Facilities Lease Agreement

Between

Sacramento City Unified School District
And
ENTITY NAME

For the
Ethel Phillips Elementary School Campus Renewal Project
SCUSD PROJECT #0110-468

DSA Application #TBD

Located at
2930 21st Ave, Sacramento, CA 95820

Documents Bound Herewith

AGREEMENT FORM

EXHIBIT A THE PROJECT
EXHIBIT B DESCRIPTION OF THE SITE
EXHIBIT C LEASE PAYMENT SCHEDULE
EXHIBIT D GENERAL CONSTRUCTION TERMS AND CONDITIONS
EXHIBIT E INSURANCE REQUIREMENTS
EXHIBIT F GENERAL CONDITIONS COSTS
EXHIBIT G CONSTRUCTION SCHEDULE
EXHIBIT H PRECONSTRUCTION SERVICES
EXHIBIT I SKILLED & TRAINED REPORTING FORM SAMPLE
EXHIBIT J PROJECT LABOR AGREEMENT
ATTACHMENT 1 DVBE GOOD FAITH EFFORTS OUTREACH REQUIREMENTS
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Sacramento City Unified School District

Facilities Lease Agreement

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THIS FACILITIES LEASE ("Facilities Lease"), made as of **Month Day, Year** ("Effective Date"), is entered into by and between **Entity Name**, a California corporation, as sublessor (the "Entity"), and Sacramento City Unified School District, a school district duly organized and validly existing under the Constitution and laws of said State of California, as sub lessee (the "District").

RECITALS

WHEREAS, the District desires to provide for a project that will be constructed as more particularly described in Exhibit A attached hereto and incorporated herein by this reference (the "Project"), **Ethel Phillips Elementary School Campus Renewal Project** located on the District's property at **Ethel Phillips Elementary School, 2930 21st Ave, Sacramento, CA 95820.**

WHEREAS, the District has issued a Request for Proposals for development of the Project and, upon receipt and review of the proposals has selected the Entity as submitting the best value proposal for the development of the Project;

WHEREAS, by way of a site lease dated **Month Day, Year** (the "Site Lease") the District has leased to the Entity the real property described in Exhibit B for the construction of the Project (the "Site");

WHEREAS, by way of this Facilities Lease, the Entity hereby leases the Site and the improvements back to the District;

WHEREAS, the District is authorized under Section 17406 of the Education Code of the State of California to lease the Site to the Entity and to have the Entity construct the Project on the Site and to lease back to the District the Site and the Project, and the District has duly authorized the execution and delivery of this Facilities Lease;

WHEREAS, the Entity is authorized to sublease the Site as lessee and to construct the Project on the Site, and has duly authorized the execution and delivery of this Facilities Lease;

WHEREAS, the Governing Board of the District (the "Board") has determined that it is in the best interests of the District and for the common benefit of the citizens residing in the District to construct the Project by leasing the Site to the Entity and by immediately entering into this Facilities Lease under which the District will sublease the Site and lease the Project from the Entity and make Lease Payments on the dates and in the amounts set forth in the payment schedule attached hereto as Exhibit C (the "Lease Payment Schedule").

WHEREAS, the parties have performed all acts, conditions and things required by law to exist, to have happened and to have been performed precedent to and in connection with the execution and entering into this Facilities Lease in regular and due time, form and manner as required by law, and the parties hereto are now duly authorized to execute and enter into this Facilities Lease;

WHEREAS, the District and the Entity further acknowledge and agree that they have entered into the Site Lease and this Facilities Lease pursuant to Education Code section 17406 as the best available and most expeditious means for the District to satisfy its substantial need to construct the Project.

NOW, THEREFORE, in consideration of the above recitals and of the mutual covenants hereinafter contained, the parties hereto do hereby agree as follows:

ARTICLE 1. DEFINITIONS AND EXHIBITS.

1.1 Definitions. Unless the context otherwise requires, the terms defined in this Section shall, for all purposes of this Facilities Lease, have the meanings herein specified. Additional definitions are included in Exhibit D, the General Construction Terms and Conditions.

1.1.1 "District" means the Sacramento City Unified School District, a school district duly organized and existing under the laws of the State of California.

1.1.2 "District Representative" means the Superintendent of the District, or any other person authorized by the Board of Education of the District to act on behalf of the District under or with respect to this Facilities Lease. The person or persons so designated to act as District Representative(s) shall be authorized in writing with notice served to the Entity's Authorized Representative. The District shall provide such notice designating the District Representative within five (5) business days of providing the Notice to Proceed.

1.1.3 "DSA" means the State of California, Department of General Services, Division of the State Architect.

1.1.4 "Entity" means **Entity Name**, a corporation duly organized and existing under the laws of the State of California duly licensed to do business in the State of California.

1.1.5 "Entity Representative" means the written, authorized representatives of the Entity, or any person authorized to act on behalf of the Entity under or with respect to this Facilities Lease as evidenced by a resolution conferring that representative with such authorization adopted by the Board of Directors of the Entity or as so designated by the President of the Entity. The Entity's initial representative is **[Name, Title]**.

1.1.6 "Event of Default by District" means one or more events as defined in Section 9.1 of this Facilities Lease.

1.1.7 "Event of Default by the Entity" means one or more events as defined in Section 9.3 of this Facilities Lease.

1.1.8 "Facilities Lease" means this Facilities Lease together with any duly authorized and executed amendment hereto.

1.1.9 "General Construction Terms and Conditions" shall mean the terms and conditions set forth in Exhibit D attached hereto.

1.1.10 "Lease Payment" means any payment required to be made by the District pursuant to Section 4.4 of this Facilities Lease and as set forth in Exhibit C attached to this Facilities Lease.

1.1.11 "Lease Payment Schedule" shall mean the payment schedule attached hereto as Exhibit C, to be developed by Entity during Preconstruction Services.

1.1.12 "Permitted Encumbrances" means, as of any particular time: (i) liens for general and valorem taxes and assessments, if any, not then delinquent, or which the District may, pursuant to provisions of Section 5.3 hereof, permit to remain unpaid; (ii) the Site Lease; (iii) this Facilities Lease, (iv) easements, rights of way, mineral rights, drilling rights and other rights, reservations, covenants, conditions or restrictions which exist of record as of the date of this Facilities Lease; and (v) easements, rights of way, mineral rights, drilling rights and other rights, reservations, covenants, conditions or restrictions established following the date of recordation of this Facilities Lease and to which the Entity and the District consent in writing which will not impair or impede the operation of the Site.

1.1.13 "Plans and Specifications" means the construction plans and specifications prepared for the Project by **HMC Architects** as approved by the DSA, Application No. **[to be added by Amendment]** and as further referenced in the General Construction Terms and Conditions, Exhibit D attached hereto.

1.1.14 "Preconstruction Services" means those services to be performed in Phase I of this Facilities Lease, as defined in greater detail in Exhibit H hereto.

1.1.15 "Project" or "Work" means the improvements and equipment to be constructed and installed by the Entity for the District's **Ethel Phillips Elementary School Campus Renewal Project** for the **Ethel Phillips Elementary School** as more particularly described in Exhibit A attached hereto, the General Construction Terms and Conditions (Exhibit D hereto), and the Plans and Specifications, and includes, unless the context requires otherwise, the Site. No Work for which Entity is required to be licensed in accordance with Article 5 (commencing with Section 7065) of Chapter 9 of Division 3 of the Business and Professions Code, and for which DSA approval is required, can be performed before receipt of the required DSA approval.

1.1.16 "Site" means that certain real property particularly described in Exhibit "B" attached hereto.

1.1.17 "Site Lease" means the Site Lease dated as of **Month, Day, Year**, by and between the District and the Entity together with any duly authorized and executed amendments thereto under which the District leased the Site to the Entity.

1.1.18 "Term of this Facilities Lease" or "Term" means the time during which the District has the obligation to make the Lease Payments under this Facilities Lease, as provided

for in Section 4.2 of this Facilities Lease.

1.1.19 "Total Base Rent" (TBR) means that amount to be developed by Entity during Preconstruction Services which shall be set forth in Section 4.4.2 below and as otherwise provided for herein.

1.2 Exhibits. The following Exhibits are attached to and by reference incorporated and made a part of this Facilities Lease:

Exhibit A - THE PROJECT: The description of the Project.

Exhibit B – THE SITE: The description of the real property constituting the Site.

Exhibit C - LEASE PAYMENT SCHEDULE: The schedule of Lease Payments to be paid by the District hereunder, to be developed by Entity during Preconstruction Services.

Exhibit D - GENERAL CONSTRUCTION TERMS AND CONDITIONS: The general terms and conditions for the construction of the Project.

Exhibit E – INSURANCE: The insurance requirements for the Project.

Exhibit F – GENERAL CONDITION COSTS

Exhibit G – CONSTRUCTION SCHEDULE, to be developed by Entity during Preconstruction Services.

Exhibit H – PRECONSTRUCTION SERVICES

Exhibit I – SAMPLE SKILLED & TRAINED REPORTING FORM

Attachment 1 – DVBE GOOD FAITH OUTREACH EFFORT REQUIREMENTS

ARTICLE 2. REPRESENTATIONS, COVENANTS AND WARRANTIES.

2.1 Representations, Covenants and Warranties of the District. The District represents, covenants and warrants to the Entity as follows:

2.1.1 Due Organization and Existence. The District is a school district, duly organized and existing under the Constitution and laws of the State of California.

2.1.2 Authorization. The District has the full power and authority to enter into, to execute and to deliver this Facilities Lease and the Site Lease, and to perform all of its duties and obligations hereunder, and has duly authorized the execution of this Facilities Lease and the Site Lease. The representatives of District executing this Facilities Lease and the Site Lease are fully

authorized to execute the same.

2.1.3 No Violations. Neither the execution and delivery of this Facilities Lease nor of the Site Lease, nor the fulfillment of or compliance with the terms and conditions hereof or thereof, nor the consummation of the transactions contemplated hereby or thereby, conflicts with or results in a breach or default (with due notice or the passage of time, or both) under the organizational instruments of the District or any applicable law or administrative rule or regulation, or any applicable court or administrative decree or order, or a breach of any of the terms, conditions or provisions of any restriction or any agreement or instrument to which the District is now a party or by which the District is bound, or constitutes a default under any of the foregoing, or results in the creation or imposition of any lien, charge or encumbrance whatsoever upon any of the property or assets of the District, or upon the Site, except Permitted Encumbrances.

2.1.4 No Litigation. There is no pending or, to the knowledge of the District, threatened action or proceeding before any court or administrative agency which will materially adversely affect the ability of the District to perform its obligations under this Facilities Lease.

2.2 Representations, Covenants and Warranties of the Entity. The Entity represents, covenants and warrants to District as follows:

2.2.1 Due Organization and Existence. The Entity is a California corporation duly organized and existing under the laws of the State of California; duly authorized and licensed to do business in the State of California; has the power to enter into this Facilities Lease and the Site Lease; is possessed of full power to own, rent and hold real and personal property, and to lease and sell the same; has duly authorized the execution and delivery of all of the aforesaid agreements; and is empowered and fully capable of undertaking the development and construction of the Project as described herein and in the documents referred to herein.

2.2.2 Authorization. The Entity has the full power and authority to enter into, to execute and to deliver this Facilities Lease and the Site Lease, and to perform all of its duties and obligations hereunder, and has duly authorized the execution of this Facilities Lease and the Site Lease.

2.2.3 No Violations. Neither the execution and delivery of this Facilities Lease and the Site Lease, nor the fulfillment of or compliance with the terms and conditions hereof or thereof, nor the consummation of the transactions contemplated hereby or thereby, conflicts with or results in a breach of the terms, conditions or provisions of any restriction or any agreement or instrument to which the Entity is now a party or by which the Entity is bound, or constitutes a default under any of the foregoing, or results in the creation or imposition of any lien, charge or encumbrance whatsoever upon any of the property or assets of the Entity or the Site, except the Permitted Encumbrances.

2.2.4 No Litigation. There is no pending or, to the knowledge of the Entity, threatened action or proceeding before any court or administrative agency which will materially adversely affect the ability of the Entity to perform its obligations under this Facilities Lease.

2.2.5 No Encumbrances. The Entity shall not pledge the Lease Payments or other amounts derived from the Site and from its other rights under this Facilities Lease, and shall not mortgage or encumber the Site, except as allowed under the provisions of the Facilities Lease and/or the Site Lease to finance construction of the Project.

2.2.6 Continued Existence. For up to six months following the term of this Lease, the Entity shall not voluntarily commence any act intended to dissolve or terminate the legal existence of the Entity, provided District is not in uncured default under this Facilities Lease. The Entity shall give District sixty (60) days written notice prior to dissolving or terminating the legal existence of the Entity within two (2) years of the expiration of this Lease.

2.2.7 No Assignments. Except as provided herein or otherwise with the District's advance written consent, the Entity will not assign this Facilities Lease, its right to receive Lease Payments and prepayments from the District, or its duties and obligations hereunder to any other person, firm or corporation. If assignment of rents is necessary to finance construction of the Project, the parties shall reasonably cooperate to facilitate such assignment. No assignment shall impair or violate the representations, covenants and warranties contained in this Section 2.2. This Lease may be assigned to an affiliate of the Entity provided that the representations, covenants and warranties in this Section 2.2 are not impaired or violated. Contracting or subcontracting with licensed contractors is not an assignment.

ARTICLE 3. PROJECT PHASES.

3.1 Preconstruction Services. Upon execution of this Facilities Lease, Entity shall commence performance of Preconstruction Services, as defined in and governed by Exhibit H hereto. Although the District anticipates authorizing Entity to proceed with the construction services following completion of Preconstruction Services, performance of Preconstruction Services shall not entitle Entity to perform any construction services.

3.2 Construction of the Project and Post-Construction Lease. Following approval of the TBR and Lease Payment Schedule by the Board, if the District elects to proceed with construction hereunder, then the District shall issue to Entity a Notice to Proceed. Entity may not perform any construction work prior to issuance of that Notice to Proceed, and the District shall make no payment for construction services unless it issues a Notice to Proceed applicable to those services.

3.2.1 Site Conditions and Pre-Construction Review. The Entity acknowledges that the Entity has visually investigated the Site and reviewed all reports for the Site provided to Entity by the District, has satisfied itself as to all issues related to site conditions that are discoverable through diligent observation by an experienced construction professional and has included all such issues in the Total Base Rent. The Entity further acknowledges that, prior to the start of construction, the Entity has reviewed the Plans and Specifications, geotechnical report and pointed out any design errors or omissions that are reasonably observable by an experienced construction professional and will have determined that, prior to commencement of construction, the Plans and Specifications are adequate for the Project's construction. The Entity specifically

acknowledges that its Preconstruction Services include review of the BIM model provided by the District and that, prior to the start of construction, the Entity will perform all review using that BIM model reasonably necessary to identify conflicts prior to the start of construction. Notwithstanding the foregoing, the parties understand that the Entity is not required to conduct an architectural or engineering or code compliance review of the Plans and Specifications.

3.2.2 Construction of Project. The Entity, in conjunction with the District, agrees to cause the Project to be developed, constructed, and installed in accordance with the terms hereof, the General Construction Terms and Conditions set forth in Exhibit D, the Plans and Specifications and those things reasonably inferable from the aforementioned documents as being within the scope of the Project and necessary to produce the stated result even though no mention is made thereof. The Entity, in conjunction with the District, further agrees that it will cause the development, construction, and installation of the Project to be diligently performed. The parties may approve additional changes in the Plans and Specifications for the Project as provided in Exhibit D.

3.2.3 Time of Completion. Following execution of this Facilities Lease and receipt of the Notice to Proceed with the construction, the Entity shall proceed with the construction of the Project with due diligence. Construction of the entire Project shall be fully complete no later than the date stated in the Notice to Proceed, together with such additional time as may be provided by amendment (change order) pursuant to the General Construction Terms and Conditions set forth in Exhibit D. Included in this time to complete is an allowance of up to **[to be added by Amendment]** weather days of excusable weather delays. "Completion" means completion of all contract work, including punch list items and final cleaning completed, so that the entire Project can be occupied for its intended purpose. If the District requires occupancy of any portion of the Project before Completion has occurred, the District may exercise its right to early occupancy of the completed portions of the Project upon terms and conditions set forth in Exhibit D. The Entity expressly acknowledges and agrees that the District's occupancy at any time shall not entitle the Entity to acceleration of any Lease Payment, including, without limitation, the Final Lease Payment. A timely completion of the Project requires timely response to questions and approvals. The process for responses to questions and approvals is set forth in Exhibit D.

3.2.4 Liquidated Damages. The Project is a critical component of ongoing educational services being provided by the District, which can be impacted if the Project is not timely completed. Therefore, if the Project is not completed within the time period set forth at Section 3.2.3 above, as such completion date may be revised from time to time by mutual agreement or may be extended in accordance with the terms and conditions set forth in Exhibit D, it is understood that the District will suffer damage, and that it is impractical and unfeasible to determine the amount of actual damages. Therefore, it is agreed that if the Project is not substantially completed within the time period specified in Section 3.2.3 as such completion date may be extended in accordance with the terms and conditions set forth in Exhibit D, the Entity shall pay to the District, as the sole and exclusive remedy for delay, as fixed and liquidated damages, and not as a penalty, the sum of **$2,500.00 (Two Thousand Five Hundred Dollars and No Cents)** for each calendar day of delay until the date that the Project is substantially complete (as defined in Exhibit D, section 1.41) and the District can take occupancy of the full

Project for its intended use, and that both the Entity and the Entity's surety shall be liable for the total amount thereof. After the date by which the District can take occupancy of the full Project for its intended use, the District may withhold one hundred fifty percent (150%) of the reasonable value of any incomplete work as determined by the District's Representative, including, without limitation, any remaining contract work, punch list items, final completion and/or close-out documents. The District shall have the right to deduct the amount of liquidated damages and/or withholdings from any money due or to become due to the Entity.

3.2.5 Acceptance of the Project. When it believes the Project is fully complete, the Entity shall provide the District with a Certificate of Completion. The Project shall only be considered fully complete after the District accepts completion of the Project. The District shall have no obligation to accept completion of the Project until the entire work has been completed in accordance with the Plans and Specifications, including any amendments thereto, and Exhibit D hereto and approved for completion by the District in consultation with its representative, architect and inspector and all close-out documents and submissions required of the Entity have been provided to the District. The District shall not unreasonably withhold, condition, or delay acceptance of the Project. If the District determines not to accept the Project following receipt of Certificate of Completion from the Entity, the District shall within ten (10) days provide the Entity, with a written statement indicating in adequate detail those deficiencies remaining and what measures are necessary in the reasonable opinion of the District to correct such deficiencies prior to acceptance by the District.

3.2.6 Notice of Completion. Within fifteen (15) days after the District accepts the Project as complete, the District shall record a Notice of Completion with the County Recorder.

3.2.7 Compliance with Public Contract Code section 20111.6. Compliance with Public Contract Code section 20111.6 is required on this Project. Through the Request for Proposals/Requests for Qualifications, Entity has been prequalified for this Project pursuant to this statute. Mechanical contractors, electrical contractors and plumbing contractors also must be prequalified prior to submitting bids for the Project. Mechanical, electrical and plumbing contractors subject to these requirements are those with any of the following license classifications: C-4, C-7, C-10, C-16, C-20, C-34, C-36, C-38, C-42, C-43 and C-46. In compliance with Public Contract Code section 20111.6, Entity shall work with the District and the District's consultants in prequalifying such subcontractors, using the District's standard on-line Prequalification Questionnaire and uniform rating system.

3.2.8 Compliance with Education Code section 17407.5. In accordance with Education Code section 17407.5, the District has entered into a Project Labor Agreement ("PLA") attached as **Exhibit J** hereto, that binds the Entity and all of its Subcontractors performing work on the Project to use a "skilled and trained workforce," as defined in Public Contract Code section 2601(d). The Entity hereby acknowledges that it is bound by the District's PLA and commits that every trade and specialty contract awarded will be subject to the requirements of the PLA, including with respect to use of a skilled and trained workforce as defined in Public Contract Code section 2601(d). To verify compliance, the District may require the Entity to provide regular and/or periodic reports verifying that the Entity and its subcontractors are in compliance with these requirements, including requiring confirmation of the percentage of work performed

by journeypersons that are graduates of an approved apprenticeship program for the applicable occupation.

If any required report shows the required percentages of journeyperson graduates have not been met for the period of the report, then the District will require the Entity to provide an explanation as to why the percentages were not met and a plan to achieve substantial compliance, with respect to the relevant apprenticeable occupation(s), by the end of the construction services.

If a subcontractor fails to provide the information to the Entity necessary for the Entity to verify compliance, the Entity shall notify the District. Repeated failure or refusal of a subcontractor to provide the required information demonstrating compliance may be grounds for substitution in accordance with Public Contract Code section 4107(a)(3) and/or (7) and/or grounds for the District to object to the continued use of that subcontractor. The Entity may draw upon the Construction Contingency Fund, but not the District Contingency, for any increased costs it incurs for replacing a subcontractor under this paragraph, but the Entity shall not be entitled to any increase of that contingency, any increase in the Total Base Rent, or any increase in the lease Term. The Entity shall comply with the requirements of paragraph 4.4.2.4.4 related to any such use of the Construction Contingency Fund.

Before making final payment in full to a subcontractor for Project work, the Entity shall obtain a declaration signed under penalty of perjury from the subcontractor that the subcontractor has met the skilled and trained workforce requirements.

ARTICLE 4. AGREEMENT TO LEASE; TERMINATION OF LEASE; LEASE PAYMENTS; TITLE TO THE PROJECT.

4.1 Lease of Project; No Merger. The District, by way of the Site Lease, has heretofore leased the Site to the Entity, and the Entity hereby leases Site and the Project to the District upon the terms and conditions set forth in this Facilities Lease. The leasing by the District to the Entity of the Site shall not affect or result in a merger of the District's interest pursuant to this Facilities Lease or its fee estate as lessor under the Site Lease, and the District shall continue to have and hold its fee interest in said Site throughout the term of this Facilities Lease. The Entity shall continue to have and hold a leasehold estate in the Site pursuant to the Site Lease through the term thereof and the term of this Facilities Lease. As to the Site Lease, this Facilities Lease shall be deemed to constitute a sublease.

4.2 Term of Facilities Lease. The Term of this Facilities Lease shall be **twenty three (23) months** consisting of the total of the time a) to perform Preconstruction Services, estimated to require **four (4) months**, b) **seven (7) months** to construct the Project, including punchlist and project acceptance, and c) the post-construction lease period of t**welve (12) consecutive months** following completion of the Project, subject to the right of the District to terminate earlier in accordance with this Facilities Lease. If the time to complete Preconstruction Services is extended or delayed, then the Term shall be extended a corresponding amount. If the time to complete construction of the Project is extended or delayed, then the Term shall be extended in a corresponding amount to allow for the full **twelve (12) month** post-construction lease period; the monthly lease payments for the post-construction period shall not change if the Term is

extended, except that, if the delay or extension is the result of a District-caused action or delay during construction, then the parties shall meet and confer in good faith regarding any additional financing costs. **The term shall commence on Month, Day, Year (the "Commencement Date")**.

4.3 Termination of Term. Notwithstanding Section 4.2, the Term of this Facilities Lease shall terminate upon the earliest of any of the following events:

4.3.1 An Event of Default by District and the Entity's election to terminate this Facilities Lease pursuant to Section 9.2 hereof; or

4.3.2 An event of Default by the Entity and the District's election to terminate this Facilities Lease pursuant to Section 9.4 hereof; or

4.3.3 The District's election to terminate this Facilities Lease pursuant to Section 6.2 or Section 9.6 hereof; or

4.3.4 The District's election not to proceed with construction services; or

4.3.5 The arrival of the last day of the Term of this Facilities Lease and payment of all Lease Payments hereunder; provided, however, that if on the scheduled date for expiration of this Facilities Lease the Lease Payments shall not have been fully paid by District, then the Term of this Facilities Lease and Site Lease shall be extended until the date upon which all such Lease Payments shall be fully paid, notwithstanding anything to the contrary in this Facilities Lease and the Site Lease. Notwithstanding the foregoing, the District's withhold of any portion of a Lease Payment as required by law or permitted in this Facilities Lease shall not prevent the expiration of the Term of this Facilities Lease.

4.4 Lease Payments.

4.4.1 Obligation to Pay. Subject to adoption of the Lease Payment Schedule upon determination of the TBR, issuance of a Notice to Proceed, and the provisions of Article 6 hereof, the District agrees to pay to the Entity, its successors and assigns, as rental for the use and occupancy of the Project, the Lease Payments commencing with the month in which the District issues the Notice to Proceed, in the amounts specified in the Lease Payment Schedule attached hereto as Exhibit C, plus any such approved allowances or contingencies and incorporated herein by reference. In partial consideration for the Facilities Lease and the reduced rent specified in the Site Lease, Entity agrees to abate lease payments from the Commencement Date through Phase I of the Project, unless otherwise specified in the Lease Payment Schedule approved by the District's Board. Lease Payments shall be payable on the **last day of each calendar month, unless that date is a weekend or holiday, in which case the Lease Payment is due on the first business date thereafter**.

4.4.2 Total Base Rent. The TBR shall be the total sum paid by the District for the Project, excluding Preconstruction Services, in the form of Lease Payments under the terms of this Facilities Lease. The TBR for the Project shall not be exceeded except as specified under

the provisions of this Article 4 and/or Exhibit D. The TBR for the lease of the Project is **[to be added by Amendment] Dollars ($ TBD .00)** subject to the provisions of any Contingency Funds set forth in this Article 4.

4.4.2.1 The Entity shall prepare a detailed line item costing of the TBR, including the Entity's fee and any financing costs, and, once agreed to by the District, it shall be attached to the Lease Payment Schedule. However, in the event any of the costs included in the TBR (excluding the Entity's General Condition costs) are reduced subsequent to the District's approval, the savings shall be disclosed by the Entity to the District and shall be distributed in equal parts to the Construction Contingency and to the District's Contingency. Entity's failure to disclose the savings shall be a material breach of this Agreement. All parties acknowledge that the Total Base Rent is based on the Plans and Specifications for the Project as approved or amended by DSA or as amended by mutual agreement of the Entity and the District.

4.4.2.2 The TBR will be subject to change only as described in Exhibit D, for change orders and/or any other changes directed by the District or for Compensable Time Extensions.

4.4.2.3 Because satisfactory completion of the Project and the District's rights under this Facilities Lease are essential to the District's educational services, rights of quiet enjoyment, and other rights of tenancy, in addition to any other rights the District enjoys under California law, the District may withhold from any Lease Payment sufficient amount (a maximum of 150%) as in its reasonable judgment may be necessary to cover:

(1) Failure of the Entity to comply with its obligations under this Facilities Lease, including its exhibits;

(2) Breaches or interferences by the Entity of the District's rights of quiet enjoyment and other rights of tenancy permitted under California law;

(3) Failure of the Entity to give the District timely occupancy of the Site and/or the Project;

(4) Payments which may be past due and payable for just claims against the Entity or any subcontractors for labor/materials furnished in and about the performance of work on the Project;

(5) Defective work not remedied;

(6) Completion of the Project if there exists a reasonable doubt that

the Project can be completed for the balance of the unpaid Lease Payments;

(7) Damage to another contractor;

(8) Potential fees or penalties that may be due in connection with any failure to construct the Project in accordance with the terms of this Facilities Lease and the law.

Upon the Entity's removal of the condition upon which the withholding is based, the District shall promptly pay the withheld amount to the Entity.

4.4.2.4 The Total Base Rent includes:

4.4.2.4.1 Construction Contingency Fund in the amount of **[to be added by Amendment] Dollars and no cents ($ TBD .00),** which, except as set forth herein, shall cover all additional or extra Costs of the Work set forth in the Contract Documents as a result of all conditions and events that do not entitle Entity to a change order in accordance with Exhibit D, Article 15.01 of the Facilities Lease. The Construction Contingency Fund may be used for costs associated with Entity, subcontractor or supplier's Excusable Delay (as allowed in Exhibit D, Article 14), lack of coordination or inefficiencies. Any additional work needed to achieve a complete, usable and functional Project consistent with the design intent of the District's Architect will be covered by the Construction Contingency Fund and will not be considered a material change in the scope of the work per Article 15.01 of the Facilities Lease. The Entity shall have no right to draw against this contingency without written approval of the District prior to its use.

4.4.2.4.2 Specific Allowances – **[to be added by amendment]**

4.4.2.4.3 District Contingency in the amount of **[to be added by Amendment] Dollars and no cents ($ TBD .00)** which shall cover additional or extra costs to the project that entitle Entity to a change order in accordance with Exhibit D, Article 15.01 of the Facilities Lease. The Entity shall have no right to draw against this contingency without written approval of the District prior to its use.

4.4.2.4.4 Allowances and Contingencies shall be used efficiently and expeditiously to minimize cost and delay to the project. Prior to commencing any work that would result in the utilization of one of the Contingencies or Allowances, the Entity shall give the District written notice of its intended use of said funds. The District shall have the right to object to any said use of funds provided notice of objection is given

to the Entity within five business days of the entity's notice or within such shorter time as reasonably stated in that notice. In the event of disagreement about the use of any said funds, including without limitation, which funds may be used, the District may direct the Entity to proceed and direct the Entity which, if any, of the funds Entity may draw against. The Entity shall promptly comply with such directive and may submit a claim in accordance with Article 23 of Exhibit D. If the Entity commences the work without giving the District the required written notices and opportunity to object, the Entity shall, for all purposes, be deemed to have waived its rights to additional compensation for such work. The Entity shall provide the District with a monthly accounting of its use of any part of the Construction Contingency Fund and the Allowances. Pricing and record keeping for uses of any Contingency Fund or Allowance shall be in accordance with Article 15 of Exhibit D, the General Construction Terms and Conditions and shall be memorialized by a Contract Draw Authorization (CDA). Allowable payments of Contingency Funds or Allowances shall be reflected as increases to the Lease Payment(s) for the given month(s).

4.4.2.4.5 If paid to the Entity, any funds remaining in any Contingency or Allowance Fund shall be returned to the District within fifteen (15) days after the Notice of Completion is recorded. Otherwise, the funds not used and not paid to the Entity shall be deducted by written amendment from the Total Base Rent prior to the final Lease Payment.

4.4.3 Lease Payments to Constitute Current Expense of the District. The District and the Entity understand and intend that the obligation of the District to pay Lease Payments and other payments hereunder constitutes a current expense of the District and shall not in any way be construed to be a debt of the District in contravention of any applicable constitutional or statutory limitation or requirement concerning the creation of indebtedness by the District, nor shall anything contained herein constitute a pledge of the general tax revenues, funds or moneys of the District. Lease Payments due hereunder shall be payable only from current funds which are budgeted and appropriated or otherwise made legally available for such purpose. This Facilities Lease shall not create an immediate indebtedness for any aggregate payments which may become due hereunder. Upon approval of the initial or any amended TBR, the District will appropriate sufficient funds from District funds from the District's current fiscal year and/or State funds to be received during the District's current fiscal year, and will segregate such funds in a separate account to be utilized solely for the Lease Payments. The Entity acknowledges that the District has not pledged the full faith and credit of the District, the State of California or any state agency or state department to the payment of Lease Payments or any other payments due hereunder. The covenants on the part of District contained in this Facilities Lease constitute duties imposed by law and it shall be the duty of each and every public official of the District to take such action and do such things as are required by law in the performance of the official duty of such officials to enable the District to carry out and perform the covenants and agreements in this Facilities Lease agreed to be carried out and performed by the District in accordance with the

terms and conditions set forth herein.

4.4.4 Optional Prepayment. The District may prepay the Lease Payments, in whole or in part, at any time, without penalty. The District shall give the Entity written notice of its intent to exercise its option and the date and amount of such prepayment not less than fifteen (15) days in advance of the date of the exercise.

4.5 Title. Pursuant to California Education Code section 17402, the District has the requisite legal interest in the Site. During the Term of this Facilities Lease, the District shall hold title to the Site. Upon payment by the District of all Lease Payments during the Term of this Facilities Lease as the same become due and payable, or if the Entity or the District exercises any option to terminate this Facilities Lease as set forth herein, all right, title and interest of the Entity, its assigns and successors in interest in and to the Project, including all additions which comprise fixtures, repairs, replacements or modifications thereof, shall be transferred to and vested in the District at the expiration of the Term or payment of the final Lease Payment or termination, whichever shall come first. Title shall be transferred to and vested in the District hereunder without the necessity for any further instrument or transfer, provided, however, that the Entity agrees to execute any instrument requested by District to memorialize such termination of this Facilities Lease and transfer title to the District.

4.6 Fair Rental Value. The Lease Payments coming due and payable during each month of the Term constitute the total rental for the Project and shall be paid by the District as set forth in Section 4.4 and the Lease Payment Schedule for and in consideration of the right to use and occupy the Project. The District and the Entity have agreed and determined that the total Lease Payments do not exceed the fair rental value of the Project. In making such determination, consideration has been given to the obligations of the parties under the Facilities Lease and Site Lease, the uses and purposes which may be served by the Project, and the benefits there from which will accrue to the District and the general public.

4.7 Quiet Enjoyment. Excepting any interference resulting from the Entity's performance pursuant to the General Construction Terms and Conditions and/or the Plans and Specifications, during the Term of this Facilities Lease, the Entity shall provide the District with quiet use and enjoyment of the Site, and the District shall during such Term peaceably and quietly have and hold and enjoy the Site without suit, trouble or hindrance from the Entity, except as expressly set forth in this Facilities Lease. The Entity will, at the request of the District, join in any legal action in which the District asserts its right to such possession and enjoyment to the extent the Entity may lawfully do so, at the District's sole cost.

4.8 District's Right to do Other Improvements. Following completion of the Project, the District may have other improvements done at the facility and/or on the site unrelated to the Project and through its own forces and/or separately retained service providers. The District shall comply with all laws in connection with such improvements, be fully responsible for payment for all such improvements, and obtain or cause to be obtained all required insurances for such improvements. Further, the District's indemnity obligations owed to the Entity under Section 5.5.1 shall apply to claims, damages, costs, expenses (including reasonable attorneys' fees), judgments or liabilities arising from such improvements.

4.9 Abatement of Rental in the Event of Substantial Interference With Use and Occupancy of the Project and the Site. The amount of Lease Payments for the Project and the Site shall be abated during any period of delay before District occupancy of the Project and the Site, which delay is due to an insured hazard under this Lease, such that there is substantial interference with the District's use and occupancy of the Project by the date of completion set forth in Section 3.2.3 hereof. Once the Project is restored to its status as of the date of the event which caused the delay and/or interference with the District's use and occupancy of the Project, the Lease Payments shall resume, with no reduction for any applicable insurance proceeds received by the Entity under this Section, and the Lease Payment Schedule and/or Lease Term shall be adjusted accordingly. Nothing contained herein shall be construed as a waiver of the Entity's right to receive any Lease Payments otherwise due as of the initial date of the abatement or that may become due when the Lease Payments resume.

ARTICLE 5. MAINTENANCE; TAXES; INSURANCE AND OTHER MATTERS.

5.1 Maintenance. During the Preconstruction Services phase and then following delivery of possession of the Project by the Entity to District, or of any portion on which the District takes early occupancy, the repair, improvement, replacement and maintenance of the Project or portion thereof shall be at the sole cost and expense and the sole responsibility of the District, subject to all warranties against defects in materials and workmanship provided in Exhibit D hereto.

5.2 Utilities. From the Notice to Proceed with construction services until completion of the Project by the Entity, the Entity shall pay all utility costs, including, but not limited to, temporary gas, temporary electricity, temporary water, temporary heat, temporary telephone, and refuse disposal as they specifically relate to the work the Entity is performing to complete the Project. During the Preconstruction Services phase and then following completion of the Project by the Entity, or of any portion on which the District takes early occupancy, the cost and expenses for all utility services associated with the District's use and occupancy of the completed portions shall be paid by District.

5.3 Taxes and Other Impositions.

5.3.1. Except to the extent that it is exempt from doing so, District shall pay, all ad valorem real property taxes, special taxes, possessory interest taxes, bonds and special lien assessments or other impositions of any kind with respect to the Project, the Site and the improvements thereon, charged to or imposed upon either the Entity or the District or their respective interests or estates in the Project. In the event any possessory interest tax is levied on the Entity, its successors and assigns, by virtue of this Facilities Lease, the Site Lease, or General Construction Terms and Conditions, District shall pay such possessory interest tax directly, if possible, or shall reimburse the Entity, its successors and assigns for the full amount thereof within thirty (30) days after presentation of proof of payment by the Entity. This section does not apply to any taxes of any kind for labor, equipment or material performed, purchased or used by the Entity, all of which remain the sole obligation of the Entity.

5.3.2. Entity shall pay all taxes charged against trade fixtures, furnishings, equipment or any other personal property belonging to Entity. Entity shall try to have personal property taxed separately from the Site. If any of Entity's personal property is taxed with the Site, project and/or improvements, Entity shall pay District the taxes for the personal property within fifteen (15) days after Lessee receives a written statement from District for such personal property taxes.

5.3.3 At its sole cost and expense, Entity shall give all notices and comply with all laws, ordinances, rules, regulations, and lawful orders of any public authority bearing on the performance of the Work; pay all local, state, and federal taxes, except as otherwise expressly provided herein; and pay all benefits, insurance, taxes, and contributions for Social Security and Unemployment which are measured by wages, salaries, or other remunerations paid to Entity's employees. Upon the District's request, Entity shall furnish evidence satisfactory to the District that any or all of the foregoing obligations have been fulfilled.

5.4 Insurance. During the term of this Facilities Lease the Entity shall maintain all of the insurance coverages as set forth in the Site Lease and in Exhibit E hereto.

5.5 Indemnification.

5.5.1 The District shall indemnify, defend and hold harmless the Entity and its successors, assigns, officers, directors, shareholders, partners, members, agents and employees from and against any claims, damages, costs, expenses (including reasonable attorneys' fees), judgments or liabilities arising from the negligent or intentional acts or omissions of the District or its officers, agents, or employees, with respect to District's use, operation, repair, alteration and occupancy of the Site and/or the Project and the performance of District's obligations herein or arising from the presence of hazardous materials that predates the Site Lease.

5.5.2 The Entity shall indemnify, defend with counsel acceptable to the District and hold harmless District, its officers, officials, agents and employees from and against any and all third party claims, damages, costs, expenses (including reasonable attorneys' fees), judgments or liabilities arising out of or in any way connected with the performance or attempted performance of the provisions hereof, or in any way arising out of or connected with this Facilities Lease (including without limitation the Preconstruction Services, the General Construction Terms and Conditions, and the Plans and Specifications), including but not limited to, equitable relief, stop payment notice actions (but only when not caused by the District's failure to make payments in accordance with the Facilities Lease) or any acts or omissions, any wrongful act, or any negligent act or omission to act, whether active or passive, on the part of the Entity or any of its agents, employees, independent contractors, Subcontractors or suppliers; provided, further, without limiting the foregoing, that the indemnity is intended to apply to any wrongful acts, or any actively or passively negligent acts or omissions to act, committed jointly or concurrently by the Entity, the Entity's agents, employees, independent contractors, Subcontractors or suppliers.

5.5.2.1 To the fullest extent permitted by law, the Entity's duty to defend shall extend, without limitation, to any suit or action founded upon any third party losses, claims, demands, damages, costs, expenses, attorney's fees, or liability of every nature arising out of or in any way connected with the performance or attempted

performance of the provisions hereof, or in any way arising out of or connected with this Facilities Lease, including its exhibits.

5.5.2.2 The Entity's defense and indemnity obligations expressly extend to and include any and all claims, demands, damages, costs, expenses, or liability occasioned as a result of damages to adjacent property caused by the conduct of the work for the Project by the Entity or any party for whom the Entity is liable.

5.5.2.3 The Entity's defense and indemnity obligations expressly extend to and include any and all claims, demands, damages, costs, expenses, or liability occasioned as a result of the violation by the Entity, the Entity's agents, employees, or independent contractors, Subcontractors or suppliers of any provisions of federal, state or local law, including applicable administrative regulations.

5.5.2.4 The Entity's defense and indemnity obligations also expressly extend to and include any claims, demands, damages, costs, expenses, or liability occasioned by injury to or death of any person, or any property damage to property owned by any person while on or about the Site or as a result of the work for the Project, whether such persons are on or about the Site by right or not, whenever the work is alleged to have been a contributing cause in any degree whatsoever.

5.5.2.5 Nothing contained in the foregoing indemnity provisions shall be construed to require the Entity to indemnify the District in contravention of Section 2782 of the Civil Code for the sole negligence or willful misconduct of the District, its agents, employees, or independent contractors.

5.5.2.6 In claims against any person or entity herein indemnified that are made by an employee of the Entity or an employee of any of the Entity's agents, independent contractors, Subcontractors or suppliers, a person indirectly employed by the Entity or by any of the Entity's agents, independent contractors, Subcontractors or suppliers, or anyone for whose acts the Entity or any of the Entity's agents, independent contractors, Subcontractors or suppliers may be liable, the defense and indemnification obligations herein shall not be limited by any limitation on amount or type of damages, compensation, or benefits payable by or for the Entity or the Entity's agents, independent contractors, Subcontractors or suppliers under workers' compensation acts, disability acts, or other employee benefit acts.

5.5.2.7 The Entity's defense and indemnification obligations shall not be limited by any assertion or finding that the person or entity indemnified is liable by reason of a non-delegable duty.

5.5.2.8 Nothing contained in the foregoing defense and indemnity provisions shall be construed to require the Entity to defend or indemnify the District to the

extent the claims, damages, costs, expenses, judgments, fines, penalties or liabilities arise out of the actions or inaction of the Architect or its subconsultants, or any other person, firm or entity providing design or other professional services in connection with the Project.

5.5.2.9 Should the Entity be required to investigate or defend any third party claims or actions that are subsequently determined not to be the sole responsibility of the Entity, the District shall then reimburse the Entity its unrecovered out-of-pocket costs, including reasonable attorneys' fees and any insurance deductibles, to the proportionate extent that the Entity is determined not to be responsible.

ARTICLE 6. EMINENT DOMAIN; DAMAGE AND DESTRUCTION.

6.1 Eminent Domain.

6.1.1 Eminent Domain Takings. If all of the Project and the Site shall be taken permanently under the power of eminent domain, the Term of this Facilities Lease shall cease as of the day possession shall be so taken, provided that if the taking occurs prior to full completion of the Project, the Entity shall be entitled to the value of the construction completed, plus reasonable costs of termination, plus a pro rata share of overhead and profit, less any Lease Payments and other payments made prior to the taking. If less than all of the Project and the Site shall be taken permanently, or if all of the Project and the Site or any part thereof shall be taken temporarily, under the power of eminent domain: (1) this Facilities Lease shall continue in full force and effect and shall not be terminated by virtue of such taking and the parties waive the benefit of any law to the contrary, and (2) there shall be a partial abatement of Lease Payments as a result of the application of the net proceeds of any eminent domain award to the prepayment of the Lease Payments hereunder.

6.1.2 From Eminent Domain Award. The net proceeds of any eminent domain or condemnation shall be payable to the District.

6.2 Damage and Destruction. If the Site and/or the Project is totally or partially destroyed due to fire, acts of vandalism, flood, storm, earthquake, Acts of God, or other casualty beyond the control or responsibility of either party hereto, the Lease Payments shall abate, in accordance with Section 4.9, during the time that the Site and/or the Project, or a portion thereof, is unusable for District's intended use. The Entity and District agree that the obligation to repair or replace the Site shall be in accordance with the following provisions:

6.2.1 Escrow. Any proceeds payable to the Entity and District from all applicable insurance policies, other than rental interruption insurance, shall be immediately deposited in an escrow (the "Escrow").

6.2.2 Total Destruction. In the event that ninety percent (90%) or more of the Site and/or the Project is destroyed or damaged (a "Total Destruction") through no fault of the Entity, then District, at District's option, may elect to terminate this Facilities Lease and the Site Lease, and shall use the insurance proceeds to pay an amount to the Entity equal to the Lease Payments

due as of the date of destruction and the value of all work completed by the Entity, plus reasonable costs of termination, less any Lease Payments previously made. Any remaining insurance proceeds will be retained by District. In the alternative, District may elect to continue with the Facilities Lease in effect and have the Site and/or the Project rebuilt utilizing the insurance proceeds, which shall be exclusively used for that purpose. The Entity shall have no obligation to contribute funds for the rebuilding of the Site and/or the Project should the cost of rebuilding exceed the insurance proceeds. Anything less than a Total Destruction of the Site and/or the Project shall be deemed a "Partial Damage or Destruction."

6.2.3 Partial Damage or Destruction. In the event that the Site and/or the Project is partially damaged or destroyed before final completion, the Entity shall repair and/or have repaired the Site and/or the Project utilizing the proceeds from insurance which were deposited into the Escrow up to the amount of the Entity's actual costs for the repair or reconstruction, and District shall pay the Entity any excess amounts needed to pay the costs of repair or reconstruction. In the event the costs of repair or reconstruction do not exceed the amount held in the Escrow, the remaining funds shall be released to District. In the event that the Site and/or the Project is partially damaged or destroyed after final completion but before expiration of the Lease Term, the District shall repair or have repaired the Site and/or the Project utilizing the proceeds from insurance which were deposited into the Escrow. If District fails or refuses to repair or reconstruct as provided herein, then the Entity shall have the right to repair and restore the Site and/or the Project, in which case the Entity shall be entitled to a disbursement of the funds in the Escrow up to the amount of the Entity's actual costs for the repair or reconstruction, and District shall pay the Entity any excess amounts needed to pay the costs of repair or reconstruction. In the event the costs of repair or reconstruction do not exceed the amount held in the Escrow, the remaining funds shall be released to District.

6.2.4 Deductibles; Self Insurance. Where any loss is covered by insurance required by this Facilities Lease which contains provisions for any deductible amount, the Party contractually obligated to provide such insurance shall pay any such deductible amount or the amount of any self-insurance, except if loss is caused by the other party, or its other contractors, subcontractors or suppliers.

6.2.6 Personal Property. Any insurance proceeds payable to District for losses to personal property contents within the Site and/or the Project shall be for the exclusive use of District, and may be utilized in whatever manner District, in its sole discretion, may designate.

ARTICLE 7. ACCESS; DISCLAIMER OF WARRANTIES.

7.1 By the Entity. The Entity shall have the right at all reasonable times, as further defined in Exhibit D, General Requirements, Section 01500 to enter upon the Site to construct the Project pursuant to this Facilities Lease. Following the acceptance of the Project by District, the Entity may enter the Project at reasonable times with advance notice and arrangement with District for purposes of making any repairs required to be made by the Entity.

7.2 By District. The District shall have the right to enter upon the Site at reasonable times for whatever purpose the District chooses, providing that during construction, the District shall comply with all safety precautions required by the Entity.

7.3 Disclaimer of Warranties. The Entity acknowledges that under the terms of the Site Lease, the Entity is leasing the Site from the District in an "AS IS" condition. The Entity further acknowledges that the District makes no other warranties except as specifically set forth in the Site Lease and this Facilities Lease or in Exhibit D hereto. The Entity agrees that it or its authorized contractor shall provide to the District an express warranty in accordance with Article 22 of the General Construction Terms and Conditions, Exhibit D hereto, and the Entity shall assign or direct its authorized contractor to assign all rights under said warranty to the District. In addition, the Entity agrees to use its best efforts to assist the District in enforcing said warranty. In the event that assignment of the warranty is not effective or valid or the Entity's authorized contractor fails to honor the warranty, the Entity shall indemnify and hold the District harmless.

ARTICLE 8. ASSIGNMENT, SUBLEASING; AMENDMENT.

8.1 Assignment and Subleasing. Except as provided in Section 9.4, this Facilities Lease may not be assigned by the District. Any sublease by the District of this Facilities Lease shall be upon thirty (30) days' written notice to the Entity and shall be subject to the following conditions: (1) this Facilities Lease and the obligation of the District to make Lease Payments hereunder shall remain obligations of the District; (2) the District shall, within thirty (30) days after the delivery thereof, furnish or cause to be furnished to the Entity a true and complete copy of such sublease; and (3) no such sublease by the District shall cause the Project or the Site to be used for a purpose other than a governmental or proprietary function authorized under the provisions of the Constitution and laws of the State of California. The District shall indemnify the Entity for any violation of applicable Education Code sections, including but not limited to sections 17402 and 17406, that may arise as a result of such sublease. This Facilities Lease may be assigned or subleased by the Entity only to an entity or affiliate of the Entity, but the Entity shall not be released from any liability under the terms of this Lease.

8.2 Amendment of this Facilities Lease. The parties anticipate that this Facilities Lease will be amended, by written agreement of the parties, to reflect the Total Base Rent and Lease Payment Schedule following Preconstruction Services, and may be amended at other times to reflect modifications to its terms. Without the written agreement of the parties, neither party will alter or modify, or agree or consent to alter or modify this Facilities Lease.

ARTICLE 9. EVENTS OF DEFAULT AND REMEDIES; TERMINATION.

9.1 Events of Default by the District. The following shall be "Events of Default" by the District under this Facilities Lease and the terms "Event of Default" and "Default" shall mean, whenever they are used in this Facilities Lease, any one or more of the following events:

9.1.1 Failure by the District to pay any Lease Payment required to be paid hereunder at the time specified herein, unless properly withheld pursuant to this Facilities Lease and/or the

provisions found in Exhibit D.

9.1.2 Failure by the District to observe and perform any covenant, condition or agreement in this Facilities Lease on its part to be observed or performed, other than as referred to in Section 9.1.1, for a period of thirty (30) days after written notice specifying such failure and requesting that it be remedied has been given to the District by the Entity; provided, however, if the failure stated in the notice cannot be corrected within the applicable period, the Entity shall not unreasonably withhold its consent to an extension of such time if corrective action is instituted by the District within the applicable period and diligently pursued until the default is corrected.

9.2 Remedies on Default by District. Whenever any Event of Default referred to in Section 9.1 hereof shall have happened and be continuing, it shall be lawful for the Entity to exercise any and all remedies available pursuant to law or granted pursuant to this Facilities Lease, including but not limited to the right to stop work and to extend the date of completion by the number of days the Project is delayed due to the Event of Default; provided, however, there shall be no right under any circumstances to accelerate the Lease Payments or otherwise declare any Lease Payments not then in default to be immediately due and payable. Each and every covenant hereof to be kept and performed by the District is expressly made a condition hereof and upon the breach thereof, the Entity may exercise any and all rights of entry and re-entry upon the Project and the Site, and also, at its option, with or without such entry, may terminate this Facilities Lease; provided, that no such termination shall be affected either by operation of law or acts of the parties hereto, except only in the manner herein expressly provided. In the event of such default and notwithstanding any re-entry by the Entity, the District shall, except as provided herein, continue to remain liable for the payment of the Lease Payments and/or damages for breach of this Facilities Lease and the performance of all conditions herein contained and, in any event such rent and/or damages shall be payable to the Entity at the time and in the manner as herein provided.

9.3 Event of Default by the Entity. The following shall be Events of Default by the Entity under this Facilities Lease and the terms "Event of Default" and "Default" shall mean, whenever they are used in this Facilities Lease, any one or more of the following events:

9.3.1 The Entity, or any member of the Entity, unreasonably refuses or fails to prosecute the work on the Project pursuant to the terms and conditions of this Facilities Lease, including Exhibits D and H, and/or the Plans and Specifications with such reasonable diligence as will accomplish its completion within the time specified or any extension thereof, or unreasonably fails to complete said work within such time.

9.3.2 Prior to completion of Project, the Entity should be adjudged a bankrupt, or file for bankruptcy or if it should make a general assignment for the benefit of its creditors, or if a receiver should be appointed on account of its insolvency, unless these conditions are cured within thirty (30) days.

9.3.3 The Entity, or any member of the Entity, persistently disregards applicable laws as referenced in the General Construction Terms and Conditions (Exhibit D), or otherwise be in

material violation of the General Construction Terms and Conditions.

9.4 Remedies on Default by the Entity.

9.4.1 If an Event of Default by the Entity remains uncured for a period of three (3) days for Preconstruction Services or thirty (30) days for construction services after District has given written notice specifying the failure and requesting that it be remedied, District may, in its sole discretion, and without prejudice to any other right or remedy, terminate the Site Lease and this Facilities Lease, including all provisions and Exhibits hereto, and acquire not less than all of the Entity's interest in the labor, equipment and materials provided under this Facilities Lease in its "as is, where is" condition and pay the Entity the sums due under the terms of this Facilities Lease consistent with the actual work completed as it relates to the Preconstruction Services fee or Total Base Rent payments as adjusted by the terms of this Facilities Lease, less any Lease Payments and other payments already paid as of the date of termination.

In the event that the District exercises this option to terminate after an uncured Event of Default by the Entity during construction services, the parties shall meet and confer and review the accounts and records of the Entity to determine the actual costs incurred by the Entity for the work completed and acceptable to the Architect and the District to the date of termination ("Actual Costs"), including both paid and unpaid. The Actual Costs of the work completed shall include the cost of any materials or equipment ordered and paid for (including any deposits paid toward final costs) but which have not been shipped or are stored off-site and any contractual obligations incurred by the Entity that cannot be cancelled or terminated without penalty. In addition, the Actual Costs shall include any development or overhead fees that have been earned based on the actual work completed as of the date of termination prorated based on the total cost of the Project. Once the Actual Costs have been agreed to by the Parties, or otherwise determined, if the Actual Costs are greater than the Base Rent and other payments made by the District for the completed work, then the difference will be payable by the District. If the Actual Costs are less than the Base Rent paid by the District, the Entity will pay the difference to the District. The District will assume any accounts payable and contractual obligations that cannot be cancelled or terminated for labor, materials or equipment ordered but not fully paid for by the Entity as of the date of termination. The Entity will cooperate with the District and assign any subcontracts with subcontractors or material providers to the District at the District's election. Upon payment as aforesaid and payment of all other amounts owed, the Entity shall deliver to the District all reasonably necessary documents in recordable form to terminate the Facilities Lease and the Site Lease and transfer title to the Project to the District. District may record all such documents as are necessary to accomplish such termination at the District's cost and expense and proceed to complete the Project in any manner deemed appropriate by the District. Any such payments required hereunder shall be paid within ten (10) days of the final determination of the amounts due.

9.4.2 Alternatively, the District may, without prejudice to any other right or remedy, serve upon the Entity and its surety written notice of default, declaring an Entity default, reserving the right to assign, and advising of the District's intention to require the Entity to assign the Entity's obligations under the Site Lease, the Facilities Lease, including Exhibit D hereto, and the Construction Documents as defined in Exhibit D hereto (the "Obligations") to a

party as designated by the District due to Entity's default. Such notice shall contain the reasons for the default. Unless, within thirty (30) days after the service of such notice, such violation shall cease and satisfactory arrangements for the correction thereof be made by the Entity, or in the event that Entity fails to cease such violation and make, in the District's sole discretion, satisfactory arrangements for the correction thereof, upon written notice from District of assignment ("Notice of Assignment"), Entity shall not be entitled to receive any further payment, except as provided for in this Section 9.4.2, and the District shall have the absolute right to designate an assignment of the Obligations from the Entity to another party. The Entity and its surety hereby consent to such assignment.

9.4.2.1 In the event of service of a Notice of Assignment upon the Entity and its surety, the Entity's surety shall have the right to take over and complete the Project by giving the District written notice of such within fifteen (15) days after service upon it of the Notice of Assignment. If the surety fails to commence performance thereof within thirty (30) days from date of serving such notice, the District may require that the Entity and/or the surety assign the Obligations to a party designated by the District. The District may, without liability for doing so, take possession of and utilize in completing the work such materials, appliances, plants, and other property belonging to the Entity as may be on the site of the work and necessary therefore.

9.4.2.2 If the unpaid balance of the Total Base Rent exceeds the expenses of finishing the work including compensation for additional managerial and administrative services, such excess shall be paid to the Entity. If such expenses exceed such unpaid balance, the Entity shall pay the difference to District within sixty (60) days of recordation of the Notice of Completion for the Project. Any expense incurred by the District as herein provided, and damage incurred through the Entity's default shall be certified by the Architect.

9.4.2.3 The foregoing provisions are in addition to and not in limitation of any other rights or remedies available to the District.

9.4.3 In the event it is determined that the District did not have cause to issue a Notice of Assignment under Section 9.4.2, the Entity shall only be entitled to receive compensation in accordance with Section 9.4.1.

9.5 No Remedy Exclusive. No remedy herein conferred upon or reserved to the parties is intended to be exclusive and every such remedy shall be cumulative and shall be in addition to every other remedy given under this Facilities Lease or now or hereafter existing at law or in equity. No delay or omission to exercise any right or power accruing upon any Default shall impair any such right or power or shall be construed to be a waiver thereof, but any such right and power may be exercised from time to time and as often as may be deemed expedient. In order to entitle the parties to exercise any remedy reserved to them in this Article 9, it shall not be necessary to give any notice, other than such notice as may be required in this Article or by

law.

9.6 Termination for Convenience. The District has the absolute right to terminate the Facilities Lease and the Site Lease without cause and for its convenience upon fourteen (14) days' written notice to the Entity. In the event of termination without cause during Preconstruction Services, the Entity shall be entitled to payment in an amount not to exceed the Preconstruction Services fee which shall be calculated as follows: (1) the percentage completion of items of preconstruction services by Entity as accepted by the District; plus (2) other reasonable costs actually incurred by Entity in connection with termination; provided, however, that in no event shall Entity be paid an amount which exceeds the Preconstruction Services fee for any item of Preconstruction Services. In the event of such termination without cause during construction services, the District shall pay the Entity the earned but unpaid actual costs, calculated in accordance with Section 9.4.1, plus ten percent (10%) of the remaining Entity fee for the Project. The Entity shall not be entitled to any further compensation.

If the Facilities Lease and Site Lease are terminated by the District for default, and it is later determined that the default termination was wrongful, such termination automatically shall be converted to and treated as a termination for convenience under this section, and Entity shall be entitled to receive only the amounts payable hereunder in compensation.

9.7 No Additional Waiver Implied by One Waiver. In the event any agreement contained in this Facilities Lease should be breached by either party and thereafter waived by the other party, such waiver shall be limited to the particular breach so waived and shall not be deemed to waive any other breach hereunder.

9.8 Application of Proceeds. All amounts derived by the Entity as a result of an Event of Default hereunder, shall be applied to the Lease Payments in order of payment date.

ARTICLE 10. MISCELLANEOUS.

10.1 Notices. Any notice to either party shall be in writing and given by delivering the same to such party in person, or by sending the same by registered or certified mail, return receipt requested, with postage prepaid, or by delivering any notice by nationally recognized overnight delivery service (such as Federal Express) for next business day delivery, to the following addresses:

To the District: 5735 47th Ave.
Sacramento, CA 95824-4528
Attention: Chris Ralston

To the Entity: **Entity Name**
Address
City, State Zip
Attention: _____

Any party may change its mailing address at any time by giving written notice of such change to the other parties in the manner provided therein. All notices under this Facilities Lease shall be deemed given, received, made or communicated on the date personal delivery is effected, or if mailed or sent by overnight delivery service, on the delivery date or attempted delivery date shown in the return receipt. No party shall refuse or evade delivery of any notice.

10.2 Binding Effect. This Facilities Lease shall inure to the benefit of and shall be binding upon The Entity and the District and their respective successors, transferees and assigns.

10.3 Severability. In the event any provision of this Facilities Lease shall be held invalid or unenforceable by any court of competent jurisdiction, such holding shall not invalidate or render unenforceable any other provision hereof, unless elimination of such invalid provision materially alters the rights and obligations embodied in this Facilities Lease or the Site Lease.

10.4 Further Assurances and Corrective Instruments. The Entity and the District agree that they will, from time to time, execute, acknowledge and deliver such supplements hereto and such further instruments as may reasonably be required for correcting any inadequate or incorrect description of the Site or the Project hereby leased or intended to be leased.

10.5 Execution in Counterparts. This Facilities Lease may be executed in several counterparts, each of which shall be an original and all of which shall constitute but one and the same instrument.

10.6 Applicable Law. This Facilities Lease shall be governed by and construed in accordance with the laws of the State of California.

10.7 The Entity and District Representatives. Whenever under the provisions of this Facilities Lease the approval of the Entity or the District is required, or the Entity or the District is required to take some action at the request of the other, such approval or such request shall be given for the Entity by the Entity's Representative and for the District by the District's Representative, and any party hereto shall be authorized to rely upon any such approval or request.

10.8 Captions. The captions or headings in this Facilities Lease are for convenience only and in no way define, limit or describe the scope or intent of any provisions or Sections of this Facilities Lease.

10.9 Interpretation. It is agreed and acknowledged by District and the Entity that the provisions of this Facilities Lease and its Exhibits have been arrived at through negotiation, and that each of the parties has had a full and fair opportunity to revise portions of this Facilities Lease and its Exhibits and to have such provisions reviewed by legal counsel. Therefore, the normal rule of construction that any ambiguities are to be resolved against the drafting party shall not apply in construing or interpreting this Facilities Lease and its Exhibits.

10.10 Time. Time is of the essence of each and all of the terms and provisions of this Facilities Lease and its Exhibits.

10.11 Force Majeure. Except as otherwise provided herein, a party shall be excused from the performance of any obligation imposed in this Facilities Lease and the exhibits hereto for any period and to the extent that a party is prevented from performing such obligation, in whole or in part, as a result of delays caused by the other party or third parties, other than third parties under the control or supervision of the party hereto charged with the delay, a governmental agency or entity, an act of God, war, terrorism, civil disturbance, forces of nature, fire, flood, earthquake, strikes or lockouts, and such non performance will not be a default hereunder or a grounds for termination of this Facilities Lease.

10.12 Estoppel Certificates. Each party, within twenty (20) days after written notice from the other party, shall execute, acknowledge and deliver to the other party in recordable form an estoppel certificate certifying that this Facilities Lease is: (i) unmodified and in full force and effect, or if there have been modifications, that the same is in full force and effect as modified and stating the modifications; (ii) the amount of the Lease Payments and any Additional Payments then owing but currently unpaid; and (iii) stating whether or not the other party is in default in the performance of any provision of this Facilities Lease, and if so, specifying each such default of which the party may have knowledge. Each party shall only be required to certify the foregoing information to the extent that such information is truthful and accurate.

10.13 Attorneys' Fees; Disputes. In the event that either party is required to institute legal proceedings to enforce this Lease, in whole or in part, the prevailing party shall be entitled to recover its reasonable attorneys' fees, costs and expenses. The parties further agree that any action of proceeding brought to enforce the terms and conditions of this Facilities Lease shall be maintained exclusively in Sacramento County, California.

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10.14 Recitals Incorporated. The Recitals set forth at the beginning of this Facilities Lease are hereby incorporated into its terms and provisions by this reference.

IN WITNESS WHEREOF, the parties hereto have caused this Facilities Lease to be executed by their respective duly authorized officers, to be effective as of the day and year first written above.

Sacramento City Unified School District,

A school district organized and existing under the laws
of the State of California

By: _____
Name and Title

By: _____
Name and Title

Contract: Contract amount(s) Project #(s) bc #(s)

Entity:
Entity Name

Signature: _____

By: _____

Title: _____

Business Address: _____

License Number: _____ Exp. Date: _____
DIR Registration #: _____ Exp. Date: _____
Federal Tax ID #: _____

EXHIBIT A

THE PROJECT

The name of the Project is **Ethel Phillips Elementary School Campus Renewal Project** to be constructed at **2930 21st Ave, Sacramento, CA 95820** consists of construction, in accordance with the Plans and Specifications prepared by **HMC Architects.**

The Project shall include, but not be limited to, campus wide exterior and interior painting, classroom floor replacement, replace whiteboards and tackboards in classrooms, toilet room accessibility improvements, addition of new security cameras, site accessibility improvements, kindergarten/TK classroom relocation, modernization of existing building for admin use, redesign of main parking lot including repaving and restriping, removal of three (3) existing apparatus and replace with new, new PC shade structures, replacing existing built up roofing, HVAC upgrades, new landscape throughout site including replacement of existing irrigation systems, new PC modular buildings, new PC shade structure with photovoltaics in parking lot, modernization of existing kitchen facilities, interior remodel of administration area, new fencing throughout site, replacement of the existing storm drain, sanitary sewer, and domestic water line to edge of buildings.

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EXHIBIT B

DESCRIPTION OF THE SITE

The Site leased is all of that area inside
the (colored boundary) on the map shown below.

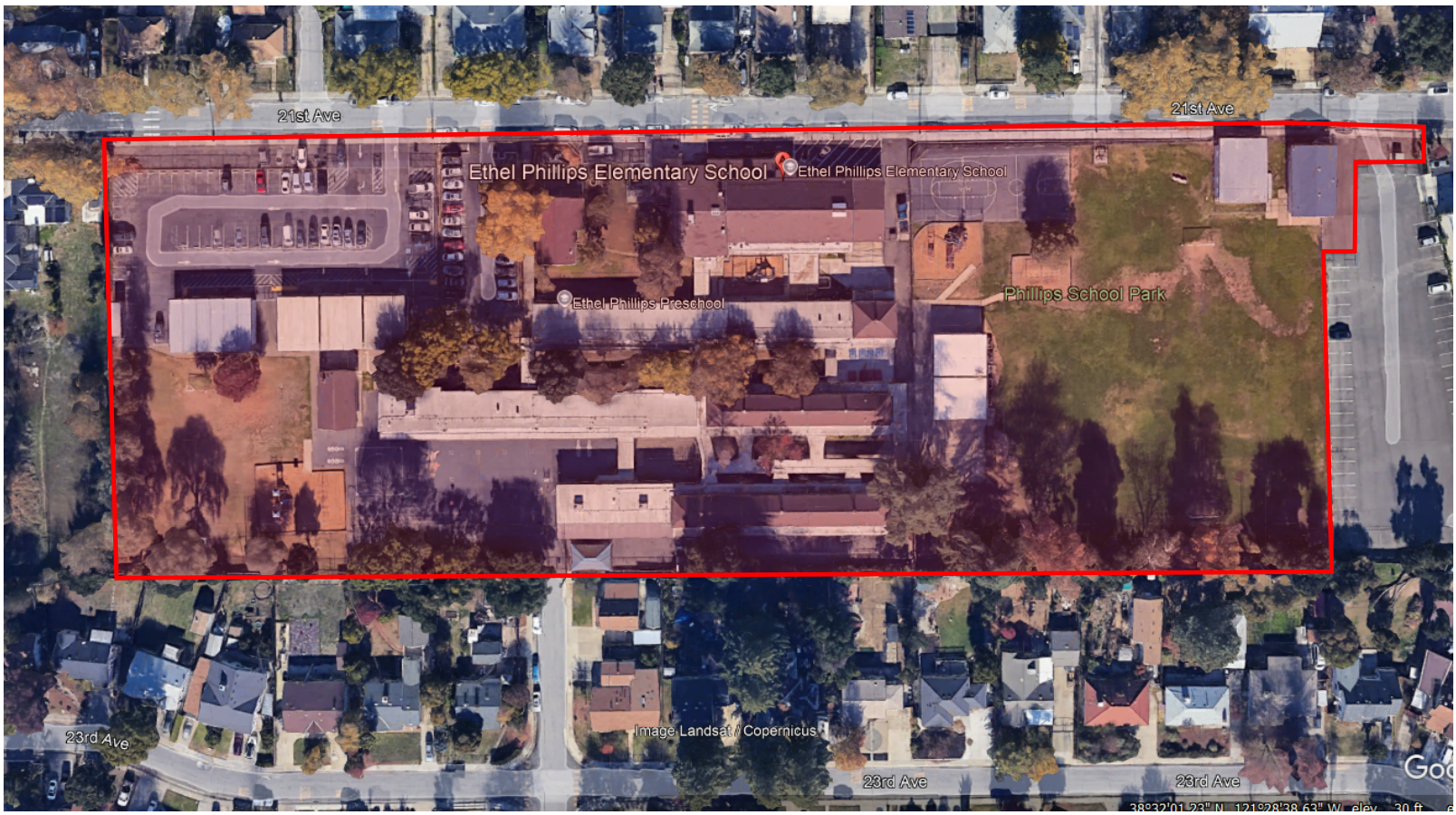

EXHIBIT C

LEASE PAYMENT SCHEDULE/TBR CALCULATION

[TO BE ADDED BY AMENDMENT]

EXHIBIT C

QUALIFICATIONS & ASSUMPTIONS

[TO BE ADDED BY AMENDMENT]

EXHIBIT C

EXCLUSIONS AND WORK NOT INCLUDED

[TO BE ADDED BY AMENDMENT]

LIST OF PLANS, SPECIFICATIONS AND OTHER DOCUMENTS

[DSA DRAWINGS & SPECIFICATIONS INDEX TO BE ADDED BY AMENDMENT]

NOTE: THIS SECTION SHOULD INCLUDE BUT NOT LIMITED TO DSA 103; GEOTECHNICAL REPORT(S); HAZARDOUS MATERIAL REPORT(S); DSA APPROVED ADDENUMS; OUTSIDE AGENCY APPLICATIONS; APPROVED PHASING PLAN AS APPLICALBE TO PROJECT; AND DOCUMENTS APPLICABLE TO THIS PROJECT.

Raney Geotechnical Inc.

September 25, 2024

Sacramento City Unified School District
c/o Mr. Ryan Wade
Kitchell CEM
2450 Venture Oaks Way, Ste 500
Sacramento, California 95833

Geotechnical Engineering and Geologic Hazards Report
ETHEL PHILLIPS MODERNIZATION
2930 21st Avenue
Sacramento, California 95820
File No. 3073-002.00P

INTRODUCTION

Our firm has completed this Geotechnical Engineering and Geologic Hazard Study for the proposed modernization of the existing Ethel Phillips Elementary School campus in Sacramento, California. The purposes of this investigation have been to explore the existing soil, geologic, and groundwater conditions at the site, and to provide geologic hazards and geotechnical engineering conclusions and recommendations for use by the other members of the design team for design and construction of the proposed project. This report presents the results of our study.

Scope of Services

Our scope of services for this project included the following tasks:

1. perform a site reconnaissance;
2. review of United States Geological Survey (USGS) topographic maps, aerial photographs and available groundwater data;

3. perform subsurface explorations, including the drilling and sampling of nine borings and two cone penetrometer tests (CPT) to depths of about five to 60 feet below the existing ground surface (bgs);
4. collect representative bulk samples of soils;
5. perform laboratory testing of selected soil samples;
6. perform engineering analyses; and,
7. preparation of this report.

We also retained the services of GEOCON Consultants, Inc. to prepare a Geologic Hazards Evaluation to meet the requirements of the California Geological Survey (CGS).

Figures and Attachments

This report contains a Site Plan showing the boring and CPT locations as Plate 1 and the Logs of Soil Borings as Plates 2 through 10. A Unified Soil Classification System is included on Plate 11, which includes nomenclature used to describe the soils. Laboratory test results are included as Plates 12 through 16.

Appendix A includes a *Geologic Hazards Evaluation* prepared by GEOCON Consultants, Inc. (GEOCON) for the site. Appendix B includes the CPT sounding logs and Appendix C contains the results of the liquefaction analysis.

Field Exploration and Laboratory Testing

As part of our study for the proposed improvements, our field exploration included the drilling and sampling of nine soil borings (B1 through B9) and two CPTs (CPT-01 and CPT-02) at the approximate locations shown on Plate 1.

The borings were performed on July 31, 2024 to depths of about five to 16½ feet below existing site grades utilizing a CME-55 HT truck-mounted drilling rig equipped with six-inch-diameter solid flight augers. At various intervals, soil samples were recovered with a 2½-inch outside diameter (O.D.), 2-inch inside diameter (I.D.), modified California split-spoon sampler. The samplers were driven by an automatic 140-pound hammer freely falling 30 inches. The number of blows of the hammer required to drive the 18-inch-long samplers each six-inch interval were recorded. The sum of the blows required to drive the sampler the lower 12-inch interval is designated the penetration resistance or "blow count" for that particular drive.

The modified California samples were retained in 2-inch diameter by 6-inch long, thin-walled brass tubes contained within the sampler. After recovery, the field representative visually classified the soil recovered in the tubes. After the samples were classified, the ends of the tubes and plastic bags were sealed to preserve the natural moisture contents.

In addition to the driven samples, representative bulk samples of near-surface soils also were collected and retained in plastic bags. Driven and bulk samples were taken to our laboratory for additional soil classification and selection of samples for testing.

The CPT soundings were completed on September 19, 2024 and were advanced at a rate of about one inch per second using a 15-square-centimeter cone penetrometer at the locations shown in Plate 1. The CPTs were advanced by using a 25-ton, truck-mounted, CPT rig provided by Middle Earth Geo Testing, Inc. of Hayward, California. The CPT soundings were advanced to a penetration depth of about 60 feet below existing grades. Data was collected from the CPTs at approximate depth intervals of five centimeters (or about two inches), with shear wave velocity measurements obtained at approximately five-foot intervals. Copies of the CPT logs are presented in Appendix B.

Selected undisturbed soil samples were tested to determine dry unit weight (American Society of Testing and Materials [ASTM] D2937) and natural moisture content (ASTM D2216). The results of these tests are included on the boring logs at the depth each tested sample was obtained. Two representative samples of the near-surface soil were subjected to Expansion Index testing (ASTM D4829); the results of this test are presented on Plate 12.

One representative sample of the near-surface soil was subjected to Plasticity Index testing (ASTM D4318); the results of this test is presented on Plate 13.

Two representative samples of anticipated pavement subgrade soils were subjected to Resistance "R" Value testing in accordance with California Test 301. The results of the test are presented in Plate 14.

Two samples of representative near-surface soil were submitted to Sunland Analytical to determine the soil pH and minimum resistivity (California Test 643), Sulfate concentration (California Test 417), and Chloride concentration (California Test 422). The test results are presented in Plates 15 and 16.

Proposed Construction

Based on our correspondence with Kitchell and review of a *Site Improvement Plan* prepared by HMC Architects, we understand the project will consist of the modernization of the existing campus, including a new kindergarten building at the west end of the campus, new playground areas, new outdoor covered eating area, new hardcourts, new parking and drive area, new fire lane, new sidewalks, and a new turf field (we understand the new turf field may be constructed of synthetic turf).

We understand the new kindergarten building will be a single-story, slab-on-grade structure covering about 7400 square feet in plan area. We understand the new building will be a wood-frame structure or a modular building.

Grading plans were not available; however, based on the existing site topography, we anticipate excavations and fills on the order of one to two feet will be required for development of the site, excluding underground utilities.

FINDINGS

Site Description

The project site is located at the existing Ethel Phillips Elementary School located at 2930 21st Avenue in Sacramento, California. The property is bounded to the north by 21st Avenue; beyond which is existing residential development, to the south and east by also existing residential development, and to the west by commercial development; beyond which is Franklin Boulevard. At the time of our field exploration in July and September of 2024, the area of the proposed structures is vacant land covered in grass, used as a play area. A majority of the proposed fire lane area is occupied by existing asphalt concrete. The proposed covered eating area is currently occupied by asphalt concrete hardcourts.

Based on our observations, the site is generally flat across the school campus. Review of a *United States Geological Survey* (*USGS) 7.5-Minute Series Topographic Map of the Sacramento East Quadrangle*, dated 2021, indicates the existing ground surface at the site is approximately +25 feet relative mean sea level (msl) referencing the North American Vertical Datum of 1988 (NAVD88).

Historical Aerial Photograph Review

Review of historic aerial photographs from 1947, 1957, 1964, 1966, 1984, 1993, 1998, 2002, 2005, 2009, and every other year from 2010 through 2024. In 1947, the school site appears to be occupied by residential structures or vacant land. The aerial of 1957 reveals that a majority of the school campus on eastern end has been developed. The structures on the western end of the school campus can first be seen in the 1998 aerial photograph. Pavement improvements (hardcourt and new parking areas) can be seen in the 2002 photograph. Between 2002 and 2022 the site has remained essentially the same. At the time of our field reconnaissance in July 2024, the site has remained relatively unchanged since 2002.

Soil Conditions

Nine exploratory borings (B1 through B9) were performed on July 31, 2024 and two CPTs (CPT-01 and CPT-02) were performed on September 19, 2024 at the approximate locations shown on Plate 1.

Boring locations B1, B5, and B7 were performed within existing asphalt concrete surfaces and the asphalt thicknesses encountered varied from about three to six inches at those borings. The aggregate base encountered beneath the asphalt concrete ranged from 10 to 12 inches thick.

The soil conditions at the surface or beneath the existing pavements at the boring locations generally consists of stiff to hard variably cemented lean clay (locally known as “hardpan”) with varying clay, silt, and sand content to the explored depth of five to 16½ feet bgs. At location B3, hard silt with sand was encountered beneath the clay layer.

At the CPT locations, the soundings revealed soil behavior types similar to clay and silty clay throughout the majority of the 60 foot depth of the CPTs. At CPT-02, interbedded silty sand layers were encountered from depths of about 45 to 60 feet below the existing ground surface.

Following completion of the drilling and sampling at the boring and CPT locations, the boreholes were backfilled with native soil cuttings and CPT holes were backfilled with a slurry of neat cement and water in accordance with Sacramento County Environmental Management Department’s requirements. Borings through asphalt concrete surface were sealed with non-shrink concrete patch painted with black dye.

For specific information regarding the soil conditions at a specific exploration location, please refer to the Logs of Soil Borings, Plates 2 through 10 and CPT sounding reports in Appendix B.

Groundwater

Groundwater was not encountered within the explored five to 16½ foot bgs at the boring locations performed on July 31, 2024. On September 19, 2024 groundwater dissipation tests were performed during the advancement of the CPTs. Results of the CPT dissipation tests revealed groundwater levels at about 26½ to 28 feet bgs at the CPT locations.

To supplement the groundwater data, we reviewed available groundwater data published by the California Department of Water Resources (DWR, 2019) from a monitoring well (08N05E18Q001M) located about ½ -mile northeast of the site. DWR has monitored water levels in the well from October 1963 to October 2017, however the data recorded from April 2011 to October 2017 at this well are listed as questionable data. Ground surface elevation at the well is indicated to be about +27 feet msl which is similar to the school site's elevation of +25 feet msl. Groundwater measurements at the DWR well have a "high" groundwater elevation of about +6 feet msl in July 2015, which is about 21 feet bgs at the well location. Groundwater measurements at the DWR well recorded a "low" groundwater elevation of about -17 feet msl in October 1966, which is about 44 feet bgs at the well location. Based on this data, groundwater elevations in the vicinity of the site have fluctuated from about 21 to 44 feet below the existing ground surface during the last 60 years.

Geologic Hazards

Geologic hazards specific to the site as outlined in CGS Note 48 are included in the report prepared by GEOCON and included in Appendix A. Refer to the GEOCON report for additional information regarding geologic hazards at the site.

CONCLUSIONS

Shear Wave Velocities and Seismic Site Class

Shear wave velocities obtained at locations CPT-01 and CPT-02 varied from about 878 to 1634 feet per second (fps) within the upper 60 feet of the soil profile. The average shear wave velocity within the upper 60 feet was determined in accordance with Section 1613A.3.2 of the 2022 California Building Code (CBC) and Chapter 20 of American Society of Civil Engineers (ASCE) 7-16 and was found to be about 1264 fps at CPT-01 and about 1098 fps at CPT-02.

