" is designated as "Areas determined to be outside the 0.2% annual chance floodplain" (FIRM, August 28, 2008).
- ◆ The existing artificial fill is considered unsuitable to support structural loads. Therefore, all artificial fill and incompetent alluvial soils in the upper five (5) feet should be excavated. Over-excavations should extend at least five (5) feet outside building footprints or a distance equal to the actual depth of removal, whichever is greater. Some additional over-excavation may be required to remove unsuitable loose soils and to prepare a suitably compacted structural fill mat to receive new foundations and slabs-on-grade. Thickness of compacted fill underneath the building should not vary.
- ◆ Subgrade soil surfaces that will receive compacted fill shall be scarified to a depth of at least 12 inches. The scarified soil shall be moisture-conditioned and mixed to within three (3) percent of the optimum moisture content for coarse-grained soil and above two (2) percent of the optimum moisture content for fine-grained soil, then compacted



to a minimum of 90 percent of the laboratory maximum dry density as determined by ASTM Standard D1557.

- ◆ Site soils should be excavatable with conventional heavy-duty earth-moving equipment. Excavated site soils free of oversized materials, organic matter or other debris are suitable for placement as compacted fill after proper processing. Such processing may include moisture conditioning and mixing.
- ◆ The proposed building may be supported on continuous strip and/or isolated spread shallow foundations.
- ◆ For shallow footings founded on compacted fill, an allowable net bearing capacity of 2,000 pounds per square foot (psf) may be used. The allowable bearing capacity can be increased by 250 psf for each foot of width or depth of footing embedment to the maximum of 2,500 psf. Actual footing size should be determined based on structural requirements.
- ◆ The static settlement of the structure supported on strip and/or spread footings founded on compacted fill will depend on the actual footing dimensions and the imposed vertical loads. Based on the maximum allowable net bearing pressures of 2,500 psf, as presented above, settlement less than 1-inch should be anticipated. Due to the granular nature of the subsurface soils, most of the settlement should occur during construction. In order to evaluate differential settlement, data on the relative dimension of adjacent footings, magnitude of imposed loads and distance between footings is needed. In the absence of such data, and based on our experience on similar projects for similarly loaded footings, the differential settlement may be taken as equal to about one half of the total settlement over a horizontal distance of 50 feet.
- ◆ Cantilevered earth retaining walls should be designed based on an active earth pressure equal to that developed by a fluid density of 40 and 45 pounds per cubic foot (pcf) for low and very low equivalent fluid pressures, respectively. This pressure assumes a level ground surface behind the walls for a distance greater than the wall height.
- ◆ Lateral loads can be resisted by an allowable passive earth pressure of 200 pounds per foot of depth for natural soil or compacted fill applied against below-grade wall elements. The allowable passive earth pressure indicated above is obtained by applying a factor of safety of 1.5. Due to the low overburden stress of the soil at shallow depth, the upper one foot of passive resistance should be neglected unless the soil is confined by pavement or slab. The maximum passive pressure should not exceed 2,500 psf. In addition, a friction coefficient of 0.3 between the concrete and compacted fill can be used in combination with passive earth pressures to resist lateral loads. The coefficient of friction should be applied to net normal dead loads only.



Results of our investigation indicate that the proposed one-story Day Care Center 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.



PROFESSIONAL CERTIFICATION

This report has been prepared 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.



Joseph P. Gratzner, C.E.G.
Project Geologist



Hashmi S. E. Quazi, Ph.D., G.E.
Regional Manager/Principal Engineer



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Appendix B	<i>Laboratory Testing Program</i>
Appendix C	<i>Earthwork Specifications</i>
Appendix D	<i>Liquefaction and Settlement Analysis</i>



1.0 INTRODUCTION

This report contains the findings of our geotechnical investigation performed at the site of the proposed one-story Day Care Center building and associated pavement in the area of Rubidoux, Riverside County, California, as shown on Figure No. 1, *Approximate Site Location Map*.

The purposes of this investigation were to determine the nature and engineering properties of the subsurface materials, recommendations for site earthwork and design, and construction of foundations for the proposed one-story Day Care Center building.

This report is written for the project described herein and is intended for use solely by Ruhnau Ruhnau Clarke and its design team. 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 PROJECT DESCRIPTION

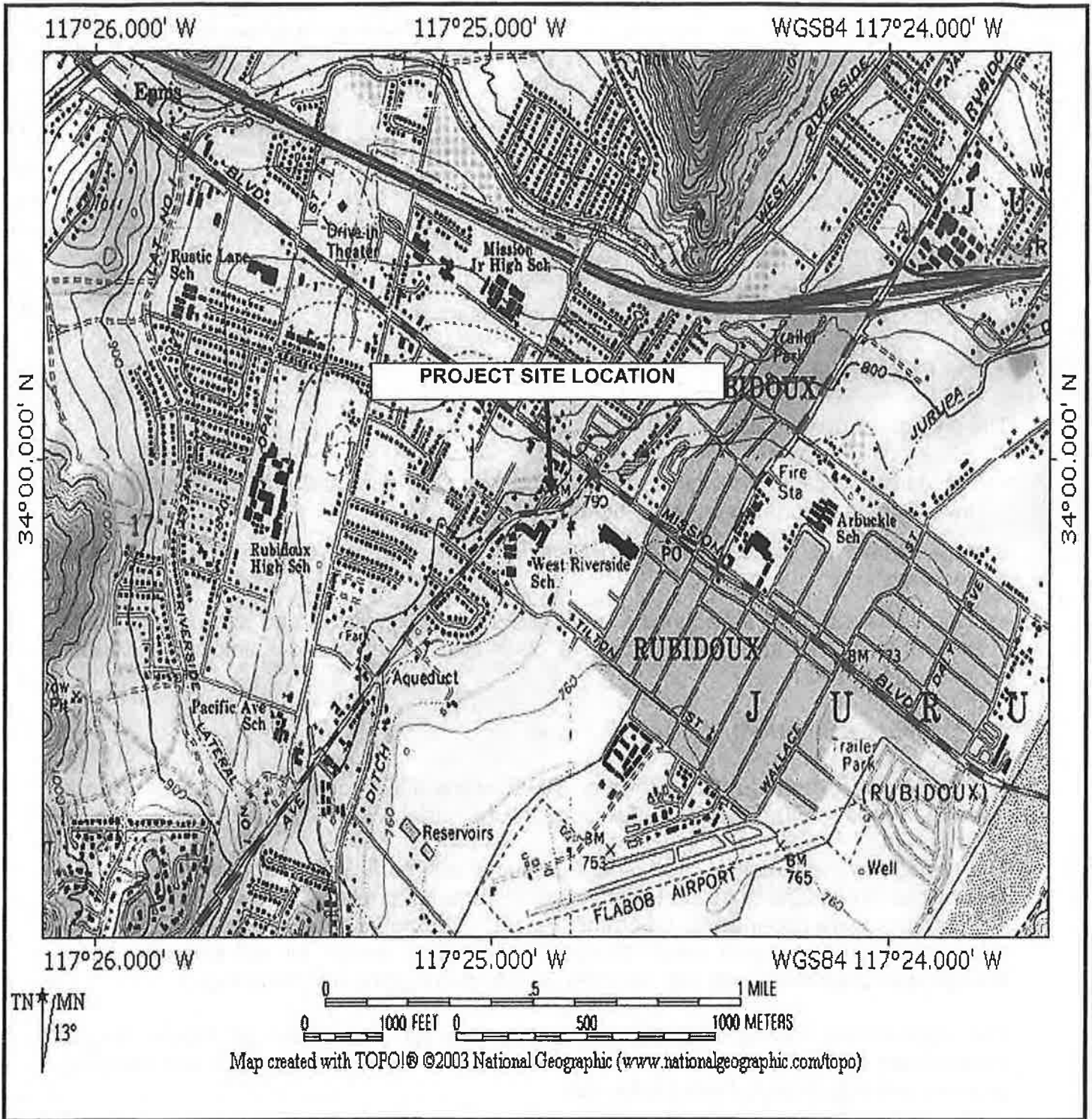
The Riverside County Economic Development Agency plans to construct an approximately 12,000 square foot one-story masonry structure to be used as a day care center with associated play apparatus areas, service access road, service yard, outdoor classroom, and landscaping. The building will be founded on shallow foundation with slab-on-grade.

3.0 SITE DESCRIPTION

The approximately 1.5-acre site is located at 3865 Riverview Drive about 550 feet south of the intersection of Riverview Drive and Mission Boulevard, in the area of Rubidoux, Riverside County, California.

The project site consists of parcel numbers 182-311-001, 182-290-005, 182-290-006, and sections of parcel numbers 182-290-004 and 182-290-007. The site is bounded by the Rubidoux Library on the north, Riverview Drive on the east and south, and an electrical substation and senior center on the west. The site is currently a vacant lot and straddles both the southwest portion of the Rubidoux Library property, as well as a small vacant lot immediately to the south. A small 3-foot high concrete block retaining wall, oriented east to west, currently delineates the boundary between the proposed Rubidoux Day Care Center and the existing Rubidoux Library. Power lines are oriented north to south over the center of the site. At the time of our investigation the southwest portion of the proposed Rubidoux Day Care Center was covered by construction equipment, including several backhoes, a few storage containers, trailers, and construction debris.





APPROXIMATE SITE LOCATION MAP

PROPOSED RUBIDOUX DAY CARE CENTER

Area of Rubidoux, Riverside County, California

For: Ruhnau Ruhnau Clark

Project Number:

09-81-137-01

Figure No.:

Topography of this site slopes gently towards Riverview Drive on the east. Drainage is by sheet flow in this direction. The site is relatively flat with a ground elevation of about 800 feet above Mean Sea Level (MSL).

4.0 SCOPE OF WORK

Our scope of work is described in the following subsections.

4.1 Project Set-up

The project set-up consisted of the following:

- Research available geologic maps, seismic hazard maps, and previous geotechnical investigation reports prepared by others.
- Co-ordinate site access with the Riverside County Economic Development Agency representative.
- Conduct a site reconnaissance to evaluate surface conditions and site access, mark boring locations, and contact USA to clear the boring locations from conflict with underground utilities.

4.2 Field Exploration

A total of six (6) borings (BH-1 through BH-6) were drilled on May 21, 2009, up to a maximum depth of 50.5 feet below existing ground surface (bgs).

The borings were visually logged by our geologist and sampled at regular intervals and at changes in subsurface soils. Relatively undisturbed samples, SPT samples, and bulk soil samples were obtained for laboratory testing. The borings were drilled using a truck-mounted rig equipped with 8-inch diameter hollow-stem augers for soil sampling. The borings were backfilled loose with soil cuttings following logging and sampling.

