REQUEST FOR PROPOSALS (RFP)
Specification No. 18-11209-C
FOR
Cazadero Camp Jensen Dormitory Replacement Design
PROPOSALS WILL NOT BE OPENED AND READ PUBLICLY

Dear Proposer:

The City of Berkeley is soliciting written proposals from qualified firms or individuals for the design of the Jensen Dormitory Replacement Project as a Request for Proposal (RFP) this is not an invitation to bid and although price is very important, other factors will be taken into consideration.

The project scope, content of proposal, and vendor selection process are summarized in the RFP (attached). Proposals must be received no later than 2:00 pm, on Tuesday, December 11, 2018. All responses must be in a sealed envelope and have “Jensen Dorm Design” and Specification No. 18-11209-C clearly marked on the outer most mailing envelope. Please submit one (1) unbound original and (2) unbound copies of the proposal as follows:

Mail or Hand Deliver To:
City of Berkeley
Finance Department/General Services Division
2180 Milvia Street, 3rd Floor
Berkeley, CA 94704

Proposals will not be accepted after the date and time stated above. Incomplete proposal or proposals that do not conform to the requirements specified herein will not be considered. Issuance of the RFP does not obligate the City to award a contract, nor is the City liable for any costs incurred by the proposer in the preparation and submittal of proposals for the subject work. The City retains the right to award all or parts of this contract to several bidders, to not select any bidders, and/or to re-solicit proposals. The act of submitting a proposal is a declaration that the proposer has read the RFP and understands all the requirements and conditions.

For questions concerning the anticipated work, or scope of the project, please contact Liza McNulty, Capital Improvement Program Manager, via email at LMcNulty@cityofberkeley.info no later than November 28, 2018. Answers to questions will not be provided by telephone or email. Rather, answers to all questions or any addenda will be posted on the City of Berkeley’s site at http://www.cityofberkeley.info/ContentDisplay.aspx?id=7128. It is the vendor’s responsibility to check this site. For general questions concerning the submittal process, contact purchasing at 510-981-7320.

We look forward to receiving and reviewing your proposal.

Sincerely,

Shari Hamilton
General Services Manager
I. SUMMARY

Cazadero Camp located in Cazadero, California is owned by the City of Berkeley, and straddles Austin Creek in Sonoma County. In April, 2016, a landslide at Cazadero Camp destroyed the Jensen Dormitory. The City has completed the repair of the landslide itself, and now is undertaking the replacement of the Jensen Dormitory building.

Jensen Dormitory was a two-story structure, originally constructed in about 1970. The second floor consisted of a 48-foot long, 15-foot wide structure, with an attached 48-foot long, 10-foot wide deck. The enclosed ~720 square foot (SF) second floor consisted of four bedrooms (each opening directly onto the deck) and one communal restroom (2 toilets, 1 shower, 1 sink). The first floor consisted of two storage spaces – one, an enclosed, concrete floored storage room constructed under the second level deck, and second, a storage/crawl space under the main structure with a sloped, earthen floor. The Jensen Dormitory site is highly constrained by trees, existing buildings and decking, and the reconstructed hillside slope and retaining wall. The building site itself is outside of the 100-year Special Flood Hazard Area (SFHA) for Austin Creek, however much of the property is within the 100-year SFHA, and therefore relocation of the structure elsewhere on site is not proposed.

The City does not have as-built plans for the pre-landslide Jensen Dormitory, however plans for similar structures constructed in the same time period are available (see Attachment I, ‘Framing Detail’ and ‘Second Floor Plan’). The goal of the Jensen Dormitory Replacement Project (Project) is to design a new Jensen Dormitory structure to replace the destroyed structure. The replacement structure shall be designed to replicate the pre-landslide structure size, layout, function, materials and finishes except where code compliance requires modifications to the pre-landslide structure. The Project is anticipated to require an exterior ramp to provide accessible access to the finished second floor. Connection to adjacent water, wastewater, and electrical utilities is required. Refer to the basemap (Attachment J) for the location of these utilities.

Permitting for the Project is included in the scope, and will be through the City of Berkeley Planning Department. A Draft Geotechnical Report for the Jensen Dormitory Replacement Design is available, and attached to this RFP (Attachment K). Representative photos of the Jensen Dormitory prior to its demolition are attached (Attachment L).

A site visit to the Project location will occur on Monday, November 26th at 11 am. This site visit is not mandatory, however an RSVP in advance is required to receive detailed address and meeting location information. RSVP to Project Manager Liza McNulty via email to LMcNulty@cityofberkeley.info.

II. SCOPE OF SERVICES

Task 1: Data Review and Collection
Design Consultant will review existing information, including but not limited to:
- Draft Geotechnical Report (attached)
- Base Map (PDF attached, CAD available)
- Photos of As Was Jensen Dormitory (partial record attached)
- Applicable codes and ordinances impacting the structure (permitting shall be via the City of Berkeley planning department).

This task includes one site visit to Cazadero Camp, and one meeting with City of Berkeley Planning Department.

Task 2: Basis of Design
Design Consultant will provide a basis of design report that describes the scope of the reconstructed Jensen Dormitory. This Report shall include conceptual plan and elevation drawings, and general, architectural, structural, mechanical, fire protection and electrical descriptions, including wall, floor and roof assemblies, interior and exterior materials and finishes. Where code compliance requires deviation from the documented pre-landslide building shall be specifically identified. Assumptions or uncertainties within the basis of design scope shall be specifically identified. This task does not include cost estimating. This task includes any site visits required to Cazadero Camp required for development of the Basis of Design.
Task 3: 60% Detailed Design
Develop and submit 60% Plans and Technical Specifications for the building reconstruction, including related accessibility improvements (anticipated to include exterior ramp) and utility tie-ins. Submittal shall include drawings, specifications, equipment information, and cost estimate. Plans anticipated to include:

- Building location site plan
- Floor Plan
- Roof Plan
- Building Elevation
- Building Sections
- Typical Wall Sections
- Interior and exterior details including window and door selections and related schedules
- Finish Schedule
- Utility Plans, Connections and Details
- Foundation Plans
- Roof and Framing Plans
- Mechanical Plans
- Plumbing Plans
- Electrical Plans
- Fire Protection Plans if/as required

This task includes one meeting with City of Berkeley Planning Department to address any questions not resolved during prior tasks.

Task 4: Permit Submittal (90% Detailed Design)
Advance design documentation to the 90% level. This task includes preparation of permit submittal package and completion of City of Berkeley permit application materials. Prepare drawings, reports and calculations required for permit plan checks, including but not limited to:

- Building plans and technical specifications, including plumbing, mechanical and electrical
- Storm Water Pollution Prevention Plan (SWPPP)
- Structural Calculations Report
- Title 24 Energy Documentation
- Calgreen Checklist

Task 5: Bid Plans (100% Detailed Design)
Advance design documents and technical specifications to the 100% CD level for coordination and bidding. This task includes incorporation of permit plan check comments into plans, specifications and supporting calculations and reporting as applicable.

Task 6: Bid Support Services
Attend pre-bid site visit at Cazadero Camp. Assist the City in responding to bidders questions during the bid period, including preparation of addenda and revised drawings as needed. Prepare a final conformed set of stamped construction contract documents that includes all addenda and bid period revisions.

Task 7: Construction Support Services
Review and respond to contractor submittals and requests for information, including attendance at site meetings during construction (pre-construction conference, and at key points during Project construction). Prepare final conformed as-built drawings and documentation based on contractor submittals and plan mark ups.

III. SUBMISSION REQUIREMENTS
All proposals shall include the following information, organized as separate sections of the proposal. The proposal should be concise and to the point.

1. **Contractor Identification:**

   Provide the name of the firm, the firm's principal place of business, the name and telephone number of the contact person and company tax identification number.

2. **Client References:**

   Provide a minimum of three client references. References should be California cities or other large public sector entities. References that relate to the relevant experience presented in the proposal (see #4) are preferred. Provide the designated person's name, title, organization, address, telephone number, and the project(s) that were completed under that client’s direction.

3. **Schedule:**

   The City desires to advertise and begin construction of the Jensen Dormitory Replacement Project in 2019, which requires an accelerated schedule for design development. Assuming a notice to proceed of February 11, 2019, as indicated below, develop and submit a schedule for the scope of work described herein. Clearly state assumptions regarding City and permit review periods.

4. **Relevant Experience:**

   The proposal shall include a summary of relevant experience that reflects at least three projects with a similar scale and scope as the Jensen Dormitory Replacement Project. In particular, relevant experience related to code analysis and documentation, projects involving insurance claims, and the design of structures to replace or restore damaged buildings is desired.

5. **Price Proposal:**

   The proposal shall include pricing for all services in a separate sealed envelope. Pricing shall be all inclusive unless indicated otherwise on a separate pricing sheet. The Proposal shall itemize all services, including hourly rates for all professional, technical and support personnel, and all other charges related to completion of the work shall be itemized. Price will not be considered in award of the proposal, but will serve as the basis for the contractual scope and fee.

6. **Contract Terminations:**

   **If your organization has had a contract terminated in the last five (5) years, describe such incident.** Termination for default is defined as notice to stop performance due to the vendor’s non-performance or poor performance and the issue of performance was either (a) not litigated due to inaction on the part of the vendor, or (b) litigated and such litigation determined that the vendor was in default.

   Submit full details of the terms for default including the other party’s name, address, and phone number. Present the vendor’s position on the matter. The City will evaluate the facts and may, at its sole discretion, reject the proposal on the grounds of the past experience.

   If the firm has not experienced any such termination for default or early termination in the past five (5) years, so indicate.

**IV. SELECTION CRITERIA**
The following criteria will be considered, although not exclusively, in determining which firm is hired.

1. References 40%
2. Relevant Experience 40%
3. Schedule 20%

V. PAYMENT

Invoices: Invoices must be fully itemized, and provide sufficient information for approving payment and audit. Invoices must be accompanied by receipt for services in order for payment to be processed. Mail invoices to the Project Manager and reference the contract number.

City of Berkeley
Accounts Payable
1947 Center Street, 5th Floor
Berkeley, CA 94705
Attn: Liza McNulty, Capital Improvement Program Manager
Parks, Recreation & Waterfront Department

Payments: The City will make payment to the vendor within 30- days of receipt of a correct and complete invoice.

VI. CITY REQUIREMENTS

A. Non-Discrimination Requirements:

Ordinance No. 5876-N.S. codified in B.M.C. Chapter 13.26 states that, for contracts worth more than $3,000 bids for supplies or bids or proposals for services shall include a completed Workforce Composition Form. Businesses with fewer than five employees are exempt from submitting this form. (See B.M.C. 13.26.030)

Under B.M.C. section 13.26.060, the City may require any bidder or vendor it believes may have discriminated to submit a Non-Discrimination Program. The Contract Compliance Officer will make this determination. This applies to all contracts and all consultants (contractors). Berkeley Municipal Code section 13.26.070 requires that all contracts with the City contain a non-discrimination clause, in which the contractor agrees not to discriminate and allows the City access to records necessary to monitor compliance. This section also applies to all contracts and all consultants. **Bidders must submit the attached Non-Discrimination Disclosure Form with their proposal**

B. Nuclear Free Berkeley Disclosure Form:

Berkeley Municipal Code section 12.90.070 prohibits the City from granting contracts to companies that knowingly engage in work for nuclear weapons. This contracting prohibition may be waived if the City Council determines that no reasonable alternative exists to doing business with a company that engages in nuclear weapons work. If your company engages in work for nuclear weapons, explain on the Disclosure Form the nature of such work. **Bidders must submit the attached Nuclear Free Disclosure Form with their proposal.**

C. Oppressive States:

The City of Berkeley prohibits granting of contracts to firms that knowingly provide personal services to specified
Countries. This contracting prohibition may be waived if the City Council determines that no reasonable alternative exists to doing business with a company that is covered by City Council Resolution No. 59,853-N.S. If your company or any subsidiary is covered, explain on the Disclosure Form the nature of such work. **Bidders must submit the attached Oppressive States Disclosure Form with their proposal.**

D. **Conflict of Interest:**

In the sole judgment of the City, any and all proposals are subject to disqualification on the basis of a conflict of interest. The City may not contract with a vendor if the vendor or an employee, officer or director of the proposer's firm, or any immediate family member of the preceding, has served as an elected official, employee, board or commission member of the City who influences the making of the contract or has a direct or indirect interest in the contract.