A shear wave velocity of 1231 fps was encountered at a depth of about 60 feet below the existing ground surface at CPT-02. Based on the site geology and our analysis, we anticipated the soils from a depth of 60 to 100 feet have at least the same shear wave velocity as that encountered at a depth of 60 feet below the existing ground surface at CPT-02. Based on this assumption, the average shear wave velocity within the upper 100 feet of the ground surface at CPT-02 is calculated to be about 1211 fps.

Review of the geology of the area indicates the site is underlain by the Pleistocene-aged (10,000 to 700,000 years before present) lower unit of the Riverbank Formation. The Riverbank Formation has been identified as a material meeting Site Classification C (Wills, et al., 2000[1]).

Based on Table 20.3-1 of ASCE 7-16, a seismic Site Class C applies to sites with average shear wave velocities between 1200 to 2500 fps for the upper 100 feet of the ground surface. Based on the shear wave velocity data collected from the CPTs, assuming the soils from a depth of 60 to 100 feet have at least the same shear wave velocity encountered at a depth of 60 feet below the existing ground surface at CPT-02, and the geology of the site, it is our opinion that a Site Class C is applicable to the site, in accordance with Table 20.3-1 of ASCE 7-16 and the 2022 CBC.

Seismic Design - 2022 CBC/ASCE 7-16 Seismic Design Criteria

The 2022 California Building Code (CBC) references the American Society of Civil Engineers (ASCE) Standard 7-16 for seismic design. To assist with the structural design of this project, we have provided seismic design parameters for the 2022 CBC; which have been determined based on the sites locations and the web interface developed by the Structural Engineers Associate of California (SEAOC) and the Office of Statewide Health Planning and Development (OSHPD).

The seismic design parameters summarized below in Table 1 may be used for seismic design of the planned improvements at the site.

Table 1: 2022 CBC Seismic Design Parameters

Latitude: 38.5330° N Longitude: 121.4781° W	ASCE 7-16 Table/Figure	2022 CBC Figure/Section/Table	Factor/ Coefficient	2022 CBC Values
0.2-second Period MCE	Figure 22-1	Figure: 1613.2.1(1)	S_S	0.570 g

[1] Wills, C.J, et al, 2000, "A Site Conditions Map for California Based on Geology and Shear-Wave Velocity," Bulletin of the Seismological Society of America, 90, 6B., pp.S187-S208, December 2000.

Latitude: 38.5330° N Longitude: 121.4781° W	ASCE 7-16 Table/Figure	2022 CBC Figure/Section/Table	Factor/ Coefficient	2022 CBC Values
1.0 second Period MCE_R	Figure 22-2	Figure: 1113.2.1(2)	S_1	0.253 g
Soil Class	Table 20.3-1	Section: 1613.2.2	Site Class	C
Site Coefficient	Table 11.4-1	Table: 1613.2.3 (1)	F_a	1.272
Site Coefficient	Table 11.4-2	Table: 1613.2.3(2)	F_v	1.500
Adjusted MCE Spectral Response Parameters	Equation 11.4-1	Equation: 16-36	S_{MS}	0.725 g
	Equation 11.4-2	Equation: 16-37	S_{M1}	0.380 g
Design Spectral Acceleration Parameters	Equation 11.4-3	Equation: 16-38	S_{DS}	0.483 g
	Equation 11.4-4	Equation: 16-39	S_{D1}	0.253 g
Seismic Design Category	Table 11.6-1	Table: 1613.2.5(1)	Risk Category I to IV	D
	Table 11.6-2	Table: 1613.2.5(2)	Risk Category I to IV	D

Notes: MCE_R = Risk-Targeted Maximum Considered Earthquake; g = gravity

Liquefaction Potential

Liquefaction is a soil strength loss phenomenon that typically occurs in loose, saturated cohesionless soils as a result of strong ground shaking during earthquakes. The potential for liquefaction at a site usually is determined based on the results of a subsurface soil investigation and the groundwater conditions beneath the site. Hazards to buildings associated with liquefaction include shallow and deep foundation bearing capacity failure, lateral spreading of soil, and differential settlement of soils below foundations, all of which can contribute to structural damage or collapse.

A liquefaction analysis to determine factors of safety against liquefaction was performed for the soil and groundwater conditions encountered at CPT-01 and CPT-02 performed during our field explorations.

Seismic Settlement

We performed a liquefaction analysis of data obtained from CPT-01 and CPT-02, using a historic high groundwater level of 20 feet below the ground surface during a seismic event. The analysis was performed using soil liquefaction assessment software Cliq (Version 3.5.2.22) developed by GeoLogismiki. The software utilizes data collected from CPT soundings to determine factors of safety against liquefaction for varying earthquake input energies and uses the results of the National Center for Earthquake Engineering Research (NCEER) liquefaction evaluation methods summarized by Youd, et al (2001). Input values were obtained using the results of the CPT soundings referenced above.

A peak ground acceleration (PGAM) of 0.24 g was used in the liquefaction analysis based on Equation 11.8-1 of American Society of Civil Engineers (ASCE) 7-16. A mode magnitude earthquake of 6.5 was used for this analysis using the 2014 USGS National Seismic Hazard Mapping Project (NSHMP) Probabilistic Seismic Hazard Analysis (PSHA) Interactive Deaggregation web site.

Liquefaction potential at the site also was evaluated based on the Liquefaction Potential Index (LPI). The LPI is a measure of the liquefaction potential based on an analysis of the entire vertical soil profile, and not just discrete layers (Iwasaki, 1986; Toprak and Holzer, 2003). Factors taken into consideration for the LPI calculations include: thickness of the liquefied layer; proximity of the liquefied layer to the surface; and, the factor of safety. The LPI ranges from 0 to 100 with the value zero representing no liquefaction potential. Surface manifestations of liquefaction occur at LPI $\geq$ 5. The LPI for the soil conditions at CPT-01 and CPT-02 were calculated to be 0.0 and 0.04, respectively, indicating a very low potential for liquefaction during the design seismic event (mode magnitude earthquake of 6.5 and a PGA of 0.24 g).

The results of the liquefaction analysis at the CPT locations using Cliq indicate calculated seismic settlements between zero and 0.59 inches at CPT-01 and CPT-02, respectively. However, the settlement estimate calculated at CPT-02 is generally shown at depths from about 50 to 60 feet below the existing ground surface. Given the depth of the estimated settlement calculated, the geology of the site, and the relatively stiff, cemented soils encountered within the upper 15 to 20 feet of the site, seismic settlement at the site is anticipated to be negligible and does not need to be accounted for in design of the overlying structures. Differential seismic induced settlement is considered to be negligible at the site. As noted previously, the presence of non-liquefiable soil layers overlying and interbedded within the liquefiable layers will likely mitigate the impact of seismically induced settlement at the ground surface.

The potential for dry sand seismic settlement was also evaluated for soils above the groundwater table. The upper 20 feet of the existing ground surface was generally observed to be relatively stiff, cemented cohesive soils and/or relatively dense granular soils. Therefore, dry sand seismic settlement at the site is not anticipated.

Based on the results of our analysis, it is our opinion that the potential for loss of bearing capacity (strength) beneath the prepared building pads is very low and does not need to be further mitigated in the design of the structure, provided the recommendations of this report are incorporated into the design of the building.

The site is relatively flat and sloping ground is not located in the immediately vicinity of the site. Therefore, lateral spread due to liquefaction is not anticipated at the site or in the vicinity.

Copies of the output files for the liquefaction analysis, including the results of the 2014 USGS NSHMP PSHA Interactive Deaggregation, are provided in Appendix C.

Soil Expansion Potential

Laboratory test results on near-surface soils encountered at boring locations B3 and B7 indicate these materials were found to have low expansion potential when tested in accordance with ASTM D4318 test method as shown in Plate 12. Additional laboratory test performed on the soil samples indicate these material possesses low plasticity when tested in accordance with the ASTM D4318 test method as shown in Plate 13.

Based on the laboratory test results and the soil conditions encountered at the site, special site preparation or foundation design to mitigate the effects of expansive soils will not be required for development of this site.

Bearing Capacity

The results of our study indicate the undisturbed site soils can provide adequate support for the proposed improvements provided the recommendations of this report are carefully followed. Clearing operations to remove vegetation and remnants of any existing improvements (i.e., hardcourts, classrooms, etc.) will disturb the underlying materials and create loose and variable soil conditions. Disturbed soils must be excavated to expose a firm base and the excavations widened, as necessary to provide equipment access, and backfilled with engineered fill to provide uniform support for the planned structures. Engineered fill that is properly placed and

compacted as recommended in this report will be capable of supporting the proposed structures and pavements.

Pavement Subgrade Quality

Laboratory test results indicate the near-surface clays are moderate quality materials for support of asphalt concrete pavements. Laboratory tests on near-surface soil collected from the site revealed that these materials possess Resistance ("R") values of 23 and 36 when tested in accordance with California Test 301 as shown on Plate 14.

Effect of New Construction on Existing Development

There are existing buildings and other improvements (e.g., pavements, exterior flatwork, underground utilities, etc.) adjacent to the planned buildings. We assume that the buildings are supported on conventional shallow foundations (isolated spread and/or continuous footings). For excavations that will encroach within a one horizontal to one vertical (1H:1V) projection from the bottom of the existing building foundations, stabilizing the existing buildings and/or other improvements using an underpinning system that supports the existing foundations may be required should be evaluated by the Geotechnical Engineer in coordination with the design team.

Groundwater Effect on Development

Free groundwater was not encountered in the explored five to 16½ feet bgs of the borings performed at the site in July of 2024. Review of available groundwater data revealed the groundwater elevation at nearby monitoring wells has ranged from 21 to 44 feet below the existing ground surface.

Groundwater levels at the site should be expected to fluctuate throughout the year based on variations in seasonal precipitation, local pumping, and other factors. Locally perched shallower groundwater may be encountered.

Based on current explorations performed at the site and historical groundwater data, we do not anticipate excavations within about 20 feet of the existing ground surface to encounter permanent groundwater, although locally perched water could be encountered and require localized dewatering (depending on the time of year). If perched is encountered, the use of sumps or submersible pumps could be used as methods to lower the groundwater level.

If excavations extend deeper than about 20 feet below the ground surface, dewatering may be

required. The dewatering method used will depend on the soil conditions, depth of the excavation and amount of groundwater present within the excavation. Dewatering, if required, should be the contractor's responsibility. The dewatering system should be designed and constructed by a dewatering contractor with local experience. We recommend the selected dewatering system lower the groundwater level to at least two feet below the bottom of the proposed excavations.

Seasonal Water

During the wet season, infiltrating surface runoff water will create a saturated surface condition. It is probable that grading operations attempted following the onset of winter rains and prior to prolonged drying periods will be hampered by high soil moisture contents, especially due to the relatively low permeability of the near-surface soils and underlying cemented soils. Such soil, intended for use as engineered fill, will likely require a prolonged period of dry weather and/or considerable aeration to reach a moisture content suitable to achieve required compaction. This should be considered in the construction schedule for the project.

Soils beneath existing pavements will likely be at an elevated moisture content regardless of the time of year and will require drying before compaction or use as fill. Such soils, intended for use as engineered fill, will require considerable aeration and/or drying to reach a moisture content that will permit the soils to be properly compacted. This should be considered in the construction schedule for the project.

Typical remedial measures include discing and aerating the soils during dry weather, mixing the soils with dryer materials, removing and replacing the soils with an approved fill material, stabilization with a geogrid reinforcement, and/or mixing the soils with an approved hydrating agent such as a lime or cement product. Our firm should be consulted prior to implementing any remedial measure to observe the unstable subgrade condition and provide site-specific recommendations.

Excavation Conditions

The surface and near-surface soils should be readily excavatable with conventional construction equipment. The underlying cemented soils (locally referred to as "hardpan") will be slower to excavate, but special excavation equipment is not anticipated. Subsurface remnants from previous development, if any, at the site can be slow to excavate with a standard, rubber-tired backhoe; however, experience has shown that excavators can remove these materials with moderate effort.

Based on the borings performed at the site, excavations associated with building foundations, shallow trenches for utilities, and other excavations less than five feet deep associated with the planned construction, should stand vertically for short periods of time (i.e., less than one day) required for construction.

Excavations deeper than five feet that will be entered by workers should be sloped, braced, or shored in accordance with current Occupational Safety and Health Administration (OSHA) regulations. The contractor must provide an adequately constructed and braced shoring system in accordance with federal, state, and local safety regulations for individuals working in an excavation that may expose them to the danger of moving ground.

Excavated materials should not be stockpiled directly adjacent to an open trench to prevent surcharge loading of the trench sidewalls. Excessive truck and equipment traffic also should be avoided near open trenches. If material is stored or heavy equipment is operated near an excavation, stronger shoring would be needed to resist the extra pressure due to the superimposed loads.

Soil Suitability for Engineered Fill Construction

The existing on-site soils are considered suitable for use as engineered fill provided that they do not contain significant quantities of organics, rubble and deleterious debris, and are at a proper moisture content to achieve the desired degree of compaction.

Existing pavements (asphalt concrete and concrete) and concrete improvements within areas to be removed and replaced may be broken up and pulverized for use as fill. Asphalt and Portland cement concrete rubble may be used as fill provided it is processed into fragments less than three inches in largest dimension, is mixed with soil to form a compactable mixture, and is approved by the Owner. Note that reuse of the pulverized materials is only acceptable from a geotechnical perspective and should be approved by the Owner prior to use.

Clean aggregate base materials recovered from pavement demolition, if any, may be used in engineered fill construction. The existing asphalt concrete may be pulverized and used as engineered fill and/or aggregate sub-base outside the planned building footprints provided the material is pulverized to less than three inches in largest dimension and mixed to form a compactable mixture.

Preliminary Soil Corrosion Potential

Tow samples of near-surface soil were submitted to Sunland Analytical Lab of Rancho Cordova, California for testing to determine minimum resistivity, pH, and chloride and sulfate concentrations to help evaluate the potential for corrosive attack upon reinforced concrete and

buried metal. The results of the corrosivity testing are summarized in Table 2. Copies of the corrosion test reports are presented on Plates 15 and 16.

Table 2: Corrosion Test Results

Sample Location	Depth (feet)	Soil Type	Analyte / Test Method			
			pH	Chloride Content (ppm)	Sulfate Content (ppm)	Resistivity (ohm-cm)
			CA DOT 643 Modified*	CA DOT 422	CA DOT 417	CA DOT 643 Modified*
B2	1.5	CL	6.41	1.5	13.0	4,020
B7	2.0	CL	--	--	<.1	4,020

Notes: * = Small cell method CA DOT = California Department of Transportation
Ω-cm = Ohm-centimeters ppm = Parts per million

The California Department of Transportation Corrosion and Structural Concrete Field Investigation Branch, Corrosion Guidelines, Version 3.2, dated March 2021, considers a site to be corrosive to foundation elements if one or more of the following conditions exists for the representative soil and/or water samples taken: has a chloride concentration greater than or equal to 500 ppm, sulfate concentration greater than or equal to 2000 ppm, or the pH is 5.5 or less.

Based on the above test results, the on-site soils are not considered corrosive to buried metal or to concrete for the samples tested.

Table 19.3.1.1 – Exposure Categories and Classes, of American Concrete Institute (ACI) 318-19, Section 19.3 – Concrete Durability Requirements, as referenced in Section 1904.1 of the 2022 CBC, indicates the severity of sulfate exposure for the samples tested is Exposure Class S0. Exposure Class S0 is assigned for conditions where the water-soluble sulfate concentration in contact with concrete is low and injurious sulfate attack is not a concern. The project structural engineer should review the requirements of ACI 318 and determine their applicability to the site.

Raney Geotechnical, Inc. are not corrosion engineers. Therefore, if it is desired to further define the soil corrosion potential at the site a corrosion engineer should be consulted.

RECOMMENDATIONS

General

The recommendations presented below are appropriate for typical construction in the late spring through fall months. The on-site soils likely will be saturated by rainfall in the winter and early spring months and will not be compactable without drying by aeration or chemical treatment. Should the construction schedule require work to continue during the wet months, additional recommendations can be provided, as conditions dictate.

Site preparation should be accomplished in accordance with the provisions of this report. A representative of the Geotechnical Engineer should be present during all earthwork operations to evaluate compliance with the recommendations included in this report. The Geotechnical Engineer of Record referenced herein should be considered the Geotechnical Engineer that is retained to provide geotechnical engineering observation and testing services during construction.

Site Clearing

The site should be cleared of all surface and subsurface debris; remnants of prior structures, if any; utilities to be relocated or abandoned, including trench backfill and associated pipe bedding material, if any; and, any other items designated for removal. Where practical, site clearing should extend at least two feet beyond the limits of the planned improvement areas.

Surface vegetation should be removed by stripping. Strippings may be stockpiled for later use in landscape areas or disposed of off-site. Strippings should not be used in general fill construction, but may be used in landscaped areas, provided they are kept at least five feet from any structure, including adjacent flatwork and pavements, moisture conditioned, and receive compactive effort.

Existing trees designated for removal, if any, should include the entire rootball and roots larger than ½-inch in diameter. Adequate removal of debris and roots may require laborers and handpicking to clear the subgrade soils to the satisfaction of the Geotechnical Engineer's on-site representative.

Depressions resulting from removal of the above items, as well as any loose, soft, or saturated soils should be cleaned out to firm native soil and backfilled with engineered fill in accordance with the recommendations in this report. It is important that the Geotechnical Engineer's representative be present on a periodic basis during clearing operations to verify adequate removal of the surface and subsurface items, as well as the proper backfilling of resulting excavations.

Subgrade Preparation

Structural areas to receive fill, remain at-grade or achieved by excavation, should be scarified to a depth of at least six inches. The scarified soil should be thoroughly moisture conditioned to at least optimum and compacted to at least 90 percent relative compaction. Relative compaction and optimum moisture should be based on the maximum dry density as determined in accordance with the ASTM D1557 Test Method.

The upper six inches of final pad grade should be thoroughly moisture conditioned to at least the optimum moisture content, and uniformly compacted to at least 90 percent of the ASTM D1557 maximum dry density at a moisture content of at least the optimum moisture.

The upper six inches of pavement subgrade should be moisture conditioned to at least the optimum moisture content and compacted to no less than 95 percent relative compaction, regardless of whether final subgrade is achieved by excavation, filling or left at existing grade. Final pavement subgrade processing and compaction should be performed after completion of underground utilities and must be stable under construction traffic prior to aggregate base placement.

Final pavement subgrade processing and compaction should be performed just prior to placement of aggregate base, after construction of underground utilities is complete. The moisture content of the subgrade soils must be maintained until covered by aggregate base, or the subgrade soils re-moisture conditioned just prior to base placement.

To help identify unstable pavement subgrades, a proof-roll should be performed with a fully-loaded water truck on the exposed pavement subgrades prior to placement of aggregate base. The proof-roll should be observed by a representative of the Geotechnical Engineer.

If unstable soil conditions are encountered during subgrade preparation, stabilizing the subgrade soils may be required to achieve a stable pavement subgrade. Typical recommendations for stabilizing unstable soil subgrades include: cross-rip, blade, and aerate; removal and

replacement; geogrid stabilization; and/or, chemical treatment. Stabilization recommendations will depend on the actual conditions encountered at the time of construction and should be determined by the project team, including the Geotechnical Engineer. Typically geogrid stabilization of isolated unstable areas is the most efficient stabilization technique and considered the most likely stabilization option at the site.

If hardpan, as identified by the Geotechnical Engineer's representative, is encountered at the exposed ground surface, scarification and recompaction as noted above is not required.

Site clearing and compaction operations should be performed in the presence of the Geotechnical Engineer's representative who will evaluate the performance of the subgrade under compactive load and identify loose or unstable soils that could require additional subgrade preparation.

Engineered Fill

On-site soils are considered suitable for use in engineered fill construction, provided they do not contain significant concentrations of organic materials, rubble debris, or particles greater than three inches in maximum dimension.

Imported fill materials, if required, should be compactable granular materials with an Expansion Index of 20 or less; an organic content less than five percent; do not contain particles greater than three inches in maximum dimension, and be within a compactable moisture content. Additionally, import fill materials that will be used within pavement areas should be non-expansive and have a minimum Resistance value of 20 when tested in accordance with California Test 301.

Imported fill should be observed and approved by the Geotechnical Engineer at least three business days prior to being transported to the site. Also, if import fills are required (other than aggregate base), the contractor must provide appropriate documentation that the import is clean of known contamination and within acceptable corrosion limits.

Engineered fill should be placed in lifts not exceeding six inches in compacted thickness with each lift being uniformly moisture conditioned to at least the optimum moisture content and compacted to not less than 90 percent of the maximum dry density per ASTM D1557.

The upper six inches of final pad grade should be thoroughly moisture conditioned to at least the optimum moisture content, and uniformly compacted to at least 90 percent of the ASTM D1557 maximum dry density at a moisture content of at least the optimum moisture.

The upper six inches of final pavement subgrade should be uniformly compacted to at least 95 percent of the ASTM D1557 maximum dry density at a moisture content of at least the optimum moisture and must be stable under construction traffic prior to placement of aggregate base.

Permanent excavation and fill slopes should be constructed no steeper than two horizontal to one vertical (2H:1V) and should be vegetated as soon as practical following grading to minimize erosion. As a minimum, the following erosion control measures should be considered: placement of straw bale sediment barriers or construction of silt filter fences in areas where surface run-off may be concentrated. Slopes should be over-built and cutback to design grades and inclinations.

A representative of the Geotechnical Engineer should be present during site preparation and all grading operations to observe and test the fill to verify compliance with these recommendations and the project specifications.

Utility Trench Backfill

Bedding of utilities and initial backfill should be in accordance with the manufacturer's recommendations for the pipe materials selected.

Utility trench backfill should be placed in relatively thin lifts, uniformly moisture conditioned to at least the optimum moisture content and mechanically compacted to at least 90 percent of the ASTM D1557 maximum dry density. The actual lift thickness should be determined in the field based on material type and compaction equipment used. Utility trench backfill should be continuously observed and tested during construction.

Trench backfill materials and compaction within street rights-of-way should conform to the applicable portions of the current Sacramento County standards, latest edition. The upper six inches of utility trench backfill within pavement areas should be compacted to at least 95 percent of the ASTM D1557 maximum dry density.

Underground utility trenches, which are aligned nearly parallel with foundations, should be located at least three feet from the outer edge of foundations. Trenches should not encroach into the zone extending outward at a one horizontal to one vertical (1H:1V) inclination below the bottom of the foundations.

Foundation Design

Based on our understanding of the proposed improvements, we anticipate the new kindergarten building will be supported on shallow, spread foundations. The proposed shade structures can be supported on isolated spread and/or drilled pier foundation systems. The sections below provide design parameters for each system.

Shallow, Spread Foundations

The proposed kindergarten building and shade structures may be supported upon isolated spread foundations extending at least 18 inches into the final subgrade level, as measured from lowest adjacent soil grade. Isolated spread foundations should maintain a minimum 18-inch dimension.

Foundations bearing on undisturbed native soils and/or engineered fill may be sized for maximum vertical compressive loads utilizing a maximum allowable soil bearing pressures of 3000 pounds per square foot (psf) for dead plus live load; this bearing value may be increased by one-third to include the effects of seismic or wind forces. The weight of foundation concrete extending below lowest adjacent soil grade may be disregarded in sizing computations.

We recommend that all foundations be adequately reinforced to provide structural continuity, mitigate cracking, and enable spanning of local soil irregularities. Reinforcement should be determined by the project structural engineer.

Resistance to lateral displacement of shallow foundations may be computed using an ultimate friction factor of 0.25 multiplied by the effective vertical load on each foundation. Additional lateral resistance may be achieved using an ultimate passive earth pressure against the vertical projection of the foundation equal to an equivalent fluid pressure of 300 psf per foot of depth. These two modes of resistance should not be added unless the passive earth pressure component is reduced by 50 percent. The upper one foot of passive resistance should be neglected if the area in front of the foundation does not contain flatwork or pavement for at least five lateral feet from the outside edge of the foundation.

Drilled Pier Foundation Design

The shade structures may also be supported on drilled, cast-in-place concrete piers (drilled piers) extending at least three feet below lowest adjacent soil grade. Drilled piers should have a minimum shaft diameter of 18 inches to help facilitate proper cleaning of the bottom of the pier. Drilled piers extending at least five feet below the existing ground surface may be sized utilizing

a maximum allowable end bearing capacity of 4000 psf or an allowable skin friction of 300 pounds per square foot (psf) for dead plus live loads, which may be applied over the surface of the pier extending deeper than 12 inches below grade. Those values may be increased by one-third to include short-term wind or seismic forces.

Uplift resistance of pier foundations may be computed using the following resisting forces, where applicable: 1) weight of the pier concrete (150 pounds per cubic foot [pcf]), and 2) an allowable skin friction of 300 psf applied over the shaft area of the pier. Increased uplift resistance can be achieved by increasing the diameter of the pier or increasing the depth. The upper one foot of skin friction should be disregarded unless the pier is completely surrounded by slab concrete for a distance of at least three feet from the edge of the foundation pier.

Torsional resistance may be computed using the allowable skin friction of 300 psf applied over the shaft area of the pier.

Sizing of drilled piers to resist lateral loads can be evaluated using Section 1807.3.2 of the 2022 CBC. An allowable value of 300 pcf for lateral bearing as defined in Table 1806.2 of the CBC may be used for the coefficients S_1 and S_3 for the nonconstrained and constrained conditions, respectively. The allowable lateral value may be increased 1/3 for total loading that includes wind and/or earthquake loads. The upper 12 inches of the subgrade should be neglected for the nonconstrained condition.

Reinforcement and concrete should be placed in the pier excavations as soon as possible after excavation is completed to minimize the chances of sidewall caving into the excavations. We recommend that the pier contractor be prepared to case the pier holes or use drilling slurry, if conditions require. Voids created by excessive sloughing may be backfilled with slurry and/or additional structure concrete, if approved by the project structural engineer.

The soils should be readily excavatable with conventional construction equipment. However, larger drill rigs may be required to penetrate the hardpan encountered near the surface of the site. Based on the borings performed at the site, excavations associated with drilled pier foundations should stand vertically for short periods of time (i.e., less than one day) required for construction. However, relatively cohesionless sands may encountered and result in caving or sloughing; therefore, the drilling contractor should be prepared to case the drilled pier excavations, if necessary.

If the drilled piers are constructed in the "dry" (with dry being less than two inches of water at the base of the excavation), the concrete may be placed by the free-fall method, using a short hopper or back-chute to direct the concrete flow out of the truck into a vertical stream of flowing concrete with a relatively small diameter. The stream is directed to avoid hitting the sides of the excavation or any reinforcing cages. For the free-fall method of concrete placement, we recommend the concrete mix be designed with a slump of five to seven inches.

Where groundwater will be encountered which cannot be controlled such that more than six inches of water accumulates at the bottom of the pier excavation, concrete should be placed using a tremie. For concrete placed using the tremie method, a slump of six to eight inches, and a maximum aggregate size of ¾-inch is recommended. The required slump should be obtained by using plasticizers or water-reducing agents. Addition of water on-site to establish the recommended slump should not be allowed.

When extracting temporary casings or tremie methods from the excavation, care should be taken to maintain a head of concrete to prevent infiltration of water and soil into the shaft area. The head of concrete should always be greater than the head of water outside the pier or tremie, taking into account the differences in unit weights of concrete and water.

Interior Floor Slab Support

Interior concrete slab-on-grade floors should be at least four inches thick and contain reinforcement for crack control. Final reinforcement and joint spacing should be determined by the project structural engineer. Proper and consistent location of the reinforcement near mid-slab is essential to its performance.

Floor slabs should be underlain by a layer of free-draining crushed rock, serving as a deterrent to migration of capillary moisture. The crushed rock layer should be between four and six inches thick and graded such that 100 percent passes a one-inch sieve and no appreciable amount passes a No. 4 sieve. Additional moisture protection may be provided by placing a vapor retarder membrane (at least 10-mils thick) directly over the crushed rock. The membrane should meet or exceed the minimum specifications as outlined in ASTM E1745 and be installed in strict conformance with the manufacturer's recommendations.

Floor slab construction over the past 30 years or more has included placement of a thin layer of sand or pea gravel over the vapor retarder membrane. The intent of the sand or pea gravel is to aid in the proper curing of the slab concrete and to protect the membrane prior to concrete placement. However, debate over excessive moisture vapor emissions from floor slabs includes

concern for water trapped within the sand or pea gravel. Consequently, we consider the use of the sand or pea gravel layer as optional and not required from a geotechnical perspective. The concrete curing benefits should be weighed against efforts to reduce slab moisture vapor transmission.

The recommendations presented above are intended to mitigate any significant soils-related cracking of the slab-on-grade floors. More important to the performance and appearance of a Portland cement concrete slab is the quality of the concrete, the workmanship of the concrete contractor, the curing techniques utilized, and the spacing of control joints.

Floor Slab Moisture Penetration Resistance

It is likely that floor slab subgrade soils will become saturated at some time during the life of the structures, especially when the slab is constructed during the wet seasons, or when constantly wet ground or poor drainage conditions exist adjacent to the structures. For this reason, it should be assumed that the interior slab intended for moisture-sensitive floor coverings or materials, require protection against moisture or moisture vapor penetration. Standard practice includes placing a layer of gravel/crushed rock and a vapor retarder membrane (and possibly a layer of sand/pea gravel) as discussed above. Recommendations contained in this report concerning foundation and floor slab design are presented as minimum requirements only from the geotechnical engineering standpoint.

It is emphasized that the use of gravel/crushed rock and membrane below the slab will not "moisture proof" the slab, nor will it assure that slab moisture transmission levels will be low enough to prevent damage to floor coverings or other building components. It is emphasized that we are not slab moisture proofing or moisture protection experts. The sub-slab gravel/crushed rock and vapor retarder membrane simply offers a first line of defense against soil-related moisture. If increased protection against moisture vapor penetration of the slab is desired, a concrete moisture protection specialist should be consulted. The design team should consider all available measures for slab moisture protection. It is commonly accepted that maintaining the lowest practical water-cement ratio in the slab concrete is one of the most effective ways to reduce future moisture vapor penetration of the completed slabs.

Exterior Flatwork

Areas to receive exterior concrete flatwork (i.e., sidewalks) should be moisture conditioned to at least the optimum moisture content and uniformly compacted to at least 90 percent relative compaction prior to concrete placement. Proper moisture conditioning of the subgrade soils is

considered essential to the performance of exterior flatwork. Exterior flatwork should be underlain by at least four inches of aggregate base uniformly compacted to not less than 90 percent relative compaction.

Exterior flatwork concrete should be at least four inches thick and consideration should be given to thickening the outside edge of the flatwork to twice the slab thickness and reinforcing the slabs with rebar for crack control. Practices recommended by the Portland Cement Association (PCA) for proper placement and curing of concrete should be followed during exterior concrete flatwork construction.

Expansion joints should be provided to allow for minor vertical movement of the flatwork. Exterior flatwork should be constructed independent of the perimeter building foundation and isolated column foundations by the placement of a layer of felt material between the flatwork and the foundation.

Areas adjacent to new exterior flatwork should be landscaped to maintain more uniform soil moisture conditions adjacent to and under the flatwork. We recommend that final landscaping plans not allow fallow ground adjacent to exterior concrete flatwork.

Pavement Design

The anticipated pavement subgrade soils are anticipated to exhibit moderate subgrade qualities for support of asphalt concrete pavements. An R-value of 20 was used in our pavement design. The following pavement sections have been calculated based on the results of R-value testing, and the procedures contained within Chapters 600 to 670 of the California Highway Design Manual, 7th edition, utilizing design Traffic Indices (TIs) considered appropriate for the proposed development. The project civil engineer should determine the appropriate TI based on anticipated traffic conditions. Additional pavement sections can be provided upon request.

Table 3: Pavement Design Alternatives

Traffic Index (TI)	Traffic Condition	Pavement Subgrade (R-Value = 20)		
		Asphalt Concrete (inches)	Class 2 Aggregate Base (inches)	Portland Cement Concrete (inches)
4.5	Hardcourts and Automobile Parking Only	2½*	7	--
		--	7	4
5.5	Moderate Truck Traffic and Emergency Vehicles	2½	11	--
		3*	9	--
		--	9	4

Note: * = Asphalt concrete thickness contains the Caltrans safety factor.

We emphasize that the performance of pavements is critically dependent upon uniform and adequate compaction of the soil subgrade, as well as all engineered fill and utility trench backfill within the limits of the pavement. The upper six inches of pavement subgrades should be compacted to at least 95 percent relative compaction at a moisture content of at least the optimum moisture content. We recommend that the final subgrade compaction be achieved following completion of underground utility line trench backfill.

If hardpan, as identified by the Geotechnical Engineer's representative, is encountered at the exposed ground surface, scarification and recompaction as noted above is not required.

Aggregate base utilized within the pavement section should be compacted to at least 95 percent relative compaction.

In the summer heat, high axle loads coupled with shear stresses induced by sharply turning tire movements can lead to failure in asphalt concrete pavements. Therefore, consideration should be given to using a Portland cement concrete (PCC) section in areas subjected to concentrated heavy wheel loading, such as entry driveways and trash encloures. As a minimum, the concrete sections noted above should be considered.

We suggest the concrete slabs be constructed with thickened edges in accordance with ACI design standards, latest edition. Reinforcing for crack control, should be provided in accordance with ACI guidelines. Reinforcement must be located at mid-slab depth to be effective. Joint

spacing and details should conform to the current PCA or ACI guidelines. Portland cement concrete should achieve a minimum compressive strength of 3500 psi at 28 days. Construction of Portland cement concrete pavements should be performed in accordance with applicable ACI or PCA standards.

All pavement materials and construction methods of structural pavement sections should conform to the applicable provisions of the *Caltrans Standard Specifications*, latest edition.

Site Drainage

Final site grading should be accomplished to provide positive drainage of surface water away from structures and prevent ponding of water adjacent to foundations, slabs, or pavements. The grade adjacent to houses should be sloped away from foundations at a minimum two percent slope for a distance of at least five feet, where possible.

Roof gutter downspouts and surface drains should drain onto pavements or be connected to rigid non-perforated piping directed to an appropriate drainage point away from the buildings. Ponding of surface water should not be allowed adjacent to buildings or pavements. Landscape berms, if planned, should not be constructed in such a manner as to promote drainage toward structures.

Geotechnical Engineering Observation and Testing During Earthwork Construction

Site preparation should be accomplished in accordance with the recommendations of this report. Geotechnical testing and observation during construction is considered a continuation of our geotechnical engineering investigation. Raney Geotechnical, Inc. should be retained to provide testing and observation services during site clearing, preparation, earthwork, and foundation construction at the project to verify compliance with this geotechnical report and the project plans and specifications, and to provide consultation as required during construction. These services are beyond the scope of work authorized for this investigation; however, we would be pleased to submit a proposal to provide these services upon request.

In the event that Raney Geotechnical, Inc. is not retained to provide geotechnical engineering observation and testing services during construction, the Geotechnical Engineer retained to provide these services should indicate in writing that they agree with the recommendations of this report or prepare supplemental recommendations as necessary. A final report by the "Geotechnical Engineer" should be prepared upon completion of the project.

Additional Services

We recommend that Raney Geotechnical, Inc. be retained to review the final plans and specifications to determine if the intent of our recommendations has been implemented in those documents. We would be pleased to submit a proposal to provide these services upon request.

LIMITATIONS

Our recommendations are based upon the information provided regarding the proposed project, combined with our analysis of site conditions revealed by the field exploration and laboratory testing programs. We have used our engineering judgment based upon the information provided and the data generated from our study. This report has been prepared in substantial compliance with generally accepted geotechnical engineering practices that exist in the area of the project at the time the report was prepared. No warranty, either express or implied, is provided.

If the proposed construction is modified or re-sited; or, if it is found during construction that subsurface conditions differ from those we encountered at the boring locations, we should be afforded the opportunity to review the new information or changed conditions to determine if our conclusions and recommendations must be modified.
We emphasize that this report is applicable only to the proposed construction and the investigated site and should not be utilized for construction on any other site.

The conclusions and recommendations of this report are considered valid for a period of three years. If design is not completed and construction has not started within three years of the date of this report, the report must be reviewed and updated as necessary.

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The following Plates are attached and complete this report:

Plate 1 – Plot Plan
Plates 2 through 10 – Logs of Borings
Plate 11 – Unified Soil Classification System
Plate 12 – Expansion Index Test Results
Plate 13 – Atterberg's Limits Test Results
Plate 14 – Resistance Value Test Results
Plates 15 and 16 – Corrosion Test Results

Very truly yours,

RANEY GEOTECHNICAL, INC

Guang H. Zhu
Staff Engineer

Matthew S. Moyneur
Senior Engineer

PROJECT NUMBER: 3073-002.00P

NOTES:

1. BORING LOCATIONS SHOWN ARE APPROXIMATE.
2. PREPARED FROM A SITE PLAN BY HMC ARCHITECTS AND A 11/23/2023 GOOGLE EARTH IMAGE.

KEY:

B1 BORING LOCATION AND NUMBER

PROPOSED STRUCTURE

SITE PLAN

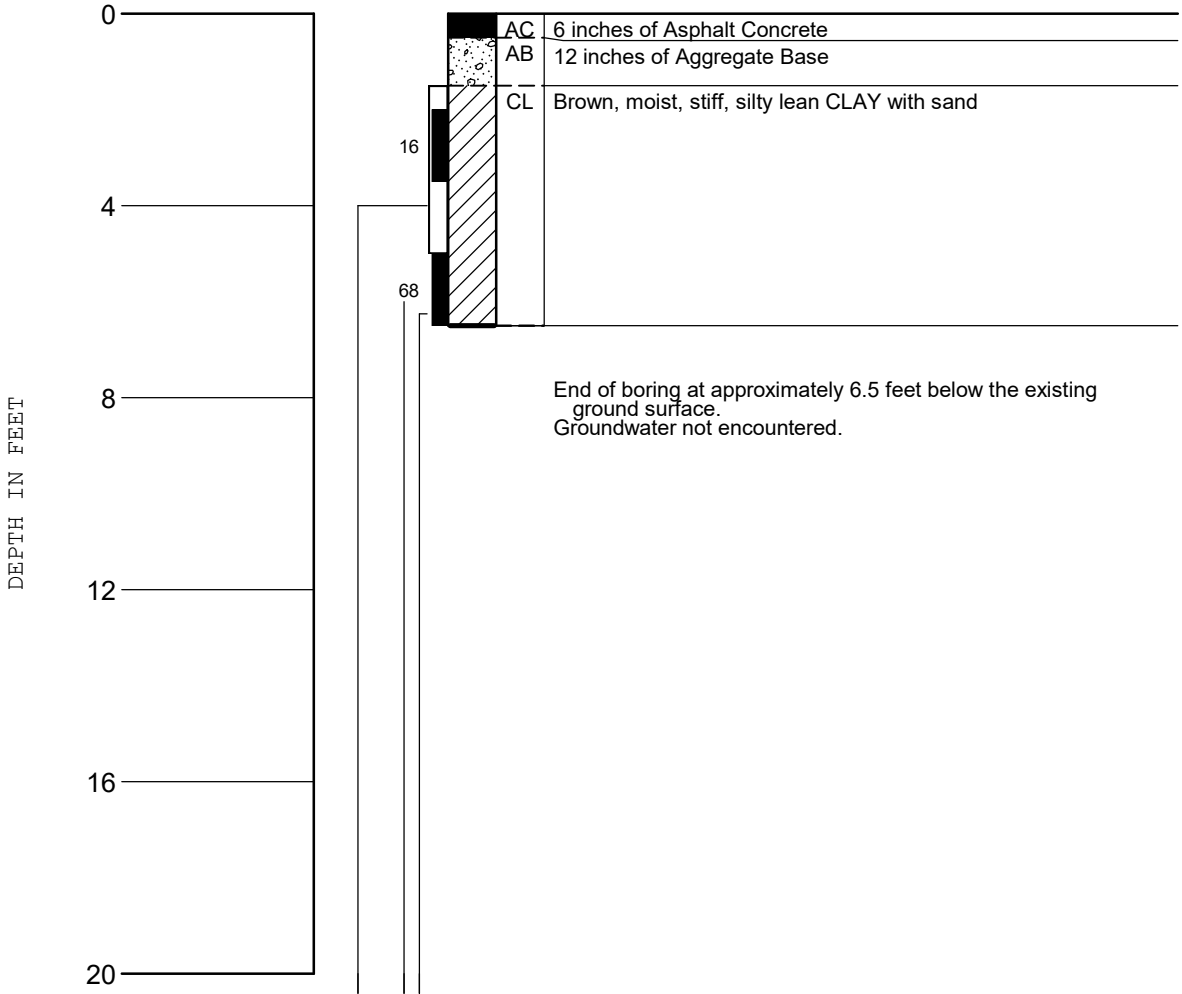
Raney Geotechnical Inc.

PLATE 1

PROJECT NUMBER: 5995-001.00 PROJECT NAME: Ethel Phillips Modernization
DRAWN BY: HZ DATE: 7/31/2024

BORING 1

DRILLED: 7/31/24



End of boring at approximately 6.5 feet below the existing ground surface.
Groundwater not encountered.

NOTES:

1. THE BORING LOG DEPICTS SUBSURFACE CONDITIONS ONLY AT THE BORING LOCATION AND TIME DESIGNATED.
2. NOMENCLATURE USED TO DESCRIBE SOILS DEFINED ON PLATE 11.
3. UNDISTURBED SAMPLE OBTAINED WITH 2" I.D. MODIFIED CALIFORNIA SAMPLER.
4. SAMPLER PENETRATION RESISTANCE IN BLOWS PER FOOT OR FRACTION THEREOF; 140-POUND HAMMER, 30" DROP.
5. DISTURBED SAMPLE OBTAINED FROM AUGERS.
6. FREE GROUNDWATER WAS ENCOUNTERED IN BORINGS.

LOG OF BORING

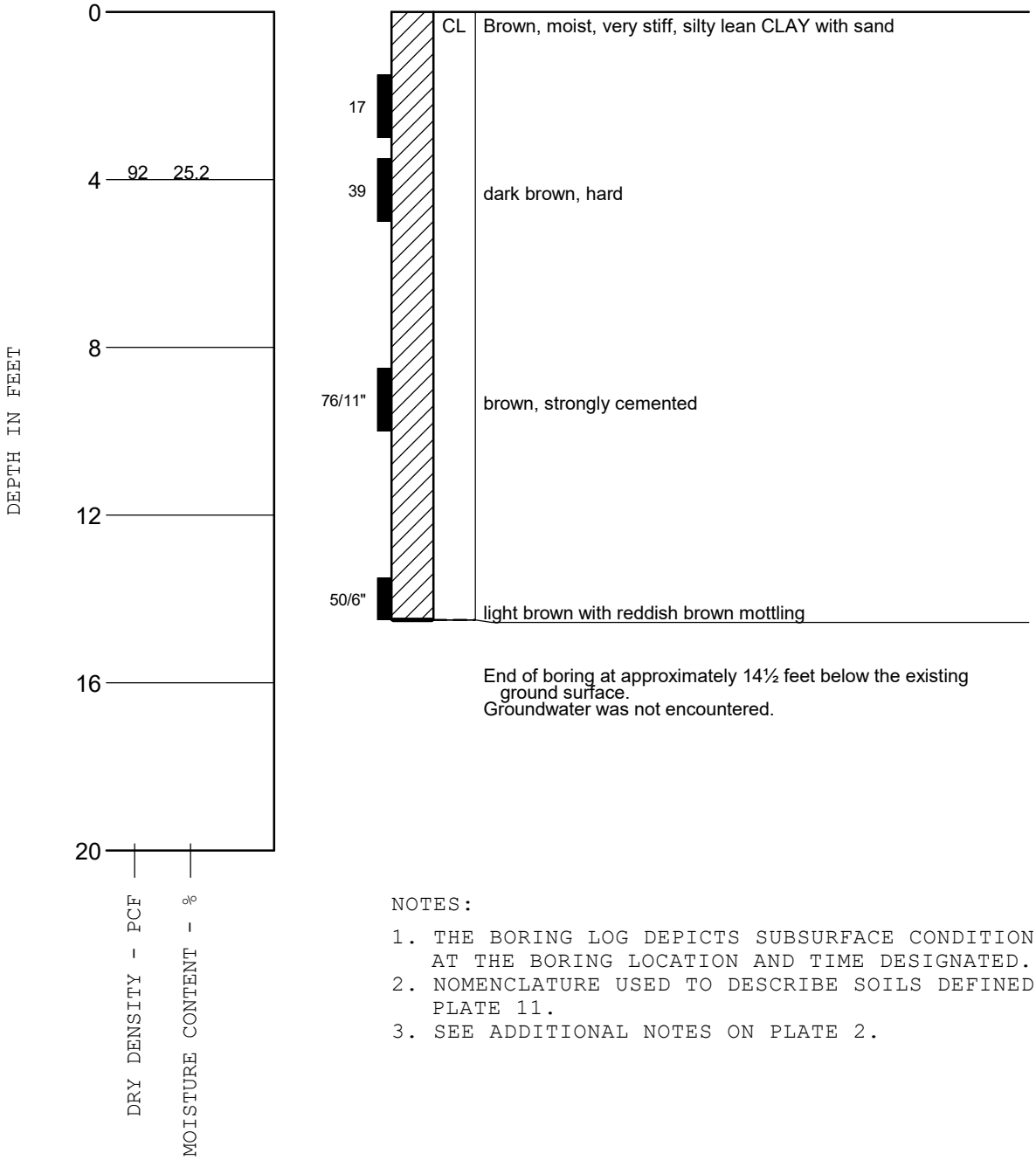
Raney Geotechnical Inc

PLATE 2

PROJECT NUMBER: 5995-001.00 PROJECT NAME: Ethel Phillips Modernization
DRAWN BY: HZ DATE: 7/31/2024

BORING 2

DRILLED: 7/31/24



End of boring at approximately 14½ feet below the existing ground surface.
Groundwater was not encountered.

NOTES:

1. THE BORING LOG DEPICTS SUBSURFACE CONDITIONS ONLY AT THE BORING LOCATION AND TIME DESIGNATED.
2. NOMENCLATURE USED TO DESCRIBE SOILS DEFINED ON PLATE 11.
3. SEE ADDITIONAL NOTES ON PLATE 2.

Raney Geotechnical Inc

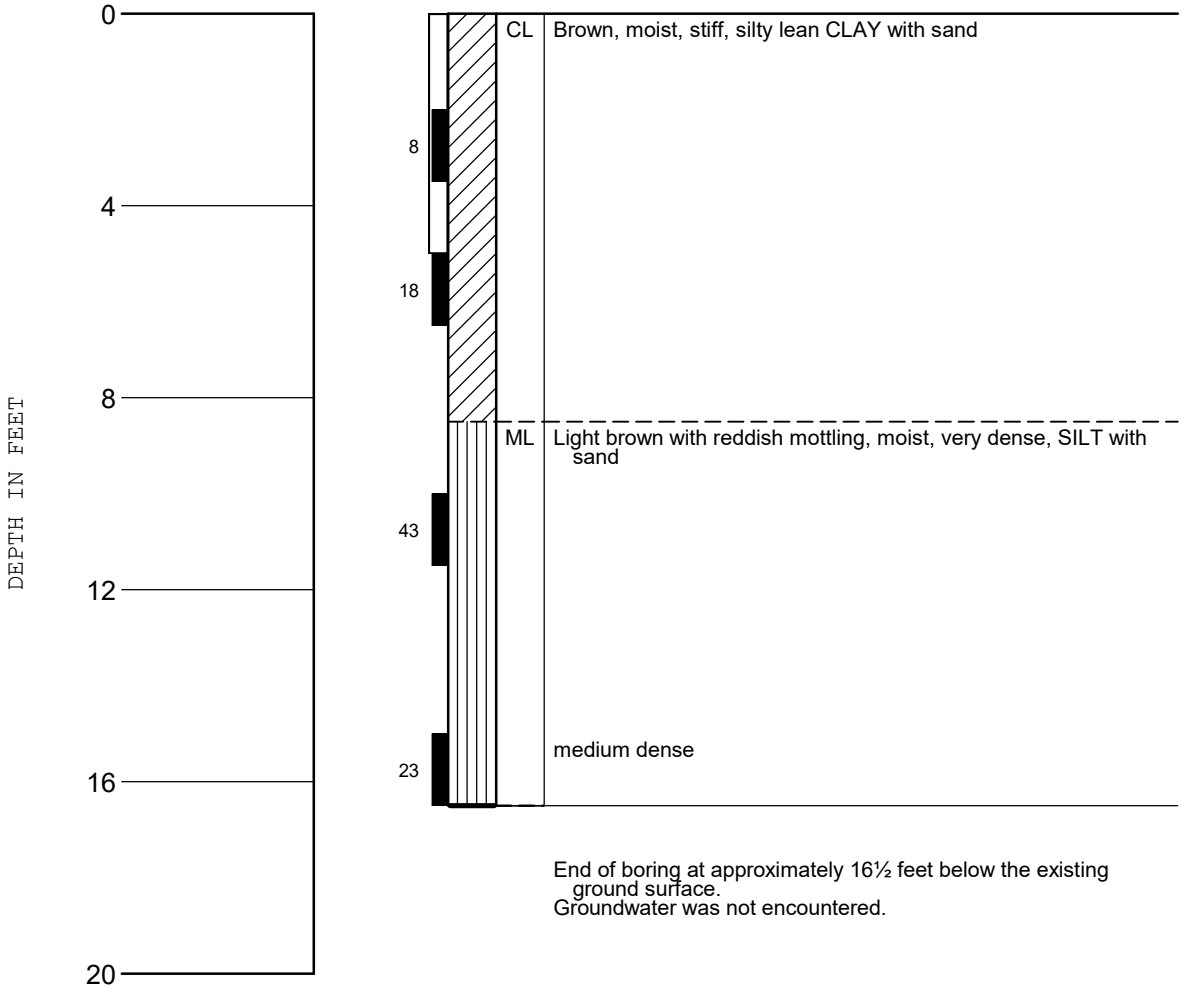
LOG OF BORING

PLATE 3

PROJECT NUMBER: 5995-001.00 PROJECT NAME: Ethel Phillips Modernization
DRAWN BY: HZ DATE: 7/31/2024

BORING 3

DRILLED: 7/31/24



End of boring at approximately 16½ feet below the existing ground surface.
Groundwater was not encountered.

NOTES:

1. THE BORING LOG DEPICTS SUBSURFACE CONDITIONS ONLY AT THE BORING LOCATION AND TIME DESIGNATED.
2. NOMENCLATURE USED TO DESCRIBE SOILS DEFINED ON PLATE 11.
3. SEE ADDITIONAL NOTES ON PLATE 2.

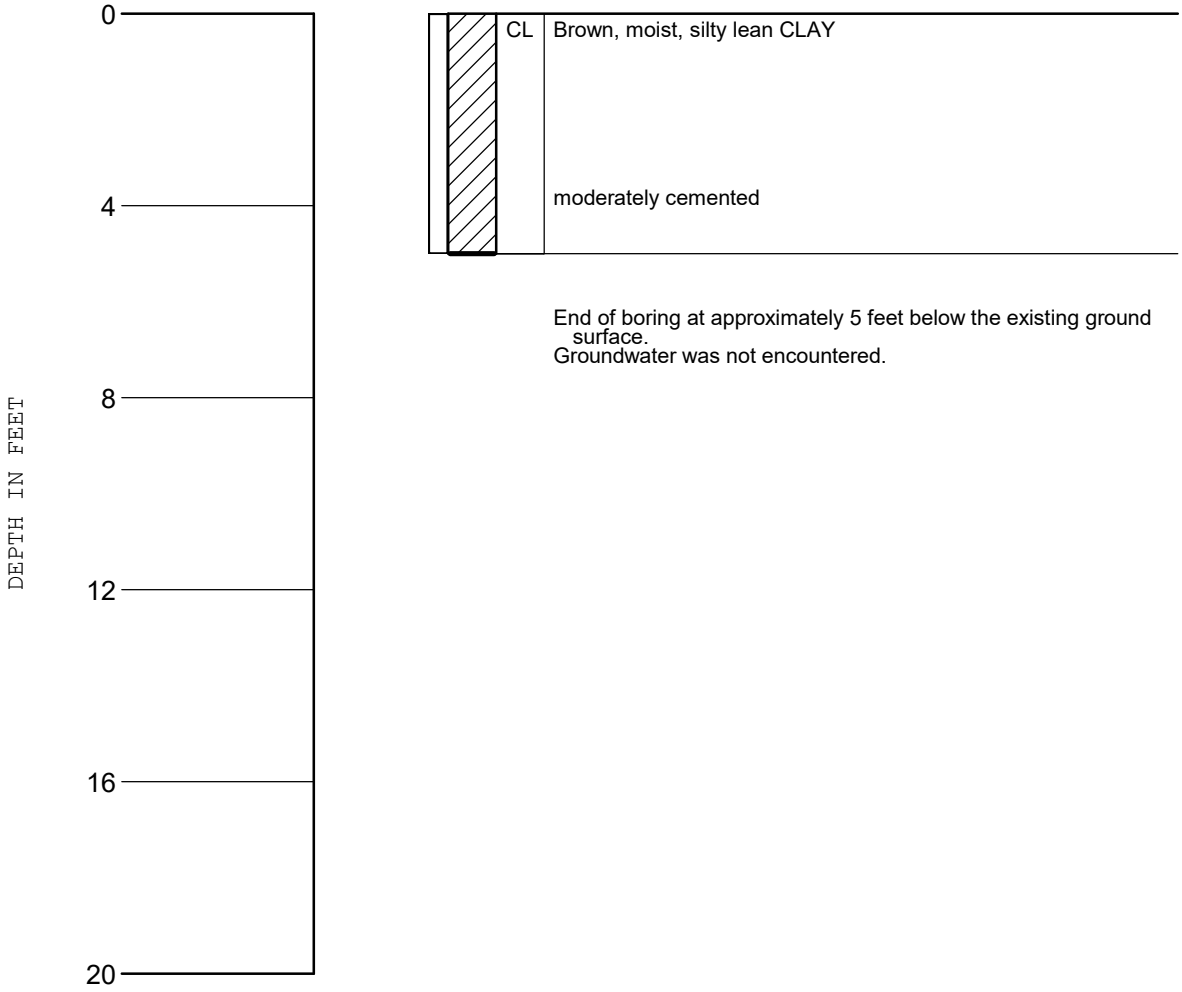
Raney Geotechnical Inc

LOG OF BORING

PROJECT NUMBER: 5995-001.00 PROJECT NAME: Ethel Phillips Modernization
DRAWN BY: HZ DATE: 7/31/2024

BORING 4

DRILLED: 7/31/24



End of boring at approximately 5 feet below the existing ground surface.
Groundwater was not encountered.

NOTES:

1. THE BORING LOG DEPICTS SUBSURFACE CONDITIONS ONLY AT THE BORING LOCATION AND TIME DESIGNATED.
2. NOMENCLATURE USED TO DESCRIBE SOILS DEFINED ON PLATE 11.
3. SEE ADDITIONAL NOTES ON PLATE 2.

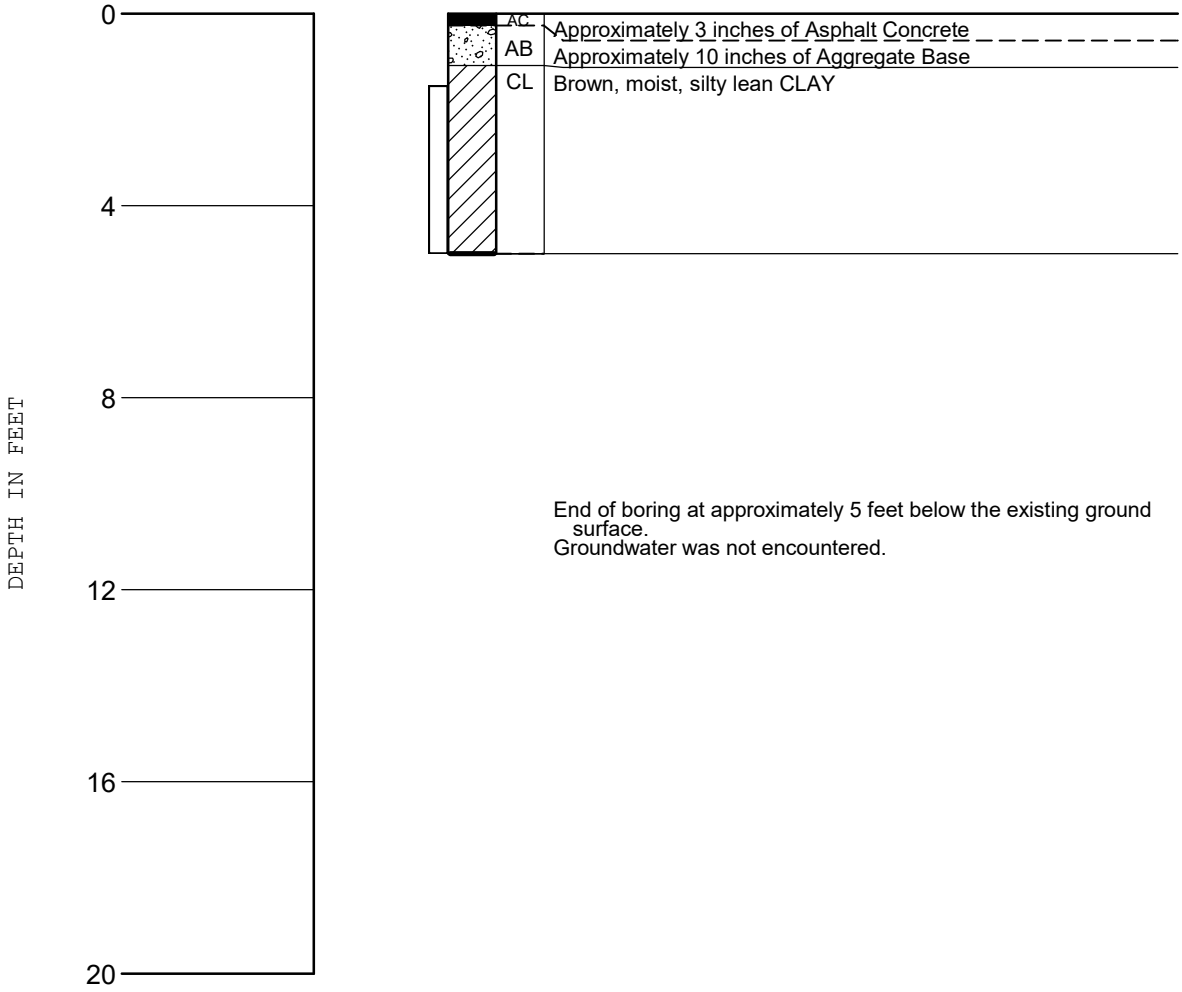
LOG OF BORING

Raney Geotechnical Inc

PROJECT NUMBER: 5995-001.00 PROJECT NAME: Ethel Phillips Modernization
DRAWN BY: HZ DATE: 7/31/2024

BORING 5

DRILLED: 7/31/24



End of boring at approximately 5 feet below the existing ground surface.
Groundwater was not encountered.

NOTES:

1. THE BORING LOG DEPICTS SUBSURFACE CONDITIONS ONLY AT THE BORING LOCATION AND TIME DESIGNATED.
2. NOMENCLATURE USED TO DESCRIBE SOILS DEFINED ON PLATE 11.
3. SEE ADDITIONAL NOTES ON PLATE 2.

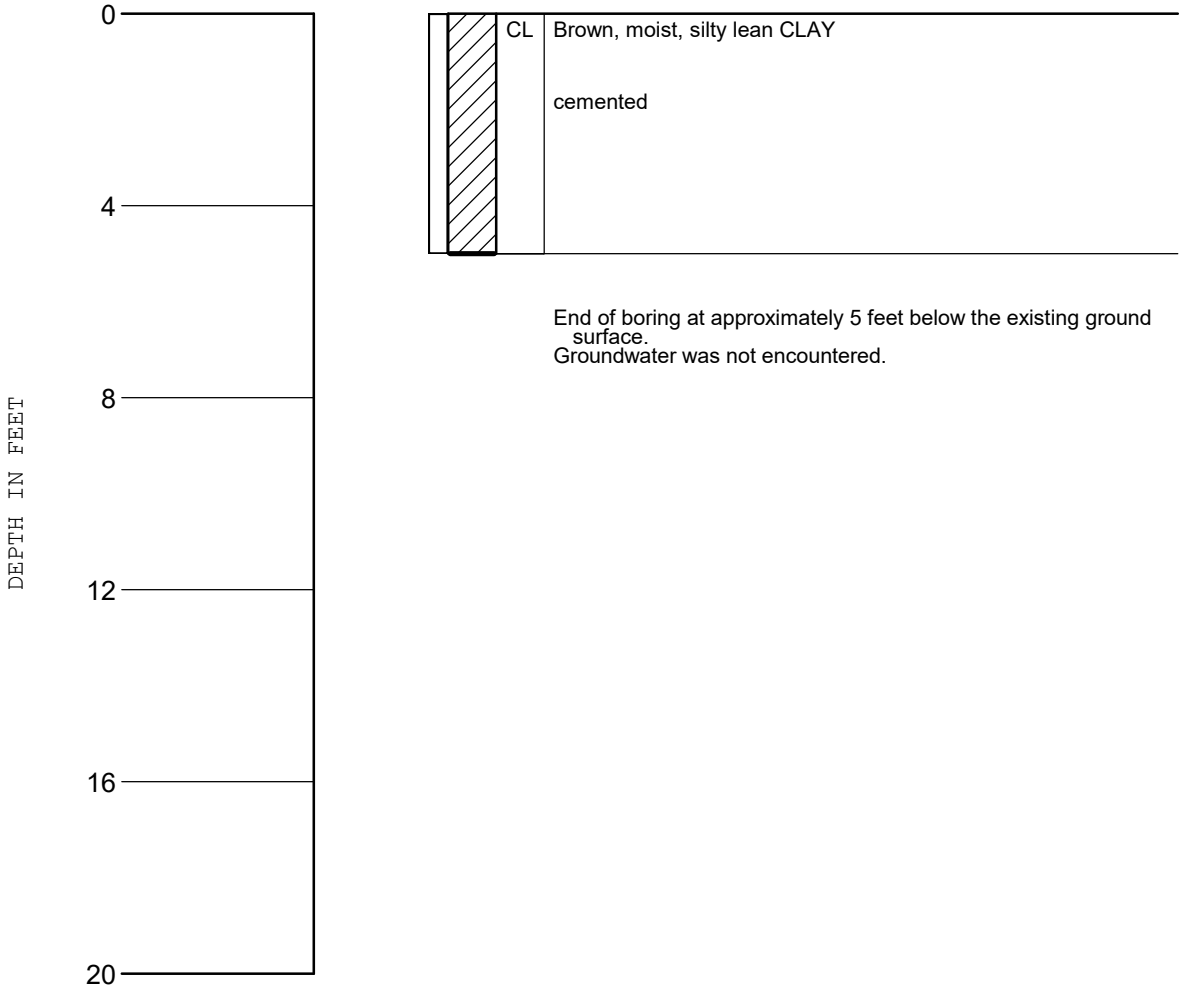
Raney Geotechnical Inc

LOG OF BORING

PROJECT NUMBER: 5995-001.00 PROJECT NAME: Ethel Phillips Modernization
DRAWN BY: HZ DATE: 7/31/2024

BORING 6

DRILLED: 7/31/24



End of boring at approximately 5 feet below the existing ground surface.
Groundwater was not encountered.

NOTES:

1. THE BORING LOG DEPICTS SUBSURFACE CONDITIONS ONLY AT THE BORING LOCATION AND TIME DESIGNATED.
2. NOMENCLATURE USED TO DESCRIBE SOILS DEFINED ON PLATE 11.
3. SEE ADDITIONAL NOTES ON PLATE 2.

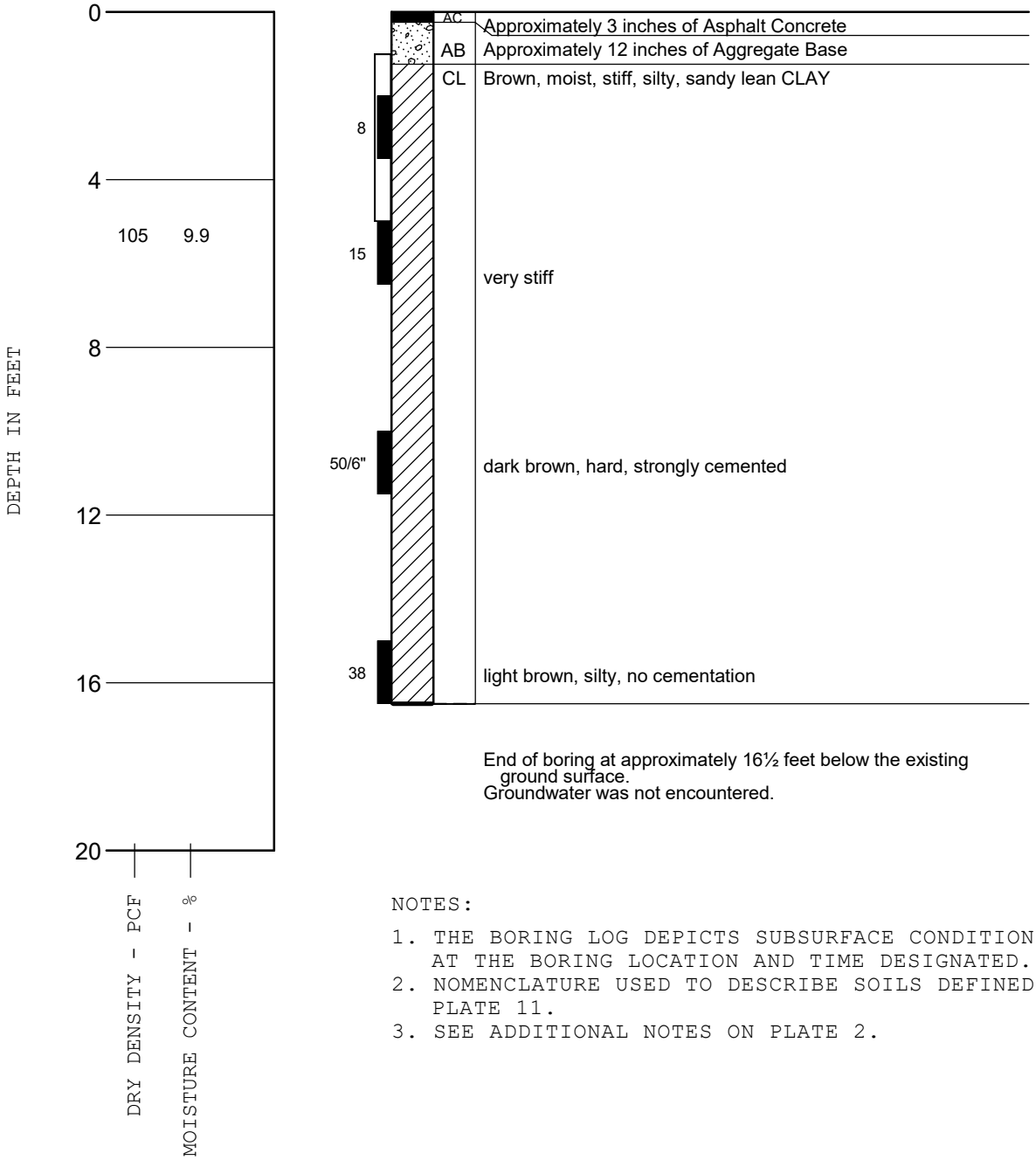
Raney Geotechnical Inc

LOG OF BORING

PROJECT NUMBER: 5995-001.00 PROJECT NAME: Ethel Phillips Modernization
DRAWN BY: HZ DATE: 7/31/2024

BORING 7

DRILLED: 7/31/24



End of boring at approximately 16½ feet below the existing ground surface.
Groundwater was not encountered.

NOTES:

1. THE BORING LOG DEPICTS SUBSURFACE CONDITIONS ONLY AT THE BORING LOCATION AND TIME DESIGNATED.
2. NOMENCLATURE USED TO DESCRIBE SOILS DEFINED ON PLATE 11.
3. SEE ADDITIONAL NOTES ON PLATE 2.

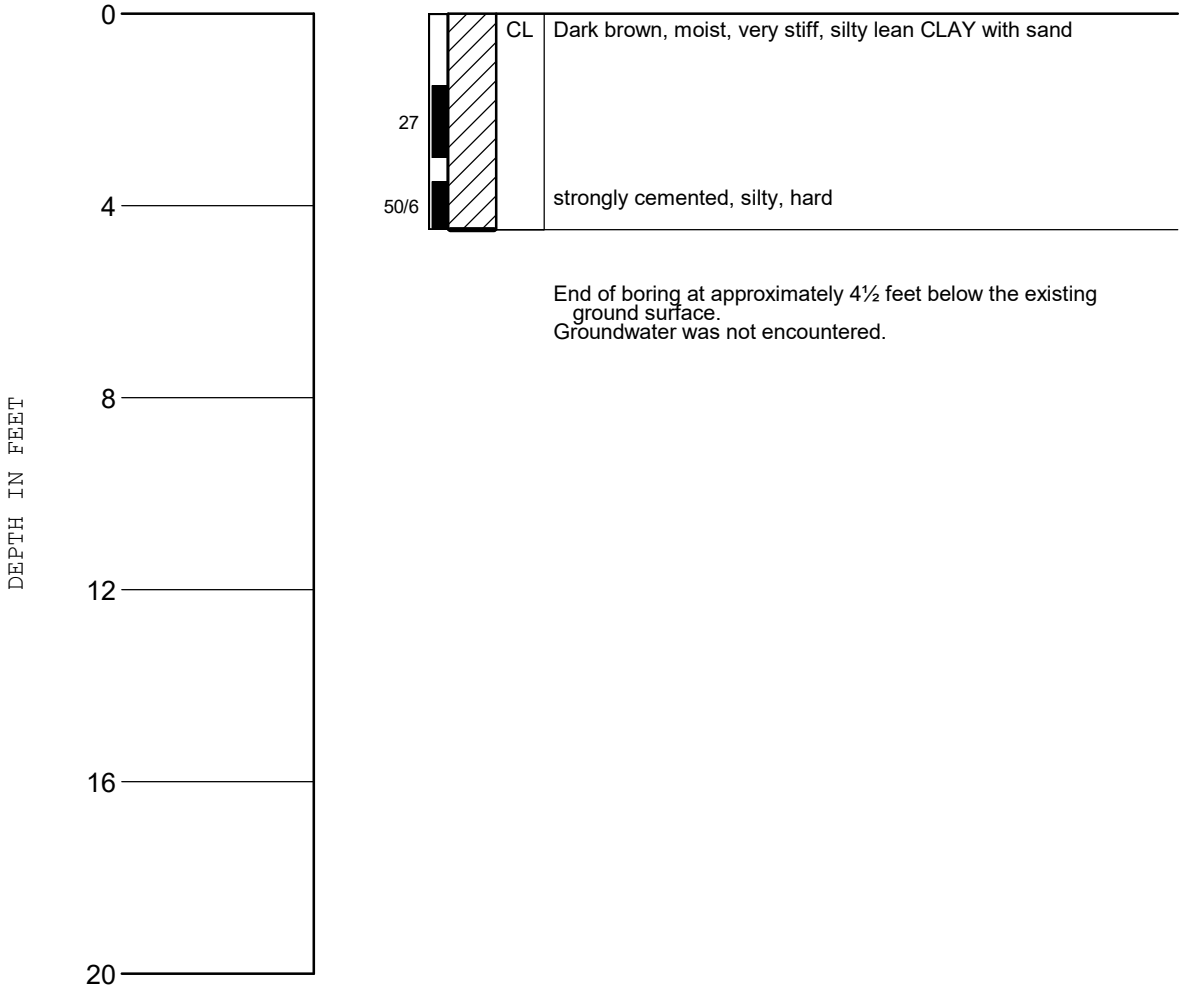
LOG OF BORING

Raney Geotechnical Inc

PROJECT NUMBER: 5995-001.00 PROJECT NAME: Ethel Phillips Modernization
DRAWN BY: HZ DATE: 7/31/2024

BORING 8

DRILLED: 7/31/24



End of boring at approximately 4½ feet below the existing ground surface.
Groundwater was not encountered.

NOTES:

1. THE BORING LOG DEPICTS SUBSURFACE CONDITIONS ONLY AT THE BORING LOCATION AND TIME DESIGNATED.
2. NOMENCLATURE USED TO DESCRIBE SOILS DEFINED ON PLATE 11.
3. SEE ADDITIONAL NOTES ON PLATE 2.

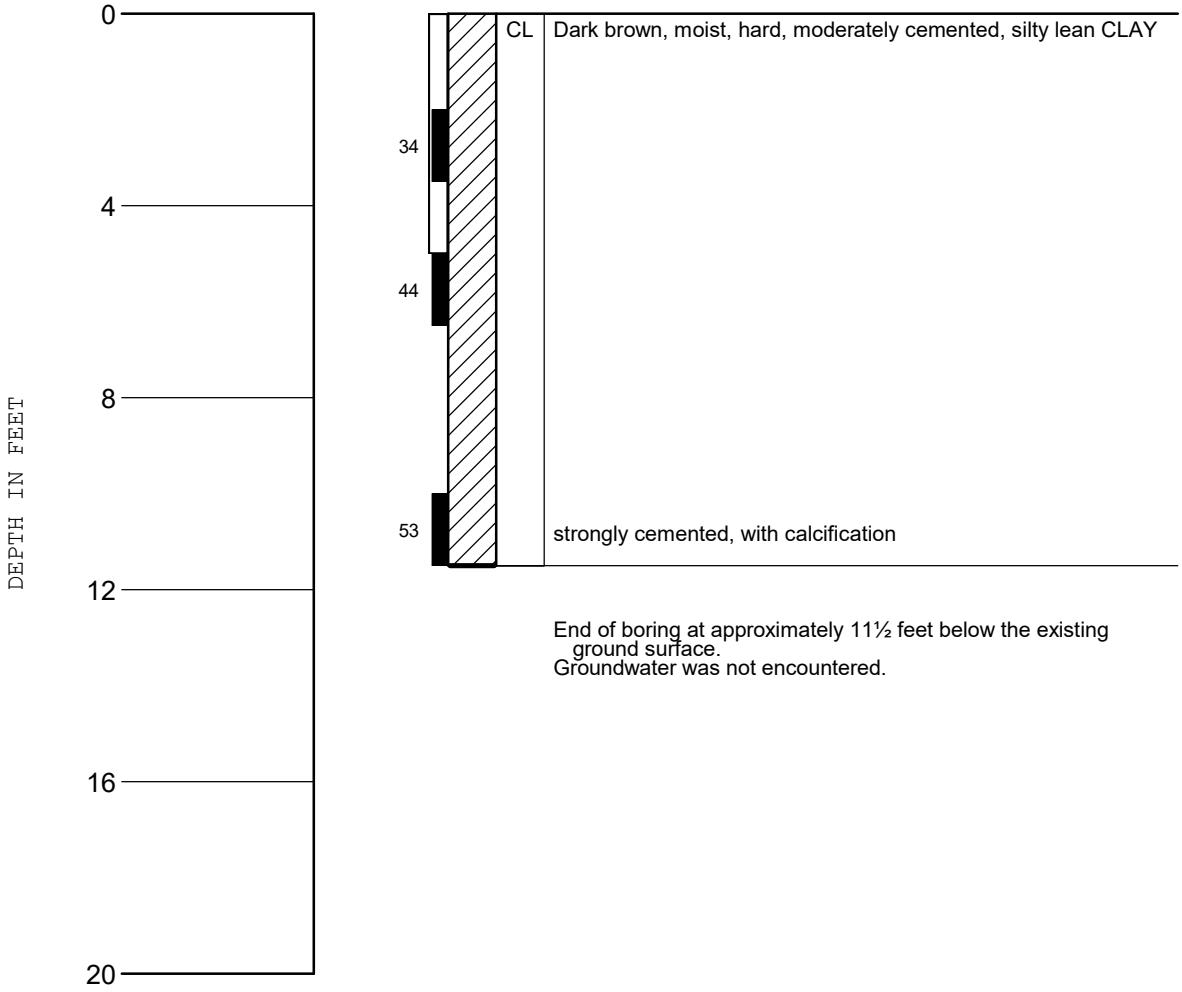
Raney Geotechnical Inc

LOG OF BORING

PROJECT NUMBER: 5995-001.00 PROJECT NAME: Ethel Phillips Modernization
DRAWN BY: HZ DATE: 7/31/2024

BORING 9

DRILLED: 7/31/24



End of boring at approximately 11½ feet below the existing ground surface.
Groundwater was not encountered.

NOTES:

1. THE BORING LOG DEPICTS SUBSURFACE CONDITIONS ONLY AT THE BORING LOCATION AND TIME DESIGNATED.
2. NOMENCLATURE USED TO DESCRIBE SOILS DEFINED ON PLATE 11.
3. SEE ADDITIONAL NOTES ON PLATE 2.