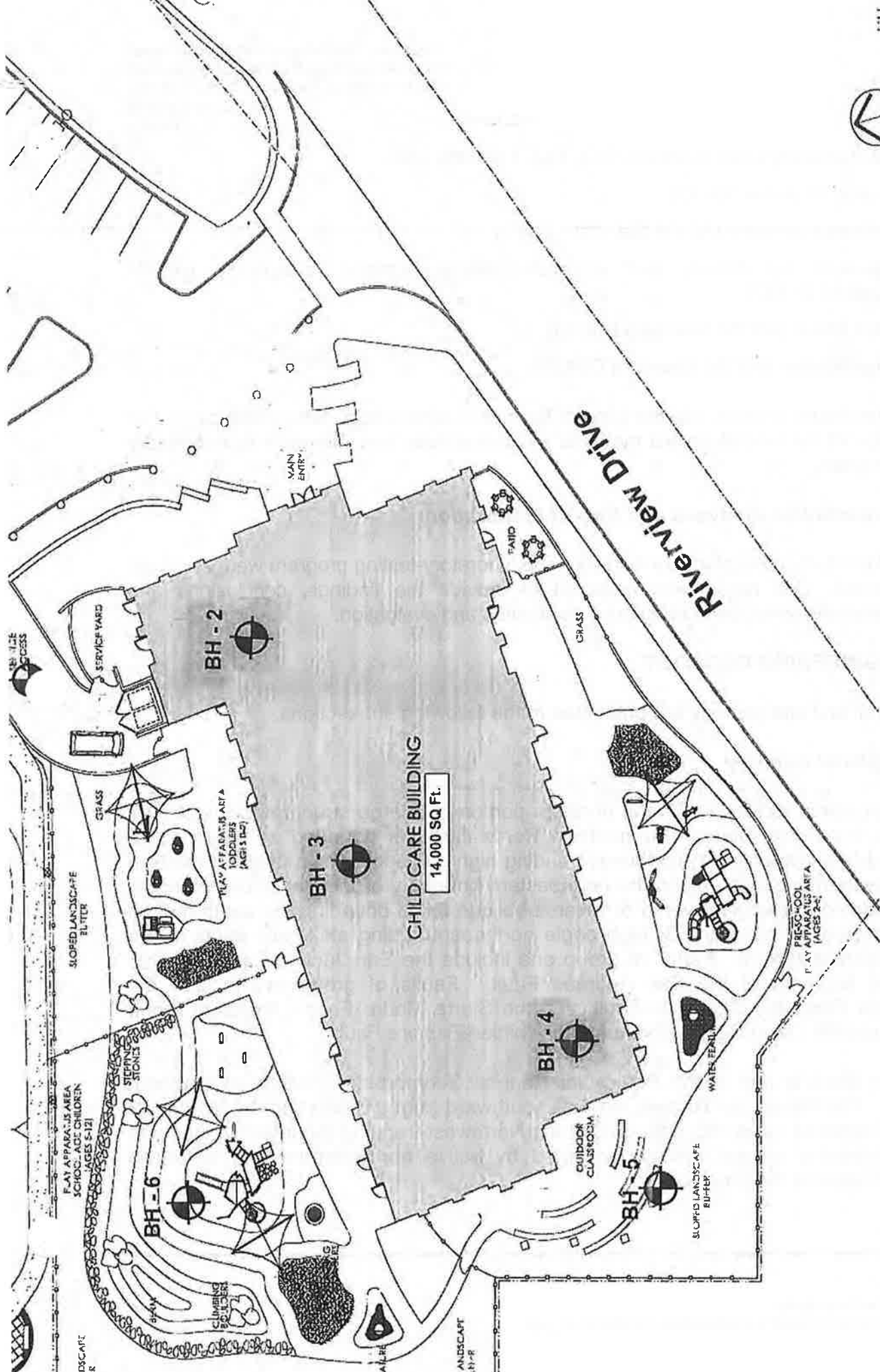
The approximate locations of the exploratory borings are shown in Figure No. 2, *Approximate Boring Location Map*. For a description of the field exploration and sampling program see Appendix A, *Field Exploration*.

4.3 Laboratory Testing

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

- ◆ *In situ* moisture contents and dry densities (ASTM Standard D2216)
- ◆ Expansion index (ASTM Standard D4829)





Rubidoux Child Development Center
 Riverside County Economic Development Agency
 Design Development
 May 2009

APPROXIMATE BORING LOCATION MAP

PROPOSED DAY CARE CENTER

Area of Rubidoux, Riverside County, California

- ◆ Soil corrosivity tests (Caltrans 643, 422, 417, and 532)
- ◆ R-value (Caltrans 309-G)
- ◆ Grain size analysis (ASTM Standard D422)
- ◆ Maximum dry density and optimum-moisture content relationship (ASTM Standard D1557)
- ◆ Direct shear (ASTM Standard D3080)
- ◆ Consolidation (ASTM Standard D2435)

For *in situ* moisture content, see the Logs of Borings in Appendix A, *Field Exploration*. For a description of the laboratory test methods and test results, see Appendix B, *Laboratory Testing Program*.

4.4 Geotechnical Analyses and Report Preparation

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.

5.0 ENGINEERING GEOLOGY

The regional and site geology are presented in the following subsections.

5.1 Regional Geology

The project site is located within the northern portion of a large structural block of land known as the Perris Block. The northern Perris Block is bounded by three major convergent fault systems: 1) northwest-trending high angle strike-slip faults of the San Andreas system projecting along the northeastern boundary of the Peninsular Ranges, 2) east-trending low angle reverse or reverse-oblique faults bounding the south margin of the Traverse Ranges, and 3) high angle northeast-trending strike-slip faults of the Whittier-Elsinore system. Faults of group one include the San Jacinto Fault and San Bernardino segment of the San Andreas Fault. Faults of group two include the Cucamonga Fault, the San Jose Fault, and the Sierra Madre Fault. Faults of group three include the Chino-Central Avenue and Whittier-Elsinore Faults.

The Perris Block is part of the Peninsular Ranges Geomorphic Province of Southern California. The Peninsular Ranges extends southward from the San Gabriel Mountains to several hundred miles into Baja California. Northwest-trending mountain ranges and broad intervening valleys typically bordered by active northwest-trending strike-slip faults, characterize the province.



5.2 Site Geology

The project site is located on a portion of a broad, slightly dissected, southeast sloping alluvial fan. These Pleistocene-age alluvial fan deposits were derived from weathering of rocks of the adjacent uplands and transported primarily by local canyon streams from the Jurupa Mountains and Pedley Hills. These deposits have gradually filled the valleys to create alluvial basins between intervening hillsides and generally consist of indurated mixtures of sand and gravel.

6.0 FAULTING AND SEISMICITY

The following subsections discuss faulting and seismicity.

6.1 Faulting

There are no known active fault traces projecting toward or extending across the project site. The site is not situated within a currently designated Alquist-Priolo Earthquake Fault Zone of California or the County of Riverside-designated Earthquake Fault Zone.

6.2 Seismicity

The proposed site is situated in a seismically active region. 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.

The following Table No. 1, *Seismic Characteristics of Nearby Active Faults*, contains a list of active and potentially active faults within 100 kilometers of the subject site. The approximate distance to the site is listed in Table No. 1, *Seismic Characteristics of Nearby Active Faults*.

Table No. 1, Seismic Characteristics of Nearby Active Faults

Fault Name and Section	Approximate Distance to Site (kilometers)	Max. Moment Magnitude (Mw)	Slip Rate (mm/yr)
San Jacinto-San Bernardino	12.5	6.7	12.0
San Jacinto-San Jacinto Valley	16.5	6.9	12.0
Cucamonga	20.6	6.9	5.0
Chino-Central Ave. (Elsinore)	22.6	6.7	1.0
San Andreas - Southern	25.0	7.5	24.0
Elsinore-Glen Ivy	25.6	6.8	5.0



Fault Name and Section	Approximate Distance to Site (kilometers)	Max. Moment Magnitude (Mw)	Slip Rate (mm/yr)
Elsinore-Whittier	26.0	6.8	2.5
San Jose	28.4	6.4	0.5
Cleghorn	32.0	6.5	3.0
Sierra Madre(Central)	33.0	7.0	3.0
North Frontal Fault Zone (West)	34.7	7.0	1.0
San Andreas - 1857 Rupture	36.2	7.8	34.0
Elsinore-Temecula	40.1	6.8	5.0
Clamshell-Sawpit	47.9	6.5	0.5
San Jacinto-Anza	54.2	7.2	12.0
Raymond	57.5	6.5	0.5
North Frontal Fault Zone (East)	62.4	6.7	0.5
Newport-Inglewood (L.A. Basin)	64.0	6.9	1.0
Pinto Mountain	64.2	7.0	2.5
Newport-Inglewood (Offshore)	64.4	6.9	1.5
Helendale - S. Lockhardt	65.0	7.1	0.6
Verdugo	66.6	6.7	0.5
Hollywood	76.3	6.5	1.0
Elsinore-Julian	78.5	7.1	5.0
Palos Verdes	81.5	7.1	3.0
Lenwood-Lockhart-Old Woman Sprgs	82.0	7.3	0.6
Sierra Madre (San Fernando)	86.8	6.7	2.0
San Gabriel	87.3	7.0	1.0
Johnson Valley (Northern)	89.4	6.7	0.6
Santa Monica	92.0	6.6	1.0
Burnt Mountain	93.5	6.5	0.6
Landers	93.8	7.3	0.6
Coronado Bank	94.0	7.4	3.0
Eureka Peak	95.2	6.5	0.6
Rose Canyon	96.6	6.9	1.5
Emerson – Copper Mountain	100.3	6.9	0.6



6.3 Other Effects of Seismic Activities

Secondary effects of seismic activity include surface fault rupture, soil liquefaction, lateral spreading, landslides, earthquake-induced flooding, tsunamis, and seiches. Site-specific potential for each of these seismic hazards is discussed in the following sections.

Surface Fault Rupture: The site is not located within a currently designated State of California Earthquake Fault Zone or the County of Riverside-designated Earthquake Fault Zone. Based on a review of existing geologic information no known active surface fault zone crosses or projects toward the site. The potential for surface rupture resulting from the movement of the nearby major faults is not known with certainty but is considered very low.

Liquefaction: Liquefaction is defined as the phenomenon in a soil mass, due to the development of excess pore pressures, suffers a substantial reduction in its shear strength to a constant value and deforms continuously until the imposed shear stresses become equal to steady-state shear strength. During earthquakes, excess pore pressures in saturated soil deposits may develop as a result of induced cyclic shear stresses resulting in liquefaction.

Groundwater was encountered at fifty (50) feet bgs in boring BH-3. Review of the County of Riverside Safety Element for Liquefaction Susceptibility indicates the project site is located within an area of high liquefaction potential. Review of the Spring 2008 Cooperative Well Management program, indicates depth to groundwater in wells located within a ½-mile of the site ranges from 17 to 47 feet bgs. Our analysis indicates that the project site has low susceptibility to liquefaction due to the dense condition of site soils. For details, please refer to Appendix D, *Liquefaction and Settlement Analysis*.

Lateral Spreading: Seismically induced lateral spreading involves primarily lateral movement of 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 site and in the immediate vicinity of the site is relatively flat and site soils are not considered susceptible to liquefaction. Under these circumstances, the potential for lateral spreading at the subject site is considered very low.

Landslides: Seismically induced landslides and other slope failures are common occurrences during or soon after earthquakes. The project site is relatively flat. Review of the County of Riverside Safety Element for Earthquake-Induced Slope Instability shows the project site is not located in an area of potential seismically-induced landslides. The potential for landslides is considered to be very low.



Earthquake-Induced Flooding: This is flooding caused by failure of dams or other water-retaining structures as a result of earthquakes. Review of the County of Riverside Safety Element for Dam Failure Inundation Zones shows the site is not located within a flood inundation area.

Tsunamis: Tsunamis are seismic waves generated by fault displacement or major ground movement. Based on the location of the site, tsunamis do not pose a hazard.

Seiches: Seiches are large waves generated in enclosed bodies of water in response to ground shaking. Based on the site location, seiches do not pose a hazard.

6.4 CBC Seismic Parameters

Based on the results of our borings, laboratory testing, and in accordance with the California Building Code (2007 CBC) the seismic parameters are provided in Table No. 2 and on the coordinates 33.9990 degrees north and 117.4151 degrees west.

Table No. 2, CBC Seismic Parameters

Seismic Parameters	
Site Class	"D"
Mapped Short period (0.2-sec) Spectral Response Acceleration, S_s	1.500g
Mapped 1-second Spectral Response Acceleration, S_1	0.600g
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, SM_s	1.500g
MCE 1-second period Spectral Response Acceleration, SM_1	0.900g
Design Spectral Response Acceleration for short period, S_{ds}	1.000g
Design Spectral Response Acceleration for 1-second period, S_{d1}	0.600g

7.0 SUBSURFACE CONDITION

The subsurface conditions are discussed in the following subsections.