Furthermore, the City may not contract with any vendor whose income, investment, or real property interest may be affected by the contract. The City, at its sole option, may disqualify any proposal on the basis of such a conflict of interest. **Please identify any person associated with the firm that has a potential conflict of interest.**

E. **Berkeley Living Wage Ordinance:**

Chapter 13.27 of the Berkeley Municipal Code requires that contractors offer all eligible employees with City mandated minimum compensation during the term of any contract that may be awarded by the City. If the Contractor is not currently subject to the Living Wage Ordinance, cumulative contracts with the City within a one-year period may subject Contractor to the requirements under B.M.C. Chapter 13.27. A certification of compliance with this ordinance will be required upon execution of a contract. The Living Wage rate is currently $14.97 (if medical benefits are provided) or $17.45 (if medical benefits are not provided). The Living Wage rate is adjusted automatically effective June 30th of each year commensurate with the corresponding increase in the Consumer Price Index published in April of each year. If the Living Wage rate is adjusted during the term of your agreement, you must pay the new adjusted rate to all eligible employees, regardless of what the rate was when the contract was executed.

F. **Berkeley Equal Benefits Ordinance:**

Chapter 13.29 of the Berkeley Municipal Code requires that contractors offer domestic partners the same access to benefits that are available to spouses. A certification of compliance with this ordinance will be required upon execution of a contract.

G. **Statement of Economic Interest:**

The City’s Conflict of Interest Code designates “consultants” as a category of persons who must complete Form 700, Statement of Economic Interest, at the beginning of the contract period and again at the termination of the contract. The selected contractor will be required to complete the Form 700 before work may begin.

VII. **OTHER REQUIREMENTS**

A. **Insurance**

The selected contractor will be required to maintain general liability insurance in the minimum amount of $2,000,000, automobile liability insurance in the minimum amount of $1,000,000 and a professional liability insurance policy in the amount of $2,000,000 to cover any claims arising out of the performance of the contract. The general liability and automobile insurance must name the City, its officers, agents, volunteers and employees as additional insureds.

B. **Worker’s Compensation Insurance:**
A selected contractor who employs any person shall maintain workers' compensation insurance in accordance with state requirements. Sole proprietors with no employees are not required to carry Worker’s Compensation Insurance.

C. Business License

Virtually every contractor that does business with the City must obtain a City business license as mandated by B.M.C. Ch. 9.04. The business license requirement applies whether or not the contractor has an office within the City limits. However, a "casual" or "isolated" business transaction (B.M.C. section 9.04.010) does not subject the contractor to the license tax. Warehousing businesses and charitable organizations are the only entities specifically exempted in the code from the license requirement (see B.M.C. sections, 9.04.295 and 9.04.300). Non-profit organizations are granted partial exemptions (see B.M.C. section 9.04.305). Persons who, by reason of physical infirmity, unavoidable misfortune, or unavoidable poverty, may be granted an exemption of one annual free license at the discretion of the Director of Finance. (see B.M.C. sections 9.04.290).

Vendor must apply for a City business license and show proof of application to Purchasing Manager within seven days of being selected as intended contractor.

The Customer Service Division of the Finance Department located at 1947 Center Street, Berkeley, CA 94704, issues business licenses. Contractors should contact this division for questions and/or information on obtaining a City business license, in person, or by calling 510-981-7200.

D. Recycled Paper

All reports to the City shall be on recycled paper that contains at least 50% recycled product when such paper is available at a cost of not greater than ten percent more than the cost of virgin paper, and when such paper is available at the time it is required. If recycled paper is not available the Contractor shall use white paper. Written reports or studies shall be printed on both sides of the page whenever practical.

E. State Prevailing Wage:

Certain labor categories under this project may be subject to prevailing wages as identified in the State of California Labor Code commencing in Section 1770 et. seq. These labor categories, when employed for any “work performed during the design and preconstruction phases of construction including, but not limited to, inspection and land surveying work,” constitute a “Public Work” within the definition of Section 1720(a)(1) of the California Labor Code requiring payment of prevailing wages.

Wage information is available through the California Division of Industrial Relations web site at: http://www.dir.ca.gov/OPRL/statistics_and_databases.html

VIII. SCHEDULE (dates are subject to change)

- Issue RFP to potential bidders: November 13, 2018
- Site Visit (not mandatory) November 26, 2018
- Questions Due November 28, 2018
- Proposals due December 11, 2018
- Complete Selection Process December 14, 2018
- Council Approval of Contract (over $50k) January 22, 2018
- Award of Contract January 23, 2018
Thank you for your interest in working with the City of Berkeley for this service. We look forward to receiving your proposal.

Attachments:

- Check List of Required items for Submittal Attachment A
- Non-Discrimination/Workforce Composition Form Attachment B
- Nuclear Free Disclosure Form Attachment C
- Oppressive States Form Attachment D
- Living Wage Form Attachment E
- Equal Benefits Certification of Compliance Attachment F
- Right to Audit Form Attachment G
- Insurance Endorsement Attachment H
- Jensen Dormitory Representative Floor Plan Attachment I
- Jensen Dormitory Base Map Attachment J
- Jensen Dormitory Draft Geotechnical Report Attachment K
- Jensen Dormitory Representative As-Was Photos Attachment L
ATTACHMENT A

CHECKLIST

- Proposal describing services and relevant experience (one (1) unbound original and two (2) unbound copies)
- Contractor Identification and Company Information
- Client References
- Project Schedule
- Costs proposal by task, type of service & personnel (separate sealed envelope)
- The following forms, completed and signed in blue ink (attached):
  - Non-Discrimination/Workforce Composition Form Attachment B
  - Nuclear Free Disclosure Form Attachment C
  - Oppressive States Form Attachment D
  - Living Wage Form Attachment E
  - Equal Benefits Ordinance Certification of Compliance (EBO-1) Attachment F

ADDITIONAL SUBMITTALS REQUIRED FROM SELECTED VENDOR AFTER COUNCIL APPROVAL TO AWARD CONTRACT.

- Provide original-signed in blue ink Evidence of Insurance
  - Auto
  - Liability
  - Worker’s Compensation
- Right to Audit Form Attachment G
- Commercial General & Automobile Liability Endorsement Form Attachment H
- Berkeley Business License

For informational purposes only: Sample of Professional Services Contract can be found on the City’s website on the current bid and proposal page at the top of the page.
NON-DISCRIMINATION/WORKFORCE COMPOSITION FORM FOR NON-CONSTRUCTION CONTRACTS

To assist the City of Berkeley in implementing its Non-Discrimination policy, it is requested that you furnish information regarding your personnel as requested below and return it to the City Department handling your contract:

Organization: ________________________________________________________________
Address:  __________________________________________________________________
Business Lic. #: ___________

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<thead>
<tr>
<th>Occupational Category</th>
<th>Total Employees</th>
<th>White Employees</th>
<th>Black Employees</th>
<th>Asian Employees</th>
<th>Hispanic Employees</th>
<th>Other Employees</th>
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<td>Totals:</td>
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Is your business MBE/WBE/DBE certified? Yes _____ No _____ If yes, by what agency? _______________________________________

If yes, please specify: Male: _____ Female: _____ Indicate ethnic identifications: ______________________________________

Do you have a Non-Discrimination policy? Yes: _____ No: _____

Signed: ___________________________________________________________ Date: ___________________

Verified by: ______________________________________________________ Date: ___________________

City of Berkeley Contract Compliance Officer

Attachment B
Occupational Categories

Officials and Administrators - Occupations in which employees set broad policies, exercise overall responsibility for execution of these policies, or provide specialized consultation on a regional, district or area basis. Includes: department heads, bureau chiefs, division chiefs, directors, deputy superintendents, unit supervisors and kindred workers.

Professionals - Occupations that require specialized and theoretical knowledge that is usually acquired through college training or through work experience and other training that provides comparable knowledge. Includes: personnel and labor relations workers, social workers, doctors, psychologists, registered nurses, economists, dietitians, lawyers, systems analysts, accountants, engineers, employment and vocational rehabilitation counselors, teachers or instructors, and kindred workers.

Technicians - Occupations that require a combination of basic scientific or technical knowledge and manual skill that can be obtained through specialized post-secondary school education or through equivalent on-the-job training. Includes: computer programmers and operators, technical illustrators, highway technicians, technicians (medical, dental, electronic, physical sciences) and kindred workers.

Protective Service Workers - Occupations in which workers are entrusted with public safety, security and protection from destructive forces. Includes: police officers, fire fighters, guards, sheriffs, bailiffs, correctional officers, detectives, marshals, harbor patrol officers, and kindred workers.

Para-Professionals - Occupations in which workers perform some of the duties of a professional or technician in a supportive role, which usually requires less formal training and/or experience normally required for professional or technical status. Such positions may fall within an identified pattern of a staff development and promotion under a "New Transporters" concept. Includes: library assistants, research assistants, medical aides, child support workers, police auxiliary, welfare service aides, recreation assistants, homemaker aides, home health aides, and kindred workers.

Office and Clerical - Occupations in which workers are responsible for internal and external communication, recording and retrieval of data and/or information and other paperwork required in an office. Includes: bookkeepers, messengers, office machine operators, clerk-typists, stenographers, court transcribers, hearings reporters, statistical clerks, dispatchers, license distributors, payroll clerks, and kindred workers.

Skilled Craft Workers - Occupations in which workers perform jobs which require special manual skill and a thorough and comprehensive knowledge of the processes involved in the work which is acquired through on-the-job training and experience or through apprenticeship or other formal training programs. Includes: mechanics and repairpersons, electricians, heavy equipment operators, stationary engineers, skilled machining occupations, carpenters, compositors and typesetters, and kindred workers.

Service/Maintenance - Occupations in which workers perform duties which result in or contribute to the comfort, convenience, hygiene or safety of the general public or which contribute to the upkeep and care of buildings, facilities or grounds of public property. Workers in this group may operate machinery. Includes: chauffeurs, laundry and dry cleaning operatives, truck drivers, bus drivers, garage laborers, custodial personnel, gardeners and groundskeepers, refuse collectors, and construction laborers.
CITY OF BERKELEY
Nuclear Free Zone Disclosure Form

I (we) certify that:

1. I am (we are) fully cognizant of any and all contracts held, products made or otherwise handled by this business entity, and of any such that are anticipated to be entered into, produced or handled for the duration of its contract(s) with the City of Berkeley. (To this end, more than one individual may sign this disclosure form, if a description of which type of contracts each individual is cognizant is attached.)

2. I (we) understand that Section 12.90.070 of the Nuclear Free Berkeley Act (Berkeley Municipal Code Ch. 12.90; Ordinance No. 5784-N.S.) prohibits the City of Berkeley from contracting with any person or business that knowingly engages in work for nuclear weapons.

3. I (we) understand the meaning of the following terms as set forth in Berkeley Municipal Code Section 12.90.130:

   "Work for nuclear weapons" is any work the purpose of which is the development, testing, production, maintenance or storage of nuclear weapons or the components of nuclear weapons; or any secret or classified research or evaluation of nuclear weapons; or any operation, management or administration of such work.

   "Nuclear weapon" is any device, the intended explosion of which results from the energy released by reactions involving atomic nuclei, either fission or fusion or both. This definition of nuclear weapons includes the means of transporting, guiding, propelling or triggering the weapon if and only if such means is destroyed or rendered useless in the normal propelling, triggering, or detonation of the weapon.