Raney Geotechnical Inc

LOG OF BORING

PROJECT NUMBER: 3073-002.00P

PLATE NUMBER: 11

GRAPH	SYMBOL	DESCRIPTION	MAJOR DIVISIONS		
	GW	WELL GRADED GRAVELS, GRAVEL-SAND MIXTURES	CLEAN GRAVELS WITH LESS THAN 5% FINES	GRAVEL AND GRAVELLY SOILS	COARSE GRAINED SOILS MORE THAN 50% LARGER THAN NO. 200 SIEVE
	GP	POORLY GRADED GRAVELS, GRAVEL-SAND MIXTURES			
	GM	SILTY GRAVELS, GRAVEL-SAND-SILT MIXTURES	GRAVELS WITH MORE THAN 12% FINES	MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	
	GC	CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES			
	SW	WELL GRADED SANDS, GRAVELLY SANDS	CLEAN SANDS WITH LESS THAN 5% FINES	SANDS AND SANDY SOILS	
	SP	POORLY GRADED SANDS, GRAVELLY SANDS			
	SM	SILTY SANDS, SAND-SILT MIXTURES	SANDS WITH MORE THAN 12% FINES	MORE THAN 50% OF COARSE FRACTION PASSING NO. 4 SIEVE	
	SC	CLAYEY SANDS, SAND-CLAY MIXTURES			
	ML	INORGANIC SILTS, ROCK FLOUR, OR CLAYEY SILTS WITH SLIGHT PLASTICITY	LIQUID LIMIT LESS THAN 50	SILTS AND CLAYS	FINE GRAINED SOILS MORE THAN 50% SMALLER THAN NO. 200 SIEVE
	CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS			
	OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY			
	MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS SILTS, ELASTIC SILTS	LIQUID LIMIT GREATER THAN 50	SILTS AND CLAYS	
	CH	INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS			
	OH	ORGANIC CLAYS AND ORGANIC SILTS OF MEDIUM TO HIGH PLASTICITY			
	PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENT	HIGHLY ORGANIC SOILS		

UNIFIED SOIL CLASSIFICATION SYSTEM

Raney Geotechnical Inc

PLATE 11

Expansion Index Tests
ASTM D4829

Sample Location: B3
Material Description: Brown lean CLAY with sand
Method: ASTM D4829

Depth (ft)	Initial Moisture Content (%)	Final Moisture Content (%)	Dry Density (pcf)	Expansion Index
0-5’	9.7	22.6	109.2	34

Sample Location: B7
Material Description: Brown sandy lean CLAY
Method: ASTM D4829

Depth (ft)	Initial Moisture Content (%)	Final Moisture Content (%)	Dry Density (pcf)	Expansion Index
1-5’	8.5	18.6	115.8	12

Project Number: 3073-002.00P

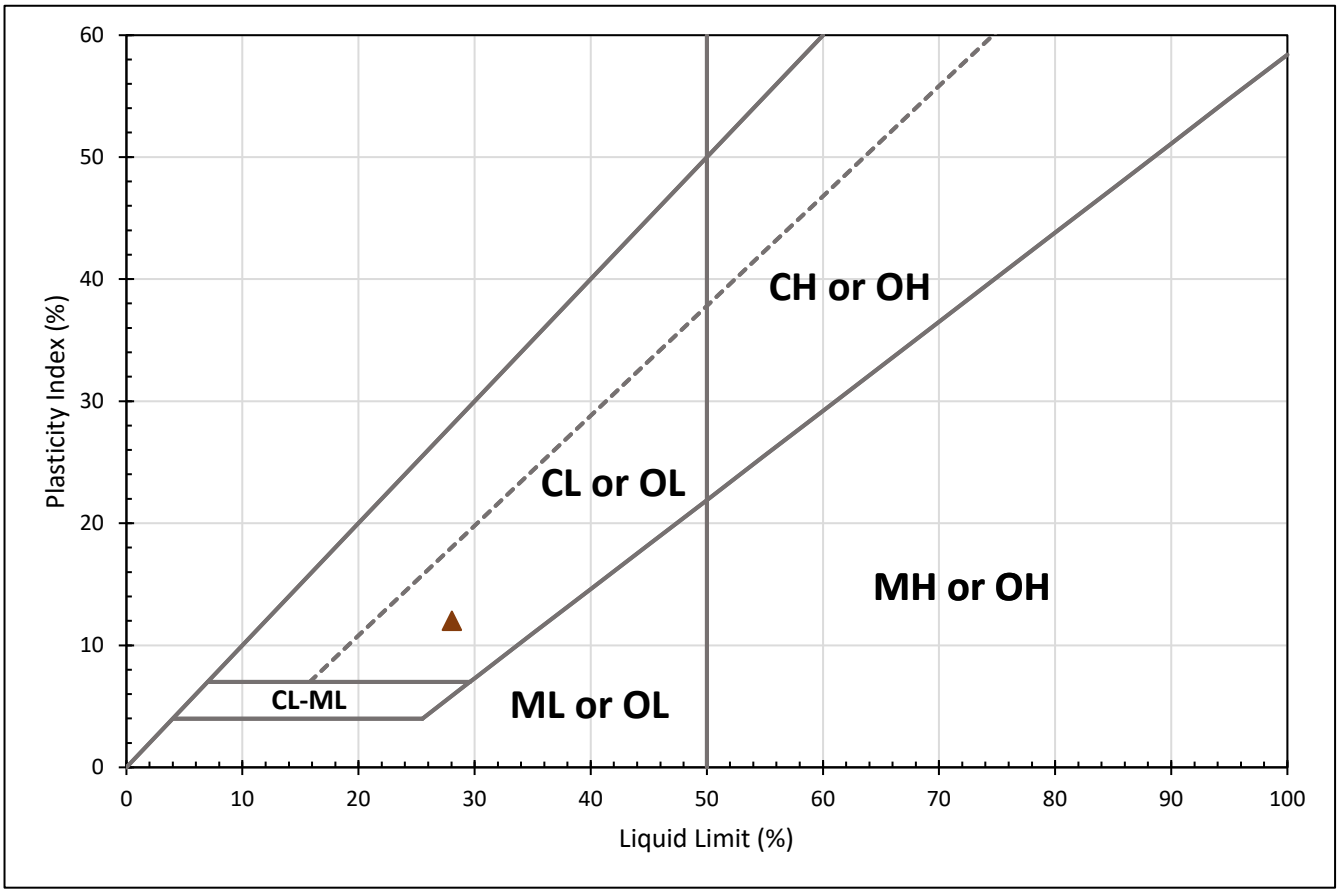
Classification of Expansive Soil

Expansion Index	Expansion Potential
0-20	Very Low
21-50	Low
51-90	Moderate
91-130	High
Above 130	Very High

EXPANSION INDEX DATA

Raney Geotechnical Inc.

Atterberg Limits
ASTM D4318



Symbol	Sample No.	Depth	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	USCS	Soil Description
▲	B3	0-5'	28	16	12	CL	Brown, lean CLAY with sand

Project Number: 3073-002.00P

Plasticity Index Data

Raney Geotechnical Inc.

Resistance Value Test
California Test Method 301G

Sample Location: B1
Depth: 1.5'-5'
Material Description: Brown lean CLAY with sand

Test Number	Dry Density (Pcf)	Moisture Content (%)	Exudation Pressure (Psi)	Expansion Pressure (Psf)	Resistance Value
1	120.5	13.4	314	65	24
2	119.3	14.0	264	48	20
3	115.4	15.2	201	30	9

Resistance value at 300 psi exudation pressure = 23

Project Number: 3073-002.00P

Sample Location: B6
Depth: 0 – 5'
Material Description: Brown silty lean CLAY

Test Number	Dry Density (pcf)	Moisture Content (%)	Exudation Pressure (Psi)	Expansion Pressure (Psf)	Resistance Value
1	121.4	11.8	318	43	43
2	119.7	12.3	260	0	25
3	118.8	13.3	147	0	10

Resistance value at 300 psi exudation pressure = 36

RESISTANCE VALUE DATA

Raney Geotechnical Inc.

PLATE 14

Sunland Analytical
11419 Sunrise Gold Circle, #10
Rancho Cordova, CA 95742
(916) 852-8557

Date Reported 08/09/2024
Date Submitted 08/06/2024

To: Hao Zhu
Raney Geotechnical
3140 Beacon Blvd.
West Sacramento, CA 95691

From: Gene Oliphant, Ph.D. \ Ty Bui
General Manager \ Lab Manager

The reported analysis was requested for the following location:
Location : B2-1I Site ID : 1.
Thank you for your business.

* For future reference to this analysis please use SUN # 92857-192326.

EVALUATION FOR SOIL CORROSION

Soil pH	6.410		
Minimum Resistivity	4.02 ohm-cm (x1000)		
Chloride	1.5 ppm	00.00015	%
Sulfate	13.0 ppm	00.00130	%

METHODS
pH and Min.Resistivity CA DOT Test #643
Sulfate CA DOT Test #417, Chloride CA DOT Test #422m

Project Number: 3073-002.00P

SOIL CORROSION POTENTIAL

Raney Geotechnical Inc.

PLATE 15

Sunland Analytical
11419 Sunrise Gold Circle, #10
Rancho Cordova, CA 95742
(916) 852-8557

Date Reported / /
Date Submitted 08/06/2024

To: Hao Zhu
Raney Geotechnical
3140 Beacon Blvd.
West Sacramento, CA 95691

From: Gene Oliphant, Ph.D. \ Ty Bui
General Manager \ Lab Manager

The reported analysis was requested for the following location:
Location : B7-1I Site ID : 1.
Thank you for your business.

* For future reference to this analysis please use SUN # 92858-192327.

EVALUATION FOR SOIL CORROSION

Soil pH	No Test
Minimum Resistivity	4.02 ohm-cm (x1000)
Chloride	No Test
Sulfate	< .1

METHODS
pH and Min.Resistivity CA DOT Test #643
Sulfate CA DOT Test #417, Chloride CA DOT Test #422m

Project Number: 3073-002.00P

SOIL CORROSION POTENTIAL

Raney Geotechnical Inc.

APPENDIX A

GEOCON Consultants, Inc. *Geologic Hazards Evaluation* Report

Project No. S2882-05-01
September 25, 2024

VIA ELECTRONIC MAIL

Matthew Moyneur, PE, GE
Raney Geotechnical
3140 Beacon Blvd
West Sacramento, California 95691

Subject: GEOLOGIC HAZARDS EVALUATION
ETHEL PHILLIPS ELEMENTARY SCHOOL MODERNIZATION
2930 21ST AVENUE
SACRAMENTO, CALIFORNIA

Mr. Moyneur:

In accordance with our Agreement with Raney Geotechnical, Inc. dated August 30, 2024, we performed a geologic hazards evaluation for the proposed modernization of the existing Ethel Phillips Elementary School campus in Sacramento, California.

We understand that a Geotechnical Investigation was already performed by Raney for the proposed modernization project (Raney, 2024), however a Geologic Hazards Evaluation is now required. The purpose of our study was to evaluate the surface and subsurface conditions at the site based on subsurface information provided by Raney Geotechnical and prepare a *Geologic Hazards Evaluation* that meets the current California Geological Survey (CGS) review guidelines. Based on our evaluation, the primary geologic hazard that may impact the project is possible seismic-induced soil liquefaction. Further evaluation and mitigation of this geologic hazard should be addressed in the project geotechnical report.

The accompanying report presents our findings and conclusions from our study. Please contact us if you have any questions concerning the contents of this report.

Respectfully submitted,

GEOCON CONSULTANTS, INC.

Lauren A. Herbert, EIT, GIT
Senior Staff Engineer

Thomas C. DeSimone, PG, CEG
Senior Geologist

PROFESSIONAL GEOLOGIST
THOMAS C. De SIMONE
No. #2715
CERTIFIED ENGINEERING GEOLOGIST
STATE OF CALIFORNIA

Jeremy J. Zorne, PE, GE
Senior Engineer

REGISTERED PROFESSIONAL ENGINEER
JEREMY J. ZORNE
No. 2636
GEOTECHNICAL
STATE OF CALIFORNIA

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GEOLOGIC HAZARDS EVALUATION

1.0 INTRODUCTION AND PURPOSE

This report presents the results of our geologic hazards evaluation for the proposed modernization of the existing Ethel Phillips Elementary School campus in Sacramento, California. The approximate site location is depicted on the Vicinity Map, Figure 1.

Per the Division of the State Architect (DSA) requirements (DSA IR A-4.13), a *Geologic Hazards Evaluation* subject to review by the California Geological Survey (CGS) is required for the project.

The purpose of our study was to evaluate the subsurface conditions at the site based on subsurface data and laboratory test results from Raney Geotechnical and perform a *Geologic Hazards Evaluation* that meets the current CGS review guidelines.

1.1 Scope of Services

To prepare this report, we performed the following scope of services:

- Reviewed geologic maps, aerial photographs and other literature pertaining to the site to aid in evaluating geologic hazards present at or near the site.
- Performed a site reconnaissance in conjunction with Raney's field investigation to review project limits and site geological conditions.
- Analyzed the boring logs, Cone Penetrometer Test (CPT) logs, and other relevant data provided by Raney and prepared this report to summarize our findings, conclusions, and recommendations with respect to the geologic hazards associated with this project.

A Vicinity Map is presented as Figure 1 and an Aerial Site Plan is presented as Figure 2. Approximate locations of the proposed new buildings and exploratory borings and CPTs performed by Raney are shown on the Proposed Development Plan, Figure 3. A Topographic Map is presented as Figure 4 and a Geologic Map is presented as Figure 5. Geologic Cross Sections, based on the results of Raney Geotechnical's field investigation and published geologic mapping, are presented as Figures 6 and 7. A Regional Fault Map is presented as Figure 8 and a Regional Seismicity Map is presented as Figure 9. Lastly, a FEMA Flood Hazard Map is presented as Figure 10. Boring logs, CPT sounding logs, and an excerpt from the liquefaction potential analysis prepared by Raney Geotechnical are presented in Appendix A.

2.0 SITE AND PROJECT DESCRIPTION

2.1 Site Location and Description

The existing Ethel Phillips Elementary School site consists of Sacramento County Assessor Parcel Numbers 019-0094-013, and 019-0102-001 through -003, totaling approximately 7.2 acres. The site is bounded to the north and south by 21st Avenue and 23rd Avenue, respectively, beyond which are residential subdivisions. The site is further bounded to the east by commercial development and to the west by an additional residential subdivision. The current site configuration is shown on the Aerial Site Map, Figure 2. At the time of our field reconnaissance, the site was developed with classroom buildings, portables, athletic turf, perimeter fencing, an asphalt-paved parking lot, and landscaping. Current site conditions are shown in Photos 1 and 2.

2.2 Project Description

Based on the site plan prepared by HMC Architects (revised June 17, 2024) and our review of Raney Geotechnical's *Geotechnical Engineering Report*, we understand that the project consists of constructing a new kindergarten building, playground, outdoor covered patio, hardcourts, asphalt-paved parking and driving areas, turf field, and exterior flatwork improvements. We understand that the new kindergarten building will be constructed at-grade and no retaining walls or below-ground basements are planned at this time. We anticipate the project will also include the construction of other ancillary facilities, improvements, and underground utility infrastructure. Approximate locations and configuration of proposed site improvements are shown on the Proposed Development Plan, Figure 3.

2.3 2.3 Current Topography

The United States Geological Survey (USGS) topographic map of the Sacramento East Quadrangle (USGS, 2021) depicts the topography of the site and vicinity as generally flat with an elevation of approximately 25 feet above mean sea level (MSL), relative to the North American Vertical Datum of 1988 (NAVD88). A portion of the USGS Topographic Map showing the site location is presented as Figure 4.

3.0 SOIL AND GEOLOGIC CONDITIONS

We identified soil and geologic conditions by reviewing referenced geologic literature (Section 7.0), reviewing subsurface data provided by Raney Geotechnical, and performing a geologic reconnaissance of the site and surrounding area.

3.1 Site and Regional Geology

The site is located within the Great Valley Geomorphic Province of California, more commonly referred to as the Sacramento Valley. The Sacramento Valley is a broad depression bounded by the Sierra Nevada mountain range to the east, the Coast Ranges to the west, and the Sacramento - San Joaquin delta to the south. The valley has been filled with a thick sequence of sediments derived from weathering of the adjacent mountain ranges resulting in a stratigraphic section of Cretaceous, Tertiary, and Quaternary deposits.

Based on the *Preliminary Geologic Map of the Sacramento 30' X 60' Quadrangle*, compiled by Gutierrez, C.I., 2011, the site is underlain by the middle member of the Pleistocene-age Riverbank Formation (map symbol Qr_2), which is described as older alluvium consisting of interbedded layers of clay, silt, and sand deposited by rivers and streams emanating from the Sierra Nevada.

Subsurface conditions encountered during Raney Geotechnical's field investigation at the site are generally consistent with the mapped geology of the area. A portion of the geologic map covering the site vicinity is presented as Figure 5, Regional Geologic Map. Generalized Geologic Cross-Sections of the site are presented as Figures 6 and 7.

3.2 Existing Pavement

Existing pavement was encountered in boring locations B1, B5, and B7, and CPT locations CPT1 and CPT2 performed by Raney Geotechnical on July 31 and September 19, 2024. Approximate pavement structural section thicknesses are included in Raney Geotechnical's report

3.3 Riverbank Formation

Riverbank Formation was encountered below the pavement section or topsoil in Raney Geotechnical's boring and CPT locations to the maximum depth explored of approximately 61 feet. The material generally consisted of stiff to hard silt (ML) and silty lean clay (CL) with varying amounts of sand. A lens of relatively dense silty sand was encountered in CPT2 below a depth of about 50 feet, overlying a denser layer of poorly graded sand encountered at a depth of about 59 feet.

Soil conditions described in the previous paragraphs are generalized. The exploratory boring and CPT logs are included in Raney Geotechnical's report.

4.0 GROUNDWATER

Raney Geotechnical encountered groundwater in each of their CPTs performed on September 19, 2024 at depths ranging from 26.5 to 27.8 feet.

We reviewed available depth-to-groundwater data on the California Department of Water Resources (DWR) Sustainable Groundwater Management Act (SGMA) Data Viewer (https://sgma.water.ca.gov/webgis/?appid=SGMADataViewer#gwlevels). The SGMA Data Viewer website indicates that depth to groundwater at and near the site ranges from approximately 20 to 40 feet (Spring 2023). This is consistent with the findings of Raney's subsurface explorations.

It should be noted that fluctuations in the level of groundwater may occur due to variations in precipitation, temperature, and other factors. Depth to groundwater can also vary significantly due to localized pumping, irrigation practices, and seasonal fluctuations. Therefore, it is possible that groundwater may be higher or lower than the levels observed during the investigation and/or reported herein.

5.0 SEISMICITY AND GEOLOGIC HAZARDS

5.1 Mapped Geologic Hazard Zones

According to our review of the CGS Information Warehouse website, (https://maps.conservation.ca.gov/cgs/informationwarehouse/regulatorymaps/) as well as other published literature, the site is not located within a mapped geologic hazard zone associated with seismic hazards, landslides, liquefaction, tsunami/seiche, or surface fault rupture.

5.2 Regional Active Faults / Surface Fault Rupture Hazard

The numerous faults in California include Holocene-active, pre-Holocene (Quaternary), and inactive faults (pre-Quaternary). The criteria for these major groups were developed by the California Geological Survey (CGS, formerly known as the California Division of Mines and Geology) for the Alquist-Priolo Earthquake Fault Zone Program (CGS, 2018). By definition, a Holocene-active fault is one that has had surface displacement within Holocene time (about the last 11,700 years). A pre-Holocene fault has demonstrated surface displacement during Quaternary time (approximately the last 1.6 million years) but has had no known Holocene movement. Faults that have not moved in the last 1.6 million years are considered inactive.

The site is not within a state-designated Alquist-Priolo Earthquake Fault Zone for surface fault rupture hazards (CGS, 2023). No Holocene-active or pre-Holocene faults with the potential for surface fault rupture are known to pass directly beneath the site. Therefore, the potential for surface rupture due to faulting occurring beneath the site during the design life of the proposed development is considered low.

According to the Fault Activity Map of California by the California Geological Survey (CGS, https://maps.conservation.ca.gov/cgs/fam/), the closest fault with historic displacement is Green Valley Fault within the larger Green Valley Fault zone, which ruptured within the last 200 years about 42.4 miles southwest of the site. According to the United States Geological Survey's 2008 National Seismic Hazard Map, (USGS, https://earthquake.usgs.gov/cfusion/hazfaults_2008_search/) the closest mapped Holocene-active fault is the Segment 4 of the Great Valley Fault System, located approximately 28.4 miles southwest of the site. The closest mapped pre-Holocene (Quaternary) fault to the site is the Midland Fault, a concealed fault located approximately 19 miles southwest of the site. Based on the USGS National Seismic Hazard Maps website (https://earthquake.usgs.gov/cfusion/hazfaults_2008_search/query_main.cfm), Table 1 lists faults and fault systems within 50 miles of the site that are considered capable of producing earthquakes with a moment magnitude (MW) of 6.5 or greater. The closest fault of any age is the Willows Fault zone, which is considered pre-quaternary in age, older than 1.6 million years.

Additional faults within the vicinity of the site are shown in the Regional Fault Map, Figure 8.

TABLE 1
FAULT SYSTEMS WITHIN 50 MILES OF THE SITE

Fault Name	Approximate Distance Miles	Maximum Earthquake Magnitude (Mw)
Great Valley 4a, Trout Creek	28.4	6.6
Great Valley 4b, Gordon Valley	30.2	6.8
Great Valley 5, Pittsburg Kirby Hills	32.1	6.7
Great Valley 5, Mysterious Ridge	32.8	7.1
Hunting Creek-Berryessa	39.5	7.1
Green Valley Connected	39.5	6.8
West Napa	48.5	6.7
Greenville Connected	48.8	7.0

5.3 Seismicity

As with all of California, the site has experienced historic earthquakes from various regional faults, although the local site region has a history of relatively low seismicity in comparison with more active seismic regions such as the San Francisco Bay Area or southern California.

An examination of available historic data from the California Geological Survey's Historical Earthquake Online Database (CGS, https://maps.conservation.ca.gov/cgs/historicearthquakes/) suggests that the site may have experienced ground shaking equivalent to Modified Mercalli Intensity (MMI) of VII. The most intense earthquake ground shaking likely resulted from an earthquake between Vacaville and Winters on April 19, 1892, with an epicenter located approximately 30 miles west of the site. The earthquake had approximate Richter Scale Magnitudes of 6.6 and was felt as far away as Chico, Sonora, and Salinas. Additionally, an earthquake occurred two days later than the first on April 21, 1892, with an epicenter about 23 miles west of the site. The earthquake had an approximate Richter Scale Magnitude of 6.4 and resulted in ground shaking in the site vicinity equivalent to a Modified Mercalli Intensity (MMI) of VII. Additional earthquakes in the vicinity of the site are shown in the Regional Seismicity Map, Figure 9.

We used the USGS Unified Hazard Tool (USGS, 2023) to determine the deaggregated seismic source parameters including controlling magnitude and fault distance. The USGS estimated modal magnitude is 5.5 and the estimated Peak Ground Acceleration (PGA) for the Maximum Considered Earthquake (MCE) with a 2,475-year return period is 0.34g.

While listing PGA is useful for comparison of potential effects of fault activity in a region, other considerations are important in seismic design, including frequency and duration of motion and soil conditions underlying the site. The site could be subjected to ground shaking in the event of an earthquake along the faults mentioned above or other area faults.

5.4 Liquefaction and Seismic Settlement

Liquefaction is a phenomenon in which loose, saturated, cohesionless soil deposits located beneath the groundwater table lose strength when subjected to intense and prolonged ground shaking. The seismic excitation increases pore water pressure creating a buoyant effect of the loose soil. When liquefaction occurs, building foundations may sink or tilt and differential ground settlement may occur. Other effects may include sand boils (ground loss) and lateral spreading if the liquefiable soil is located adjacent to a steep free face. The areas that have the greatest potential for liquefaction are those in which the water table is less than 50 feet below ground surface and the soils are predominately clean, poorly graded sand deposits of loose to medium-dense relative density.

The site is not located in a currently established State of California Seismic Hazard Zone for liquefaction. The site is also underlain by non-liquefiable clay within the upper 50 feet of ground surface. However, based on the presence of groundwater within the upper 30 feet beneath the site, liquefaction is a possibility. Based on the results of liquefaction analyses performed by Raney Geotechnical (2024), sandy soils at the CPT2 location between 50 and 60 feet have potential for liquefaction (see Appendix A). Consequences (secondary effects) of liquefaction may include loss of soil bearing capacity for shallow foundations, ground loss (sand boils), lateral slope displacements (lateral spreading) and ground surface settlement. While settlement in this zone is a possibility, surface manifestations and loss of foundation bearing capacity are unlikely due to the approximately 50-feet-thick, non-liquefiable clay overlying the sand. Evaluation of liquefaction potential and mitigation of liquefaction and related secondary effects should be performed by Raney Geotechnical as part of their geotechnical investigation.

5.5 Lateral Spreading

Because the site topography is generally flat and level and there is no adjacent free-face or sloping geometry, lateral spreading resulting from liquefaction is not anticipated and is not considered to be a hazard for the site.

5.6 Unsaturated Seismic Settlement

Strong seismic shaking can induce settlement of unsaturated, loose sandy soil. Based on the results of Raney Geotechnical's subsurface investigation, the upper 50 feet of soil primarily consists of stiff to hard clayey and silty soil with varying amounts of cementation. Because of this, unsaturated seismic settlement due to seismic shaking is not anticipated and is not considered to be a hazard for the site.

5.7 Landslides and Slope Stability

The site has not been evaluated with respect to seismic landslide hazard by CGS, and no landslide data are available on the California Department of Conservation interactive Landslide Inventory map (https://maps.conservation.ca.gov/cgs/lsi/). The site is relatively flat and level and there are no significant slopes on or adjacent to the site. Therefore, landslides and slope instability are not hazards for the site.

5.8 Tsunamis and Seiches

The site is located approximately 92 miles from the Pacific Ocean and is not located near any large body of water. Therefore, tsunamis (seismic sea waves) or seiches (wave oscillations in an enclosed or semi-enclosed body of water) are not hazards for the site at this time.

5.9 Flooding and Dam Failure Inundation

Based on the Flood Hazard Zone Layer from the National Flood Hazard Database prepared by the Federal Emergency Management Agency (FEMA) (https://hazards-fema.maps.arcgis.com/home/index.html), the site has a "area with reduced flood risk due to levee" (FEMA, 2024). Therefore, flooding is not considered to be a hazard for the site. A presentation of the FEMA flood map surrounding the site is shown in the FEMA Flood Hazard Map, Figure 10.

Based on the California Division of Safety of Dams (DSOD) *California Dam Breach Inundation Map Web Publisher* (DWR, https://fmds.water.ca.gov/webgis/?appid=dam_prototype_v2, accessed September 2024), the site does not appear to be located within the inundation zone any reservoirs. Therefore, dam failure inundation is not considered to be a hazard for the site.

5.10 Expansive Soil

Laboratory testing performed by Raney Geotechnical indicates low expansion potential and low plasticity in the near-surface clay soils at the site. Therefore, expansive soil is not considered to be a hazard for the site.

5.11 Soil Corrosion Potential

Soil corrosion potential testing is being performed by Raney Geotechnical. Refer to Raney Geotechnical's report for test results and related discussion.

5.12 Volcanic Activity

The nearest active volcanic area to the site is the Clear Lake Volcanic Field, located approximately 76 miles northwest of the site (USGS, 2024). Due to the distance between the site and the nearest volcanic field, the potential for direct impacts to the site due to regional volcanic activity is low.

5.13 Naturally Occurring Asbestos

The site is not located within an area mapped as an ultramafic rock unit, former asbestos mine, historic asbestos prospect, or other reported occurrence of asbestos in California. Naturally occurring asbestos (NOA) minerals (chrysotile, tremolite, actinolite, crocidolite, anthophyllite, and amosite) are more likely to be encountered in areas with ultramafic rocks or sheared metavolcanic rocks due to metamorphic processes. The site is not within an area of known mapped NOA occurrence (Van Gosen and Clinkenbeard, 2011). Based on the site geology, which consists of alluvial deposits, the likelihood of NOA being present at the site is considered to be low.

5.14 Oil Fields & Methane Zones

Based on a review of the California Geologic Energy Management Division (CalGEM) online mapping system, the site is located approximately 3.5 miles northwest of the boundary of the Florin Gas field, and approximately 4.8 miles east of the boundary of the Greens Lake Gas field. No oil or gas wells are mapped in the immediate vicinity of the site (CalGEM, 2024), the closest being a plugged dry gas well located approximately 1.5 miles west-southwest of the site. Due to the voluntary nature of record reporting by the oil and gas well drilling companies, wells may be improperly located or not shown on the location map. Other wells could be encountered during construction. Any wells encountered would need to be properly abandoned in accordance with the current requirements of CalGEM.

5.15 Radon

The United States Environmental Protection Agency's (USEPA) Map of Radon Zones (USEPA, 2021) depicts the radon potential in each U.S. County. Areas in Zone 1 have the highest radon potential, and those in Zone 3 have the lowest. Sacramento County is depicted on the map in Zone 3 (i.e., low potential). The project site is not within a California Department of Conservation study area for indoor radon potential (2024). Therefore, there is a low potential for radon at the site.

6.0 LIMITATIONS AND UNIFORMITY OF CONDITIONS

The recommendations of this report pertain only to the site investigated and are based upon the assumption that the soil conditions do not deviate from those disclosed in the investigation. If any variations or undesirable conditions are encountered during construction, or if the proposed construction will differ from that anticipated herein, the geologic consultant should be notified so that supplemental findings can be given. The evaluation or identification of the potential presence of hazardous materials or environmental contamination was not part of our scope of services.

This report is issued with the understanding that it is the responsibility of the owner or their representative to ensure that the information contained herein are brought to the attention of the design team for the project and incorporated into the plans and specifications.

Changes in the conditions of a property can occur with the passage of time, whether they are due to natural processes or the works of man on this or adjacent properties. Additionally, changes in applicable or appropriate standards may occur, whether they result from legislation or the broadening of knowledge. Accordingly, the findings of this report may be invalidated partially or wholly by changes outside our control. Therefore, this report is subject to review and should not be relied upon after a period of three years.

Our professional services were performed, our findings obtained, and our recommendations prepared in accordance with generally accepted geologic principles and practices used in the site area at this time. No warranty is provided, express or implied.

7.0 REFERENCES

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2. California Building Standards Commission, *2022 California Building Code*, based on *2021 International Building Code*, International Code Council, 2022.

3. California Department of Conservation, *Indoor Radon Potential* website, https://maps.conservation.ca.gov/cgs/radon/app/, accessed September 2024.

4. California Department of Conservation, *Landslide Inventory (Beta)* interactive map, https://maps.conservation.ca.gov/cgs/lsi/, accessed September 2024.

5. California Department of Water Resources (DWR), *California Dam Breach Inundation Map Web Publisher* website, https://fmds.water.ca.gov/webgis/?appid=dam_prototype_v2, accessed September 2024.

6. California DWR, *Sustainable Groundwater Management Act (SGMA) Data Viewer* online application, https://sgma.water.ca.gov/webgis/?appid=SGMADataViewer#gwlevels, accessed September 2024.

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8. California Geological Survey (CGS), *Earthquake Fault Zones: A Guide for Government Agencies, Property Owners / Developers, and Geoscience Practitioners for Assessing Fault Rupture Hazards in California,* Special Publication 42, 93 pp., Revised 2018.

9. CGS, *Historical Earthquake Online Database*, https://maps.conservation.ca.gov/cgs/historicearthquakes/, accessed September 2024.

10. CGS, *Earthquake Zones of Required Investigation* website: https://maps.conservation.ca.gov/cgs/EQZApp/app/, accessed September 2024.

11. CGS, *Fault Activity Map of California*, https://maps.conservation.ca.gov/cgs/fam/, accessed September 2024.

12. CGS, *Guidelines for Evaluating and Mitigating Seismic Hazards in California, Special Publication 117A*, revised and re-adopted September 11, 2008.

13. CGS, *Note 48 – Checklist for the Review of Engineering Geology and Seismology Reports for California Public Schools, Hospitals, and Essential Services Buildings*, November 2019.

14. Federal Emergency Management Agency (FEMA), *National Flood Insurance Program, Flood Insurance Rate Map No. 06067C0190H*, map effective date August 6, 2012.

15. Gutierrez, C.I., *Preliminary Geologic Map of the Sacramento 30' X 60' Quadrangle, California*, California Geological Survey Regional Geologic Map Series, map scale 1:100,000, 2011.

16. Hart, Earl W., and Bryant, William A., *Alquist-Priolo Earthquake Fault Zone Program*, California Division of Mines and Geology, 1999.

17. HMC Architects, *Site Improvement Plan,* revised June 17, 2024.

18. Raney Geotechnical, Inc., *Geotechnical Engineering Report – Ethel Phillips Modernization*, dated August 20, 2024.

19. United States Environmental Protection Agency (USEPA), *California - EPA Map of Radon Zones* website, chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://www.epa.gov/sites/default/files/2014-08/documents/california.pdf, accessed September 2024.

20. United States Geological Survey (USGS), *California Volcano Observatory* website, https://www.usgs.gov/observatories/calvo, accessed September 2024.

21. USGS, *Unified Hazard Tool*, https://earthquake.usgs.gov/hazards/interactive/; accessed September 2024.

22. USGS, *U.S. Quaternary Faults* interactive fault map, https://usgs.maps.arcgis.com/apps/webappviewer/index.html?id=5a6038b3a1684561a9b0aadf88412fcf; accessed September 2024.

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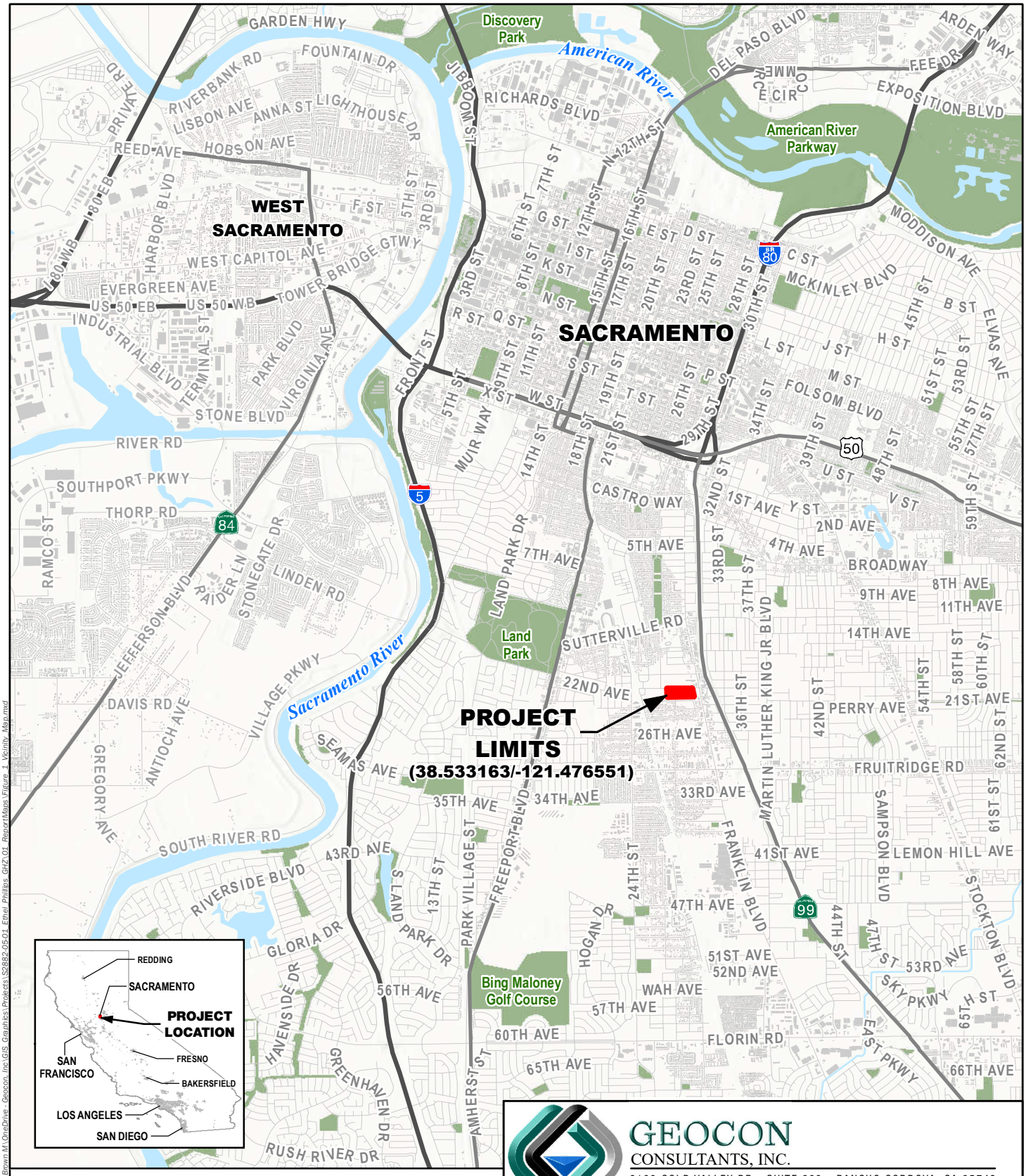
24. Van Gosen, Bradley S., and Clinkenbeard, John P., *Reported Historic Asbestos Mines, Historic Asbestos Prospects, and Other Natural Occurrences of Asbestos in California*, U.S. Geological Survey and California Geological Survey, USGS Open-File Report 2011-1188, California Geological Survey Map Sheet 59, 2011.



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VICINITY MAP

S2882-05-01	September 2024	Figure 1

Legend

Approximate Site Boundary

N

0 200

Scale in Feet

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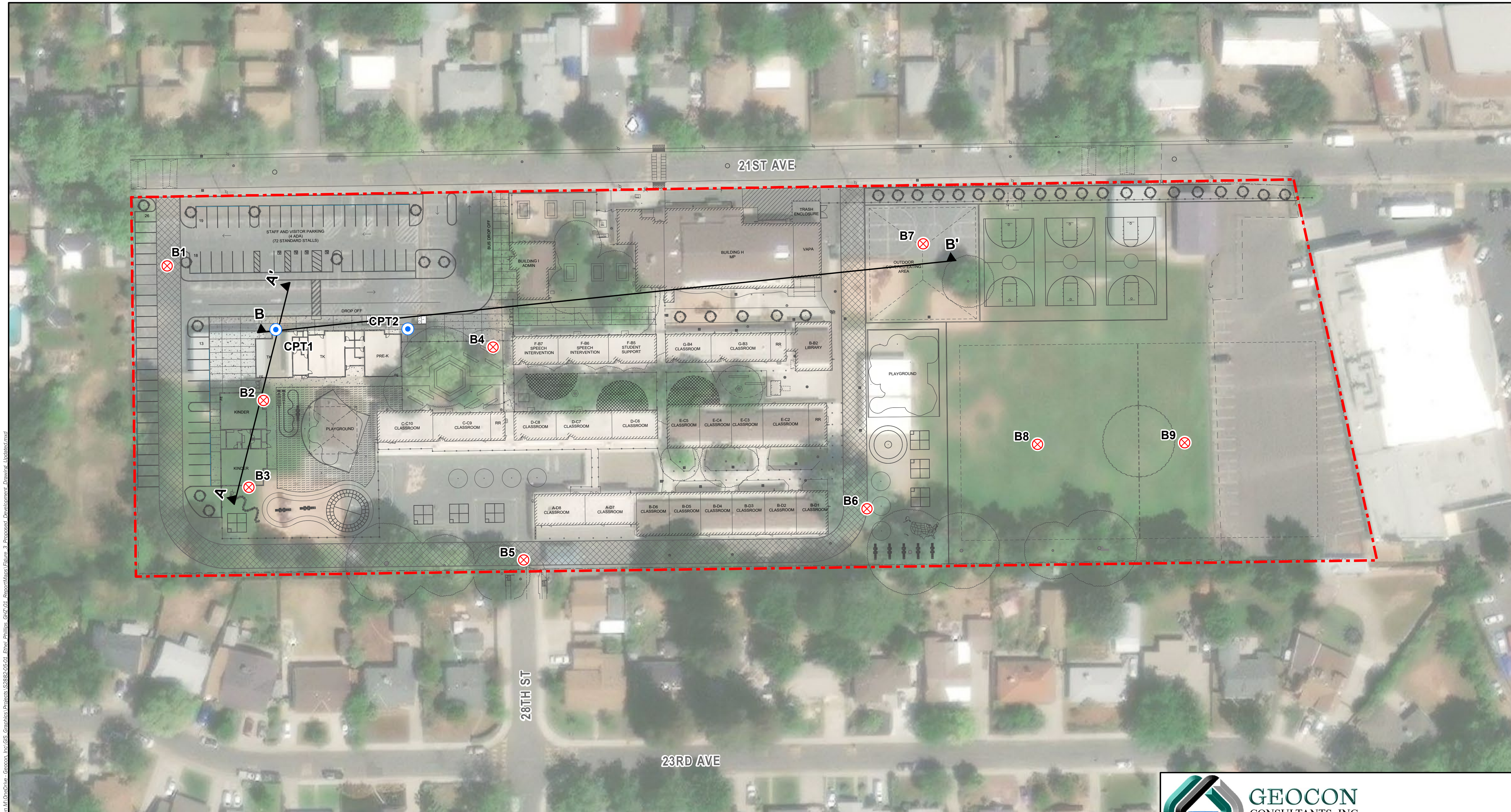
AERIAL SITE MAP

S2882-05-01	September 2024	Figure 2

GEOCON 9/9/2024 USER Brown M PATH C:\Users\Brown M\OneDrive - Geocon, Inc\GIS Graphics\Projects\S2882-05-01 Ethel Phillips GHZ\01 Report\Maps\Figure 2 Aerial Site Map.mxd



Proposed Development Design Drawing by HMC Architects (6/17/2024)

Legend

Approximate Boring Location (Raney, July 2024)

Approximate Cone Penetration Tests (CPT) Sample Location (Raney, July 2024)

Approximate Cross-Section Location (Figures 6 and 7)

Approximate Site Boundary

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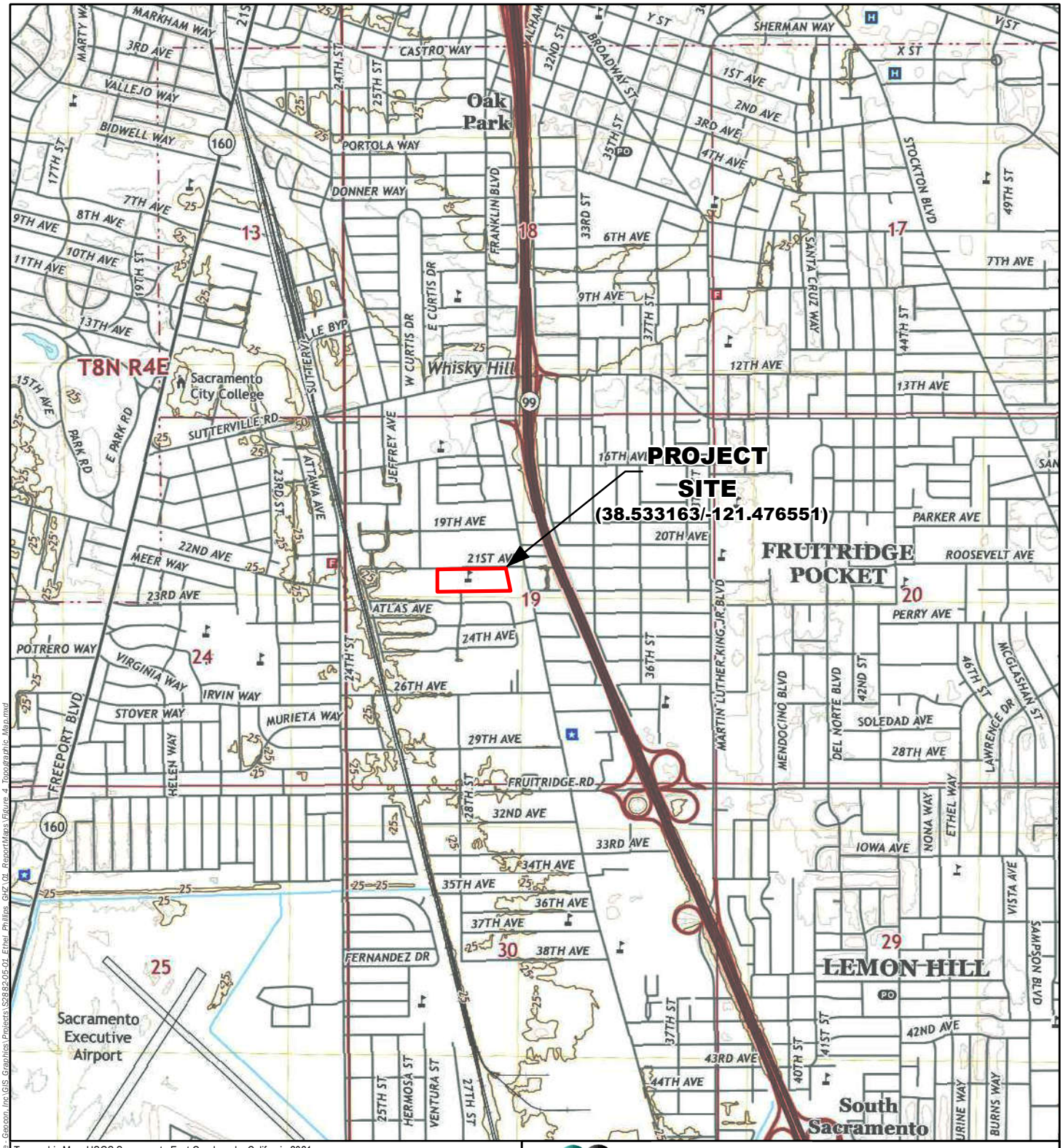
PROPOSED DEVELOPMENT PLAN

S2882-05-01	September 2024	Figure 3



Topograhic Map: USGS Sacramento East Quadrangle, California 2021

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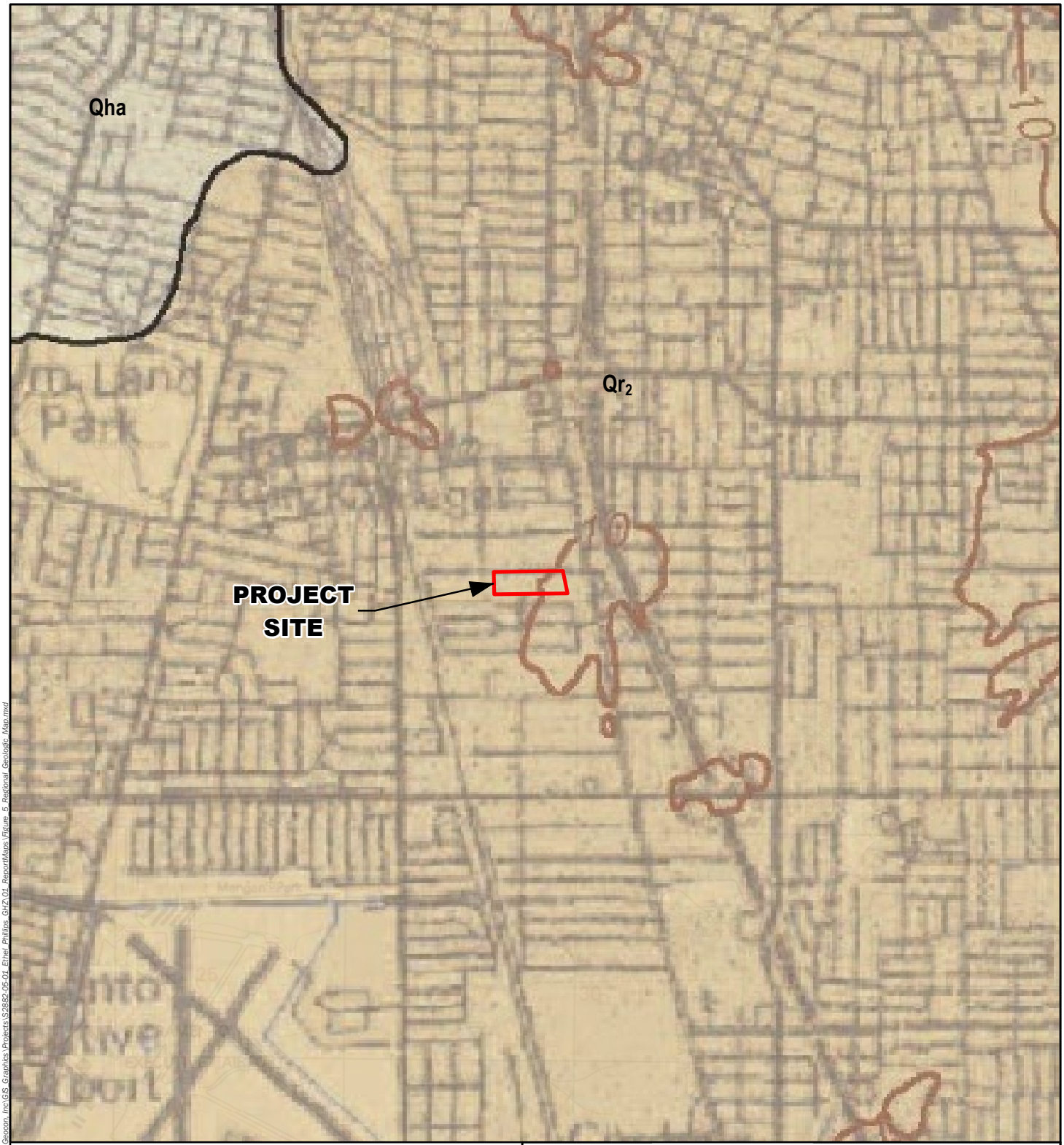
TOPOGRAPHIC MAP

S2882-05-01	September 2024	Figure 4



Preliminary Geologic Map of the Sacramento 30'x60' Quadrangle, California; Carlos I. Gutierrez, 2011

Unit Explantion

- Qha — Holocene alluvium
- Qr_2 — Riverbank Formation - Middle Unit

N

0 2,000

Scale in Feet

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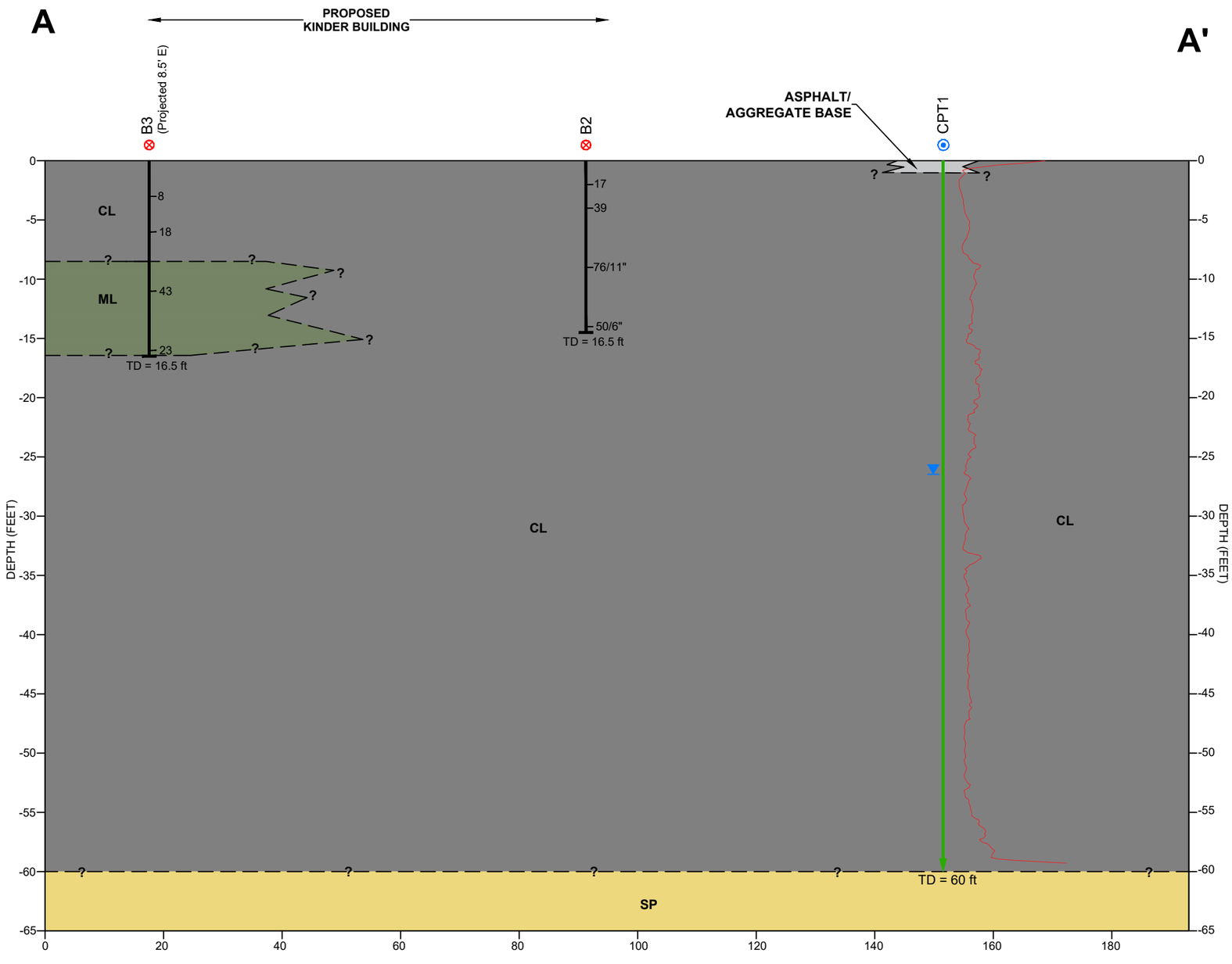
REGIONAL GEOLOGIC MAP

S2882-05-01	September 2024	Figure 5



Legend

B3 — Exploration Location

43 — Blow Count (California Modified Sampler)

Water Level

CPT1 — CPT Location

Tip Resistance Plot

Soil Contacts

Soil Classifications:

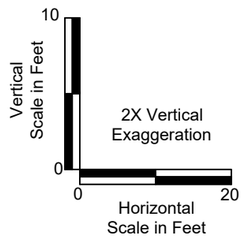
SP = Poorly graded sands, gravelly sands, little or no fines

ML = Inorganic silts and very fine sands, rock flour, silty of clayey fine sands or clayey silts with slight plasticity

CL = Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays

Abbreviations:

ft = Feet



Notes:

1. This figure depicts generalized subsurface conditions inferred from Raney's explorations and is intended for use as general geologic characterization and an aid for design. Actual subsurface conditions, including groundwater depths/elevations, may vary. Please refer to the Raney Report for detailed subsurface conditions encountered at each boring/CPT location.

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CROSS SECTION A-A'

S2882-05-01	September 2024	Figure 6

B

B'

BUILDING H

PROPOSED OUTDOOR COVERED EATING AREA

CPT1

CPT2 (Projected 10' S)

B4 (Projected 31' S)

B7 (Projected 16.5' N)

ASPHALT/ AGGREGATE BASE

ASPHALT/ AGGREGATE BASE

TD = 5 ft

8
18
50/6"
38
TD = 16.5 ft

CL

CL

CL

SM

SM

SP

TD = 60 ft

TD = 60 ft

DEPTH (FEET)

0
-5
-10
-15
-20
-25
-30
-35
-40
-45
-50
-55
-60
-65

0
40
80
120
160
200
240
280
320
360
400
440
480
520
560

Legend

B7 — Exploration Location

18 — Blow Count (California Modified Sampler)

Water Level

CPT2 — CPT Location

Tip Resistance Plot

Soil Contacts

Soil Classifications:
SP = Poorly graded sands, gravelly sands, little or no fines
SM = Silty sands with or without gravel
CL = Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays

Abbreviations:
ft = Feet

Vertical Scale in Feet: 10, 0

4X Vertical Exaggeration

Horizontal Scale in Feet: 0, 40

Notes:
1. This figure depicts generalized subsurface conditions inferred from Raney's explorations and is intended for use as general geologic characterization and an aid for design. Actual subsurface conditions, including groundwater depths/elevations, may vary. Please refer to the Raney Report for detailed subsurface conditions encountered at each boring/CPT location.

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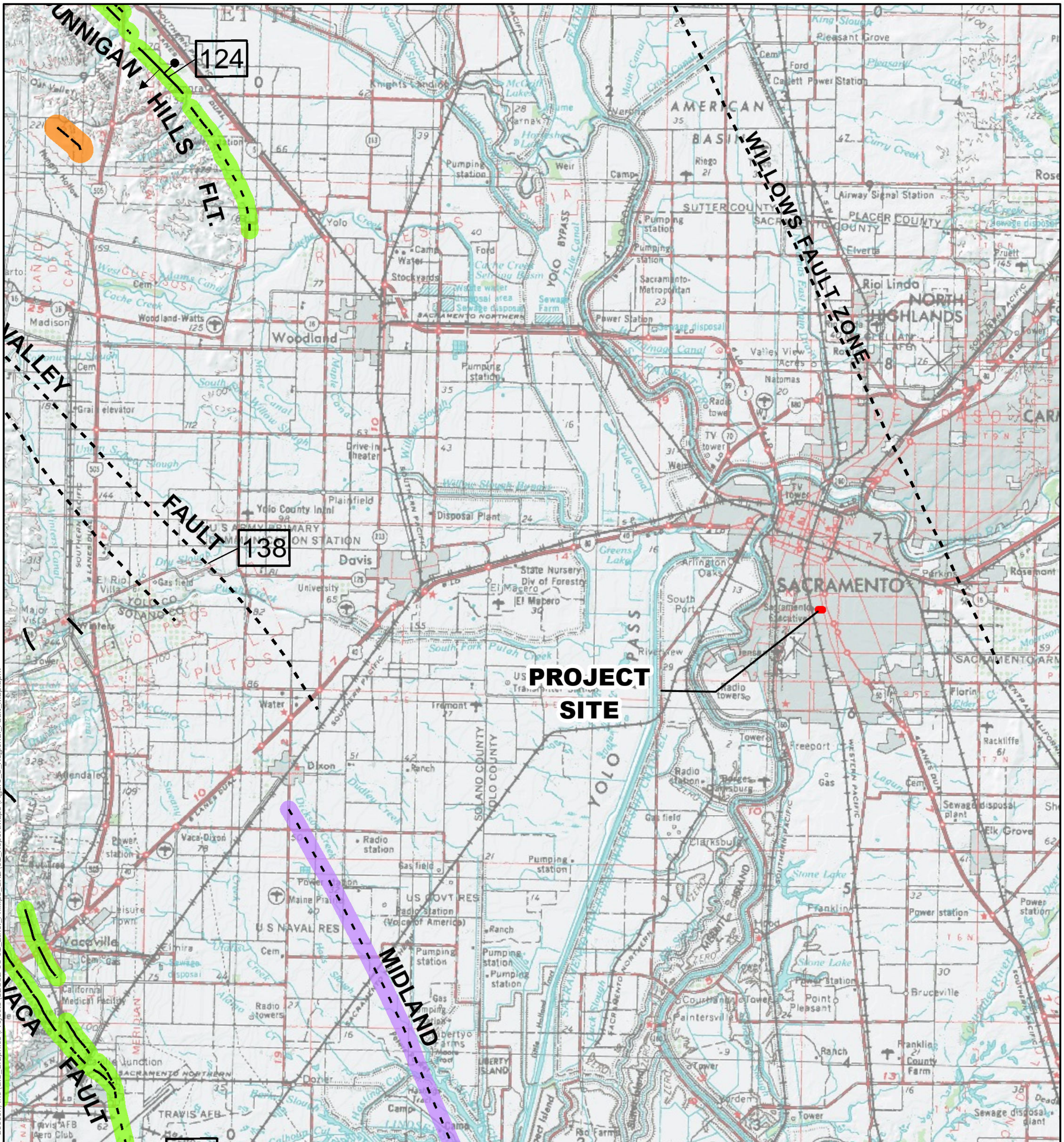
CROSS SECTION B-B'

S2882-05-01 | September 2024 | Figure 7



Fault Activity Map of California by Charles W. Jennings and William A. Bryant published in 2010. (California Department of Conservation, GIS)

Legend

- Structural discontinuity
- Fault, Certain
- Fault, Approximate
- Fault, Concealed
- Thrust Fault, Certain
- Thrust Fault, Approximate
- Fault with Late Quaternary Activity (within past 700,000 years)
- Quaternary Fault (activity with in past 1.6 million years)

N

0 5

Scale in Miles

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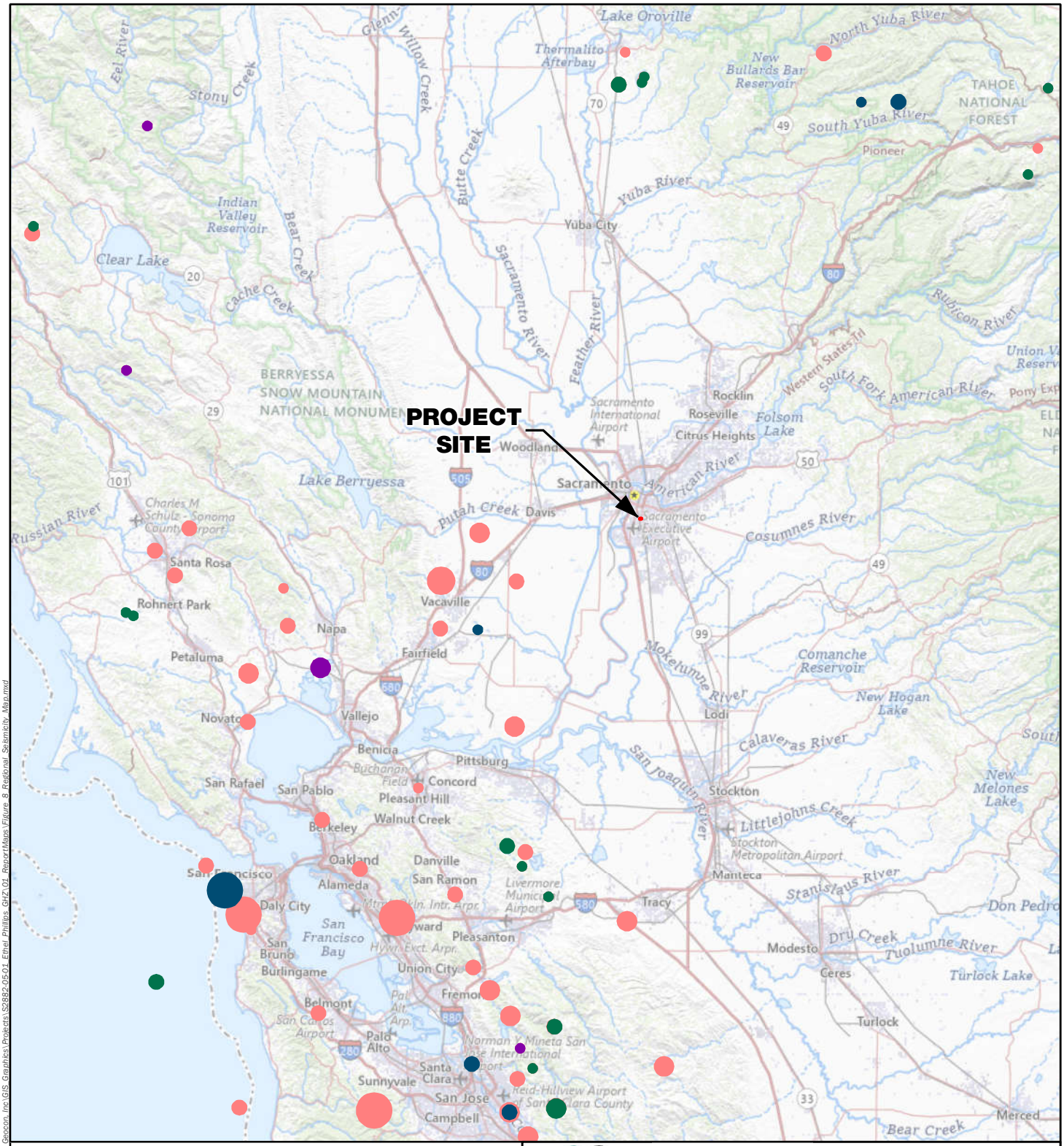
REGIONAL FAULT MAP

S2882-05-01	September 2024	Figure 8



Epicenters of and Areas Damaged by M>5 California Earthquakes, 1800-2023; California Department of Conservation and NOAA

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REGIONAL SEISMICITY MAP

S2882-05-01	September 2024	Figure 9

Legend

Approximate Site Boundary

FEMA Flood Hazard Zone

Area with Reduced Flood Risk Due to Levee

N

0 500

Scale in Feet

Flood Hazard Zone layer from FEMA National Flood Hazard Database; https://hazards-fema.maps.arcgis.com/ 9/10/2024

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FEMA FLOOD HAZARD MAP

S2882-05-01	September 2024	Figure 10

Photo No. 1 - Representative existing site conditions facing west.

Photo No. 2 – CPT2 location in existing pavement facing south.

PHOTOS NO. 1 & 2

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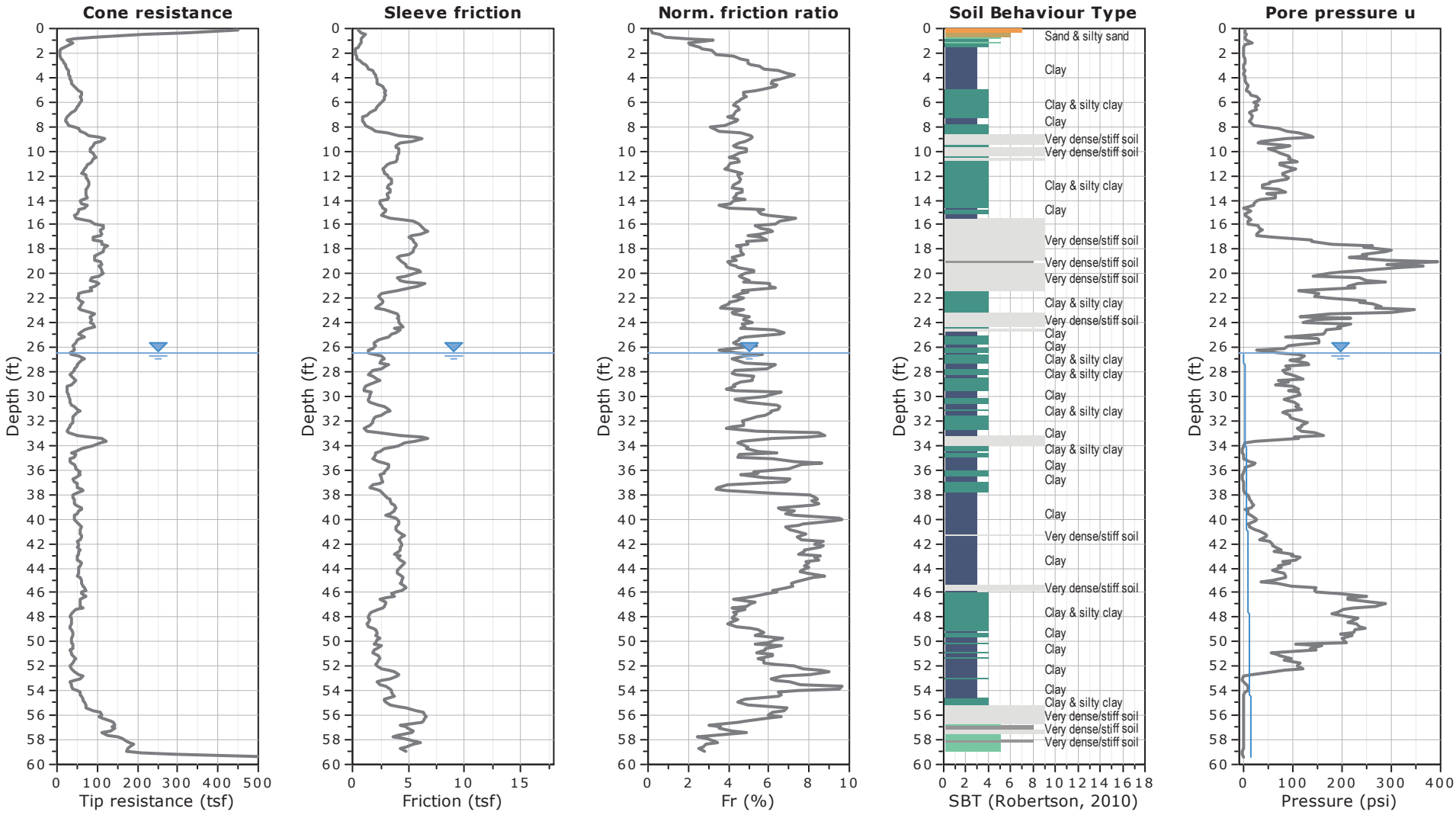
GEOCON Project No. S2882-05-01 | September 2024

APPENDIX A



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CPT1

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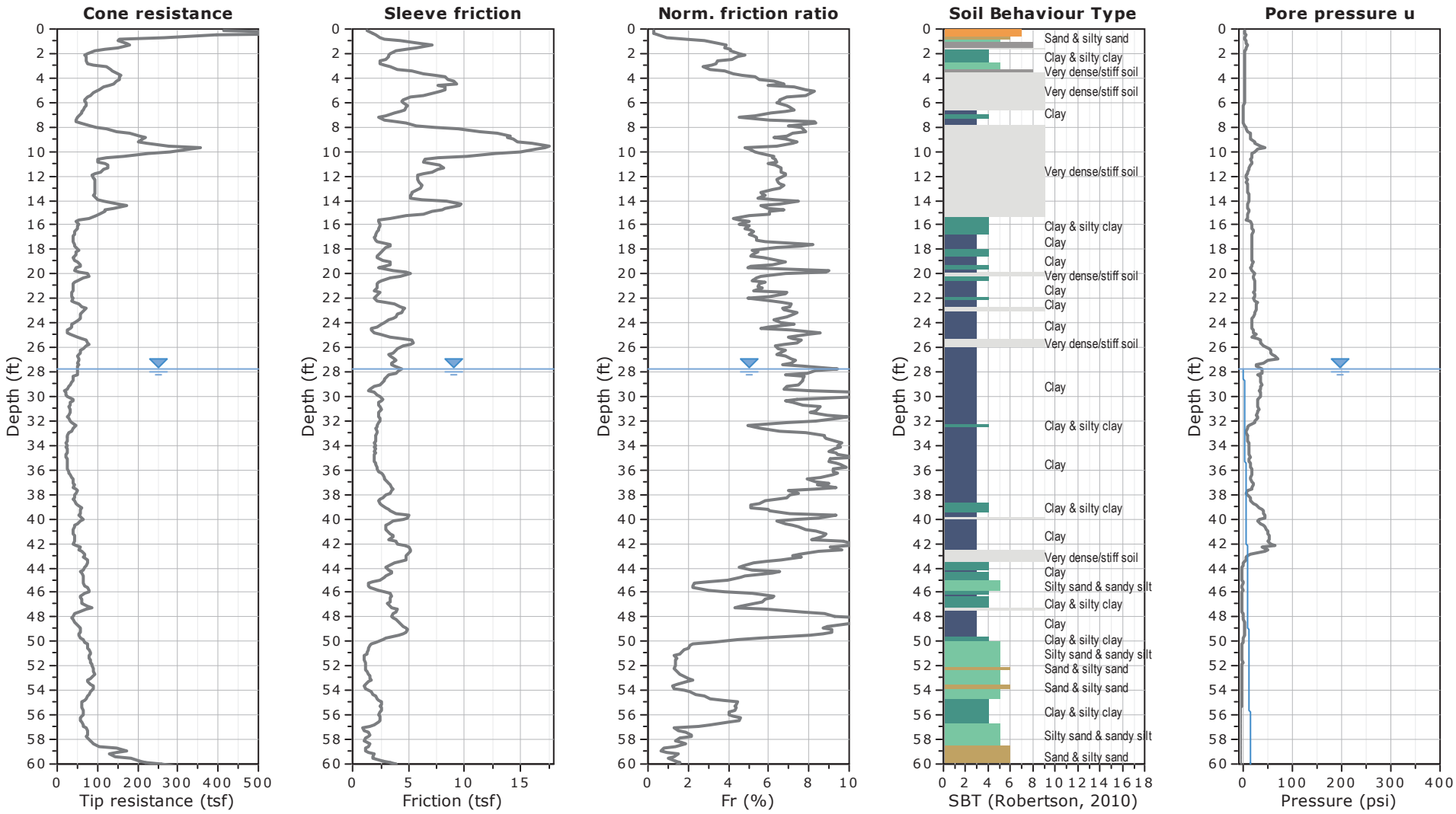
S2882-05-01	September 2024	Figure A1



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CPT2

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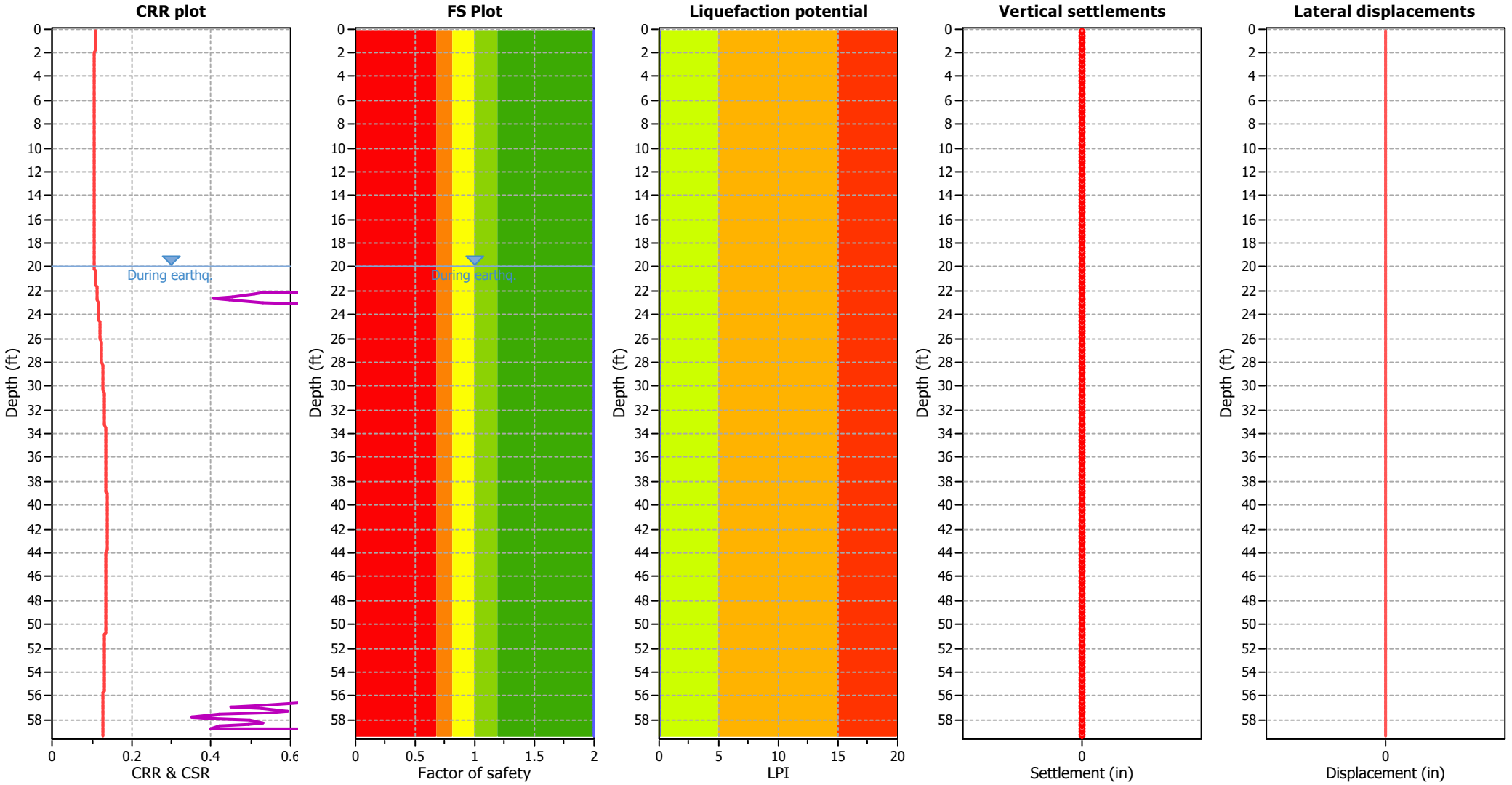
S2882-05-01	September 2024	Figure A2

Liquefaction analysis overall plots



Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	20.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.24	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	26.50 ft	Fill height:	N/A	Limit depth:	N/A

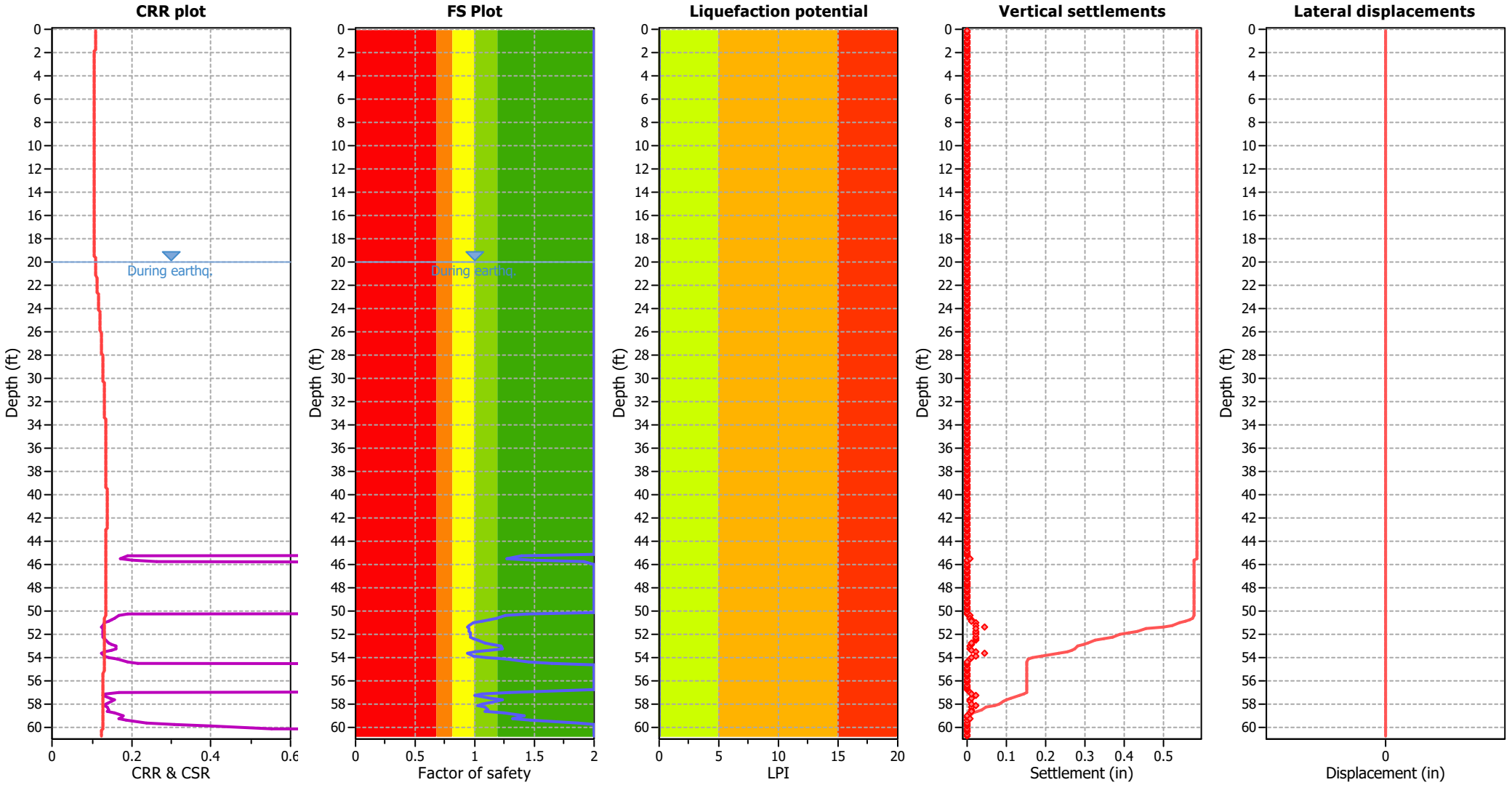
F.S. color scheme

- Almost certain it will liquefy
- Very likely to liquefy
- Liquefaction and no liq. are equally likely
- Unlike to liquefy
- Almost certain it will not liquefy

LPI color scheme

- Very high risk
- High risk
- Low risk

Liquefaction analysis overall plots



Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	20.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.24	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	26.50 ft	Fill height:	N/A	Limit depth:	N/A

F.S. color scheme

- Almost certain it will liquefy
- Very likely to liquefy
- Liquefaction and no liq. are equally likely
- Unlike to liquefy
- Almost certain it will not liquefy

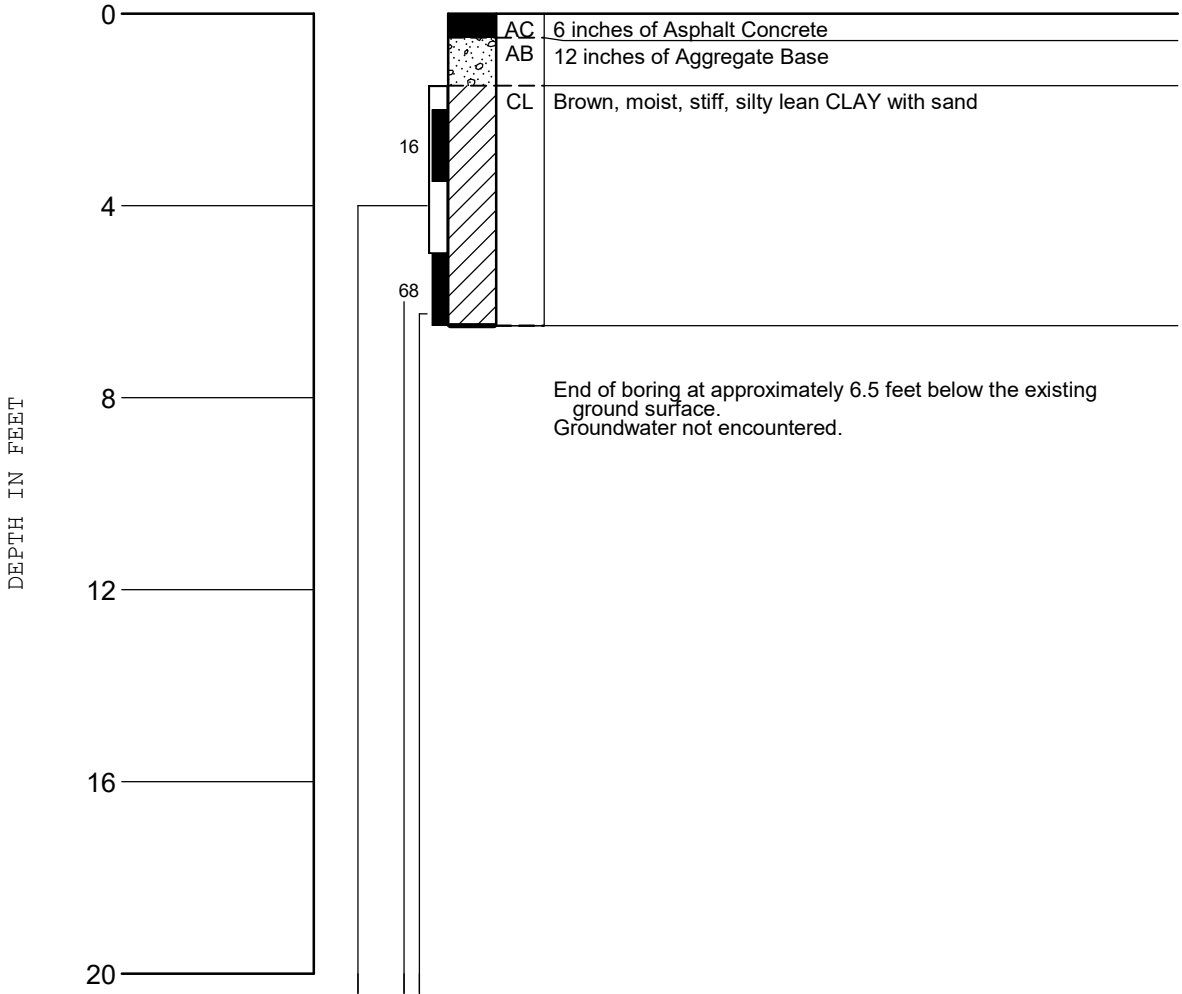
LPI color scheme

- Very high risk
- High risk
- Low risk

PROJECT NUMBER: 5995-001.00 PROJECT NAME: Ethel Phillips Modernization
DRAWN BY: HZ DATE: 7/31/2024

BORING 1

DRILLED: 7/31/24



End of boring at approximately 6.5 feet below the existing ground surface.
Groundwater not encountered.