7.1 Subsurface Profile

Artificial fill and alluvial deposits were encountered at the project site to the maximum depth explored of 50.5 feet below ground surface (bgs). Artificial fill consisting of silty sand was encountered in borings BH-4 through BH-6 to depths between two (2) and five (5) feet bgs.

Alluvial deposits underlie the artificial fill and consisted mainly of sandy silt, sandy clay, silty sand, sand, and occasional sand with gravel.

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

7.2 Groundwater

Groundwater was encountered at fifty (50) feet bgs in boring BH-3. Review of the County of Riverside Safety Element for Liquefaction Susceptibility indicates the project site is located within an area of high liquefaction potential. Review of the Spring 2008 Cooperative Well Management program, indicates depth to groundwater in wells located within a ½ mile of the site ranges from 17 to 47 feet bgs.

The groundwater level beneath the site can vary depending upon the seasonal precipitation and groundwater basin activities including recharge, storage and pumping occurring in the general site vicinity.

7.3 Subsurface Variations

Based on results of the subsurface exploration and our experience, some variations in the continuity and nature of subsurface conditions within the project site should be 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 are 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.

8.0 FLOODING

Review of the Flood Insurance Rate Maps (FIRM) indicates that the entire site is designated as Zone "X", "areas determined to be outside the 0.2% annual chance floodplain".

9.0 LABORATORY TESTING

Results of the various laboratory tests are discussed below:

- *In-situ* Moisture and Dry Density – *In-situ* dry density and moisture content of undocumented fill soils within the upper two (2) to five (5) feet ranged from 108 to 121 pounds per cubic feet (pcf) at three (3) percent, respectively. *In-situ* dry density and moisture content of alluvial soils within the upper six and one-half (6.5) feet ranged from 104 to 110 pounds per cubic feet (pcf) and 4 to 16 percent, respectively. Results of *in-situ* moisture and dry density tests are presented on the Logs of Borings in Appendix A, *Field Exploration*.



- Expansion Index – One (1) representative sample from the upper five (5) feet bgs of the site soil was tested to evaluate Expansion Potential (EI) in accordance with the ASTM Standard D4829. The test result is included in Appendix B, *Laboratory Testing Program*. The test result indicates the measured EI was 70, which corresponds to medium expansion potential.
- Soil Corrosivity – One (1) representative sample of the site soil was tested to determine soil corrosivity with respect to common construction materials such as concrete and steel. The test results are presented in Appendix B, *Laboratory Testing Program*. Test results are also discussed in Section 12.9, *Soil Corrosivity Evaluation*.
- R-value Test – One (1) R-value test was performed on a representative bulk soil sample. Based on the test result, the R-value of near surface site soils is 18. This value indicates that the soil has a low resistance to traffic loading.
- Grain Size Analysis – One (1) representative sample was tested to determine the relative grain size. Result of this test is presented in Appendix B, *Laboratory Testing Program*.
- Maximum Dry Density and Optimum Moisture Content – Typical moisture-density relationship of a representative near surface soil sample is presented in Appendix B, *Laboratory Testing Program*. The test results show that the laboratory maximum dry density is 119.5 pounds per cubic foot (pcf). The optimum moisture content of sample tested was 13.5 percent.
- Direct Shear – One (1) direct shear test was performed on a representative sample. Result of the direct shear test is presented in Appendix B, *Laboratory Testing Program*. The test results indicate the soil tested has moderate shear strength.
- Consolidation Test – One (1) consolidation test was performed on a representative sample of the site soil. The result of the test is presented in Appendix B, *Laboratory Testing Program*. Based on the result of this test, the compressibility of the site native soils is moderate.

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

10.0 EARTHWORK AND SITE GRADING RECOMMENDATIONS

10.1 General Evaluation

Based on our field exploration, laboratory testing, and analyses of subsurface conditions at the site, remedial grading is required to prepare the site for support of the proposed one-



story Day Care Center structure and associated pavement. To reduce differential settlement, variations in the soil type, degree of compaction, and thickness of the compacted fill placed underneath the footings should be kept to a minimum.

Site grading recommendations provided below are based on our experience with similar projects in the area and our evaluation of this investigation.

Site preparation will require removal of any vegetation, and any existing underground manmade structures and utilities, and all artificial fill.

10.2 Mitigation of Expansive Soils

The site soils have medium expansion potential. The onsite soil materials will be mixed during the grading and the expansion potential might be changed. Therefore, the expansion potential of site soils should be verified after the grading. Slabs, foundations and pavement placed directly on expansive subgrade soil will likely crack over time.

The soil materials with Expansion Index higher than 20 should be mitigated. There are several mitigation measures that can be utilized to improve expansive soils at the site. Some mitigation measures include:

- Pre-saturate the top 18 inches of on-site compacted subgrade soils to approximately three (3) percent above optimum moisture content combined with grade beam or mat foundation
- Remove about two (2) feet of the underlying medium expansive soils and replace with on-site or imported sandy material
- Reinforce footing and place thicker concrete slab with moisture barrier
- Use post-tensioned slab
- Lime treat the upper two (2) feet of the subgrade soils

It is very important to keep the site soils moisture content around or under the edge of foundation, concrete slab, and asphalt concrete pavement at approximately the same moisture content before, during and after construction. This will reduce greatly the expansion potential of the site soils.

10.3 Over-excavation

The existing artificial fill is considered unsuitable to support structural loads. Therefore, all artificial fill and incompetent alluvial soils in the upper five (5) feet should be excavated. Over-excavations should extend at least five (5) feet outside building footprints or a distance equal to the actual depth of removal, whichever is greater. The actual depth of over-excavation should be determined to provide required minimum amount of fill under building footings and slab-on-grade as follows:



- Continuous or isolated footings should be placed on at least two (2) feet of structural fill.
- Over-excavation should provide as a minimum of two (2) feet of structural fill below the bottom of slab-on-grade.

The actual depth of removal should be based on recommendations and observation made during grading. Therefore, some variations in the depth and lateral extent of over-excavation recommended in this report should be anticipated.

10.4 Over-excavation for Driveways and Parking Areas

In areas receiving asphalt concrete, the upper two (2) feet of soils bgs or all undocumented fill, whichever is greater, should be excavated. Such excavation should extend at least two (2) feet beyond the pavement edges. Where depth of cut to subgrade elevation exceeds two (2) feet, no additional excavation will be required. The pavement sections can be placed on excavated surface, scarified a minimum of twelve (12) inches, moisture conditioned as necessary, and compacted to a minimum of 95 percent of the laboratory maximum dry density.

10.5 Structural Fill

The approved bottom of the excavations should be scarified to a depth of at least twelve (12) inches. The scarified soils should be mixed and moisture conditioned if necessary, to within three (3) percent of the optimum moisture content for coarse-grained soil and above two (2) percent of the optimum moisture content for fine-grained soil, then compacted to at least 90 percent of the laboratory maximum dry density to produce a firm and unyielding surface.

All structural fill should be placed on competent, scarified and compacted native materials as determined by a Converse representative and in accordance with the specifications presented in this section and in Appendix C, *Earthwork Specifications*.

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 import fill should be tested and approved by Converse. The import fill should be non-expansive with an expansion potential less than 20.

Prior to compaction, fill materials should be thoroughly mixed and moisture conditioned when necessary, to within \pm three (3) percent of optimum moisture content for coarse-grained soils and above two (2) percent of optimum moisture content for fine-grained soils. All fill, if not specified otherwise elsewhere in this report, should be compacted to at least 90 percent of the laboratory maximum dry density in accordance with the ASTM Standard D1557 test method.



At the time of our recent field investigation, *in-situ* moisture content of soils at the upper five (5) feet ranged from 3 to 16 percent. The optimum moisture content was 13.5 percent. Therefore, some moisture conditioning will be necessary prior to the material being placed as compacted fill. The amount of processing required for proper moisture conditioning at the site will depend on the seasonal variations in the *in-situ* moisture conditions, the depth of cut, the equipment, and the processing method.

10.6 Excavatability

Based on our field exploration, the earth materials at the site should be excavatable with conventional heavy-duty earth moving and trenching equipment. Oversized material greater than three (3) inches is expected to be encountered.

10.7 Shrinkage and Subsidence

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 fill material is estimated to range from zero (0) to ten (10) percent. The approximate shrinkage factor for the alluvium soils at five (5) feet bgs, is estimated to range from three (3) to ten (10) percent with an average of six (6) percent.
- Subsidence would depend on the construction methods including type of equipment utilized. For estimation purposes, ground subsidence may be taken as 0.20 feet.

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 subsidence factors are needed, it is recommended that field-testing using the actual equipment and grading techniques be conducted.

10.8 Subgrade Preparation

Final subgrade soils 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 majority of the near-surface site soils is coarse-grained, and is considered to be free draining.

The subgrade should be moisture conditioned before placing concrete.



11.0 UTILITY TRENCH BACKFILL

The following sections provide recommendations for pipe bedding and trench zone backfill.

11.1 *Pipe Bedding*

Pipe bedding is defined as the material supporting and surrounding the pipe to 12 inches above the pipe. To provide uniform and firm support for the pipe, compacted granular materials such as clean sand, gravel or $\frac{3}{4}$ -inch crushed aggregate or crushed rock may be used as pipe bedding material. The type and thickness of the granular bedding placed underneath and around the pipe, if any, should be selected by the pipe designer. The load on the rigid pipes and deflection of flexible pipes and, hence, the pipe design, depends on the type and the amount of bedding placed underneath and around the pipe. Care should be taken to densify the bedding material below the springline of the pipe.

Pipe designs generally require granular material with a sand equivalent (SE) greater than 30 and free from oversized particles (greater than 1-inch).

Migration of fines from the surrounding native and/or fill soils must be considered in selecting the gradation of any imported bedding material. We recommend that the pipe bedding material should satisfy the following criteria:

$$D_{15} < 2.5 \text{ mm (0.1 inch)} \text{ and } D_{50} < 19.0 \text{ mm (0.75 inch)}$$

Where D_{15} and D_{50} represent particle sizes of the bedding material corresponding to 15 percent and 50 percent passing by weight, respectively.

11.2 *Trench Zone Backfill*

The trench zone is defined as the portion of the trench above the pipe bedding extending up to the final grade level of the trench surface.

Trench excavations to receive backfill shall be free of trash, debris or other unsatisfactory materials at the time of backfill placement. Excavated on-site soils free of oversize particles and deleterious matter after proper processing may be used to backfill the trench zone. Imported trench backfill, if used, should be approved by the project soils consultant prior to delivery at the site.

Trench backfill shall be compacted to 90 percent of the laboratory maximum dry density as per ASTM Standard D1557 test method. At least the upper twelve (12) inches of trench underlying pavements should be compacted to at least 95 percent of the laboratory maximum dry density.



The specifications are recommended to provide a basis for quality control during the placement of trench backfill presented in Appendix C, *Earthwork Recommendations*.

12.0 DESIGN RECOMMENDATIONS

The various design 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.

The proposed building may be supported on continuous (strip) and/or isolated spread footings.

12.1 Shallow Spread Footing Design Parameters

Actual footing size should be determined based on structural requirements. Isolated and continuous footings should be at least 24 inches and 12 inches wide, respectively, and embedded at least 15 inches below the lowest adjacent final soil grade.

For shallow footings founded on compacted fill, an allowable net bearing capacity of 2,000 pounds per square foot (psf) may be used. The allowable bearing capacity can be increased by 250 psf for each foot of width or depth of footing embedment to the maximum of 2,500 psf. Actual footing size should be determined based on structural requirements.

The allowable net bearing capacity is defined as the maximum allowable net bearing pressure on the ground. It is obtained by dividing the net ultimate bearing capacity by a safety factor. The ultimate bearing capacity is the bearing stress at which ground fails by shear or experiences a limiting amount of settlement at the foundation. The net ultimate bearing capacity is obtained by subtracting the total overburden pressure on a horizontal plane at the foundation level from the ultimate bearing capacity.