   "Component of a nuclear weapon" is any device, radioactive or non-radioactive, the primary intended function of which is to contribute to the operation of a nuclear weapon (or be a part of a nuclear weapon).

4. Neither this business entity nor its parent nor any of its subsidiaries engages in work for nuclear weapons or anticipates entering into such work for the duration of its contract(s) with the City of Berkeley.

Based on the foregoing, the undersigned declares under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

Printed Name: ___________________________________ Title: ____________________________________________

Signature: ______________________________________ Date: ____________________________________________

Business Entity: ________________________________________________________________________________

Contract Description/Specification No: Jensen Dormitory Replacement Design / 18-11209-C

Attachment C
CITY OF BERKELEY
Oppressive States Compliance Statement

The undersigned, an authorized agent of ____________________________________________ (hereafter "Vendor"), has had an opportunity to review the requirements of Berkeley City Council Resolution No. 59,853-N.S. (hereafter "Resolution"). Vendor understands and agrees that the City may choose with whom it will maintain business relations and may refrain from contracting with those Business Entities which maintain business relationships with morally repugnant regimes. Vendor understands the meaning of the following terms used in the Resolution:

"Business Entity" means "any individual, firm, partnership, corporation, association or any other commercial organization, including parent-entities and wholly-owned subsidiaries" (to the extent that their operations are related to the purpose of the contract with the City).

"Oppressive State" means: Tibet Autonomous Region and the Provinces of Ado, Kham and U-Tsang

“Personal Services” means “the performance of any work or labor and shall also include acting as an independent contractor or providing any consulting advice or assistance, or otherwise acting as an agent pursuant to a contractual relationship.”

Contractor understands that it is not eligible to receive or retain a City contract if at the time the contract is executed, or at any time during the term of the contract it provides Personal Services to:

a. The governing regime in any Oppressive State.
b. Any business or corporation organized under the authority of the governing regime of any Oppressive State.
c. Any person for the express purpose of assisting in business operations or trading with any public or private entity located in any Oppressive State.

Vendor further understands and agrees that Vendor's failure to comply with the Resolution shall constitute a default of the contract and the City Manager may terminate the contract and bar Vendor from bidding on future contracts with the City for five (5) years from the effective date of the contract termination.

The undersigned is familiar with, or has made a reasonable effort to become familiar with, Vendor's business structure and the geographic extent of its operations. By executing the Statement, Vendor certifies that it complies with the requirements of the Resolution and that if any time during the term of the contract it ceases to comply, Vendor will promptly notify the City Manager in writing.

Based on the foregoing, the undersigned declares under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

Printed Name: ___________________________________ Title: ___________________________________
Signature: ___________________________________ Date: ________________________________

Business Entity: ______________________________________________________________________________

Contract Description/Specification No.: Jensen Dormitory Replacement Design / 18-11209-C

I am unable to execute this Statement; however, Vendor is exempt under Section VII of the Resolution. I have attached a separate statement explaining the reason(s) Vendor cannot comply and the basis for any requested exemption.

Signature: ___________________________________ Date: ________________________________
CITY OF BERKELEY
Living Wage Certification for Providers of Services

TO BE COMPLETED BY ALL PERSONS OR ENTITIES ENGAGING IN A CONTRACT FOR PERSONAL SERVICES WITH THE CITY OF BERKELEY.

The Berkeley Municipal Code Chapter 13.27, Berkeley's Living Wage Ordinance (LWO), provides that contractors who engage in a specified amount of business with the City (except where specifically exempted) under contracts which furnish services to or for the City in any twelve (12) month period of time shall comply with all provisions of this Ordinance. The LWO requires a City contractor to provide City mandated minimum compensation to all eligible employees, as defined in the Ordinance. In order to determine whether this contract is subject to the terms of the LWO, please respond to the questions below. Please note that the LWO applies to those contracts where the contractor has achieved a cumulative dollar contracting amount with the City. Therefore, even if the LWO is inapplicable to this contract, subsequent contracts may be subject to compliance with the LWO. Furthermore, the contract may become subject to the LWO if the status of the Contractor's employees change (i.e. additional employees are hired) so that Contractor falls within the scope of the Ordinance.

Section I.

1. IF YOU ARE A FOR-PROFIT BUSINESS, PLEASE ANSWER THE FOLLOWING QUESTIONS

   a. During the previous twelve (12) months, have you entered into contracts, including the present contract, bid, or proposal, with the City of Berkeley for a cumulative amount of $25,000.00 or more?

   YES ____  NO ____

   If no, this contract is NOT subject to the requirements of the LWO, and you may continue to Section II. If yes, please continue to question 1(b).

   b. Do you have six (6) or more employees, including part-time and stipend workers?

   YES ____  NO ____

   If you have answered, “YES” to questions 1(a) and 1(b) this contract IS subject to the LWO. If you responded "NO" to 1(b) this contract IS NOT subject to the LWO. Please continue to Section II.

2. IF YOU ARE A NON-PROFIT BUSINESS, AS DEFINED BY SECTION 501(C) OF THE INTERNAL REVENUE CODE OF 1954, PLEASE ANSWER THE FOLLOWING QUESTIONS.

   a. During the previous twelve (12) months, have you entered into contracts, including the present contract, bid or proposal, with the City of Berkeley for a cumulative amount of $100,000.00 or more?

   YES ____  NO ____

   If no, this Contract is NOT subject to the requirements of the LWO, and you may continue to Section II. If yes, please continue to question 2(b).

   b. Do you have six (6) or more employees, including part-time and stipend workers?

   YES ____  NO ____

   If you have answered, “YES” to questions 2(a) and 2(b) this contract IS subject to the LWO. If you responded "NO" to 2(b) this contract IS NOT subject to the LWO. Please continue to Section II.

Section II

Please read, complete, and sign the following:

THIS CONTRACT IS SUBJECT TO THE LIVING WAGE ORDINANCE.  

□

THIS CONTRACT IS NOT SUBJECT TO THE LIVING WAGE ORDINANCE.  

□

Attachment E

Revised June 2017
The undersigned, on behalf of himself or herself individually and on behalf of his or her business or organization, hereby certifies that he or she is fully aware of Berkeley's Living Wage Ordinance, and the applicability of the Living Wage Ordinance, and the applicability of the subject contract, as determined herein. The undersigned further agrees to be bound by all of the terms of the Living Wage Ordinance, as mandated in the Berkeley Municipal Code, Chapter 13.27. If, at any time during the term of the contract, the answers to the questions posed herein change so that Contractor would be subject to the LWO, Contractor will promptly notify the City Manager in writing. Contractor further understands and agrees that the failure to comply with the LWO, this certification, or the terms of the Contract as it applies to the LWO, shall constitute a default of the Contract and the City Manager may terminate the contract and bar Contractor from future contracts with the City for five (5) years from the effective date of the Contract termination. If the contractor is a for-profit business and the LWO is applicable to this contract, the contractor must pay a living wage to all employees who spend 25% or more or their compensated time engaged in work directly related to the contract with the City. If the contractor is a non-profit business and the LWO is applicable to this contract, the contractor must pay a living wage to all employees who spend 50% or more or their compensated time engaged in work directly related to the contract with the City.

These statements are made under penalty of perjury under the laws of the state of California.

Printed Name: ___________________________________ Title:________________________________________

Signature: _______________________________________ Date:_______________________________________

Business Entity:  ______________________________________________________________________________

Contract Description/Specification No: Jensen DormitoryReplacement Design / 18-11209-C

Section III

•   ** FOR ADMINISTRATIVE USE ONLY -- PLEASE PRINT CLEARLY ** **

I have reviewed this Living Wage Certification form, in addition to verifying Contractor's total dollar amount contract commitments with the City in the past twelve (12) months, and determined that this Contract IS / IS NOT  (circle one) subject to Berkeley's Living Wage Ordinance.

Department Name ___________________________ Department Representative ___________________________
Form EBO-1
CITY OF BERKELEY
CERTIFICATION OF COMPLIANCE WITH EQUAL BENEFITS ORDINANCE
If you are a contractor, return this form to the originating department/project manager. If you are a vendor (supplier of goods), return this form to the Purchasing Division of the Finance Dept.

SECTION 1. CONTRACTOR/VENDOR INFORMATION

<table>
<thead>
<tr>
<th>Name:</th>
<th>Vendor No.:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Address:</td>
<td>City:</td>
</tr>
<tr>
<td>Contact Person:</td>
<td></td>
</tr>
<tr>
<td>E-mail Address:</td>
<td>Fax No.:</td>
</tr>
</tbody>
</table>

SECTION 2. COMPLIANCE QUESTIONS

A. The EBO is inapplicable to this contract because the contractor/vendor has no employees. 
   □ Yes  □ No  (If “Yes,” proceed to Section 5; if “No”, continue to the next question.)

B. Does your company provide (or make available at the employees’ expense) any employee benefits? 
   □ Yes  □ No 
   If “Yes,” continue to Question C. 
   If “No,” proceed to Section 5. (The EBO is not applicable to you.)

C. Does your company provide (or make available at the employees’ expense) any benefits to the spouse of an employee? ................................................................. □ Yes  □ No

D. Does your company provide (or make available at the employees’ expense) any benefits to the domestic partner of an employee? ................................................................. □ Yes  □ No
   If you answered “No” to both Questions C and D, proceed to Section 5. (The EBO is not applicable to this contract.) If you answered “Yes” to both Questions C and D, please continue to Question E. If you answered “Yes” to Question C and “No” to Question D, please continue to Section 3.

E. Are the benefits that are available to the spouse of an employee identical to the benefits that are available to the domestic partner of the employee? ................................................................. □ Yes  □ No
   If you answered “Yes,” proceed to Section 4. (You are in compliance with the EBO.) If you answered “No,” continue to Section 3.

SECTION 3. PROVISIONAL COMPLIANCE

A. Contractor/vendor is not in compliance with the EBO now but will comply by the following date:
   □ By the first effective date after the first open enrollment process following the contract start date, not to exceed two years, if the Contractor submits evidence of taking reasonable measures to comply with the EBO; or
   □ At such time that administrative steps can be taken to incorporate nondiscrimination in benefits in the Contractor’s infrastructure, not to exceed three months; or
   □ Upon expiration of the contractor’s current collective bargaining agreement(s).
B. If you have taken all reasonable measures to comply with the EBO but are unable to do so, do you agree to provide employees with a cash equivalent?*  

* The cash equivalent is the amount of money your company pays for spousal benefits that are unavailable for domestic partners.

SECTION 4. REQUIRED DOCUMENTATION

At time of issuance of purchase order or contract award, you may be required by the City to provide documentation (copy of employee handbook, eligibility statement from your plans, insurance provider statements, etc.) to verify that you do not discriminate in the provision of benefits.

SECTION 5. CERTIFICATION

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct and that I am authorized to bind this entity contractually. By signing this certification, I further agree to comply with all additional obligations of the Equal Benefits Ordinance that are set forth in the Berkeley Municipal Code and in the terms of the contract or purchase order with the City.

Executed this _______day of _________________, in the year __________, at __________________, __________.

(City)

(State)

__________________________  ________________________
Name  (please print)      Signature

__________________________  ________________________
Title        Federal ID or Social Security Number

FOR CITY OF BERKELEY USE ONLY

☐ Non-Compliant (The City may not do business with this contractor/vendor)  
☐ One-Person Contractor/Vendor  ☐ Full Compliance  ☐ Reasonable Measures

☐ Provisional Compliance Category, Full Compliance by Date: ________________________________

Staff Name(Sign and Print): ___________________________ Date: ____________ ______________

Attachment F
CITY OF BERKELEY
Right to Audit Form

The contractor agrees that pursuant to Section 61 of the Berkeley City Charter, the City Auditor’s office may conduct an audit of Contractor’s financial, performance and compliance records maintained in connection with the operations and services performed under this contract.