NOTES:

1. THE BORING LOG DEPICTS SUBSURFACE CONDITIONS ONLY AT THE BORING LOCATION AND TIME DESIGNATED.
2. NOMENCLATURE USED TO DESCRIBE SOILS DEFINED ON PLATE 11.
3. UNDISTURBED SAMPLE OBTAINED WITH 2" I.D. MODIFIED CALIFORNIA SAMPLER.
4. SAMPLER PENETRATION RESISTANCE IN BLOWS PER FOOT OR FRACTION THEREOF; 140-POUND HAMMER, 30" DROP.
5. DISTURBED SAMPLE OBTAINED FROM AUGERS.
6. FREE GROUNDWATER WAS ENCOUNTERED IN BORINGS.

LOG OF BORING

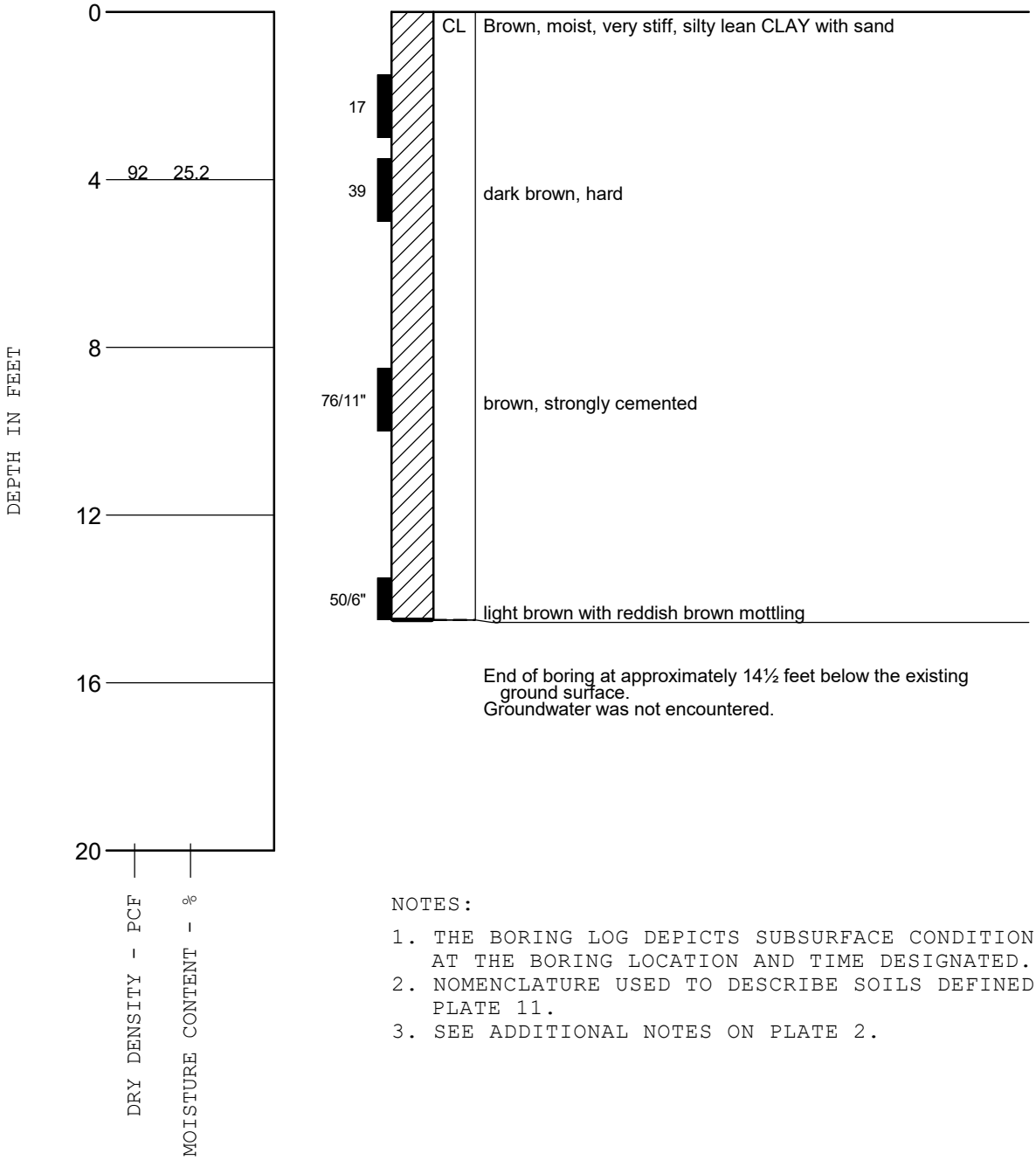
Raney Geotechnical Inc

PLATE 2

PROJECT NUMBER: 5995-001.00 PROJECT NAME: Ethel Phillips Modernization
DRAWN BY: HZ DATE: 7/31/2024

BORING 2

DRILLED: 7/31/24



End of boring at approximately 14½ feet below the existing ground surface.
Groundwater was not encountered.

NOTES:

1. THE BORING LOG DEPICTS SUBSURFACE CONDITIONS ONLY AT THE BORING LOCATION AND TIME DESIGNATED.
2. NOMENCLATURE USED TO DESCRIBE SOILS DEFINED ON PLATE 11.
3. SEE ADDITIONAL NOTES ON PLATE 2.

Raney Geotechnical Inc

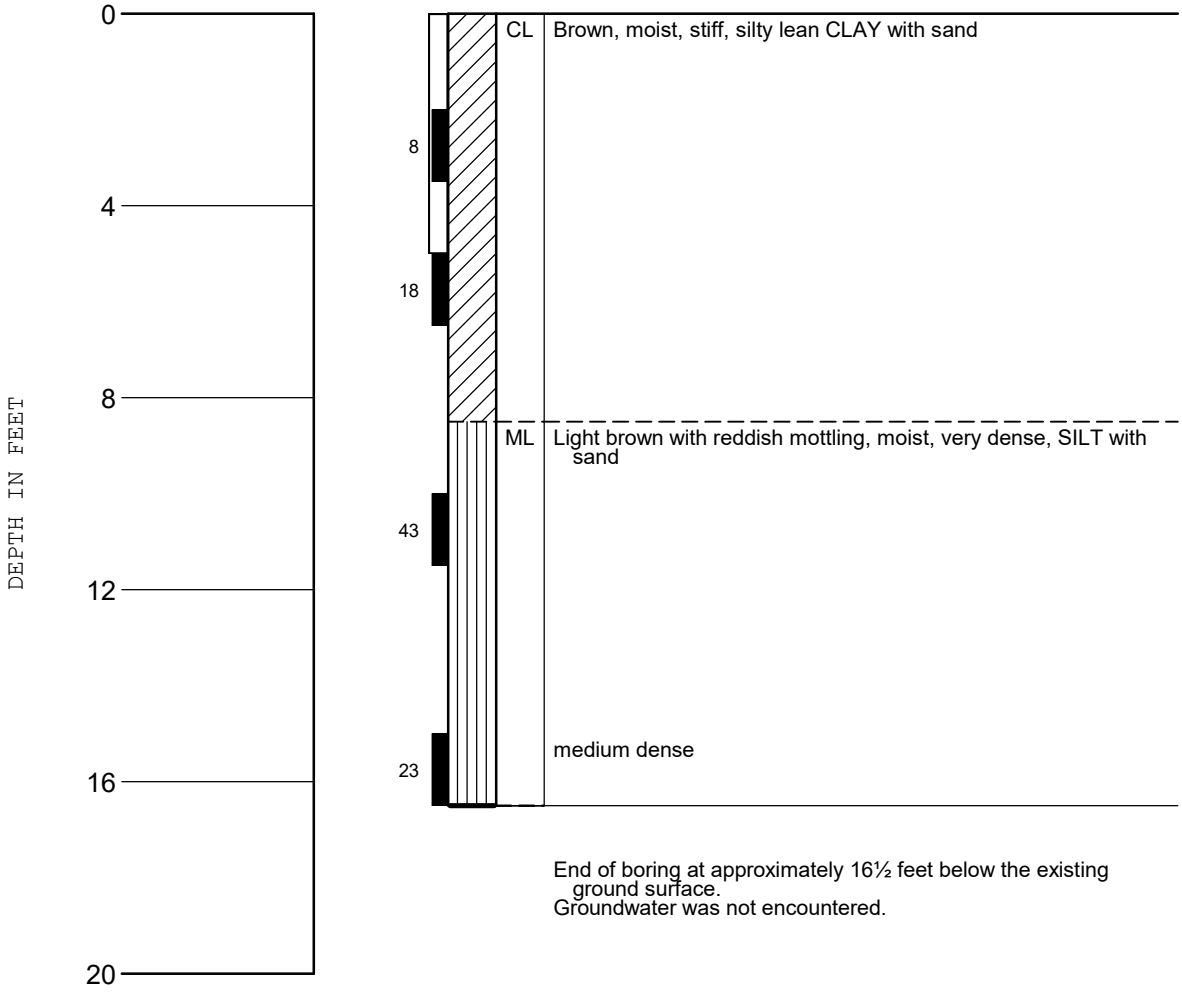
LOG OF BORING

PLATE 3

PROJECT NUMBER: 5995-001.00 PROJECT NAME: Ethel Phillips Modernization
DRAWN BY: HZ DATE: 7/31/2024

BORING 3

DRILLED: 7/31/24



End of boring at approximately 16½ feet below the existing ground surface.
Groundwater was not encountered.

NOTES:

1. THE BORING LOG DEPICTS SUBSURFACE CONDITIONS ONLY AT THE BORING LOCATION AND TIME DESIGNATED.
2. NOMENCLATURE USED TO DESCRIBE SOILS DEFINED ON PLATE 11.
3. SEE ADDITIONAL NOTES ON PLATE 2.

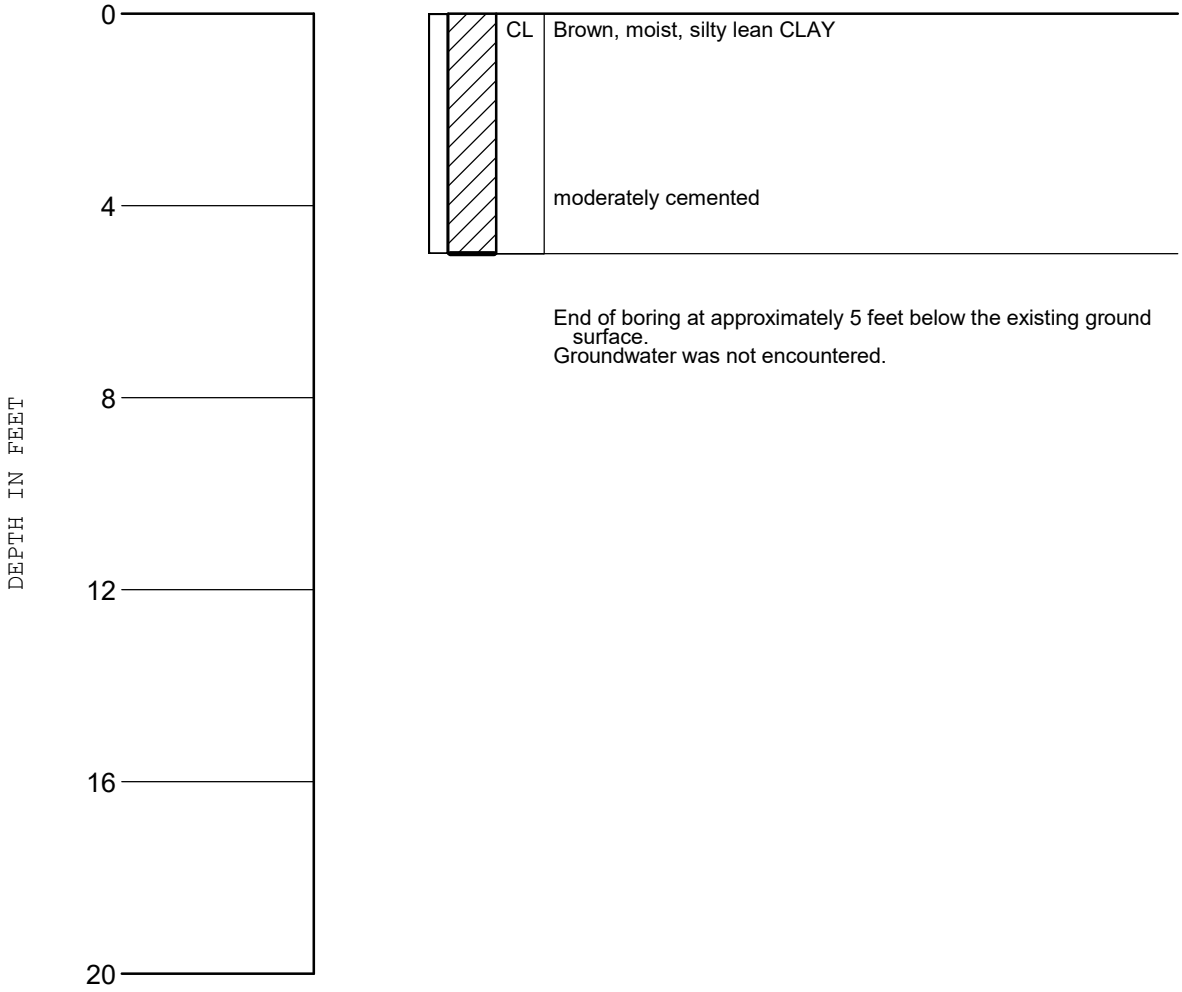
Raney Geotechnical Inc

LOG OF BORING

PROJECT NUMBER: 5995-001.00 PROJECT NAME: Ethel Phillips Modernization
DRAWN BY: HZ DATE: 7/31/2024

BORING 4

DRILLED: 7/31/24



End of boring at approximately 5 feet below the existing ground surface.
Groundwater was not encountered.

NOTES:

1. THE BORING LOG DEPICTS SUBSURFACE CONDITIONS ONLY AT THE BORING LOCATION AND TIME DESIGNATED.
2. NOMENCLATURE USED TO DESCRIBE SOILS DEFINED ON PLATE 11.
3. SEE ADDITIONAL NOTES ON PLATE 2.

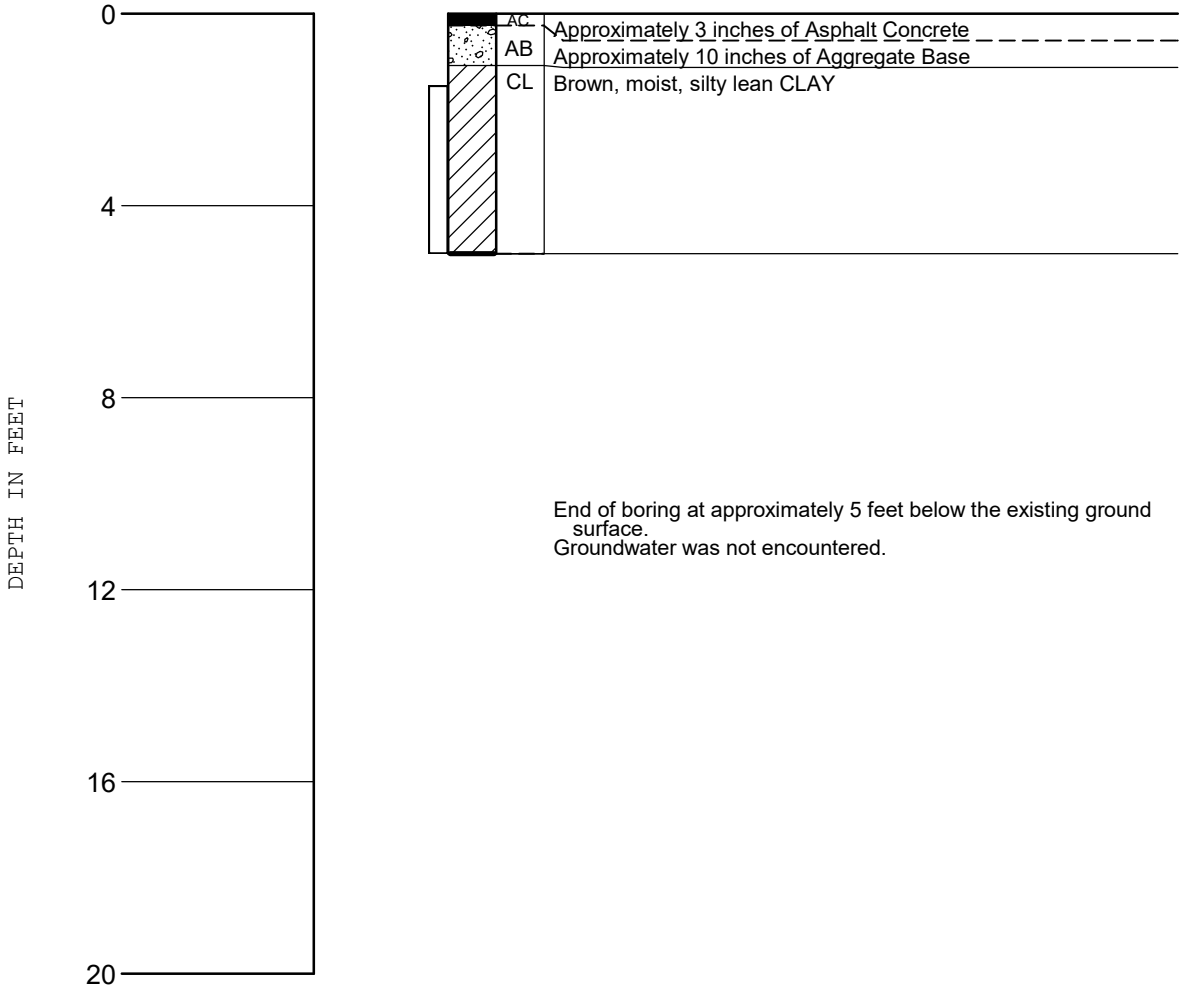
LOG OF BORING

Raney Geotechnical Inc

PROJECT NUMBER: 5995-001.00 PROJECT NAME: Ethel Phillips Modernization
DRAWN BY: HZ DATE: 7/31/2024

BORING 5

DRILLED: 7/31/24



End of boring at approximately 5 feet below the existing ground surface.
Groundwater was not encountered.

NOTES:

1. THE BORING LOG DEPICTS SUBSURFACE CONDITIONS ONLY AT THE BORING LOCATION AND TIME DESIGNATED.
2. NOMENCLATURE USED TO DESCRIBE SOILS DEFINED ON PLATE 11.
3. SEE ADDITIONAL NOTES ON PLATE 2.

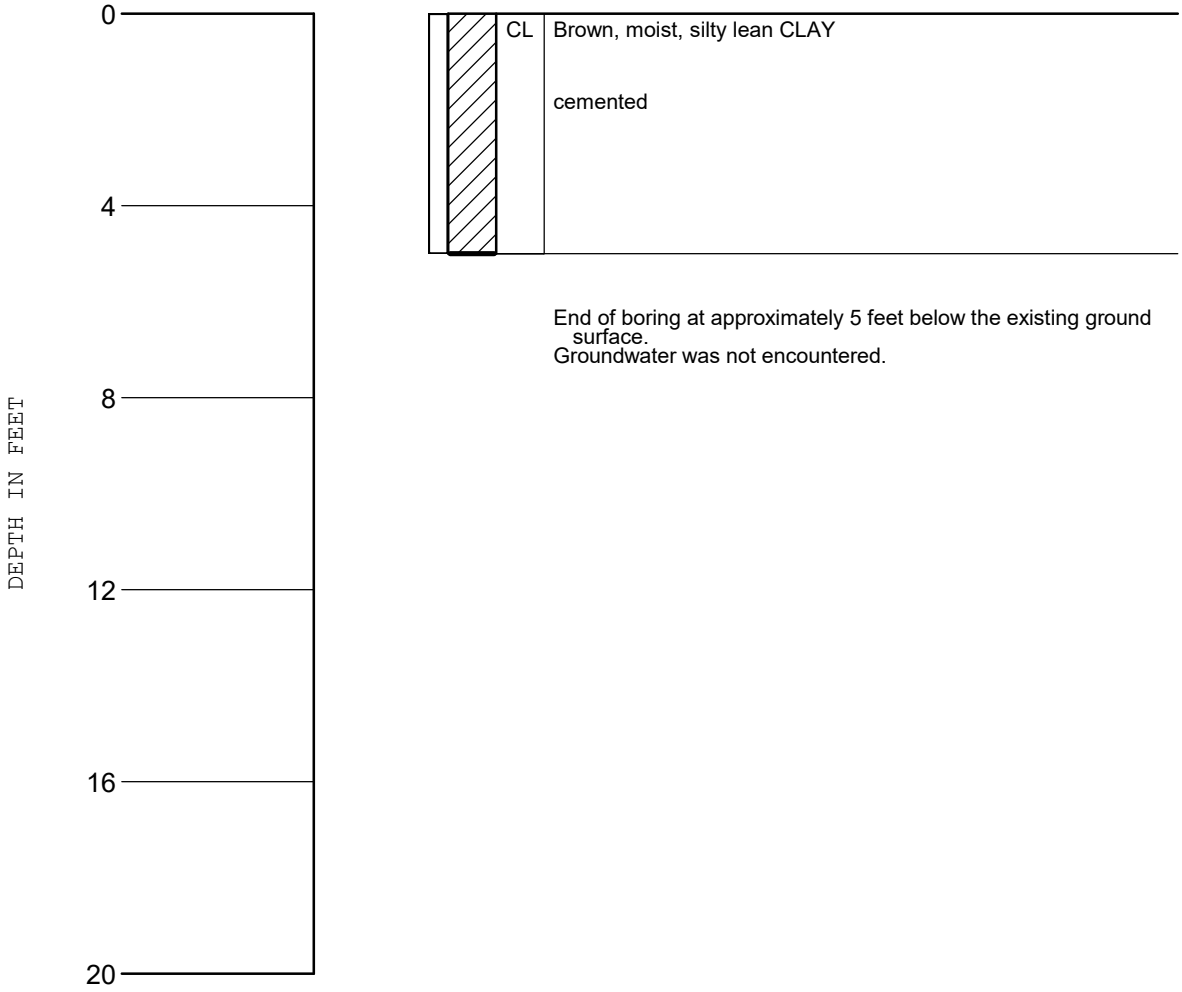
Raney Geotechnical Inc

LOG OF BORING

PROJECT NUMBER: 5995-001.00 PROJECT NAME: Ethel Phillips Modernization
DRAWN BY: HZ DATE: 7/31/2024

BORING 6

DRILLED: 7/31/24



End of boring at approximately 5 feet below the existing ground surface.
Groundwater was not encountered.

NOTES:

1. THE BORING LOG DEPICTS SUBSURFACE CONDITIONS ONLY AT THE BORING LOCATION AND TIME DESIGNATED.
2. NOMENCLATURE USED TO DESCRIBE SOILS DEFINED ON PLATE 11.
3. SEE ADDITIONAL NOTES ON PLATE 2.

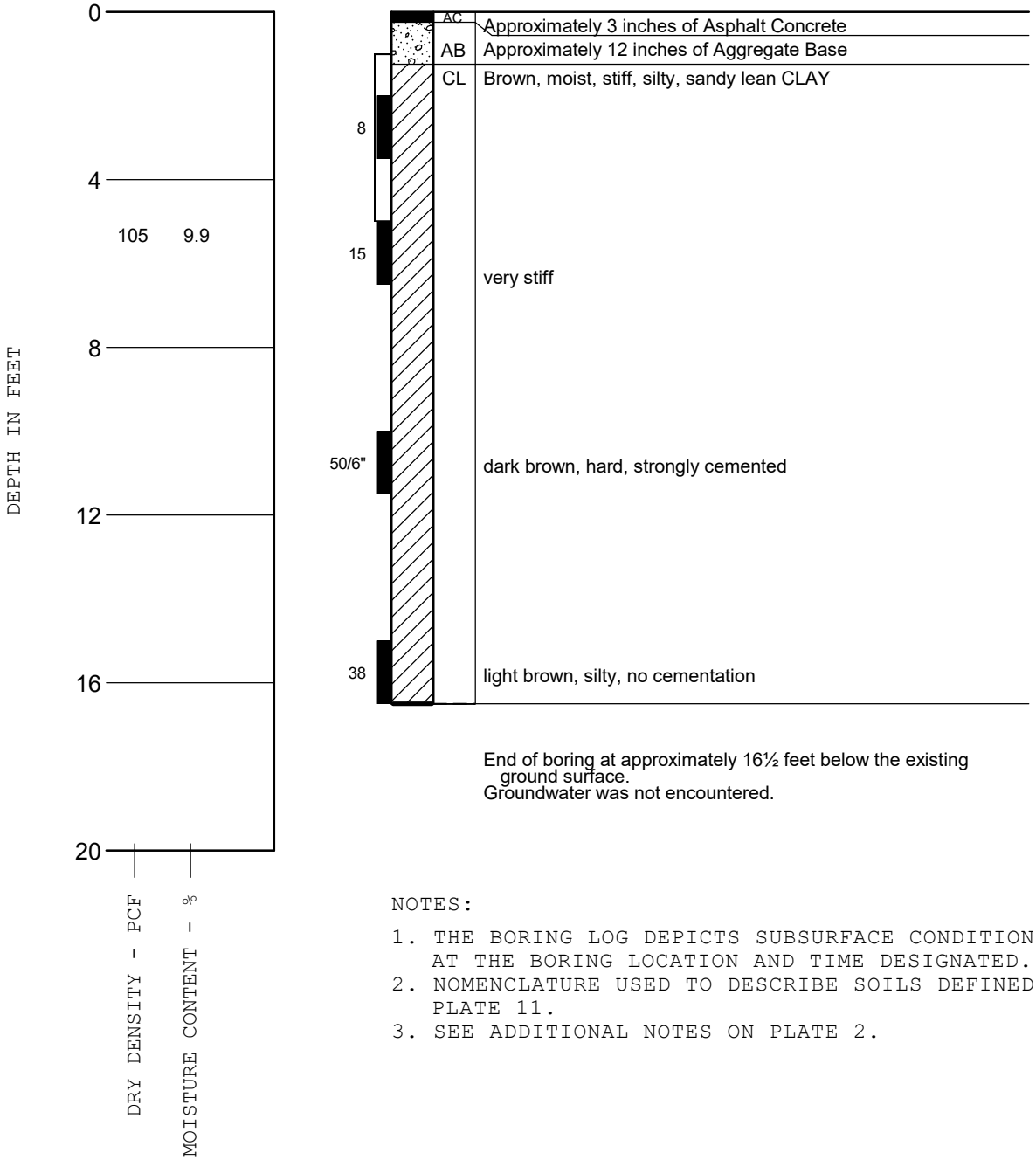
Raney Geotechnical Inc

LOG OF BORING

PROJECT NUMBER: 5995-001.00 PROJECT NAME: Ethel Phillips Modernization
DRAWN BY: HZ DATE: 7/31/2024

BORING 7

DRILLED: 7/31/24



End of boring at approximately 16½ feet below the existing ground surface.
Groundwater was not encountered.

NOTES:

1. THE BORING LOG DEPICTS SUBSURFACE CONDITIONS ONLY AT THE BORING LOCATION AND TIME DESIGNATED.
2. NOMENCLATURE USED TO DESCRIBE SOILS DEFINED ON PLATE 11.
3. SEE ADDITIONAL NOTES ON PLATE 2.

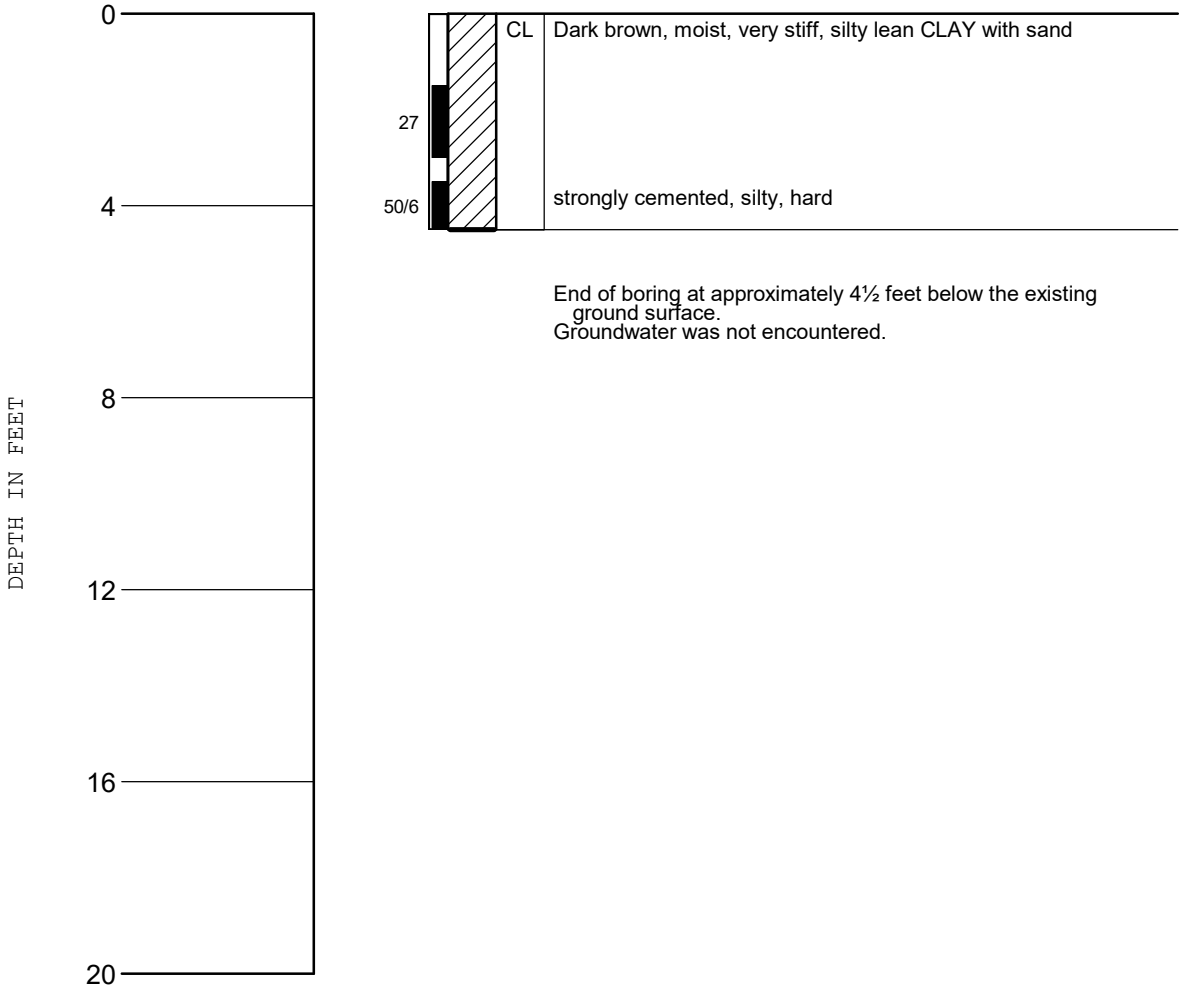
LOG OF BORING

Raney Geotechnical Inc

PROJECT NUMBER: 5995-001.00 PROJECT NAME: Ethel Phillips Modernization
DRAWN BY: HZ DATE: 7/31/2024

BORING 8

DRILLED: 7/31/24



End of boring at approximately 4½ feet below the existing ground surface.
Groundwater was not encountered.

NOTES:

1. THE BORING LOG DEPICTS SUBSURFACE CONDITIONS ONLY AT THE BORING LOCATION AND TIME DESIGNATED.
2. NOMENCLATURE USED TO DESCRIBE SOILS DEFINED ON PLATE 11.
3. SEE ADDITIONAL NOTES ON PLATE 2.

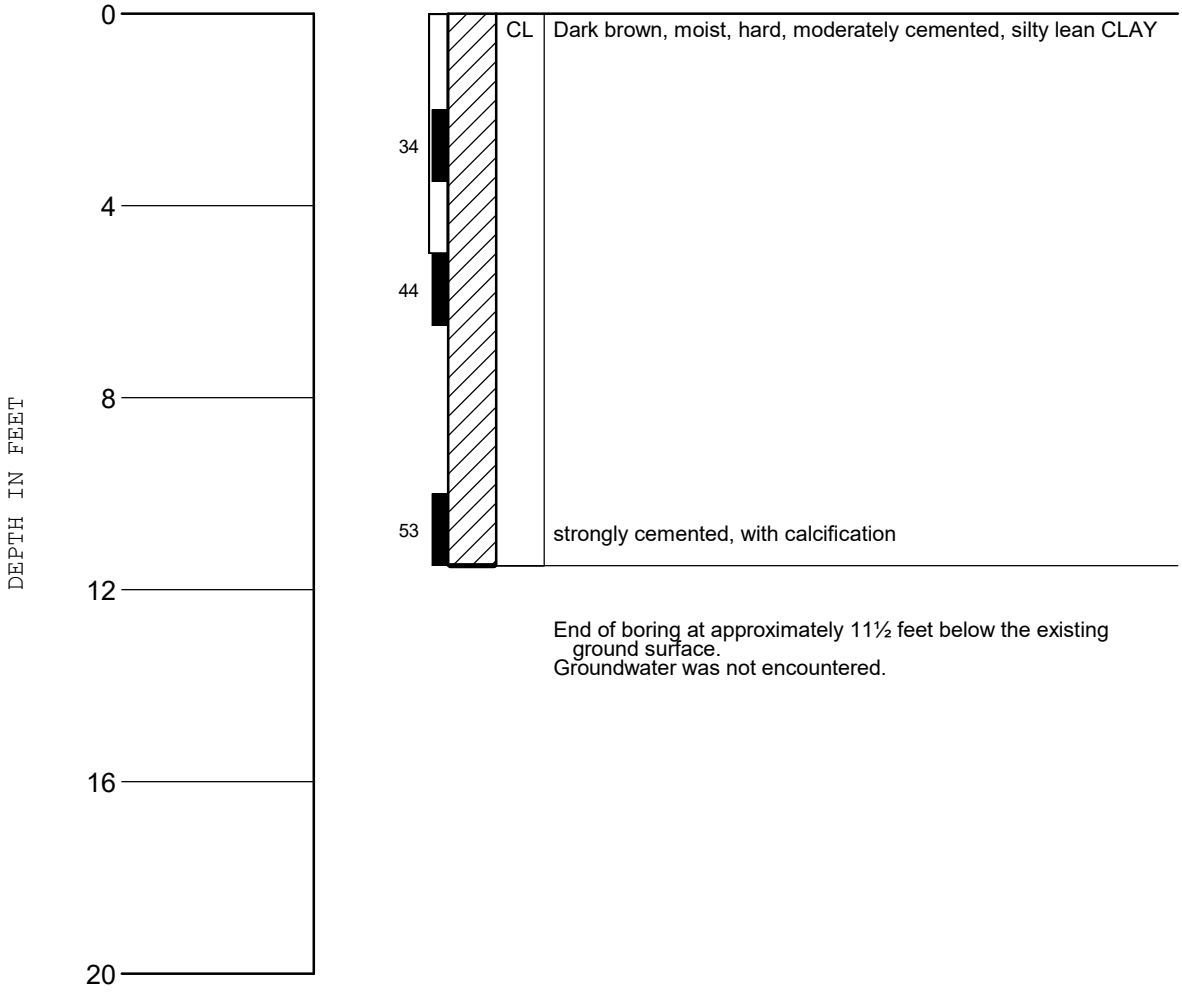
Raney Geotechnical Inc

LOG OF BORING

PROJECT NUMBER: 5995-001.00 PROJECT NAME: Ethel Phillips Modernization
DRAWN BY: HZ DATE: 7/31/2024

BORING 9

DRILLED: 7/31/24



End of boring at approximately 11½ feet below the existing ground surface.
Groundwater was not encountered.

NOTES:

1. THE BORING LOG DEPICTS SUBSURFACE CONDITIONS ONLY AT THE BORING LOCATION AND TIME DESIGNATED.
2. NOMENCLATURE USED TO DESCRIBE SOILS DEFINED ON PLATE 11.
3. SEE ADDITIONAL NOTES ON PLATE 2.

Raney Geotechnical Inc

LOG OF BORING

APPENDIX B

Logs of CPTs

Raney Geotechnical

https://www.raneygeotechnical.com/

CPT: CPT-01

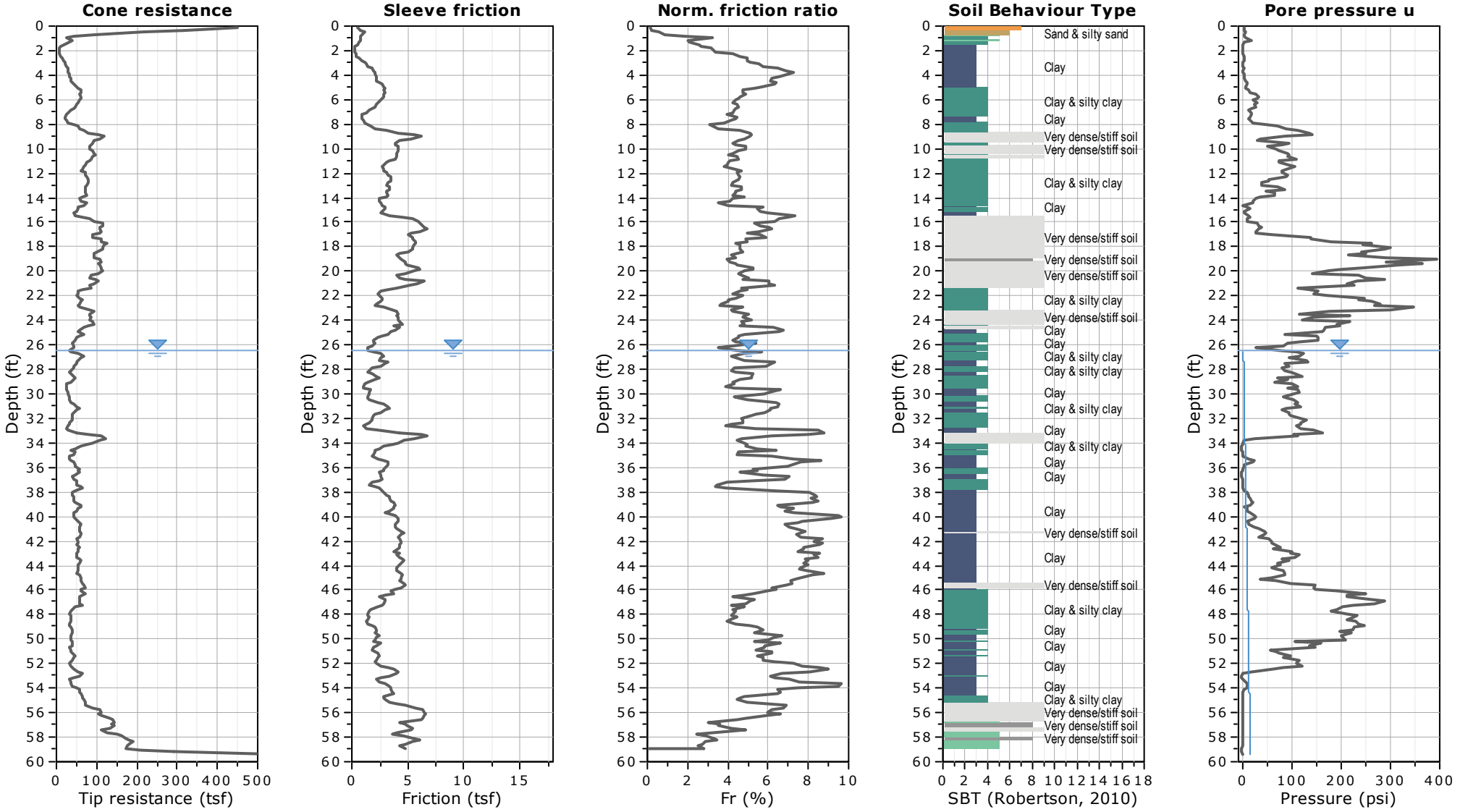
Total depth: 59.38 ft, Date: 9/19/2024

Cone Type: 15cm²

Cone Operator: JM-IY

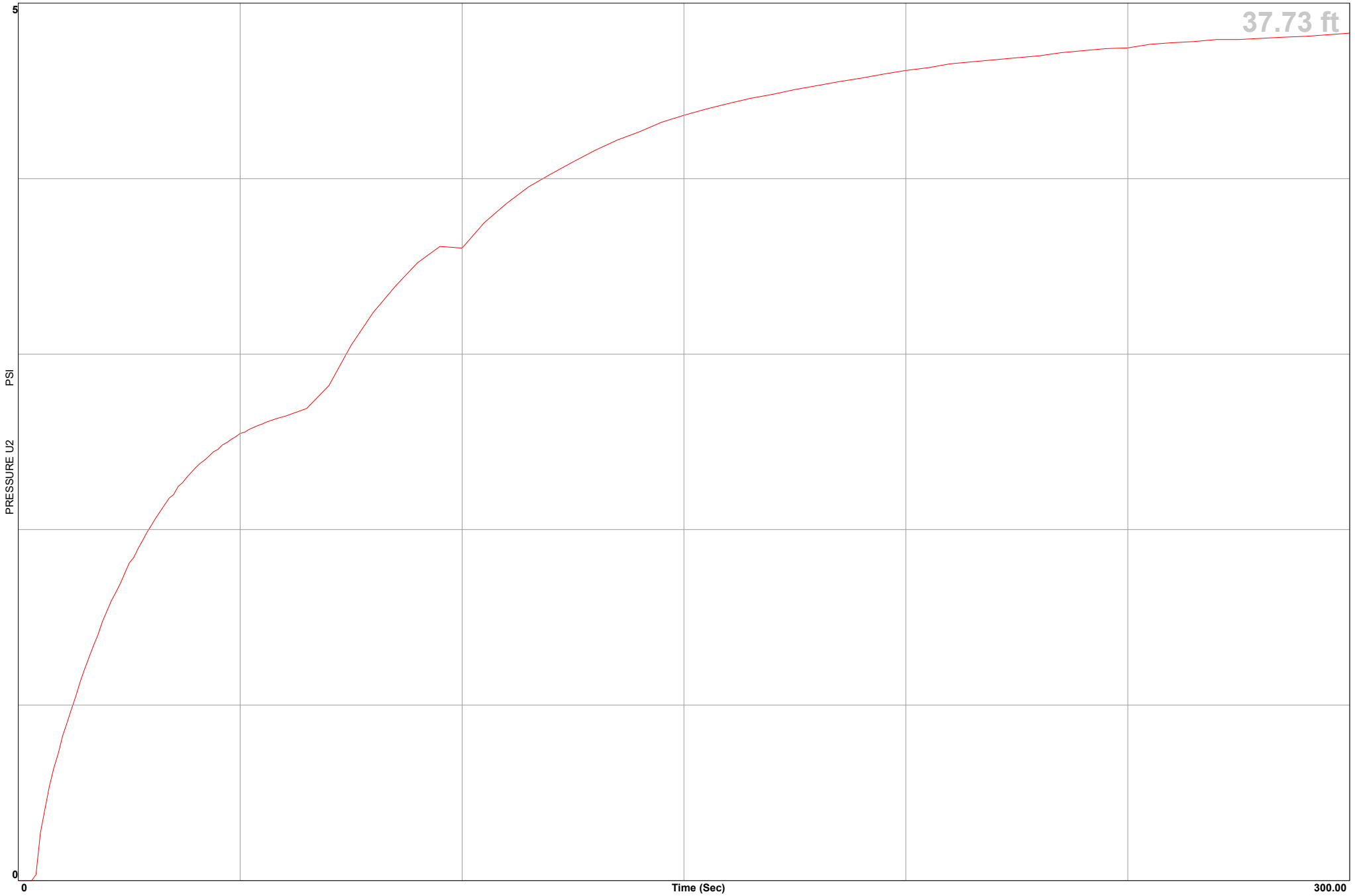
Project: Ethel Phillips Modernization

Location: 2930 21st Avenue, Sacramento, CA 95820



Raney Geotechnical

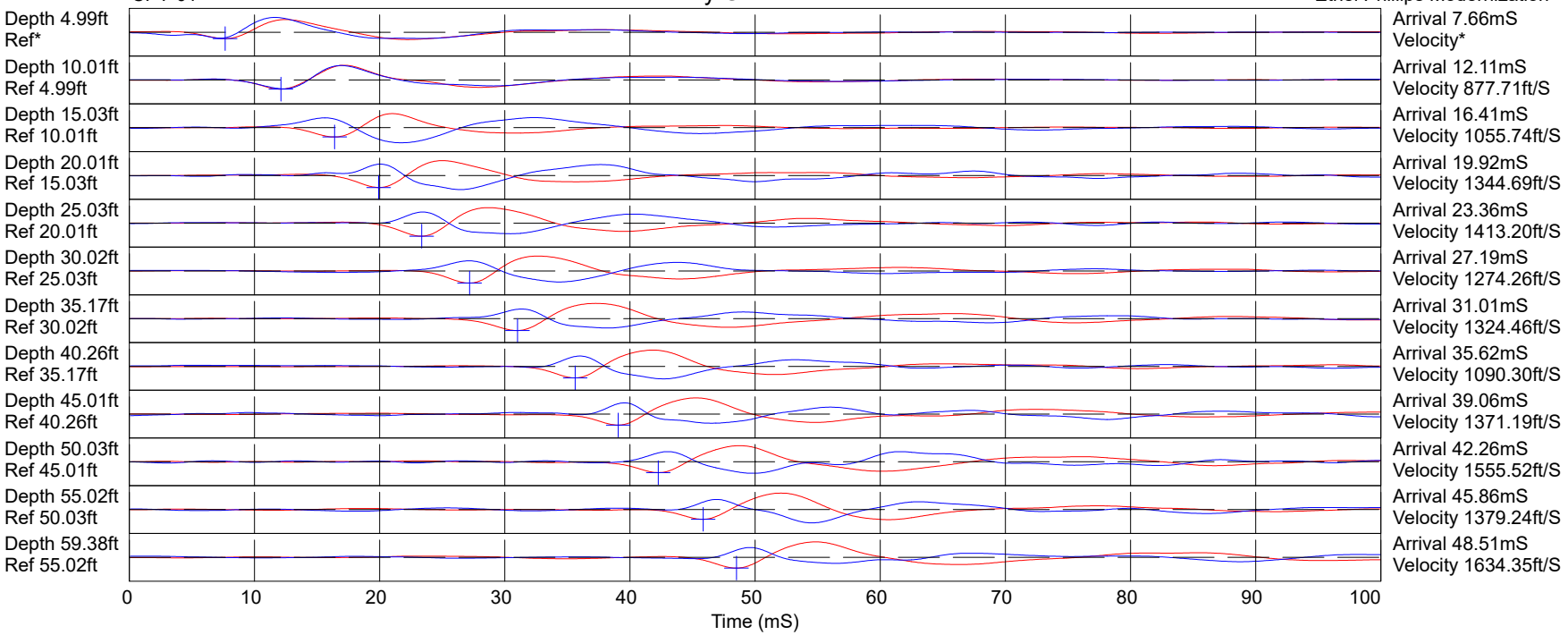
Location	Ethel Phillips Modernization	Operator	JM-IY	GPS
Job Number	3073-002-00P	Cone Number	DDG1589	
Hole Number	CPT-01	Date and Time	9/19/2024 2:07:53 PM	
Equilized Pressure	4.8	EST GW Depth During Test	26.5	



CPT-01

Raney Geotechnical

Ethel Phillips Modernization



Hammer to Rod String Distance (ft): 5.83

* = Not Determined

COMMENT:

Raney Geotechnical

https://www.raneygeotechnical.com/

CPT: CPT-02

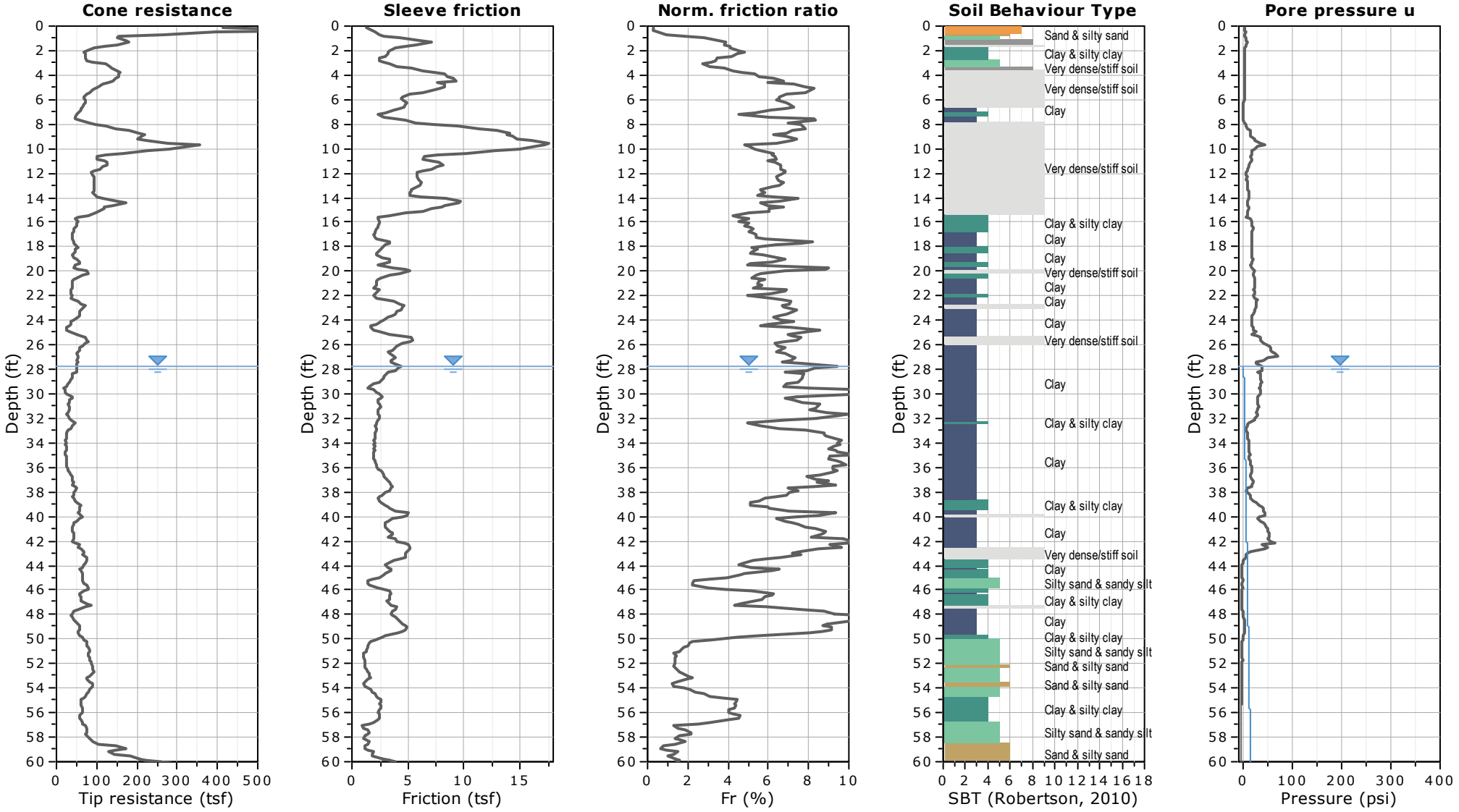
Total depth: 60.70 ft, Date: 9/19/2024

Cone Type: 15cm²

Cone Operator: JM-IY

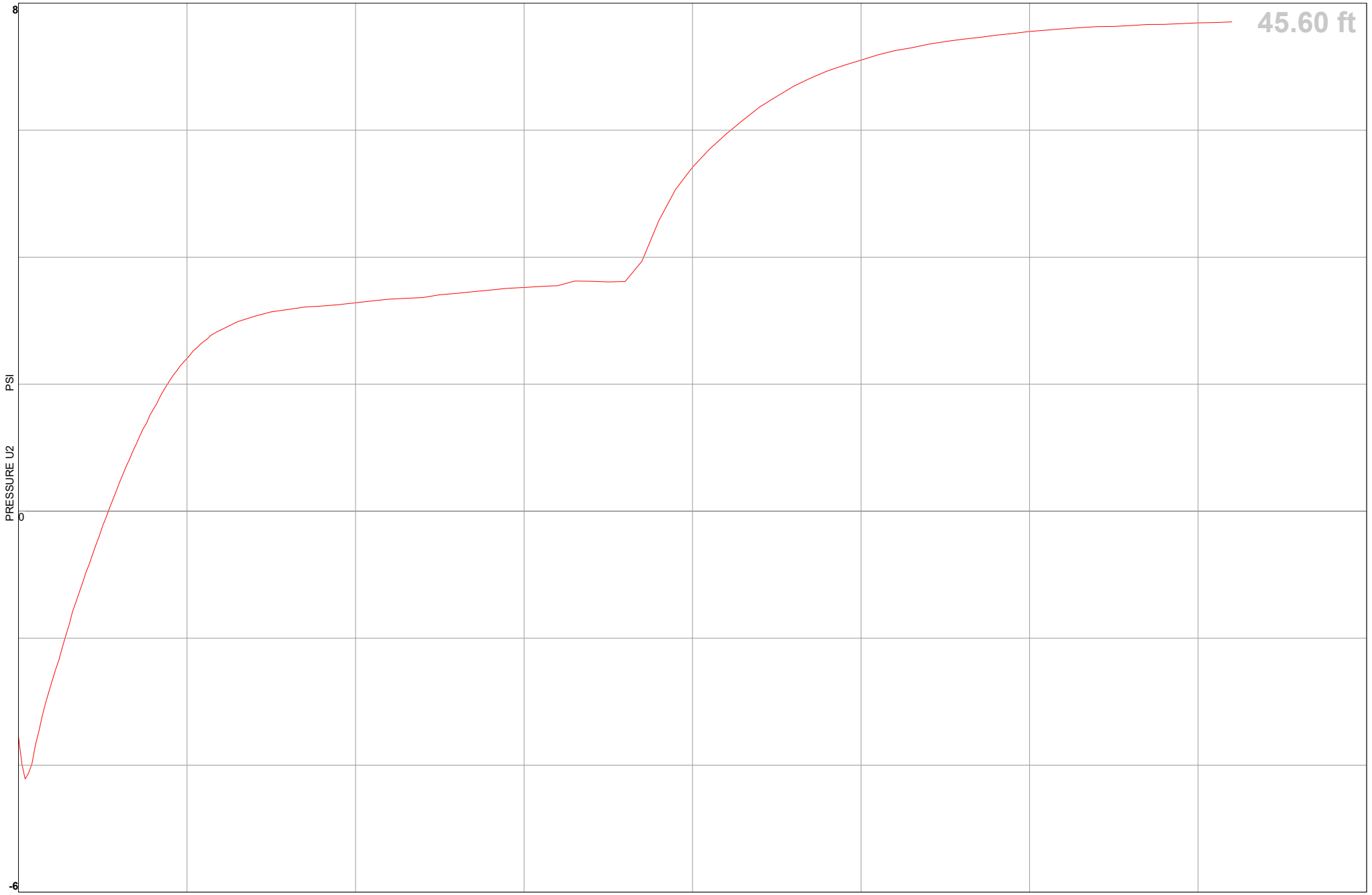
Project: Ethel Phillips Modernization

Location: 2930 21st Avenue, Sacramento, CA 95820



Raney Geotechnical

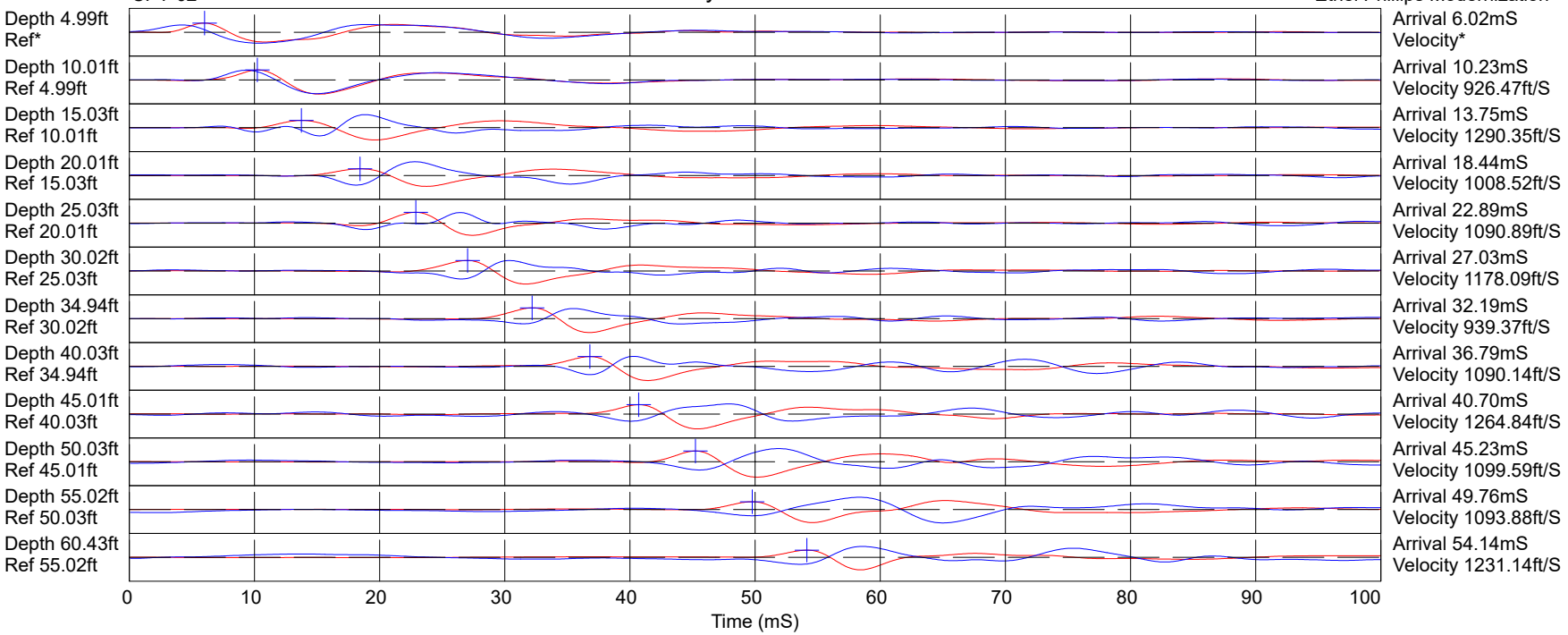
Location	Ethel Phillips Modernization	Operator	JM-IY	GPS
Job Number	3073-002-00P	Cone Number	DDG1589	
Hole Number	CPT-02	Date and Time	9/19/2024 3:06:36 PM	
Equilized Pressure	7.6	EST GW Depth During Test	27.8	



CPT-02

Raney Geotechnical

Ethel Phillips Modernization



Hammer to Rod String Distance (ft): 5.83
* = Not Determined

COMMENT:

APPENDIX C

Liquefaction Analysis Results

GeoLogismiki
Geotechnical Engineers
Merarhias 56
http://www.geologismiki.gr

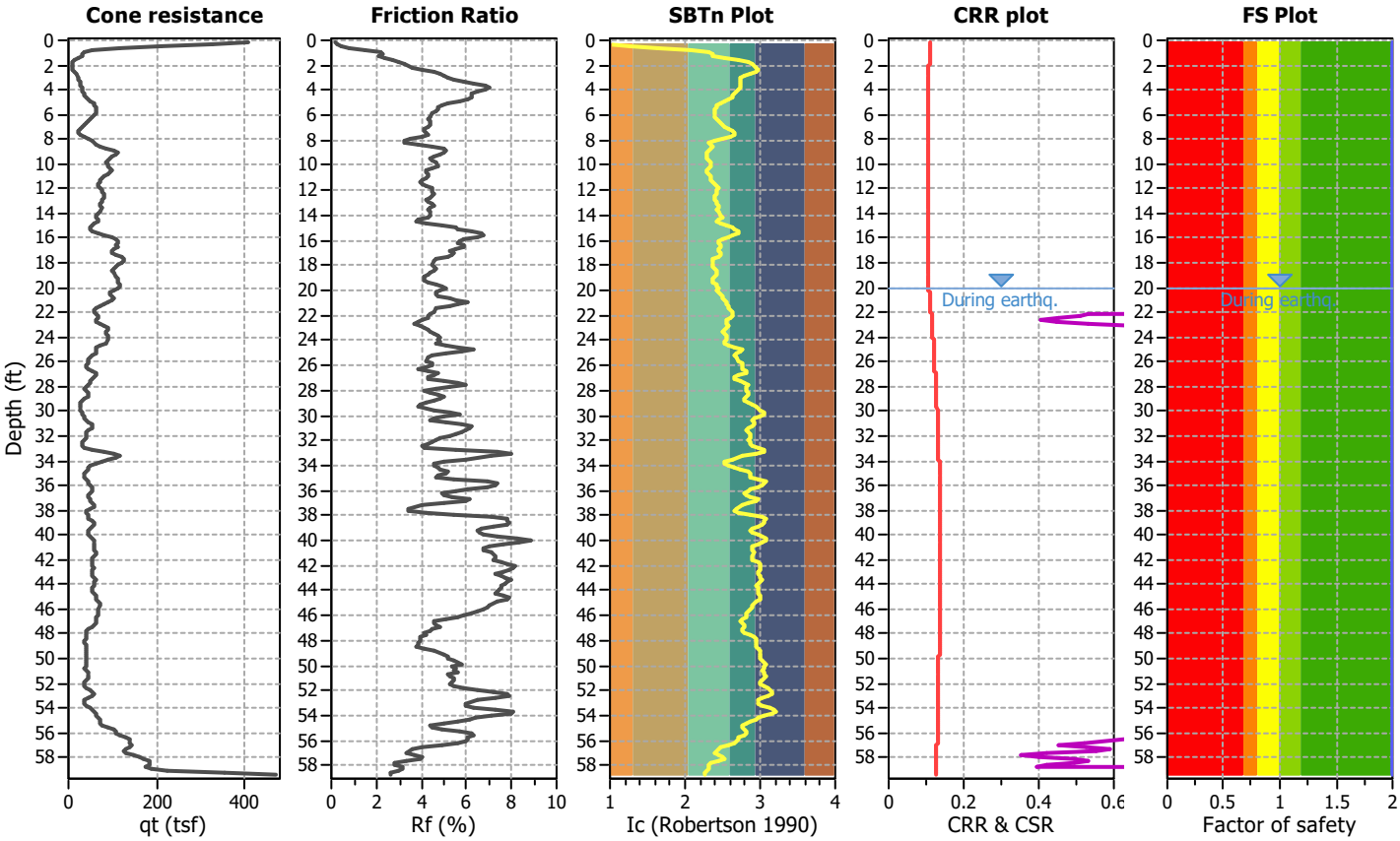
LIQUEFACTION ANALYSIS REPORT

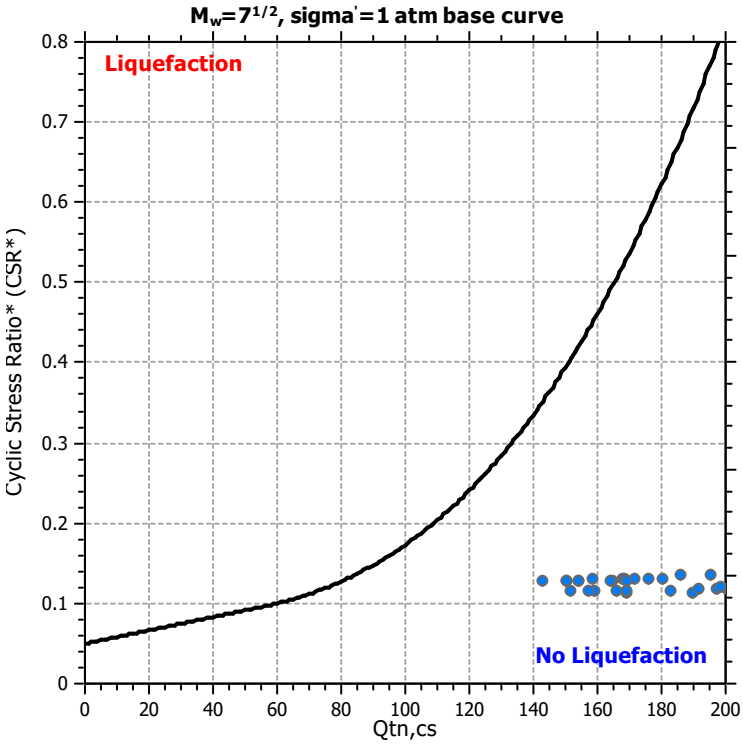
Project title : 3073-002.00P **Location : Ethel Philips ES**

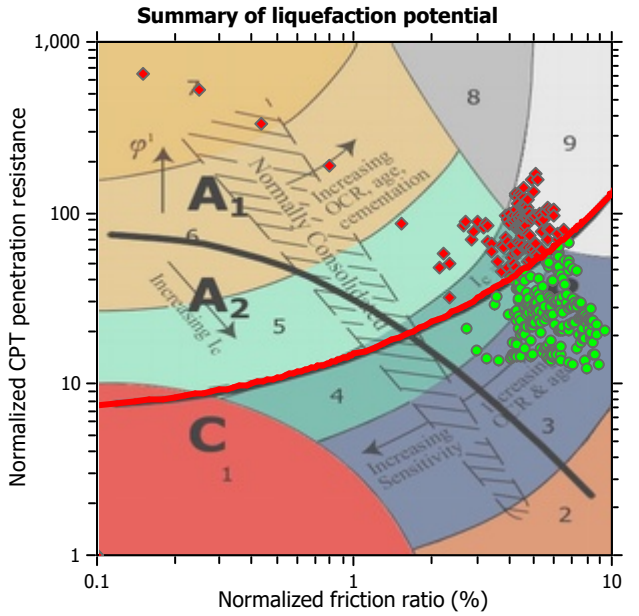
CPT file : CPT-01

Input parameters and analysis data

Analysis method:	NCEER (1998)	G.W.T. (in-situ):	26.50 ft	Use fill:	No	Clay like behavior applied:	Sands only
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	20.00 ft	Fill height:	N/A	Limit depth applied:	No
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	N/A
Earthquake magnitude M_w:	6.50	Ic cut-off value:	2.60	Trans. detect. applied:	No	MSF method:	Method based
Peak ground acceleration:	0.24	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

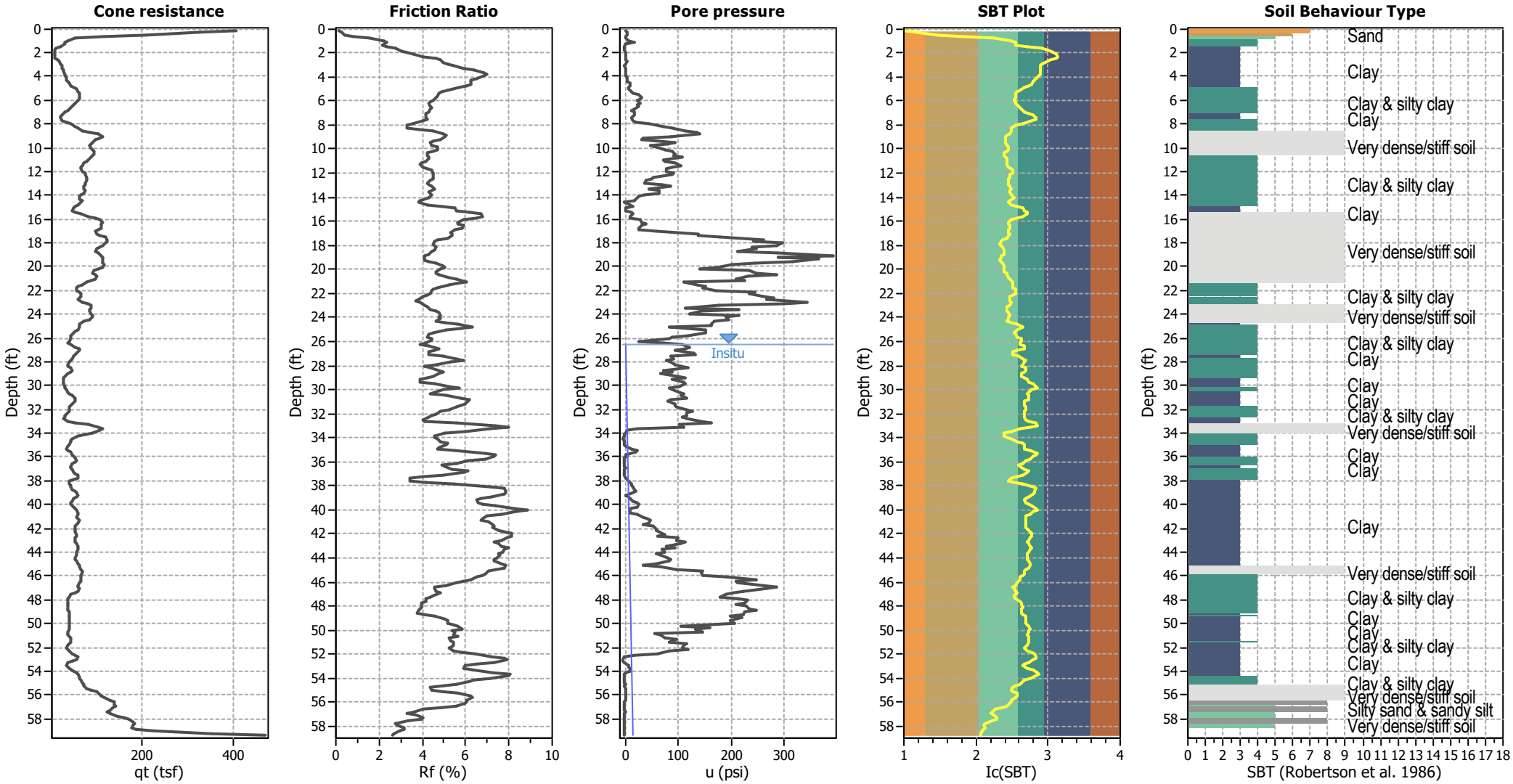






Zone A_1: Cyclic liquefaction likely depending on size and duration of cyclic loading
Zone A_2: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots



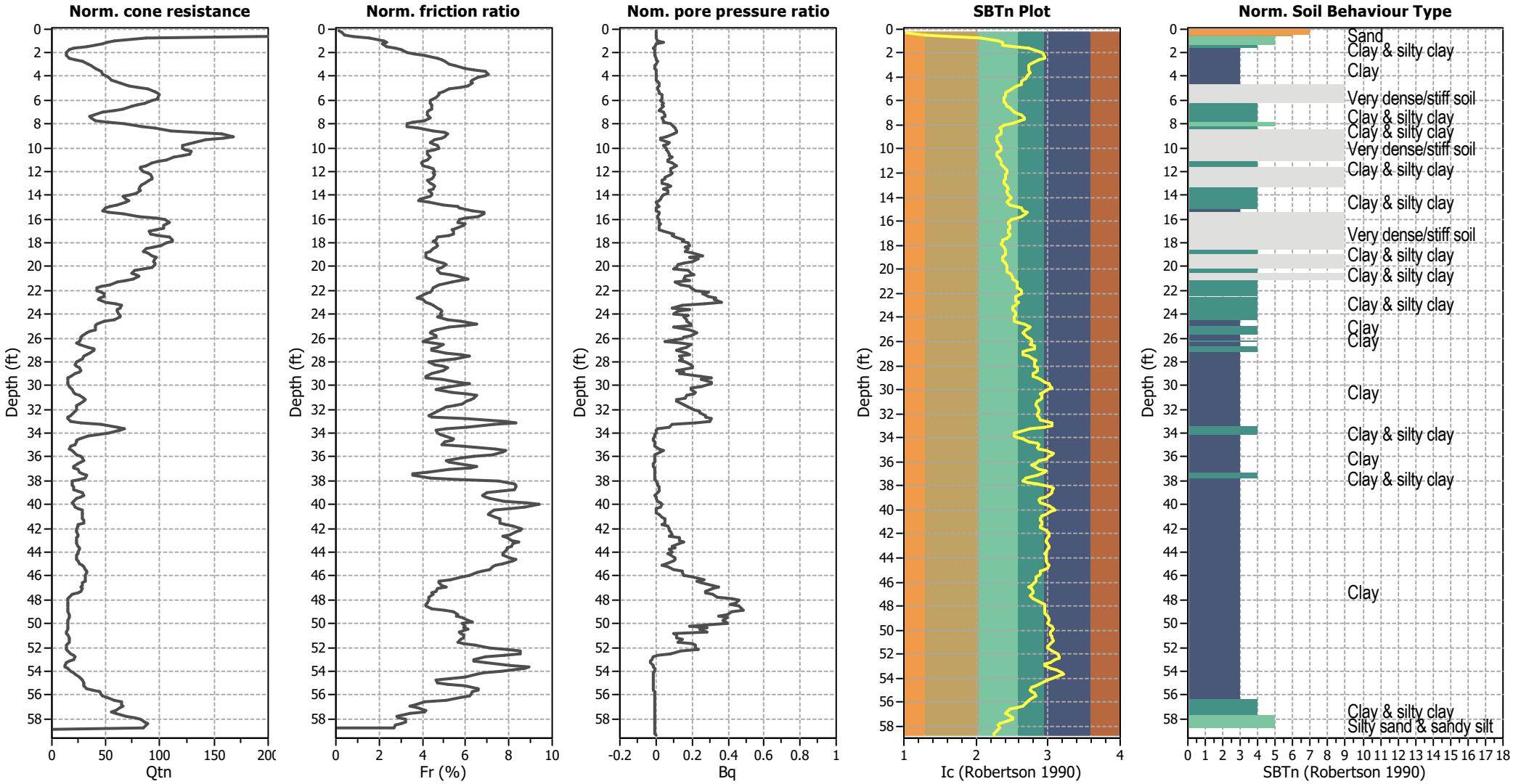
Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	20.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_o applied:	Yes
Earthquake magnitude M_w:	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.24	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	26.50 ft	Fill height:	N/A	Limit depth:	N/A

SBT legend

1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to
9. Very stiff fine grained

CPT basic interpretation plots (normalized)