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. If normal code requirements are applied for design, the above vertical bearing value may be increased by 33 percent for short duration loadings, which will include loadings induced by wind or seismic forces.

12.2 Lateral Earth Pressures and Resistance to Lateral Loads

The lateral earth pressures and resistance to lateral loads are estimated by using on-site native soils compacted to an average 95 percent of the laboratory maximum dry density.



12.3 Active Earth Pressure

If retaining walls are planned, the following recommendations should be followed in its design and construction. 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 and presented in the following table.

Table No. 3, Equivalent Fluid Pressure

Equivalent Fluid Pressure, pcf	Very Low	Low
Active earth conditions (Free to deflect)	40	45
At-rest (wall is restrained)	60	70

12.4 Passive Earth Pressure

Lateral loads can be resisted by an allowable passive earth pressure of 200 pounds per foot of depth for natural soil or compacted fill applied against below-grade wall elements. The allowable passive earth pressure indicated above is obtained by applying a factor of safety of 1.5. Due to the low overburden stress of the soil at shallow depth, the upper one foot of passive resistance should be neglected unless the soil is confined by pavement or slab. The maximum passive pressure should not exceed 2,500 psf. In addition, a friction coefficient of 0.3 between the concrete and compacted fill can be used in combination with passive earth pressures to resist lateral loads. The coefficient of friction should be applied to net normal dead loads only.

12.5 Settlement

The static settlement of structures supported on strip and/or spread footings founded on compacted fill will depend on the actual footing dimensions and the imposed vertical loads. Based on the maximum allowable net bearing pressures of 2,500 psf, as presented above, settlement less than 1-inch should be anticipated. In order to evaluate differential settlement, data on the relative dimension of adjacent footings, magnitude of imposed loads and distance between footings is needed. In the absence of such data, and based on our experience on similar projects for similarly loaded footings, the differential settlement may be taken as equal to about one half of the total settlement over a horizontal distance of 50 feet.

12.6 Modulus of Subgrade Reaction

For the subject project, design of the structures supported on 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.



12.7 Slabs-on-grade

The design of the slabs-on-grade will depend on, among other factors, the expansive potential of the pad soils. Based on the expansion index test performed during this investigation, the expansive potential of the pad soils is "Medium". The expansion potential of the building pad should be verified at the completion of the grading.

Structural design elements such as thickness, reinforcement, joint spacing, etc., for the slabs-on-grade should be selected based on the analysis performed by the project structural engineer considering anticipated loading conditions and the modulus of subgrade reaction of the supporting soils, as presented above.

In areas where a moisture-sensitive floor covering (such as vinyl tile or carpet) is used, slabs should be protected by at least a ten-mil-thick polyethylene vapor barrier between the slab and compacted subgrade. Where a vapor barrier is used, it should be protected with two (2) inches of sand placed above the barrier, to reduce the potential for punctures and to aid concrete curing. Polyethylene sheets should be overlapped a minimum of six (6) inches, and should be taped or otherwise sealed.

The two (2) inches of sand placed above the vapor barrier may be omitted in accordance with American Concrete Institute (ACI) recommendation (ACI Publication 302.1R-04), if approved by the owner and the vapor barrier is increased to a thickness of at least 15 mil. However, as pointed out in the current edition of ACI 302, control of the concrete placement, especially as far as slump and water content is extremely critical. ACI 302 indicates that if strict control of the concrete placement is not done, problems with shrinkage, curling, settlement cracking, longer bleeding period and finishing may occur.

Minimum reinforcement of 6" x 6"-#10/#10 wire mesh, or equivalent, properly centered in the middle of the slabs, is recommended. As indicated above, the structural design may require greater thickness and/or reinforcement.

Subgrade soils must be firm and non-yielding prior to placement of concrete.

In hot weather, the contractor should take appropriate curing precautions after placement of concrete to minimize cracking of the slabs. The potential for slab cracking may be lessened by the addition of fiber mesh to the concrete and/or control of the water/cement ratio.

Joints for concrete slabs-on-grade must be carefully designed. Joint spacing is dependent upon slab thickness and concrete properties and should be selected by the structural engineer.

Concrete should be cured by protecting it against loss of moisture and rapid temperature change for at least seven (7) days after placement. Moist curing, waterproof paper, white polyethylene sheeting, white liquid membrane compound, or a combination thereof may be



used after finishing operations have been completed. The edges of concrete slabs exposed after removal of forms should be immediately protected to provide continuous curing.

The above recommendations are based on the results of tests performed on representative site soils. If soils other than those presently encountered within the project site are placed as structural fill within the building pad, the modulus of subgrade reaction should be reevaluated. The final slab design should be based on the actual modulus of subgrade reaction.

12.8 Flexible Asphalt Concrete Pavement Design

An R-value of 18 was obtained from testing of a representative soil sample. At the completion of grading, the R-value of the subgrade soils should be determined and the pavement structural sections should be reevaluated.

Minimum asphalt pavement sections presented in Table No. 4, *Preliminary Asphalt Pavement Sections*, are based on Traffic Indices (TIs) values of 5.0 through 8.0, and a design subgrade R-value of 18.

Table No. 4, Preliminary Asphalt Pavement Sections

Traffic Index (TI)	Minimum Asphalt Thickness (inches)	Minimum Aggregate Base Thickness (inches)
5.0	3.5	6.5
6.0	4.5	8.0
7.0	5.5	9.5
8.0	6.0	12.0

The on-site soils will be mixed during grading and the exposed subgrade soils may be different after grading. The paving sections presented above may have to be revised.

Aggregate base should be compacted to at least 95 percent of the laboratory maximum dry density per ASTM Standard D1557 test method. Crushed aggregate base materials should conform to Sections 200-2.2 of the *Standard Specifications for Public Works Construction* (Greenbook), latest edition. To reduce the potential for premature pavement distress, it is important that final pavement grade be designed such that ponding on or adjacent to the pavements is avoided. Pavement runoff should be directed to a suitable non-erosion drainage device. Landscape irrigation should *not* be allowed to flow into pavement subgrade.

Where asphalt pavements meet concrete or existing pavements, the concrete and/or asphalt should be sprayed with an SS-1 or CSS-1 emulsion. Proper asphalt



compaction next to concrete pavements, curbs and existing pavements is important to provide a relatively impermeable contact between the two materials.

12.9 Soil Corrosivity Evaluation

Converse retained Schiff Associates, to test one (1) bulk soil samples collected from the upper five (5) feet during our investigation. The tests included minimum resistivity, pH, soluble sulfates, and chloride content.

The sulfate content of the sample tested was 63 ppm, which indicated that site soils are "Negligibly" deleterious to concrete. Type II Portland Cement is recommended for the construction of the foundations or slabs.

The chloride content of the sample tested was 30 ppm. The pH value of the site soils was 8.0. The measured value of the minimum electrical resistivity when saturated was 1,560 Ohm-cm. These values indicate a "Corrosive" potential to ferrous metals in contact with these soils.

12.10 Site Drainage

Adequate positive drainage should be provided away from the structures to prevent ponding and to reduce percolation of water into structural backfill. A desirable slope for surface drainage is two (2) percent in landscaped areas and one (1) percent in paved areas.

Planters and landscaped areas adjacent to the building perimeter should be designed to minimize water infiltration into the subgrade soils. Gutters and downspouts should be installed on the roof, and runoff should be directed to the storm drain through non-erosive devices.

13.0 CONSTRUCTION RECOMMENDATIONS

13.1 General

Site soils should be excavatable using conventional heavy-duty excavating equipment. Temporary sloped excavation is feasible if performed in accordance with the slope ratios provided in Section 13.2, *Temporary Excavations*. Existing utilities should be accurately located and either protected or removed as required.

13.2 Temporary Excavations

Based on the materials encountered in the exploratory borings, sloped temporary excavations may be constructed according to the slope ratios presented in Table No. 5, *Slope Ratios for Temporary Excavation*. 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 may have to be constructed at a flatter gradient than presented in the following table.

Table No. 5, Slope Ratios for Temporary Excavation

Maximum Depth of Cut (feet)	Maximum Slope Ratio* (horizontal: vertical)
0 - 4	vertical
4 - 10	1.5:1

*Slope ratio assumed to be uniform from top to toe of slope.

Surfaces exposed in slope excavations should be kept moist but not saturated to retard 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 trench edge. The above maximum slopes are based on a maximum height of six (6) feet of stockpiled soils placed at least five (5) feet from the trench 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.

Temporary shoring is not anticipated for this project. If shoring is required, this office should be contacted for earth pressure recommendations.

14.0 PLAN REVIEW AND CONSTRUCTION INSPECTION SERVICES

This report has been prepared to aid in evaluation of the site, to prepare site-grading recommendations, and to assist the civil/structural engineer in the design of the proposed one-story Day Care Center building site. It is recommended that this office be provided the opportunity to provide final site-grading and design recommendations once the final grading plan is available.

All site grading and earthwork should be completed under the observation and testing of a qualified geotechnical consultant to verify compliance with the recommendations set forth in this report. All ground surfaces should be examined and approved by the project geotechnical consultant prior to placing any fill and/or structure. All footing excavations should be observed prior to placement of steel and concrete to see that footings are founded on satisfactory soil and that excavations are free of loose, disturbed or deleterious materials.



15.0 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.

Design recommendations given in this report are based on the assumption that the earthwork and site grading recommendations contained in this report are implemented. 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.



16.0 REFERENCES

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U. S. GEOLOGICAL SURVEY Riverside West 7.5' Quadrangle, Riverside County, California, dated 1967, photorevised 1980.



APPENDIX A
FIELD EXPLORATION

APPENDIX A

FIELD EXPLORATION

Our field investigation included a site reconnaissance and a subsurface exploration program consisting of drilling soil borings. During the site reconnaissance, the surface conditions were noted and the locations of the borings were established. 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.

Six (6) borings (BH-1 through BH-6) were drilled on May 21, 2009. The borings were drilled using a truck-mounted rig equipped with 8-inch diameter hollow-stem augers for soil sampling. The depths of the borings ranged from 6.5 to 50.5 feet below existing ground surface (bgs). Soils were continuously logged by a Converse 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. Samples are 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. Bulk samples of typical soil types were also obtained.

Standard Penetration Test (SPT) was also performed starting at twenty (20) feet bgs 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 (6) inches for a total of 1.5 feet of sampler penetration are shown on the Logs of Borings in the "BLOWS/6-inch" column. The standard penetration test was performed in accordance with the ASTM Standard D1586 test method.

It should be noted that the exact depths at which material changes occur cannot always be established accurately. Unless a more precise depth can be established by other means, changes in material conditions that occur between drive samples are indicated on the logs at the tip of the next drive sample.