In the event of such audit, Contractor agrees to provide the Auditor with reasonable access to Contractor’s employees and make all such financial, performance and compliance records available to the Auditor’s office. City agrees to provide Contractor an opportunity to discuss and respond to any findings before a final audit report is filed.

Signed: ________________________________   Date: __________________

Print Name & Title: ________________________________

Company: _________________________________________

Contract Description/Specification No: Jensen Dormitory Replacement Design / 18-11209-C

Please direct questions regarding this form to the Auditor's Office, at (510) 981-6750.
CITY OF BERKELEY
Commercial General and Automobile Liability Endorsement

The attached Certificates of Insurance are hereby certified to be a part of the following policies having the following expiration dates:

<table>
<thead>
<tr>
<th>Policy No.</th>
<th>Company Providing Policy</th>
<th>Expir. Date</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The scope of the insurance afforded by the policies designated in the attached certificates is not less than that which is afforded by the Insurance Service Organization's or other "Standard Provisions" forms in use by the insurance company in the territory in which coverage is afforded.

Such Policies provide for or are hereby amended to provide for the following:

1. The named insured is ________________________________.

2. CITY OF BERKELEY ("City") is hereby included as an additional insured with respect to liability arising out of the hazards or operations under or in connection with the following agreement:
   ________________________________.

The insurance provided applies as though separate policies are in effect for both the named insured and City, but does not increase the limits of liability set forth in said policies.

3. The limits of liability under the policies are not less than those shown on the certificate to which this endorsement is attached.

4. Cancellation or material reduction of this coverage will not be effective until thirty (30) days following written notice to ________________________________, Department of ________________________________, Berkeley, CA.

5. This insurance is primary and insurer is not entitled to any contribution from insurance in effect for City.

The term "City" includes successors and assigns of City and the officers, employees, agents and volunteers.

______________________________
Insurance Company

Date: ____________       By: ________________________________
Signature of Underwriter's
Authorized Representative

Contract Description/Specification No: Jensen Dormitory Replacement Design / 18-11209-C

Attachment H
Attachment K

JENSEN DORM REPLACEMENT
CITY OF BERKELEY CAZADERO PERFORMING ARTS CAMP
SONOMA COUNTY, CALIFORNIA

GEOTECHNICAL REPORT

SUBMITTED TO
Ms. Liza McNulty, PE
Capital Improvement Program Manager
City of Berkeley
Finance Department/General Services Division
2180 Milvia Street, 3rd Floor
Berkeley, CA 94704

PREPARED BY
ENGEO Incorporated

August 24, 2018

PROJECT NO.
13026.000.000
August 24, 2018

Ms. Liza McNulty, PE
Capital Improvement Program Manager
City of Berkeley
Finance Department/General Services Division
2180 Milvia Street, 3rd Floor
Berkeley, CA 94704

Subject: Jensen Dorm Replacement Building
City of Berkeley Cazadero Performing Arts Camp
Sonoma County, California

GEOTECHNICAL REPORT

Dear Ms. McNulty:

ENGEEO prepared this geotechnical report for City of Berkeley as outlined in our agreement dated December 14, 2017. We utilized our existing knowledge of the subsurface conditions at the site to provide the enclosed geotechnical recommendations for design.

From a geotechnical engineering viewpoint, in our opinion, the site is suitable for the Jensen Dorm replacement building provided the geotechnical recommendations in this report are properly incorporated into the design plans and specifications.

Our experience and that of our profession clearly indicate that the risk of costly design, construction, and maintenance problems can be significantly lowered by retaining the design geotechnical engineering firm to review the project plans and specifications and provide geotechnical observation and testing services during construction. Please let us know when working drawings are nearing completion, and we will be glad to discuss these additional services with you.

If you have any questions or comments regarding this report, please call and we will be glad to discuss them with you.

Sincerely,

ENGEEO Incorporated

Paul Cottingham, CEG
pc/tpb/jf

Theodore P. Bayham, GE, CEG
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APPENDIX A - Supplemental Recommendations
INTRODUCTION

PURPOSE AND SCOPE

ENGEIO prepared this geotechnical report for design of the Jensen Dorm Replacement Building at the City of Berkeley Cazadero Performing Arts Camp in Sonoma County, California. We prepared this report as outlined in our agreement dated December 14, 2017. The City of Berkeley authorized ENGEO to prepare this report based on subsurface information observed during the construction of a landslide repair at the site.

During preparation of this report, we reviewed and used, as deemed appropriate, the following information:

1. ENGEO, Construction Testing and Observation Services, Cazadero Performing Arts Camp – Landslide Repair, Sonoma County, California, February 16, 2018.

2. ENGEO, Landslide Repair Plan, As-built Plan Set, Cazadero Performing Arts Camp, Sonoma County, California, February 16, 2018.


4. ENGEO, Site Reconnaissance to Observe Landslide Area, Cazadero Performing Arts Camp, May 5, 2016.


This report was prepared for the exclusive use of our client and their consultants for design of this project. In the event that any changes are made in the character, design or layout of the development, we must be contacted to review the conclusions and recommendations contained in this report to evaluate whether modifications are recommended. This document may not be reproduced in whole or in part by any means whatsoever, nor may it be quoted or excerpted without our express written consent.

PROJECT LOCATION

Figure 1.2-1 below displays a Site Vicinity Map. The proposed Jensen Dorm replacement building is located in the Cazadero Performing Arts Camp between Austin Creek Road and Austin Creek in Cazadero, California.
Figures 1.2-2 and 1.2-3 below show the approximate Jensen Dorm replacement building footprint within Cazadero Performing Arts Camp. The dorm building is to be located at the base of the recently repaired landslide slope below Austin Creek Road. The base map shown was surveyed after the landslide repair was completed by KASL Consulting Engineers (Reference 4 in Section 1.1). The proposed dorm footprint location and elevations are approximate based on our discussions with the City of Berkeley.
FIGURE 1.2-2: Site Plan
1.3 PROJECT DESCRIPTION AND SITE BACKGROUND

The Cazadero Performing Arts Camp includes various dorm buildings, a cafeteria, tent cabins, staff housing, and other structures situated within an old growth redwood forest. In May 2016, movement of a landslide above the Jensen Dorm had significantly damaged the building, making it unsafe (described in Reference 4). Subsequently, the damaged Jensen Dorm was demolished and the landslide was repaired in 2017, as documented in References 1 through 3. The landslide repair included removal of landslide material, keying and benching into intact bedrock, installing subdrains, and reconstructing the slope with engineered fill. The landslide repair limits were located partially beneath the Jensen Dorm footprint. The repair also included constructing an approximately 8-foot-tall mechanically stabilized earth (MSE) retaining wall just upslope from the proposed Jensen Dorm replacement. After the landslide repair was completed, a topographic survey was performed to document the as-built conditions in January 2018 (Reference 5).

Based on discussions with the City of Berkeley, the Jensen Dorm replacement building will be constructed in the approximate location of the original Jensen Dorm building on the slope constructed during the landslide repair below the recently constructed retaining wall. The building design has not been completed; however, we understand the building will be a split-level design constructed on the existing slope approximately as shown on Figure 1.2-3 above. Conceptually, the building design is anticipated to have a 420-square-foot (sf) slab-on-grade lower level and an 890-square-foot raised wood floor upper level. We anticipate a mid-building cast-in-place retaining wall that will likely retain up to 4 feet of soil; construction of this wall will likely include a temporary cut slope below the existing MSE wall.
2.0 FINDINGS

2.1 GEOLOGY AND SEISMICITY

2.1.1 Geology

The site is located in the Sonoma Mountains, a subrange of the Pacific Coastal Range. The Coast Range province includes many separate ranges, coalescing mountain masses, and several major structural valleys. These mountain ranges are made up largely of marine sedimentary rocks that have been highly faulted, folded, and altered by orogenic processes.

Regional geologic maps indicate that the project site is underlain by Graywacke and mélangé (Blake, et al. 2002). This geologic unit generally consists of massive to distinctly bedded, sandstone, siltstone, shale and slate grading into mélangé in some places consisting of highly sheared sedimentary, metamorphic and volcanic rock. The Austin Creek area adjacent to the site is mapped as alluvial fan and fluval deposits consisting of gravelly sand or sandy gravel that grade to sandy or silty clay.

2.1.2 Seismicity

We reviewed the California Geologic Survey’s Online interactive Fault Activity Map of California (2010) for mapped faults at the site. The site is not located within a currently designated Alquist-Priolo Earthquake Fault Zone and no known surface expression of active faults is believed to exist within the site.

The site lies within a seismically active region and there are numerous faults in the area that are considered active. The following table summarizes the distances to mapped, active regional faults and estimated maximum magnitudes within approximately 50 miles. We used the USGS Spatial Query tool that is based on the United States Geologic Survey (USGS) 2008 National Seismic Hazard Maps used to develop the 2016 California Building Code (CBC) seismic parameters.

<table>
<thead>
<tr>
<th>FAULT NAME</th>
<th>DISTANCE FROM SITE (MILES)</th>
<th>MAXIMUM MOMENT MAGNITUDE</th>
</tr>
</thead>
<tbody>
<tr>
<td>North San Andreas</td>
<td>6</td>
<td>7.9</td>
</tr>
<tr>
<td>Hayward-Rodgers Creek</td>
<td>17</td>
<td>7.3</td>
</tr>
<tr>
<td>Maacama-Garberville</td>
<td>19</td>
<td>7.4</td>
</tr>
<tr>
<td>Point Reyes</td>
<td>25</td>
<td>6.9</td>
</tr>
<tr>
<td>Collayomi</td>
<td>28</td>
<td>6.7</td>
</tr>
<tr>
<td>West Napa</td>
<td>40</td>
<td>6.7</td>
</tr>
<tr>
<td>Hunting Creek-Berryessa</td>
<td>41</td>
<td>7.1</td>
</tr>
<tr>
<td>Bartlett Springs</td>
<td>42</td>
<td>7.3</td>
</tr>
</tbody>
</table>

2.2 SEISMIC HAZARDS

Potential seismic hazards resulting from a nearby moderate to major earthquake can generally be classified as primary and secondary. The primary effect is ground rupture, also called surface faulting. The common secondary seismic hazards include ground shaking and ground lurching.
The following sections present a discussion of these hazards as they apply to the site. Based on topographic and lithologic data, the risk of ground rupture, regional subsidence or uplift, ground lurching, soil liquefaction, lateral spreading, landslides, or tsunamis is considered low to negligible at the site.

2.2.1 Ground Shaking

An earthquake of moderate to high magnitude generated within region could cause considerable ground shaking at the site, similar to that which has occurred in the past. To mitigate the shaking effects, structures should be designed using sound engineering judgment and the 2016 California Building Code (CBC) requirements, as a minimum. Seismic design provisions of current building codes generally prescribe minimum lateral forces, applied statically to the structure, combined with the gravity forces of dead-and-live loads. The code prescribed lateral forces are generally considered to be substantially smaller than the comparable forces that would be associated with a major earthquake. Therefore, structures should be able to: (1) resist minor earthquakes without damage, (2) resist moderate earthquakes without structural damage but with some nonstructural damage, and (3) resist major earthquakes without collapse but with some structural as well as nonstructural damage. Conformance to the current building code recommendations does not constitute any kind of guarantee that significant structural damage would not occur in the event of a maximum magnitude earthquake; however, it is reasonable to expect that a well-designed and well-constructed structure will not collapse or cause loss of life in a major earthquake (SEAOC, 1996).

2.3 Flooding

Considering the close proximity to Austin Creek, flooding risk should be considered in the building design by the engineer/architect.

2.4 Soil Corrosion Potential

We did not perform laboratory testing to evaluate corrosion for this report. Corrosion testing should be completed prior to final design to determine the sulfate exposure to concrete.