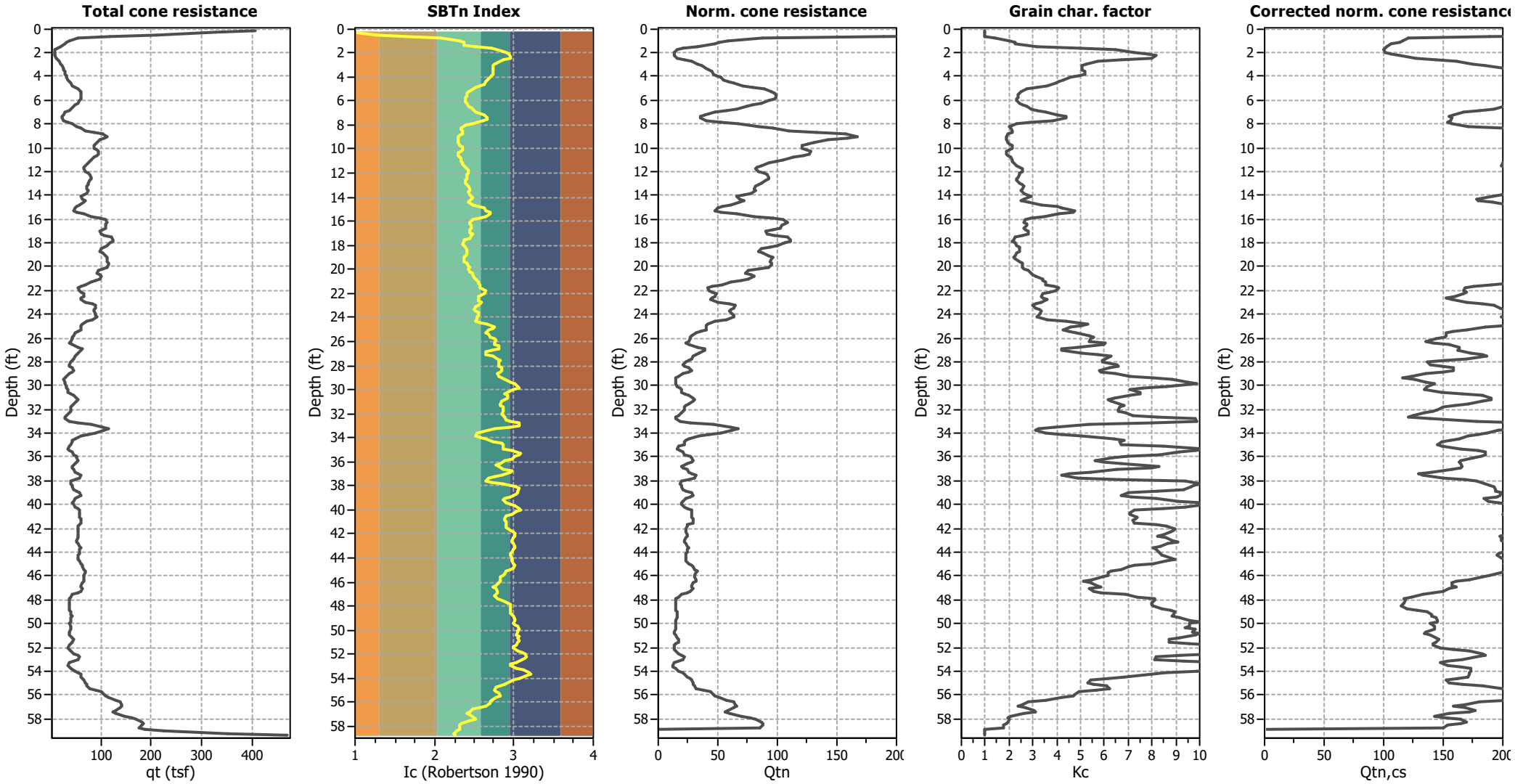
Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	20.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.24	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	26.50 ft	Fill height:	N/A	Limit depth:	N/A

SBTn legend

1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to
9. Very stiff fine grained

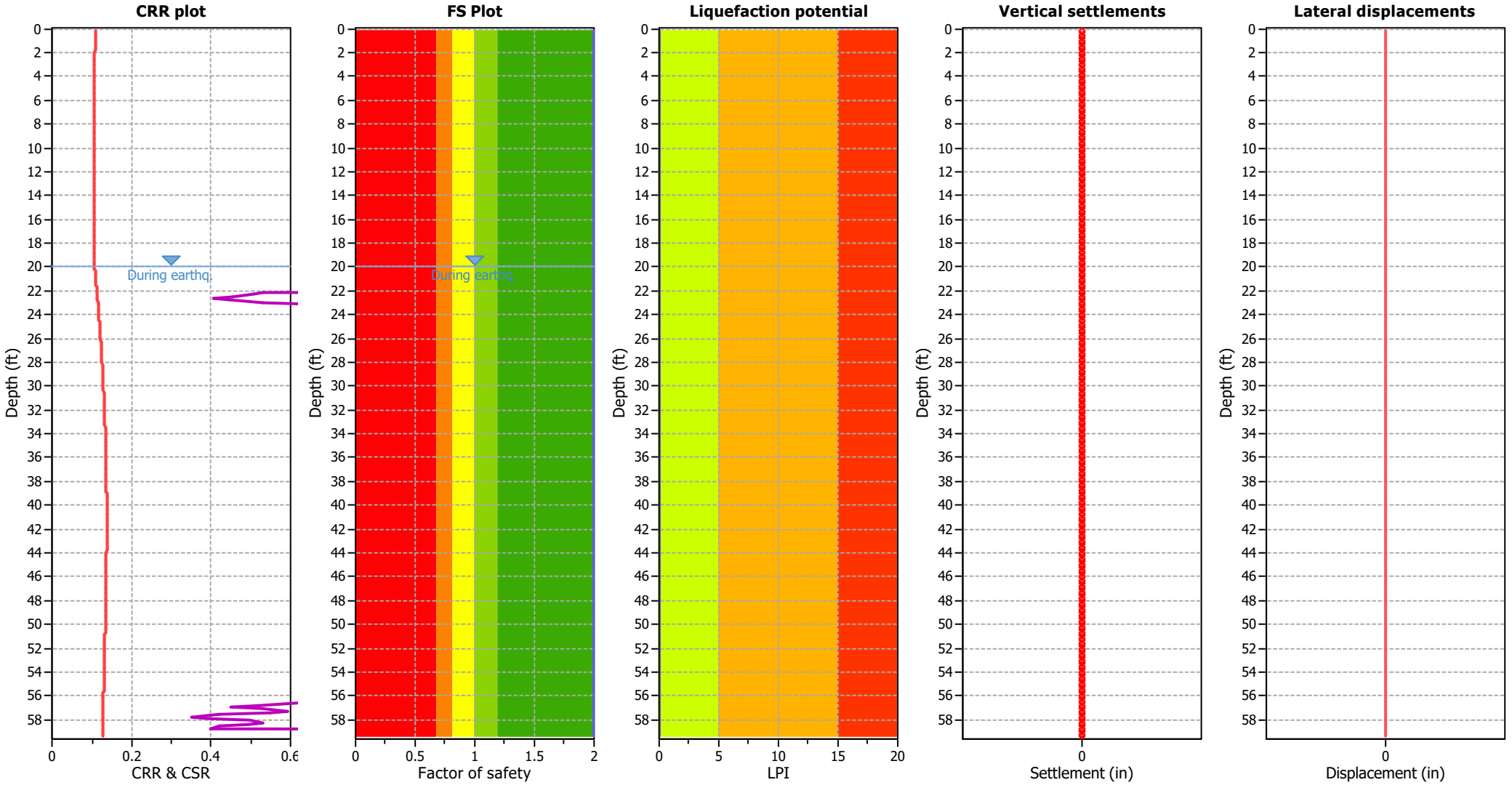
Liquefaction analysis overall plots (intermediate results)



Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	20.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_o applied:	Yes
Earthquake magnitude M_w:	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.24	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	26.50 ft	Fill height:	N/A	Limit depth:	N/A

Liquefaction analysis overall plots



Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	20.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.24	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	26.50 ft	Fill height:	N/A	Limit depth:	N/A

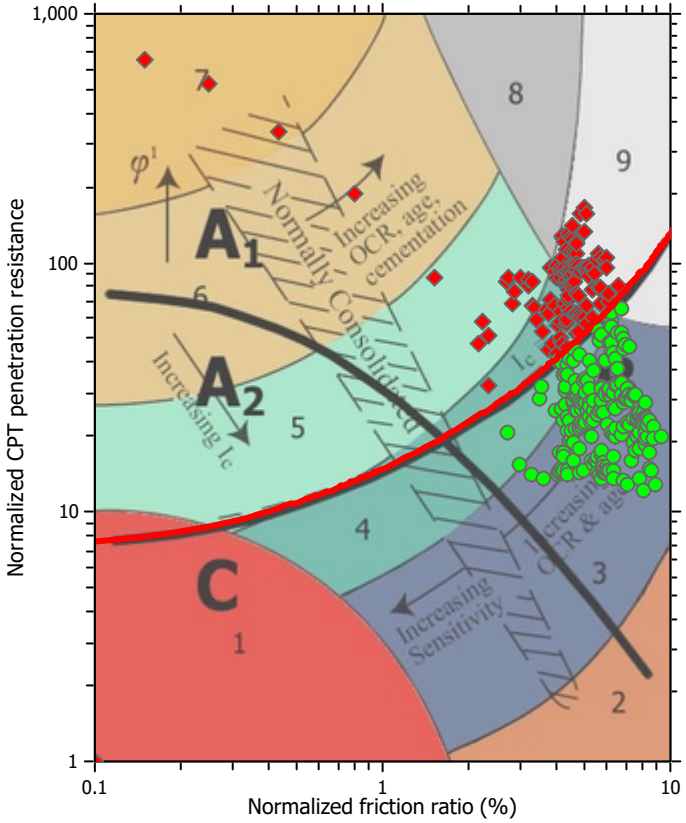
F.S. color scheme

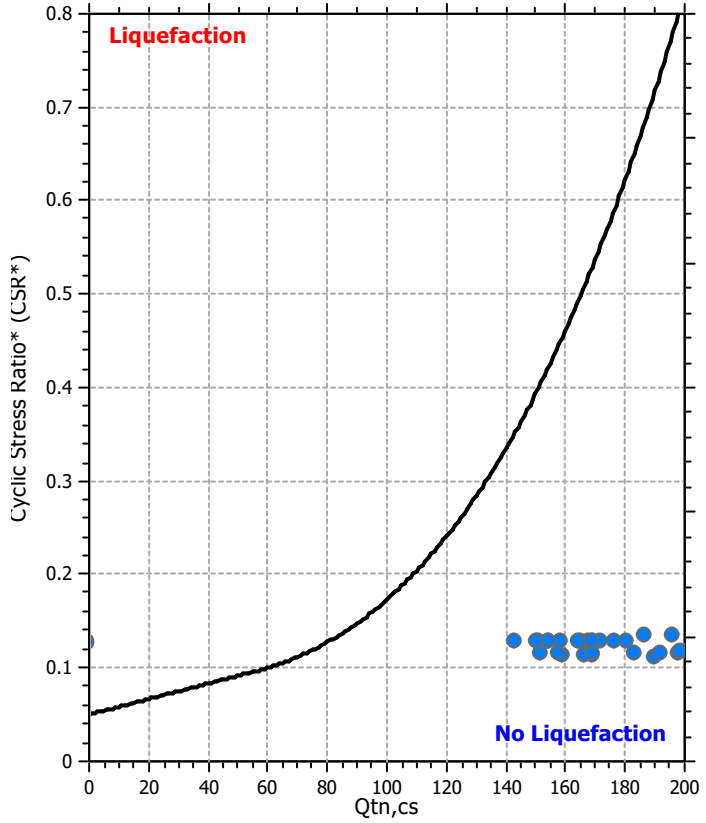
- Almost certain it will liquefy
- Very likely to liquefy
- Liquefaction and no liq. are equally likely
- Unlike to liquefy
- Almost certain it will not liquefy

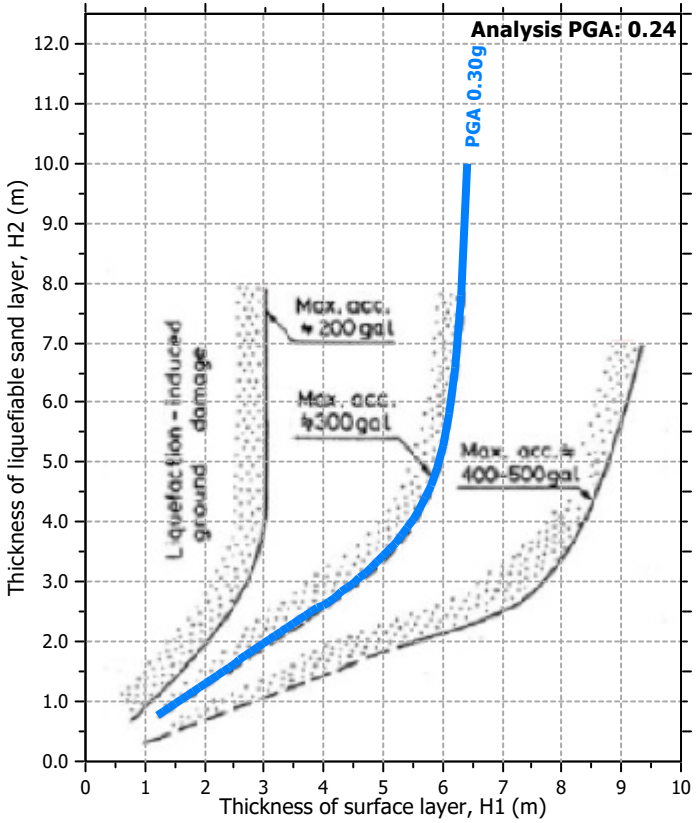
LPI color scheme

- Very high risk
- High risk
- Low risk

Liquefaction analysis summary plots



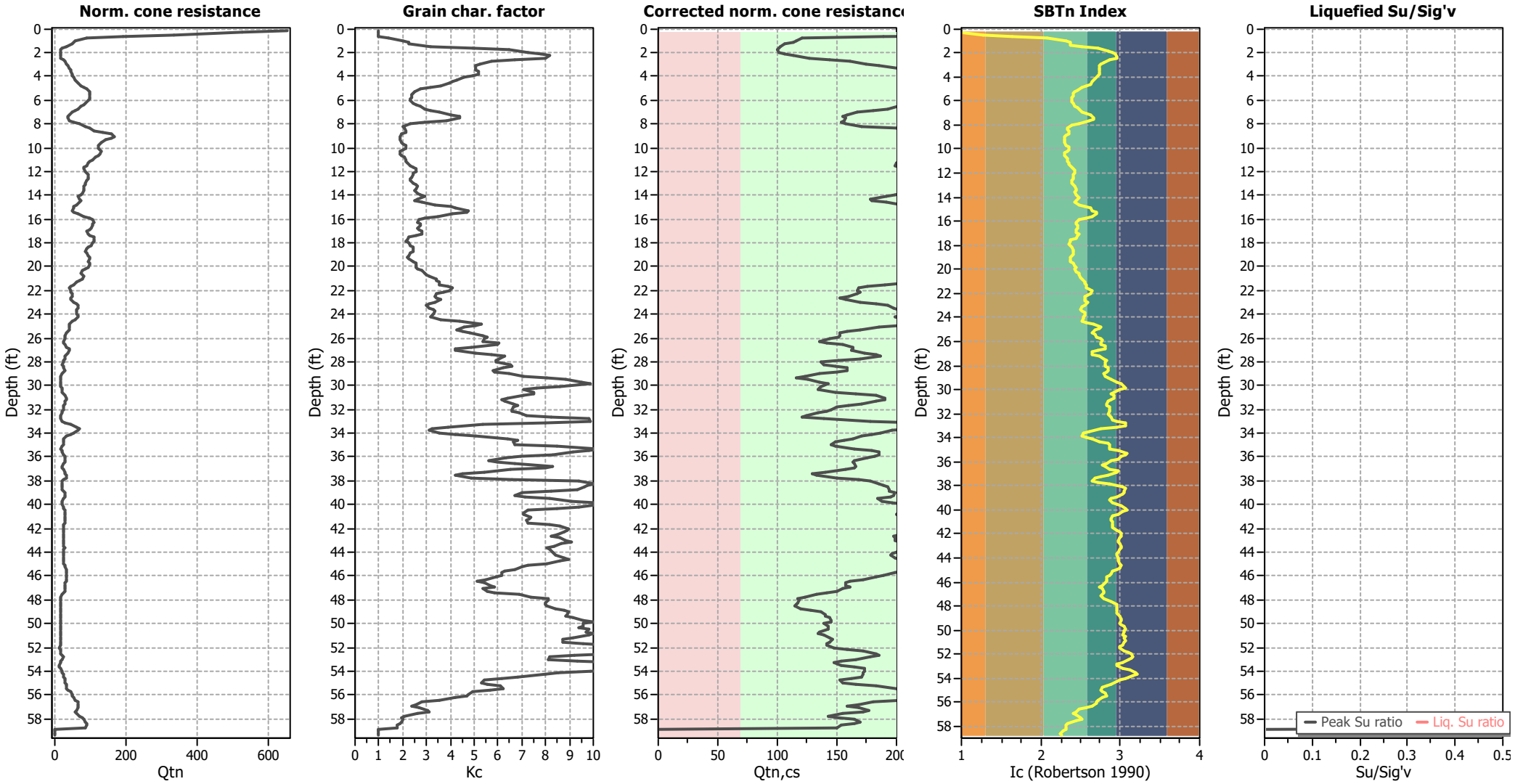




Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	20.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.24	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	26.50 ft	Fill height:	N/A	Limit depth:	N/A

Check for strength loss plots (Robertson (2010))



Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	20.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_o applied:	Yes
Earthquake magnitude M_w:	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.24	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	26.50 ft	Fill height:	N/A	Limit depth:	N/A

:: Field input data ::

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
1	0.16	450.84	0.56	1.52	0.00	121.32
2	0.33	317.79	0.72	3.14	0.00	122.89
3	0.49	214.56	1.17	3.87	0.17	122.61
4	0.66	94.61	0.84	0.95	5.04	121.52
5	0.82	44.48	0.84	0.91	14.96	118.62
6	0.98	24.70	0.80	5.16	23.10	117.45
7	1.15	39.42	0.79	16.78	25.31	116.47
8	1.31	30.71	0.63	0.49	25.25	115.17
9	1.48	18.42	0.48	-2.06	31.77	112.11
10	1.64	11.59	0.31	-1.93	41.63	108.90
11	1.80	8.79	0.27	-1.42	48.64	106.81
12	1.97	8.90	0.29	-0.97	52.21	106.44
13	2.13	8.78	0.29	-0.94	54.47	106.87
14	2.30	8.05	0.33	-0.94	55.90	107.98
15	2.46	9.58	0.43	0.38	55.21	110.29
16	2.62	12.62	0.62	0.98	49.86	113.50
17	2.79	18.36	0.90	1.88	45.41	116.30
18	2.95	21.75	1.11	-0.26	43.03	118.25
19	3.12	22.50	1.23	-2.00	42.13	119.60
20	3.28	25.15	1.43	-1.01	42.27	120.99
21	3.44	27.45	1.77	0.38	42.27	122.28
22	3.61	28.56	1.95	-0.20	42.82	123.28
23	3.77	29.13	2.10	-0.18	42.67	123.81
24	3.94	30.61	2.13	1.01	41.54	124.17
25	4.10	33.11	2.15	1.89	39.74	124.37
26	4.27	34.80	2.15	2.50	38.16	124.56
27	4.43	36.00	2.18	3.74	37.31	125.06
28	4.59	38.87	2.49	8.41	36.42	125.84
29	4.76	43.03	2.73	8.75	34.36	126.74
30	4.92	50.40	2.84	5.80	31.89	127.41
31	5.09	55.10	2.93	6.16	29.04	127.85
32	5.25	61.37	2.90	11.86	27.47	128.12
33	5.41	62.21	2.97	13.21	26.77	128.14
34	5.58	59.28	2.88	25.42	26.54	128.17
35	5.74	62.80	2.90	31.54	26.29	128.00
36	5.91	61.62	2.78	29.12	25.91	127.67
37	6.07	57.83	2.53	20.95	26.13	126.96
38	6.23	53.48	2.28	28.38	26.86	126.21
39	6.40	49.58	2.20	23.63	27.88	125.53
40	6.56	45.93	2.07	25.44	28.99	124.86
41	6.73	42.53	1.86	15.69	30.18	123.76
42	6.89	35.88	1.53	10.44	31.82	122.18
43	7.05	29.09	1.23	16.53	34.00	120.14
44	7.22	24.26	0.96	17.59	36.91	118.38
45	7.38	20.77	0.92	14.00	38.75	117.41
46	7.55	21.76	0.94	10.86	38.85	117.65
47	7.71	25.09	1.04	13.55	35.99	118.44
48	7.87	29.63	1.12	18.41	30.26	119.99

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
49	8.04	43.98	1.36	45.54	26.08	121.87
50	8.20	52.20	1.72	70.56	23.55	123.90
51	8.37	58.70	2.08	87.70	24.02	126.41
52	8.53	66.74	3.13	111.97	24.64	129.00
53	8.69	80.23	4.19	135.50	24.21	131.79
54	8.86	105.88	5.55	139.56	23.04	133.80
55	9.02	119.61	6.17	84.94	22.20	134.48
56	9.19	109.01	5.27	32.87	22.24	133.78
57	9.35	92.52	4.22	29.55	22.30	132.41
58	9.51	91.69	3.90	92.76	22.61	131.44
59	9.68	87.94	3.90	79.81	23.29	131.30
60	9.84	83.81	4.10	47.88	24.33	131.35
61	10.01	84.01	4.11	66.29	24.46	131.50
62	10.17	90.55	4.10	73.31	23.55	131.59
63	10.33	94.97	4.08	89.07	22.36	131.62
64	10.50	98.22	3.96	92.75	22.40	131.59
65	10.66	90.53	4.05	89.80	23.06	131.37
66	10.83	84.62	3.85	106.54	23.88	130.84
67	10.99	82.02	3.35	72.80	24.20	130.02
68	11.15	75.53	3.07	73.51	24.34	129.12
69	11.32	70.91	2.84	93.31	24.73	128.47
70	11.48	69.95	2.70	105.71	25.72	128.10
71	11.65	63.74	2.80	87.33	27.08	128.05
72	11.81	61.71	2.91	77.55	27.90	128.43
73	11.98	70.38	3.15	77.85	27.76	128.91
74	12.14	71.68	3.28	91.18	27.03	129.55
75	12.30	76.34	3.53	88.74	26.88	129.93
76	12.47	78.10	3.56	53.37	26.45	130.20
77	12.63	80.63	3.54	51.18	26.16	130.05
78	12.80	78.17	3.30	37.91	25.99	129.68
79	12.96	75.18	3.10	36.06	26.78	129.46
80	13.12	71.58	3.36	70.47	27.66	129.46
81	13.29	71.80	3.39	84.53	28.15	129.48
82	13.45	72.58	3.16	45.38	27.98	129.26
83	13.62	70.57	3.08	64.67	27.43	129.17
84	13.78	75.78	3.23	64.64	28.36	129.02
85	13.94	64.89	3.09	34.80	29.26	128.31
86	14.11	56.78	2.40	25.11	30.26	127.42
87	14.27	60.68	2.45	18.93	28.22	127.08
88	14.44	74.14	2.60	18.08	27.38	127.52
89	14.60	68.72	2.72	-1.94	29.49	127.94
90	14.76	52.82	3.01	9.09	33.17	127.95
91	14.93	54.07	2.92	13.05	36.79	127.65
92	15.09	49.20	2.71	0.81	37.90	127.17
93	15.26	44.46	2.61	1.68	40.58	127.45
94	15.42	46.83	3.38	10.90	40.33	129.10
95	15.58	65.50	4.52	14.85	37.32	131.39
96	15.75	84.30	5.44	8.43	33.78	133.22

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
97	15.91	95.11	5.94	9.10	30.19	134.35
98	16.08	114.96	6.08	27.87	28.52	134.97
99	16.24	113.91	6.39	31.64	28.06	135.26
100	16.40	106.73	6.43	37.84	29.10	135.46
101	16.57	109.17	6.72	30.14	29.21	135.31
102	16.73	110.60	6.06	25.36	28.36	134.85
103	16.90	107.07	5.27	24.30	28.50	134.01
104	17.06	90.71	5.07	58.85	29.57	133.60
105	17.22	91.61	5.46	138.87	29.33	133.74
106	17.39	111.32	5.49	136.87	27.97	134.21
107	17.55	112.65	5.70	178.83	25.44	134.57
108	17.72	127.30	5.66	262.41	24.96	134.68
109	17.88	119.41	5.59	243.02	24.63	134.57
110	18.04	113.52	5.41	298.63	25.39	134.37
111	18.21	113.42	5.40	287.00	26.18	133.98
112	18.37	102.22	5.00	240.02	26.79	133.30
113	18.54	94.16	4.31	248.92	27.10	132.44
114	18.70	95.13	4.04	213.06	27.11	131.93
115	18.86	92.75	4.22	289.59	26.00	132.13
116	19.03	107.58	4.43	393.91	25.33	132.69
117	19.19	113.25	4.78	290.00	24.97	133.10
118	19.36	105.30	4.81	365.84	25.58	133.37
119	19.52	108.36	4.97	316.90	26.90	133.95
120	19.69	112.19	6.00	244.91	27.65	134.54
121	19.85	113.14	6.05	200.81	27.96	134.79
122	20.01	113.48	5.52	173.20	27.63	134.23
123	20.18	105.84	4.82	140.71	28.05	133.09
124	20.34	85.39	4.07	233.54	29.47	132.22
125	20.51	83.64	4.32	248.15	30.18	132.10
126	20.67	96.42	4.74	286.85	30.89	133.53
127	20.83	105.53	6.52	230.81	31.41	134.26
128	21.00	94.25	5.77	209.93	33.54	134.34
129	21.16	81.03	5.23	225.98	33.48	133.01
130	21.33	85.13	4.01	111.54	34.25	131.37
131	21.49	64.86	3.25	135.55	34.27	129.34
132	21.65	55.00	2.59	152.00	36.27	127.58
133	21.82	54.20	2.32	144.82	37.22	126.63
134	21.98	50.88	2.45	170.81	36.56	126.78
135	22.15	58.57	2.67	246.02	35.18	127.40
136	22.31	66.31	2.77	235.44	33.45	127.70
137	22.47	62.67	2.60	261.89	32.86	127.18
138	22.64	55.90	2.15	279.94	33.22	126.32
139	22.80	55.00	2.06	265.98	34.65	126.59
140	22.97	57.42	2.90	345.60	33.12	128.30
141	23.13	83.66	3.60	300.83	31.37	130.21
142	23.29	94.11	4.03	177.00	30.78	131.21
143	23.46	81.28	4.12	113.23	31.71	131.45
144	23.62	82.11	4.03	215.67	32.84	131.40

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
145	23.79	86.00	4.08	143.96	33.00	131.45
146	23.95	81.36	4.20	120.77	32.51	131.69
147	24.11	90.08	4.31	216.07	32.31	132.02
148	24.28	92.79	4.53	190.69	31.79	131.77
149	24.44	80.91	3.77	195.80	34.49	131.58
150	24.61	68.39	4.33	168.25	38.76	130.84
151	24.77	57.27	3.92	163.36	43.37	130.37
152	24.93	53.77	3.56	161.34	42.16	129.58
153	25.10	66.66	3.17	83.30	39.84	128.71
154	25.26	59.01	2.71	150.60	38.11	127.65
155	25.43	51.08	2.32	152.34	39.38	126.26
156	25.59	46.79	2.00	152.88	40.98	125.15
157	25.75	44.09	1.93	118.03	43.78	124.66
158	25.92	39.01	2.09	89.41	44.47	124.33
159	26.08	43.58	1.80	82.08	43.87	123.67
160	26.25	42.87	1.46	26.00	43.58	122.68
161	26.41	33.72	1.49	72.19	46.97	122.80
162	26.57	35.12	1.99	108.57	46.65	124.61
163	26.74	54.44	2.63	121.98	41.24	126.62
164	26.90	67.50	2.80	113.30	37.72	127.53
165	27.07	59.77	2.59	93.29	37.94	127.40
166	27.23	52.23	2.52	129.40	42.21	127.55
167	27.40	50.45	3.22	131.98	45.57	127.76
168	27.56	49.33	3.01	85.30	48.01	127.63
169	27.72	43.59	2.54	91.83	46.93	126.28
170	27.89	43.93	1.87	77.10	46.39	124.43
171	28.05	37.33	1.52	85.77	46.23	122.66
172	28.22	32.49	1.41	94.83	49.11	122.41
173	28.38	35.02	1.82	103.72	49.24	123.60
174	28.54	43.89	2.25	118.51	47.66	125.11
175	28.71	47.25	2.41	70.62	45.62	125.48
176	28.87	44.24	2.01	88.88	46.10	124.39
177	29.04	35.34	1.46	65.11	48.65	122.14
178	29.20	25.96	1.11	100.25	51.55	119.94
179	29.36	26.54	1.02	111.90	55.44	118.85
180	29.53	25.71	1.08	89.31	58.76	119.91
181	29.69	24.78	1.62	110.94	61.36	120.99
182	29.86	27.01	1.61	113.31	62.61	121.83
183	30.02	27.23	1.56	102.42	57.74	121.67
184	30.18	32.92	1.39	82.69	53.65	121.56
185	30.35	32.30	1.46	89.34	51.45	121.78
186	30.51	32.90	1.61	102.45	53.27	123.35
187	30.68	37.46	2.37	110.67	53.25	125.30
188	30.84	44.20	2.88	103.81	51.51	127.26
189	31.00	51.23	3.29	116.95	48.51	128.43
190	31.17	57.05	3.43	86.85	47.46	128.62
191	31.33	50.09	3.02	79.04	47.86	127.93
192	31.50	44.13	2.55	93.29	49.56	126.48

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
193	31.66	39.94	2.11	94.61	50.39	125.16
194	31.82	38.11	1.94	96.48	49.71	124.25
195	31.99	39.61	1.84	116.32	49.18	123.82
196	32.15	38.17	1.79	128.14	49.40	123.23
197	32.32	33.67	1.57	117.16	50.52	122.19
198	32.48	31.01	1.27	116.65	51.96	120.63
199	32.64	27.36	1.04	107.97	56.18	119.97
200	32.81	25.41	1.34	115.93	62.59	121.87
201	32.97	28.18	2.39	144.37	62.82	126.21
202	33.14	48.58	4.28	161.36	55.28	130.68
203	33.30	79.09	6.25	103.12	43.73	133.82
204	33.46	110.18	6.79	110.26	36.27	134.99
205	33.63	121.33	5.63	22.11	32.20	134.57
206	33.79	108.37	4.71	2.15	31.68	133.18
207	33.96	88.87	4.16	-0.06	34.23	131.67
208	34.12	74.62	3.57	-2.29	37.91	130.03
209	34.28	61.29	2.87	-3.56	42.29	128.21
210	34.45	46.49	2.41	-3.96	48.48	126.32
211	34.61	35.39	2.13	-3.23	50.44	125.23
212	34.78	47.76	2.06	-1.91	49.59	124.59
213	34.94	44.48	1.89	-1.97	49.89	124.15
214	35.10	31.78	1.83	0.25	57.30	124.15
215	35.27	33.57	2.29	10.80	64.21	125.05
216	35.43	35.27	2.88	23.04	62.54	126.71
217	35.60	44.64	3.26	18.31	59.82	127.71
218	35.76	46.80	3.19	1.41	56.54	128.16
219	35.93	47.80	3.17	1.99	50.81	128.03
220	36.09	56.79	2.84	-1.90	48.22	127.82
221	36.25	53.56	2.80	-2.20	44.72	127.37
222	36.42	56.37	2.50	-2.90	46.48	126.97
223	36.58	47.08	2.56	-3.36	49.93	126.54
224	36.75	39.30	2.59	-2.73	56.55	126.46
225	36.91	41.82	2.69	-0.62	55.38	126.48
226	37.07	50.47	2.52	-2.02	48.91	125.91
227	37.24	49.01	1.84	-1.92	43.93	124.79
228	37.40	48.95	1.59	-1.84	39.61	124.37
229	37.57	62.73	2.04	-2.12	37.81	125.43
230	37.73	66.28	2.48	-1.05	41.43	126.66
231	37.89	45.41	2.76	2.49	49.42	127.12
232	38.06	38.34	2.91	6.27	60.78	127.26
233	38.22	40.26	3.17	11.90	63.37	127.70
234	38.39	42.39	3.38	11.89	62.31	128.20
235	38.55	44.30	3.42	14.53	61.76	128.56
236	38.71	44.31	3.56	15.92	60.69	128.89
237	38.88	47.63	3.71	18.97	56.25	129.49
238	39.04	62.19	3.87	13.94	51.25	129.88
239	39.21	59.74	3.81	1.44	49.76	130.03
240	39.37	54.83	3.80	7.03	51.60	129.54

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
241	39.53	51.24	3.35	8.54	55.98	128.73
242	39.70	43.56	3.00	13.52	59.72	128.56
243	39.86	42.69	3.84	21.25	63.57	128.87
244	40.03	43.57	3.99	25.54	64.33	129.71
245	40.19	48.00	4.19	22.30	60.75	130.10
246	40.35	55.70	4.12	8.86	57.21	130.36
247	40.52	56.99	4.07	9.80	52.26	130.39
248	40.68	60.13	3.95	9.77	51.52	130.23
249	40.85	56.67	3.83	22.12	51.41	130.18
250	41.01	56.80	3.99	32.24	52.67	130.42
251	41.17	57.77	4.38	42.66	52.48	130.99
252	41.34	62.94	4.65	45.85	52.05	131.26
253	41.50	61.25	4.38	44.05	52.12	131.12
254	41.67	56.32	4.15	32.38	56.15	130.70
255	41.83	50.24	4.22	51.31	57.73	130.62
256	41.99	55.24	4.40	57.50	59.19	130.71
257	42.16	52.25	4.40	59.20	58.98	130.75
258	42.32	51.27	4.25	63.49	58.44	130.70
259	42.49	56.45	4.27	74.55	57.34	130.59
260	42.65	55.03	4.14	61.32	56.30	130.35
261	42.81	52.17	3.80	99.59	57.70	130.25
262	42.98	50.74	4.24	97.31	58.79	130.12
263	43.14	49.86	4.04	113.29	59.73	130.41
264	43.31	51.99	4.30	104.57	58.10	130.69
265	43.47	58.84	4.50	78.64	56.72	131.18
266	43.64	59.78	4.67	93.10	55.51	131.33
267	43.80	58.64	4.43	68.27	56.09	131.15
268	43.96	55.16	4.27	75.03	56.50	130.73
269	44.13	54.85	4.05	57.46	56.74	130.46
270	44.29	55.49	4.05	67.50	57.09	130.28
271	44.46	52.41	4.03	81.33	58.52	130.41
272	44.62	51.13	4.34	84.33	59.08	130.66
273	44.78	56.00	4.48	83.49	57.80	131.00
274	44.95	60.39	4.44	57.12	55.49	131.15
275	45.11	61.67	4.35	34.18	52.13	131.14
276	45.28	62.38	4.32	66.92	51.16	131.31
277	45.44	65.52	4.61	97.60	49.85	131.64
278	45.60	69.15	4.74	145.73	47.99	131.76
279	45.77	71.01	4.35	143.47	47.51	131.35
280	45.93	62.22	3.92	144.90	47.44	130.53
281	46.10	59.42	3.53	191.17	46.25	130.13
282	46.26	70.16	3.70	248.49	44.38	129.54
283	46.42	62.99	3.03	210.78	42.66	128.71
284	46.59	57.84	2.46	212.50	44.13	127.97
285	46.75	55.84	3.02	261.85	45.14	127.81
286	46.92	56.40	2.93	287.38	46.04	128.13
287	47.08	56.83	2.83	268.55	43.81	127.94
288	47.24	63.61	2.68	223.22	44.51	127.27

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
289	47.41	48.29	2.32	203.03	45.86	125.87
290	47.57	40.41	1.70	190.37	50.75	124.00
291	47.74	35.40	1.53	179.35	52.79	122.42
292	47.90	33.31	1.42	210.90	55.74	121.99
293	48.06	35.36	1.49	230.94	55.85	122.02
294	48.23	34.81	1.55	226.16	55.25	122.10
295	48.39	35.26	1.44	210.56	55.19	121.86
296	48.56	34.33	1.36	227.92	55.52	121.64
297	48.72	32.85	1.45	235.28	57.07	122.15
298	48.88	34.13	1.75	247.41	58.56	123.29
299	49.05	37.55	2.07	226.30	59.18	124.41
300	49.21	38.40	2.23	222.70	58.89	124.97
301	49.38	39.20	2.16	197.32	58.64	124.96
302	49.54	38.32	2.05	219.87	59.92	125.24
303	49.70	37.60	2.50	199.14	61.51	125.25
304	49.87	35.58	2.23	201.50	63.13	125.17
305	50.03	34.58	2.06	207.07	61.61	124.56
306	50.20	38.81	1.97	103.59	61.46	124.98
307	50.36	39.18	2.54	158.91	60.89	125.13
308	50.52	38.01	2.15	133.40	62.49	124.97
309	50.69	33.76	1.90	145.28	61.98	124.09
310	50.85	36.74	1.86	54.67	63.29	123.84
311	51.02	34.98	2.02	66.75	62.38	124.56
312	51.18	40.92	2.39	73.65	60.00	125.52
313	51.35	47.65	2.51	97.11	58.19	126.00
314	51.51	42.76	2.34	81.76	58.13	125.72
315	51.67	38.67	2.14	114.99	61.50	125.03
316	51.84	34.90	2.10	111.33	65.37	124.70
317	52.00	32.31	2.23	108.30	68.58	125.04
318	52.17	34.42	2.54	119.44	69.81	126.29
319	52.33	40.10	3.26	82.02	68.98	127.77
320	52.49	43.83	3.73	59.49	65.58	129.22
321	52.66	54.13	4.10	15.76	60.21	130.04
322	52.82	63.37	3.99	-2.33	55.99	130.03
323	52.99	58.95	3.38	-5.20	55.88	128.81
324	53.15	43.67	2.55	-4.43	60.55	126.83
325	53.31	33.79	2.15	-1.25	66.99	125.41
326	53.48	35.21	2.40	5.02	72.72	125.64
327	53.64	34.33	2.99	6.28	73.79	126.82
328	53.81	38.28	3.33	9.10	69.99	127.97
329	53.97	49.53	3.46	8.56	62.80	128.77
330	54.13	57.46	3.51	0.84	57.51	129.33
331	54.30	59.15	3.67	-1.14	55.21	129.68
332	54.46	61.03	3.73	-1.46	50.50	129.32
333	54.63	63.38	2.88	-1.27	47.38	128.83
334	54.79	66.16	2.89	-1.25	44.11	128.31
335	54.95	69.25	2.95	-1.79	43.43	128.85
336	55.12	72.57	3.41	-0.59	44.66	129.77

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
337	55.28	71.35	4.04	-1.33	47.11	131.04
338	55.45	73.47	4.85	-0.97	47.65	132.47
339	55.61	88.44	5.71	-0.68	45.02	133.89
340	55.77	106.13	6.37	-0.59	41.68	134.89
341	55.94	111.82	6.48	-0.89	40.80	135.37
342	56.10	104.00	6.65	-0.86	40.30	135.47
343	56.27	112.08	6.51	0.23	37.98	135.57
344	56.43	132.84	6.35	-0.88	34.16	135.63
345	56.59	140.84	6.15	-1.26	29.67	134.89
346	56.76	143.77	4.24	-1.93	28.00	134.18
347	56.92	135.66	4.76	-2.58	26.65	133.61
348	57.09	144.06	4.98	-1.88	28.62	134.12
349	57.25	132.33	5.40	-1.76	30.96	134.22
350	57.41	111.64	5.27	-1.06	31.39	133.65
351	57.58	127.25	4.04	-1.33	28.09	132.83
352	57.74	149.81	3.63	-2.10	23.92	132.65
353	57.91	160.94	4.47	-2.09	22.88	133.75
354	58.07	172.77	5.54	-1.99	23.50	135.11
355	58.23	180.28	6.09	-2.14	22.85	135.67
356	58.40	190.42	5.43	-2.22	21.97	135.38
357	58.56	179.75	4.80	-2.48	20.74	134.50
358	58.73	175.40	4.29	-2.52	20.93	134.09
359	58.89	174.11	4.77	-2.63	N/A	87.36
360	59.06	208.17	-272311.73	-2.64	N/A	87.36
361	59.22	291.28	-272311.73	-3.67	N/A	87.36
362	59.38	559.03	-272311.73	-1.54	N/A	87.36

Abbreviations

Depth: Depth from free surface, at which CPT was performed (ft)
q_c: Measured cone resistance (tsf)
f_s: Sleeve friction resistance (tsf)
u: Pore pressure (tsf)
Fines content: Percentage of fines in soil (%)
Unit weight: Bulk soil unit weight (pcf)

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data ::

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
1	0.16	0.01	0.00	0.01	1.00	0.156	1.44	0.108	1.00	1.00	2.000	No
2	0.33	0.02	0.00	0.02	1.00	0.156	1.44	0.108	1.00	1.00	2.000	No
3	0.49	0.03	0.00	0.03	1.00	0.156	1.44	0.108	1.00	1.00	2.000	No
4	0.66	0.04	0.00	0.04	1.00	0.156	1.44	0.108	1.00	1.00	2.000	No
5	0.82	0.05	0.00	0.05	1.00	0.156	1.44	0.108	1.00	1.00	2.000	No
6	0.98	0.06	0.00	0.06	1.00	0.156	1.44	0.108	1.00	1.00	2.000	No
7	1.15	0.07	0.00	0.07	1.00	0.156	1.44	0.108	1.00	1.00	2.000	No
8	1.31	0.08	0.00	0.08	1.00	0.156	1.44	0.108	1.00	1.00	2.000	No
9	1.48	0.09	0.00	0.09	1.00	0.156	1.44	0.108	1.00	1.00	2.000	No
10	1.64	0.10	0.00	0.10	1.00	0.156	1.44	0.108	1.00	1.00	2.000	No
11	1.80	0.11	0.00	0.11	1.00	0.156	1.44	0.108	1.00	1.00	2.000	No
12	1.97	0.11	0.00	0.11	1.00	0.156	1.44	0.108	1.00	1.00	2.000	No
13	2.13	0.12	0.00	0.12	1.00	0.156	1.44	0.108	1.00	1.00	2.000	No
14	2.30	0.13	0.00	0.13	1.00	0.155	1.44	0.108	1.00	1.00	2.000	No
15	2.46	0.14	0.00	0.14	1.00	0.155	1.44	0.108	1.00	1.00	2.000	No
16	2.62	0.15	0.00	0.15	1.00	0.155	1.44	0.108	1.00	1.00	2.000	No
17	2.79	0.16	0.00	0.16	1.00	0.155	1.44	0.108	1.00	1.00	2.000	No
18	2.95	0.17	0.00	0.17	1.00	0.155	1.44	0.108	1.00	1.00	2.000	No
19	3.12	0.18	0.00	0.18	0.99	0.155	1.44	0.108	1.00	1.00	2.000	No
20	3.28	0.19	0.00	0.19	0.99	0.155	1.44	0.108	1.00	1.00	2.000	No
21	3.44	0.20	0.00	0.20	0.99	0.155	1.44	0.108	1.00	1.00	2.000	No
22	3.61	0.21	0.00	0.21	0.99	0.155	1.44	0.107	1.00	1.00	2.000	No
23	3.77	0.22	0.00	0.22	0.99	0.155	1.44	0.107	1.00	1.00	2.000	No
24	3.94	0.23	0.00	0.23	0.99	0.155	1.44	0.107	1.00	1.00	2.000	No
25	4.10	0.24	0.00	0.24	0.99	0.155	1.44	0.107	1.00	1.00	2.000	No
26	4.27	0.25	0.00	0.25	0.99	0.155	1.44	0.107	1.00	1.00	2.000	No
27	4.43	0.26	0.00	0.26	0.99	0.155	1.44	0.107	1.00	1.00	2.000	No
28	4.59	0.27	0.00	0.27	0.99	0.155	1.44	0.107	1.00	1.00	2.000	No
29	4.76	0.28	0.00	0.28	0.99	0.155	1.44	0.107	1.00	1.00	2.000	No
30	4.92	0.29	0.00	0.29	0.99	0.155	1.44	0.107	1.00	1.00	2.000	No
31	5.09	0.30	0.00	0.30	0.99	0.154	1.44	0.107	1.00	1.00	2.000	No
32	5.25	0.31	0.00	0.31	0.99	0.154	1.44	0.107	1.00	1.00	2.000	No
33	5.41	0.32	0.00	0.32	0.99	0.154	1.44	0.107	1.00	1.00	2.000	No
34	5.58	0.33	0.00	0.33	0.99	0.154	1.44	0.107	1.00	1.00	2.000	No
35	5.74	0.34	0.00	0.34	0.99	0.154	1.44	0.107	1.00	1.00	2.000	No
36	5.91	0.35	0.00	0.35	0.99	0.154	1.44	0.107	1.00	1.00	2.000	No
37	6.07	0.36	0.00	0.36	0.99	0.154	1.44	0.107	1.00	1.00	2.000	No
38	6.23	0.38	0.00	0.38	0.99	0.154	1.44	0.107	1.00	1.00	2.000	No
39	6.40	0.39	0.00	0.39	0.99	0.154	1.44	0.107	1.00	1.00	2.000	No
40	6.56	0.40	0.00	0.40	0.99	0.154	1.44	0.107	1.00	1.00	2.000	No
41	6.73	0.41	0.00	0.41	0.99	0.154	1.44	0.107	1.00	1.00	2.000	No
42	6.89	0.42	0.00	0.42	0.99	0.154	1.44	0.107	1.00	1.00	2.000	No
43	7.05	0.43	0.00	0.43	0.99	0.154	1.44	0.107	1.00	1.00	2.000	No
44	7.22	0.44	0.00	0.44	0.99	0.154	1.44	0.107	1.00	1.00	2.000	No
45	7.38	0.44	0.00	0.44	0.98	0.154	1.44	0.107	1.00	1.00	2.000	No
46	7.55	0.45	0.00	0.45	0.98	0.154	1.44	0.107	1.00	1.00	2.000	No
47	7.71	0.46	0.00	0.46	0.98	0.154	1.44	0.106	1.00	1.00	2.000	No
48	7.87	0.47	0.00	0.47	0.98	0.153	1.44	0.106	1.00	1.00	2.000	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
49	8.04	0.48	0.00	0.48	0.98	0.153	1.44	0.106	1.00	1.00	2.000	No
50	8.20	0.49	0.00	0.49	0.98	0.153	1.44	0.106	1.00	1.00	2.000	No
51	8.37	0.50	0.00	0.50	0.98	0.153	1.44	0.106	1.00	1.00	2.000	No
52	8.53	0.52	0.00	0.52	0.98	0.153	1.44	0.106	1.00	1.00	2.000	No
53	8.69	0.53	0.00	0.53	0.98	0.153	1.44	0.106	1.00	1.00	2.000	No
54	8.86	0.54	0.00	0.54	0.98	0.153	1.44	0.106	1.00	1.00	2.000	No
55	9.02	0.55	0.00	0.55	0.98	0.153	1.44	0.106	1.00	1.00	2.000	No
56	9.19	0.56	0.00	0.56	0.98	0.153	1.44	0.106	1.00	1.00	2.000	No
57	9.35	0.57	0.00	0.57	0.98	0.153	1.44	0.106	1.00	1.00	2.000	No
58	9.51	0.58	0.00	0.58	0.98	0.153	1.44	0.106	1.00	1.00	2.000	No
59	9.68	0.59	0.00	0.59	0.98	0.153	1.44	0.106	1.00	1.00	2.000	No
60	9.84	0.60	0.00	0.60	0.98	0.153	1.44	0.106	1.00	1.00	2.000	No
61	10.01	0.61	0.00	0.61	0.98	0.153	1.44	0.106	1.00	1.00	2.000	No
62	10.17	0.62	0.00	0.62	0.98	0.153	1.44	0.106	1.00	1.00	2.000	No
63	10.33	0.63	0.00	0.63	0.98	0.153	1.44	0.106	1.00	1.00	2.000	No
64	10.50	0.65	0.00	0.65	0.98	0.153	1.44	0.106	1.00	1.00	2.000	No
65	10.66	0.66	0.00	0.66	0.98	0.153	1.44	0.106	1.00	1.00	2.000	No
66	10.83	0.67	0.00	0.67	0.98	0.152	1.44	0.106	1.00	1.00	2.000	No
67	10.99	0.68	0.00	0.68	0.98	0.152	1.44	0.106	1.00	1.00	2.000	No
68	11.15	0.69	0.00	0.69	0.98	0.152	1.44	0.106	1.00	1.00	2.000	No
69	11.32	0.70	0.00	0.70	0.98	0.152	1.44	0.106	1.00	1.00	2.000	No
70	11.48	0.71	0.00	0.71	0.98	0.152	1.44	0.106	1.00	1.00	2.000	No
71	11.65	0.72	0.00	0.72	0.98	0.152	1.44	0.106	1.00	1.00	2.000	No
72	11.81	0.73	0.00	0.73	0.98	0.152	1.44	0.106	1.00	1.00	2.000	No
73	11.98	0.74	0.00	0.74	0.97	0.152	1.44	0.105	1.00	1.00	2.000	No
74	12.14	0.75	0.00	0.75	0.97	0.152	1.44	0.105	1.00	1.00	2.000	No
75	12.30	0.76	0.00	0.76	0.97	0.152	1.44	0.105	1.00	1.00	2.000	No
76	12.47	0.77	0.00	0.77	0.97	0.152	1.44	0.105	1.00	1.00	2.000	No
77	12.63	0.78	0.00	0.78	0.97	0.152	1.44	0.105	1.00	1.00	2.000	No
78	12.80	0.79	0.00	0.79	0.97	0.152	1.44	0.105	1.00	1.00	2.000	No
79	12.96	0.80	0.00	0.80	0.97	0.152	1.44	0.105	1.00	1.00	2.000	No
80	13.12	0.82	0.00	0.82	0.97	0.152	1.44	0.105	1.00	1.00	2.000	No
81	13.29	0.83	0.00	0.83	0.97	0.152	1.44	0.105	1.00	1.00	2.000	No
82	13.45	0.84	0.00	0.84	0.97	0.152	1.44	0.105	1.00	1.00	2.000	No
83	13.62	0.85	0.00	0.85	0.97	0.152	1.44	0.105	1.00	1.00	2.000	No
84	13.78	0.86	0.00	0.86	0.97	0.152	1.44	0.105	1.00	1.00	2.000	No
85	13.94	0.87	0.00	0.87	0.97	0.151	1.44	0.105	1.00	1.00	2.000	No
86	14.11	0.88	0.00	0.88	0.97	0.151	1.44	0.105	1.00	1.00	2.000	No
87	14.27	0.89	0.00	0.89	0.97	0.151	1.44	0.105	1.00	1.00	2.000	No
88	14.44	0.90	0.00	0.90	0.97	0.151	1.44	0.105	1.00	1.00	2.000	No
89	14.60	0.91	0.00	0.91	0.97	0.151	1.44	0.105	1.00	1.00	2.000	No
90	14.76	0.92	0.00	0.92	0.97	0.151	1.44	0.105	1.00	1.00	2.000	No
91	14.93	0.93	0.00	0.93	0.97	0.151	1.44	0.105	1.00	1.00	2.000	No
92	15.09	0.94	0.00	0.94	0.97	0.151	1.44	0.105	1.00	1.00	2.000	No
93	15.26	0.95	0.00	0.95	0.97	0.151	1.44	0.105	1.00	1.00	2.000	No
94	15.42	0.96	0.00	0.96	0.97	0.151	1.44	0.105	1.00	1.00	2.000	No
95	15.58	0.97	0.00	0.97	0.97	0.151	1.44	0.105	1.00	1.00	2.000	No
96	15.75	0.98	0.00	0.98	0.97	0.151	1.44	0.105	1.00	1.00	2.000	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
97	15.91	1.00	0.00	1.00	0.97	0.151	1.44	0.105	1.00	1.00	2.000	No
98	16.08	1.01	0.00	1.01	0.97	0.151	1.44	0.105	1.00	1.00	2.000	No
99	16.24	1.02	0.00	1.02	0.97	0.151	1.44	0.104	1.00	1.00	2.000	No
100	16.40	1.03	0.00	1.03	0.97	0.151	1.44	0.104	1.00	1.00	2.000	No
101	16.57	1.04	0.00	1.04	0.97	0.151	1.44	0.104	1.00	1.00	2.000	No
102	16.73	1.05	0.00	1.05	0.96	0.150	1.44	0.104	1.00	1.00	2.000	No
103	16.90	1.06	0.00	1.06	0.96	0.150	1.44	0.104	1.00	1.00	2.000	No
104	17.06	1.07	0.00	1.07	0.96	0.150	1.44	0.104	1.00	1.00	2.000	No
105	17.22	1.08	0.00	1.08	0.96	0.150	1.44	0.104	1.00	1.00	2.000	No
106	17.39	1.09	0.00	1.09	0.96	0.150	1.44	0.104	0.99	1.00	2.000	No
107	17.55	1.11	0.00	1.11	0.96	0.150	1.44	0.104	0.99	1.00	2.000	No
108	17.72	1.12	0.00	1.12	0.96	0.150	1.44	0.104	0.99	1.00	2.000	No
109	17.88	1.13	0.00	1.13	0.96	0.150	1.44	0.104	0.99	1.00	2.000	No
110	18.04	1.14	0.00	1.14	0.96	0.150	1.44	0.104	0.99	1.00	2.000	No
111	18.21	1.15	0.00	1.15	0.96	0.150	1.44	0.104	0.98	1.00	2.000	No
112	18.37	1.16	0.00	1.16	0.96	0.150	1.44	0.104	0.98	1.00	2.000	No
113	18.54	1.17	0.00	1.17	0.96	0.150	1.44	0.104	0.98	1.00	2.000	No
114	18.70	1.18	0.00	1.18	0.96	0.150	1.44	0.104	0.98	1.00	2.000	No
115	18.86	1.19	0.00	1.19	0.96	0.150	1.44	0.104	0.98	1.00	2.000	No
116	19.03	1.20	0.00	1.20	0.96	0.150	1.44	0.104	0.97	1.00	2.000	No
117	19.19	1.21	0.00	1.21	0.96	0.150	1.44	0.104	0.97	1.00	2.000	No
118	19.36	1.23	0.00	1.23	0.96	0.150	1.44	0.104	0.97	1.00	2.000	No
119	19.52	1.24	0.00	1.24	0.96	0.149	1.44	0.104	0.97	1.00	2.000	No
120	19.69	1.25	0.00	1.25	0.96	0.149	1.44	0.104	0.97	1.00	2.000	No
121	19.85	1.26	0.00	1.26	0.96	0.149	1.44	0.104	0.97	1.00	2.000	No
122	20.01	1.27	0.00	1.27	0.96	0.149	1.44	0.104	0.96	1.00	0.107	No
123	20.18	1.28	0.01	1.28	0.96	0.150	1.44	0.104	0.96	1.00	0.108	No
124	20.34	1.29	0.01	1.28	0.96	0.150	1.44	0.104	0.96	1.00	0.108	No
125	20.51	1.30	0.02	1.29	0.96	0.151	1.44	0.105	0.96	1.00	0.109	No
126	20.67	1.31	0.02	1.29	0.96	0.151	1.44	0.105	0.96	1.00	0.109	No
127	20.83	1.32	0.03	1.30	0.95	0.152	1.44	0.105	0.96	1.00	0.110	No
128	21.00	1.34	0.03	1.30	0.95	0.152	1.44	0.106	0.96	1.00	0.110	No
129	21.16	1.35	0.04	1.31	0.95	0.153	1.44	0.106	0.96	1.00	0.111	No
130	21.33	1.36	0.04	1.32	0.95	0.153	1.44	0.106	0.96	1.00	0.111	No
131	21.49	1.37	0.05	1.32	0.95	0.154	1.44	0.107	0.96	1.00	0.112	No
132	21.65	1.38	0.05	1.33	0.95	0.154	1.44	0.107	0.96	1.00	0.112	No
133	21.82	1.39	0.06	1.33	0.95	0.155	1.44	0.107	0.95	1.00	0.112	No
134	21.98	1.40	0.06	1.34	0.95	0.155	1.44	0.108	0.95	1.00	0.113	No
135	22.15	1.41	0.07	1.34	0.95	0.156	1.44	0.108	0.95	1.00	0.113	No
136	22.31	1.42	0.07	1.35	0.95	0.156	1.44	0.108	0.95	1.00	0.114	No
137	22.47	1.43	0.08	1.35	0.95	0.157	1.44	0.109	0.95	1.00	0.114	No
138	22.64	1.44	0.08	1.36	0.95	0.157	1.44	0.109	0.95	1.00	0.115	No
139	22.80	1.45	0.09	1.36	0.95	0.158	1.44	0.109	0.95	1.00	0.115	No
140	22.97	1.46	0.09	1.37	0.95	0.158	1.44	0.110	0.95	1.00	0.115	No
141	23.13	1.47	0.10	1.37	0.95	0.158	1.44	0.110	0.95	1.00	0.116	No
142	23.29	1.48	0.10	1.38	0.95	0.159	1.44	0.110	0.95	1.00	0.116	No
143	23.46	1.49	0.11	1.39	0.95	0.159	1.44	0.110	0.95	1.00	0.117	No
144	23.62	1.50	0.11	1.39	0.95	0.160	1.44	0.111	0.95	1.00	0.117	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
145	23.79	1.52	0.12	1.40	0.95	0.160	1.44	0.111	0.95	1.00	0.117	No
146	23.95	1.53	0.12	1.40	0.95	0.160	1.44	0.111	0.95	1.00	0.118	No
147	24.11	1.54	0.13	1.41	0.94	0.161	1.44	0.112	0.94	1.00	0.118	No
148	24.28	1.55	0.13	1.41	0.94	0.161	1.44	0.112	0.94	1.00	0.118	No
149	24.44	1.56	0.14	1.42	0.94	0.162	1.44	0.112	0.94	1.00	0.119	No
150	24.61	1.57	0.14	1.43	0.94	0.162	1.44	0.112	0.94	1.00	0.119	No
151	24.77	1.58	0.15	1.43	0.94	0.162	1.44	0.113	0.94	1.00	0.120	No
152	24.93	1.59	0.15	1.44	0.94	0.163	1.44	0.113	0.94	1.00	0.120	No
153	25.10	1.60	0.16	1.44	0.94	0.163	1.44	0.113	0.94	1.00	0.120	No
154	25.26	1.61	0.16	1.45	0.94	0.163	1.44	0.113	0.94	1.00	0.121	No
155	25.43	1.62	0.17	1.45	0.94	0.164	1.44	0.114	0.94	1.00	0.121	No
156	25.59	1.63	0.17	1.46	0.94	0.164	1.44	0.114	0.94	1.00	0.121	No
157	25.75	1.64	0.18	1.46	0.94	0.164	1.44	0.114	0.94	1.00	0.122	No
158	25.92	1.65	0.18	1.47	0.94	0.165	1.44	0.114	0.94	1.00	0.122	No
159	26.08	1.66	0.19	1.47	0.94	0.165	1.44	0.115	0.94	1.00	0.122	No
160	26.25	1.67	0.19	1.48	0.94	0.165	1.44	0.115	0.94	1.00	0.123	No
161	26.41	1.68	0.20	1.48	0.94	0.166	1.44	0.115	0.93	1.00	0.123	No
162	26.57	1.69	0.21	1.49	0.94	0.166	1.44	0.115	0.93	1.00	0.123	No
163	26.74	1.70	0.21	1.49	0.94	0.166	1.44	0.115	0.93	1.00	0.124	No
164	26.90	1.71	0.22	1.50	0.93	0.167	1.44	0.116	0.93	1.00	0.124	No
165	27.07	1.72	0.22	1.50	0.93	0.167	1.44	0.116	0.93	1.00	0.124	No
166	27.23	1.74	0.23	1.51	0.93	0.167	1.44	0.116	0.93	1.00	0.125	No
167	27.40	1.75	0.23	1.51	0.93	0.168	1.44	0.116	0.93	1.00	0.125	No
168	27.56	1.76	0.24	1.52	0.93	0.168	1.44	0.116	0.93	1.00	0.125	No
169	27.72	1.77	0.24	1.53	0.93	0.168	1.44	0.117	0.93	1.00	0.126	No
170	27.89	1.78	0.25	1.53	0.93	0.168	1.44	0.117	0.93	1.00	0.126	No
171	28.05	1.79	0.25	1.54	0.93	0.169	1.44	0.117	0.93	1.00	0.126	No
172	28.22	1.80	0.26	1.54	0.93	0.169	1.44	0.117	0.93	1.00	0.126	No
173	28.38	1.81	0.26	1.55	0.93	0.169	1.44	0.117	0.93	1.00	0.127	No
174	28.54	1.82	0.27	1.55	0.93	0.170	1.44	0.118	0.93	1.00	0.127	No
175	28.71	1.83	0.27	1.56	0.93	0.170	1.44	0.118	0.93	1.00	0.127	No
176	28.87	1.84	0.28	1.56	0.93	0.170	1.44	0.118	0.93	1.00	0.127	No
177	29.04	1.85	0.28	1.57	0.93	0.170	1.44	0.118	0.92	1.00	0.128	No
178	29.20	1.86	0.29	1.57	0.92	0.171	1.44	0.118	0.92	1.00	0.128	No
179	29.36	1.87	0.29	1.58	0.92	0.171	1.44	0.118	0.92	1.00	0.128	No
180	29.53	1.88	0.30	1.58	0.92	0.171	1.44	0.119	0.92	1.00	0.129	No
181	29.69	1.89	0.30	1.58	0.92	0.171	1.44	0.119	0.92	1.00	0.129	No
182	29.86	1.90	0.31	1.59	0.92	0.172	1.44	0.119	0.92	1.00	0.129	No
183	30.02	1.91	0.31	1.59	0.92	0.172	1.44	0.119	0.92	1.00	0.129	No
184	30.18	1.92	0.32	1.60	0.92	0.172	1.44	0.119	0.92	1.00	0.130	No
185	30.35	1.93	0.32	1.60	0.92	0.172	1.44	0.119	0.92	1.00	0.130	No
186	30.51	1.94	0.33	1.61	0.92	0.172	1.44	0.120	0.92	1.00	0.130	No
187	30.68	1.95	0.33	1.61	0.92	0.173	1.44	0.120	0.92	1.00	0.130	No
188	30.84	1.96	0.34	1.62	0.92	0.173	1.44	0.120	0.92	1.00	0.130	No
189	31.00	1.97	0.34	1.63	0.92	0.173	1.44	0.120	0.92	1.00	0.131	No
190	31.17	1.98	0.35	1.63	0.91	0.173	1.44	0.120	0.92	1.00	0.131	No
191	31.33	1.99	0.35	1.64	0.91	0.173	1.44	0.120	0.92	1.00	0.131	No
192	31.50	2.00	0.36	1.64	0.91	0.173	1.44	0.120	0.92	1.00	0.131	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
193	31.66	2.01	0.36	1.65	0.91	0.174	1.44	0.120	0.92	1.00	0.132	No
194	31.82	2.02	0.37	1.65	0.91	0.174	1.44	0.121	0.91	1.00	0.132	No
195	31.99	2.03	0.37	1.66	0.91	0.174	1.44	0.121	0.91	1.00	0.132	No
196	32.15	2.04	0.38	1.66	0.91	0.174	1.44	0.121	0.91	1.00	0.132	No
197	32.32	2.05	0.38	1.67	0.91	0.174	1.44	0.121	0.91	1.00	0.132	No
198	32.48	2.06	0.39	1.67	0.91	0.174	1.44	0.121	0.91	1.00	0.133	No
199	32.64	2.07	0.39	1.68	0.91	0.175	1.44	0.121	0.91	1.00	0.133	No
200	32.81	2.08	0.40	1.68	0.90	0.175	1.44	0.121	0.91	1.00	0.133	No
201	32.97	2.09	0.40	1.69	0.90	0.175	1.44	0.121	0.91	1.00	0.133	No
202	33.14	2.10	0.41	1.69	0.90	0.175	1.44	0.121	0.91	1.00	0.133	No
203	33.30	2.11	0.41	1.70	0.90	0.175	1.44	0.121	0.91	1.00	0.133	No
204	33.46	2.12	0.42	1.70	0.90	0.175	1.44	0.121	0.91	1.00	0.134	No
205	33.63	2.13	0.43	1.71	0.90	0.175	1.44	0.122	0.91	1.00	0.134	No
206	33.79	2.15	0.43	1.71	0.90	0.175	1.44	0.122	0.91	1.00	0.134	No
207	33.96	2.16	0.44	1.72	0.90	0.175	1.44	0.122	0.91	1.00	0.134	No
208	34.12	2.17	0.44	1.73	0.90	0.176	1.44	0.122	0.91	1.00	0.134	No
209	34.28	2.18	0.45	1.73	0.90	0.176	1.44	0.122	0.91	1.00	0.134	No
210	34.45	2.19	0.45	1.74	0.89	0.176	1.44	0.122	0.91	1.00	0.135	No
211	34.61	2.20	0.46	1.74	0.89	0.176	1.44	0.122	0.91	1.00	0.135	No
212	34.78	2.21	0.46	1.75	0.89	0.176	1.44	0.122	0.90	1.00	0.135	No
213	34.94	2.22	0.47	1.75	0.89	0.176	1.44	0.122	0.90	1.00	0.135	No
214	35.10	2.23	0.47	1.76	0.89	0.176	1.44	0.122	0.90	1.00	0.135	No
215	35.27	2.24	0.48	1.76	0.89	0.176	1.44	0.122	0.90	1.00	0.135	No
216	35.43	2.25	0.48	1.77	0.89	0.176	1.44	0.122	0.90	1.00	0.135	No
217	35.60	2.26	0.49	1.77	0.89	0.176	1.44	0.122	0.90	1.00	0.136	No
218	35.76	2.27	0.49	1.78	0.89	0.176	1.44	0.122	0.90	1.00	0.136	No
219	35.93	2.28	0.50	1.78	0.88	0.176	1.44	0.122	0.90	1.00	0.136	No
220	36.09	2.29	0.50	1.79	0.88	0.176	1.44	0.122	0.90	1.00	0.136	No
221	36.25	2.30	0.51	1.79	0.88	0.176	1.44	0.122	0.90	1.00	0.136	No
222	36.42	2.31	0.51	1.80	0.88	0.176	1.44	0.122	0.90	1.00	0.136	No
223	36.58	2.32	0.52	1.81	0.88	0.176	1.44	0.122	0.90	1.00	0.136	No
224	36.75	2.33	0.52	1.81	0.88	0.176	1.44	0.122	0.90	1.00	0.136	No
225	36.91	2.34	0.53	1.82	0.88	0.176	1.44	0.122	0.90	1.00	0.136	No
226	37.07	2.35	0.53	1.82	0.88	0.177	1.44	0.122	0.90	1.00	0.136	No
227	37.24	2.36	0.54	1.83	0.87	0.177	1.44	0.122	0.90	1.00	0.137	No
228	37.40	2.37	0.54	1.83	0.87	0.177	1.44	0.122	0.90	1.00	0.137	No
229	37.57	2.38	0.55	1.84	0.87	0.177	1.44	0.122	0.90	1.00	0.137	No
230	37.73	2.39	0.55	1.84	0.87	0.177	1.44	0.122	0.90	1.00	0.137	No
231	37.89	2.40	0.56	1.85	0.87	0.177	1.44	0.122	0.89	1.00	0.137	No
232	38.06	2.42	0.56	1.85	0.87	0.177	1.44	0.122	0.89	1.00	0.137	No
233	38.22	2.43	0.57	1.86	0.87	0.176	1.44	0.122	0.89	1.00	0.137	No
234	38.39	2.44	0.57	1.86	0.86	0.176	1.44	0.122	0.89	1.00	0.137	No
235	38.55	2.45	0.58	1.87	0.86	0.176	1.44	0.122	0.89	1.00	0.137	No
236	38.71	2.46	0.58	1.87	0.86	0.176	1.44	0.122	0.89	1.00	0.137	No
237	38.88	2.47	0.59	1.88	0.86	0.176	1.44	0.122	0.89	1.00	0.137	No
238	39.04	2.48	0.59	1.88	0.86	0.176	1.44	0.122	0.89	1.00	0.137	No
239	39.21	2.49	0.60	1.89	0.86	0.176	1.44	0.122	0.89	1.00	0.137	No
240	39.37	2.50	0.60	1.90	0.86	0.176	1.44	0.122	0.89	1.00	0.137	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
241	39.53	2.51	0.61	1.90	0.86	0.176	1.44	0.122	0.89	1.00	0.137	No
242	39.70	2.52	0.61	1.91	0.85	0.176	1.44	0.122	0.89	1.00	0.137	No
243	39.86	2.53	0.62	1.91	0.85	0.176	1.44	0.122	0.89	1.00	0.137	No
244	40.03	2.54	0.62	1.92	0.85	0.176	1.44	0.122	0.89	1.00	0.137	No
245	40.19	2.55	0.63	1.92	0.85	0.176	1.44	0.122	0.89	1.00	0.137	No
246	40.35	2.56	0.64	1.93	0.85	0.176	1.44	0.122	0.89	1.00	0.137	No
247	40.52	2.57	0.64	1.93	0.85	0.176	1.44	0.122	0.89	1.00	0.138	No
248	40.68	2.59	0.65	1.94	0.84	0.176	1.44	0.122	0.89	1.00	0.138	No
249	40.85	2.60	0.65	1.95	0.84	0.176	1.44	0.122	0.89	1.00	0.138	No
250	41.01	2.61	0.66	1.95	0.84	0.175	1.44	0.122	0.88	1.00	0.138	No
251	41.17	2.62	0.66	1.96	0.84	0.175	1.44	0.122	0.88	1.00	0.138	No
252	41.34	2.63	0.67	1.96	0.84	0.175	1.44	0.122	0.88	1.00	0.138	No
253	41.50	2.64	0.67	1.97	0.84	0.175	1.44	0.121	0.88	1.00	0.138	No
254	41.67	2.65	0.68	1.97	0.84	0.175	1.44	0.121	0.88	1.00	0.138	No
255	41.83	2.66	0.68	1.98	0.83	0.175	1.44	0.121	0.88	1.00	0.138	No
256	41.99	2.67	0.69	1.98	0.83	0.175	1.44	0.121	0.88	1.00	0.138	No
257	42.16	2.68	0.69	1.99	0.83	0.175	1.44	0.121	0.88	1.00	0.138	No
258	42.32	2.69	0.70	2.00	0.83	0.175	1.44	0.121	0.88	1.00	0.137	No
259	42.49	2.70	0.70	2.00	0.83	0.174	1.44	0.121	0.88	1.00	0.137	No
260	42.65	2.71	0.71	2.01	0.83	0.174	1.44	0.121	0.88	1.00	0.137	No
261	42.81	2.72	0.71	2.01	0.83	0.174	1.44	0.121	0.88	1.00	0.137	No
262	42.98	2.74	0.72	2.02	0.82	0.174	1.44	0.121	0.88	1.00	0.137	No
263	43.14	2.75	0.72	2.02	0.82	0.174	1.44	0.121	0.88	1.00	0.137	No
264	43.31	2.76	0.73	2.03	0.82	0.174	1.44	0.121	0.88	1.00	0.137	No
265	43.47	2.77	0.73	2.03	0.82	0.174	1.44	0.120	0.88	1.00	0.137	No
266	43.64	2.78	0.74	2.04	0.82	0.174	1.44	0.120	0.88	1.00	0.137	No
267	43.80	2.79	0.74	2.05	0.82	0.173	1.44	0.120	0.88	1.00	0.137	No
268	43.96	2.80	0.75	2.05	0.81	0.173	1.44	0.120	0.88	1.00	0.137	No
269	44.13	2.81	0.75	2.06	0.81	0.173	1.44	0.120	0.88	1.00	0.137	No
270	44.29	2.82	0.76	2.06	0.81	0.173	1.44	0.120	0.87	1.00	0.137	No
271	44.46	2.83	0.76	2.07	0.81	0.173	1.44	0.120	0.87	1.00	0.137	No
272	44.62	2.84	0.77	2.07	0.81	0.173	1.44	0.120	0.87	1.00	0.137	No
273	44.78	2.85	0.77	2.08	0.81	0.172	1.44	0.120	0.87	1.00	0.137	No
274	44.95	2.86	0.78	2.09	0.80	0.172	1.44	0.119	0.87	1.00	0.137	No
275	45.11	2.87	0.78	2.09	0.80	0.172	1.44	0.119	0.87	1.00	0.137	No
276	45.28	2.89	0.79	2.10	0.80	0.172	1.44	0.119	0.87	1.00	0.137	No
277	45.44	2.90	0.79	2.10	0.80	0.172	1.44	0.119	0.87	1.00	0.137	No
278	45.60	2.91	0.80	2.11	0.80	0.172	1.44	0.119	0.87	1.00	0.137	No
279	45.77	2.92	0.80	2.11	0.80	0.171	1.44	0.119	0.87	1.00	0.137	No
280	45.93	2.93	0.81	2.12	0.79	0.171	1.44	0.119	0.87	1.00	0.136	No
281	46.10	2.94	0.81	2.12	0.79	0.171	1.44	0.119	0.87	1.00	0.136	No
282	46.26	2.95	0.82	2.13	0.79	0.171	1.44	0.118	0.87	1.00	0.136	No
283	46.42	2.96	0.82	2.14	0.79	0.171	1.44	0.118	0.87	1.00	0.136	No
284	46.59	2.97	0.83	2.14	0.79	0.170	1.44	0.118	0.87	1.00	0.136	No
285	46.75	2.98	0.83	2.15	0.79	0.170	1.44	0.118	0.87	1.00	0.136	No
286	46.92	2.99	0.84	2.15	0.78	0.170	1.44	0.118	0.87	1.00	0.136	No
287	47.08	3.00	0.84	2.16	0.78	0.170	1.44	0.118	0.87	1.00	0.136	No
288	47.24	3.01	0.85	2.16	0.78	0.170	1.44	0.118	0.87	1.00	0.136	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
289	47.41	3.02	0.86	2.17	0.78	0.170	1.44	0.118	0.87	1.00	0.136	No
290	47.57	3.03	0.86	2.17	0.78	0.169	1.44	0.117	0.87	1.00	0.136	No
291	47.74	3.04	0.87	2.18	0.78	0.169	1.44	0.117	0.87	1.00	0.136	No
292	47.90	3.05	0.87	2.18	0.77	0.169	1.44	0.117	0.87	1.00	0.135	No
293	48.06	3.06	0.88	2.19	0.77	0.169	1.44	0.117	0.86	1.00	0.135	No
294	48.23	3.07	0.88	2.19	0.77	0.169	1.44	0.117	0.86	1.00	0.135	No
295	48.39	3.08	0.89	2.20	0.77	0.168	1.44	0.117	0.86	1.00	0.135	No
296	48.56	3.09	0.89	2.20	0.77	0.168	1.44	0.117	0.86	1.00	0.135	No
297	48.72	3.10	0.90	2.21	0.77	0.168	1.44	0.116	0.86	1.00	0.135	No
298	48.88	3.11	0.90	2.21	0.76	0.168	1.44	0.116	0.86	1.00	0.135	No
299	49.05	3.12	0.91	2.22	0.76	0.168	1.44	0.116	0.86	1.00	0.135	No
300	49.21	3.13	0.91	2.22	0.76	0.167	1.44	0.116	0.86	1.00	0.135	No
301	49.38	3.14	0.92	2.23	0.76	0.167	1.44	0.116	0.86	1.00	0.135	No
302	49.54	3.15	0.92	2.23	0.76	0.167	1.44	0.116	0.86	1.00	0.134	No
303	49.70	3.16	0.93	2.24	0.76	0.167	1.44	0.116	0.86	1.00	0.134	No
304	49.87	3.17	0.93	2.24	0.75	0.167	1.44	0.115	0.86	1.00	0.134	No
305	50.03	3.19	0.94	2.25	0.75	0.166	1.44	0.115	0.86	1.00	0.134	No
306	50.20	3.20	0.94	2.25	0.75	0.166	1.44	0.115	0.86	1.00	0.134	No
307	50.36	3.21	0.95	2.26	0.75	0.166	1.44	0.115	0.86	1.00	0.134	No
308	50.52	3.22	0.95	2.26	0.75	0.166	1.44	0.115	0.86	1.00	0.134	No
309	50.69	3.23	0.96	2.27	0.75	0.165	1.44	0.115	0.86	1.00	0.134	No
310	50.85	3.24	0.96	2.27	0.74	0.165	1.44	0.115	0.86	1.00	0.134	No
311	51.02	3.25	0.97	2.28	0.74	0.165	1.44	0.114	0.86	1.00	0.133	No
312	51.18	3.26	0.97	2.28	0.74	0.165	1.44	0.114	0.86	1.00	0.133	No
313	51.35	3.27	0.98	2.29	0.74	0.165	1.44	0.114	0.86	1.00	0.133	No
314	51.51	3.28	0.98	2.29	0.74	0.164	1.44	0.114	0.86	1.00	0.133	No
315	51.67	3.29	0.99	2.30	0.74	0.164	1.44	0.114	0.86	1.00	0.133	No
316	51.84	3.30	0.99	2.30	0.73	0.164	1.44	0.114	0.86	1.00	0.133	No
317	52.00	3.31	1.00	2.31	0.73	0.164	1.44	0.114	0.86	1.00	0.133	No
318	52.17	3.32	1.00	2.31	0.73	0.163	1.44	0.113	0.86	1.00	0.133	No
319	52.33	3.33	1.01	2.32	0.73	0.163	1.44	0.113	0.85	1.00	0.132	No
320	52.49	3.34	1.01	2.33	0.73	0.163	1.44	0.113	0.85	1.00	0.132	No
321	52.66	3.35	1.02	2.33	0.73	0.163	1.44	0.113	0.85	1.00	0.132	No
322	52.82	3.36	1.02	2.34	0.72	0.163	1.44	0.113	0.85	1.00	0.132	No
323	52.99	3.37	1.03	2.34	0.72	0.162	1.44	0.113	0.85	1.00	0.132	No
324	53.15	3.38	1.03	2.35	0.72	0.162	1.44	0.112	0.85	1.00	0.132	No
325	53.31	3.39	1.04	2.35	0.72	0.162	1.44	0.112	0.85	1.00	0.132	No
326	53.48	3.40	1.04	2.36	0.72	0.162	1.44	0.112	0.85	1.00	0.132	No
327	53.64	3.41	1.05	2.36	0.72	0.161	1.44	0.112	0.85	1.00	0.131	No
328	53.81	3.42	1.05	2.37	0.71	0.161	1.44	0.112	0.85	1.00	0.131	No
329	53.97	3.43	1.06	2.37	0.71	0.161	1.44	0.112	0.85	1.00	0.131	No
330	54.13	3.44	1.06	2.38	0.71	0.161	1.44	0.111	0.85	1.00	0.131	No
331	54.30	3.46	1.07	2.39	0.71	0.160	1.44	0.111	0.85	1.00	0.131	No
332	54.46	3.47	1.08	2.39	0.71	0.160	1.44	0.111	0.85	1.00	0.131	No
333	54.63	3.48	1.08	2.40	0.71	0.160	1.44	0.111	0.85	1.00	0.131	No
334	54.79	3.49	1.09	2.40	0.71	0.160	1.44	0.111	0.85	1.00	0.131	No
335	54.95	3.50	1.09	2.41	0.70	0.160	1.44	0.111	0.85	1.00	0.130	No
336	55.12	3.51	1.10	2.41	0.70	0.159	1.44	0.110	0.85	1.00	0.130	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
337	55.28	3.52	1.10	2.42	0.70	0.159	1.44	0.110	0.85	1.00	0.130	No
338	55.45	3.53	1.11	2.42	0.70	0.159	1.44	0.110	0.85	1.00	0.130	No
339	55.61	3.54	1.11	2.43	0.70	0.159	1.44	0.110	0.85	1.00	0.130	No
340	55.77	3.55	1.12	2.44	0.70	0.158	1.44	0.110	0.85	1.00	0.130	No
341	55.94	3.56	1.12	2.44	0.69	0.158	1.44	0.110	0.85	1.00	0.130	No
342	56.10	3.57	1.13	2.45	0.69	0.158	1.44	0.109	0.85	1.00	0.129	No
343	56.27	3.59	1.13	2.45	0.69	0.158	1.44	0.109	0.85	1.00	0.129	No
344	56.43	3.60	1.14	2.46	0.69	0.157	1.44	0.109	0.84	1.00	0.129	No
345	56.59	3.61	1.14	2.47	0.69	0.157	1.44	0.109	0.84	1.00	0.129	No
346	56.76	3.62	1.15	2.47	0.69	0.157	1.44	0.109	0.84	1.00	0.129	No
347	56.92	3.63	1.15	2.48	0.69	0.157	1.44	0.109	0.84	1.00	0.129	No
348	57.09	3.64	1.16	2.48	0.68	0.156	1.44	0.109	0.84	1.00	0.129	No
349	57.25	3.65	1.16	2.49	0.68	0.156	1.44	0.108	0.84	1.00	0.129	No
350	57.41	3.66	1.17	2.49	0.68	0.156	1.44	0.108	0.84	1.00	0.128	No
351	57.58	3.67	1.17	2.50	0.68	0.156	1.44	0.108	0.84	1.00	0.128	No
352	57.74	3.68	1.18	2.51	0.68	0.156	1.44	0.108	0.84	1.00	0.128	No
353	57.91	3.69	1.18	2.51	0.68	0.155	1.44	0.108	0.84	1.00	0.128	No
354	58.07	3.71	1.19	2.52	0.68	0.155	1.44	0.108	0.84	1.00	0.128	No
355	58.23	3.72	1.19	2.52	0.67	0.155	1.44	0.107	0.84	1.00	0.128	No
356	58.40	3.73	1.20	2.53	0.67	0.155	1.44	0.107	0.84	1.00	0.128	No
357	58.56	3.74	1.20	2.54	0.67	0.154	1.44	0.107	0.84	1.00	0.128	No
358	58.73	3.75	1.21	2.54	0.67	0.154	1.44	0.107	0.84	1.00	0.127	No
359	58.89	3.76	1.21	2.54	0.67	0.154	1.44	0.107	0.84	1.00	0.127	No
360	59.06	3.76	1.22	2.55	0.67	0.154	1.44	0.107	0.84	1.00	0.127	No
361	59.22	3.77	1.22	2.55	0.67	0.154	1.44	0.107	0.84	1.00	0.127	No
362	59.38	3.78	1.23	2.55	0.66	0.154	1.44	0.107	0.84	1.00	0.127	No