For a key to soil symbols and terminology used in the boring logs, refer to Drawing No. A-1, *Unified Soil Classification and Key to Boring Log Symbols*. For logs of borings, see Drawing Nos. A-2 through A-7, *Logs 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 <small>(LITTLE OR NO FINES)</small>		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
				GP	POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
		GRAVELS WITH FINES <small>(APPRECIABLE AMOUNT OF FINES)</small>		GM	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	CLEAN SANDS <small>(LITTLE OR NO FINES)</small>		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
				SP	POORLY-GRADED SANDS, GRAVELLY SAND, LITTLE OR NO FINES
		SANDS WITH FINES <small>(APPRECIABLE AMOUNT OF FINES)</small>		SM	SILTY SANDS, SAND - SILT MIXTURES
			SC	CLAYEY SANDS, SAND - CLAY MIXTURES	
FINE GRAINED SOILS MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	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
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS LIQUID LIMIT GREATER THAN 50			MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY
				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 <small>(Results shown in Appendix B)</small>		STRENGTH
CLASSIFICATION		
Plasticity	pi	Pocket Penetrometer
Grain Size Analysis	ma	Direct Shear
Passing No. 200 Sieve	wa	Direct Shear (single point)
Sand Equivalent	se	Unconfined Compression
Expansion Index	ei	Triaxial Compression
Compaction Curve	max	Vane Shear
Hydrometer	h	
		Consolidation
		Collapse Test
		Resistance (R) Value
		Chemical Analysis
		Electrical Resistivity

UNIFIED SOIL CLASSIFICATION AND KEY TO BORING LOG SYMBOLS



Converse Consultants

PROPOSED RUBIDOUX DAY CARE CENTER
Approximately 1.5-acre Site
Area of Rubidoux, Riverside County, California
For: Ruhnau Ruhnau Clarke

Project No. **09-81-137-01** Drawing No. **A - 1**

Log of Boring No. BH - 1

Dates Drilled: 5/21/2009 Logged by: CG Checked By: JG
 Equipment: CME 75/ 8" HSA Driving Weight and Drop: 140 lbs / 30 in
 Ground Surface Elevation (ft): 798± 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/ 6"	MOISTURE (%)	DRY UNIT WT. (pcf)	OTHER
			DRIVE	BULK				
5		<u>ALLUVIUM (Qal):</u> <u>SANDY SILT (ML):</u> fine- to medium-grained, trace clay, gray.			13/24/36	16	110	r
		End of boring at 6.5 feet. No groundwater encountered. Borehole backfilled loose with soil cuttings on 5-21-2009.			11/41/30	14	108	



Converse Consultants

PROPOSED RUBIDOUX DAY CARE CENTER
 Approximately 1.5-acre Site
 Area of Rubidoux, Riverside County, California
 For: Ruhnau Ruhnau Clarke

Project No. 09-81-137-01 Drawing No. A - 2

Log of Boring No. BH - 2

Dates Drilled: 5/21/2009 Logged by: CG Checked By: JG
 Equipment: CME 75/ 8" HSA Driving Weight and Drop: 140 lbs / 30 in
 Ground Surface Elevation (ft): 797± 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/ 6"	MOISTURE (%)	DRY UNIT WT. (pcf)	OTHER
			DRIVE	BULK				
5		ALLUVIUM (Qal): SILTY SAND (SM): fine- to coarse-grained, trace gravel to 1" in largest dimension, brown. SANDY SILT (ML): fine-grained sand, brown.	■	■	21/32/45	10	108	ds
		SAND TO SILTY SAND (SP-SM): fine- to medium-grained, gray-brown.	■	■	9/13/32	4	110	
		SAND (SP): fine- to medium-grained, - light brown.	■	■	19/30/50-5"	1	97	
		End of boring at 11.5 feet. No groundwater encountered. Borehole backfilled loose with soil cuttings on 5-21-2009.						



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PROPOSED RUBIDOUX DAY CARE CENTER
 Approximately 1.5-acre Site
 Area of Rubidoux, Riverside County, California
 For: Ruhnau Ruhnau Clarke

Project No. 09-81-137-01 Drawing No. A - 3

Log of Boring No. BH - 3

Dates Drilled: 5/21/2009 Logged by: CG Checked By: JG
 Equipment: CME 75/ 8" HSA Driving Weight and Drop: 140 lbs / 30 in
 Ground Surface Elevation (ft): 797± Depth to Water (ft): 50

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/ 6"	MOISTURE (%)	DRY UNIT WT. (pcf)	OTHER
			DRIVE	BULK				
5	[Diagonal Hatching]	ALLUVIUM (Qal): SANDY CLAY (CL): fine- to medium-grained sand, few gravel to 1" in largest dimension, brown. - fine-grained sand, brown	[Solid Black]	[Cross-hatching]	14/24/37	14	107	max,ei ca,er
10	[Vertical Lines]	SANDY SILT (ML): fine-grained sand, brown. - fine- to medium-grained sand, gray	[Solid Black]		9/23/30	7	109	c
15	[Dotted Pattern]	SAND (SP): fine- to coarse-grained, brown.	[Solid Black]		5/14/22	10	98	
20				[X-Mark]	10/14/26	-	-	
25				[Solid Black]	18/28/37			
30				[Solid Black]	24/42/50-4"	2	108	
				[X-Mark]	50-3"			



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PROPOSED RUBIDOUX DAY CARE CENTER
 Approximately 1.5-acre Site
 Area of Rubidoux, Riverside County, California
 For: Ruhnau Ruhnau Clarke




Project No. **09-81-137-01** Drawing No. **A - 4a**

Log of Boring No. BH - 3

Dates Drilled: 5/21/2009 Logged by: CG Checked By: JG

Equipment: CME 75/ 8" HSA Driving Weight and Drop: 140 lbs / 30 in

Ground Surface Elevation (ft): 797± Depth to Water (ft): 50

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/ 6"	MOISTURE (%)	DRY UNIT WT. (pcf)	OTHER
			DRIVE	BULK				
40		SAND (SP): fine- to coarse-grained, brown.			50-2"	.	.	
45			SAND WITH GRAVEL (SP): fine- to coarse-grained, gravel to 2" in largest dimension, brown.			50-3"	.	.
50		End of boring at 50.5 feet. Groundwater encountered at 50.0 feet below ground surface. Borehole backfilled loose with soil cuttings on 5-21-2009.				50-5"	10	114
						50-5"		






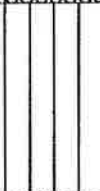

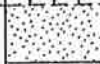

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PROPOSED RUBIDOUX DAY CARE CENTER
Approximately 1.5-acre Site
Area of Rubidoux, Riverside County, California
For: Ruhnau Ruhnau Clarke

Project No. 09-81-137-01 Drawing No. A - 4b

Log of Boring No. BH - 4

Dates Drilled: 5/21/2009 Logged by: CG Checked By: JG
 Equipment: CME 75/ 8" HSA Driving Weight and Drop: 140 lbs / 30 in
 Ground Surface Elevation (ft): 797± 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/ 6"	MOISTURE (%)	DRY UNIT WT. (pcf)	OTHER
			DRIVE	BULK				
5		ARTIFICIAL FILL (Af): SILTY SAND (SM): fine- to coarse-grained, few gravel to 1" in largest dimension and asphalt concrete fragments, brown.			17/27/24	3	121	
10		ALLUVIUM (Qal): SANDY SILT (ML): fine- to medium-grained sand, brown.			18/30/32	8	104	ma
11		SAND (SP): fine- to coarse-grained, brown.			11/14/25	1	103	
		End of boring at 11.5 feet. No groundwater encountered. Borehole backfilled loose with soil cuttings on 5-21-2009.						




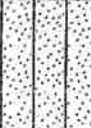
Converse Consultants

PROPOSED RUBIDOUX DAY CARE CENTER
 Approximately 1.5-acre Site
 Area of Rubidoux, Riverside County, California
 For: Ruhnau Ruhnau Clarke

Project No. **09-81-137-01** Drawing No. **A - 5**

Log of Boring No. BH - 5

Dates Drilled: 5/21/2009 Logged by: CG Checked By: JG
 Equipment: CME 75/ 8" HSA Driving Weight and Drop: 140 lbs / 30 in
 Ground Surface Elevation (ft): 798± 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/ 6"	MOISTURE (%)	DRY UNIT WT. (pcf)	OTHER
			DRIVE	BULK				
5		ARTIFICIAL FILL (Af): SILTY SAND (SM): fine- to coarse-grained, few asphalt concrete fragments, brown.	■		6/8/11	3	108	
		ALLUVIUM (Qal): SILTY SAND fine- to coarse-grained, brown	■		4/9/13	4	105	
		End of boring at 6.5 feet. No groundwater encountered. Borehole backfilled loose with soil cuttings on 5-21-2009.						



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PROPOSED RUBIDOUX DAY CARE CENTER
 Approximately 1.5-acre Site
 Area of Rubidoux, Riverside County, California
 For: Ruhnau Ruhnau Clarke


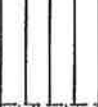




Project No. 09-81-137-01 Drawing No. A - 6

Log of Boring No. BH - 6

Dates Drilled: 5/21/2009 Logged by: CG Checked By: JG

Equipment: CME 75/ 8" HSA Driving Weight and Drop: 140 lbs / 30 in

Ground Surface Elevation (ft): 797± 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/ 6"	MOISTURE (%)	DRY UNIT WT. (pcf)	OTHER
			DRIVE	BULK				
5		ARTIFICIAL FILL (Af):						
		SILTY SAND (SM): fine- to coarse-grained, few gravel to 1" largest dimension, brown.			11/21/32	16	105	
		ALLUVIUM (Qal): SANDY SILT (ML): fine-grained sand with clay, brown.						
		SILTY SAND (SM): fine- to coarse-grained, brown.			16/25/38	6	108	
		End of boring at 6.5 feet. No groundwater encountered. Borehole backfilled loose with soil cuttings on 5-21-2009.						



Converse Consultants

PROPOSED RUBIDOUX DAY CARE CENTER
Approximately 1.5-acre Site
Area of Rubidoux, Riverside County, California
For: Ruhnau Ruhnau Clarke

Project No. 09-81-137-01 Drawing No. A - 7

APPENDIX B
LABORATORY TESTING PROGRAM

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*. 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*.

Expansion Index Test

A representative bulk sample was tested to evaluate the expansion potential of material encountered at the site. The test was conducted in accordance with ASTM Standard D4829. The test result is presented in the following table.

Table No. B-1, Expansion Index Test Result

Boring No.	Depth (feet)	Soil Description	Expansion Index	Expansion Potential
BH-3	0-5'	Sandy Clay (CL)	70	Medium

Soil Corrosivity

Representative soil samples were tested to determine minimum electrical resistivity, pH, and chemical content, including soluble sulfate and chloride concentrations. The purpose of these tests is to determine the corrosion potential of site soils when placed in contact with common construction materials. These tests were performed by Schiff Associates of Claremont, California. Test results are presented in the following table.



Table No. B-2, Corrosivity Test Results

Sample Location (Boring/Depth)	pH	Soluble Sulfate (CA 417) (ppm)	Soluble Chlorides (CA 422) (ppm)	Saturated Resistivity (CA 643) Ohm-cm
BH-3/0-5'	8.0	63	30	1,560

R-value Test

One (1) representative bulk soil sample was tested for resistance value (R-value) in accordance with State of California Standard Method 309-G. This test was designed to provide a relative measure of soil strength for use in pavement design. For the test result, see the following table.

Table No. B-3, R-Value Test Result

Boring No./Depth (feet)	Soil Classification	Measured R-value
BH-1/0-5'	Sandy Silt (ML)	18

Grain-Size Analysis

To assist in classification of soils, mechanical grain-size analysis was performed on one (1) selected sample. Testing was performed in general accordance with the ASTM Standard D422 test method. The grain-size curve is shown in Drawing No. B-1, *Grain Size Distribution Results*.

Maximum Dry Density Test

Laboratory maximum dry density-moisture content relationship test was performed on a representative bulk sample. The test was conducted in accordance with ASTM Standard D1557 laboratory procedure. The test result is presented on Drawing No. B-2, *Moisture-Density Relationship Results*.

Direct Shear

One (1) direct shear test was performed on this project. All samples were tested under soaked moisture conditions. For this 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 sample was then sheared at a constant strain rate of 0.01 inch/minute. Shear deformation was recorded until a maximum of about 0.25-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 No. B-3, *Direct Shear Test Results*, and in the following table.