On a preliminary basis, assuming a ‘Not Applicable’ sulfate exposure, there would be no requirement for cement type or water-cement ratio; however, a minimum concrete compressive strength of 2,500 psi is specified by the building code. For this sulfate range, we would recommend Type II cement and a concrete mix design for foundations and building slabs-on-grade that incorporates a maximum water-cement ratio of 0.50. It should be noted, however, that the structural engineering design requirements for concrete may result in more stringent concrete specifications.

2.5 2016 CBC Seismic Design Parameters

The 2016 CBC utilizes design criteria set forth in the 2010 ASCE 7 Standard. Based on the shallow bedrock encountered, we characterized the site as Site Class C in accordance with the 2016 CBC. We provide the 2016 CBC seismic design parameters in Table 2.5-1 below, which include design spectral response acceleration parameters based on the mapped Risk-Targeted Maximum Considered Earthquake (MCER) spectral response acceleration parameters.
TABLE 2.5-1: 2016 CBC Seismic Design Parameters, Latitude: 38.522902 Longitude: -123.086292

<table>
<thead>
<tr>
<th>PARAMETER</th>
<th>VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Site Class</td>
<td>C</td>
</tr>
<tr>
<td>Mapped MCE_{R} Spectral Response Acceleration at Short Periods, S_{S} (g)</td>
<td>1.52</td>
</tr>
<tr>
<td>Mapped MCE_{R} Spectral Response Acceleration at 1-second Period, S_{1} (g)</td>
<td>0.67</td>
</tr>
<tr>
<td>Site Coefficient, F_{A}</td>
<td>1.00</td>
</tr>
<tr>
<td>Site Coefficient, F_{V}</td>
<td>1.30</td>
</tr>
<tr>
<td>MCE_{R} Spectral Response Acceleration at Short Periods, S_{MS} (g)</td>
<td>1.50</td>
</tr>
<tr>
<td>MCE_{R} Spectral Response Acceleration at 1-second Period, S_{M1} (g)</td>
<td>0.88</td>
</tr>
<tr>
<td>Design Spectral Response Acceleration at Short Periods, S_{DS} (g)</td>
<td>1.00</td>
</tr>
<tr>
<td>Design Spectral Response Acceleration at 1-second Period, S_{D1} (g)</td>
<td>0.58</td>
</tr>
<tr>
<td>Mapped MCE Geometric Mean (MCE_{G}) Peak Ground Acceleration, PGA (g)</td>
<td>0.59</td>
</tr>
<tr>
<td>Site Coefficient, F_{PGA}</td>
<td></td>
</tr>
<tr>
<td>MCE_{G} Peak Ground Acceleration adjusted for Site Class effects, PGA_{M} (g)</td>
<td>0.59</td>
</tr>
</tbody>
</table>

2.6 SUBSURFACE CONDITIONS

During construction of the landslide repair in 2017, subsurface conditions were observed by both an ENGEO field geologist and certified engineering geologist. The landslide repair within the Jensen Dorm replacement footprint included overexcavation of unsuitable soil and the excavation of a keyway into bedrock. The unsuitable soil was observed in the upper 2 feet and consisted of an organic rich soft clay; this soil was removed within the landslide repair limits, however likely remains outside of the landslide repair limits. Below the organic soil, the keyway excavation encountered yellowish brown sandstone. The sandstone was generally very weak to weak, slightly weathered, massive and composed of fine to medium sand.

The engineered fill placed within the proposed building footprint was a mixture of landslide debris and keyway excavation spoils; the fill was described as a sandy clay with gravel. As indicated in Reference 1, we performed geotechnical testing and observation during fill placement to check that the fill was compacted to a minimum of 90 percent relative compaction at least 3 percentage points over optimum moisture content.

These observations were used to characterize the subsurface conditions and develop the recommendations in this report. No laboratory testing was performed. Below are photographs of the Jensen Dorm replacement area during the landslide repair construction.
2.7 GROUNDWATER CONDITIONS

We did not observe groundwater in the excavation of the keyway within the proposed building footprint. Additionally, as detailed in Reference 2, the landslide excavation included subdrains intended to incept and drain groundwater in the hillside adjacent to the proposed building.

Fluctuations in the level of groundwater may occur due to variations in rainfall, irrigation practice, and other factors not evident at the time observations were made.

3.0 CONCLUSIONS

From a geotechnical engineering viewpoint, in our opinion, the site is suitable for the Jensen Dorm replacement building provided the geotechnical recommendations in this report are properly incorporated into the design plans and specifications. The main geotechnical concern for the planned building site is the presence of expansive soils.

The sandy clay with gravel used to construct the slope within the proposed building footprint may be expansive. Expansive soils change in volume with changes in moisture. They can shrink or swell and cause heaving and cracking of slabs-on-grade, pavements, and structures founded on shallow foundations.
We provide foundation and earthwork recommendations in Sections 4.0 and 8.0 to reduce the potential for damage to the planned building. These recommendations include 24-inch-deep footings intended to extend into soil with reduced moisture fluctuation and 18 inches of low-expansion potential soil below the slab-on-grade portion of the building.

4.0 FOUNDATION RECOMMENDATIONS

We developed structural improvement recommendations based on observations of the subsurface conditions during the landslide repair excavation.

4.1 SHALLOW FOOTINGS WITH SLAB-ON-GRADE

The proposed dorm building can be supported on continuous or isolated spread footings bearing in competent native soil or compacted fill.

4.1.1 Footing Dimensions and Allowable Bearing Capacity

Foundations recommended above should be designed for a maximum allowable bearing pressure of 2,500 pounds per square foot (psf) for dead-plus-live loads. Increase this bearing capacity by one-third for the short-term effects of wind or seismic loading. The maximum allowable bearing pressure is a net value; the weight of the footing may be neglected for design purposes. Provide minimum footing dimensions as follows in the Table 4.1.1-1 below.

<table>
<thead>
<tr>
<th>FOOTING TYPE</th>
<th>MINIMUM DEPTH (INCHES)</th>
<th>MINIMUM WIDTH (INCHES)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Continuous</td>
<td>24</td>
<td>12</td>
</tr>
<tr>
<td>Isolated</td>
<td>24</td>
<td>18</td>
</tr>
</tbody>
</table>

* below lowest adjacent pad grade

Minimum footing depths shown above are taken from the lowest adjacent pad grade. The cold joint between the exterior footing and slab-on-grade should be located at least 4 inches above adjacent exterior grade.

Footings located adjacent to utility trenches should have their bearing surfaces below an imaginary 1:1 (horizontal:vertical) plane projected upward from the bottom edge of the trench to the footing.

4.1.2 Waterstop

If a two-pour system is used for footings and slab, the cold joint between the exterior footing and slab-on-grade should be located at least 4 inches above adjacent finish exterior grade. If this is not done, then we recommend the addition of a waterstop between the two pours to reduce moisture penetration through the cold joint and migration under the slab. Use of a monolithic pour would eliminate the need for the waterstop.

4.1.3 Reinforcement

The structural engineer should design footing reinforcement to support the intended structural loads without excessive settlement. Reinforce continuous footings with top and bottom steel to
provide structural continuity and to permit spanning of local irregularities. At a minimum, design continuous footings to structurally span a clear distance of 5 feet. To help resist expansive soil movement, reinforce continuous footings with at least four No. 4 steel reinforcement bars, two top and two bottom.

4.1.4 Foundation Lateral Resistance

Lateral loads may be resisted by friction along the base and by passive pressure along the sides of foundations. The passive pressure is based on an equivalent fluid pressure in pounds per cubic foot (pcf). We recommend the following allowable values for design:

- Passive Lateral Pressure: 300 pcf
- Coefficient of Friction: 0.35

The above allowable values include a factor of safety of 1.5. Increase the above values by one-third for the short-term effects of wind or seismic loading. Passive lateral pressure should not be used for footings on or above slopes.

4.1.5 Settlement

Provided our report recommendations are followed and given the proposed construction, we estimate total and differential foundation settlements to be less than approximately 1 inch and ½ inch, respectively.

5.0 SLABS-ON-GRADE

5.1 INTERIOR CONCRETE FLOOR SLABS

5.1.1 Minimum Design Section

As discussed further in Section 8.1, the interior floor slabs should be supported on 18 inches of low-expansion potential fill to reduce the likelihood of slab damage from heave or shrinkage.

We recommend the following minimum slab design:

1. Provide a minimum concrete thickness of 5 inches.

2. Place minimum steel reinforcing of No. 3 rebar on 18-inch centers each way within the middle third of the slab to help control the width of shrinkage cracking that inherently occurs as concrete cures.

The structural engineer should provide final design thickness and additional reinforcement, as necessary, for the intended structural loads.

5.1.2 Slab Moisture Vapor Reduction

When buildings are constructed with concrete slab-on-grade, water vapor from beneath the slab will migrate through the slab and into the building. This water vapor can be reduced but not stopped. Vapor transmission can negatively affect floor coverings and lead to increased moisture within a building. When water vapor migrating through the slab would be undesirable, we
recommend the following to reduce, but not stop, water vapor transmission upward through the slab-on-grade.

1. Construct a moisture retarder system directly beneath the slab on-grade that consists of the following:

   a. Vapor retarder membrane sealed at all seams and pipe penetrations and connected to all footings. Vapor retarders shall conform to Class A vapor retarder in accordance with ASTM E 1745, latest edition, “Standard Specification for Plastic Water Vapor Retarders used in Contact with Soil or Granular Fill under Concrete Slabs”. The vapor retarder should be underlain by

   b. 4 inches of clean crushed rock. Crushed rock should have 100 percent passing the ¾-inch sieve and less than 5 percent passing the No. 4 Sieve.

2. Use a concrete water-cement ratio for slabs-on-grade of no more than 0.50.

3. Provide inspection and testing during concrete placement to check that the proper concrete and water cement ratio are used.

4. Moist cure slabs for a minimum of 3 days or use other equivalent curing specified by the structural engineer.

The structural engineer should be consulted as to the use of a layer of clean sand or pea gravel (less than 5 percent passing the U.S. Standard No. 200 Sieve) placed on top of the vapor retarder membrane to assist in concrete curing.

5.2 TRENCH BACKFILL

Backfill and compact all trenches below building slabs-on-grade and to 5 feet laterally beyond any edge in accordance with Section 8.3.2 Underground Utility Backfill.

6.0 RETAINING WALLS

6.1 LATERAL SOIL PRESSURES

Design the mid-building retaining wall to resist lateral earth pressures from adjoining natural materials and/or backfill and from any surcharge loads. Provided that adequate drainage is included as recommended below, design walls restrained from movement at the top to resist an equivalent fluid pressure of 90 pounds per cubic foot (pcf). In addition, design restrained walls to resist an additional uniform pressure equivalent to one-half of any surcharge loads applied at the surface. If the retained height is greater than 6 feet, the wall should be analyzed for seismic stability using a seismic increment of 35 pcf.

The above lateral earth pressures assume sloping backfill conditions no steeper than 2:1 (horizontal:vertical) and sufficient drainage behind the walls to prevent any build-up of hydrostatic pressures from surface water infiltration and/or a rise in the groundwater level. Dampproofing of the walls should be included in areas where wall moisture would be problematic.
Construct a drainage system, as recommended below, to reduce hydrostatic forces behind the retaining wall.

6.2 RETAINING WALL DRAINAGE

Construct either graded rock drains or geosynthetic drainage composites behind the retaining walls to reduce hydrostatic lateral forces. For rock drain construction, we recommend two types of rock drain alternatives:

1. A minimum 12-inch-thick layer of Class 2 Permeable Filter Material (Caltrans Specification 68-2.02F) placed directly behind the wall, or

2. A minimum 12-inch-thick layer of washed, crushed rock with 100 percent passing the ¾-inch sieve and less than 5 percent passing the No. 4 sieve. Envelop rock in a minimum 6-ounce, nonwoven geotextile filter fabric.

For both types of rock drains:

1. Place the rock drain directly behind the walls of the structure.

2. Extend rock drains from the wall base to within 12 inches of the top of the wall.

3. Place a minimum of 4-inch-diameter perforated pipe (glued joints and end caps) at the base of the wall, inside the rock drain and fabric, with perforations placed down.