Abbreviations

Depth: Depth from free surface, at which CPT was performed (ft)
σ_v: Total overburden pressure at test point (tsf)
u_0: Water pressure at test point (tsf)
σ_v': Effective overburden pressure based on GWT during earthquake (tsf)
r_d: Nonlinear shear mass factor
CSR: Cyclic Stress Ratio
MSF: Magnitude Scaling Factor
CSR_{eq}: CSR adjusted for M=7.5
K_σ: Effective overburden stress factor
CSR^*: CSR fully adjusted

:: Cyclic Resistance Ratio (CRR) calculation data ::

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
1	0.16	406.52	0.77	0.15	0.50	653.12	1.00	653.12	4.000	No	No	2.00
2	0.33	327.77	0.97	0.25	0.50	526.58	1.00	526.58	4.000	No	No	2.00
3	0.49	209.03	1.28	0.44	0.50	335.78	1.00	335.78	4.000	No	No	2.00
4	0.66	117.91	1.64	0.80	0.50	189.38	1.00	189.38	4.000	No	No	2.00
5	0.82	54.63	2.07	1.51	0.63	87.69	1.38	121.00	4.000	No	No	2.00
6	0.98	36.31	2.32	2.22	0.70	58.24	1.98	115.60	4.000	No	No	2.00
7	1.15	31.72	2.37	2.33	0.72	50.85	2.24	113.71	4.000	No	No	2.00
8	1.31	29.59	2.37	2.14	0.72	47.42	2.23	105.66	4.000	No	No	2.00
9	1.48	20.22	2.52	2.34	0.77	32.35	3.15	101.84	4.000	No	No	2.00
10	1.64	12.90	2.72	2.76	0.82	20.58	4.94	101.67	4.000	No	Yes	2.00
11	1.80	9.74	2.85	3.03	0.86	15.47	6.44	99.58	4.000	No	Yes	2.00
12	1.97	8.80	2.90	3.30	0.88	13.96	7.26	101.29	4.000	No	Yes	2.00
13	2.13	8.56	2.94	3.64	0.89	13.55	7.79	105.63	4.000	No	Yes	2.00
14	2.30	8.79	2.96	4.09	1.00	13.92	8.14	113.29	4.000	No	Yes	2.00
15	2.46	10.08	2.95	4.67	1.00	15.97	7.97	127.37	4.000	No	Yes	2.00
16	2.62	13.53	2.87	4.88	0.87	21.50	6.71	144.31	4.000	No	Yes	2.00
17	2.79	17.59	2.79	5.03	0.84	28.00	5.73	160.39	4.000	No	Yes	2.00
18	2.95	20.87	2.75	5.22	0.83	33.26	5.23	173.81	4.000	No	Yes	2.00
19	3.12	23.12	2.73	5.48	0.83	36.86	5.04	185.86	4.000	No	Yes	2.00
20	3.28	25.02	2.73	5.95	0.83	39.90	5.07	202.28	4.000	No	Yes	2.00
21	3.44	27.05	2.73	6.40	0.83	43.14	5.07	218.77	4.000	No	Yes	2.00
22	3.61	28.38	2.74	6.89	0.83	45.26	5.18	234.56	4.000	No	Yes	2.00
23	3.77	29.44	2.74	7.06	0.83	46.94	5.15	241.90	4.000	No	Yes	2.00
24	3.94	30.96	2.72	6.92	0.82	49.38	4.92	243.13	4.000	No	Yes	2.00
25	4.10	32.87	2.69	6.57	0.81	52.42	4.57	239.35	4.000	No	Yes	2.00
26	4.27	34.68	2.66	6.28	0.80	55.31	4.26	235.83	4.000	No	Yes	2.00
27	4.43	36.63	2.64	6.25	0.80	58.43	4.11	239.88	4.000	No	Yes	2.00
28	4.59	39.40	2.62	6.30	0.79	62.87	3.94	247.87	4.000	No	Yes	2.00
29	4.76	44.21	2.58	6.11	0.78	70.58	3.58	252.55	4.000	No	No	2.00
30	4.92	49.61	2.53	5.74	0.77	79.24	3.17	251.06	4.000	No	No	2.00
31	5.09	55.74	2.46	5.21	0.75	89.07	2.73	243.42	4.000	No	No	2.00
32	5.25	59.71	2.43	4.94	0.74	95.43	2.51	239.86	4.000	No	No	2.00
33	5.41	61.20	2.41	4.79	0.73	97.80	2.42	236.72	4.000	No	No	2.00
34	5.58	61.77	2.40	4.75	0.73	98.70	2.39	235.95	4.000	No	No	2.00
35	5.74	61.65	2.40	4.66	0.73	98.49	2.36	232.26	4.000	No	No	2.00
36	5.91	61.14	2.39	4.50	0.72	97.66	2.31	225.65	4.000	No	No	2.00
37	6.07	58.02	2.39	4.39	0.73	92.63	2.34	216.55	4.000	No	No	2.00
38	6.23	53.98	2.41	4.36	0.73	86.12	2.43	209.42	4.000	No	No	2.00
39	6.40	50.04	2.44	4.40	0.74	79.77	2.57	204.97	4.000	No	No	2.00
40	6.56	46.33	2.46	4.45	0.75	73.80	2.73	201.14	4.000	No	No	2.00
41	6.73	41.70	2.49	4.41	0.75	66.34	2.90	192.48	4.000	No	No	2.00
42	6.89	36.04	2.53	4.32	0.77	57.24	3.16	180.71	4.000	No	No	2.00
43	7.05	29.96	2.57	4.20	0.78	47.45	3.52	166.89	4.000	No	No	2.00
44	7.22	24.94	2.63	4.23	0.80	39.37	4.03	158.74	4.000	No	Yes	2.00
45	7.38	22.47	2.67	4.27	0.81	35.38	4.38	154.84	4.000	No	Yes	2.00
46	7.55	22.72	2.67	4.35	0.81	35.78	4.40	157.25	4.000	No	Yes	2.00
47	7.71	25.70	2.61	4.10	0.79	40.54	3.86	156.66	4.000	No	Yes	2.00
48	7.87	33.27	2.49	3.58	0.76	52.69	2.91	153.54	4.000	No	No	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
49	8.04	42.58	2.39	3.32	0.73	67.64	2.33	157.67	4.000	No	No	2.00
50	8.20	52.60	2.33	3.30	0.71	83.72	2.03	170.18	4.000	No	No	2.00
51	8.37	60.51	2.34	3.85	0.71	95.92	2.09	200.01	4.000	No	No	2.00
52	8.53	70.16	2.36	4.50	0.71	110.09	2.16	237.35	4.000	No	No	2.00
53	8.69	86.14	2.34	5.01	0.71	133.03	2.11	280.29	4.000	No	No	2.00
54	8.86	103.64	2.31	5.14	0.70	156.88	1.98	310.31	4.000	No	No	2.00
55	9.02	112.74	2.29	5.05	0.70	167.55	1.89	317.10	4.000	No	No	2.00
56	9.19	107.76	2.29	4.87	0.70	157.94	1.90	299.53	4.000	No	No	2.00
57	9.35	98.49	2.29	4.56	0.70	142.40	1.90	270.83	4.000	No	No	2.00
58	9.51	91.69	2.30	4.40	0.70	130.98	1.93	253.23	4.000	No	No	2.00
59	9.68	88.87	2.32	4.49	0.70	125.70	2.00	251.97	4.000	No	No	2.00
60	9.84	86.19	2.35	4.72	0.71	120.84	2.12	256.26	4.000	No	No	2.00
61	10.01	87.02	2.35	4.75	0.71	120.53	2.13	257.32	4.000	No	No	2.00
62	10.17	90.94	2.33	4.54	0.71	123.96	2.03	252.08	4.000	No	No	2.00
63	10.33	95.80	2.30	4.25	0.70	128.42	1.91	245.06	4.000	No	No	2.00
64	10.50	95.88	2.30	4.23	0.70	127.02	1.91	242.88	4.000	No	No	2.00
65	10.66	92.51	2.31	4.30	0.70	121.42	1.98	240.43	4.000	No	No	2.00
66	10.83	87.01	2.34	4.34	0.71	113.19	2.07	234.23	4.000	No	No	2.00
67	10.99	81.94	2.34	4.21	0.71	105.45	2.11	222.00	4.000	No	No	2.00
68	11.15	77.31	2.35	4.03	0.71	98.38	2.12	208.70	4.000	No	No	2.00
69	11.32	73.44	2.36	3.95	0.72	92.51	2.17	200.47	4.000	No	No	2.00
70	11.48	69.57	2.38	4.04	0.72	86.92	2.29	198.78	4.000	No	No	2.00
71	11.65	66.43	2.42	4.27	0.73	82.38	2.46	202.78	4.000	No	No	2.00
72	11.81	66.44	2.44	4.49	0.74	81.68	2.57	210.11	4.000	No	No	2.00
73	11.98	69.11	2.43	4.56	0.74	84.05	2.55	214.57	4.000	No	No	2.00
74	12.14	74.04	2.41	4.53	0.73	89.00	2.45	218.40	4.000	No	No	2.00
75	12.30	76.50	2.41	4.56	0.73	91.00	2.43	221.57	4.000	No	No	2.00
76	12.47	79.29	2.40	4.51	0.73	93.29	2.38	221.93	4.000	No	No	2.00
77	12.63	79.65	2.39	4.40	0.73	92.72	2.34	217.08	4.000	No	No	2.00
78	12.80	78.59	2.39	4.26	0.73	90.54	2.32	210.06	4.000	No	No	2.00
79	12.96	75.67	2.41	4.35	0.73	86.42	2.42	209.34	4.000	No	No	2.00
80	13.12	73.77	2.43	4.50	0.74	83.56	2.54	212.22	4.000	No	No	2.00
81	13.29	72.95	2.44	4.58	0.74	81.89	2.61	213.45	4.000	No	No	2.00
82	13.45	72.59	2.44	4.47	0.74	80.68	2.58	208.44	4.000	No	No	2.00
83	13.62	73.82	2.42	4.32	0.74	81.21	2.51	203.67	4.000	No	No	2.00
84	13.78	71.20	2.45	4.45	0.74	77.69	2.64	204.76	4.000	No	No	2.00
85	13.94	66.41	2.47	4.43	0.75	71.82	2.77	198.60	4.000	No	No	2.00
86	14.11	61.16	2.49	4.39	0.76	65.55	2.91	191.02	4.000	No	No	2.00
87	14.27	64.16	2.44	3.93	0.74	68.03	2.62	178.04	4.000	No	No	2.00
88	14.44	68.02	2.42	3.86	0.74	71.47	2.50	178.75	4.000	No	No	2.00
89	14.60	65.35	2.47	4.31	0.75	68.19	2.80	190.89	4.000	No	No	2.00
90	14.76	58.63	2.55	5.00	0.77	60.75	3.38	205.22	4.000	No	No	2.00
91	14.93	52.14	2.63	5.62	0.80	53.59	4.01	214.92	4.000	No	Yes	2.00
92	15.09	49.32	2.65	5.68	0.80	50.22	4.22	211.71	4.000	No	Yes	2.00
93	15.26	46.89	2.70	6.31	0.82	47.35	4.73	223.99	4.000	No	Yes	2.00
94	15.42	52.40	2.70	6.81	0.82	52.52	4.68	245.94	4.000	No	Yes	2.00
95	15.58	65.71	2.64	6.87	0.80	65.41	4.11	268.67	4.000	No	Yes	2.00
96	15.75	81.79	2.57	6.56	0.78	80.79	3.48	281.10	4.000	No	No	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
97	15.91	98.34	2.49	5.98	0.75	96.35	2.90	279.77	4.000	No	No	2.00
98	16.08	108.32	2.45	5.72	0.74	105.28	2.66	279.98	4.000	No	No	2.00
99	16.24	112.34	2.44	5.66	0.74	108.30	2.59	281.00	4.000	No	No	2.00
100	16.40	110.42	2.46	5.96	0.75	105.59	2.74	289.61	4.000	No	No	2.00
101	16.57	109.28	2.47	5.92	0.75	103.66	2.76	285.94	4.000	No	No	2.00
102	16.73	109.33	2.45	5.56	0.74	102.87	2.64	271.12	4.000	No	No	2.00
103	16.90	103.31	2.45	5.35	0.74	96.39	2.66	256.06	4.000	No	No	2.00
104	17.06	97.53	2.47	5.46	0.75	90.23	2.81	253.57	4.000	No	No	2.00
105	17.22	99.49	2.47	5.42	0.75	91.36	2.78	253.53	4.000	No	No	2.00
106	17.39	107.37	2.44	5.22	0.74	97.96	2.58	252.92	4.000	No	No	2.00
107	17.55	119.86	2.38	4.73	0.72	108.74	2.25	244.89	4.000	No	No	2.00
108	17.72	123.07	2.36	4.63	0.72	110.89	2.19	243.27	4.000	No	No	2.00
109	17.88	123.93	2.36	4.52	0.71	110.90	2.16	239.03	4.000	No	No	2.00
110	18.04	119.43	2.37	4.62	0.72	106.03	2.25	238.18	4.000	No	No	2.00
111	18.21	113.68	2.39	4.68	0.73	100.13	2.34	234.76	4.000	No	No	2.00
112	18.37	106.99	2.41	4.63	0.73	93.48	2.42	226.49	4.000	No	No	2.00
113	18.54	100.54	2.42	4.48	0.73	87.15	2.46	214.78	4.000	No	No	2.00
114	18.70	97.62	2.42	4.35	0.73	84.02	2.47	207.14	4.000	No	No	2.00
115	18.86	102.79	2.39	4.16	0.72	88.01	2.32	204.27	4.000	No	No	2.00
116	19.03	109.20	2.37	4.15	0.72	93.00	2.24	208.14	4.000	No	No	2.00
117	19.19	113.75	2.36	4.15	0.72	96.32	2.19	211.41	4.000	No	No	2.00
118	19.36	113.64	2.38	4.32	0.72	95.53	2.27	216.76	4.000	No	No	2.00
119	19.52	113.07	2.41	4.70	0.73	94.28	2.44	229.82	4.000	No	No	2.00
120	19.69	114.89	2.43	4.99	0.74	95.10	2.54	241.38	4.000	No	No	2.00
121	19.85	115.91	2.44	5.11	0.74	95.29	2.58	245.89	4.000	No	No	2.00
122	20.01	113.29	2.43	4.88	0.74	92.54	2.54	234.60	4.000	No	No	2.00
123	20.18	104.19	2.44	4.67	0.74	84.44	2.59	218.92	4.000	No	No	2.00
124	20.34	94.61	2.47	4.72	0.75	75.94	2.80	212.35	4.000	No	No	2.00
125	20.51	92.17	2.49	4.81	0.75	73.41	2.90	213.01	4.000	No	No	2.00
126	20.67	98.87	2.50	5.32	0.76	78.23	3.01	235.57	4.000	No	No	2.00
127	20.83	102.23	2.52	5.63	0.76	80.34	3.09	248.46	4.000	No	No	2.00
128	21.00	96.81	2.56	6.12	0.78	75.30	3.44	258.99	4.000	No	No	2.00
129	21.16	89.43	2.56	5.68	0.78	69.04	3.43	236.75	4.000	No	No	2.00
130	21.33	79.28	2.58	5.34	0.78	60.62	3.56	215.78	4.000	No	No	2.00
131	21.49	70.25	2.58	4.77	0.78	53.26	3.56	189.80	0.716	No	No	2.00
132	21.65	60.10	2.62	4.63	0.79	44.99	3.91	176.13	3.600	No	Yes	2.00
133	21.82	55.61	2.64	4.52	0.80	41.23	4.09	168.58	3.600	No	Yes	2.00
134	21.98	57.25	2.62	4.44	0.80	42.26	3.97	167.67	3.600	No	Yes	2.00
135	22.15	61.72	2.60	4.36	0.79	45.48	3.72	169.26	0.531	No	No	2.00
136	22.31	66.09	2.56	4.14	0.78	48.64	3.42	166.49	0.509	No	No	2.00
137	22.47	65.36	2.55	3.92	0.77	47.86	3.33	159.18	0.455	No	No	2.00
138	22.64	61.74	2.56	3.76	0.77	44.86	3.39	151.87	0.406	No	No	2.00
139	22.80	60.38	2.59	4.02	0.78	43.48	3.63	157.74	0.445	No	No	2.00
140	22.97	69.74	2.55	4.18	0.77	50.24	3.37	169.26	0.531	No	No	2.00
141	23.13	82.35	2.52	4.34	0.76	59.40	3.09	183.30	0.653	No	No	2.00
142	23.29	89.19	2.50	4.47	0.76	64.15	2.99	192.07	0.739	No	No	2.00
143	23.46	88.26	2.52	4.68	0.77	62.98	3.14	197.77	0.799	No	No	2.00
144	23.62	85.40	2.55	4.86	0.77	60.41	3.32	200.68	4.000	No	No	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
145	23.79	85.46	2.55	4.89	0.77	60.09	3.35	201.20	4.000	No	No	2.00
146	23.95	88.12	2.54	4.85	0.77	61.71	3.27	201.67	4.000	No	No	2.00
147	24.11	90.61	2.54	4.88	0.77	63.17	3.24	204.37	4.000	No	No	2.00
148	24.28	90.82	2.52	4.71	0.77	63.05	3.15	198.73	0.810	No	No	2.00
149	24.44	83.36	2.58	5.15	0.78	57.08	3.60	205.54	4.000	No	No	2.00
150	24.61	71.39	2.67	5.74	0.81	47.97	4.38	210.03	3.600	No	Yes	2.00
151	24.77	62.17	2.75	6.50	0.83	40.98	5.30	217.04	3.600	No	Yes	2.00
152	24.93	61.19	2.73	5.96	0.83	40.19	5.05	202.89	3.600	No	Yes	2.00
153	25.10	61.71	2.69	5.24	0.81	40.53	4.59	185.86	3.600	No	Yes	2.00
154	25.26	60.77	2.66	4.62	0.80	39.84	4.25	169.51	3.600	No	Yes	2.00
155	25.43	54.48	2.68	4.44	0.81	35.31	4.50	158.77	3.600	No	Yes	2.00
156	25.59	49.35	2.71	4.37	0.82	31.59	4.81	151.96	3.600	No	Yes	2.00
157	25.75	45.03	2.76	4.63	0.84	28.38	5.38	152.71	3.600	No	Yes	2.00
158	25.92	43.61	2.77	4.62	0.84	27.26	5.53	150.69	3.600	No	Yes	2.00
159	26.08	42.76	2.76	4.34	0.84	26.60	5.40	143.70	3.600	No	Yes	2.00
160	26.25	40.92	2.76	4.03	0.84	25.29	5.34	135.08	3.600	No	Yes	2.00
161	26.41	38.23	2.82	4.50	0.85	23.24	6.06	140.96	3.600	No	Yes	2.00
162	26.57	42.55	2.81	4.97	0.85	25.90	6.00	155.28	3.600	No	Yes	2.00
163	26.74	54.00	2.71	4.72	0.82	33.52	4.86	163.00	3.600	No	Yes	2.00
164	26.90	62.15	2.65	4.42	0.80	39.00	4.18	163.13	3.600	No	Yes	2.00
165	27.07	61.45	2.65	4.41	0.80	38.43	4.22	162.26	3.600	No	Yes	2.00
166	27.23	55.85	2.73	5.13	0.83	34.33	5.06	173.64	3.600	No	Yes	2.00
167	27.40	52.33	2.79	5.77	0.85	31.73	5.76	182.84	3.600	No	Yes	2.00
168	27.56	49.27	2.83	6.15	0.86	29.55	6.30	186.00	3.600	No	Yes	2.00
169	27.72	46.84	2.82	5.49	0.85	28.03	6.06	169.71	3.600	No	Yes	2.00
170	27.89	42.84	2.81	4.82	0.85	25.51	5.94	151.47	3.600	No	Yes	2.00
171	28.05	39.15	2.80	4.29	0.85	23.16	5.90	136.73	3.600	No	Yes	2.00
172	28.22	36.31	2.85	4.59	0.86	21.19	6.54	138.60	3.600	No	Yes	2.00
173	28.38	38.65	2.85	4.96	0.86	22.56	6.57	148.19	3.600	No	Yes	2.00
174	28.54	43.46	2.83	5.19	0.86	25.53	6.22	158.74	3.600	No	Yes	2.00
175	28.71	46.46	2.79	4.98	0.85	27.44	5.77	158.42	3.600	No	Yes	2.00
176	28.87	43.35	2.80	4.72	0.85	25.43	5.88	149.44	3.600	No	Yes	2.00
177	29.04	36.40	2.85	4.42	0.86	20.97	6.44	135.02	3.600	No	Yes	2.00
178	29.20	30.61	2.89	4.17	0.88	17.28	7.10	122.75	3.600	No	Yes	2.00
179	29.36	27.52	2.95	4.17	1.00	14.43	8.03	115.82	3.600	No	Yes	2.00
180	29.53	27.17	3.00	4.91	1.00	14.19	8.85	125.63	3.600	No	Yes	2.00
181	29.69	27.34	3.04	5.65	1.00	14.24	9.52	135.57	3.600	No	Yes	2.00
182	29.86	27.91	3.06	6.15	1.00	14.51	9.85	142.93	3.600	No	Yes	2.00
183	30.02	30.49	2.99	5.32	1.00	15.90	8.60	136.71	3.600	No	Yes	2.00
184	30.18	32.13	2.93	4.87	0.89	17.82	7.60	135.32	3.600	No	Yes	2.00
185	30.35	34.02	2.89	4.63	0.88	18.99	7.08	134.39	3.600	No	Yes	2.00
186	30.51	35.67	2.92	5.38	0.88	19.81	7.51	148.70	3.600	No	Yes	2.00
187	30.68	39.71	2.92	6.06	0.88	22.12	7.50	165.92	3.600	No	Yes	2.00
188	30.84	45.89	2.89	6.48	0.88	25.79	7.09	182.89	3.600	No	Yes	2.00
189	31.00	52.30	2.84	6.36	0.86	29.71	6.41	190.31	3.600	No	Yes	2.00
190	31.17	54.15	2.83	6.22	0.86	30.80	6.17	190.17	3.600	No	Yes	2.00
191	31.33	51.67	2.83	6.03	0.86	29.23	6.26	182.98	3.600	No	Yes	2.00
192	31.50	46.00	2.86	5.81	0.87	25.70	6.64	170.75	3.600	No	Yes	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
193	31.66	42.09	2.87	5.49	0.87	23.30	6.83	159.24	3.600	No	Yes	2.00
194	31.82	40.70	2.86	5.08	0.87	22.47	6.68	150.04	3.600	No	Yes	2.00
195	31.99	40.27	2.85	4.86	0.86	22.20	6.56	145.54	3.600	No	Yes	2.00
196	32.15	38.89	2.86	4.71	0.87	21.33	6.61	140.93	3.600	No	Yes	2.00
197	32.32	36.02	2.88	4.55	0.87	19.56	6.86	134.24	3.600	No	Yes	2.00
198	32.48	32.32	2.90	4.28	0.88	17.31	7.20	124.60	3.600	No	Yes	2.00
199	32.64	29.56	2.97	4.43	1.00	14.63	8.21	120.16	3.600	No	Yes	2.00
200	32.81	28.75	3.06	5.97	1.00	14.16	9.84	139.39	3.600	No	Yes	2.00
201	32.97	36.08	3.06	7.86	1.00	18.00	9.90	178.24	3.600	No	Yes	2.00
202	33.14	53.91	2.95	8.31	1.00	27.35	7.99	218.55	3.600	No	Yes	2.00
203	33.30	81.08	2.76	7.31	0.84	45.74	5.37	245.68	3.600	No	Yes	2.00
204	33.46	104.67	2.62	6.07	0.79	60.73	3.92	237.78	3.600	No	Yes	2.00
205	33.63	113.94	2.53	5.11	0.77	67.08	3.22	215.85	4.000	No	No	2.00
206	33.79	106.31	2.52	4.64	0.76	62.47	3.14	195.86	0.779	No	No	2.00
207	33.96	90.62	2.58	4.69	0.78	52.42	3.56	186.41	0.682	No	No	2.00
208	34.12	74.90	2.65	4.86	0.80	42.43	4.22	178.96	3.600	No	Yes	2.00
209	34.28	60.75	2.73	5.04	0.83	33.58	5.07	170.37	3.600	No	Yes	2.00
210	34.45	47.67	2.84	5.43	0.86	25.51	6.40	163.26	3.600	No	Yes	2.00
211	34.61	43.17	2.87	5.37	0.87	22.79	6.84	155.99	3.600	No	Yes	2.00
212	34.78	42.51	2.86	5.03	0.87	22.42	6.65	149.11	3.600	No	Yes	2.00
213	34.94	41.32	2.87	4.93	0.87	21.69	6.72	145.71	3.600	No	Yes	2.00
214	35.10	36.65	2.98	5.83	1.00	17.56	8.49	149.07	3.600	No	Yes	2.00
215	35.27	33.70	3.08	7.42	1.00	16.01	10.27	164.49	3.600	No	Yes	2.00
216	35.43	38.08	3.06	7.84	1.00	18.18	9.83	178.71	3.600	No	Yes	2.00
217	35.60	42.44	3.02	7.74	1.00	20.34	9.12	185.56	3.600	No	Yes	2.00
218	35.76	46.52	2.97	7.24	1.00	22.33	8.30	185.31	3.600	No	Yes	2.00
219	35.93	50.47	2.88	6.36	0.87	26.28	6.93	182.12	3.600	No	Yes	2.00
220	36.09	52.71	2.84	5.82	0.86	27.66	6.34	175.38	3.600	No	Yes	2.00
221	36.25	55.54	2.78	5.09	0.84	29.47	5.58	164.47	3.600	No	Yes	2.00
222	36.42	52.30	2.81	5.24	0.85	27.45	5.96	163.56	3.600	No	Yes	2.00
223	36.58	47.54	2.87	5.64	0.87	24.50	6.73	164.81	3.600	No	Yes	2.00
224	36.75	42.70	2.97	6.48	1.00	20.05	8.30	166.44	3.600	No	Yes	2.00
225	36.91	43.84	2.95	6.27	1.00	20.56	8.01	164.77	3.600	No	Yes	2.00
226	37.07	47.08	2.85	5.25	0.86	24.15	6.50	156.89	3.600	No	Yes	2.00
227	37.24	49.45	2.76	4.21	0.84	25.80	5.41	139.65	3.600	No	Yes	2.00
228	37.40	53.53	2.68	3.56	0.81	28.42	4.54	129.09	3.600	No	Yes	2.00
229	37.57	59.30	2.65	3.58	0.80	31.77	4.20	133.36	3.600	No	Yes	2.00
230	37.73	58.14	2.72	4.35	0.82	30.63	4.90	150.14	3.600	No	Yes	2.00
231	37.89	50.05	2.86	5.70	0.87	25.40	6.61	167.93	3.600	No	Yes	2.00
232	38.06	41.44	3.03	7.55	1.00	18.99	9.37	177.93	3.600	No	Yes	2.00
233	38.22	40.47	3.07	8.29	1.00	18.47	10.05	185.57	3.600	No	Yes	2.00
234	38.39	42.50	3.06	8.29	1.00	19.40	9.77	189.48	3.600	No	Yes	2.00
235	38.55	43.87	3.05	8.34	1.00	20.00	9.62	192.50	3.600	No	Yes	2.00
236	38.71	45.65	3.03	8.25	1.00	20.80	9.35	194.42	3.600	No	Yes	2.00
237	38.88	51.61	2.97	7.55	1.00	23.61	8.23	194.19	3.600	No	Yes	2.00
238	39.04	56.69	2.89	7.00	0.87	28.27	7.03	198.77	3.600	No	Yes	2.00
239	39.21	59.03	2.86	6.77	0.87	29.57	6.69	197.76	3.600	No	Yes	2.00
240	39.37	55.35	2.89	6.92	0.88	27.41	7.11	194.90	3.600	No	Yes	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
241	39.53	50.01	2.96	7.12	1.00	22.58	8.16	184.24	3.600	No	Yes	2.00
242	39.70	46.04	3.02	7.81	1.00	20.63	9.10	187.68	3.600	No	Yes	2.00
243	39.86	43.56	3.07	8.80	1.00	19.40	10.10	196.00	3.600	No	Yes	2.00
244	40.03	45.08	3.08	9.42	1.00	20.06	10.31	206.75	3.600	No	Yes	2.00
245	40.19	49.36	3.03	8.75	1.00	22.02	9.36	206.13	3.600	No	Yes	2.00
246	40.35	53.76	2.98	8.06	1.00	24.02	8.47	203.34	3.600	No	Yes	2.00
247	40.52	57.74	2.90	7.33	0.88	28.09	7.27	204.14	3.600	No	Yes	2.00
248	40.68	58.13	2.89	7.11	0.88	28.29	7.09	200.72	3.600	No	Yes	2.00
249	40.85	58.17	2.89	7.06	0.88	28.25	7.07	199.71	3.600	No	Yes	2.00
250	41.01	57.55	2.91	7.40	0.88	27.75	7.36	204.33	3.600	No	Yes	2.00
251	41.17	59.75	2.91	7.60	0.88	28.81	7.32	210.80	3.600	No	Yes	2.00
252	41.34	61.29	2.90	7.62	0.88	29.55	7.22	213.31	3.600	No	Yes	2.00
253	41.50	60.76	2.90	7.56	0.88	29.20	7.23	211.26	3.600	No	Yes	2.00
254	41.67	56.55	2.96	7.88	1.00	24.77	8.20	203.13	3.600	No	Yes	2.00
255	41.83	54.61	2.99	8.19	1.00	23.81	8.59	204.65	3.600	No	Yes	2.00
256	41.99	53.38	3.01	8.56	1.00	23.18	8.96	207.79	3.600	No	Yes	2.00
257	42.16	53.78	3.01	8.51	1.00	23.30	8.91	207.58	3.600	No	Yes	2.00
258	42.32	54.27	3.00	8.35	1.00	23.46	8.77	205.76	3.600	No	Yes	2.00
259	42.49	55.21	2.98	8.04	1.00	23.82	8.50	202.37	3.600	No	Yes	2.00
260	42.65	55.68	2.97	7.69	1.00	23.97	8.24	197.46	3.600	No	Yes	2.00
261	42.81	53.89	2.99	7.94	1.00	23.09	8.59	198.33	3.600	No	Yes	2.00
262	42.98	52.41	3.00	8.10	1.00	22.37	8.86	198.21	3.600	No	Yes	2.00
263	43.14	52.38	3.02	8.45	1.00	22.29	9.10	202.87	3.600	No	Yes	2.00
264	43.31	54.99	2.99	8.20	1.00	23.40	8.69	203.28	3.600	No	Yes	2.00
265	43.47	58.20	2.97	8.11	1.00	24.77	8.34	206.64	3.600	No	Yes	2.00
266	43.64	60.24	2.96	7.89	1.00	25.61	8.05	206.09	3.600	No	Yes	2.00
267	43.80	59.00	2.96	7.93	1.00	24.99	8.19	204.61	3.600	No	Yes	2.00
268	43.96	57.18	2.97	7.81	1.00	24.12	8.29	199.93	3.600	No	Yes	2.00
269	44.13	56.13	2.97	7.73	1.00	23.59	8.35	196.92	3.600	No	Yes	2.00
270	44.29	55.24	2.98	7.72	1.00	23.13	8.44	195.16	3.600	No	Yes	2.00
271	44.46	54.13	3.00	8.08	1.00	22.58	8.79	198.58	3.600	No	Yes	2.00
272	44.62	54.38	3.01	8.31	1.00	22.63	8.93	202.20	3.600	No	Yes	2.00
273	44.78	56.92	2.99	8.17	1.00	23.69	8.61	203.95	3.600	No	Yes	2.00
274	44.95	60.19	2.95	7.72	1.00	25.05	8.04	201.45	3.600	No	Yes	2.00
275	45.11	62.24	2.90	7.37	0.88	28.42	7.24	205.64	3.600	No	Yes	2.00
276	45.28	64.15	2.89	7.23	0.87	29.37	7.01	205.85	3.600	No	Yes	2.00
277	45.44	67.17	2.87	7.09	0.87	30.90	6.71	207.32	3.600	No	Yes	2.00
278	45.60	70.42	2.83	6.77	0.86	32.62	6.29	205.17	3.600	No	Yes	2.00
279	45.77	69.54	2.83	6.51	0.86	32.18	6.18	199.02	3.600	No	Yes	2.00
280	45.93	66.52	2.82	6.19	0.86	30.66	6.17	189.13	3.600	No	Yes	2.00
281	46.10	66.74	2.80	5.83	0.85	30.87	5.91	182.35	3.600	No	Yes	2.00
282	46.26	67.31	2.77	5.31	0.84	31.32	5.51	172.50	3.600	No	Yes	2.00
283	46.42	66.89	2.74	4.79	0.83	31.27	5.15	161.04	3.600	No	Yes	2.00
284	46.59	62.18	2.77	4.79	0.84	28.73	5.46	156.72	3.600	No	Yes	2.00
285	46.75	60.35	2.79	4.89	0.84	27.66	5.67	156.84	3.600	No	Yes	2.00
286	46.92	60.28	2.80	5.11	0.85	27.47	5.86	161.04	3.600	No	Yes	2.00
287	47.08	62.68	2.76	4.72	0.84	28.83	5.39	155.37	3.600	No	Yes	2.00
288	47.24	59.58	2.77	4.62	0.84	27.19	5.53	150.49	3.600	No	Yes	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
289	47.41	53.73	2.80	4.41	0.85	24.19	5.82	140.89	3.600	No	Yes	2.00
290	47.57	44.12	2.88	4.50	0.87	19.17	6.92	132.57	3.600	No	Yes	2.00
291	47.74	39.16	2.91	4.29	0.88	16.69	7.39	123.37	3.600	No	Yes	2.00
292	47.90	37.68	2.96	4.27	1.00	14.51	8.10	117.58	3.600	No	Yes	2.00
293	48.06	37.70	2.96	4.29	1.00	14.49	8.13	117.77	3.600	No	Yes	2.00
294	48.23	38.35	2.95	4.23	1.00	14.73	7.98	117.54	3.600	No	Yes	2.00
295	48.39	37.99	2.95	4.15	1.00	14.54	7.97	115.87	3.600	No	Yes	2.00
296	48.56	37.38	2.96	4.13	1.00	14.26	8.05	114.74	3.600	No	Yes	2.00
297	48.72	37.18	2.98	4.46	1.00	14.14	8.43	119.21	3.600	No	Yes	2.00
298	48.88	38.25	3.00	5.00	1.00	14.55	8.80	128.07	3.600	No	Yes	2.00
299	49.05	40.04	3.01	5.47	1.00	15.25	8.96	136.66	3.600	No	Yes	2.00
300	49.21	41.49	3.01	5.62	1.00	15.81	8.89	140.52	3.600	No	Yes	2.00
301	49.38	41.71	3.00	5.57	1.00	15.87	8.82	140.03	3.600	No	Yes	2.00
302	49.54	41.33	3.02	5.86	1.00	15.67	9.15	143.40	3.600	No	Yes	2.00
303	49.70	40.14	3.04	6.11	1.00	15.15	9.56	144.85	3.600	No	Yes	2.00
304	49.87	38.84	3.07	6.34	1.00	14.58	9.99	145.59	3.600	No	Yes	2.00
305	50.03	38.78	3.05	5.85	1.00	14.52	9.59	139.24	3.600	No	Yes	2.00
306	50.20	39.78	3.04	5.98	1.00	14.89	9.55	142.19	3.600	No	Yes	2.00
307	50.36	40.57	3.04	5.94	1.00	15.18	9.40	142.67	3.600	No	Yes	2.00
308	50.52	39.08	3.06	6.12	1.00	14.54	9.81	142.73	3.600	No	Yes	2.00
309	50.69	37.77	3.05	5.70	1.00	13.98	9.68	135.33	3.600	No	Yes	2.00
310	50.85	36.44	3.07	5.80	1.00	13.41	10.03	134.47	3.600	No	Yes	2.00
311	51.02	38.48	3.06	5.93	1.00	14.20	9.79	138.99	3.600	No	Yes	2.00
312	51.18	42.32	3.02	5.90	1.00	15.71	9.17	144.07	3.600	No	Yes	2.00
313	51.35	44.99	3.00	5.78	1.00	16.74	8.71	145.82	3.600	No	Yes	2.00
314	51.51	44.44	2.99	5.66	1.00	16.48	8.69	143.32	3.600	No	Yes	2.00
315	51.67	40.26	3.04	5.93	1.00	14.77	9.56	141.18	3.600	No	Yes	2.00
316	51.84	36.90	3.10	6.42	1.00	13.40	10.58	141.85	3.600	No	Yes	2.00
317	52.00	35.50	3.14	7.11	1.00	12.81	11.47	146.98	3.600	No	Yes	2.00
318	52.17	37.10	3.16	7.92	1.00	13.42	11.82	158.54	3.600	No	Yes	2.00
319	52.33	40.70	3.15	8.50	1.00	14.81	11.58	171.55	3.600	No	Yes	2.00
320	52.49	46.78	3.10	8.51	1.00	17.18	10.64	182.80	3.600	No	Yes	2.00
321	52.66	54.13	3.03	7.76	1.00	20.04	9.22	184.82	3.600	No	Yes	2.00
322	52.82	58.86	2.96	6.89	1.00	21.85	8.16	178.41	3.600	No	Yes	2.00
323	52.99	55.27	2.96	6.37	1.00	20.39	8.14	165.92	3.600	No	Yes	2.00
324	53.15	45.42	3.03	6.41	1.00	16.48	9.31	153.46	3.600	No	Yes	2.00
325	53.31	37.55	3.12	6.92	1.00	13.37	11.03	147.43	3.600	No	Yes	2.00
326	53.48	34.49	3.20	8.08	1.00	12.14	12.65	153.60	3.600	No	Yes	2.00
327	53.64	36.04	3.21	8.91	1.00	12.71	12.96	164.84	3.600	No	Yes	2.00
328	53.81	40.83	3.16	8.72	1.00	14.55	11.87	172.60	3.600	No	Yes	2.00
329	53.97	48.51	3.06	7.62	1.00	17.49	9.90	173.14	3.600	No	Yes	2.00
330	54.13	55.42	2.99	6.83	1.00	20.13	8.54	171.89	3.600	No	Yes	2.00
331	54.30	59.21	2.95	6.53	1.00	21.54	7.97	171.75	3.600	No	Yes	2.00
332	54.46	61.17	2.88	5.94	0.87	24.98	6.86	171.31	3.600	No	Yes	2.00
333	54.63	63.50	2.82	5.27	0.86	26.31	6.16	161.93	3.600	No	Yes	2.00
334	54.79	66.24	2.77	4.63	0.84	27.88	5.45	151.95	3.600	No	Yes	2.00
335	54.95	69.31	2.75	4.69	0.83	29.28	5.31	155.47	3.600	No	Yes	2.00
336	55.12	71.04	2.78	5.14	0.84	29.82	5.57	165.97	3.600	No	Yes	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
337	55.28	72.45	2.82	5.95	0.85	30.03	6.10	183.07	3.600	No	Yes	2.00
338	55.45	77.74	2.83	6.56	0.86	32.19	6.22	200.06	3.600	No	Yes	2.00
339	55.61	89.33	2.78	6.58	0.84	37.61	5.64	212.21	3.600	No	Yes	2.00
340	55.77	102.12	2.72	6.28	0.82	43.84	4.95	217.05	3.600	No	Yes	2.00
341	55.94	107.30	2.71	6.27	0.82	46.26	4.78	220.93	3.600	No	Yes	2.00
342	56.10	109.29	2.70	6.19	0.82	47.18	4.68	220.60	3.600	No	Yes	2.00
343	56.27	116.30	2.65	5.77	0.80	50.83	4.23	215.03	3.600	No	Yes	2.00
344	56.43	128.58	2.58	5.07	0.78	57.47	3.54	203.71	4.000	No	No	2.00
345	56.59	139.13	2.48	4.12	0.75	63.93	2.82	180.61	0.628	No	No	2.00
346	56.76	140.06	2.44	3.70	0.74	64.95	2.59	168.01	0.521	No	No	2.00
347	56.92	141.14	2.41	3.39	0.73	65.95	2.40	158.59	0.451	No	No	2.00
348	57.09	137.32	2.45	3.78	0.74	63.18	2.67	168.87	0.528	No	No	2.00
349	57.25	129.32	2.51	4.15	0.76	58.41	3.02	176.50	0.591	No	No	2.00
350	57.41	123.72	2.52	4.08	0.76	55.56	3.09	171.64	0.550	No	No	2.00
351	57.58	129.54	2.44	3.43	0.74	59.40	2.60	154.39	0.422	No	No	2.00
352	57.74	145.97	2.34	2.84	0.71	69.03	2.07	143.14	0.353	No	No	2.00
353	57.91	161.14	2.31	2.89	0.70	76.86	1.96	150.77	0.399	No	No	2.00
354	58.07	171.30	2.33	3.20	0.71	81.31	2.03	164.87	0.497	No	No	2.00
355	58.23	181.13	2.31	3.21	0.70	86.36	1.96	169.13	0.530	No	No	2.00
356	58.40	183.45	2.29	3.03	0.69	87.94	1.87	164.44	0.494	No	No	2.00
357	58.56	181.82	2.25	2.72	0.68	87.87	1.76	154.25	0.421	No	No	2.00
358	58.73	176.39	2.26	2.68	0.68	84.92	1.77	150.49	0.397	No	No	2.00
359	58.89	185.86	N/A	-49844.39	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
360	59.06	224.48	N/A	-82250.86	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
361	59.22	352.79	N/A	-78022.44	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
362	59.38	469.75	N/A	-58440.14	1.00	-1.00	1.00	N/A	4.000	No	No	2.00

Abbreviations

Depth: Depth from free surface, at which CPT was performed (ft)
q_t: Total cone resistance
I_c: Soil behavior type index
Fr: Normalized friction ratio (%)
n: Stress exponent
Q_{tn}: Normalized cone resistance
K_c: Cone resistance correction factor due to fines
$Q_{tn,cs}$: Normalized and adjusted cone resistance
$CRR_{7.5}$: Cyclic resistance ratio for M_w=7.5
FS: Factor of safety against soil liquefaction

:: Liquefaction Potential Index calculation data ::

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
0.16	2.00	0.00	0.00	0.16	0.00	0.33	2.00	0.00	0.00	0.16	0.00
0.49	2.00	0.00	0.00	0.16	0.00	0.66	2.00	0.00	0.00	0.16	0.00
0.82	2.00	0.00	0.00	0.16	0.00	0.98	2.00	0.00	0.00	0.16	0.00
1.15	2.00	0.00	0.00	0.16	0.00	1.31	2.00	0.00	0.00	0.16	0.00
1.48	2.00	0.00	0.00	0.16	0.00	1.64	2.00	0.00	0.00	0.16	0.00
1.80	2.00	0.00	0.00	0.16	0.00	1.97	2.00	0.00	0.00	0.16	0.00
2.13	2.00	0.00	0.00	0.16	0.00	2.30	2.00	0.00	0.00	0.16	0.00
2.46	2.00	0.00	0.00	0.16	0.00	2.62	2.00	0.00	0.00	0.16	0.00
2.79	2.00	0.00	0.00	0.16	0.00	2.95	2.00	0.00	0.00	0.16	0.00
3.12	2.00	0.00	0.00	0.16	0.00	3.28	2.00	0.00	0.00	0.16	0.00
3.44	2.00	0.00	0.00	0.16	0.00	3.61	2.00	0.00	0.00	0.16	0.00
3.77	2.00	0.00	0.00	0.16	0.00	3.94	2.00	0.00	0.00	0.16	0.00
4.10	2.00	0.00	0.00	0.16	0.00	4.27	2.00	0.00	0.00	0.16	0.00
4.43	2.00	0.00	0.00	0.16	0.00	4.59	2.00	0.00	0.00	0.16	0.00
4.76	2.00	0.00	0.00	0.16	0.00	4.92	2.00	0.00	0.00	0.16	0.00
5.09	2.00	0.00	0.00	0.16	0.00	5.25	2.00	0.00	0.00	0.16	0.00
5.41	2.00	0.00	0.00	0.16	0.00	5.58	2.00	0.00	0.00	0.16	0.00
5.74	2.00	0.00	0.00	0.16	0.00	5.91	2.00	0.00	0.00	0.16	0.00
6.07	2.00	0.00	0.00	0.16	0.00	6.23	2.00	0.00	0.00	0.16	0.00
6.40	2.00	0.00	0.00	0.16	0.00	6.56	2.00	0.00	0.00	0.16	0.00
6.73	2.00	0.00	0.00	0.16	0.00	6.89	2.00	0.00	0.00	0.16	0.00
7.05	2.00	0.00	0.00	0.16	0.00	7.22	2.00	0.00	0.00	0.16	0.00
7.38	2.00	0.00	0.00	0.16	0.00	7.55	2.00	0.00	0.00	0.16	0.00
7.71	2.00	0.00	0.00	0.16	0.00	7.87	2.00	0.00	0.00	0.16	0.00
8.04	2.00	0.00	0.00	0.16	0.00	8.20	2.00	0.00	0.00	0.16	0.00
8.37	2.00	0.00	0.00	0.16	0.00	8.53	2.00	0.00	0.00	0.16	0.00
8.69	2.00	0.00	0.00	0.16	0.00	8.86	2.00	0.00	0.00	0.16	0.00
9.02	2.00	0.00	0.00	0.16	0.00	9.19	2.00	0.00	0.00	0.16	0.00
9.35	2.00	0.00	0.00	0.16	0.00	9.51	2.00	0.00	0.00	0.16	0.00
9.68	2.00	0.00	0.00	0.16	0.00	9.84	2.00	0.00	0.00	0.16	0.00
10.01	2.00	0.00	0.00	0.16	0.00	10.17	2.00	0.00	0.00	0.16	0.00
10.33	2.00	0.00	0.00	0.16	0.00	10.50	2.00	0.00	0.00	0.16	0.00
10.66	2.00	0.00	0.00	0.16	0.00	10.83	2.00	0.00	0.00	0.16	0.00
10.99	2.00	0.00	0.00	0.16	0.00	11.15	2.00	0.00	0.00	0.16	0.00
11.32	2.00	0.00	0.00	0.16	0.00	11.48	2.00	0.00	0.00	0.16	0.00
11.65	2.00	0.00	0.00	0.16	0.00	11.81	2.00	0.00	0.00	0.16	0.00
11.98	2.00	0.00	0.00	0.16	0.00	12.14	2.00	0.00	0.00	0.16	0.00
12.30	2.00	0.00	0.00	0.16	0.00	12.47	2.00	0.00	0.00	0.16	0.00
12.63	2.00	0.00	0.00	0.16	0.00	12.80	2.00	0.00	0.00	0.16	0.00
12.96	2.00	0.00	0.00	0.16	0.00	13.12	2.00	0.00	0.00	0.16	0.00
13.29	2.00	0.00	0.00	0.16	0.00	13.45	2.00	0.00	0.00	0.16	0.00
13.62	2.00	0.00	0.00	0.16	0.00	13.78	2.00	0.00	0.00	0.16	0.00
13.94	2.00	0.00	0.00	0.16	0.00	14.11	2.00	0.00	0.00	0.16	0.00
14.27	2.00	0.00	0.00	0.16	0.00	14.44	2.00	0.00	0.00	0.16	0.00
14.60	2.00	0.00	0.00	0.16	0.00	14.76	2.00	0.00	0.00	0.16	0.00
14.93	2.00	0.00	0.00	0.16	0.00	15.09	2.00	0.00	0.00	0.16	0.00
15.26	2.00	0.00	0.00	0.16	0.00	15.42	2.00	0.00	0.00	0.16	0.00
15.58	2.00	0.00	0.00	0.16	0.00	15.75	2.00	0.00	0.00	0.16	0.00

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
15.91	2.00	0.00	0.00	0.16	0.00	16.08	2.00	0.00	0.00	0.16	0.00
16.24	2.00	0.00	0.00	0.16	0.00	16.40	2.00	0.00	0.00	0.16	0.00
16.57	2.00	0.00	0.00	0.16	0.00	16.73	2.00	0.00	0.00	0.16	0.00
16.90	2.00	0.00	0.00	0.16	0.00	17.06	2.00	0.00	0.00	0.16	0.00
17.22	2.00	0.00	0.00	0.16	0.00	17.39	2.00	0.00	0.00	0.16	0.00
17.55	2.00	0.00	0.00	0.16	0.00	17.72	2.00	0.00	0.00	0.16	0.00
17.88	2.00	0.00	0.00	0.16	0.00	18.04	2.00	0.00	0.00	0.16	0.00
18.21	2.00	0.00	0.00	0.16	0.00	18.37	2.00	0.00	0.00	0.16	0.00
18.54	2.00	0.00	0.00	0.16	0.00	18.70	2.00	0.00	0.00	0.16	0.00
18.86	2.00	0.00	0.00	0.16	0.00	19.03	2.00	0.00	0.00	0.16	0.00
19.19	2.00	0.00	0.00	0.16	0.00	19.36	2.00	0.00	0.00	0.16	0.00
19.52	2.00	0.00	0.00	0.16	0.00	19.69	2.00	0.00	0.00	0.16	0.00
19.85	2.00	0.00	0.00	0.16	0.00	20.01	2.00	0.00	0.00	0.16	0.00
20.18	2.00	0.00	0.00	0.16	0.00	20.34	2.00	0.00	0.00	0.16	0.00
20.51	2.00	0.00	0.00	0.16	0.00	20.67	2.00	0.00	0.00	0.16	0.00
20.83	2.00	0.00	0.00	0.16	0.00	21.00	2.00	0.00	0.00	0.16	0.00
21.16	2.00	0.00	0.00	0.16	0.00	21.33	2.00	0.00	0.00	0.16	0.00
21.49	2.00	0.00	0.00	0.16	0.00	21.65	2.00	0.00	0.00	0.16	0.00
21.82	2.00	0.00	0.00	0.16	0.00	21.98	2.00	0.00	0.00	0.16	0.00
22.15	2.00	0.00	0.00	0.16	0.00	22.31	2.00	0.00	0.00	0.16	0.00
22.47	2.00	0.00	0.00	0.16	0.00	22.64	2.00	0.00	0.00	0.16	0.00
22.80	2.00	0.00	0.00	0.16	0.00	22.97	2.00	0.00	0.00	0.16	0.00
23.13	2.00	0.00	0.00	0.16	0.00	23.29	2.00	0.00	0.00	0.16	0.00
23.46	2.00	0.00	0.00	0.16	0.00	23.62	2.00	0.00	0.00	0.16	0.00
23.79	2.00	0.00	0.00	0.16	0.00	23.95	2.00	0.00	0.00	0.16	0.00
24.11	2.00	0.00	0.00	0.16	0.00	24.28	2.00	0.00	0.00	0.16	0.00
24.44	2.00	0.00	0.00	0.16	0.00	24.61	2.00	0.00	0.00	0.16	0.00
24.77	2.00	0.00	0.00	0.16	0.00	24.93	2.00	0.00	0.00	0.16	0.00
25.10	2.00	0.00	0.00	0.16	0.00	25.26	2.00	0.00	0.00	0.16	0.00
25.43	2.00	0.00	0.00	0.16	0.00	25.59	2.00	0.00	0.00	0.16	0.00
25.75	2.00	0.00	0.00	0.16	0.00	25.92	2.00	0.00	0.00	0.16	0.00
26.08	2.00	0.00	0.00	0.16	0.00	26.25	2.00	0.00	0.00	0.16	0.00
26.41	2.00	0.00	0.00	0.16	0.00	26.57	2.00	0.00	0.00	0.16	0.00
26.74	2.00	0.00	0.00	0.16	0.00	26.90	2.00	0.00	0.00	0.16	0.00
27.07	2.00	0.00	0.00	0.16	0.00	27.23	2.00	0.00	0.00	0.16	0.00
27.40	2.00	0.00	0.00	0.16	0.00	27.56	2.00	0.00	0.00	0.16	0.00
27.72	2.00	0.00	0.00	0.16	0.00	27.89	2.00	0.00	0.00	0.16	0.00
28.05	2.00	0.00	0.00	0.16	0.00	28.22	2.00	0.00	0.00	0.16	0.00
28.38	2.00	0.00	0.00	0.16	0.00	28.54	2.00	0.00	0.00	0.16	0.00
28.71	2.00	0.00	0.00	0.16	0.00	28.87	2.00	0.00	0.00	0.16	0.00
29.04	2.00	0.00	0.00	0.16	0.00	29.20	2.00	0.00	0.00	0.16	0.00
29.36	2.00	0.00	0.00	0.16	0.00	29.53	2.00	0.00	0.00	0.16	0.00
29.69	2.00	0.00	0.00	0.16	0.00	29.86	2.00	0.00	0.00	0.16	0.00
30.02	2.00	0.00	0.00	0.16	0.00	30.18	2.00	0.00	0.00	0.16	0.00
30.35	2.00	0.00	0.00	0.16	0.00	30.51	2.00	0.00	0.00	0.16	0.00
30.68	2.00	0.00	0.00	0.16	0.00	30.84	2.00	0.00	0.00	0.16	0.00
31.00	2.00	0.00	0.00	0.16	0.00	31.17	2.00	0.00	0.00	0.16	0.00
31.33	2.00	0.00	0.00	0.16	0.00	31.50	2.00	0.00	0.00	0.16	0.00

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
31.66	2.00	0.00	0.00	0.16	0.00	31.82	2.00	0.00	0.00	0.16	0.00
31.99	2.00	0.00	0.00	0.16	0.00	32.15	2.00	0.00	0.00	0.16	0.00
32.32	2.00	0.00	0.00	0.16	0.00	32.48	2.00	0.00	0.00	0.16	0.00
32.64	2.00	0.00	0.00	0.16	0.00	32.81	2.00	0.00	0.00	0.16	0.00
32.97	2.00	0.00	0.00	0.16	0.00	33.14	2.00	0.00	0.00	0.16	0.00
33.30	2.00	0.00	0.00	0.16	0.00	33.46	2.00	0.00	0.00	0.16	0.00
33.63	2.00	0.00	0.00	0.16	0.00	33.79	2.00	0.00	0.00	0.16	0.00
33.96	2.00	0.00	0.00	0.16	0.00	34.12	2.00	0.00	0.00	0.16	0.00
34.28	2.00	0.00	0.00	0.16	0.00	34.45	2.00	0.00	0.00	0.16	0.00
34.61	2.00	0.00	0.00	0.16	0.00	34.78	2.00	0.00	0.00	0.16	0.00
34.94	2.00	0.00	0.00	0.16	0.00	35.10	2.00	0.00	0.00	0.16	0.00
35.27	2.00	0.00	0.00	0.16	0.00	35.43	2.00	0.00	0.00	0.16	0.00
35.60	2.00	0.00	0.00	0.16	0.00	35.76	2.00	0.00	0.00	0.16	0.00
35.93	2.00	0.00	0.00	0.16	0.00	36.09	2.00	0.00	0.00	0.16	0.00
36.25	2.00	0.00	0.00	0.16	0.00	36.42	2.00	0.00	0.00	0.16	0.00
36.58	2.00	0.00	0.00	0.16	0.00	36.75	2.00	0.00	0.00	0.16	0.00
36.91	2.00	0.00	0.00	0.16	0.00	37.07	2.00	0.00	0.00	0.16	0.00
37.24	2.00	0.00	0.00	0.16	0.00	37.40	2.00	0.00	0.00	0.16	0.00
37.57	2.00	0.00	0.00	0.16	0.00	37.73	2.00	0.00	0.00	0.16	0.00
37.89	2.00	0.00	0.00	0.16	0.00	38.06	2.00	0.00	0.00	0.16	0.00
38.22	2.00	0.00	0.00	0.16	0.00	38.39	2.00	0.00	0.00	0.16	0.00
38.55	2.00	0.00	0.00	0.16	0.00	38.71	2.00	0.00	0.00	0.16	0.00
38.88	2.00	0.00	0.00	0.16	0.00	39.04	2.00	0.00	0.00	0.16	0.00
39.21	2.00	0.00	0.00	0.16	0.00	39.37	2.00	0.00	0.00	0.16	0.00
39.53	2.00	0.00	0.00	0.16	0.00	39.70	2.00	0.00	0.00	0.16	0.00
39.86	2.00	0.00	0.00	0.16	0.00	40.03	2.00	0.00	0.00	0.16	0.00
40.19	2.00	0.00	0.00	0.16	0.00	40.35	2.00	0.00	0.00	0.16	0.00
40.52	2.00	0.00	0.00	0.16	0.00	40.68	2.00	0.00	0.00	0.16	0.00
40.85	2.00	0.00	0.00	0.16	0.00	41.01	2.00	0.00	0.00	0.16	0.00
41.17	2.00	0.00	0.00	0.16	0.00	41.34	2.00	0.00	0.00	0.16	0.00
41.50	2.00	0.00	0.00	0.16	0.00	41.67	2.00	0.00	0.00	0.16	0.00
41.83	2.00	0.00	0.00	0.16	0.00	41.99	2.00	0.00	0.00	0.16	0.00
42.16	2.00	0.00	0.00	0.16	0.00	42.32	2.00	0.00	0.00	0.16	0.00
42.49	2.00	0.00	0.00	0.16	0.00	42.65	2.00	0.00	0.00	0.16	0.00
42.81	2.00	0.00	0.00	0.16	0.00	42.98	2.00	0.00	0.00	0.16	0.00
43.14	2.00	0.00	0.00	0.16	0.00	43.31	2.00	0.00	0.00	0.16	0.00
43.47	2.00	0.00	0.00	0.16	0.00	43.64	2.00	0.00	0.00	0.16	0.00
43.80	2.00	0.00	0.00	0.16	0.00	43.96	2.00	0.00	0.00	0.16	0.00
44.13	2.00	0.00	0.00	0.16	0.00	44.29	2.00	0.00	0.00	0.16	0.00
44.46	2.00	0.00	0.00	0.16	0.00	44.62	2.00	0.00	0.00	0.16	0.00
44.78	2.00	0.00	0.00	0.16	0.00	44.95	2.00	0.00	0.00	0.16	0.00
45.11	2.00	0.00	0.00	0.16	0.00	45.28	2.00	0.00	0.00	0.16	0.00
45.44	2.00	0.00	0.00	0.16	0.00	45.60	2.00	0.00	0.00	0.16	0.00
45.77	2.00	0.00	0.00	0.16	0.00	45.93	2.00	0.00	0.00	0.16	0.00
46.10	2.00	0.00	0.00	0.16	0.00	46.26	2.00	0.00	0.00	0.16	0.00
46.42	2.00	0.00	0.00	0.16	0.00	46.59	2.00	0.00	0.00	0.16	0.00
46.75	2.00	0.00	0.00	0.16	0.00	46.92	2.00	0.00	0.00	0.16	0.00
47.08	2.00	0.00	0.00	0.16	0.00	47.24	2.00	0.00	0.00	0.16	0.00

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
47.41	2.00	0.00	0.00	0.16	0.00	47.57	2.00	0.00	0.00	0.16	0.00
47.74	2.00	0.00	0.00	0.16	0.00	47.90	2.00	0.00	0.00	0.16	0.00
48.06	2.00	0.00	0.00	0.16	0.00	48.23	2.00	0.00	0.00	0.16	0.00
48.39	2.00	0.00	0.00	0.16	0.00	48.56	2.00	0.00	0.00	0.16	0.00
48.72	2.00	0.00	0.00	0.16	0.00	48.88	2.00	0.00	0.00	0.16	0.00
49.05	2.00	0.00	0.00	0.16	0.00	49.21	2.00	0.00	0.00	0.16	0.00
49.38	2.00	0.00	0.00	0.16	0.00	49.54	2.00	0.00	0.00	0.16	0.00
49.70	2.00	0.00	0.00	0.16	0.00	49.87	2.00	0.00	0.00	0.16	0.00
50.03	2.00	0.00	0.00	0.16	0.00	50.20	2.00	0.00	0.00	0.16	0.00
50.36	2.00	0.00	0.00	0.16	0.00	50.52	2.00	0.00	0.00	0.16	0.00
50.69	2.00	0.00	0.00	0.16	0.00	50.85	2.00	0.00	0.00	0.16	0.00
51.02	2.00	0.00	0.00	0.16	0.00	51.18	2.00	0.00	0.00	0.16	0.00
51.35	2.00	0.00	0.00	0.16	0.00	51.51	2.00	0.00	0.00	0.16	0.00
51.67	2.00	0.00	0.00	0.16	0.00	51.84	2.00	0.00	0.00	0.16	0.00
52.00	2.00	0.00	0.00	0.16	0.00	52.17	2.00	0.00	0.00	0.16	0.00
52.33	2.00	0.00	0.00	0.16	0.00	52.49	2.00	0.00	0.00	0.16	0.00
52.66	2.00	0.00	0.00	0.16	0.00	52.82	2.00	0.00	0.00	0.16	0.00
52.99	2.00	0.00	0.00	0.16	0.00	53.15	2.00	0.00	0.00	0.16	0.00
53.31	2.00	0.00	0.00	0.16	0.00	53.48	2.00	0.00	0.00	0.16	0.00
53.64	2.00	0.00	0.00	0.16	0.00	53.81	2.00	0.00	0.00	0.16	0.00
53.97	2.00	0.00	0.00	0.16	0.00	54.13	2.00	0.00	0.00	0.16	0.00
54.30	2.00	0.00	0.00	0.16	0.00	54.46	2.00	0.00	0.00	0.16	0.00
54.63	2.00	0.00	0.00	0.16	0.00	54.79	2.00	0.00	0.00	0.16	0.00
54.95	2.00	0.00	0.00	0.16	0.00	55.12	2.00	0.00	0.00	0.16	0.00
55.28	2.00	0.00	0.00	0.16	0.00	55.45	2.00	0.00	0.00	0.16	0.00
55.61	2.00	0.00	0.00	0.16	0.00	55.77	2.00	0.00	0.00	0.16	0.00
55.94	2.00	0.00	0.00	0.16	0.00	56.10	2.00	0.00	0.00	0.16	0.00
56.27	2.00	0.00	0.00	0.16	0.00	56.43	2.00	0.00	0.00	0.16	0.00
56.59	2.00	0.00	0.00	0.16	0.00	56.76	2.00	0.00	0.00	0.16	0.00
56.92	2.00	0.00	0.00	0.16	0.00	57.09	2.00	0.00	0.00	0.16	0.00
57.25	2.00	0.00	0.00	0.16	0.00	57.41	2.00	0.00	0.00	0.16	0.00
57.58	2.00	0.00	0.00	0.16	0.00	57.74	2.00	0.00	0.00	0.16	0.00
57.91	2.00	0.00	0.00	0.16	0.00	58.07	2.00	0.00	0.00	0.16	0.00
58.23	2.00	0.00	0.00	0.16	0.00	58.40	2.00	0.00	0.00	0.16	0.00
58.56	2.00	0.00	0.00	0.16	0.00	58.73	2.00	0.00	0.00	0.16	0.00
58.89	2.00	0.00	0.00	0.16	0.00	59.06	2.00	0.00	0.00	0.16	0.00
59.22	2.00	0.00	0.00	0.16	0.00	59.38	2.00	0.00	0.00	0.16	0.00

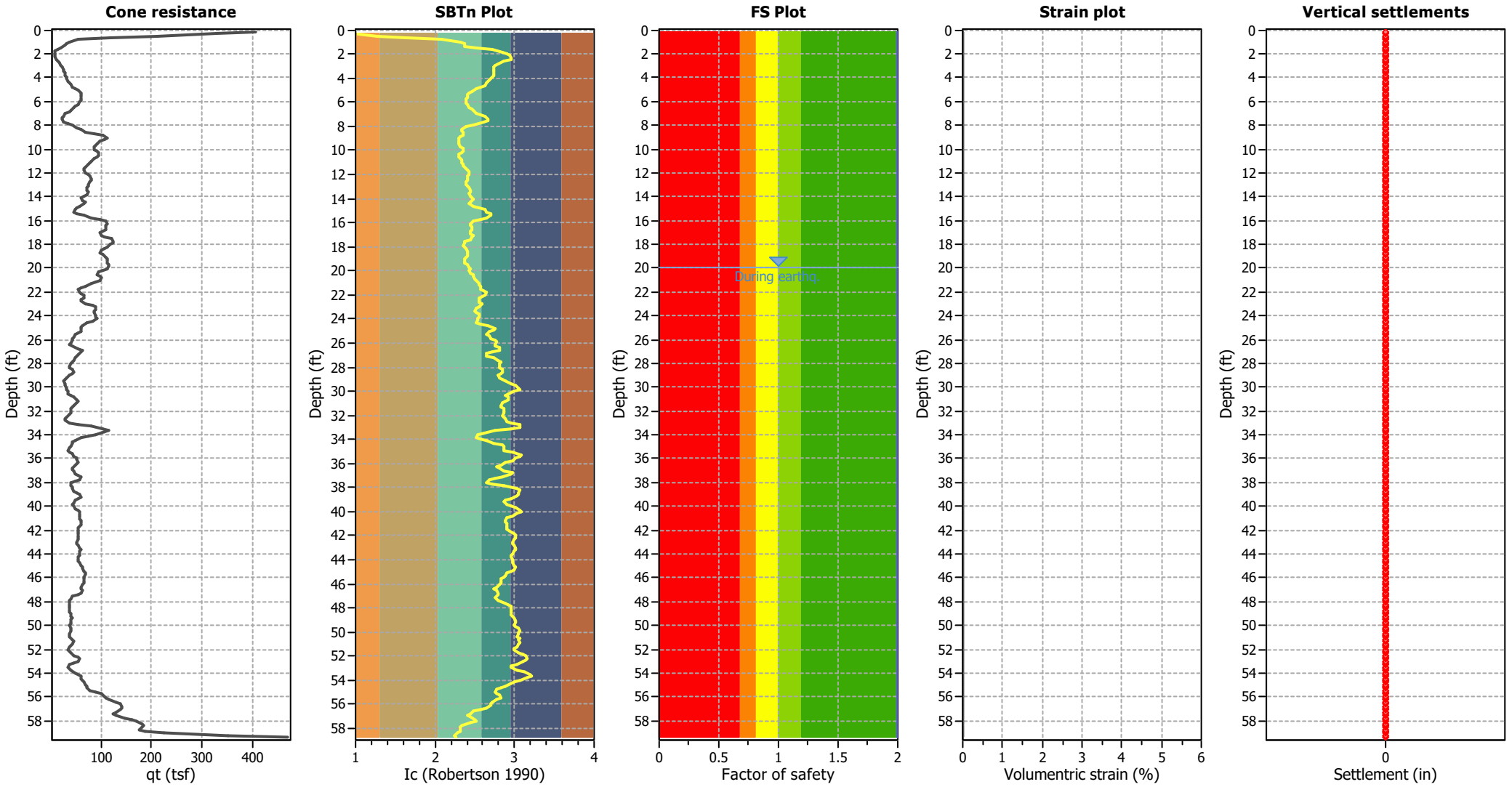
Overall liquefaction potential: 0.00

LPI = 0.00 - Liquefaction risk very low
LPI between 0.00 and 5.00 - Liquefaction risk low
LPI between 5.00 and 15.00 - Liquefaction risk high
LPI > 15.00 - Liquefaction risk very high

Abbreviations

FS: Calculated factor of safety for test point
F_L: 1 - FS
w_z: Function value of the extend of soil liquefaction according to depth
d_z: Layer thickness (ft)
LPI: Liquefaction potential index value for test point

Estimation of post-earthquake settlements



Abbreviations

q_t:	Total cone resistance (cone resistance q_c corrected for pore water effects)
I_c:	Soil Behaviour Type Index
FS:	Calculated Factor of Safety against liquefaction
Volumentric strain:	Post-liquefaction volumentric strain

:: Post-earthquake settlement due to soil liquefaction ::

Depth (ft)	$Q_{tn,cs}$	FS	e_v (%)	DF	Settlement (in)	Depth (ft)	$Q_{tn,cs}$	FS	e_v (%)	DF	Settlement (in)
20.01	234.60	2.00	0.00	1.00	0.00	20.18	218.92	2.00	0.00	1.00	0.00
20.34	212.35	2.00	0.00	1.00	0.00	20.51	213.01	2.00	0.00	1.00	0.00
20.67	235.57	2.00	0.00	1.00	0.00	20.83	248.46	2.00	0.00	1.00	0.00
21.00	258.99	2.00	0.00	1.00	0.00	21.16	236.75	2.00	0.00	1.00	0.00
21.33	215.78	2.00	0.00	1.00	0.00	21.49	189.80	2.00	0.00	1.00	0.00
21.65	176.13	2.00	0.00	1.00	0.00	21.82	168.58	2.00	0.00	1.00	0.00
21.98	167.67	2.00	0.00	1.00	0.00	22.15	169.26	2.00	0.00	1.00	0.00
22.31	166.49	2.00	0.00	1.00	0.00	22.47	159.18	2.00	0.00	1.00	0.00
22.64	151.87	2.00	0.00	1.00	0.00	22.80	157.74	2.00	0.00	1.00	0.00
22.97	169.26	2.00	0.00	1.00	0.00	23.13	183.30	2.00	0.00	1.00	0.00
23.29	192.07	2.00	0.00	1.00	0.00	23.46	197.77	2.00	0.00	1.00	0.00
23.62	200.68	2.00	0.00	1.00	0.00	23.79	201.20	2.00	0.00	1.00	0.00
23.95	201.67	2.00	0.00	1.00	0.00	24.11	204.37	2.00	0.00	1.00	0.00
24.28	198.73	2.00	0.00	1.00	0.00	24.44	205.54	2.00	0.00	1.00	0.00
24.61	210.03	2.00	0.00	1.00	0.00	24.77	217.04	2.00	0.00	1.00	0.00
24.93	202.89	2.00	0.00	1.00	0.00	25.10	185.86	2.00	0.00	1.00	0.00
25.26	169.51	2.00	0.00	1.00	0.00	25.43	158.77	2.00	0.00	1.00	0.00
25.59	151.96	2.00	0.00	1.00	0.00	25.75	152.71	2.00	0.00	1.00	0.00
25.92	150.69	2.00	0.00	1.00	0.00	26.08	143.70	2.00	0.00	1.00	0.00
26.25	135.08	2.00	0.00	1.00	0.00	26.41	140.96	2.00	0.00	1.00	0.00
26.57	155.28	2.00	0.00	1.00	0.00	26.74	163.00	2.00	0.00	1.00	0.00
26.90	163.13	2.00	0.00	1.00	0.00	27.07	162.26	2.00	0.00	1.00	0.00
27.23	173.64	2.00	0.00	1.00	0.00	27.40	182.84	2.00	0.00	1.00	0.00
27.56	186.00	2.00	0.00	1.00	0.00	27.72	169.71	2.00	0.00	1.00	0.00
27.89	151.47	2.00	0.00	1.00	0.00	28.05	136.73	2.00	0.00	1.00	0.00
28.22	138.60	2.00	0.00	1.00	0.00	28.38	148.19	2.00	0.00	1.00	0.00
28.54	158.74	2.00	0.00	1.00	0.00	28.71	158.42	2.00	0.00	1.00	0.00
28.87	149.44	2.00	0.00	1.00	0.00	29.04	135.02	2.00	0.00	1.00	0.00
29.20	122.75	2.00	0.00	1.00	0.00	29.36	115.82	2.00	0.00	1.00	0.00
29.53	125.63	2.00	0.00	1.00	0.00	29.69	135.57	2.00	0.00	1.00	0.00
29.86	142.93	2.00	0.00	1.00	0.00	30.02	136.71	2.00	0.00	1.00	0.00
30.18	135.32	2.00	0.00	1.00	0.00	30.35	134.39	2.00	0.00	1.00	0.00
30.51	148.70	2.00	0.00	1.00	0.00	30.68	165.92	2.00	0.00	1.00	0.00
30.84	182.89	2.00	0.00	1.00	0.00	31.00	190.31	2.00	0.00	1.00	0.00
31.17	190.17	2.00	0.00	1.00	0.00	31.33	182.98	2.00	0.00	1.00	0.00
31.50	170.75	2.00	0.00	1.00	0.00	31.66	159.24	2.00	0.00	1.00	0.00
31.82	150.04	2.00	0.00	1.00	0.00	31.99	145.54	2.00	0.00	1.00	0.00
32.15	140.93	2.00	0.00	1.00	0.00	32.32	134.24	2.00	0.00	1.00	0.00
32.48	124.60	2.00	0.00	1.00	0.00	32.64	120.16	2.00	0.00	1.00	0.00
32.81	139.39	2.00	0.00	1.00	0.00	32.97	178.24	2.00	0.00	1.00	0.00
33.14	218.55	2.00	0.00	1.00	0.00	33.30	245.68	2.00	0.00	1.00	0.00
33.46	237.78	2.00	0.00	1.00	0.00	33.63	215.85	2.00	0.00	1.00	0.00
33.79	195.86	2.00	0.00	1.00	0.00	33.96	186.41	2.00	0.00	1.00	0.00
34.12	178.96	2.00	0.00	1.00	0.00	34.28	170.37	2.00	0.00	1.00	0.00
34.45	163.26	2.00	0.00	1.00	0.00	34.61	155.99	2.00	0.00	1.00	0.00
34.78	149.11	2.00	0.00	1.00	0.00	34.94	145.71	2.00	0.00	1.00	0.00
35.10	149.07	2.00	0.00	1.00	0.00	35.27	164.49	2.00	0.00	1.00	0.00
35.43	178.71	2.00	0.00	1.00	0.00	35.60	185.56	2.00	0.00	1.00	0.00

:: Post-earthquake settlement due to soil liquefaction :: (continued)

Depth (ft)	$Q_{tn,cs}$	FS	e_v (%)	DF	Settlement (in)	Depth (ft)	$Q_{tn,cs}$	FS	e_v (%)	DF	Settlement (in)
35.76	185.31	2.00	0.00	1.00	0.00	35.93	182.12	2.00	0.00	1.00	0.00
36.09	175.38	2.00	0.00	1.00	0.00	36.25	164.47	2.00	0.00	1.00	0.00
36.42	163.56	2.00	0.00	1.00	0.00	36.58	164.81	2.00	0.00	1.00	0.00
36.75	166.44	2.00	0.00	1.00	0.00	36.91	164.77	2.00	0.00	1.00	0.00
37.07	156.89	2.00	0.00	1.00	0.00	37.24	139.65	2.00	0.00	1.00	0.00
37.40	129.09	2.00	0.00	1.00	0.00	37.57	133.36	2.00	0.00	1.00	0.00
37.73	150.14	2.00	0.00	1.00	0.00	37.89	167.93	2.00	0.00	1.00	0.00
38.06	177.93	2.00	0.00	1.00	0.00	38.22	185.57	2.00	0.00	1.00	0.00
38.39	189.48	2.00	0.00	1.00	0.00	38.55	192.50	2.00	0.00	1.00	0.00
38.71	194.42	2.00	0.00	1.00	0.00	38.88	194.19	2.00	0.00	1.00	0.00
39.04	198.77	2.00	0.00	1.00	0.00	39.21	197.76	2.00	0.00	1.00	0.00
39.37	194.90	2.00	0.00	1.00	0.00	39.53	184.24	2.00	0.00	1.00	0.00
39.70	187.68	2.00	0.00	1.00	0.00	39.86	196.00	2.00	0.00	1.00	0.00
40.03	206.75	2.00	0.00	1.00	0.00	40.19	206.13	2.00	0.00	1.00	0.00
40.35	203.34	2.00	0.00	1.00	0.00	40.52	204.14	2.00	0.00	1.00	0.00
40.68	200.72	2.00	0.00	1.00	0.00	40.85	199.71	2.00	0.00	1.00	0.00
41.01	204.33	2.00	0.00	1.00	0.00	41.17	210.80	2.00	0.00	1.00	0.00
41.34	213.31	2.00	0.00	1.00	0.00	41.50	211.26	2.00	0.00	1.00	0.00
41.67	203.13	2.00	0.00	1.00	0.00	41.83	204.65	2.00	0.00	1.00	0.00
41.99	207.79	2.00	0.00	1.00	0.00	42.16	207.58	2.00	0.00	1.00	0.00
42.32	205.76	2.00	0.00	1.00	0.00	42.49	202.37	2.00	0.00	1.00	0.00
42.65	197.46	2.00	0.00	1.00	0.00	42.81	198.33	2.00	0.00	1.00	0.00
42.98	198.21	2.00	0.00	1.00	0.00	43.14	202.87	2.00	0.00	1.00	0.00
43.31	203.28	2.00	0.00	1.00	0.00	43.47	206.64	2.00	0.00	1.00	0.00
43.64	206.09	2.00	0.00	1.00	0.00	43.80	204.61	2.00	0.00	1.00	0.00
43.96	199.93	2.00	0.00	1.00	0.00	44.13	196.92	2.00	0.00	1.00	0.00
44.29	195.16	2.00	0.00	1.00	0.00	44.46	198.58	2.00	0.00	1.00	0.00
44.62	202.20	2.00	0.00	1.00	0.00	44.78	203.95	2.00	0.00	1.00	0.00
44.95	201.45	2.00	0.00	1.00	0.00	45.11	205.64	2.00	0.00	1.00	0.00
45.28	205.85	2.00	0.00	1.00	0.00	45.44	207.32	2.00	0.00	1.00	0.00
45.60	205.17	2.00	0.00	1.00	0.00	45.77	199.02	2.00	0.00	1.00	0.00
45.93	189.13	2.00	0.00	1.00	0.00	46.10	182.35	2.00	0.00	1.00	0.00
46.26	172.50	2.00	0.00	1.00	0.00	46.42	161.04	2.00	0.00	1.00	0.00
46.59	156.72	2.00	0.00	1.00	0.00	46.75	156.84	2.00	0.00	1.00	0.00
46.92	161.04	2.00	0.00	1.00	0.00	47.08	155.37	2.00	0.00	1.00	0.00
47.24	150.49	2.00	0.00	1.00	0.00	47.41	140.89	2.00	0.00	1.00	0.00
47.57	132.57	2.00	0.00	1.00	0.00	47.74	123.37	2.00	0.00	1.00	0.00
47.90	117.58	2.00	0.00	1.00	0.00	48.06	117.77	2.00	0.00	1.00	0.00
48.23	117.54	2.00	0.00	1.00	0.00	48.39	115.87	2.00	0.00	1.00	0.00
48.56	114.74	2.00	0.00	1.00	0.00	48.72	119.21	2.00	0.00	1.00	0.00
48.88	128.07	2.00	0.00	1.00	0.00	49.05	136.66	2.00	0.00	1.00	0.00
49.21	140.52	2.00	0.00	1.00	0.00	49.38	140.03	2.00	0.00	1.00	0.00
49.54	143.40	2.00	0.00	1.00	0.00	49.70	144.85	2.00	0.00	1.00	0.00
49.87	145.59	2.00	0.00	1.00	0.00	50.03	139.24	2.00	0.00	1.00	0.00
50.20	142.19	2.00	0.00	1.00	0.00	50.36	142.67	2.00	0.00	1.00	0.00
50.52	142.73	2.00	0.00	1.00	0.00	50.69	135.33	2.00	0.00	1.00	0.00
50.85	134.47	2.00	0.00	1.00	0.00	51.02	138.99	2.00	0.00	1.00	0.00
51.18	144.07	2.00	0.00	1.00	0.00	51.35	145.82	2.00	0.00	1.00	0.00