Table No. B-4, Direct Shear Test Results

Boring No.	Depth (feet)	Test Conditions	Soil Classification	Peak Strength Parameters	
				Cohesion (psi)	Friction Angle (degrees)
BH-2	2.0-3.5	Native	Sandy Silt (ML)	200	26

*Apparent Cohesion was not used in engineering analysis

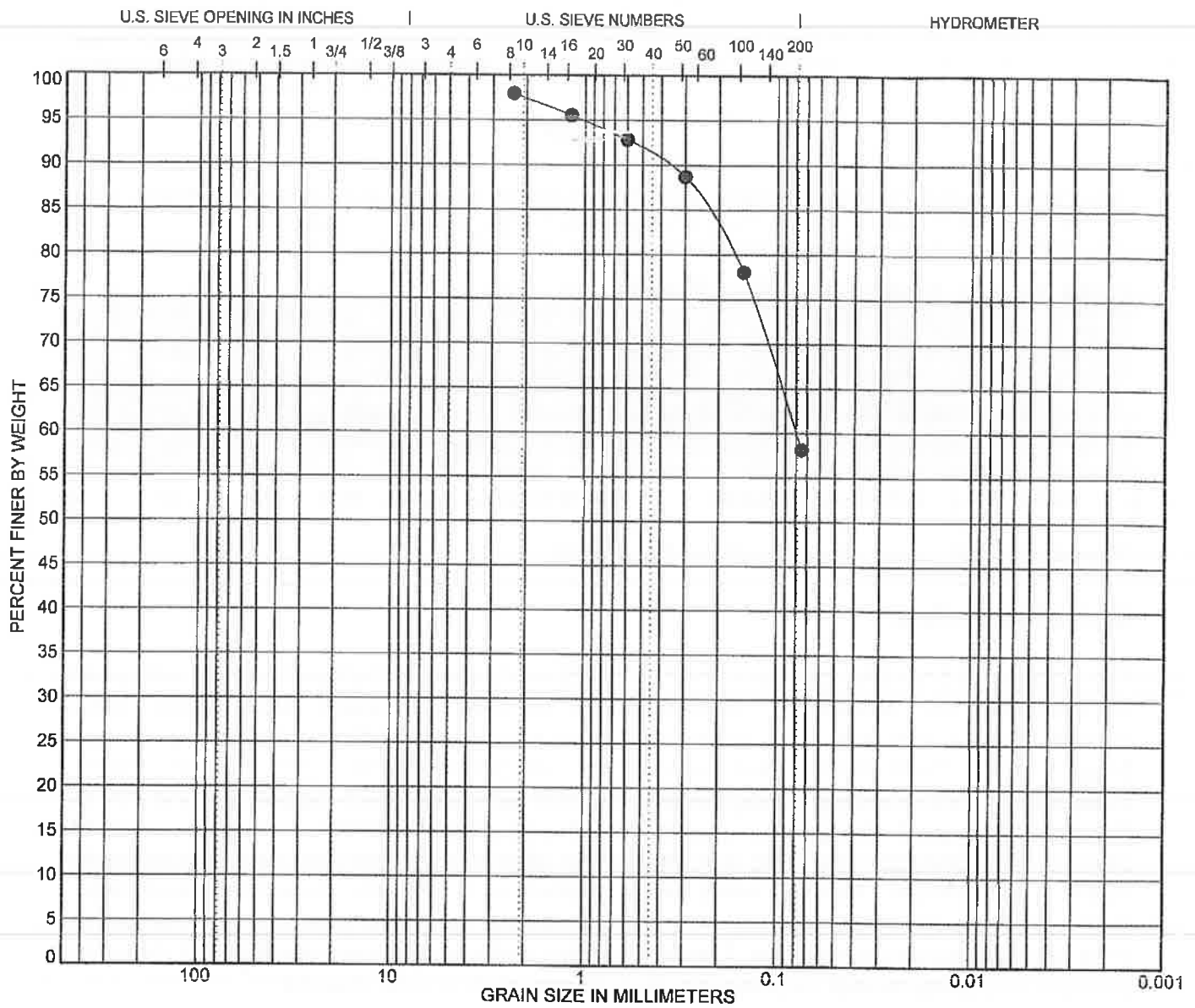
Consolidation Test

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 samples were tested at field and submerged conditions. The test results, including sample density and moisture content, are presented in Drawing No. B-4, *Consolidation Test Results*.

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.





COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Boring No.	Depth (ft)	Description					LL	PL	PI	Cc	Cu
● BH - 4	5.0-6.5	SANDY CLAY (CL)									
Boring No.	Depth (ft)	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay		
● BH - 4	5.0-6.5	2.36	0.08			0.0	39.8	58.1			

GRAIN SIZE DISTRIBUTION RESULTS

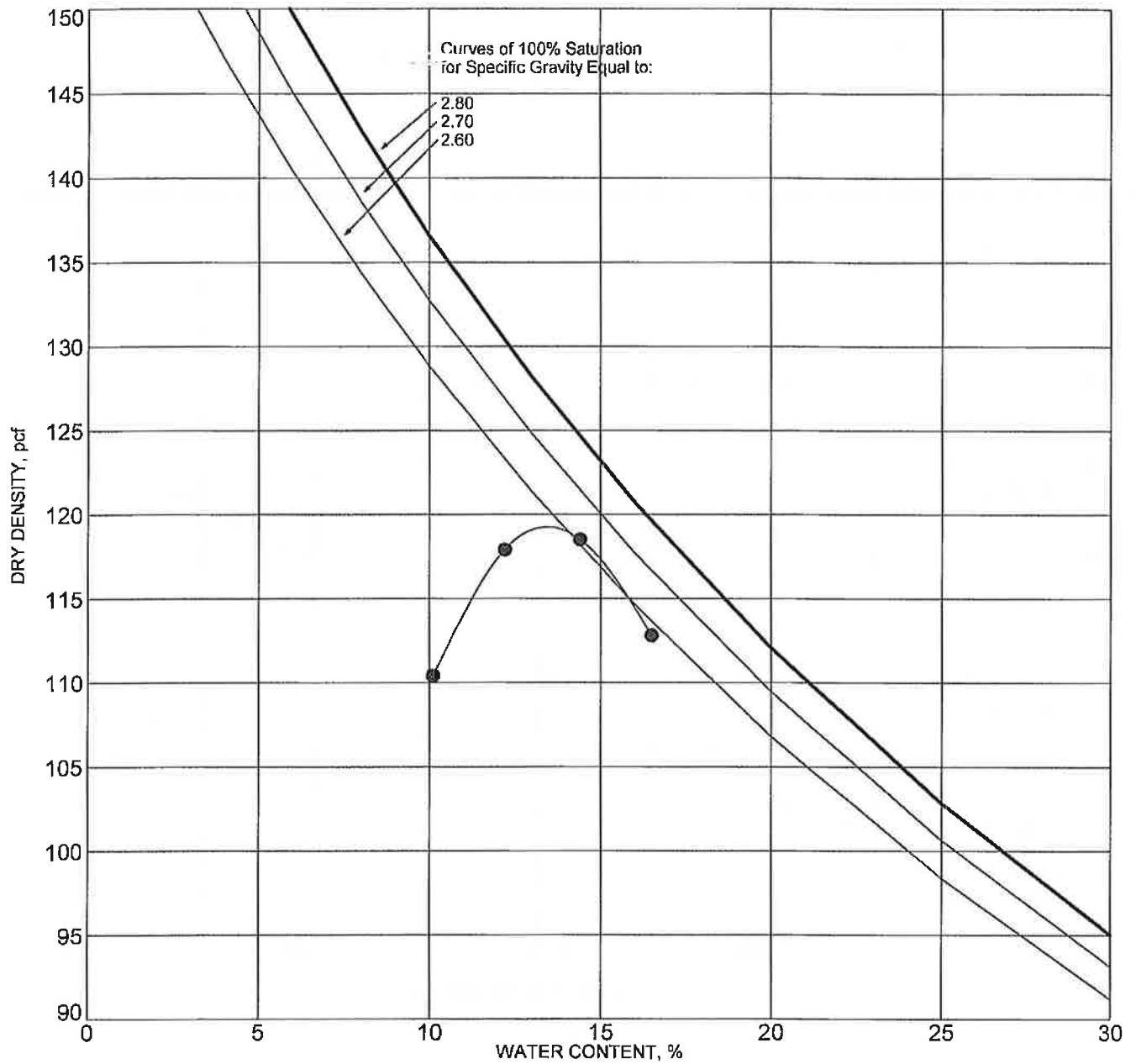


Converse Consultants

PROPOSED RUBIDOUX DAY CARE CENTER
 Approximately 1.5-acre Site
 Area of Rubidoux, Riverside County, California
 For: Ruhnau Ruhnau Clarke

Project No.
09-81-137-01

Drawing No.
B-1



SYMBOL	BORING NO.	DEPTH (ft)	DESCRIPTION	ASTM TEST METHOD	OPTIMUM WATER, %	MAXIMUM DRY DENSITY, pcf
●	BH - 3	0-5	SANDY CLAY (CL), brown	D1557 - A	13.5	119.5

MOISTURE-DENSITY RELATIONSHIP RESULTS

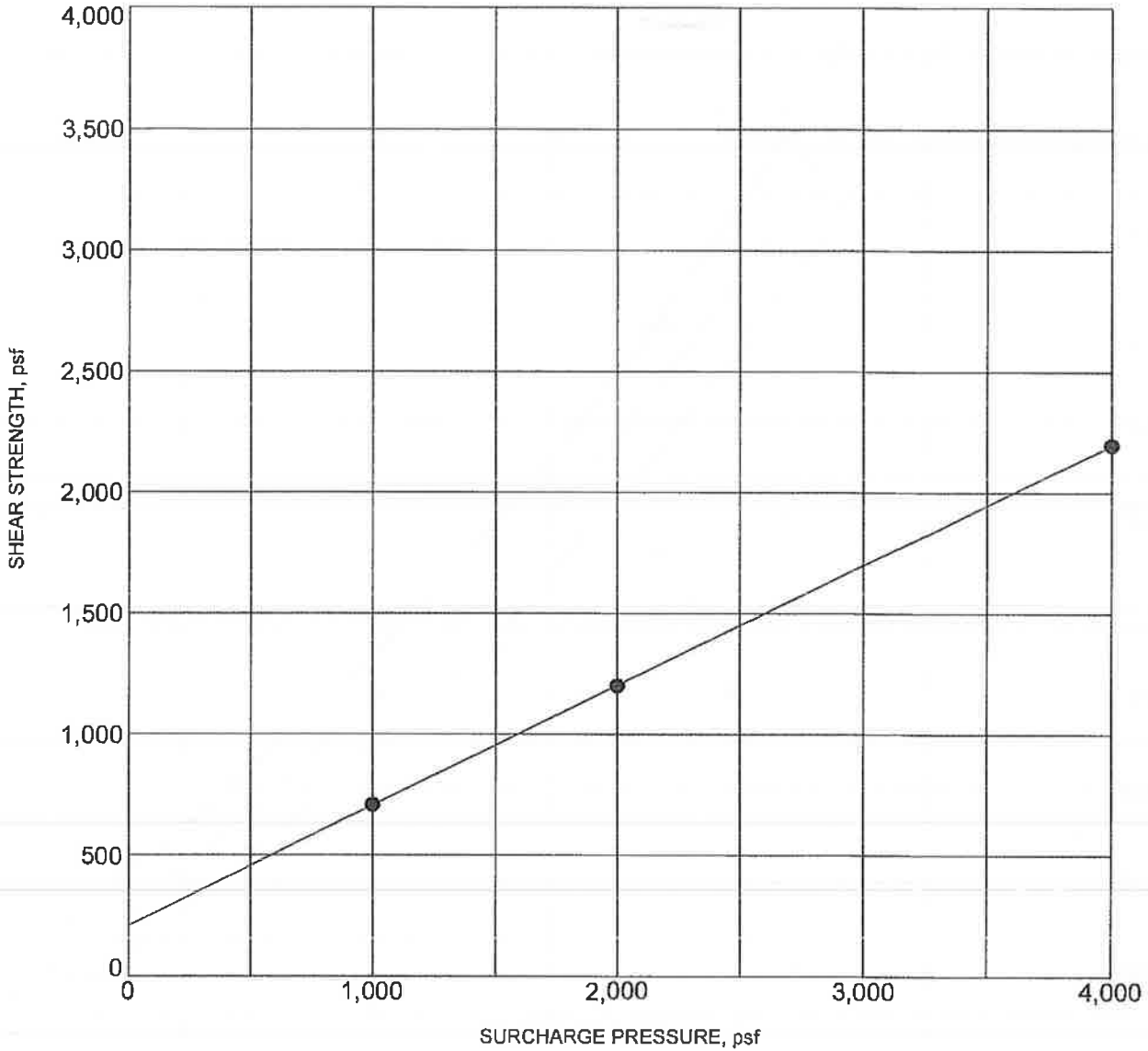


Converse Consultants

PROPOSED RUBIDOUX DAY CARE CENTER
 Approximately 1.5-acre site
 Area of Rubidoux, Riverside County, California
 For: Ruhnau Ruhnau Clarke

Project No.
 09-81-137-01

Drawing No.
 B - 2



BORING NO. :	BH - 2	DEPTH (ft) :	2.0-3.5
DESCRIPTION :	SANDY SILTY (ML)		
COHESION (psf) :	200	FRICTION ANGLE (degrees):	26
MOISTURE CONTENT (%) :	108.1	DRY DENSITY (pcf) :	10.0

NOTE: Ultimate Strength.