4. Place pipe at a gradient at least 1 percent to direct water away from the wall by gravity to a drainage facility.

ENGEIO should review and approve geosynthetic composite drainage systems prior to use.

6.3 BACKFILL

Backfill behind retaining walls should be placed and compacted in accordance with Section 8.3.2. Use light compaction equipment within 5 feet of the wall face. If heavy compaction equipment is used, the walls should be temporarily braced to avoid excessive wall movement.

6.4 FOUNDATIONS

Retaining walls may be supported on continuous footings designed in accordance with recommendations presented in Section 4.1.

7.0 CRAWL SPACE MOISTURE REDUCTION

The upper portion of the building will be constructed with raised floors and underlying crawl space areas. There are inherent risks of excessive ground moisture and water vapor leading to wood damage, mold, mildew, etc. To reduce the potential for ground moisture in crawl spaces, we recommend that measures be implemented to control moisture below and around the building. Depressed crawl space areas (lower than surrounding grades outside of the building), irrigation practices around the structure, presence of shallow groundwater, and poor drainage may lead to high ground moisture conditions in the crawlspace areas. It is important that the crawl space
designer provide necessary measures to properly and liberally ventilate crawl space areas to reduce adverse effects of high water vapor conditions.

Surface drain inlets shall be installed at low portions of the crawl space to collect and divert surface water, in sealed pipes, away from the structure. Crawl space ground surface shall be covered with either: (1) “thin concrete slab” (a concrete slab with a thickness of at least 2 to 3 inches) placed directly over a polyethylene membrane, or (2) a durable vapor retarder/liner conforming to Class A of ASTM E 1745, latest edition; vapor retarders shall be installed in accordance with manufacturer’s recommendations including sealing seams, pipe penetrations and attachment to perimeter concrete stemwalls.

As a minimum, we recommend that ventilation openings be provided through foundation walls or exterior walls for the under-floor space, between the bottom of the floor joists and the earth under the building, in accordance with 2016 CBC. Additionally, locations of the ventilation openings shall be around all sides of foundation perimeters, and crawl-space airflow shall allow for adequate evacuation of excessive water vapor. Site-specific design and conditions, along with the desired degree of reduction of risk associated with crawl space moisture, may necessitate consultation with a ventilation specialist for proper design.

**8.0 EARTHWORK RECOMMENDATIONS**

The relative compaction and optimum moisture content of soil referred to in this report are based on the most recent ASTM D1557 test method. Compacted soil is not acceptable if it is unstable. It should exhibit only minimal flexing or pumping, as observed by an ENGEO representative.

As used in this report, the term “moisture condition” refers to adjusting the moisture content of the soil by either drying if too wet or adding water if too dry.

We define “structural areas” as any area sensitive to settlement of compacted soil. These areas include, but are not limited to building pads, sidewalks, pavement areas, and retaining walls.

We provide earthwork recommendations in the sections below. In addition, we provide general recommendations in Appendix A, Supplemental Recommendations.

**8.1 BUILDING PAD PREPARATION**

For the slab-on-grade portions of the building, we recommend building pad preparation include overexcavation of remaining soft organic rich fine-grained soil. We anticipate this will only be necessary be outside of the limits of the previously graded landslide repair area. Onsite soil material is suitable as fill material provided it is processed to remove concentrations of organic material, debris, and particles greater than 8 inches in maximum dimension. In addition, to reduce the potential for damage to the slab-on-grade from expansive soil, the upper 18 inches of the building pad should consist of low expansive fill. We define low expansion potential fill as soil with an Expansive Index (EI) of less than 50. Confirmation EI testing should be performed by ENGEO prior to pad construction.

Imported fill materials should meet the above requirements and have an EI less than 50. Allow ENGEO to sample and test proposed imported fill materials at least 5 days prior to delivery to the site.
Fill compaction recommendations are provided in Section 8.3.1

8.2 OVER-OPTIMUM SOIL MOISTURE CONDITIONS

The contractor should anticipate encountering excessively over-optimum (wet) soil moisture conditions during winter or spring pad preparation, or during or following periods of rain. Wet soil can make proper compaction difficult or impossible. Wet soil conditions can be mitigated by:

1. Frequent spreading and mixing during warm dry weather.
2. Mixing with drier materials.
3. Mixing with a lime, lime-flyash, or cement product; or
4. Stabilizing with aggregate, geotextile stabilization fabric, or both.

Options 3 and 4 should be evaluated by ENGEIO prior to implementation.

8.3 FILL COMPACTION

8.3.1 Building Pad

Perform subgrade compaction prior to fill placement, following cutting operations, and in areas left at grade as follows.

1. Scarify to a depth of at least 8 inches.
2. Moisture condition soil to at least 1 percentage point above the optimum moisture content; and
3. Compact the subgrade to at least 90 percent relative compaction.

After the subgrade soil has been compacted, place and compact acceptable fill as follows:

1. Spread fill in loose lifts that do not exceed 8 inches.
2. Moisture condition lifts to at least 1 percentage point above the optimum moisture content; and
3. Compact fill to a minimum of 90 percent relative compaction.

If expansive soil is encountered (at least 18 inches below the building pad), moisture condition soil to at least 3 percentage points over the optimum moisture content

8.3.2 Underground Utility Backfill

8.3.2.1 General

The contractor is responsible for conducting trenching and shoring in accordance with CALOSHA requirements. Project consultants involved in utility design should specify pipe bedding materials.

8.3.2.2 Structural Areas

Place and compact trench backfill as follows:

1. Trench backfill should have a maximum particle size of 6 inches.
2. Moisture condition trench backfill to or slightly above the optimum moisture content. Moisture condition backfill outside the trench.

3. Place fill in loose lifts not exceeding 12 inches; and
4. Compact fill to a minimum of 90 percent relative compaction (ASTM D1557).

Where utility trenches cross perimeter building foundations, backfill with native clay soil for pipe bedding and backfill for a distance of 2 feet on each side of the foundation. This will help prevent the normally granular bedding materials from acting as a conduit for water to enter beneath the building. As an alternative, a sand cement slurry (minimum 28-day compressive strength of 500 psi) may be used in place of native clay soil.

8.4 SLOPES

The slope beneath and adjacent to the building should be constructed to a final slope gradient of 2:1 (horizontal:vertical) or flatter. The contractor is responsible to construct temporary construction slopes in accordance with CALOSHA requirements. In order to maintain the integrity of the existing MSE wall, the temporary slope for the mid-building retaining wall should not encroach within a 1:1 projection down from the bottom of the MSE wall.

8.5 SITE DRAINAGE

8.5.1 Surface Drainage

The project civil engineer is responsible for designing surface drainage improvements. With regard to geotechnical engineering issues, we recommend that finish grades be sloped away from building to the maximum extent practical. The latest California Building Code Section 1804.3 specifies minimum slopes of 5 percent away from foundations.

9.0 CONSTRUCTION MONITORING

Our experience and that of our profession clearly indicate that the risk of costly design, construction, and maintenance problems can be significantly lowered by retaining the design geotechnical engineering firm to:

1. Review the final grading and foundation plans and specifications prior to construction to evaluate whether our recommendations have been implemented, and to provide additional or modified recommendations, as needed. This also allows us to check if any changes have occurred in the nature, design or location of the proposed improvements and provides the opportunity to prepare a written response with updated recommendations.

2. Perform laboratory testing and construction monitoring to check the validity of the assumptions we made to prepare this report. Earthwork operations should be performed under the observation of our representative to check that the site is properly prepared, the selected fill materials are satisfactory, and that placement and compaction of the fills has been performed in accordance with our recommendations and the project specifications. Sufficient notification to us prior to earthwork is important.
If we are not retained to perform the services described above, then we are not responsible for any party’s interpretation of our report (and subsequent addenda, letters, and verbal discussions).

10.0 LIMITATIONS AND UNIFORMITY OF CONDITIONS

This report presents geotechnical recommendations for design of the improvements discussed in Section 1.3 for the City of Berkeley Cazadero Performing Arts project. If changes occur in the nature or design of the project, we should be allowed to review this report and provide additional recommendations, if any. It is the responsibility of the owner to transmit the information and recommendations of this report to the appropriate organizations or people involved in design of the project, including but not limited to developers, owners, buyers, architects, engineers, and designers. The conclusions and recommendations contained in this report are solely professional opinions and are valid for a period of no more than 2 years from the date of report issuance.

We strived to perform our professional services in accordance with generally accepted geotechnical engineering principles and practices currently employed in the area; no warranty is expressed or implied. There are risks of earth movement and property damages inherent in building on or with earth materials. We are unable to eliminate all risks or provide insurance; therefore, we are unable to guarantee or warrant the results of our services.

This report is based upon field and other conditions discovered at the time of report preparation. We developed this report with limited subsurface exploration data. We assumed that our subsurface exploration data is representative of the actual subsurface conditions across the site. Considering possible underground variability of soil, rock, stockpiled material, and groundwater, additional costs may be required to complete the project. We recommend that the owner establish a contingency fund to cover such costs. If unexpected conditions are encountered, notify ENGEO immediately to review these conditions and provide additional and/or modified recommendations, as necessary.

Our services did not include excavation sloping or shoring, soil volume change factors, flood potential, or a geohazard exploration. In addition, our geotechnical exploration did not include work to determine the existence of possible hazardous materials. If any hazardous materials are encountered during construction, notify the proper regulatory officials immediately.

This document must not be subject to unauthorized reuse, that is, reusing without written authorization of ENGEO. Such authorization is essential because it requires ENGEO to evaluate the document’s applicability given new circumstances, not the least of which is passage of time.

Actual field or other conditions will necessitate clarifications, adjustments, modifications or other changes to ENGEO’s documents. Therefore, ENGEO must be engaged to prepare the necessary clarifications, adjustments, modifications or other changes before construction activities commence or further activity proceeds. If ENGEO’s scope of services does not include on-site construction observation, or if other persons or entities are retained to provide such services, ENGEO cannot be held responsible for any or all claims arising from or resulting from the performance of such services by other persons or entities, and from any or all claims arising from or resulting from clarifications, adjustments, modifications, discrepancies or other changes necessary to reflect changed field or other conditions.

We determined the lines designating the interface between layers on the exploration logs using visual observations. The transition between the materials may be abrupt or gradual. The
exploration logs contain information concerning samples recovered, indications of the presence of various materials such as clay, sand, silt, rock, existing fill, etc., and observations of groundwater encountered. The field logs also contain our interpretation of the subsurface conditions between sample locations. Therefore, the logs contain both factual and interpretative information. Our recommendations are based on the contents of the final logs, which represent our interpretation of the field logs.
SELECTED REFERENCES

1. ENGEO, Construction Testing and Observation Services, Cazadero Performing Arts Camp – Landslide Repair, Sonoma County, California, February 16, 2018.

2. ENGEO, Landslide Repair Plan, As-built Plan Set, Cazadero Performing Arts Camp, Sonoma County, California, February 16, 2018.


4. ENGEO, Site Reconnaissance to Observe Landslide Area, Cazadero Performing Arts Camp, May 5, 2016.


SUPPLEMENTAL RECOMMENDATIONS

Prepared by
ENGEIO Incorporated
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GENERAL INFORMATION

PREFACE

These supplemental recommendations are intended as a guide for earthwork and are in addition to any previous earthwork recommendations made by the Geotechnical Engineer. If there is a conflict between these supplemental recommendations and any previous recommendations, it should be immediately brought to the attention of ENGEO. Testing standards identified in this document shall be the most current revision (unless stated otherwise).