:: Post-earthquake settlement due to soil liquefaction :: (continued)

Depth (ft)	$Q_{tn,cs}$	FS	e_v (%)	DF	Settlement (in)	Depth (ft)	$Q_{tn,cs}$	FS	e_v (%)	DF	Settlement (in)
51.51	143.32	2.00	0.00	1.00	0.00	51.67	141.18	2.00	0.00	1.00	0.00
51.84	141.85	2.00	0.00	1.00	0.00	52.00	146.98	2.00	0.00	1.00	0.00
52.17	158.54	2.00	0.00	1.00	0.00	52.33	171.55	2.00	0.00	1.00	0.00
52.49	182.80	2.00	0.00	1.00	0.00	52.66	184.82	2.00	0.00	1.00	0.00
52.82	178.41	2.00	0.00	1.00	0.00	52.99	165.92	2.00	0.00	1.00	0.00
53.15	153.46	2.00	0.00	1.00	0.00	53.31	147.43	2.00	0.00	1.00	0.00
53.48	153.60	2.00	0.00	1.00	0.00	53.64	164.84	2.00	0.00	1.00	0.00
53.81	172.60	2.00	0.00	1.00	0.00	53.97	173.14	2.00	0.00	1.00	0.00
54.13	171.89	2.00	0.00	1.00	0.00	54.30	171.75	2.00	0.00	1.00	0.00
54.46	171.31	2.00	0.00	1.00	0.00	54.63	161.93	2.00	0.00	1.00	0.00
54.79	151.95	2.00	0.00	1.00	0.00	54.95	155.47	2.00	0.00	1.00	0.00
55.12	165.97	2.00	0.00	1.00	0.00	55.28	183.07	2.00	0.00	1.00	0.00
55.45	200.06	2.00	0.00	1.00	0.00	55.61	212.21	2.00	0.00	1.00	0.00
55.77	217.05	2.00	0.00	1.00	0.00	55.94	220.93	2.00	0.00	1.00	0.00
56.10	220.60	2.00	0.00	1.00	0.00	56.27	215.03	2.00	0.00	1.00	0.00
56.43	203.71	2.00	0.00	1.00	0.00	56.59	180.61	2.00	0.00	1.00	0.00
56.76	168.01	2.00	0.00	1.00	0.00	56.92	158.59	2.00	0.00	1.00	0.00
57.09	168.87	2.00	0.00	1.00	0.00	57.25	176.50	2.00	0.00	1.00	0.00
57.41	171.64	2.00	0.00	1.00	0.00	57.58	154.39	2.00	0.00	1.00	0.00
57.74	143.14	2.00	0.00	1.00	0.00	57.91	150.77	2.00	0.00	1.00	0.00
58.07	164.87	2.00	0.00	1.00	0.00	58.23	169.13	2.00	0.00	1.00	0.00
58.40	164.44	2.00	0.00	1.00	0.00	58.56	154.25	2.00	0.00	1.00	0.00
58.73	150.49	2.00	0.00	1.00	0.00	58.89	-1.00	2.00	0.00	1.00	0.00
59.06	-1.00	2.00	0.00	1.00	0.00	59.22	-1.00	2.00	0.00	1.00	0.00
59.38	-1.00	2.00	0.00	1.00	0.00						

Total estimated settlement: 0.00

Abbreviations

$Q_{tn,cs}$: Equivalent clean sand normalized cone resistance
FS: Factor of safety against liquefaction
e_v (%): Post-liquefaction volumentric strain
DF: e_v depth weighting factor
Settlement: Calculated settlement

:: Strength loss calculation (Robertson (2009) ::

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
0.16	406.52	653.12	1.00	653.12	0.77	1.18	1.18
0.33	327.77	526.58	1.00	526.58	0.97	1.12	1.12
0.49	209.03	335.78	1.00	335.78	1.28	1.00	1.00
0.66	117.91	189.38	1.00	189.38	1.64	0.88	0.88
0.82	54.63	87.69	1.38	121.00	2.07	0.78	0.78
0.98	36.31	58.24	1.98	115.60	2.32	0.78	0.78
1.15	31.72	50.85	2.24	113.71	2.37	0.77	0.77
1.31	29.59	47.42	2.23	105.66	2.37	0.76	0.76
1.48	20.22	32.35	3.15	101.84	2.52	0.75	0.75
1.64	12.90	20.58	4.94	101.67	2.72	0.75	0.75
1.80	9.74	15.47	6.44	99.58	2.85	0.75	0.75
1.97	8.80	13.96	7.26	101.29	2.90	0.75	0.75
2.13	8.56	13.55	7.79	105.63	2.94	0.76	0.76
2.30	8.79	13.92	8.14	113.29	2.96	0.77	0.77
2.46	10.08	15.97	7.97	127.37	2.95	0.79	0.79
2.62	13.53	21.50	6.71	144.31	2.87	0.82	0.82
2.79	17.59	28.00	5.73	160.39	2.79	0.84	0.84
2.95	20.87	33.26	5.23	173.81	2.75	0.86	0.86
3.12	23.12	36.86	5.04	185.86	2.73	0.87	0.87
3.28	25.02	39.90	5.07	202.28	2.73	0.89	0.89
3.44	27.05	43.14	5.07	218.77	2.73	0.91	0.91
3.61	28.38	45.26	5.18	234.56	2.74	0.92	0.92
3.77	29.44	46.94	5.15	241.90	2.74	0.93	0.93
3.94	30.96	49.38	4.92	243.13	2.72	0.93	0.93
4.10	32.87	52.42	4.57	239.35	2.69	0.93	0.93
4.27	34.68	55.31	4.26	235.83	2.66	0.92	0.92
4.43	36.63	58.43	4.11	239.88	2.64	0.93	0.93
4.59	39.40	62.87	3.94	247.87	2.62	0.93	0.93
4.76	44.21	70.58	3.58	252.55	2.58	0.94	0.94
4.92	49.61	79.24	3.17	251.06	2.53	0.94	0.94
5.09	55.74	89.07	2.73	243.42	2.46	0.93	0.93
5.25	59.71	95.43	2.51	239.86	2.43	0.93	0.93
5.41	61.20	97.80	2.42	236.72	2.41	0.92	0.92
5.58	61.77	98.70	2.39	235.95	2.40	0.92	0.92
5.74	61.65	98.49	2.36	232.26	2.40	0.92	0.92
5.91	61.14	97.66	2.31	225.65	2.39	0.91	0.91
6.07	58.02	92.63	2.34	216.55	2.39	0.90	0.90
6.23	53.98	86.12	2.43	209.42	2.41	0.90	0.90
6.40	50.04	79.77	2.57	204.97	2.44	0.89	0.89
6.56	46.33	73.80	2.73	201.14	2.46	0.89	0.89
6.73	41.70	66.34	2.90	192.48	2.49	0.88	0.88
6.89	36.04	57.24	3.16	180.71	2.53	0.87	0.87
7.05	29.96	47.45	3.52	166.89	2.57	0.85	0.85
7.22	24.94	39.37	4.03	158.74	2.63	0.84	0.84
7.38	22.47	35.38	4.38	154.84	2.67	0.83	0.83
7.55	22.72	35.78	4.40	157.25	2.67	0.84	0.84
7.71	25.70	40.54	3.86	156.66	2.61	0.84	0.84
7.87	33.27	52.69	2.91	153.54	2.49	0.83	0.83

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
8.04	42.58	67.64	2.33	157.67	2.39	0.84	0.84
8.20	52.60	83.72	2.03	170.18	2.33	0.85	0.85
8.37	60.51	95.92	2.09	200.01	2.34	0.89	0.89
8.53	70.16	110.09	2.16	237.35	2.36	0.92	0.92
8.69	86.14	133.03	2.11	280.29	2.34	0.96	0.96
8.86	103.64	156.88	1.98	310.31	2.31	0.99	0.99
9.02	112.74	167.55	1.89	317.10	2.29	0.99	0.99
9.19	107.76	157.94	1.90	299.53	2.29	0.98	0.98
9.35	98.49	142.40	1.90	270.83	2.29	0.95	0.95
9.51	91.69	130.98	1.93	253.23	2.30	0.94	0.94
9.68	88.87	125.70	2.00	251.97	2.32	0.94	0.94
9.84	86.19	120.84	2.12	256.26	2.35	0.94	0.94
10.01	87.02	120.53	2.13	257.32	2.35	0.94	0.94
10.17	90.94	123.96	2.03	252.08	2.33	0.94	0.94
10.33	95.80	128.42	1.91	245.06	2.30	0.93	0.93
10.50	95.88	127.02	1.91	242.88	2.30	0.93	0.93
10.66	92.51	121.42	1.98	240.43	2.31	0.93	0.93
10.83	87.01	113.19	2.07	234.23	2.34	0.92	0.92
10.99	81.94	105.45	2.11	222.00	2.34	0.91	0.91
11.15	77.31	98.38	2.12	208.70	2.35	0.90	0.90
11.32	73.44	92.51	2.17	200.47	2.36	0.89	0.89
11.48	69.57	86.92	2.29	198.78	2.38	0.89	0.89
11.65	66.43	82.38	2.46	202.78	2.42	0.89	0.89
11.81	66.44	81.68	2.57	210.11	2.44	0.90	0.90
11.98	69.11	84.05	2.55	214.57	2.43	0.90	0.90
12.14	74.04	89.00	2.45	218.40	2.41	0.91	0.91
12.30	76.50	91.00	2.43	221.57	2.41	0.91	0.91
12.47	79.29	93.29	2.38	221.93	2.40	0.91	0.91
12.63	79.65	92.72	2.34	217.08	2.39	0.90	0.90
12.80	78.59	90.54	2.32	210.06	2.39	0.90	0.90
12.96	75.67	86.42	2.42	209.34	2.41	0.90	0.90
13.12	73.77	83.56	2.54	212.22	2.43	0.90	0.90
13.29	72.95	81.89	2.61	213.45	2.44	0.90	0.90
13.45	72.59	80.68	2.58	208.44	2.44	0.90	0.90
13.62	73.82	81.21	2.51	203.67	2.42	0.89	0.89
13.78	71.20	77.69	2.64	204.76	2.45	0.89	0.89
13.94	66.41	71.82	2.77	198.60	2.47	0.89	0.89
14.11	61.16	65.55	2.91	191.02	2.49	0.88	0.88
14.27	64.16	68.03	2.62	178.04	2.44	0.86	0.86
14.44	68.02	71.47	2.50	178.75	2.42	0.86	0.86
14.60	65.35	68.19	2.80	190.89	2.47	0.88	0.88
14.76	58.63	60.75	3.38	205.22	2.55	0.89	0.89
14.93	52.14	53.59	4.01	214.92	2.63	0.90	0.90
15.09	49.32	50.22	4.22	211.71	2.65	0.90	0.90
15.26	46.89	47.35	4.73	223.99	2.70	0.91	0.91
15.42	52.40	52.52	4.68	245.94	2.70	0.93	0.93
15.58	65.71	65.41	4.11	268.67	2.64	0.95	0.95
15.75	81.79	80.79	3.48	281.10	2.57	0.96	0.96

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
15.91	98.34	96.35	2.90	279.77	2.49	0.96	0.96
16.08	108.32	105.28	2.66	279.98	2.45	0.96	0.96
16.24	112.34	108.30	2.59	281.00	2.44	0.96	0.96
16.40	110.42	105.59	2.74	289.61	2.46	0.97	0.97
16.57	109.28	103.66	2.76	285.94	2.47	0.97	0.97
16.73	109.33	102.87	2.64	271.12	2.45	0.95	0.95
16.90	103.31	96.39	2.66	256.06	2.45	0.94	0.94
17.06	97.53	90.23	2.81	253.57	2.47	0.94	0.94
17.22	99.49	91.36	2.78	253.53	2.47	0.94	0.94
17.39	107.37	97.96	2.58	252.92	2.44	0.94	0.94
17.55	119.86	108.74	2.25	244.89	2.38	0.93	0.93
17.72	123.07	110.89	2.19	243.27	2.36	0.93	0.93
17.88	123.93	110.90	2.16	239.03	2.36	0.93	0.93
18.04	119.43	106.03	2.25	238.18	2.37	0.93	0.93
18.21	113.68	100.13	2.34	234.76	2.39	0.92	0.92
18.37	106.99	93.48	2.42	226.49	2.41	0.91	0.91
18.54	100.54	87.15	2.46	214.78	2.42	0.90	0.90
18.70	97.62	84.02	2.47	207.14	2.42	0.89	0.89
18.86	102.79	88.01	2.32	204.27	2.39	0.89	0.89
19.03	109.20	93.00	2.24	208.14	2.37	0.90	0.90
19.19	113.75	96.32	2.19	211.41	2.36	0.90	0.90
19.36	113.64	95.53	2.27	216.76	2.38	0.90	0.90
19.52	113.07	94.28	2.44	229.82	2.41	0.92	0.92
19.69	114.89	95.10	2.54	241.38	2.43	0.93	0.93
19.85	115.91	95.29	2.58	245.89	2.44	0.93	0.93
20.01	113.29	92.54	2.54	234.60	2.43	0.92	0.92
20.18	104.19	84.44	2.59	218.92	2.44	0.91	0.91
20.34	94.61	75.94	2.80	212.35	2.47	0.90	0.90
20.51	92.17	73.41	2.90	213.01	2.49	0.90	0.90
20.67	98.87	78.23	3.01	235.57	2.50	0.92	0.92
20.83	102.23	80.34	3.09	248.46	2.52	0.93	0.93
21.00	96.81	75.30	3.44	258.99	2.56	0.94	0.94
21.16	89.43	69.04	3.43	236.75	2.56	0.92	0.92
21.33	79.28	60.62	3.56	215.78	2.58	0.90	0.90
21.49	70.25	53.26	3.56	189.80	2.58	0.88	0.88
21.65	60.10	44.99	3.91	176.13	2.62	0.86	0.86
21.82	55.61	41.23	4.09	168.58	2.64	0.85	0.85
21.98	57.25	42.26	3.97	167.67	2.62	0.85	0.85
22.15	61.72	45.48	3.72	169.26	2.60	0.85	0.85
22.31	66.09	48.64	3.42	166.49	2.56	0.85	0.85
22.47	65.36	47.86	3.33	159.18	2.55	0.84	0.84
22.64	61.74	44.86	3.39	151.87	2.56	0.83	0.83
22.80	60.38	43.48	3.63	157.74	2.59	0.84	0.84
22.97	69.74	50.24	3.37	169.26	2.55	0.85	0.85
23.13	82.35	59.40	3.09	183.30	2.52	0.87	0.87
23.29	89.19	64.15	2.99	192.07	2.50	0.88	0.88
23.46	88.26	62.98	3.14	197.77	2.52	0.88	0.88
23.62	85.40	60.41	3.32	200.68	2.55	0.89	0.89

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
23.79	85.46	60.09	3.35	201.20	2.55	0.89	0.89
23.95	88.12	61.71	3.27	201.67	2.54	0.89	0.89
24.11	90.61	63.17	3.24	204.37	2.54	0.89	0.89
24.28	90.82	63.05	3.15	198.73	2.52	0.89	0.89
24.44	83.36	57.08	3.60	205.54	2.58	0.89	0.89
24.61	71.39	47.97	4.38	210.03	2.67	0.90	0.90
24.77	62.17	40.98	5.30	217.04	2.75	0.90	0.90
24.93	61.19	40.19	5.05	202.89	2.73	0.89	0.89
25.10	61.71	40.53	4.59	185.86	2.69	0.87	0.87
25.26	60.77	39.84	4.25	169.51	2.66	0.85	0.85
25.43	54.48	35.31	4.50	158.77	2.68	0.84	0.84
25.59	49.35	31.59	4.81	151.96	2.71	0.83	0.83
25.75	45.03	28.38	5.38	152.71	2.76	0.83	0.83
25.92	43.61	27.26	5.53	150.69	2.77	0.83	0.83
26.08	42.76	26.60	5.40	143.70	2.76	0.82	0.82
26.25	40.92	25.29	5.34	135.08	2.76	0.81	0.81
26.41	38.23	23.24	6.06	140.96	2.82	0.81	0.81
26.57	42.55	25.90	6.00	155.28	2.81	0.83	0.83
26.74	54.00	33.52	4.86	163.00	2.71	0.84	0.84
26.90	62.15	39.00	4.18	163.13	2.65	0.84	0.84
27.07	61.45	38.43	4.22	162.26	2.65	0.84	0.84
27.23	55.85	34.33	5.06	173.64	2.73	0.86	0.86
27.40	52.33	31.73	5.76	182.84	2.79	0.87	0.87
27.56	49.27	29.55	6.30	186.00	2.83	0.87	0.87
27.72	46.84	28.03	6.06	169.71	2.82	0.85	0.85
27.89	42.84	25.51	5.94	151.47	2.81	0.83	0.83
28.05	39.15	23.16	5.90	136.73	2.80	0.81	0.81
28.22	36.31	21.19	6.54	138.60	2.85	0.81	0.81
28.38	38.65	22.56	6.57	148.19	2.85	0.82	0.82
28.54	43.46	25.53	6.22	158.74	2.83	0.84	0.84
28.71	46.46	27.44	5.77	158.42	2.79	0.84	0.84
28.87	43.35	25.43	5.88	149.44	2.80	0.83	0.83
29.04	36.40	20.97	6.44	135.02	2.85	0.81	0.81
29.20	30.61	17.28	7.10	122.75	2.89	0.79	0.79
29.36	27.52	14.43	8.03	115.82	2.95	0.78	0.78
29.53	27.17	14.19	8.85	125.63	3.00	0.68	1.01
29.69	27.34	14.24	9.52	135.57	3.04	1.02	1.02
29.86	27.91	14.51	9.85	142.93	3.06	1.01	1.04
30.02	30.49	15.90	8.60	136.71	2.99	0.81	0.81
30.18	32.13	17.82	7.60	135.32	2.93	0.81	0.81
30.35	34.02	18.99	7.08	134.39	2.89	0.80	0.80
30.51	35.67	19.81	7.51	148.70	2.92	0.83	0.83
30.68	39.71	22.12	7.50	165.92	2.92	0.85	0.85
30.84	45.89	25.79	7.09	182.89	2.89	0.87	0.87
31.00	52.30	29.71	6.41	190.31	2.84	0.88	0.88
31.17	54.15	30.80	6.17	190.17	2.83	0.88	0.88
31.33	51.67	29.23	6.26	182.98	2.83	0.87	0.87
31.50	46.00	25.70	6.64	170.75	2.86	0.85	0.85

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
31.66	42.09	23.30	6.83	159.24	2.87	0.84	0.84
31.82	40.70	22.47	6.68	150.04	2.86	0.83	0.83
31.99	40.27	22.20	6.56	145.54	2.85	0.82	0.82
32.15	38.89	21.33	6.61	140.93	2.86	0.81	0.81
32.32	36.02	19.56	6.86	134.24	2.88	0.80	0.80
32.48	32.32	17.31	7.20	124.60	2.90	0.79	0.79
32.64	29.56	14.63	8.21	120.16	2.97	0.78	0.78
32.81	28.75	14.16	9.84	139.39	3.06	0.80	1.01
32.97	36.08	18.00	9.90	178.24	3.06	1.42	1.29
33.14	53.91	27.35	7.99	218.55	2.95	0.91	0.91
33.30	81.08	45.74	5.37	245.68	2.76	0.93	0.93
33.46	104.67	60.73	3.92	237.78	2.62	0.92	0.92
33.63	113.94	67.08	3.22	215.85	2.53	0.90	0.90
33.79	106.31	62.47	3.14	195.86	2.52	0.88	0.88
33.96	90.62	52.42	3.56	186.41	2.58	0.87	0.87
34.12	74.90	42.43	4.22	178.96	2.65	0.86	0.86
34.28	60.75	33.58	5.07	170.37	2.73	0.85	0.85
34.45	47.67	25.51	6.40	163.26	2.84	0.84	0.84
34.61	43.17	22.79	6.84	155.99	2.87	0.83	0.83
34.78	42.51	22.42	6.65	149.11	2.86	0.83	0.83
34.94	41.32	21.69	6.72	145.71	2.87	0.82	0.82
35.10	36.65	17.56	8.49	149.07	2.98	0.83	0.83
35.27	33.70	16.01	10.27	164.49	3.08	1.30	1.14
35.43	38.08	18.18	9.83	178.71	3.06	1.63	1.30
35.60	42.44	20.34	9.12	185.56	3.02	1.84	1.45
35.76	46.52	22.33	8.30	185.31	2.97	0.87	0.87
35.93	50.47	26.28	6.93	182.12	2.88	0.87	0.87
36.09	52.71	27.66	6.34	175.38	2.84	0.86	0.86
36.25	55.54	29.47	5.58	164.47	2.78	0.85	0.85
36.42	52.30	27.45	5.96	163.56	2.81	0.84	0.84
36.58	47.54	24.50	6.73	164.81	2.87	0.85	0.85
36.75	42.70	20.05	8.30	166.44	2.97	0.85	0.85
36.91	43.84	20.56	8.01	164.77	2.95	0.85	0.85
37.07	47.08	24.15	6.50	156.89	2.85	0.84	0.84
37.24	49.45	25.80	5.41	139.65	2.76	0.81	0.81
37.40	53.53	28.42	4.54	129.09	2.68	0.80	0.80
37.57	59.30	31.77	4.20	133.36	2.65	0.80	0.80
37.73	58.14	30.63	4.90	150.14	2.72	0.83	0.83
37.89	50.05	25.40	6.61	167.93	2.86	0.85	0.85
38.06	41.44	18.99	9.37	177.93	3.03	1.57	1.36
38.22	40.47	18.47	10.05	185.57	3.07	1.70	1.32
38.39	42.50	19.40	9.77	189.48	3.06	1.82	1.39
38.55	43.87	20.00	9.62	192.50	3.05	1.83	1.43
38.71	45.65	20.80	9.35	194.42	3.03	1.90	1.49
38.88	51.61	23.61	8.23	194.19	2.97	0.88	0.88
39.04	56.69	28.27	7.03	198.77	2.89	0.89	0.89
39.21	59.03	29.57	6.69	197.76	2.86	0.88	0.88
39.37	55.35	27.41	7.11	194.90	2.89	0.88	0.88

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
39.53	50.01	22.58	8.16	184.24	2.96	0.87	0.87
39.70	46.04	20.63	9.10	187.68	3.02	1.57	1.47
39.86	43.56	19.40	10.10	196.00	3.07	2.01	1.39
40.03	45.08	20.06	10.31	206.75	3.08	2.08	1.43
40.19	49.36	22.02	9.36	206.13	3.03	2.18	1.57
40.35	53.76	24.02	8.47	203.34	2.98	0.89	0.89
40.52	57.74	28.09	7.27	204.14	2.90	0.89	0.89
40.68	58.13	28.29	7.09	200.72	2.89	0.89	0.89
40.85	58.17	28.25	7.07	199.71	2.89	0.89	0.89
41.01	57.55	27.75	7.36	204.33	2.91	0.89	0.89
41.17	59.75	28.81	7.32	210.80	2.91	0.90	0.90
41.34	61.29	29.55	7.22	213.31	2.90	0.90	0.90
41.50	60.76	29.20	7.23	211.26	2.90	0.90	0.90
41.67	56.55	24.77	8.20	203.13	2.96	0.89	0.89
41.83	54.61	23.81	8.59	204.65	2.99	0.89	0.89
41.99	53.38	23.18	8.96	207.79	3.01	2.22	1.66
42.16	53.78	23.30	8.91	207.58	3.01	2.21	1.66
42.32	54.27	23.46	8.77	205.76	3.00	0.89	0.89
42.49	55.21	23.82	8.50	202.37	2.98	0.89	0.89
42.65	55.68	23.97	8.24	197.46	2.97	0.88	0.88
42.81	53.89	23.09	8.59	198.33	2.99	0.89	0.89
42.98	52.41	22.37	8.86	198.21	3.00	2.10	1.60
43.14	52.38	22.29	9.10	202.87	3.02	1.99	1.59
43.31	54.99	23.40	8.69	203.28	2.99	0.89	0.89
43.47	58.20	24.77	8.34	206.64	2.97	0.89	0.89
43.64	60.24	25.61	8.05	206.09	2.96	0.89	0.89
43.80	59.00	24.99	8.19	204.61	2.96	0.89	0.89
43.96	57.18	24.12	8.29	199.93	2.97	0.89	0.89
44.13	56.13	23.59	8.35	196.92	2.97	0.88	0.88
44.29	55.24	23.13	8.44	195.16	2.98	0.88	0.88
44.46	54.13	22.58	8.79	198.58	3.00	1.95	1.61
44.62	54.38	22.63	8.93	202.20	3.01	2.09	1.62
44.78	56.92	23.69	8.61	203.95	2.99	0.89	0.89
44.95	60.19	25.05	8.04	201.45	2.95	0.89	0.89
45.11	62.24	28.42	7.24	205.64	2.90	0.89	0.89
45.28	64.15	29.37	7.01	205.85	2.89	0.89	0.89
45.44	67.17	30.90	6.71	207.32	2.87	0.89	0.89
45.60	70.42	32.62	6.29	205.17	2.83	0.89	0.89
45.77	69.54	32.18	6.18	199.02	2.83	0.89	0.89
45.93	66.52	30.66	6.17	189.13	2.82	0.87	0.87
46.10	66.74	30.87	5.91	182.35	2.80	0.87	0.87
46.26	67.31	31.32	5.51	172.50	2.77	0.86	0.86
46.42	66.89	31.27	5.15	161.04	2.74	0.84	0.84
46.59	62.18	28.73	5.46	156.72	2.77	0.84	0.84
46.75	60.35	27.66	5.67	156.84	2.79	0.84	0.84
46.92	60.28	27.47	5.86	161.04	2.80	0.84	0.84
47.08	62.68	28.83	5.39	155.37	2.76	0.83	0.83
47.24	59.58	27.19	5.53	150.49	2.77	0.83	0.83

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
47.41	53.73	24.19	5.82	140.89	2.80	0.81	0.81
47.57	44.12	19.17	6.92	132.57	2.88	0.80	0.80
47.74	39.16	16.69	7.39	123.37	2.91	0.79	0.79
47.90	37.68	14.51	8.10	117.58	2.96	0.78	0.78
48.06	37.70	14.49	8.13	117.77	2.96	0.78	0.78
48.23	38.35	14.73	7.98	117.54	2.95	0.78	0.78
48.39	37.99	14.54	7.97	115.87	2.95	0.78	0.78
48.56	37.38	14.26	8.05	114.74	2.96	0.77	0.77
48.72	37.18	14.14	8.43	119.21	2.98	0.78	0.78
48.88	38.25	14.55	8.80	128.07	3.00	0.79	1.04
49.05	40.04	15.25	8.96	136.66	3.01	0.93	1.09
49.21	41.49	15.81	8.89	140.52	3.01	1.00	1.13
49.38	41.71	15.87	8.82	140.03	3.00	0.97	1.13
49.54	41.33	15.67	9.15	143.40	3.02	0.92	1.12
49.70	40.14	15.15	9.56	144.85	3.04	1.12	1.08
49.87	38.84	14.58	9.99	145.59	3.07	0.99	1.04
50.03	38.78	14.52	9.59	139.24	3.05	0.91	1.04
50.20	39.78	14.89	9.55	142.19	3.04	0.87	1.06
50.36	40.57	15.18	9.40	142.67	3.04	1.13	1.08
50.52	39.08	14.54	9.81	142.73	3.06	0.95	1.04
50.69	37.77	13.98	9.68	135.33	3.05	0.84	1.00
50.85	36.44	13.41	10.03	134.47	3.07	0.82	0.96
51.02	38.48	14.20	9.79	138.99	3.06	0.89	1.01
51.18	42.32	15.71	9.17	144.07	3.02	1.04	1.12
51.35	44.99	16.74	8.71	145.82	3.00	0.82	0.82
51.51	44.44	16.48	8.69	143.32	2.99	0.82	0.82
51.67	40.26	14.77	9.56	141.18	3.04	0.93	1.06
51.84	36.90	13.40	10.58	141.85	3.10	0.91	0.96
52.00	35.50	12.81	11.47	146.98	3.14	0.97	0.92
52.17	37.10	13.42	11.82	158.54	3.16	1.10	0.96
52.33	40.70	14.81	11.58	171.55	3.15	1.41	1.06
52.49	46.78	17.18	10.64	182.80	3.10	1.60	1.23
52.66	54.13	20.04	9.22	184.82	3.03	1.76	1.43
52.82	58.86	21.85	8.16	178.41	2.96	0.86	0.86
52.99	55.27	20.39	8.14	165.92	2.96	0.85	0.85
53.15	45.42	16.48	9.31	153.46	3.03	1.09	1.18
53.31	37.55	13.37	11.03	147.43	3.12	0.91	0.95
53.48	34.49	12.14	12.65	153.60	3.20	1.02	0.87
53.64	36.04	12.71	12.96	164.84	3.21	1.26	0.91
53.81	40.83	14.55	11.87	172.60	3.16	1.41	1.04
53.97	48.51	17.49	9.90	173.14	3.06	1.46	1.25
54.13	55.42	20.13	8.54	171.89	2.99	0.85	0.85
54.30	59.21	21.54	7.97	171.75	2.95	0.85	0.85
54.46	61.17	24.98	6.86	171.31	2.88	0.85	0.85
54.63	63.50	26.31	6.16	161.93	2.82	0.84	0.84
54.79	66.24	27.88	5.45	151.95	2.77	0.83	0.83
54.95	69.31	29.28	5.31	155.47	2.75	0.83	0.83
55.12	71.04	29.82	5.57	165.97	2.78	0.85	0.85

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
55.28	72.45	30.03	6.10	183.07	2.82	0.87	0.87
55.45	77.74	32.19	6.22	200.06	2.83	0.89	0.89
55.61	89.33	37.61	5.64	212.21	2.78	0.90	0.90
55.77	102.12	43.84	4.95	217.05	2.72	0.90	0.90
55.94	107.30	46.26	4.78	220.93	2.71	0.91	0.91
56.10	109.29	47.18	4.68	220.60	2.70	0.91	0.91
56.27	116.30	50.83	4.23	215.03	2.65	0.90	0.90
56.43	128.58	57.47	3.54	203.71	2.58	0.89	0.89
56.59	139.13	63.93	2.82	180.61	2.48	0.87	0.87
56.76	140.06	64.95	2.59	168.01	2.44	0.85	0.85
56.92	141.14	65.95	2.40	158.59	2.41	0.84	0.84
57.09	137.32	63.18	2.67	168.87	2.45	0.85	0.85
57.25	129.32	58.41	3.02	176.50	2.51	0.86	0.86
57.41	123.72	55.56	3.09	171.64	2.52	0.85	0.85
57.58	129.54	59.40	2.60	154.39	2.44	0.83	0.83
57.74	145.97	69.03	2.07	143.14	2.34	0.82	0.82
57.91	161.14	76.86	1.96	150.77	2.31	0.83	0.83
58.07	171.30	81.31	2.03	164.87	2.33	0.85	0.85
58.23	181.13	86.36	1.96	169.13	2.31	0.85	0.85
58.40	183.45	87.94	1.87	164.44	2.29	0.85	0.85
58.56	181.82	87.87	1.76	154.25	2.25	0.83	0.83
58.73	176.39	84.92	1.77	150.49	2.26	0.83	0.83
58.89	185.86	-1.00	1.00	-1.00	-1.00	0.00	0.00
59.06	224.48	-1.00	1.00	-1.00	-1.00	0.00	0.00
59.22	352.79	-1.00	1.00	-1.00	-1.00	0.00	0.00
59.38	469.75	-1.00	1.00	-1.00	-1.00	0.00	0.00

Abbreviations

q_t: Total cone resistance
K_c: Cone resistance correction factor due to fines
$Q_{tn,cs}$: Adjusted and corrected cone resistance due to fines
I_c: Soil behavior type index
$S_{u(liq)}/\sigma'_v$: Calculated liquefied undrained strength ratio
$S_{u(peak)}/\sigma'_v$: Calculated peak undrained strength ratio

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LIQUEFACTION ANALYSIS REPORT

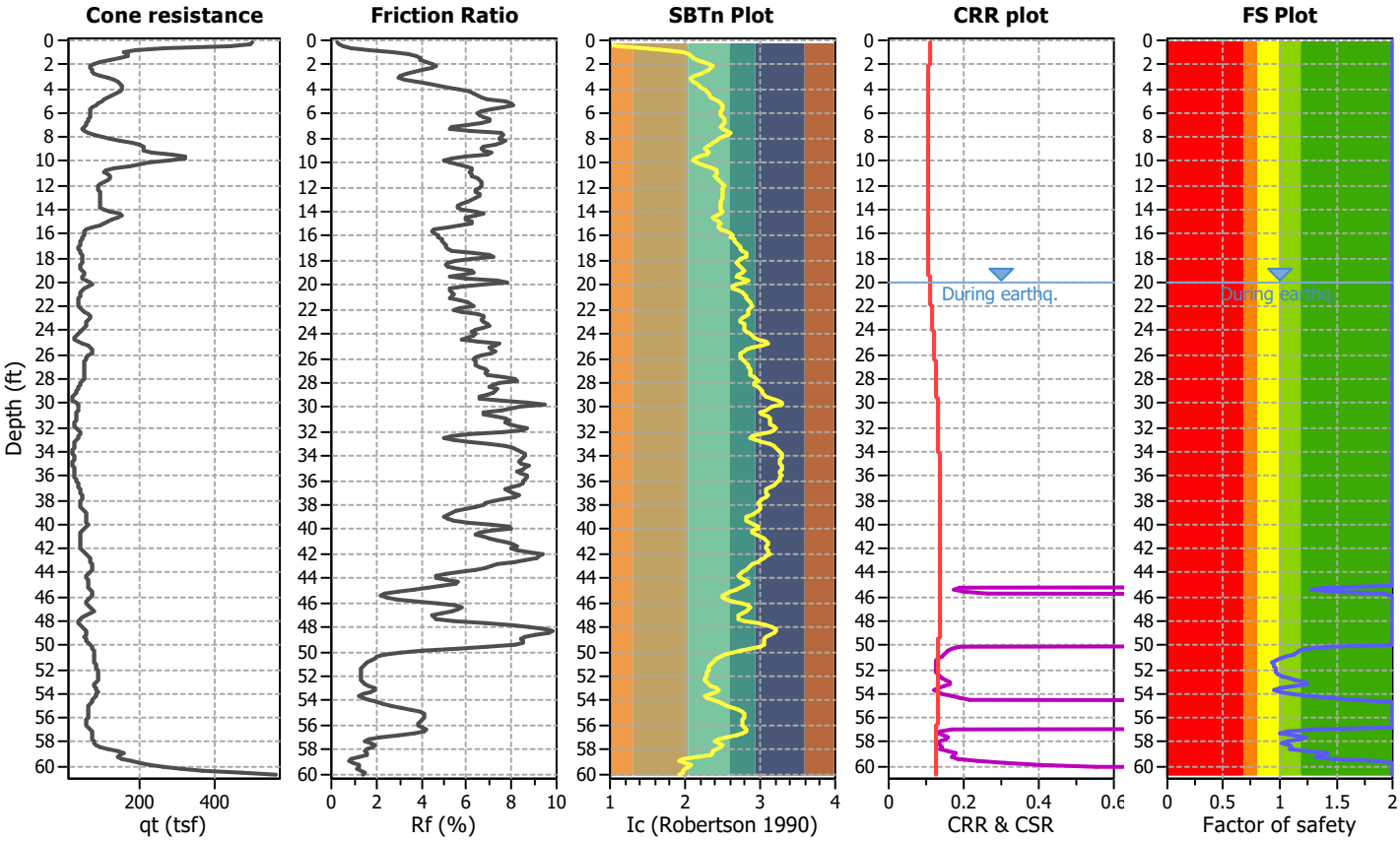
Project title : 3073-002.00P

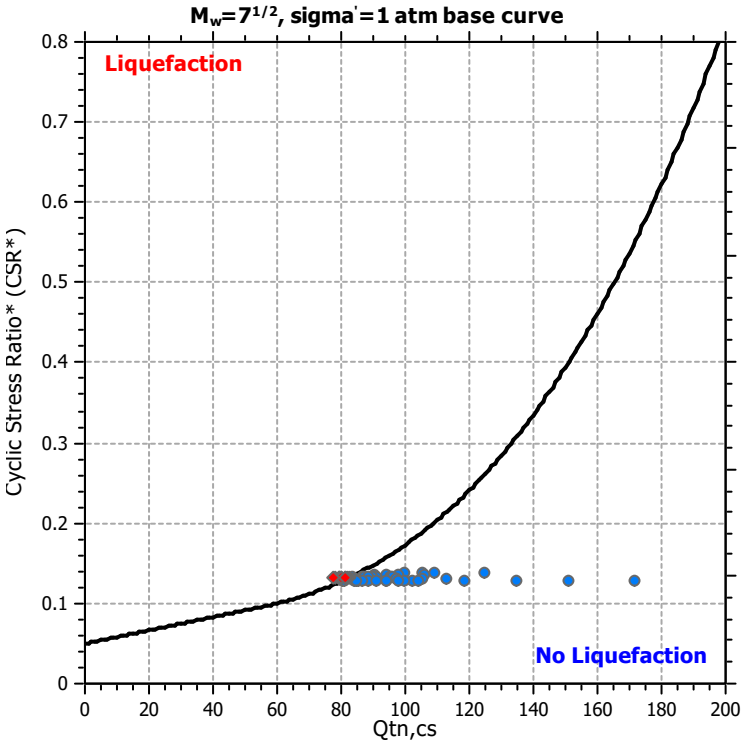
Location : Ethel Philips ES

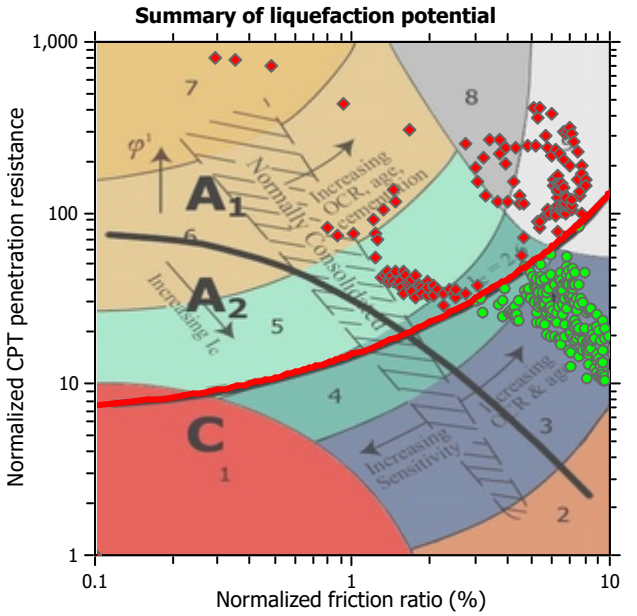
CPT file : CPT-02

Input parameters and analysis data

Analysis method:	NCEER (1998)	G.W.T. (in-situ):	26.50 ft	Use fill:	No	Clay like behavior applied:	Sands only
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	20.00 ft	Fill height:	N/A	Limit depth applied:	No
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	N/A
Earthquake magnitude M_w:	6.50	Ic cut-off value:	2.60	Trans. detect. applied:	No	MSF method:	Method based
Peak ground acceleration:	0.24	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

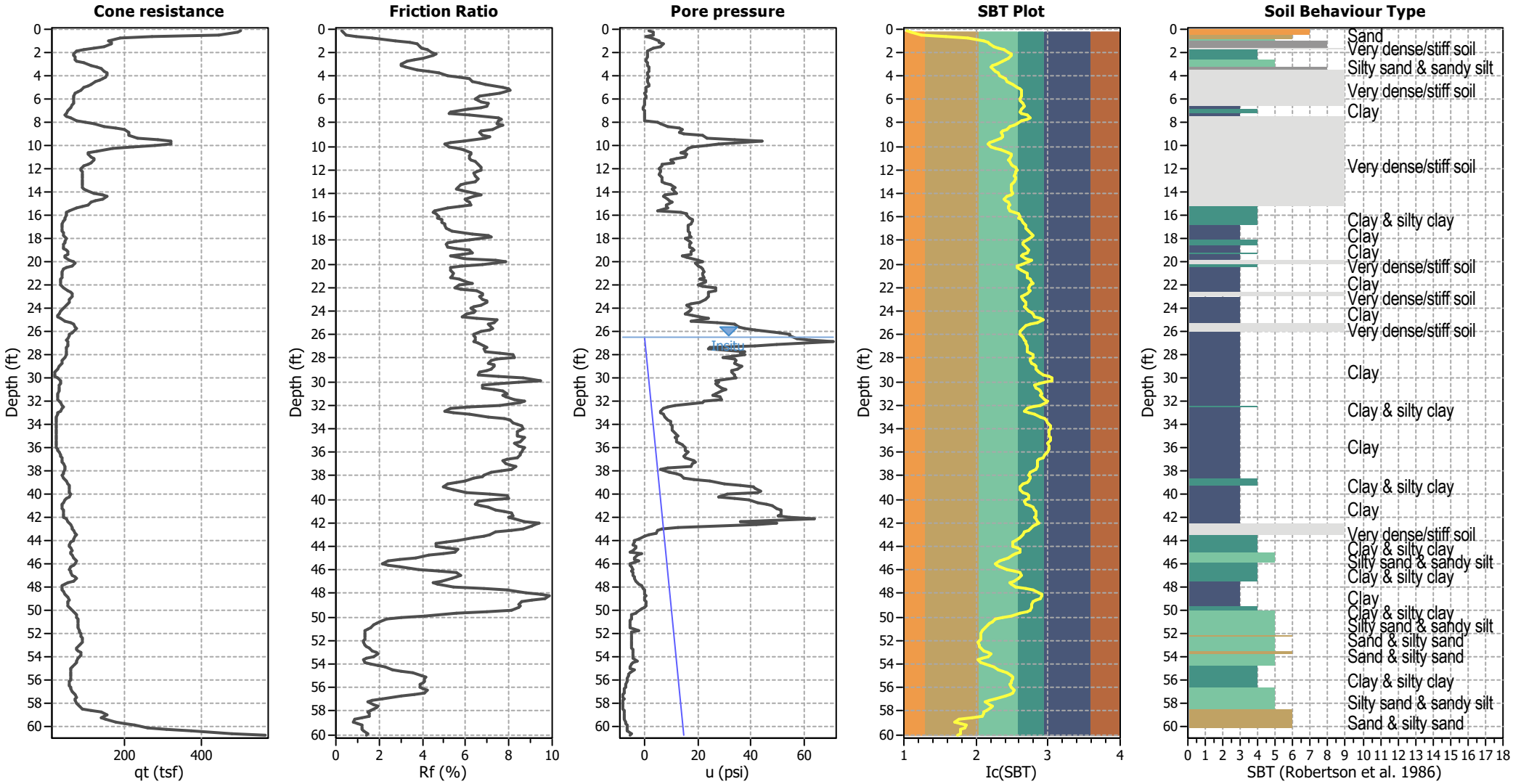






Zone A_1: Cyclic liquefaction likely depending on size and duration of cyclic loading
Zone A_2: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots



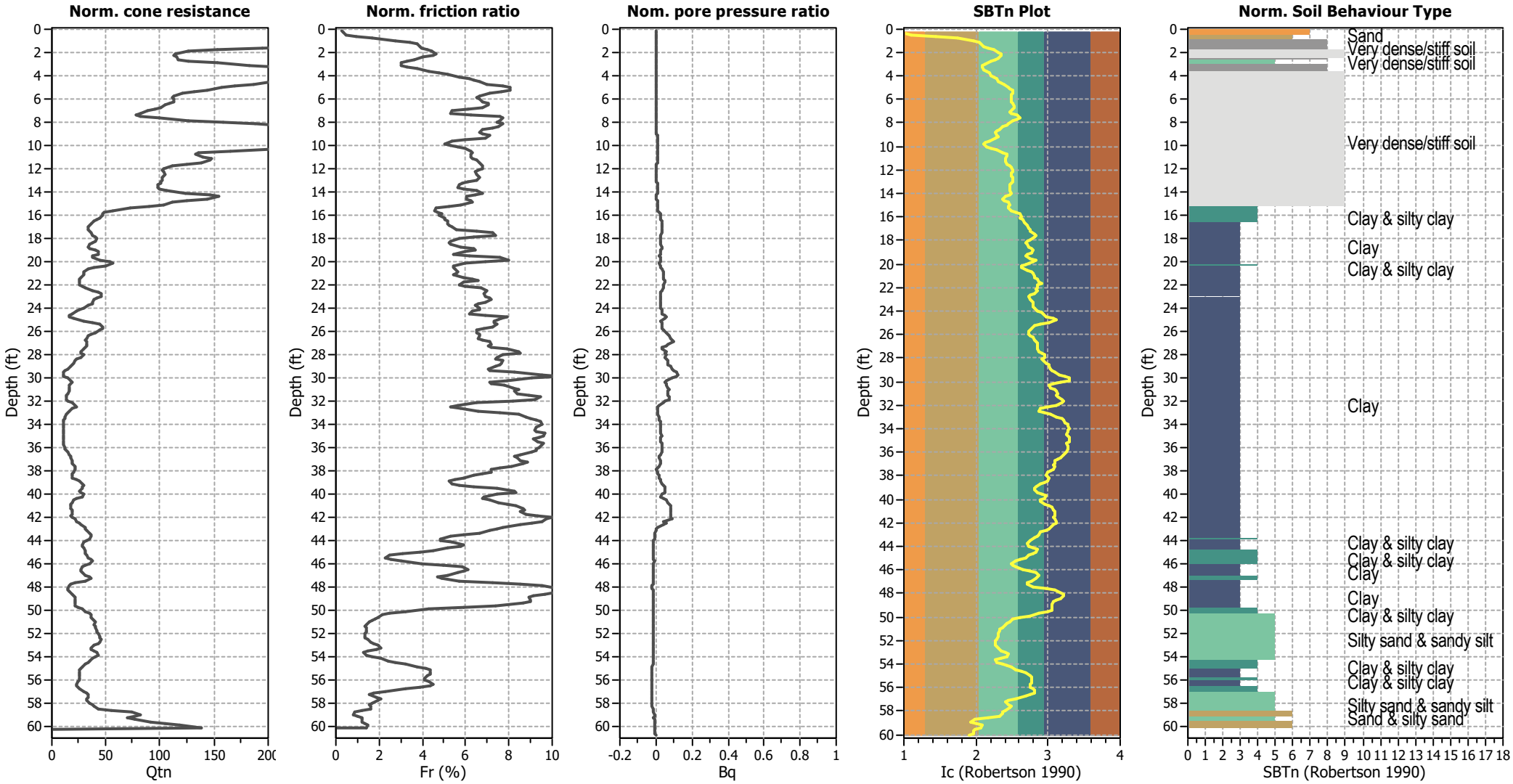
Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	20.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.24	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	26.50 ft	Fill height:	N/A	Limit depth:	N/A

SBT legend

1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to
9. Very stiff fine grained

CPT basic interpretation plots (normalized)



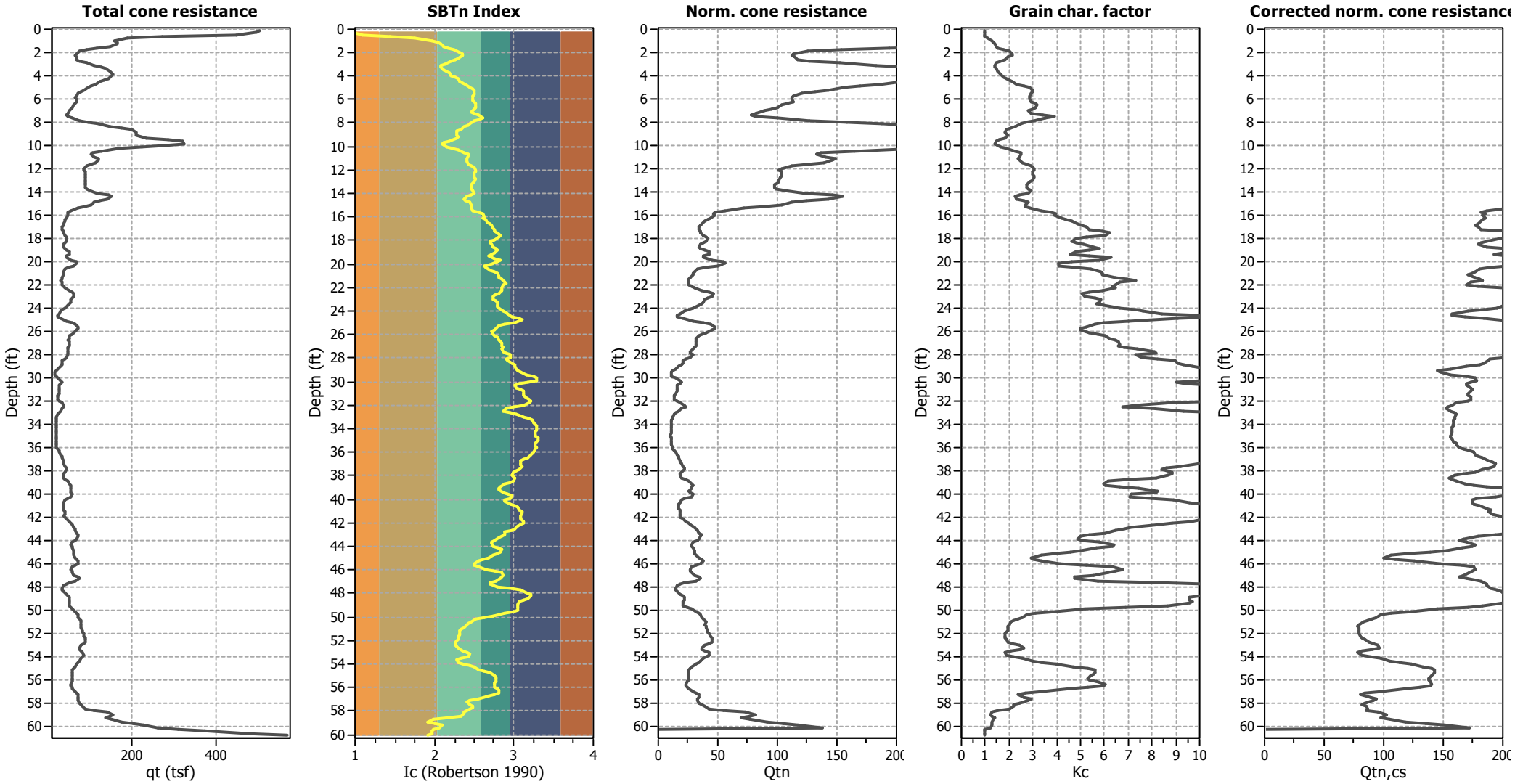
Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	20.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.24	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	26.50 ft	Fill height:	N/A	Limit depth:	N/A

SBTn legend

1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to
9. Very stiff fine grained

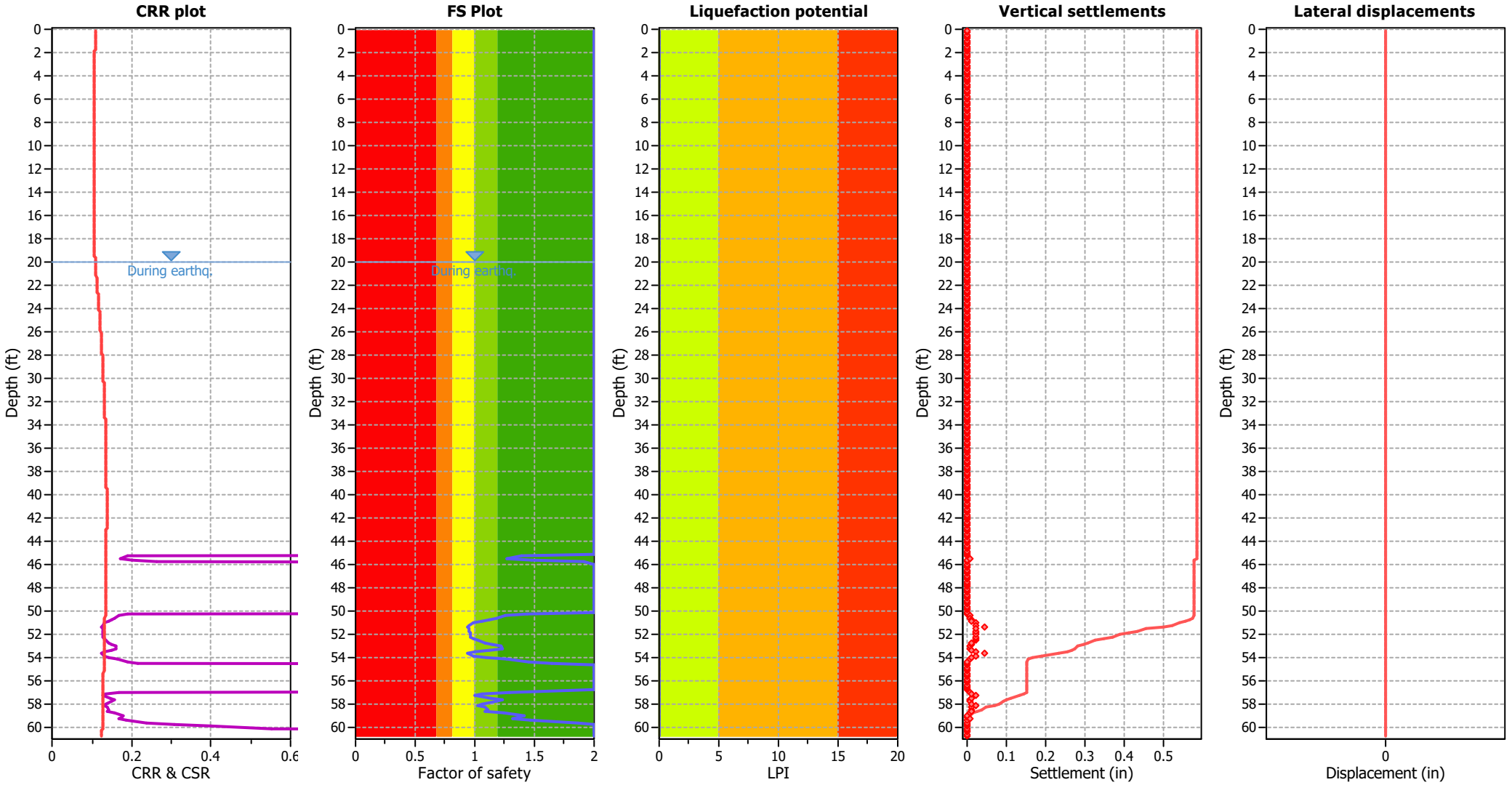
Liquefaction analysis overall plots (intermediate results)



Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	20.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_o applied:	Yes
Earthquake magnitude M_w:	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.24	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	26.50 ft	Fill height:	N/A	Limit depth:	N/A

Liquefaction analysis overall plots



Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	20.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.24	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	26.50 ft	Fill height:	N/A	Limit depth:	N/A

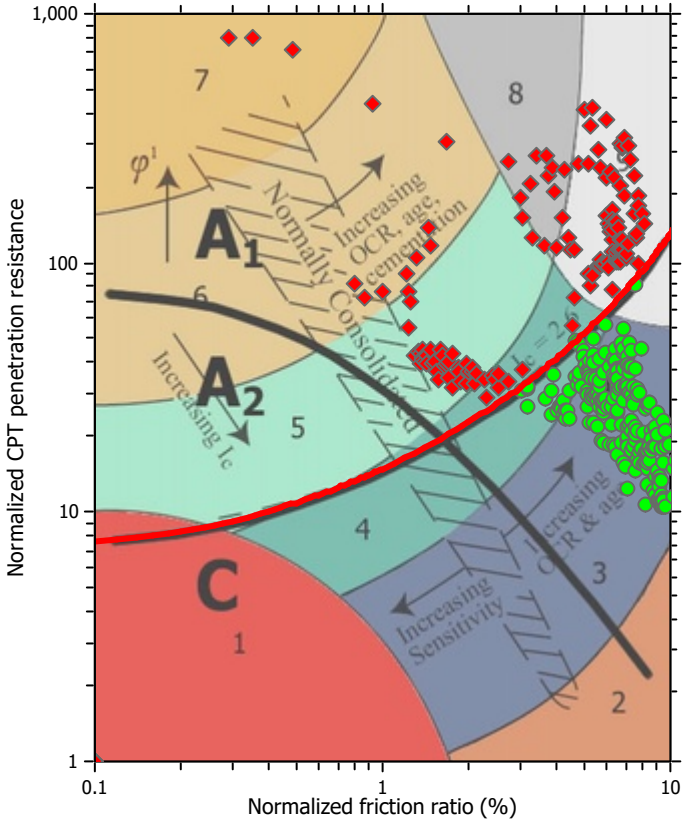
F.S. color scheme

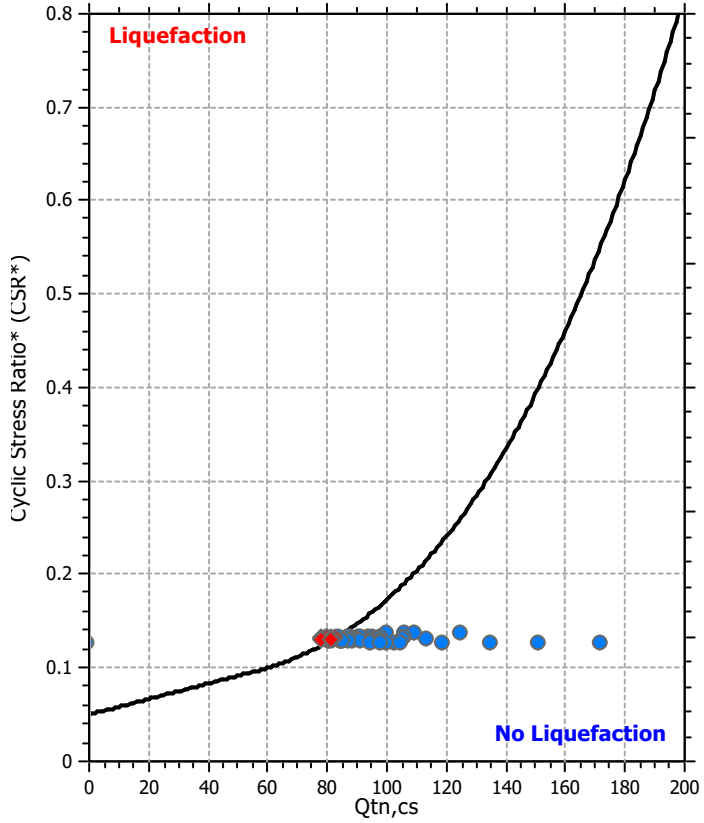
- Almost certain it will liquefy
- Very likely to liquefy
- Liquefaction and no liq. are equally likely
- Unlike to liquefy
- Almost certain it will not liquefy

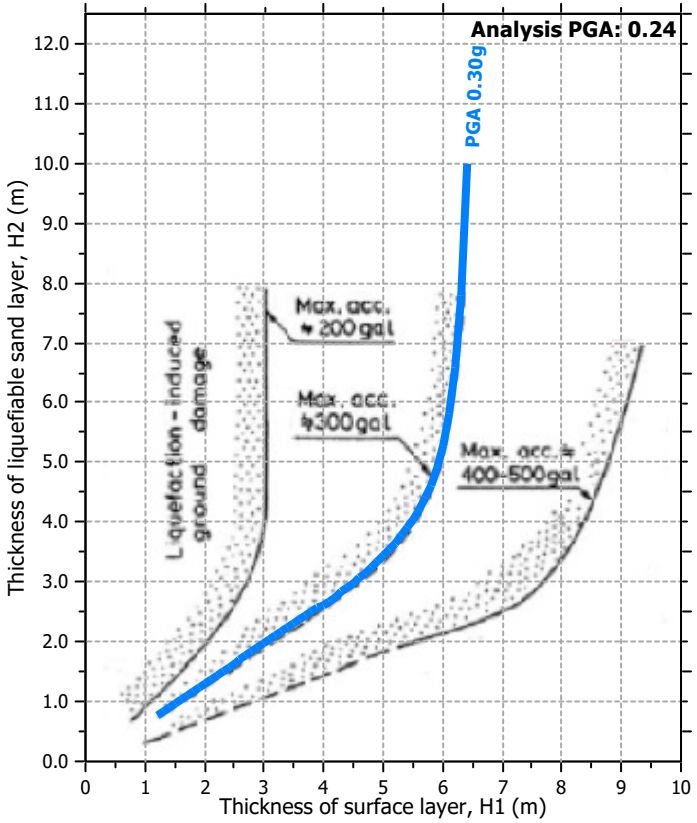
LPI color scheme

- Very high risk
- High risk
- Low risk

Liquefaction analysis summary plots



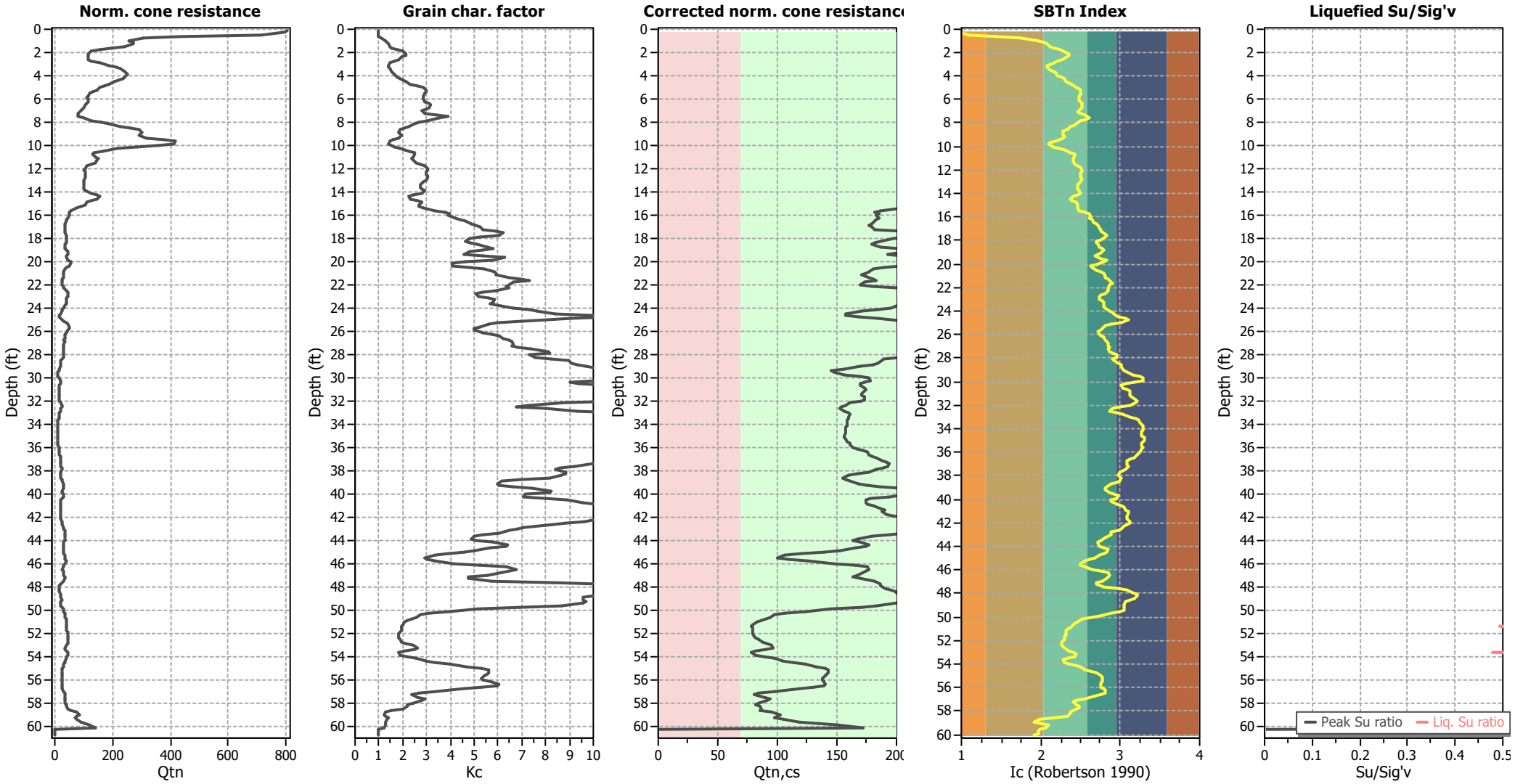




Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	20.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.24	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	26.50 ft	Fill height:	N/A	Limit depth:	N/A

Check for strength loss plots (Robertson (2010))



Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	20.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	6.50	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.24	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	26.50 ft	Fill height:	N/A	Limit depth:	N/A

:: Field input data ::

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
1	0.16	414.45	1.26	1.93	0.00	128.20
2	0.33	674.54	1.85	3.19	0.00	129.48
3	0.49	395.24	2.12	3.51	0.00	130.77
4	0.66	264.63	2.50	0.67	2.08	130.60
5	0.82	154.11	2.84	2.90	7.05	131.56
6	0.98	152.01	4.23	5.60	12.13	133.46
7	1.15	172.46	6.08	5.33	14.04	135.64
8	1.31	181.56	7.09	7.12	14.96	136.24
9	1.48	151.41	5.74	6.05	16.25	135.47
10	1.64	117.76	4.84	3.57	17.96	133.46
11	1.80	94.15	3.83	2.22	20.65	131.56
12	1.97	74.19	3.37	1.13	23.12	130.04
13	2.13	67.16	3.24	0.95	24.63	129.35
14	2.30	71.88	3.22	0.96	24.38	129.03
15	2.46	71.63	2.98	0.96	22.76	128.46
16	2.62	71.86	2.48	0.90	21.38	127.86
17	2.79	74.72	2.50	0.90	19.46	127.96
18	2.95	90.38	2.87	0.93	16.89	129.17
19	3.12	120.61	3.33	1.32	15.30	130.83
20	3.28	131.59	4.07	1.52	15.22	132.69
21	3.44	137.67	5.29	1.92	16.25	134.45
22	3.61	150.59	6.37	1.82	17.36	136.01
23	3.77	157.91	7.42	1.45	18.36	137.17
24	3.94	155.80	8.26	1.44	19.42	137.28
25	4.10	153.19	8.52	1.48	20.85	137.28
26	4.27	145.88	9.11	1.39	22.24	137.28
27	4.43	138.68	9.37	1.34	23.09	137.28
28	4.59	128.29	7.68	1.28	24.39	137.28
29	4.76	115.31	8.33	1.50	25.82	137.17
30	4.92	105.94	8.25	1.52	28.33	137.01
31	5.09	96.58	7.94	0.85	29.75	136.51
32	5.25	90.63	7.33	0.48	30.70	135.67
33	5.41	81.07	6.32	0.38	30.68	134.46
34	5.58	75.10	5.15	0.33	30.49	133.06
35	5.74	69.61	4.54	0.63	30.10	132.00
36	5.91	68.04	4.44	0.47	29.86	131.67
37	6.07	72.01	4.59	0.36	30.05	131.90
38	6.23	71.59	4.92	0.22	30.39	132.09
39	6.40	68.54	4.79	0.21	31.43	132.06
40	6.56	64.91	4.69	-0.11	31.92	131.60
41	6.73	62.49	4.25	-0.34	31.64	130.90
42	6.89	61.31	3.71	-0.30	30.70	129.68
43	7.05	55.37	2.93	-0.04	29.46	128.06
44	7.22	51.06	2.29	0.07	30.29	127.12
45	7.38	47.47	2.85	0.27	33.49	127.83
46	7.55	47.85	3.91	0.04	36.18	129.76
47	7.71	58.32	4.83	0.24	33.96	131.84
48	7.87	81.55	5.67	0.34	30.94	134.01

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
49	8.04	97.84	7.41	4.81	28.48	136.27
50	8.20	123.21	9.45	5.90	27.40	137.28
51	8.37	146.05	11.43	8.94	25.47	137.28
52	8.53	180.74	12.96	12.90	23.77	137.28
53	8.69	204.62	14.11	14.30	21.95	137.28
54	8.86	220.27	13.81	13.35	21.51	137.28
55	9.02	210.85	14.36	14.77	21.94	137.28
56	9.19	200.77	14.79	21.75	22.63	137.28
57	9.35	223.65	16.09	23.46	21.67	137.28
58	9.51	276.14	17.65	33.81	18.49	137.28
59	9.68	356.60	17.20	44.13	16.56	137.28
60	9.84	329.95	16.50	28.05	15.89	137.28
61	10.01	281.31	14.96	23.52	17.31	137.28
62	10.17	228.30	12.79	17.82	19.58	137.28
63	10.33	164.66	10.25	16.42	22.27	137.28
64	10.50	122.77	7.58	15.12	25.35	137.28
65	10.66	102.39	6.42	13.89	27.28	135.71
66	10.83	99.63	6.35	16.04	27.38	135.46
67	10.99	117.46	7.01	15.51	26.85	136.13
68	11.15	124.58	7.82	12.18	26.47	136.90
69	11.32	124.45	8.17	9.96	27.08	137.11
70	11.48	116.58	7.71	11.00	27.84	136.79
71	11.65	108.82	7.13	6.63	29.07	135.93
72	11.81	92.67	6.30	6.47	30.44	135.00
73	11.98	85.37	5.82	5.67	31.32	134.29
74	12.14	89.13	5.77	5.96	31.11	134.11
75	12.30	92.19	5.87	6.23	30.61	134.21
76	12.47	92.34	5.90	5.53	30.57	134.39
77	12.63	93.97	6.12	6.30	30.95	134.53
78	12.80	92.37	6.21	6.74	31.09	134.60
79	12.96	93.26	6.05	6.68	30.88	134.45
80	13.12	94.12	5.77	6.58	30.00	134.08
81	13.29	94.15	5.26	7.87	29.35	133.74
82	13.45	93.70	5.27	9.99	29.30	133.43
83	13.62	89.86	5.18	11.46	29.15	133.42
84	13.78	96.19	5.21	10.57	29.65	133.93
85	13.94	99.42	6.27	11.01	30.37	135.43
86	14.11	113.48	8.43	11.92	29.43	137.28
87	14.27	150.01	9.77	7.54	26.84	137.28
88	14.44	171.97	9.61	7.37	25.38	137.28
89	14.60	141.14	8.35	8.82	26.19	137.28
90	14.76	118.82	8.02	9.50	28.08	137.11
91	14.93	118.14	7.07	10.56	29.36	136.22
92	15.09	105.77	6.35	8.28	28.77	134.87
93	15.26	96.48	4.82	8.39	28.89	132.88
94	15.42	79.05	3.33	8.77	29.87	130.02
95	15.58	53.02	2.37	5.19	32.86	127.45
96	15.75	46.95	2.33	13.52	35.50	126.25

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
97	15.91	54.91	2.45	15.60	36.42	126.36
98	16.08	50.45	2.51	16.04	36.07	126.40
99	16.24	49.31	2.34	16.77	37.73	126.15
100	16.40	46.28	2.33	18.26	38.88	125.67
101	16.57	42.55	2.18	18.07	40.17	125.25
102	16.73	41.95	2.08	17.68	41.32	124.81
103	16.90	39.69	2.05	16.39	42.22	124.51
104	17.06	38.13	2.00	16.55	43.03	124.53
105	17.22	40.10	2.13	16.64	43.79	124.75
106	17.39	39.39	2.24	16.37	46.16	126.28
107	17.55	42.43	3.39	17.03	47.66	127.44
108	17.72	44.74	3.35	17.03	46.86	128.22
109	17.88	48.32	3.03	17.77	43.01	127.84
110	18.04	52.58	2.68	15.33	40.92	127.19
111	18.21	47.16	2.53	16.98	40.04	126.53
112	18.37	46.32	2.35	17.30	41.12	125.87
113	18.54	43.67	2.18	16.94	42.49	125.33
114	18.70	38.88	2.17	16.95	44.52	125.60
115	18.86	42.49	2.67	18.01	45.66	126.84
116	19.03	49.85	3.34	18.36	43.84	128.18
117	19.19	56.36	3.40	17.61	41.16	128.48
118	19.36	55.93	2.79	17.28	39.72	127.61
119	19.52	47.97	2.31	14.09	43.65	127.61
120	19.69	41.90	3.67	16.08	47.82	129.11
121	19.85	55.18	4.81	20.22	45.75	131.29
122	20.01	76.88	5.20	21.82	40.07	132.09
123	20.18	78.42	4.33	19.25	37.09	131.39
124	20.34	63.06	3.34	20.33	37.36	129.48
125	20.51	52.13	2.65	21.05	40.88	127.45
126	20.67	41.95	2.39	21.95	43.97	125.96
127	20.83	39.87	2.16	22.31	46.09	125.26
128	21.00	40.95	2.19	21.92	46.39	124.98
129	21.16	39.48	2.17	21.83	46.28	124.78
130	21.33	39.21	2.01	22.13	48.70	124.93
131	21.49	35.87	2.41	20.96	50.82	125.00
132	21.65	35.05	2.33	22.91	52.45	125.03
133	21.82	35.91	2.10	23.01	49.64	124.63
134	21.98	40.29	1.96	20.49	48.89	124.45
135	22.15	36.08	2.15	21.98	48.35	125.53
136	22.31	44.73	2.91	26.97	48.75	127.43
137	22.47	53.35	3.73	26.85	46.25	129.46
138	22.64	62.31	4.30	23.99	43.67	130.88
139	22.80	70.28	4.61	24.03	42.30	131.48
140	22.97	67.28	4.49	23.98	42.92	131.47
141	23.13	59.77	4.35	23.32	44.79	130.98
142	23.29	56.66	4.04	22.95	46.02	130.48
143	23.46	57.31	3.86	20.55	45.74	129.96
144	23.62	56.05	3.60	17.25	45.19	129.42

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
145	23.79	53.91	3.28	15.63	46.55	128.45
146	23.95	43.63	2.79	17.47	49.68	127.35
147	24.11	37.32	2.62	17.62	52.39	126.00
148	24.28	37.22	2.14	16.75	53.85	124.60
149	24.44	31.77	1.70	15.51	57.10	123.14
150	24.61	24.85	1.68	18.04	63.29	122.46
151	24.77	23.66	1.92	20.69	66.26	123.39
152	24.93	31.42	2.41	24.23	59.57	125.78
153	25.10	48.93	3.31	17.42	51.15	128.60
154	25.26	62.29	4.39	27.39	46.70	131.02
155	25.43	70.38	5.29	33.89	44.74	132.47
156	25.59	74.84	5.47	35.62	43.11	133.02
157	25.75	78.22	5.19	37.84	41.90	132.70
158	25.92	72.80	4.54	41.35	42.00	131.83
159	26.08	62.96	4.00	50.55	43.74	130.90
160	26.25	58.49	3.94	54.65	45.54	130.19
161	26.41	57.32	3.69	54.39	46.76	129.58
162	26.57	52.20	3.30	57.25	47.69	129.07
163	26.74	50.34	3.37	62.31	48.73	129.06
164	26.90	53.58	3.75	70.78	49.31	129.54
165	27.07	55.01	3.95	49.72	49.64	129.67
166	27.23	50.84	3.55	41.28	49.26	129.54
167	27.40	54.57	3.55	24.40	50.35	129.31
168	27.56	49.76	3.73	24.04	52.67	129.85
169	27.72	48.57	4.45	37.43	55.75	130.21
170	27.89	51.62	4.21	36.20	55.91	130.30
171	28.05	50.06	3.87	37.67	52.56	129.59
172	28.22	49.56	3.28	29.72	53.52	128.62
173	28.38	40.76	3.05	34.07	56.29	127.63
174	28.54	38.23	2.84	34.33	59.14	127.08
175	28.71	38.73	2.86	33.67	59.79	126.74
176	28.87	37.18	2.73	34.66	60.55	126.28
177	29.04	33.78	2.43	36.71	62.05	125.13
178	29.20	29.13	1.91	34.78	64.63	123.42
179	29.36	24.06	1.52	32.82	69.41	121.67
180	29.53	19.57	1.46	32.76	76.41	121.31
181	29.69	19.82	1.89	34.03	80.55	122.13
182	29.86	22.61	2.14	33.85	80.27	123.61
183	30.02	25.01	2.50	34.44	70.66	125.07
184	30.18	38.36	2.72	26.96	63.43	125.97
185	30.35	39.99	2.63	27.87	59.33	126.01
186	30.51	34.07	2.33	26.95	60.92	125.48
187	30.68	31.96	2.33	27.23	64.94	125.04
188	30.84	29.92	2.42	29.03	66.83	125.18
189	31.00	31.56	2.53	30.52	67.59	125.33
190	31.17	31.56	2.49	28.73	67.06	125.25
191	31.33	30.60	2.33	26.98	68.64	124.93
192	31.50	27.53	2.31	25.81	71.93	124.56