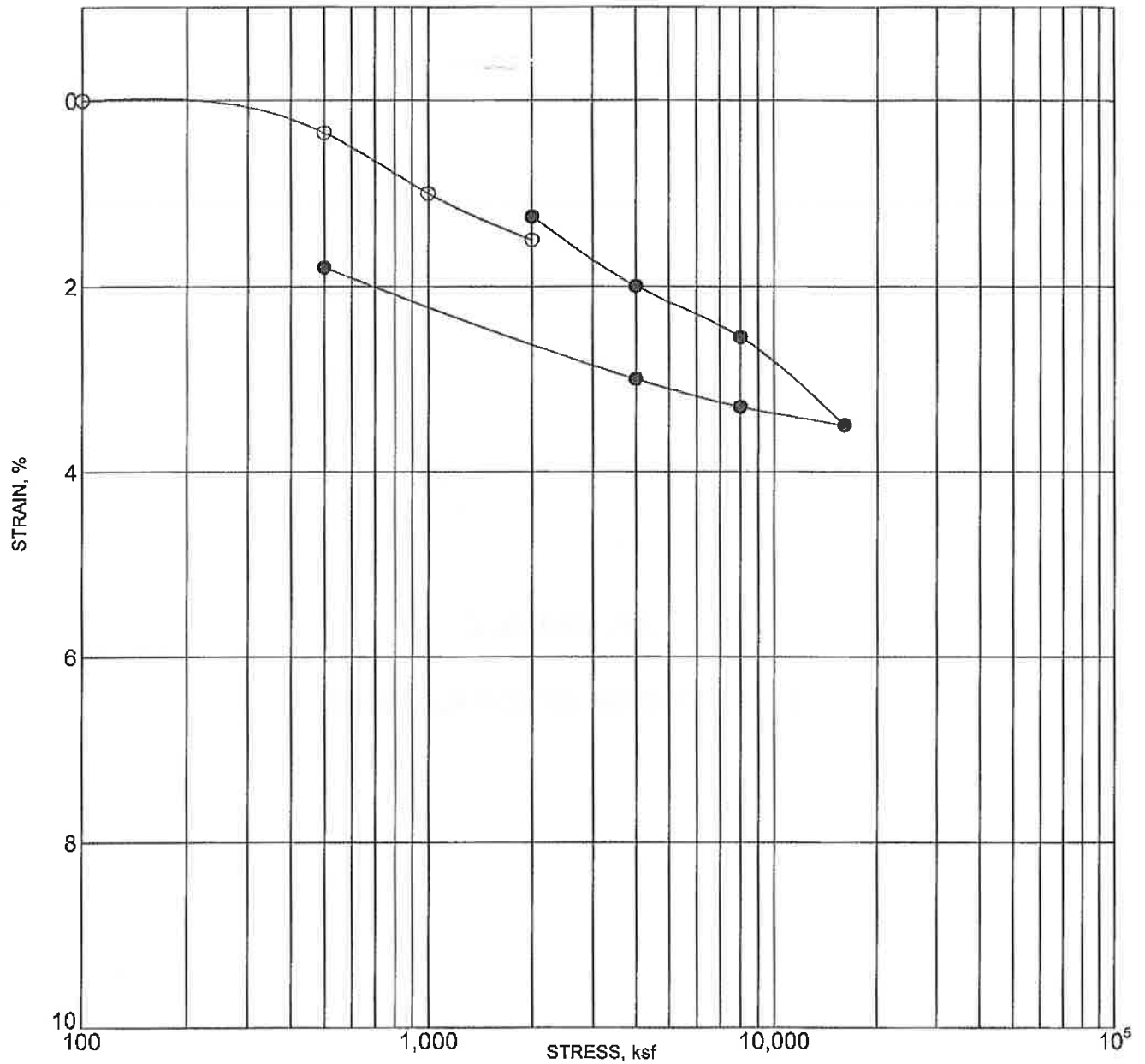
DIRECT SHEAR TEST RESULTS



Converse Consultants

PROPOSED RUBIDOUX DAY CARE CENTER
 Approximately 1.5-acre Site
 Area of Rubidoux, Riverside County, California
 For: Ruhnau Ruhnau Clarke

Project No. Drawing No.
 09-81-137-01 B - 3



BORING NO. :		BH - 3		DEPTH (ft) :		5.0-6.5	
DESCRIPTION :		SANDY SILT (ML)					
	MOISTURE CONTENT (%)		DRY DENSITY (pcf)		PERCENT SATURATION		VOID RATIO
INITIAL	6.9		108.9		36		0.515
FINAL	17.8		110.9		100		0.487

NOTE: SOLID CIRCLES INDICATE READINGS AFTER ADDITION OF WATER

CONSOLIDATION TEST RESULTS



Converse Consultants

PROPOSED RUBIDOUX DAY CARE CENTER
 Approximately 1.5-acre Site
 Area of Rubidoux, Riverside County, California
 For: Ruhanu Ruhnau Clarke

Project No.
09-81-137-01

Drawing No.
B - 4

APPENDIX C
EARTHWORK SPECIFICATIONS

APPENDIX C

EARTHWORK SPECIFICATIONS

C1.1 Scope of Work

The work includes all labor, supplies and construction equipment required to construct the one-story Day Care Center building pad and associated pavement 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
- ◆ Trench Backfill
- ◆ Observation and Testing

C1.2 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 *Preliminary Geotechnical Investigation 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.

C1.3 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.

C1.4 Site Clearing

1. Clearing and grubbing shall consist of the removal from building areas to be graded of all existing pavement, utilities, and vegetation.
2. Organic materials resulting from the clearing and grubbing operations shall be hauled away from the areas to be graded.

C1.5 Excavations

1. Based on observations made during our field explorations, the surficial soils can be excavated with conventional earthwork equipment.

C1.6 Preparation of Fill Areas

1. All organic material, organic soils, incompetent alluvium and debris should be removed from the proposed building area.
2. 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. All loose, soft or disturbed earth materials should be removed from the bottom of excavations before placing structural fill. 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 twelve (12) inches, the soil moisture adjusted to within three (3) percent of optimum moisture content for coarse-grained soils, above two (2) percent of optimum moisture content for fine-grained soils, then compacted to at least 90 percent 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.

C1.7 Placement and Compaction of Fill

1. Compacted fill placed for the support of footings, slabs-on-grade, exterior concrete flatwork, and parking areas 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.
 - b. Imported fill materials shall have an Expansion Index (EI) less than 20. All imported fill should be compacted to at least 90 percent of the laboratory maximum dry density (ASTM Standard D1557) to within three (3) percent of optimum moisture content for granular soils.
3. 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.
4. All fill placed at the site shall be compacted to at least 90 percent of the laboratory maximum dry density as determined by ASTM Standard D1557 test method. The soil should be moisture adjusted and mixed to within three (3) percent of optimum moisture content for coarse-grained soils or above two (2) percent of optimum moisture content 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 at least 95 percent of the laboratory maximum dry density.

5. 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.
6. 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 test method.
7. 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.
8. 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.

C1.8 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 of 90 percent of the laboratory maximum dry density 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 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 moisture adjusted and mixed to within three (3) percent of optimum moisture content for coarse-grained soils, above two (2) percent of optimum moisture content for 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.

C1.9 Observation and Testing

1. During the process 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.
4. 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 place.



APPENDIX D
LIQUEFACTION AND SETTLEMENT ANALYSES

APPENDIX D

LIQUEFACTION AND SETTLEMENT ANALYSES

The subsurface data obtained from exploratory borings were used to evaluate the liquefaction potential of the subject site. The Logs of Borings are presented in Appendix A, *Field Exploration*.

Liquefaction analyses were performed using the SPT data collected from boring BH-3 in accordance with the method suggested in Special Publication No. 117A and methods published by Southern California Earthquake Center (March 1999). An earthquake magnitude of M7.5 and peak ground acceleration (PGA) of 0.6g, where g is the acceleration due to gravity, was selected for this analysis. PGA was calculated equal to $S_e/2.5$ per ASCE Standard 7-05 (2006) and CBC (2007). Groundwater level at 17 feet was used in this analysis.

Analysis for seismically induced settlement for the proposed site was performed utilizing SPT data in the LiquefyPro computer program, version 5.2E. Tokimatsu and Seed (1987) present a simplified method for the evaluation of settlement in granular soil due to earthquake loading.

In general, the analysis indicates that a low potential for liquefaction may occur within the proposed site. The dynamic settlement is expected to be negligible. Plate D-1 shows the results of the liquefaction analysis.