DEFINITIONS

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>BACKFILL</td>
<td>Soil, rock or soil-rock material used to fill excavations and trenches.</td>
</tr>
<tr>
<td>DRAWINGS</td>
<td>Documents approved for construction which describe the work.</td>
</tr>
<tr>
<td>THE GEOTECHNICAL ENGINEER</td>
<td>The project geotechnical engineering consulting firm, its employees, or its designated representatives.</td>
</tr>
<tr>
<td>ENGINEERED FILL</td>
<td>Fill upon which the Geotechnical Engineer has made sufficient observations and tests to confirm that the fill has been placed and compacted in accordance with geotechnical engineering recommendations.</td>
</tr>
<tr>
<td>FILL</td>
<td>Soil, rock, or soil-rock materials placed to raise the grades of the site or to backfill excavations.</td>
</tr>
<tr>
<td>IMPORTED MATERIAL</td>
<td>Soil and/or rock material which is brought to the site from offsite areas.</td>
</tr>
<tr>
<td>ONSITE MATERIAL</td>
<td>Soil and/or rock material which is obtained from the site.</td>
</tr>
<tr>
<td>OPTIMUM MOISTURE</td>
<td>Water content, percentage by dry weight, corresponding to the maximum dry density as determined by ASTM D-1557.</td>
</tr>
<tr>
<td>RELATIVE COMPACTION</td>
<td>The ratio, expressed as a percentage, of the in-place dry density of the fill or backfill material as compacted in the field to the maximum dry density of the same material as determined by ASTM D-1557.</td>
</tr>
<tr>
<td>SELECT MATERIAL</td>
<td>Onsite and/or imported material which is approved by the Geotechnical Engineer as a specific-purpose fill.</td>
</tr>
</tbody>
</table>
PART I - EARTHWORK

1.0 GENERAL

1.1 WORK COVERED

Supplemental recommendations for performing earthwork and grading. Activities include:

- Site Preparation and Demolition
- Excavation
- Grading
- Backfill of Excavations and Trenches
- Engineered Fill Placement, Moisture Conditioning, and Compaction

1.2 CODES AND STANDARDS

The contractor should perform their work complying with applicable occupational safety and health standards, rules, regulations, and orders. The Occupational Safety and Health Standards (OSHA) Board is the only agency authorized in the State to adopt and enforce occupational safety and health standards (Labor Code § 142 et seq.). The owner, their representative and contractor are responsible for site safety; ENGEIO representatives are not responsible for site safety.

Excavating, trenching, filling, backfilling, shoring and grading work should meet the minimum requirements of the applicable Building Code, and the standards and ordinances of state and local governing authorities.

1.3 TESTING AND OBSERVATION

Site preparation, cutting and shaping, excavating, filling, and backfilling should be carried out under the testing and observation of ENGEIO. ENGEIO shall be retained to perform appropriate field and laboratory tests to check compliance with the recommendations. Any fill or backfill that does not meet the supplemental recommendations shall be removed and/or reworked, until the supplemental recommendations are satisfied.

Tests for compaction shall be made in accordance with test procedures outlined in ASTM D-1557, as applicable, unless other testing methods are deemed appropriate by ENGEIO. These and other tests shall be performed in accordance with accepted testing procedures, subject to the engineering discretion of ENGEIO.

2.0 MATERIALS

2.1 STANDARD

Materials, tools, equipment, facilities, and services as required for performing the required excavating, trenching, filling and backfilling should be furnished by the Contractor.
2.2 ENGINEERED FILL AND BACKFILL

Material to be used for engineered fill and backfill should be free from organic matter and other deleterious substances, and of such quality that it will compact thoroughly without excessive voids when watered and rolled.

Unless specified elsewhere by EN GEO, engineered fill and backfill shall be free of significant organics, or any other unsatisfactory material. In addition, engineered fill and backfill shall comply with the grading requirements shown in the following table:

<table>
<thead>
<tr>
<th>US STANDARD SIEVE</th>
<th>PERCENTAGE PASSING</th>
</tr>
</thead>
<tbody>
<tr>
<td>3&quot;</td>
<td>100</td>
</tr>
<tr>
<td>No. 4</td>
<td>35–100</td>
</tr>
<tr>
<td>No. 30</td>
<td>20–100</td>
</tr>
</tbody>
</table>

Earth materials to be used as engineered fill and backfill shall be cleared of debris, rubble and deleterious matter. Rocks and aggregate exceeding the maximum allowable size shall be removed from the site. Rocks of maximum dimension in excess of two-thirds of the lift thickness shall be removed from any fill material to the satisfaction of EN GEO.

EN GEO shall be immediately notified if potential hazardous materials or suspect soils exhibiting staining or odor are encountered. Work activities shall be discontinued within the area of potentially hazardous materials. EN GEO shall be notified at least 72 hours prior to the start of filling and backfilling operations. Materials to be used for filling and backfilling shall be submitted to EN GEO no less than 10 days prior to intended delivery to the site. Unless specified elsewhere by EN GEO, where conditions require the importation of low expansive fill material, the material shall be an inert, low to non-expansive soil, or soil-rock material, free of organic matter and meeting the following requirements:

<table>
<thead>
<tr>
<th>SIEVE SIZE</th>
<th>PERCENT PASSING</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-inch</td>
<td>100</td>
</tr>
<tr>
<td>#200</td>
<td>15 - 70</td>
</tr>
</tbody>
</table>

Plasticity Index < 12

Less than 2 percent

A sample of the proposed import material should be submitted to EN GEO no less than 10 days prior to intended delivery to the site.

2.3 SUBDRAINS

A subdrain system is an underground network of piping used to remove water from areas that collect or retain surface water or subsurface water. Subsurface water is collected by allowing
water into the pipe through perforations. Subdrain systems may drain and discharge to an appropriate outlet such as storm drain, natural swales or drainage, etc. Details for subdrain systems may vary depending on many items, including but not limited to site conditions, soil types, subdrain spacing, depth of the pipe and pervious medium, as well as pipe diameter.

2.4 **PIPE**

Subdrain pipe shall conform with these supplemental recommendations unless specified elsewhere by ENGEO. Perforated pipe for various depths shall be manufactured in accordance with the following requirements:

<table>
<thead>
<tr>
<th>TABLE 2.4-1: Perforated Pipe Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PIPE TYPE</strong></td>
</tr>
<tr>
<td>----------------</td>
</tr>
<tr>
<td>PIPE STIFFNESS ABOVE 200 PSI (BELOW 50 FEET OF FINISHED GRADE)</td>
</tr>
<tr>
<td>ABS SDR 15.3</td>
</tr>
<tr>
<td>PVC Schedule 80</td>
</tr>
<tr>
<td>PIPE STIFFNESS BETWEEN 100 PSI AND 150 PSI (BETWEEN 15 AND 50 FEET OF FINISHED GRADE)</td>
</tr>
<tr>
<td>ABS SDR 23.5</td>
</tr>
<tr>
<td>PVC SDR 23.5</td>
</tr>
<tr>
<td>PVC Schedule 40</td>
</tr>
<tr>
<td>ABS Schedule 40/DWV</td>
</tr>
<tr>
<td>PIPE STIFFNESS BETWEEN 45 PSI AND 50 PSI* (BETWEEN 0 TO 15 FEET OF FINISHED GRADE)</td>
</tr>
<tr>
<td>PVC A-2000</td>
</tr>
<tr>
<td>PVC SDR 35</td>
</tr>
<tr>
<td>ABS SDR 35</td>
</tr>
<tr>
<td>Corrugated PE</td>
</tr>
</tbody>
</table>

*Pipe with a stiffness less than 45 psi should not be used.

Other pipes not listed in the table above shall be submitted for review by the Geotechnical Engineer not less 72 hours before proposed use.

2.5 **OUTLETS AND RISERS**

Subdrain outlets and risers must be fabricated from the same material as the subdrain pipe. Outlet and riser pipe and fittings must not be perforated. Covers must be fitted and bolted into the riser pipe or elbow. Covers must seat uniformly and not be subject to rocking.

2.6 **PERMEABLE MATERIAL**

Permeable material shall generally conform to Caltrans Standard Specification unless specified otherwise by ENGEO. Class 2 permeable material shall comply with the gradation requirements shown in the following table.
TABLE 2.6-1: Class 2 Permeable Material Grading Requirements

<table>
<thead>
<tr>
<th>SIEVE SIZES</th>
<th>PERCENTAGE PASSING</th>
</tr>
</thead>
<tbody>
<tr>
<td>1&quot;</td>
<td>100</td>
</tr>
<tr>
<td>3/4&quot;</td>
<td>90 to 100</td>
</tr>
<tr>
<td>3/8&quot;</td>
<td>40 to 100</td>
</tr>
<tr>
<td>No. 4</td>
<td>25 to 40</td>
</tr>
<tr>
<td>No. 8</td>
<td>18 to 33</td>
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<tr>
<td>No. 30</td>
<td>5 to 15</td>
</tr>
<tr>
<td>No. 50</td>
<td>0 to 7</td>
</tr>
<tr>
<td>No. 200</td>
<td>0 to 3</td>
</tr>
</tbody>
</table>

2.7 FILTER FABRIC

Filter fabric shall meet the following Minimum Average Roll Values unless specified elsewhere by ENGEO.

- Grab Strength (ASTM D-4632) ........................................... 180 lbs
- Mass per Unit Area (ASTM D-4751) .................................. 6 oz/yd²
- Apparent Opening Size (ASTM D-4751).................. 70-100 U.S. Std. Sieve
- Flow Rate (ASTM D-4491) ........................................... 80 gal/min/ft²
- Puncture Strength (ASTM D-4833) ............................. 80 lbs

Areas to receive filter fabric must comply with the compaction and elevation tolerance specified for the material involved. Handle and place filter fabric under the manufacturer's instructions. Align and place filter fabric without wrinkles.

Overlap adjacent roll ends of filter fabric in accordance with manufacturer’s recommendations. The preceding roll must overlap the following roll in the direction that the permeable material is being spread. Completely replace torn or punctured sections damaged during placement or repair by placing a piece of filter fabric that is large enough to cover the damaged area and comply with the overlap specified. Cover filter fabric with the thickness of overlying material shown within 72 hours of placing the fabric.

2.8 GEOCOMPOSITE DRAINAGE

Geocomposite drainage is a prefabricated material that includes filter fabric and plastic pipe. Filter fabric must be Class A. The drain shall be of composite construction consisting of a supporting structure or drainage core material surrounded by a geotextile. The geotextile shall encapsulate the drainage core and prevent random soil intrusion into the drainage structure. The drainage core material shall consist of a three-dimensional polymeric material with a structure that permits flow along the core laterally. The core structure shall also be constructed to permit flow regardless of the water inlet surface. The drainage core shall provide support to the geotextile.

A geotextile flap shall be provided along drainage core edges. This flap shall be of sufficient width for sealing the geotextile to the adjacent drainage structure edge to prevent soil intrusion into the structure during and after installation. The geotextile shall cover the full length of the
core. The geocomposite core shall be furnished with an approved method of constructing and connecting with outlet pipes. If the fabric on the geocomposite drain is torn or punctured, replace the damaged section completely. The specific drainage composite material and supplier shall be preapproved by ENGEIO.

The Contractor shall submit a manufacturer's certification that the geocomposite meets the design properties and respective index criteria measured in full accordance with applicable test methods. The manufacturer's certification shall include a submittal package of documented test results that confirm the design values. In case of dispute over validity of design values, the Contractor will supply design property test data from a laboratory approved by ENGEIO, to support the certified values submitted.

Geocomposite material suppliers shall provide a qualified and experienced representative onsite to assist the Contractor and ENGEIO at the start of construction with directions on the use of drainage composite. If there is more than one application on a project, this criterion will apply to construction of the initial application only. The representative shall also be available on an as-needed basis, as requested by ENGEIO, during construction of the remaining applications. The soil surface against which the geocomposite is to be placed shall be free of debris and inordinate irregularities that will prevent intimate contact between the soil surface and the drain.

Edge seams shall be formed by utilizing the flap of the geotextile extending from the geocomposite's edge and lapping over the top of the fabric of the adjacent course. The fabric flap shall be securely fastened to the adjacent fabric by means of plastic tape or non-water-soluble construction adhesive, as recommended by the supplier. To prevent soil intrusion, exposed edges of the geocomposite drainage core edge must be covered.

Approved backfill shall be placed immediately over the geocomposite drain. Backfill operations should be performed to not damage the geotextile surface of the drain. Also during operations, avoid excessive settlement of the backfill material. The geocomposite drain, once installed, shall not be exposed for more than 7 days prior to backfilling.
PART II - GEOGRID SOIL REINFORCEMENT

Geogrid soil reinforcement (geogrid) shall be submitted to ENGEIO and should be approved before use. The geogrid shall be a regular network of integrally connected polymer tensile elements with aperture geometry sufficient to permit significant mechanical interlock with the surrounding soil or rock. The geogrid structure shall be dimensionally stable and able to retain its geometry under construction stresses and shall have high resistance to damage during construction to ultraviolet degradation and to chemical and biological degradation encountered in the soil being reinforced. The geogrids shall have an Allowable Tensile Strength ($T_a$) and Pullout Resistance, for the soil type(s) as specified on design plans.

The contractor shall submit a manufacturer's certification that the geogrids supplied meet plans and project specifications. The contractor shall check the geogrid upon delivery to ensure that the proper material has been received. During periods of shipment and storage, the geogrid shall be protected from temperatures greater than 140°F, mud, dirt, dust, and debris. Manufacturer's recommendations in regard to protection from direct sunlight must also be followed. At the time of installation, the geogrid will be rejected if it has defects, tears, punctures, flaws, deterioration, or damage incurred during manufacture, transportation, or storage. If approved by ENGEIO, torn or punctured sections may be repaired by placing a patch over the damaged area. Any geogrid damaged during storage or installation shall be replaced by the Contractor at no additional cost to the owner.

Geogrid material suppliers shall provide a qualified and experienced representative onsite at the initiation of the project, for a minimum of three days, to assist the Contractor and ENGEIO personnel at the start of construction. If there is more than one slope on a project, this criterion will apply to construction of the initial slope only. The representative shall also be available on an as-needed basis, as requested by ENGEIO, during construction of the remaining slope(s). Geogrid reinforcement may be joined with mechanical connections or overlaps as recommended and approved by the manufacturer. Joints shall not be placed within 6 feet of the slope face, within 4 feet below top of slope, nor horizontally or vertically adjacent to another joint.

The geogrid reinforcement shall be installed in accordance with the manufacturer's recommendations. The geogrid reinforcement shall be placed within the layers of the compacted soil as shown on the plans or as directed. The geogrid reinforcement shall be placed in continuous longitudinal strips in the direction of main reinforcement. However, if the Contractor is unable to complete a required length with a single continuous length of geogrid, a joint may be made with the manufacturer's approval. Only one joint per length of geogrid shall be allowed. This joint shall be made for the full width of the strip by using a similar material with similar strength. Joints in geogrid reinforcement shall be pulled and held taut during fill placement.

Adjacent strips, in the case of 100 percent coverage in plan view, need not be overlapped. The minimum horizontal coverage is 50 percent, with horizontal spacing between reinforcement no greater than 40 inches. Horizontal coverage of less than 100 percent shall not be allowed unless specifically detailed in the construction drawings. Adjacent rolls of geogrid reinforcement shall be overlapped or mechanically connected where exposed in a wrap around face system, as applicable.
The Contractor may place only that amount of geogrid reinforcement required for immediately pending work to prevent undue damage. After a layer of geogrid reinforcement has been placed, the next succeeding layer of soil shall be placed and compacted as appropriate. After the specified soil layer has been placed, the next geogrid reinforcement layer shall be installed. The process shall be repeated for each subsequent layer of geogrid reinforcement and soil. Geogrid reinforcement shall be placed to lay flat and pulled tight prior to backfilling. After a layer of geogrid reinforcement has been placed, suitable means, such as pins or small piles of soil, shall be used to hold the geogrid reinforcement in position until the subsequent soil layer can be placed.

Under no circumstances shall a track-type vehicle be allowed on the geogrid reinforcement before at least 6 inches of soil have been placed. Turning of tracked vehicles should be kept to a minimum to prevent tracks from displacing the fill and the geogrid reinforcement. If approved by the Manufacturer, rubber-tired equipment may pass over the geosynthetic reinforcement at slow speeds, less than 10 mph. Sudden braking and sharp turning shall be avoided. During construction, the surface of the fill should be kept approximately horizontal. Geogrid reinforcement shall be placed directly on the compacted horizontal fill surface. Geogrid reinforcements are to be placed as shown on plans, and oriented correctly.
PART III - GEOTEXTILE SOIL REINFORCEMENT

The specific geotextile material and supplier shall be preapproved by ENGEIO. The contractor shall submit a manufacturer's certification that the geotextiles supplied meet the respective index criteria set when geotextile was approved by ENGEIO, measured in full accordance with specified test methods and standards.

The contractor shall check the geotextile upon delivery to ensure that the proper material has been received. During periods of shipment and storage, the geotextile shall be protected from temperatures greater than 140°F, mud, dirt, dust, and debris. Manufacturer's recommendations in regard to protection from direct sunlight must also be followed. At the time of installation, the geotextile will be rejected if it has defects, tears, punctures, flaws, deterioration, or damage incurred during manufacture, transportation, or storage. If approved by ENGEIO, torn or punctured sections may be repaired by placing a patch over the damaged area. Any geotextile damaged during storage or installation shall be replaced by the Contractor at no additional cost to the owner.

Geotextile material suppliers shall provide a qualified and experienced representative onsite at the initiation of the project to assist the Contractor and ENGEIO personnel at the start of construction. The geotextile reinforcement shall be installed in accordance with the manufacturer's recommendations. The geotextile reinforcement shall be placed within the layers of the compacted soil as shown on the plans or as directed, secured with staples, pins, or small piles of backfill, placed without wrinkles, and aligned with the primary strength direction perpendicular to slope contours. Cover geotextile reinforcement with backfill within the same work shift. Place at least 6 inches of backfill on the geotextile reinforcement before operating or driving equipment or vehicles over it, except those used under the conditions specified below for spreading backfill.

Adjacent strips, in the case of 100 percent coverage in plan view, need not be overlapped. The minimum horizontal coverage is 50 percent, with horizontal spacing between reinforcement no greater than 40 inches. Horizontal coverage of less than 100 percent shall not be allowed unless specifically detailed in the construction drawings. Adjacent rolls of geotextile reinforcement shall be overlapped or mechanically connected where exposed in a wraparound face system, as applicable.

The contractor may place only that amount of geotextile reinforcement required for immediately pending work to prevent undue damage. After a layer of geotextile reinforcement has been placed, the succeeding layer of soil shall be placed and compacted as appropriate. After the specified soil layer has been placed, the next geotextile reinforcement layer shall be installed. The process shall be repeated for each subsequent layer of geotextile reinforcement and soil.

Geotextile reinforcement shall be placed to lay flat and be pulled tight prior to backfilling. After a layer of geotextile reinforcement has been placed, suitable means, such as pins or small piles of soil, shall be used to hold the geotextile reinforcement in position until the subsequent soil layer can be placed. Under no circumstances shall a track-type vehicle be allowed on the geotextile reinforcement before at least six inches of soil has been placed. Turning of tracked vehicles should be kept to a minimum to prevent tracks from displacing the fill and the geotextile reinforcement. If approved by the Manufacturer, rubber-tired equipment may pass over the
geotextile reinforcement as slow speeds, less than 10 mph. Sudden braking and sharp turning shall be avoided.

During construction, the surface of the fill should be kept approximately horizontal. Geotextile reinforcement shall be placed directly on the compacted horizontal fill surface. Geotextile reinforcements are to be placed within three inches of the design elevations and extend the length as shown on the elevation view unless otherwise directed by ENGEIO.

Replace or repair any geotextile reinforcement damaged during construction. Grade and compact backfill to ensure the reinforcement remains taut. Geotextile soil reinforcement must be tested to the required design values using the following ASTM test methods.

**TABLE III-1: Geotextile Soil Reinforcements**

<table>
<thead>
<tr>
<th>PROPERTY</th>
<th>TEST</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elongation at break, percent</td>
<td>ASTM D 4632</td>
</tr>
<tr>
<td>Grab breaking load, lb, 1-inch grip (min) in each direction</td>
<td>ASTM D 4632</td>
</tr>
<tr>
<td>Wide width tensile strength at 5 percent strain, lb/ft (min)</td>
<td>ASTM D 4595</td>
</tr>
<tr>
<td>Wide width tensile strength at ultimate strength, lb/ft (min)</td>
<td>ASTM D 4595</td>
</tr>
<tr>
<td>Tear strength, lb (min)</td>
<td>ASTM D 4533</td>
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<tr>
<td>Puncture strength, lb (min)</td>
<td>ASTM D 6241</td>
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<tr>
<td>Permittivity, sec⁻¹ (min)</td>
<td>ASTM D 4491</td>
</tr>
<tr>
<td>Apparent opening size, inches (max)</td>
<td>ASTM D 4751</td>
</tr>
<tr>
<td>Ultraviolet resistance, percent (min) retained grab break load, 500 hours</td>
<td>ASTM D 4355</td>
</tr>
</tbody>
</table>
PART IV - EROSION CONTROL MAT

Work shall consist of furnishing and placing a synthetic erosion control mat and/or degradable erosion control blanket for slope face protection and lining of runoff channels. The specific erosion control material and supplier shall be pre-approved by ENGEIO.

The Contractor shall submit a manufacturer's certification that the erosion mat/blanket supplied meets the criteria specified when the material was approved by ENGEIO. The manufacturer's certification shall include a submittal package of documented test results that confirm the property values. Jute mesh shall consist of processed natural jute yarns woven into a matrix, and netting shall consist of coconut fiber woven into a matrix. Erosion control blankets shall be made of processed natural fibers that are mechanically, structurally, or chemically bound together to form a continuous matrix that is surrounded by two natural nets.

The Contractor shall check the erosion control material upon delivery to ensure that the proper material has been received. During periods of shipment and storage, the erosion mat shall be protected from temperatures greater than 140°F, mud, dirt, and debris. Manufacturer's recommendations in regard to protection from direct sunlight must also be followed. At the time of installation, the erosion mat/blanket shall be rejected if it has defects, tears, punctures, flaws, deterioration, or damage incurred during manufacture, transportation, or storage. If approved by ENGEIO, torn or punctured sections may be removed by cutting out a section of the mat. The remaining ends should be overlapped and secured with ground anchors. Any erosion mat/blanket damaged during storage or installation shall be replaced by the Contractor at no additional cost to the Owner.

Erosion control material suppliers shall provide a qualified and experienced representative onsite, to assist the Contractor and ENGEIO personnel at the start of construction. If there is more than one slope on a project, this criterion will apply to construction of the initial slope only. The representative shall be available on an as-needed basis, as requested by ENGEIO, during construction of the remaining slope(s). The erosion control material shall be placed and anchored on a smooth graded, firm surface approved by the Engineer. Anchoring terminal ends of the erosion control material shall be accomplished through use of key trenches. The material in the trenches shall be anchored to the soil on maximum 1½ foot centers. Topsoil, if required by construction drawings, placed over final grade prior to installation of the erosion control material shall be limited to a depth not exceeding 3 inches.

Erosion control material shall be anchored, overlapped, and otherwise constructed to ensure performance until vegetation is well established. Anchors shall be as designated on the construction drawings, with a minimum of 12-inch length, and shall be spaced as designated on the construction drawings, with a maximum spacing of 4 feet.
Jensen Dorm Pre Demolition: Western Face (landslide occurred on southern side; right side of photo). Note trees constraining building and deck limits.
Jensen Dorm, Pre-Demolition, Standing at eastern edge, facing westward. Front (north face) of dorm, front deck.
Western Face, Storage Under Deck
From Eastern Entrance; Storage Under Deck