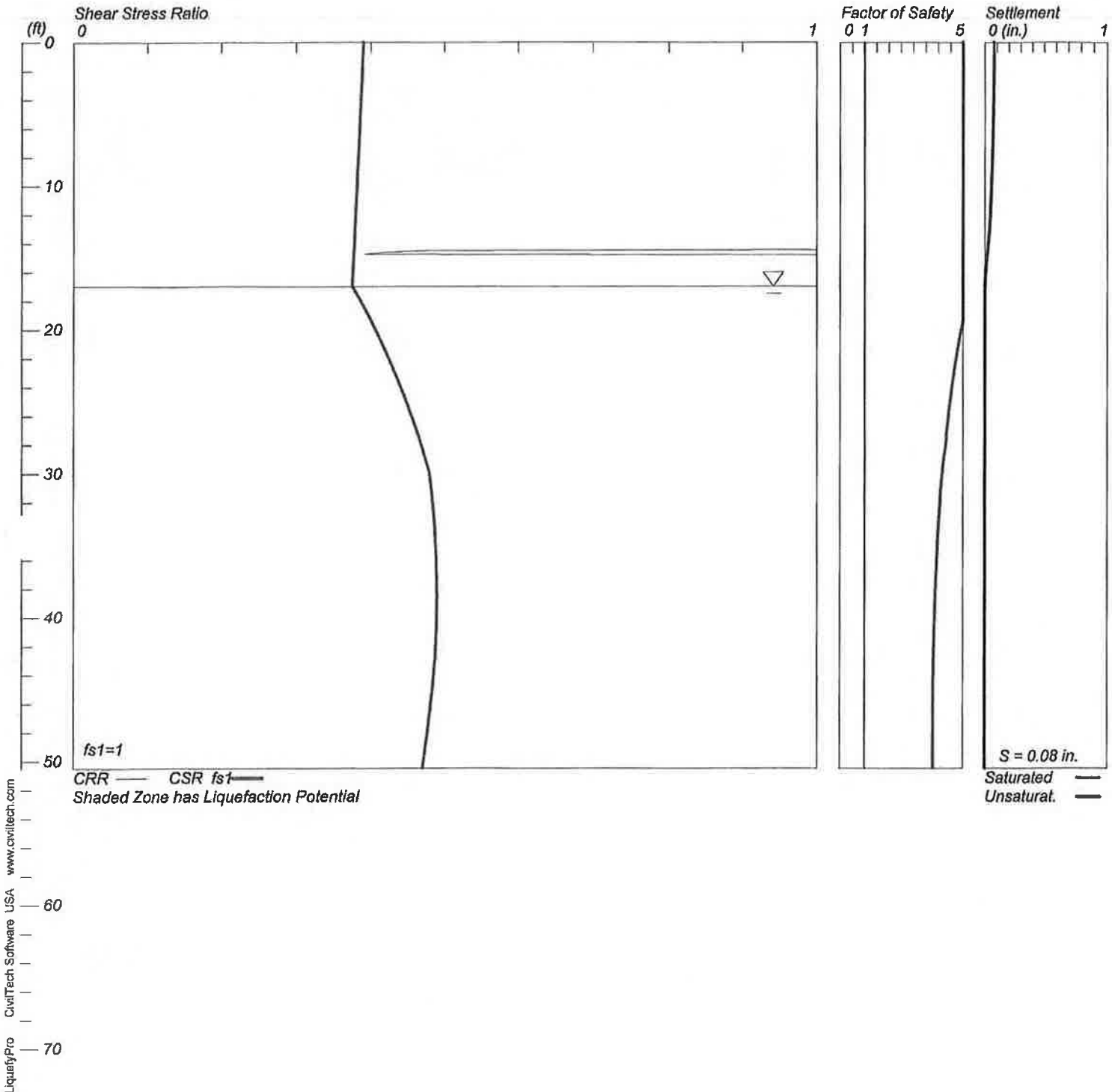


LIQUEFACTION ANALYSIS

PROPOSED RUBIDUOX DAY CARE CENTER

Hole No.=BH-3 Water Depth=17 ft Surface Elev.=797±

Magnitude=7.5
Acceleration=0.6g



LiquefyPro CiviTech Software USA www.civitech.com

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NOTICE INVITING BIDS

The Redevelopment Agency for the County of Riverside, herein called Owner, invites sealed proposals for the construction of:

A Child Development Center including site work, on-site driveway and storage yard, site utilities, and off-site improvements as shown on Drawings and Specifications.

Proposals shall be delivered to the Clerk of the Board, County of Riverside 4080 Lemon Street, 1st Floor, Riverside, CA 92501, not later than _____ to be promptly opened in public at said address.

Each proposal shall be in accordance with Plans, Specifications and other Contract Documents dated February 2, 2011 and prepared by Ruhnau, Ruhnau, Clarke, whose address is 3775 Tenth Street, Riverside CA 92501. The Plans, Specifications and other Contract Documents may be obtained at A&I Reprographics, 898 Via Lata, Colton, CA 92324 ph:(800) 233-8435 for a NON-REFUNDABLE charge for each set of plans and specifications picked up or a request can be sent via email bid@aandirepro.com. Bidders requesting that sets be mailed be mailed or shipped to them will be charged the full cost of shipping. Make checks payable to A&I Reprographics.

In Compliance with California Public Contract Code, Section 20103.7 electronic copies will be made available to contractor plan services upon their request.

The Contract General Conditions for this project will contain provisions allowing successful contractor to substitute securities for monies withheld by the Agency to ensure performance (Public Contract Code 22300. A Performance Bond and Payment Bond shall be required for this Project.

Pursuant to the Labor Code, the Governing Board of the Owner has obtained from the Director of Industrial Relations, State of California, his determinations of general prevailing rates of per diem wages applicable to the work, and for holiday and overtime work, including employee payments or health and welfare, pension, vacation and similar purposes, as set forth on schedule which is on file at the principal office of the Owner, and which will be made available to any interested person upon request.

To be considered, a potential bidder must have a Class B license, as required under provisions of the Public Contracts Code Section 3300, and the California Business and Professions Code, for work covered in its proposal when a bid is submitted. This includes a joint venture formed to submit a bid.

REDEVELOPMENT AGENCY FOR THE COUNTY OF RIVERSIDE

Clerk of the Board

By: _____
Deputy

Dated:

INSTRUCTIONS TO BIDDER

- A. **FORM OF THE PROPOSAL:** The proposal must be made on the attached Contractors Proposal form, which must be filled out completely, dated and signed by the bidder or duly authorized agent in accordance with the directions on the Proposal form.

Each proposal shall include a complete list of the subcontractors proposed for every portion of the work, in accordance with Public Contract Code Sections 4100 - 4114, inclusive.

- B. **SUBMISSION OF PROPOSAL:** Signed copies of each Proposal shall be sealed in an opaque envelope. The envelope shall bear the bidders name and shall be marked:

*PROPOSAL FOR THE CONSTRUCTION OF
Rubidoux Child Development Center
3865 Riverview Drive
Riverside, CA 92509

Proposals shall be submitted at the place designated in the Notice Inviting Construction Bids at, or before, the time specified in said Notice. Before that time a proposal may be withdrawn, but only in person by the bidder or someone authorized by him in writing, and not by telephone or telegram.

- C. **INTERPRETATION OF THE DOCUMENTS:** Discrepancies in and omissions from the plans, specifications or other contract documents, or questions as to their meaning shall, at once, be brought to the attention of the Architect. Any interpretation of the documents will be made only by addenda duly issued and a copy of such addenda will be mailed or delivered to each person or firm receiving a set of such documents. The Owner will not be responsible for any explanations or interpretations. Should anything in the scope of the work or any of the sections of the specifications be of such nature as to be apt to cause disputes between the various trades involved, such information shall be promptly called to the attention of the Architect.
- D. **ADDENDA TO THE DOCUMENTS:** The Owner reserves the right to issue such addenda to the documents as it may desire at any time prior to the time fixed for receiving proposals. A copy of all such addenda will be promptly mailed or delivered to each bidder. The number and date of each addendum shall be listed on the Contractors Proposal in the space provided.
- E. **SITE EXAMINATION**
1. Examine the project site before submitting a bid.

F. MANDATORY PREBID CONFERENCE

1. A bidders conference has been scheduled for _____ a.m. on the _____ day of _____ at the location of project site.
2. All general contractors, subcontractors and suppliers are invited.
3. Representatives of Architect will be in attendance.
4. Information relevant to the Bid Documents will be recorded in an Addendum, then issued to Bid Document recipients.

G. OWNERS RESERVATION OF RIGHTS: The Owner reserves the right to reject any or all proposals and to waive any informalities in a bid or in the bidding. No bidder may withdraw his bid for a period of sixty (60) days after the time set or the opening thereof.

H. BIDDERS CHECK OR BOND: Each proposal must be accompanied by a certified or cashiers check, or by a bid bond on the form supplied by the Owner, drawn in favor of the Owner in an amount not less than ten percent (10%) of the total proposal. This check or bond shall be given as a guarantee that the bidder, if awarded the contract, will execute and deliver the contract documents and the required Payment & Performance bonds in accordance with his proposal accepted by the Owner.

In default of execution of the contract upon award and/or delivery of said Payment and Performance Bonds, such proposal bond or check shall be held subject to payment to the Owner of the difference in money between the amount of the bidders proposal and the amount for which the Owner may legally contract with another party to perform the said work together with the costs to the Owner of redrafting, redrawing and publishing documents and papers necessary to obtain new bids on the said work. The check or bond shall, in addition, be held subject to all other damages suffered by the Owner, as set forth in the contract documents. Said check or bond will be returned upon the close of the period mentioned in Paragraph E above, and to the successful bidder upon execution o the contract documents.

NO BONDS WILL BE ACCEPTED UNLESS SUBMITTED ON FORM SUPPLIED BY OWNER.

- I. AWARD OF CONTRACT: The contract shall be awarded upon a resolution or minute order to that effect duly adopted by the governing board of the Owner. Execution of the contract documents shall constitute a written memorial thereof.
- J. ADDITIONAL INFORMATION: The Owner reserves the right to require of a bidder information regarding financial responsibility or such other information as the Owner determines is necessary to ascertain whether a bid is in fact the lowest responsible bid submitted. All references to an Architect shall be deemed to refer to the Owner where no Architect has been employed by the Owner.
- K. PROMPT ACTION BY CONTRACTOR: After the award of the Contract by the Owner, and within four (4) days after the Agreement Forms are presented to the Contractor for signing, he shall return to the Owner the signed Agreements, along with all necessary Bonds and Certificates of Insurance.
- L. CAUTION TO BIDDERS: Prospective bidders are cautioned not to merely examine the plans and specifications in making their bid, since requirements are imposed

upon the contractor by various other portions of the Contract Documents.

- M. **PERFORMANCE AND PAYMENTS BONDS:** Bidders attention is directed to the requirement that both the Performance and Payment Bonds are one hundred percent (100%) of the contract price.
- N. **BIDDERS QUALIFICATIONS:** To be considered, a potential bidder must have a Class B License, as required under provisions of Public Contracts Code Section 3300, and the California Business and Professions Code, for work covered in its proposal when a bid is submitted. This includes a joint venture formed to submit a bid.
- O. **TIME OF COMPLETION:** Time of completion of project is two hundred thirty (230) calendar days from the date specified in the NOTICE TO PROCEED issued by the Owner.
- P. **BIDS:** Under the bidding items listed on Contractors Proposal, bidders shall state prices for each bases for bid given herein after:
 - 1. Base Bid shall be the entire work complete in accordance with the drawings and specifications.

CONTRACTORS PROPOSAL

TO THE GOVERNING BOARD OF
THE
REDEVELOPMENT AGENCY
FOR THE COUNTY OF RIVERSIDE

Date _____

Bidder

The undersigned, having carefully examined the proposed site and the Plans and Specifications, the Notice Inviting Bids, the Instructions to Bidders, the Agreement Form, the Bond Forms, the General Conditions and the Supplementary General Conditions for the Rubidoux Child Development Center, 3865 Riverview Drive, Riverside, CA 92509, hereby proposes and agrees to furnish all tools, equipment, services, apparatus, facilities, transportation, labor and materials necessary to complete the construction in strict conformity with the Plans and Specifications, including all work specified in Addenda numbered and dated:

Addendum No. _____ Date

Addendum No. _____ Date

Addendum No. _____ Date

for the total sum, including all applicable taxes, permits and licenses as follows:

Base Bid (with Course of Construction insurance) \$ _____

Course of Construction Insurance Amount \$ _____

Course of Construction Insurance Deductible \$ _____

The determination of the low bidder will be based on the Base Bid with Course of Construction insurance. Bids must be submitted on all items. Failure to bid on all items may result in the bid being rejected as non-responsive.

AWARD OF CONTRACT

The undersigned fully understands that a Contract is formed upon the acceptance of this proposal by the Owner, and the undersigned further agrees that upon request he will promptly execute and deliver to Owner a written memorial of the Contract together with the required labor and material and performance bonds.

BID GUARANTEE

The enclosed certified or cashier's check or bidder's bond on approved form, made payable to the Owner, in the amount of ten percent (10%) of the total bid submitted herewith, is hereby given as guarantee that the bidder will execute and deliver the above mentioned written memorial and required bonds if awarded the contract, and in the event that the undersigned fails or refuses to execute and deliver said documents, such check or bond is to be charged with the costs of the damages experienced by the Owner as a result of such failure or refusal, including, but not limited to publication costs, the difference in money between the amount of the bid of the said principal and the amount for which obligee may legally contract with another party to perform the said work if such amount be in excess of the former, building lease or rental costs, transportation costs and additional salary costs that result from the delay due to the principal's default on the awarded contract. In no event, however, shall the Surety's liability exceed the penal sum hereof.

Name of Bidder _____

Type of Organization _____

Signature _____

Title of Signer _____

Address of Bidder _____

Telephone Number _____

Contractor's License _____

Classification _____

If bidder is a corporation, and signer is not President or Secretary, attach certified copy of Bylaws or resolution authorizing execution. If bidder is a corporation, affix corporate seal. If signer is an agent, attach Power of Attorney. If bidder is not an individual, list names of other persons authorized to bind the organization.