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
193	31.66	24.99	2.31	28.18	74.23	124.65
194	31.82	27.88	2.49	28.72	72.56	124.90
195	31.99	31.15	2.46	22.30	67.15	125.12
196	32.15	34.73	2.27	21.62	58.62	125.16
197	32.32	45.05	2.15	11.36	52.14	125.08
198	32.48	43.06	2.16	8.98	50.23	124.98
199	32.64	39.31	2.10	7.22	55.28	124.77
200	32.81	34.86	2.14	6.03	60.65	124.45
201	32.97	29.47	2.14	5.94	67.08	124.15
202	33.14	26.33	2.13	6.96	72.29	123.80
203	33.30	25.55	2.07	7.64	74.83	123.57
204	33.46	25.25	2.06	8.13	76.32	123.36
205	33.63	23.73	2.02	8.71	78.23	123.17
206	33.79	22.64	1.99	9.66	79.47	123.09
207	33.96	23.61	2.03	10.05	80.04	123.04
208	34.12	23.02	2.01	10.58	79.31	123.12
209	34.28	23.81	2.02	10.69	78.75	123.08
210	34.45	24.18	1.98	10.65	78.16	123.22
211	34.61	24.32	2.09	10.90	78.54	123.20
212	34.78	23.36	2.01	11.72	80.99	123.06
213	34.94	21.07	1.96	12.56	80.78	122.96
214	35.10	24.26	2.00	11.63	80.04	122.99
215	35.27	24.38	2.00	11.92	78.14	123.23
216	35.43	24.18	2.07	12.25	78.62	123.37
217	35.60	24.33	2.12	13.07	79.40	123.60
218	35.76	24.41	2.20	14.21	78.70	123.78
219	35.93	25.76	2.18	15.22	77.10	124.16
220	36.09	27.88	2.36	15.27	75.27	124.66
221	36.25	29.00	2.54	15.48	73.51	125.34
222	36.42	31.46	2.70	16.54	70.91	125.96
223	36.58	35.09	2.82	15.06	67.28	126.48
224	36.75	38.36	2.87	14.70	64.86	127.00
225	36.91	39.54	3.11	15.13	64.69	127.38
226	37.07	37.93	3.21	18.49	64.28	127.87
227	37.24	42.54	3.39	18.90	65.11	128.18
228	37.40	39.88	3.52	17.92	63.16	128.60
229	37.57	45.54	3.59	17.47	60.25	128.84
230	37.73	52.02	3.48	8.60	57.81	128.85
231	37.89	47.08	3.35	5.94	56.99	128.39
232	38.06	44.59	2.99	9.15	58.66	127.61
233	38.22	41.50	2.70	12.26	58.81	126.67
234	38.39	40.13	2.41	13.60	58.08	125.99
235	38.55	41.85	2.32	14.80	55.95	125.76
236	38.71	45.46	2.40	18.75	50.92	126.09
237	38.88	51.64	2.53	24.52	47.34	127.03
238	39.04	60.49	2.97	30.02	46.58	127.93
239	39.21	56.26	3.24	36.13	46.94	128.67
240	39.37	57.32	3.35	41.07	49.48	129.32

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
241	39.53	57.50	3.91	41.21	52.90	130.44
242	39.70	55.31	4.99	43.62	56.31	131.40
243	39.86	60.66	4.98	42.44	55.91	131.77
244	40.03	63.05	4.48	30.91	51.58	131.07
245	40.19	58.47	3.60	27.79	51.38	129.85
246	40.35	49.38	3.23	33.99	55.21	128.58
247	40.52	44.39	3.04	39.22	58.88	127.82
248	40.68	41.70	2.97	42.72	61.64	127.41
249	40.85	39.37	2.94	45.88	63.73	127.37
250	41.01	39.23	3.10	47.73	65.17	127.72
251	41.17	40.81	3.43	49.70	65.38	128.25
252	41.34	42.55	3.57	51.38	64.82	128.69
253	41.50	43.71	3.61	51.26	64.00	128.62
254	41.67	42.36	3.28	50.94	64.93	128.81
255	41.83	41.88	3.87	50.36	66.72	129.04
256	41.99	41.25	4.02	54.33	67.23	129.97
257	42.16	47.88	4.61	63.88	64.01	130.93
258	42.32	58.16	5.09	36.11	61.74	131.71
259	42.49	55.11	5.13	49.61	58.78	132.17
260	42.65	62.67	5.13	42.06	56.51	132.20
261	42.81	67.25	4.89	12.60	51.47	132.18
262	42.98	68.93	4.76	6.66	50.48	132.05
263	43.14	65.90	4.80	4.83	48.88	132.09
264	43.31	74.86	4.80	4.28	46.75	131.95
265	43.47	77.06	4.31	2.00	43.70	131.48
266	43.64	75.10	3.77	0.22	41.98	130.52
267	43.80	71.50	3.27	-1.92	41.31	129.50
268	43.96	68.04	2.97	-3.50	42.11	128.98
269	44.13	65.49	3.24	-3.88	45.59	128.93
270	44.29	55.90	3.45	-4.35	48.55	129.21
271	44.46	59.46	3.49	-3.27	48.17	129.07
272	44.62	65.63	3.04	-2.94	45.15	128.71
273	44.78	64.31	2.83	-4.37	42.04	127.86
274	44.95	64.07	2.41	-5.35	39.83	126.70
275	45.11	63.49	1.84	-1.21	36.21	125.06
276	45.28	64.67	1.41	-2.56	32.90	123.72
277	45.44	67.47	1.44	-3.65	30.54	123.43
278	45.60	73.82	1.59	-3.56	31.02	124.91
279	45.77	78.22	2.28	-2.09	33.00	126.75
280	45.93	77.52	2.85	-5.41	37.54	128.42
281	46.10	68.21	3.37	-5.42	43.24	129.17
282	46.26	58.67	3.49	-4.72	48.30	129.32
283	46.42	58.19	3.39	-4.41	49.98	129.23
284	46.59	61.15	3.38	-4.84	48.88	129.20
285	46.75	62.66	3.38	-4.52	47.52	129.09
286	46.92	62.41	3.17	-4.04	44.43	129.23
287	47.08	75.65	3.32	-3.69	40.69	129.60
288	47.24	85.13	3.53	-3.53	40.72	130.30

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
289	47.41	71.33	4.03	-3.38	45.50	130.46
290	47.57	54.15	3.93	-2.87	56.68	130.01
291	47.74	44.57	3.65	-2.15	64.58	129.23
292	47.90	41.31	3.54	-0.95	70.36	128.73
293	48.06	37.25	3.65	-0.24	73.53	128.78
294	48.23	38.58	3.91	0.25	74.13	129.19
295	48.39	42.84	4.13	0.35	71.66	129.78
296	48.56	46.40	4.32	0.36	67.10	130.45
297	48.72	54.49	4.57	0.41	63.49	131.06
298	48.88	58.12	4.79	0.36	61.63	131.50
299	49.05	56.35	4.87	0.36	61.67	131.65
300	49.21	55.92	4.82	0.53	62.08	131.48
301	49.38	55.39	4.54	0.52	61.54	131.03
302	49.54	54.09	4.09	0.47	58.05	130.02
303	49.70	58.04	3.03	0.08	50.61	128.86
304	49.87	63.37	2.68	-1.15	42.78	127.35
305	50.03	69.48	2.04	-2.40	36.35	126.08
306	50.20	75.06	1.62	-3.33	31.48	124.74
307	50.36	75.81	1.52	-4.77	29.03	123.98
308	50.52	76.43	1.48	-4.71	27.81	123.63
309	50.69	79.36	1.38	-4.79	26.45	123.35
310	50.85	82.35	1.32	-5.08	25.05	122.98
311	51.02	82.67	1.24	-5.34	23.84	122.27
312	51.18	80.51	1.01	-5.52	23.45	121.74
313	51.35	79.31	1.08	-5.26	22.93	121.41
314	51.51	83.29	1.09	-5.51	22.95	121.74
315	51.67	84.30	1.13	-2.04	22.57	121.91
316	51.84	84.87	1.14	-4.81	22.29	122.05
317	52.00	87.69	1.14	-4.83	21.70	122.13
318	52.17	90.80	1.14	-4.83	21.28	122.29
319	52.33	91.11	1.18	-4.84	21.39	122.62
320	52.49	91.25	1.28	-4.81	21.88	123.17
321	52.66	93.84	1.41	-4.75	22.80	123.82
322	52.82	91.52	1.54	-4.68	24.41	124.26
323	52.99	83.21	1.59	-4.64	26.78	124.44
324	53.15	77.13	1.62	-4.58	28.43	124.07
325	53.31	75.09	1.40	-4.48	27.22	123.23
326	53.48	81.94	1.10	-4.43	24.03	122.25
327	53.64	89.56	1.04	-4.38	21.62	121.75
328	53.81	89.69	1.11	-4.38	22.35	122.58
329	53.97	86.19	1.48	-4.32	24.88	123.60
330	54.13	81.19	1.62	-4.31	27.94	124.55
331	54.30	78.45	1.76	-2.85	30.64	125.20
332	54.46	75.90	2.01	-4.30	33.19	125.79
333	54.63	72.56	2.15	-4.75	36.48	126.41
334	54.79	67.33	2.40	-5.07	40.33	126.89
335	54.95	62.16	2.60	-5.37	43.46	127.18
336	55.12	61.94	2.57	-3.82	44.95	127.21

:: Field input data :: (continued)

Point ID	Depth (ft)	q_c (tsf)	f_s (tsf)	u (tsf)	Fines content (%)	Unit weight (pcf)
337	55.28	61.73	2.50	-5.37	44.91	127.18
338	55.45	62.15	2.57	-5.66	44.70	127.20
339	55.61	63.18	2.58	-5.95	43.99	127.19
340	55.77	64.74	2.46	-6.22	43.42	127.03
341	55.94	63.04	2.39	-6.29	43.70	126.84
342	56.10	60.26	2.42	-6.63	45.28	126.79
343	56.27	58.17	2.50	-6.91	46.77	126.77
344	56.43	57.44	2.45	-6.93	46.44	126.63
345	56.59	60.36	2.28	-7.19	43.50	126.08
346	56.76	64.42	1.90	-7.37	39.50	125.11
347	56.92	65.02	1.55	-7.57	33.15	123.26
348	57.09	72.75	0.91	-7.73	28.56	121.92
349	57.25	77.27	1.10	-7.96	26.52	121.66
350	57.41	75.66	1.37	-8.05	28.41	122.92
351	57.58	74.17	1.53	-7.33	30.17	123.56
352	57.74	73.32	1.49	-7.79	29.49	123.20
353	57.91	76.07	1.15	-7.81	26.91	122.47
354	58.07	83.43	1.09	-7.84	25.06	122.30
355	58.23	85.08	1.34	-7.89	24.95	123.28
356	58.40	89.17	1.60	-7.84	23.61	123.96
357	58.56	104.16	1.36	-7.76	18.00	124.09
358	58.73	148.79	1.13	-7.69	12.43	123.73
359	58.89	174.07	1.12	-7.62	10.79	124.01
360	59.06	147.21	1.39	-7.55	13.01	125.31
361	59.22	128.81	1.90	-7.49	15.56	126.18
362	59.38	144.70	1.79	-7.45	14.58	127.00
363	59.55	184.77	1.83	-6.77	12.74	128.34
364	59.71	205.51	2.68	-6.78	12.22	130.26
365	59.88	219.04	3.33	-6.65	12.20	132.23
366	60.04	257.61	3.88	-6.58	10.73	133.43
367	60.20	310.30	3.90	-6.42	N/A	87.36
368	60.37	365.08	-272311.72	-6.30	N/A	87.36
369	60.53	440.84	-272311.72	-4.98	N/A	87.36
370	60.70	627.22	-272311.72	-5.11	N/A	87.36

Abbreviations

Depth:	Depth from free surface, at which CPT was performed (ft)
q_c:	Measured cone resistance (tsf)
f_s:	Sleeve friction resistance (tsf)
u:	Pore pressure (tsf)
Fines content:	Percentage of fines in soil (%)
Unit weight:	Bulk soil unit weight (pcf)

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data ::

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
1	0.16	0.01	0.00	0.01	1.00	0.156	1.44	0.108	1.00	1.00	2.000	No
2	0.33	0.02	0.00	0.02	1.00	0.156	1.44	0.108	1.00	1.00	2.000	No
3	0.49	0.03	0.00	0.03	1.00	0.156	1.44	0.108	1.00	1.00	2.000	No
4	0.66	0.04	0.00	0.04	1.00	0.156	1.44	0.108	1.00	1.00	2.000	No
5	0.82	0.05	0.00	0.05	1.00	0.156	1.44	0.108	1.00	1.00	2.000	No
6	0.98	0.06	0.00	0.06	1.00	0.156	1.44	0.108	1.00	1.00	2.000	No
7	1.15	0.08	0.00	0.08	1.00	0.156	1.44	0.108	1.00	1.00	2.000	No
8	1.31	0.09	0.00	0.09	1.00	0.156	1.44	0.108	1.00	1.00	2.000	No
9	1.48	0.10	0.00	0.10	1.00	0.156	1.44	0.108	1.00	1.00	2.000	No
10	1.64	0.11	0.00	0.11	1.00	0.156	1.44	0.108	1.00	1.00	2.000	No
11	1.80	0.12	0.00	0.12	1.00	0.156	1.44	0.108	1.00	1.00	2.000	No
12	1.97	0.13	0.00	0.13	1.00	0.156	1.44	0.108	1.00	1.00	2.000	No
13	2.13	0.14	0.00	0.14	1.00	0.156	1.44	0.108	1.00	1.00	2.000	No
14	2.30	0.15	0.00	0.15	1.00	0.155	1.44	0.108	1.00	1.00	2.000	No
15	2.46	0.16	0.00	0.16	1.00	0.155	1.44	0.108	1.00	1.00	2.000	No
16	2.62	0.17	0.00	0.17	1.00	0.155	1.44	0.108	1.00	1.00	2.000	No
17	2.79	0.18	0.00	0.18	1.00	0.155	1.44	0.108	1.00	1.00	2.000	No
18	2.95	0.19	0.00	0.19	1.00	0.155	1.44	0.108	1.00	1.00	2.000	No
19	3.12	0.20	0.00	0.20	0.99	0.155	1.44	0.108	1.00	1.00	2.000	No
20	3.28	0.22	0.00	0.22	0.99	0.155	1.44	0.108	1.00	1.00	2.000	No
21	3.44	0.23	0.00	0.23	0.99	0.155	1.44	0.108	1.00	1.00	2.000	No
22	3.61	0.24	0.00	0.24	0.99	0.155	1.44	0.107	1.00	1.00	2.000	No
23	3.77	0.25	0.00	0.25	0.99	0.155	1.44	0.107	1.00	1.00	2.000	No
24	3.94	0.26	0.00	0.26	0.99	0.155	1.44	0.107	1.00	1.00	2.000	No
25	4.10	0.27	0.00	0.27	0.99	0.155	1.44	0.107	1.00	1.00	2.000	No
26	4.27	0.28	0.00	0.28	0.99	0.155	1.44	0.107	1.00	1.00	2.000	No
27	4.43	0.29	0.00	0.29	0.99	0.155	1.44	0.107	1.00	1.00	2.000	No
28	4.59	0.30	0.00	0.30	0.99	0.155	1.44	0.107	1.00	1.00	2.000	No
29	4.76	0.32	0.00	0.32	0.99	0.155	1.44	0.107	1.00	1.00	2.000	No
30	4.92	0.33	0.00	0.33	0.99	0.155	1.44	0.107	1.00	1.00	2.000	No
31	5.09	0.34	0.00	0.34	0.99	0.154	1.44	0.107	1.00	1.00	2.000	No
32	5.25	0.35	0.00	0.35	0.99	0.154	1.44	0.107	1.00	1.00	2.000	No
33	5.41	0.36	0.00	0.36	0.99	0.154	1.44	0.107	1.00	1.00	2.000	No
34	5.58	0.37	0.00	0.37	0.99	0.154	1.44	0.107	1.00	1.00	2.000	No
35	5.74	0.38	0.00	0.38	0.99	0.154	1.44	0.107	1.00	1.00	2.000	No
36	5.91	0.39	0.00	0.39	0.99	0.154	1.44	0.107	1.00	1.00	2.000	No
37	6.07	0.40	0.00	0.40	0.99	0.154	1.44	0.107	1.00	1.00	2.000	No
38	6.23	0.41	0.00	0.41	0.99	0.154	1.44	0.107	1.00	1.00	2.000	No
39	6.40	0.43	0.00	0.43	0.99	0.154	1.44	0.107	1.00	1.00	2.000	No
40	6.56	0.44	0.00	0.44	0.99	0.154	1.44	0.107	1.00	1.00	2.000	No
41	6.73	0.45	0.00	0.45	0.99	0.154	1.44	0.107	1.00	1.00	2.000	No
42	6.89	0.46	0.00	0.46	0.99	0.154	1.44	0.107	1.00	1.00	2.000	No
43	7.05	0.47	0.00	0.47	0.99	0.154	1.44	0.107	1.00	1.00	2.000	No
44	7.22	0.48	0.00	0.48	0.99	0.154	1.44	0.107	1.00	1.00	2.000	No
45	7.38	0.49	0.00	0.49	0.98	0.154	1.44	0.107	1.00	1.00	2.000	No
46	7.55	0.50	0.00	0.50	0.98	0.154	1.44	0.107	1.00	1.00	2.000	No
47	7.71	0.51	0.00	0.51	0.98	0.154	1.44	0.106	1.00	1.00	2.000	No
48	7.87	0.52	0.00	0.52	0.98	0.153	1.44	0.106	1.00	1.00	2.000	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
49	8.04	0.53	0.00	0.53	0.98	0.153	1.44	0.106	1.00	1.00	2.000	No
50	8.20	0.54	0.00	0.54	0.98	0.153	1.44	0.106	1.00	1.00	2.000	No
51	8.37	0.56	0.00	0.56	0.98	0.153	1.44	0.106	1.00	1.00	2.000	No
52	8.53	0.57	0.00	0.57	0.98	0.153	1.44	0.106	1.00	1.00	2.000	No
53	8.69	0.58	0.00	0.58	0.98	0.153	1.44	0.106	1.00	1.00	2.000	No
54	8.86	0.59	0.00	0.59	0.98	0.153	1.44	0.106	1.00	1.00	2.000	No
55	9.02	0.60	0.00	0.60	0.98	0.153	1.44	0.106	1.00	1.00	2.000	No
56	9.19	0.61	0.00	0.61	0.98	0.153	1.44	0.106	1.00	1.00	2.000	No
57	9.35	0.62	0.00	0.62	0.98	0.153	1.44	0.106	1.00	1.00	2.000	No
58	9.51	0.63	0.00	0.63	0.98	0.153	1.44	0.106	1.00	1.00	2.000	No
59	9.68	0.65	0.00	0.65	0.98	0.153	1.44	0.106	1.00	1.00	2.000	No
60	9.84	0.66	0.00	0.66	0.98	0.153	1.44	0.106	1.00	1.00	2.000	No
61	10.01	0.67	0.00	0.67	0.98	0.153	1.44	0.106	1.00	1.00	2.000	No
62	10.17	0.68	0.00	0.68	0.98	0.153	1.44	0.106	1.00	1.00	2.000	No
63	10.33	0.69	0.00	0.69	0.98	0.153	1.44	0.106	1.00	1.00	2.000	No
64	10.50	0.70	0.00	0.70	0.98	0.153	1.44	0.106	1.00	1.00	2.000	No
65	10.66	0.71	0.00	0.71	0.98	0.153	1.44	0.106	1.00	1.00	2.000	No
66	10.83	0.72	0.00	0.72	0.98	0.152	1.44	0.106	1.00	1.00	2.000	No
67	10.99	0.74	0.00	0.74	0.98	0.152	1.44	0.106	1.00	1.00	2.000	No
68	11.15	0.75	0.00	0.75	0.98	0.152	1.44	0.106	1.00	1.00	2.000	No
69	11.32	0.76	0.00	0.76	0.98	0.152	1.44	0.106	1.00	1.00	2.000	No
70	11.48	0.77	0.00	0.77	0.98	0.152	1.44	0.106	1.00	1.00	2.000	No
71	11.65	0.78	0.00	0.78	0.98	0.152	1.44	0.106	1.00	1.00	2.000	No
72	11.81	0.79	0.00	0.79	0.98	0.152	1.44	0.106	1.00	1.00	2.000	No
73	11.98	0.80	0.00	0.80	0.97	0.152	1.44	0.105	1.00	1.00	2.000	No
74	12.14	0.81	0.00	0.81	0.97	0.152	1.44	0.105	1.00	1.00	2.000	No
75	12.30	0.82	0.00	0.82	0.97	0.152	1.44	0.105	1.00	1.00	2.000	No
76	12.47	0.84	0.00	0.84	0.97	0.152	1.44	0.105	1.00	1.00	2.000	No
77	12.63	0.85	0.00	0.85	0.97	0.152	1.44	0.105	1.00	1.00	2.000	No
78	12.80	0.86	0.00	0.86	0.97	0.152	1.44	0.105	1.00	1.00	2.000	No
79	12.96	0.87	0.00	0.87	0.97	0.152	1.44	0.105	1.00	1.00	2.000	No
80	13.12	0.88	0.00	0.88	0.97	0.152	1.44	0.105	1.00	1.00	2.000	No
81	13.29	0.89	0.00	0.89	0.97	0.152	1.44	0.105	1.00	1.00	2.000	No
82	13.45	0.90	0.00	0.90	0.97	0.152	1.44	0.105	1.00	1.00	2.000	No
83	13.62	0.91	0.00	0.91	0.97	0.152	1.44	0.105	1.00	1.00	2.000	No
84	13.78	0.92	0.00	0.92	0.97	0.152	1.44	0.105	1.00	1.00	2.000	No
85	13.94	0.93	0.00	0.93	0.97	0.151	1.44	0.105	1.00	1.00	2.000	No
86	14.11	0.95	0.00	0.95	0.97	0.151	1.44	0.105	1.00	1.00	2.000	No
87	14.27	0.96	0.00	0.96	0.97	0.151	1.44	0.105	1.00	1.00	2.000	No
88	14.44	0.97	0.00	0.97	0.97	0.151	1.44	0.105	1.00	1.00	2.000	No
89	14.60	0.98	0.00	0.98	0.97	0.151	1.44	0.105	1.00	1.00	2.000	No
90	14.76	0.99	0.00	0.99	0.97	0.151	1.44	0.105	1.00	1.00	2.000	No
91	14.93	1.00	0.00	1.00	0.97	0.151	1.44	0.105	1.00	1.00	2.000	No
92	15.09	1.01	0.00	1.01	0.97	0.151	1.44	0.105	1.00	1.00	2.000	No
93	15.26	1.02	0.00	1.02	0.97	0.151	1.44	0.105	1.00	1.00	2.000	No
94	15.42	1.03	0.00	1.03	0.97	0.151	1.44	0.105	1.00	1.00	2.000	No
95	15.58	1.04	0.00	1.04	0.97	0.151	1.44	0.105	1.00	1.00	2.000	No
96	15.75	1.06	0.00	1.06	0.97	0.151	1.44	0.105	1.00	1.00	2.000	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
97	15.91	1.07	0.00	1.07	0.97	0.151	1.44	0.105	1.00	1.00	2.000	No
98	16.08	1.08	0.00	1.08	0.97	0.151	1.44	0.105	1.00	1.00	2.000	No
99	16.24	1.09	0.00	1.09	0.97	0.151	1.44	0.104	0.99	1.00	2.000	No
100	16.40	1.10	0.00	1.10	0.97	0.151	1.44	0.104	0.99	1.00	2.000	No
101	16.57	1.11	0.00	1.11	0.97	0.151	1.44	0.104	0.99	1.00	2.000	No
102	16.73	1.12	0.00	1.12	0.96	0.150	1.44	0.104	0.99	1.00	2.000	No
103	16.90	1.13	0.00	1.13	0.96	0.150	1.44	0.104	0.99	1.00	2.000	No
104	17.06	1.14	0.00	1.14	0.96	0.150	1.44	0.104	0.99	1.00	2.000	No
105	17.22	1.15	0.00	1.15	0.96	0.150	1.44	0.104	0.98	1.00	2.000	No
106	17.39	1.16	0.00	1.16	0.96	0.150	1.44	0.104	0.98	1.00	2.000	No
107	17.55	1.17	0.00	1.17	0.96	0.150	1.44	0.104	0.98	1.00	2.000	No
108	17.72	1.18	0.00	1.18	0.96	0.150	1.44	0.104	0.98	1.00	2.000	No
109	17.88	1.19	0.00	1.19	0.96	0.150	1.44	0.104	0.98	1.00	2.000	No
110	18.04	1.20	0.00	1.20	0.96	0.150	1.44	0.104	0.98	1.00	2.000	No
111	18.21	1.21	0.00	1.21	0.96	0.150	1.44	0.104	0.97	1.00	2.000	No
112	18.37	1.22	0.00	1.22	0.96	0.150	1.44	0.104	0.97	1.00	2.000	No
113	18.54	1.23	0.00	1.23	0.96	0.150	1.44	0.104	0.97	1.00	2.000	No
114	18.70	1.24	0.00	1.24	0.96	0.150	1.44	0.104	0.97	1.00	2.000	No
115	18.86	1.25	0.00	1.25	0.96	0.150	1.44	0.104	0.97	1.00	2.000	No
116	19.03	1.26	0.00	1.26	0.96	0.150	1.44	0.104	0.97	1.00	2.000	No
117	19.19	1.27	0.00	1.27	0.96	0.150	1.44	0.104	0.96	1.00	2.000	No
118	19.36	1.28	0.00	1.28	0.96	0.150	1.44	0.104	0.96	1.00	2.000	No
119	19.52	1.29	0.00	1.29	0.96	0.149	1.44	0.104	0.96	1.00	2.000	No
120	19.69	1.30	0.00	1.30	0.96	0.149	1.44	0.104	0.96	1.00	2.000	No
121	19.85	1.31	0.00	1.31	0.96	0.149	1.44	0.104	0.96	1.00	2.000	No
122	20.01	1.33	0.00	1.33	0.96	0.149	1.44	0.104	0.96	1.00	0.108	No
123	20.18	1.34	0.01	1.33	0.96	0.150	1.44	0.104	0.96	1.00	0.109	No
124	20.34	1.35	0.01	1.34	0.96	0.150	1.44	0.104	0.95	1.00	0.109	No
125	20.51	1.36	0.02	1.34	0.96	0.151	1.44	0.105	0.95	1.00	0.110	No
126	20.67	1.37	0.02	1.35	0.96	0.151	1.44	0.105	0.95	1.00	0.110	No
127	20.83	1.38	0.03	1.35	0.95	0.152	1.44	0.105	0.95	1.00	0.111	No
128	21.00	1.39	0.03	1.36	0.95	0.152	1.44	0.106	0.95	1.00	0.111	No
129	21.16	1.40	0.04	1.36	0.95	0.153	1.44	0.106	0.95	1.00	0.111	No
130	21.33	1.41	0.04	1.37	0.95	0.153	1.44	0.106	0.95	1.00	0.112	No
131	21.49	1.42	0.05	1.37	0.95	0.154	1.44	0.107	0.95	1.00	0.112	No
132	21.65	1.43	0.05	1.38	0.95	0.154	1.44	0.107	0.95	1.00	0.113	No
133	21.82	1.44	0.06	1.38	0.95	0.155	1.44	0.107	0.95	1.00	0.113	No
134	21.98	1.45	0.06	1.39	0.95	0.155	1.44	0.108	0.95	1.00	0.114	No
135	22.15	1.46	0.07	1.39	0.95	0.155	1.44	0.108	0.95	1.00	0.114	No
136	22.31	1.47	0.07	1.40	0.95	0.156	1.44	0.108	0.95	1.00	0.114	No
137	22.47	1.48	0.08	1.40	0.95	0.156	1.44	0.108	0.94	1.00	0.115	No
138	22.64	1.49	0.08	1.41	0.95	0.157	1.44	0.109	0.94	1.00	0.115	No
139	22.80	1.50	0.09	1.42	0.95	0.157	1.44	0.109	0.94	1.00	0.116	No
140	22.97	1.51	0.09	1.42	0.95	0.158	1.44	0.109	0.94	1.00	0.116	No
141	23.13	1.52	0.10	1.43	0.95	0.158	1.44	0.110	0.94	1.00	0.116	No
142	23.29	1.53	0.10	1.43	0.95	0.158	1.44	0.110	0.94	1.00	0.117	No
143	23.46	1.55	0.11	1.44	0.95	0.159	1.44	0.110	0.94	1.00	0.117	No
144	23.62	1.56	0.11	1.44	0.95	0.159	1.44	0.110	0.94	1.00	0.117	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
145	23.79	1.57	0.12	1.45	0.95	0.160	1.44	0.111	0.94	1.00	0.118	No
146	23.95	1.58	0.12	1.45	0.95	0.160	1.44	0.111	0.94	1.00	0.118	No
147	24.11	1.59	0.13	1.46	0.94	0.160	1.44	0.111	0.94	1.00	0.119	No
148	24.28	1.60	0.13	1.46	0.94	0.161	1.44	0.111	0.94	1.00	0.119	No
149	24.44	1.61	0.14	1.47	0.94	0.161	1.44	0.112	0.94	1.00	0.119	No
150	24.61	1.62	0.14	1.47	0.94	0.161	1.44	0.112	0.94	1.00	0.120	No
151	24.77	1.63	0.15	1.48	0.94	0.162	1.44	0.112	0.94	1.00	0.120	No
152	24.93	1.64	0.15	1.48	0.94	0.162	1.44	0.112	0.93	1.00	0.120	No
153	25.10	1.65	0.16	1.49	0.94	0.163	1.44	0.113	0.93	1.00	0.121	No
154	25.26	1.66	0.16	1.50	0.94	0.163	1.44	0.113	0.93	1.00	0.121	No
155	25.43	1.67	0.17	1.50	0.94	0.163	1.44	0.113	0.93	1.00	0.121	No
156	25.59	1.68	0.17	1.51	0.94	0.164	1.44	0.113	0.93	1.00	0.122	No
157	25.75	1.69	0.18	1.51	0.94	0.164	1.44	0.114	0.93	1.00	0.122	No
158	25.92	1.70	0.18	1.52	0.94	0.164	1.44	0.114	0.93	1.00	0.122	No
159	26.08	1.71	0.19	1.52	0.94	0.165	1.44	0.114	0.93	1.00	0.123	No
160	26.25	1.72	0.19	1.53	0.94	0.165	1.44	0.114	0.93	1.00	0.123	No
161	26.41	1.74	0.20	1.54	0.94	0.165	1.44	0.115	0.93	1.00	0.123	No
162	26.57	1.75	0.21	1.54	0.94	0.165	1.44	0.115	0.93	1.00	0.124	No
163	26.74	1.76	0.21	1.55	0.94	0.166	1.44	0.115	0.93	1.00	0.124	No
164	26.90	1.77	0.22	1.55	0.93	0.166	1.44	0.115	0.93	1.00	0.124	No
165	27.07	1.78	0.22	1.56	0.93	0.166	1.44	0.115	0.93	1.00	0.125	No
166	27.23	1.79	0.23	1.56	0.93	0.167	1.44	0.116	0.92	1.00	0.125	No
167	27.40	1.80	0.23	1.57	0.93	0.167	1.44	0.116	0.92	1.00	0.125	No
168	27.56	1.81	0.24	1.57	0.93	0.167	1.44	0.116	0.92	1.00	0.126	No
169	27.72	1.82	0.24	1.58	0.93	0.167	1.44	0.116	0.92	1.00	0.126	No
170	27.89	1.83	0.25	1.58	0.93	0.168	1.44	0.116	0.92	1.00	0.126	No
171	28.05	1.84	0.25	1.59	0.93	0.168	1.44	0.116	0.92	1.00	0.126	No
172	28.22	1.85	0.26	1.60	0.93	0.168	1.44	0.117	0.92	1.00	0.127	No
173	28.38	1.86	0.26	1.60	0.93	0.168	1.44	0.117	0.92	1.00	0.127	No
174	28.54	1.87	0.27	1.61	0.93	0.169	1.44	0.117	0.92	1.00	0.127	No
175	28.71	1.88	0.27	1.61	0.93	0.169	1.44	0.117	0.92	1.00	0.127	No
176	28.87	1.89	0.28	1.62	0.93	0.169	1.44	0.117	0.92	1.00	0.128	No
177	29.04	1.90	0.28	1.62	0.93	0.169	1.44	0.118	0.92	1.00	0.128	No
178	29.20	1.91	0.29	1.63	0.92	0.170	1.44	0.118	0.92	1.00	0.128	No
179	29.36	1.92	0.29	1.63	0.92	0.170	1.44	0.118	0.92	1.00	0.128	No
180	29.53	1.93	0.30	1.64	0.92	0.170	1.44	0.118	0.92	1.00	0.129	No
181	29.69	1.94	0.30	1.64	0.92	0.170	1.44	0.118	0.92	1.00	0.129	No
182	29.86	1.95	0.31	1.65	0.92	0.171	1.44	0.118	0.92	1.00	0.129	No
183	30.02	1.96	0.31	1.65	0.92	0.171	1.44	0.118	0.91	1.00	0.129	No
184	30.18	1.97	0.32	1.66	0.92	0.171	1.44	0.119	0.91	1.00	0.130	No
185	30.35	1.99	0.32	1.66	0.92	0.171	1.44	0.119	0.91	1.00	0.130	No
186	30.51	2.00	0.33	1.67	0.92	0.171	1.44	0.119	0.91	1.00	0.130	No
187	30.68	2.01	0.33	1.67	0.92	0.172	1.44	0.119	0.91	1.00	0.130	No
188	30.84	2.02	0.34	1.68	0.92	0.172	1.44	0.119	0.91	1.00	0.131	No
189	31.00	2.03	0.34	1.68	0.92	0.172	1.44	0.119	0.91	1.00	0.131	No
190	31.17	2.04	0.35	1.69	0.91	0.172	1.44	0.119	0.91	1.00	0.131	No
191	31.33	2.05	0.35	1.69	0.91	0.172	1.44	0.119	0.91	1.00	0.131	No
192	31.50	2.06	0.36	1.70	0.91	0.172	1.44	0.120	0.91	1.00	0.131	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
193	31.66	2.07	0.36	1.70	0.91	0.173	1.44	0.120	0.91	1.00	0.132	No
194	31.82	2.08	0.37	1.71	0.91	0.173	1.44	0.120	0.91	1.00	0.132	No
195	31.99	2.09	0.37	1.71	0.91	0.173	1.44	0.120	0.91	1.00	0.132	No
196	32.15	2.10	0.38	1.72	0.91	0.173	1.44	0.120	0.91	1.00	0.132	No
197	32.32	2.11	0.38	1.72	0.91	0.173	1.44	0.120	0.91	1.00	0.132	No
198	32.48	2.12	0.39	1.73	0.91	0.173	1.44	0.120	0.91	1.00	0.133	No
199	32.64	2.13	0.39	1.73	0.91	0.173	1.44	0.120	0.91	1.00	0.133	No
200	32.81	2.14	0.40	1.74	0.90	0.174	1.44	0.120	0.91	1.00	0.133	No
201	32.97	2.15	0.40	1.74	0.90	0.174	1.44	0.120	0.90	1.00	0.133	No
202	33.14	2.16	0.41	1.75	0.90	0.174	1.44	0.121	0.90	1.00	0.133	No
203	33.30	2.17	0.41	1.75	0.90	0.174	1.44	0.121	0.90	1.00	0.133	No
204	33.46	2.18	0.42	1.76	0.90	0.174	1.44	0.121	0.90	1.00	0.134	No
205	33.63	2.19	0.43	1.76	0.90	0.174	1.44	0.121	0.90	1.00	0.134	No
206	33.79	2.20	0.43	1.77	0.90	0.174	1.44	0.121	0.90	1.00	0.134	No
207	33.96	2.21	0.44	1.77	0.90	0.174	1.44	0.121	0.90	1.00	0.134	No
208	34.12	2.22	0.44	1.78	0.90	0.175	1.44	0.121	0.90	1.00	0.134	No
209	34.28	2.23	0.45	1.78	0.90	0.175	1.44	0.121	0.90	1.00	0.134	No
210	34.45	2.24	0.45	1.79	0.89	0.175	1.44	0.121	0.90	1.00	0.135	No
211	34.61	2.25	0.46	1.79	0.89	0.175	1.44	0.121	0.90	1.00	0.135	No
212	34.78	2.26	0.46	1.80	0.89	0.175	1.44	0.121	0.90	1.00	0.135	No
213	34.94	2.27	0.47	1.80	0.89	0.175	1.44	0.121	0.90	1.00	0.135	No
214	35.10	2.28	0.47	1.81	0.89	0.175	1.44	0.121	0.90	1.00	0.135	No
215	35.27	2.29	0.48	1.81	0.89	0.175	1.44	0.121	0.90	1.00	0.135	No
216	35.43	2.30	0.48	1.82	0.89	0.175	1.44	0.121	0.90	1.00	0.135	No
217	35.60	2.31	0.49	1.82	0.89	0.175	1.44	0.121	0.90	1.00	0.135	No
218	35.76	2.32	0.49	1.83	0.89	0.175	1.44	0.122	0.90	1.00	0.136	No
219	35.93	2.33	0.50	1.83	0.88	0.175	1.44	0.122	0.90	1.00	0.136	No
220	36.09	2.34	0.50	1.84	0.88	0.175	1.44	0.122	0.90	1.00	0.136	No
221	36.25	2.35	0.51	1.84	0.88	0.175	1.44	0.122	0.89	1.00	0.136	No
222	36.42	2.36	0.51	1.85	0.88	0.175	1.44	0.122	0.89	1.00	0.136	No
223	36.58	2.37	0.52	1.85	0.88	0.175	1.44	0.122	0.89	1.00	0.136	No
224	36.75	2.38	0.52	1.86	0.88	0.175	1.44	0.122	0.89	1.00	0.136	No
225	36.91	2.39	0.53	1.87	0.88	0.175	1.44	0.122	0.89	1.00	0.136	No
226	37.07	2.40	0.53	1.87	0.88	0.175	1.44	0.122	0.89	1.00	0.136	No
227	37.24	2.41	0.54	1.88	0.87	0.175	1.44	0.122	0.89	1.00	0.136	No
228	37.40	2.42	0.54	1.88	0.87	0.175	1.44	0.122	0.89	1.00	0.137	No
229	37.57	2.44	0.55	1.89	0.87	0.175	1.44	0.122	0.89	1.00	0.137	No
230	37.73	2.45	0.55	1.89	0.87	0.175	1.44	0.122	0.89	1.00	0.137	No
231	37.89	2.46	0.56	1.90	0.87	0.175	1.44	0.122	0.89	1.00	0.137	No
232	38.06	2.47	0.56	1.90	0.87	0.175	1.44	0.122	0.89	1.00	0.137	No
233	38.22	2.48	0.57	1.91	0.87	0.175	1.44	0.122	0.89	1.00	0.137	No
234	38.39	2.49	0.57	1.91	0.86	0.175	1.44	0.122	0.89	1.00	0.137	No
235	38.55	2.50	0.58	1.92	0.86	0.175	1.44	0.122	0.89	1.00	0.137	No
236	38.71	2.51	0.58	1.92	0.86	0.175	1.44	0.122	0.89	1.00	0.137	No
237	38.88	2.52	0.59	1.93	0.86	0.175	1.44	0.122	0.89	1.00	0.137	No
238	39.04	2.53	0.59	1.94	0.86	0.175	1.44	0.122	0.89	1.00	0.137	No
239	39.21	2.54	0.60	1.94	0.86	0.175	1.44	0.121	0.89	1.00	0.137	No
240	39.37	2.55	0.60	1.95	0.86	0.175	1.44	0.121	0.89	1.00	0.137	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
241	39.53	2.56	0.61	1.95	0.86	0.175	1.44	0.121	0.88	1.00	0.137	No
242	39.70	2.57	0.61	1.96	0.85	0.175	1.44	0.121	0.88	1.00	0.137	No
243	39.86	2.58	0.62	1.96	0.85	0.175	1.44	0.121	0.88	1.00	0.137	No
244	40.03	2.59	0.62	1.97	0.85	0.175	1.44	0.121	0.88	1.00	0.137	No
245	40.19	2.60	0.63	1.97	0.85	0.175	1.44	0.121	0.88	1.00	0.137	No
246	40.35	2.61	0.64	1.98	0.85	0.175	1.44	0.121	0.88	1.00	0.137	No
247	40.52	2.63	0.64	1.98	0.85	0.175	1.44	0.121	0.88	1.00	0.137	No
248	40.68	2.64	0.65	1.99	0.84	0.175	1.44	0.121	0.88	1.00	0.137	No
249	40.85	2.65	0.65	2.00	0.84	0.174	1.44	0.121	0.88	1.00	0.137	No
250	41.01	2.66	0.66	2.00	0.84	0.174	1.44	0.121	0.88	1.00	0.137	No
251	41.17	2.67	0.66	2.01	0.84	0.174	1.44	0.121	0.88	1.00	0.137	No
252	41.34	2.68	0.67	2.01	0.84	0.174	1.44	0.121	0.88	1.00	0.137	No
253	41.50	2.69	0.67	2.02	0.84	0.174	1.44	0.121	0.88	1.00	0.137	No
254	41.67	2.70	0.68	2.02	0.84	0.174	1.44	0.121	0.88	1.00	0.137	No
255	41.83	2.71	0.68	2.03	0.83	0.174	1.44	0.121	0.88	1.00	0.137	No
256	41.99	2.72	0.69	2.03	0.83	0.174	1.44	0.121	0.88	1.00	0.137	No
257	42.16	2.73	0.69	2.04	0.83	0.174	1.44	0.120	0.88	1.00	0.137	No
258	42.32	2.74	0.70	2.04	0.83	0.174	1.44	0.120	0.88	1.00	0.137	No
259	42.49	2.75	0.70	2.05	0.83	0.173	1.44	0.120	0.88	1.00	0.137	No
260	42.65	2.76	0.71	2.06	0.83	0.173	1.44	0.120	0.88	1.00	0.137	No
261	42.81	2.77	0.71	2.06	0.83	0.173	1.44	0.120	0.88	1.00	0.137	No
262	42.98	2.78	0.72	2.07	0.82	0.173	1.44	0.120	0.87	1.00	0.137	No
263	43.14	2.80	0.72	2.07	0.82	0.173	1.44	0.120	0.87	1.00	0.137	No
264	43.31	2.81	0.73	2.08	0.82	0.173	1.44	0.120	0.87	1.00	0.137	No
265	43.47	2.82	0.73	2.08	0.82	0.173	1.44	0.120	0.87	1.00	0.137	No
266	43.64	2.83	0.74	2.09	0.82	0.172	1.44	0.120	0.87	1.00	0.137	No
267	43.80	2.84	0.74	2.10	0.82	0.172	1.44	0.119	0.87	1.00	0.137	No
268	43.96	2.85	0.75	2.10	0.81	0.172	1.44	0.119	0.87	1.00	0.137	No
269	44.13	2.86	0.75	2.11	0.81	0.172	1.44	0.119	0.87	1.00	0.137	No
270	44.29	2.87	0.76	2.11	0.81	0.172	1.44	0.119	0.87	1.00	0.137	No
271	44.46	2.88	0.76	2.12	0.81	0.172	1.44	0.119	0.87	1.00	0.137	No
272	44.62	2.89	0.77	2.12	0.81	0.172	1.44	0.119	0.87	1.00	0.137	No
273	44.78	2.90	0.77	2.13	0.81	0.171	1.44	0.119	0.87	1.00	0.137	No
274	44.95	2.91	0.78	2.13	0.80	0.171	1.44	0.119	0.87	1.00	0.137	No
275	45.11	2.92	0.78	2.14	0.80	0.171	1.44	0.119	0.87	1.00	0.137	No
276	45.28	2.93	0.79	2.14	0.80	0.171	1.44	0.119	0.87	1.00	0.136	No
277	45.44	2.94	0.79	2.15	0.80	0.171	1.44	0.118	0.87	1.00	0.136	No
278	45.60	2.95	0.80	2.15	0.80	0.171	1.44	0.118	0.87	1.00	0.136	No
279	45.77	2.96	0.80	2.16	0.80	0.170	1.44	0.118	0.87	1.00	0.136	No
280	45.93	2.97	0.81	2.16	0.79	0.170	1.44	0.118	0.87	1.00	0.136	No
281	46.10	2.98	0.81	2.17	0.79	0.170	1.44	0.118	0.87	1.00	0.136	No
282	46.26	3.00	0.82	2.18	0.79	0.170	1.44	0.118	0.87	1.00	0.136	No
283	46.42	3.01	0.82	2.18	0.79	0.170	1.44	0.118	0.87	1.00	0.136	No
284	46.59	3.02	0.83	2.19	0.79	0.169	1.44	0.118	0.86	1.00	0.136	No
285	46.75	3.03	0.83	2.19	0.79	0.169	1.44	0.117	0.86	1.00	0.136	No
286	46.92	3.04	0.84	2.20	0.78	0.169	1.44	0.117	0.86	1.00	0.136	No
287	47.08	3.05	0.84	2.20	0.78	0.169	1.44	0.117	0.86	1.00	0.136	No
288	47.24	3.06	0.85	2.21	0.78	0.169	1.44	0.117	0.86	1.00	0.136	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
289	47.41	3.07	0.86	2.21	0.78	0.169	1.44	0.117	0.86	1.00	0.135	No
290	47.57	3.08	0.86	2.22	0.78	0.168	1.44	0.117	0.86	1.00	0.135	No
291	47.74	3.09	0.87	2.23	0.78	0.168	1.44	0.117	0.86	1.00	0.135	No
292	47.90	3.10	0.87	2.23	0.77	0.168	1.44	0.116	0.86	1.00	0.135	No
293	48.06	3.11	0.88	2.24	0.77	0.168	1.44	0.116	0.86	1.00	0.135	No
294	48.23	3.12	0.88	2.24	0.77	0.167	1.44	0.116	0.86	1.00	0.135	No
295	48.39	3.13	0.89	2.25	0.77	0.167	1.44	0.116	0.86	1.00	0.135	No
296	48.56	3.14	0.89	2.25	0.77	0.167	1.44	0.116	0.86	1.00	0.135	No
297	48.72	3.15	0.90	2.26	0.77	0.167	1.44	0.116	0.86	1.00	0.135	No
298	48.88	3.17	0.90	2.26	0.76	0.167	1.44	0.116	0.86	1.00	0.135	No
299	49.05	3.18	0.91	2.27	0.76	0.166	1.44	0.115	0.86	1.00	0.134	No
300	49.21	3.19	0.91	2.28	0.76	0.166	1.44	0.115	0.86	1.00	0.134	No
301	49.38	3.20	0.92	2.28	0.76	0.166	1.44	0.115	0.86	1.00	0.134	No
302	49.54	3.21	0.92	2.29	0.76	0.166	1.44	0.115	0.86	1.00	0.134	No
303	49.70	3.22	0.93	2.29	0.76	0.166	1.44	0.115	0.86	1.00	0.134	No
304	49.87	3.23	0.93	2.30	0.75	0.165	1.44	0.115	0.86	1.00	0.134	No
305	50.03	3.24	0.94	2.30	0.75	0.165	1.44	0.115	0.86	1.00	0.134	No
306	50.20	3.25	0.94	2.31	0.75	0.165	1.44	0.114	0.86	1.00	0.134	No
307	50.36	3.26	0.95	2.31	0.75	0.165	1.44	0.114	0.86	1.00	0.134	No
308	50.52	3.27	0.95	2.32	0.75	0.164	1.44	0.114	0.85	1.00	0.133	No
309	50.69	3.28	0.96	2.32	0.75	0.164	1.44	0.114	0.85	1.00	0.133	No
310	50.85	3.29	0.96	2.33	0.74	0.164	1.44	0.114	0.85	1.00	0.133	No
311	51.02	3.30	0.97	2.33	0.74	0.164	1.44	0.114	0.85	1.00	0.133	No
312	51.18	3.31	0.97	2.34	0.74	0.164	1.44	0.113	0.85	1.00	0.133	No
313	51.35	3.32	0.98	2.34	0.74	0.163	1.44	0.113	0.85	1.00	0.133	No
314	51.51	3.33	0.98	2.35	0.74	0.163	1.44	0.113	0.85	1.00	0.133	No
315	51.67	3.34	0.99	2.35	0.74	0.163	1.44	0.113	0.85	1.00	0.133	No
316	51.84	3.35	0.99	2.36	0.73	0.163	1.44	0.113	0.85	1.00	0.133	No
317	52.00	3.36	1.00	2.36	0.73	0.163	1.44	0.113	0.85	1.00	0.132	No
318	52.17	3.37	1.00	2.37	0.73	0.162	1.44	0.113	0.85	1.00	0.132	No
319	52.33	3.38	1.01	2.37	0.73	0.162	1.44	0.112	0.85	1.00	0.132	No
320	52.49	3.39	1.01	2.38	0.73	0.162	1.44	0.112	0.85	1.00	0.132	No
321	52.66	3.40	1.02	2.38	0.73	0.162	1.44	0.112	0.85	1.00	0.132	No
322	52.82	3.41	1.02	2.39	0.72	0.161	1.44	0.112	0.85	1.00	0.132	No
323	52.99	3.42	1.03	2.39	0.72	0.161	1.44	0.112	0.85	1.00	0.132	No
324	53.15	3.43	1.03	2.40	0.72	0.161	1.44	0.112	0.85	1.00	0.132	No
325	53.31	3.44	1.04	2.40	0.72	0.161	1.44	0.112	0.85	1.00	0.131	No
326	53.48	3.45	1.04	2.41	0.72	0.161	1.44	0.111	0.85	1.00	0.131	No
327	53.64	3.46	1.05	2.41	0.72	0.160	1.44	0.111	0.85	1.00	0.131	No
328	53.81	3.47	1.05	2.42	0.71	0.160	1.44	0.111	0.85	1.00	0.131	No
329	53.97	3.48	1.06	2.42	0.71	0.160	1.44	0.111	0.85	1.00	0.131	No
330	54.13	3.49	1.06	2.43	0.71	0.160	1.44	0.111	0.85	1.00	0.131	No
331	54.30	3.50	1.07	2.43	0.71	0.159	1.44	0.111	0.85	1.00	0.131	No
332	54.46	3.51	1.08	2.44	0.71	0.159	1.44	0.110	0.85	1.00	0.131	No
333	54.63	3.52	1.08	2.44	0.71	0.159	1.44	0.110	0.85	1.00	0.130	No
334	54.79	3.53	1.09	2.45	0.71	0.159	1.44	0.110	0.85	1.00	0.130	No
335	54.95	3.54	1.09	2.45	0.70	0.159	1.44	0.110	0.85	1.00	0.130	No
336	55.12	3.55	1.10	2.46	0.70	0.158	1.44	0.110	0.84	1.00	0.130	No

:: Cyclic Stress Ratio fully adjusted (CSR*) calculation data :: (continued)

Point ID	Depth (ft)	σ_v (tsf)	u_0 (tsf)	σ_v' (tsf)	r_d	CSR	MSF	CSR_{eq}	K_σ	User FS	CSR^*	Belongs to transition
337	55.28	3.56	1.10	2.46	0.70	0.158	1.44	0.110	0.84	1.00	0.130	No
338	55.45	3.58	1.11	2.47	0.70	0.158	1.44	0.110	0.84	1.00	0.130	No
339	55.61	3.59	1.11	2.47	0.70	0.158	1.44	0.109	0.84	1.00	0.130	No
340	55.77	3.60	1.12	2.48	0.70	0.157	1.44	0.109	0.84	1.00	0.129	No
341	55.94	3.61	1.12	2.49	0.69	0.157	1.44	0.109	0.84	1.00	0.129	No
342	56.10	3.62	1.13	2.49	0.69	0.157	1.44	0.109	0.84	1.00	0.129	No
343	56.27	3.63	1.13	2.50	0.69	0.157	1.44	0.109	0.84	1.00	0.129	No
344	56.43	3.64	1.14	2.50	0.69	0.157	1.44	0.109	0.84	1.00	0.129	No
345	56.59	3.65	1.14	2.51	0.69	0.156	1.44	0.108	0.84	1.00	0.129	No
346	56.76	3.66	1.15	2.51	0.69	0.156	1.44	0.108	0.84	1.00	0.129	No
347	56.92	3.67	1.15	2.52	0.69	0.156	1.44	0.108	0.84	1.00	0.129	No
348	57.09	3.68	1.16	2.52	0.68	0.156	1.44	0.108	0.84	1.00	0.128	No
349	57.25	3.69	1.16	2.53	0.68	0.155	1.44	0.108	0.84	1.00	0.128	No
350	57.41	3.70	1.17	2.53	0.68	0.155	1.44	0.108	0.84	1.00	0.128	No
351	57.58	3.71	1.17	2.54	0.68	0.155	1.44	0.108	0.84	1.00	0.128	No
352	57.74	3.72	1.18	2.54	0.68	0.155	1.44	0.107	0.84	1.00	0.128	No
353	57.91	3.73	1.18	2.55	0.68	0.155	1.44	0.107	0.84	1.00	0.128	No
354	58.07	3.74	1.19	2.55	0.68	0.154	1.44	0.107	0.84	1.00	0.128	No
355	58.23	3.75	1.19	2.56	0.67	0.154	1.44	0.107	0.84	1.00	0.128	No
356	58.40	3.76	1.20	2.56	0.67	0.154	1.44	0.107	0.84	1.00	0.127	No
357	58.56	3.77	1.20	2.57	0.67	0.154	1.44	0.107	0.84	1.00	0.127	No
358	58.73	3.78	1.21	2.57	0.67	0.154	1.44	0.107	0.84	1.00	0.127	No
359	58.89	3.79	1.21	2.58	0.67	0.153	1.44	0.106	0.84	1.00	0.127	No
360	59.06	3.80	1.22	2.58	0.67	0.153	1.44	0.106	0.84	1.00	0.127	No
361	59.22	3.81	1.22	2.59	0.67	0.153	1.44	0.106	0.84	1.00	0.127	No
362	59.38	3.82	1.23	2.59	0.66	0.153	1.44	0.106	0.84	1.00	0.127	No
363	59.55	3.83	1.23	2.60	0.66	0.153	1.44	0.106	0.84	1.00	0.127	No
364	59.71	3.84	1.24	2.60	0.66	0.152	1.44	0.106	0.84	1.00	0.126	No
365	59.88	3.85	1.24	2.61	0.66	0.152	1.44	0.106	0.83	1.00	0.126	No
366	60.04	3.86	1.25	2.61	0.66	0.152	1.44	0.105	0.83	1.00	0.126	No
367	60.20	3.87	1.25	2.62	0.66	0.152	1.44	0.105	0.83	1.00	0.126	No
368	60.37	3.88	1.26	2.62	0.66	0.152	1.44	0.105	0.83	1.00	0.126	No
369	60.53	3.88	1.26	2.62	0.65	0.151	1.44	0.105	0.83	1.00	0.126	No
370	60.70	3.89	1.27	2.62	0.65	0.151	1.44	0.105	0.83	1.00	0.126	No

Abbreviations

Depth: Depth from free surface, at which CPT was performed (ft)
σ_v: Total overburden pressure at test point (tsf)
u_0: Water pressure at test point (tsf)
σ_v': Effective overburden pressure based on GWT during earthquake (tsf)
r_d: Nonlinear shear mass factor
CSR: Cyclic Stress Ratio
MSF: Magnitude Scaling Factor
CSR_{eq}: CSR adjusted for M=7.5
K_σ: Effective overburden stress factor
CSR^*: CSR fully adjusted

:: Cyclic Resistance Ratio (CRR) calculation data ::

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
1	0.16	501.19	0.89	0.29	0.50	805.21	1.00	805.21	4.000	No	No	2.00
2	0.33	494.79	0.96	0.35	0.50	794.91	1.00	794.91	4.000	No	No	2.00
3	0.49	444.84	1.10	0.48	0.50	714.65	1.00	714.65	4.000	No	No	2.00
4	0.66	271.36	1.44	0.92	0.50	435.91	1.00	435.91	4.000	No	No	2.00
5	0.82	190.30	1.75	1.68	0.53	305.65	1.08	330.56	4.000	No	No	2.00
6	0.98	159.59	1.97	2.75	0.60	256.31	1.28	328.98	4.000	No	No	2.00
7	1.15	168.77	2.04	3.44	0.62	271.02	1.34	364.21	4.000	No	No	2.00
8	1.31	168.56	2.07	3.74	0.63	270.68	1.38	373.53	4.000	No	No	2.00
9	1.48	150.32	2.11	3.92	0.64	241.36	1.44	347.75	4.000	No	No	2.00
10	1.64	121.16	2.17	3.97	0.66	194.49	1.54	299.81	4.000	No	No	2.00
11	1.80	95.40	2.25	4.21	0.68	153.08	1.75	267.50	4.000	No	No	2.00
12	1.97	78.52	2.32	4.44	0.70	125.95	1.99	250.17	4.000	No	No	2.00
13	2.13	71.09	2.36	4.62	0.71	113.99	2.15	245.63	4.000	No	No	2.00
14	2.30	70.24	2.35	4.49	0.71	112.60	2.13	239.35	4.000	No	No	2.00
15	2.46	71.81	2.31	4.04	0.70	115.11	1.95	224.29	4.000	No	No	2.00
16	2.62	72.75	2.27	3.65	0.69	116.61	1.81	211.46	4.000	No	No	2.00
17	2.79	79.00	2.21	3.32	0.67	126.63	1.65	208.88	4.000	No	No	2.00
18	2.95	95.25	2.13	3.05	0.65	152.73	1.48	225.39	4.000	No	No	2.00
19	3.12	114.21	2.08	3.00	0.63	183.17	1.39	255.50	4.000	No	No	2.00
20	3.28	129.98	2.08	3.26	0.63	208.49	1.39	290.12	4.000	No	No	2.00
21	3.44	139.98	2.11	3.75	0.64	224.53	1.44	323.60	4.000	No	No	2.00
22	3.61	148.75	2.15	4.28	0.65	238.60	1.50	358.80	4.000	No	No	2.00
23	3.77	154.79	2.18	4.76	0.66	248.29	1.57	389.43	4.000	No	No	2.00
24	3.94	155.65	2.21	5.19	0.67	249.66	1.65	411.04	4.000	No	No	2.00
25	4.10	151.64	2.25	5.70	0.68	243.20	1.76	429.22	4.000	No	No	2.00
26	4.27	145.94	2.29	6.18	0.70	234.01	1.90	443.80	4.000	No	No	2.00
27	4.43	137.64	2.32	6.35	0.70	220.66	1.98	437.58	4.000	No	No	2.00
28	4.59	127.45	2.35	6.65	0.71	204.27	2.13	434.58	4.000	No	No	2.00
29	4.76	116.54	2.39	6.96	0.72	186.72	2.30	429.28	4.000	No	No	2.00
30	4.92	105.96	2.45	7.73	0.74	169.72	2.63	446.84	4.000	No	No	2.00
31	5.09	97.73	2.48	8.05	0.75	156.48	2.84	444.01	4.000	No	No	2.00
32	5.25	89.44	2.50	8.08	0.76	143.13	2.98	426.78	4.000	No	No	2.00
33	5.41	82.27	2.50	7.65	0.76	131.60	2.98	391.99	4.000	No	No	2.00
34	5.58	75.27	2.50	7.13	0.76	120.33	2.95	354.79	4.000	No	No	2.00
35	5.74	70.92	2.49	6.68	0.75	113.33	2.89	327.47	4.000	No	No	2.00
36	5.91	69.89	2.48	6.51	0.75	111.66	2.85	318.66	4.000	No	No	2.00
37	6.07	70.55	2.49	6.63	0.75	112.70	2.88	324.80	4.000	No	No	2.00
38	6.23	70.72	2.49	6.78	0.76	112.95	2.93	331.32	4.000	No	No	2.00
39	6.40	68.35	2.52	7.07	0.76	109.13	3.10	337.75	4.000	No	No	2.00
40	6.56	65.31	2.53	7.06	0.77	104.23	3.17	330.73	4.000	No	No	2.00
41	6.73	62.90	2.52	6.75	0.76	100.34	3.13	313.91	4.000	No	No	2.00
42	6.89	59.72	2.50	6.12	0.76	95.21	2.98	283.83	4.000	No	No	2.00
43	7.05	55.91	2.47	5.37	0.75	89.08	2.79	248.93	4.000	No	No	2.00
44	7.22	51.30	2.49	5.29	0.76	81.65	2.92	238.27	4.000	No	No	2.00
45	7.38	48.79	2.56	6.25	0.78	77.61	3.43	266.24	4.000	No	No	2.00
46	7.55	51.21	2.62	7.62	0.79	81.48	3.90	317.74	4.000	No	Yes	2.00
47	7.71	62.57	2.57	7.73	0.78	99.71	3.51	349.93	4.000	No	No	2.00
48	7.87	79.26	2.51	7.58	0.76	126.50	3.02	381.90	4.000	No	No	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
49	8.04	100.92	2.45	7.48	0.74	157.94	2.65	419.06	4.000	No	No	2.00
50	8.20	122.46	2.42	7.73	0.74	187.90	2.50	470.53	4.000	No	No	2.00
51	8.37	150.14	2.38	7.54	0.72	225.02	2.26	507.49	4.000	No	No	2.00
52	8.53	177.31	2.33	7.26	0.71	259.95	2.06	534.80	4.000	No	No	2.00
53	8.69	202.07	2.28	6.76	0.69	289.69	1.87	541.17	4.000	No	No	2.00
54	8.86	212.11	2.27	6.66	0.69	299.43	1.83	546.76	4.000	No	No	2.00
55	9.02	210.87	2.28	6.81	0.69	294.38	1.87	549.57	4.000	No	No	2.00
56	9.19	212.04	2.30	7.13	0.70	293.13	1.94	567.51	4.000	No	No	2.00
57	9.35	233.90	2.28	6.93	0.69	317.98	1.84	585.39	4.000	No	No	2.00
58	9.51	285.95	2.18	5.95	0.66	378.74	1.58	597.49	4.000	No	No	2.00
59	9.68	321.41	2.12	5.34	0.65	417.10	1.46	607.97	4.000	No	No	2.00
60	9.84	323.08	2.10	5.03	0.64	413.31	1.42	588.08	4.000	No	No	2.00
61	10.01	280.19	2.15	5.28	0.65	356.68	1.50	535.18	4.000	No	No	2.00
62	10.17	225.03	2.22	5.65	0.67	285.79	1.66	473.97	4.000	No	No	2.00
63	10.33	172.15	2.29	5.95	0.70	218.11	1.90	414.33	4.000	No	No	2.00
64	10.50	130.16	2.37	6.25	0.72	164.46	2.24	368.62	4.000	No	No	2.00
65	10.66	108.48	2.42	6.29	0.73	136.13	2.49	338.58	4.000	No	No	2.00
66	10.83	106.72	2.42	6.22	0.74	132.40	2.50	331.14	4.000	No	No	2.00
67	10.99	114.10	2.41	6.23	0.73	139.84	2.43	339.92	4.000	No	No	2.00
68	11.15	122.35	2.40	6.31	0.73	148.20	2.38	352.97	4.000	No	No	2.00
69	11.32	122.03	2.42	6.51	0.73	146.41	2.46	360.25	4.000	No	No	2.00
70	11.48	116.75	2.43	6.61	0.74	138.76	2.56	355.71	4.000	No	No	2.00
71	11.65	106.14	2.46	6.69	0.75	125.05	2.74	342.37	4.000	No	No	2.00
72	11.81	95.71	2.49	6.76	0.76	111.78	2.94	328.86	4.000	No	No	2.00
73	11.98	89.14	2.51	6.75	0.76	103.12	3.08	317.38	4.000	No	No	2.00
74	12.14	88.98	2.51	6.60	0.76	101.82	3.05	310.06	4.000	No	No	2.00
75	12.30	91.31	2.50	6.47	0.76	103.34	2.97	306.73	4.000	No	No	2.00
76	12.47	92.92	2.50	6.48	0.76	104.11	2.96	308.24	4.000	No	No	2.00
77	12.63	92.98	2.51	6.60	0.76	103.20	3.02	311.62	4.000	No	No	2.00
78	12.80	93.29	2.51	6.63	0.76	102.54	3.04	311.95	4.000	No	No	2.00
79	12.96	93.35	2.50	6.50	0.76	101.56	3.01	305.68	4.000	No	No	2.00
80	13.12	93.94	2.48	6.12	0.75	101.12	2.87	290.65	4.000	No	No	2.00
81	13.29	94.11	2.47	5.83	0.75	100.27	2.78	278.62	4.000	No	No	2.00
82	13.45	92.71	2.47	5.70	0.75	97.85	2.77	271.14	4.000	No	No	2.00
83	13.62	93.41	2.47	5.64	0.75	97.68	2.75	268.55	4.000	No	No	2.00
84	13.78	95.31	2.48	5.88	0.75	98.84	2.82	278.94	4.000	No	No	2.00
85	13.94	103.19	2.49	6.49	0.76	106.18	2.93	311.15	4.000	No	No	2.00
86	14.11	121.12	2.47	6.79	0.75	123.57	2.79	344.77	4.000	No	No	2.00
87	14.27	145.28	2.41	6.42	0.73	146.83	2.43	356.66	4.000	No	No	2.00
88	14.44	154.49	2.37	6.02	0.72	154.70	2.25	347.32	4.000	No	No	2.00
89	14.60	144.10	2.39	6.05	0.73	143.09	2.35	335.70	4.000	No	No	2.00
90	14.76	126.17	2.44	6.24	0.74	124.23	2.60	322.57	4.000	No	No	2.00
91	14.93	114.38	2.47	6.30	0.75	111.64	2.78	310.31	4.000	No	No	2.00
92	15.09	106.93	2.46	5.74	0.74	103.42	2.69	278.69	4.000	No	No	2.00
93	15.26	93.89	2.46	5.20	0.75	89.96	2.71	243.94	4.000	No	No	2.00
94	15.42	76.29	2.48	4.66	0.75	72.36	2.86	206.65	4.000	No	No	2.00
95	15.58	59.81	2.55	4.55	0.77	56.08	3.33	186.53	4.000	No	No	2.00
96	15.75	51.79	2.60	4.69	0.79	48.06	3.78	181.59	4.000	No	Yes	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
97	15.91	50.99	2.62	4.87	0.79	46.92	3.94	185.00	4.000	No	Yes	2.00
98	16.08	51.79	2.61	4.80	0.79	47.30	3.88	183.52	4.000	No	Yes	2.00
99	16.24	48.92	2.65	5.00	0.80	44.27	4.18	185.22	4.000	No	Yes	2.00
100	16.40	46.30	2.67	5.05	0.81	41.51	4.40	182.66	4.000	No	Yes	2.00
101	16.57	43.85	2.69	5.14	0.82	38.95	4.65	181.14	4.000	No	Yes	2.00
102	16.73	41.65	2.72	5.19	0.82	36.64	4.88	178.75	4.000	No	Yes	2.00
103	16.90	40.17	2.73	5.24	0.83	35.02	5.06	177.19	4.000	No	Yes	2.00
104	17.06	39.55	2.75	5.36	0.83	34.18	5.23	178.67	4.000	No	Yes	2.00
105	17.22	39.44	2.76	5.55	0.84	33.82	5.38	182.06	4.000	No	Yes	2.00
106	17.39	40.88	2.80	6.51	0.85	34.77	5.89	204.78	4.000	No	Yes	2.00
107	17.55	42.43	2.83	7.26	0.86	35.82	6.22	222.65	4.000	No	Yes	2.00
108	17.72	45.41	2.81	7.36	0.85	38.12	6.04	230.26	4.000	No	Yes	2.00
109	17.88	48.79	2.75	6.35	0.83	40.81	5.22	213.14	4.000	No	Yes	2.00
110	18.04	49.59	2.71	5.68	0.82	41.25	4.80	197.95	4.000	No	Yes	2.00
111	18.21	48.92	2.69	5.28	0.82	40.41	4.62	186.89	4.000	No	Yes	2.00
112	18.37	45.96	2.71	5.26	0.82	37.60	4.84	181.90	4.000	No	Yes	2.00
113	18.54	43.20	2.74	5.31	0.83	34.99	5.11	178.96	4.000	No	Yes	2.00
114	18.70	41.93	2.77	5.75	0.84	33.63	5.54	186.21	4.000	No	Yes	2.00
115	18.86	43.99	2.79	6.38	0.85	35.04	5.78	202.61	4.000	No	Yes	2.00
116	19.03	49.82	2.76	6.47	0.84	39.60	5.39	213.64	4.000	No	Yes	2.00
117	19.19	54.30	2.71	5.99	0.82	43.06	4.85	208.71	4.000	No	Yes	2.00
118	19.36	53.65	2.69	5.42	0.81	42.31	4.56	193.06	4.000	No	Yes	2.00
119	19.52	48.83	2.76	6.15	0.84	37.98	5.35	203.34	4.000	No	Yes	2.00
120	19.69	48.59	2.83	7.61	0.86	37.36	6.25	233.58	4.000	No	Yes	2.00
121	19.85	58.27	2.80	8.00	0.85	44.78	5.80	259.76	4.000	No	Yes	2.00
122	20.01	70.46	2.69	6.91	0.82	54.36	4.63	251.71	3.600	No	Yes	2.00
123	20.18	73.08	2.63	5.98	0.80	56.27	4.06	228.72	3.600	No	Yes	2.00
124	20.34	64.83	2.64	5.42	0.80	49.45	4.11	203.45	3.600	No	Yes	2.00
125	20.51	52.68	2.71	5.44	0.82	39.54	4.79	189.38	3.600	No	Yes	2.00
126	20.67	44.96	2.76	5.51	0.84	33.23	5.42	180.15	3.600	No	Yes	2.00
127	20.83	41.24	2.80	5.63	0.85	30.11	5.87	176.85	3.600	No	Yes	2.00
128	21.00	40.42	2.81	5.57	0.85	29.28	5.94	173.86	3.600	No	Yes	2.00
129	21.16	40.20	2.81	5.47	0.85	28.93	5.92	171.12	3.600	No	Yes	2.00
130	21.33	38.50	2.85	5.92	0.86	27.39	6.45	176.59	3.600	No	Yes	2.00
131	21.49	37.03	2.88	6.31	0.87	26.05	6.93	180.58	3.600	No	Yes	2.00
132	21.65	35.93	2.91	6.60	0.88	25.02	7.31	182.97	3.600	No	Yes	2.00
133	21.82	37.40	2.86	5.91	0.87	26.03	6.66	173.35	3.600	No	Yes	2.00
134	21.98	37.74	2.85	5.70	0.86	26.13	6.49	169.66	3.600	No	Yes	2.00
135	22.15	40.70	2.84	5.96	0.86	28.11	6.37	179.10	3.600	No	Yes	2.00
136	22.31	45.08	2.85	6.72	0.86	31.03	6.46	200.48	3.600	No	Yes	2.00
137	22.47	53.84	2.80	6.97	0.85	37.18	5.91	219.69	3.600	No	Yes	2.00
138	22.64	62.34	2.76	6.92	0.84	43.15	5.36	231.27	3.600	No	Yes	2.00
139	22.80	66.97	2.73	6.82	0.83	46.27	5.08	234.87	3.600	No	Yes	2.00
140	22.97	66.12	2.75	6.94	0.83	45.33	5.20	235.90	3.600	No	Yes	2.00
141	23.13	61.57	2.78	7.15	0.84	41.74	5.59	233.52	3.600	No	Yes	2.00
142	23.29	58.24	2.80	7.20	0.85	39.08	5.86	228.95	3.600	No	Yes	2.00
143	23.46	56.97	2.80	6.91	0.85	38.00	5.80	220.32	3.600	No	Yes	2.00
144	23.62	56.01	2.79	6.57	0.84	37.16	5.68	211.10	3.600	No	Yes	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
145	23.79	51.44	2.81	6.46	0.85	33.75	5.97	201.55	3.600	No	Yes	2.00
146	23.95	45.20	2.86	6.65	0.87	29.17	6.67	194.51	3.600	No	Yes	2.00
147	24.11	39.64	2.91	6.62	0.88	25.16	7.30	183.63	3.600	No	Yes	2.00
148	24.28	35.68	2.93	6.32	0.89	22.35	7.64	170.81	3.600	No	Yes	2.00
149	24.44	31.52	2.98	6.15	1.00	18.60	8.44	156.98	3.600	No	Yes	2.00
150	24.61	27.02	3.07	6.94	1.00	15.70	10.03	157.43	3.600	No	Yes	2.00
151	24.77	26.95	3.11	7.91	1.00	15.55	10.83	168.38	3.600	No	Yes	2.00
152	24.93	34.97	3.02	7.64	1.00	20.35	9.06	184.30	3.600	No	Yes	2.00
153	25.10	47.88	2.89	7.30	0.87	29.65	7.01	207.79	3.600	No	Yes	2.00
154	25.26	60.91	2.81	7.31	0.85	38.16	6.01	229.18	3.600	No	Yes	2.00
155	25.43	69.64	2.78	7.43	0.84	43.74	5.58	244.20	3.600	No	Yes	2.00
156	25.59	74.99	2.75	7.25	0.83	47.11	5.24	246.96	3.600	No	Yes	2.00
157	25.75	75.84	2.73	6.83	0.83	47.54	5.00	237.47	3.600	No	Yes	2.00
158	25.92	71.95	2.73	6.52	0.83	44.79	5.01	224.61	3.600	No	Yes	2.00
159	26.08	65.46	2.76	6.53	0.84	40.25	5.37	216.30	3.600	No	Yes	2.00
160	26.25	60.36	2.79	6.61	0.85	36.66	5.75	210.92	3.600	No	Yes	2.00
161	26.41	56.80	2.81	6.61	0.85	34.14	6.02	205.49	3.600	No	Yes	2.00
162	26.57	54.12	2.83	6.59	0.86	32.26	6.22	200.78	3.600	No	Yes	2.00
163	26.74	52.95	2.85	6.78	0.86	31.37	6.45	202.49	3.600	No	Yes	2.00
164	26.90	53.85	2.86	7.08	0.87	31.78	6.59	209.33	3.600	No	Yes	2.00
165	27.07	53.92	2.86	7.19	0.87	31.71	6.66	211.20	3.600	No	Yes	2.00
166	27.23	54.03	2.86	7.05	0.86	31.71	6.57	208.47	3.600	No	Yes	2.00
167	27.40	52.15	2.87	7.17	0.87	30.40	6.82	207.44	3.600	No	Yes	2.00
168	27.56	51.38	2.91	7.89	0.88	29.67	7.36	218.45	3.600	No	Yes	2.00
169	27.72	50.45	2.96	8.49	1.00	27.29	8.11	221.19	3.600	No	Yes	2.00
170	27.89	50.61	2.96	8.55	1.00	27.29	8.14	222.24	3.600	No	Yes	2.00
171	28.05	50.91	2.91	7.71	0.88	29.14	7.34	213.78	3.600	No	Yes	2.00
172	28.22	47.28	2.92	7.48	0.89	26.84	7.56	203.02	3.600	No	Yes	2.00
173	28.38	43.32	2.97	7.37	1.00	22.98	8.24	189.32	3.600	No	Yes	2.00
174	28.54	39.73	3.01	7.70	1.00	20.92	8.95	187.25	3.600	No	Yes	2.00
175	28.71	38.54	3.02	7.67	1.00	20.20	9.12	184.14	3.600	No	Yes	2.00
176	28.87	37.06	3.03	7.60	1.00	19.33	9.31	179.96	3.600	No	Yes	2.00
177	29.04	33.87	3.05	7.37	1.00	17.52	9.70	169.93	3.600	No	Yes	2.00
178	29.20	29.49	3.09	7.08	1.00	15.07	10.39	156.51	3.600	No	Yes	2.00
179	29.36	24.74	3.15	7.14	1.00	12.43	11.70	145.50	3.600	No	Yes	2.00
180	29.53	21.63	3.24	8.24	1.00	10.71	13.75	147.16	3.600	No	Yes	2.00
181	29.69	21.15	3.29	9.53	1.00	10.41	15.02	156.45	3.600	No	Yes	2.00
182	29.86	22.97	3.29	10.36	1.00	11.36	14.94	169.72	3.600	No	Yes	2.00
183	30.02	29.12	3.17	9.04	1.00	14.64	12.06	176.52	3.600	No	Yes	2.00
184	30.18	34.88	3.07	7.95	1.00	17.69	10.06	178.09	3.600	No	Yes	2.00
185	30.35	37.86	3.01	7.13	1.00	19.24	9.00	173.12	3.600	No	Yes	2.00
186	30.51	35.73	3.04	7.20	1.00	18.04	9.41	169.67	3.600	No	Yes	2.00
187	30.68	32.38	3.09	7.77	1.00	16.20	10.47	169.56	3.600	No	Yes	2.00
188	30.84	31.56	3.12	8.21	1.00	15.71	10.98	172.60	3.600	No	Yes	2.00
189	31.00	31.44	3.13	8.43	1.00	15.60	11.19	174.59	3.600	No	Yes	2.00
190	31.17	31.66	3.12	8.27	1.00	15.66	11.05	173.03	3.600	No	Yes	2.00
191	31.33	30.29	3.14	8.42	1.00	14.90	11.49	171.11	3.600	No	Yes	2.00
192	31.50	28.10	3.19	8.91	1.00	13.70	12.42	170.16	3.600	No	Yes	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
193	31.66	27.20	3.22	9.45	1.00	13.18	13.10	172.66	3.600	No	Yes	2.00
194	31.82	28.39	3.19	9.20	1.00	13.77	12.61	173.52	3.600	No	Yes	2.00
195	31.99	31.60	3.12	8.15	1.00	15.40	11.07	170.52	3.600	No	Yes	2.00
196	32.15	37.24	3.00	6.52	1.00	18.29	8.82	161.29	3.600	No	Yes	2.00
197	32.32	41.15	2.90	5.62	0.88	21.79	7.24	157.73	3.600	No	Yes	2.00
198	32.48	42.61	2.87	5.28	0.87	22.67	6.79	154.03	3.600	No	Yes	2.00
199	32.64	39.19	2.95	5.76	1.00	19.13	7.99	152.85	3.600	No	Yes	2.00
200	32.81	34.64	3.03	6.55	1.00	16.74	9.34	156.28	3.600	No	Yes	2.00
201	32.97	30.31	3.12	7.59	1.00	14.46	11.05	159.85	3.600	No	Yes	2.00
202	33.14	27.21	3.19	8.43	1.00	12.83	12.53	160.78	3.600	No	Yes	2.00
203	33.30	25.82	3.22	8.81	1.00	12.08	13.27	160.37	3.600	No	Yes	2.00
204	33.46	24.96	3.24	8.99	1.00	11.61	13.72	159.27	3.600	No	Yes	2.00
205	33.63	24.00	3.27	9.27	1.00	11.09	14.30	158.56	3.600	No	Yes	2.00
206	33.79	23.46	3.28	9.47	1.00	10.78	14.69	158.34	3.600	No	Yes	2.00
207	33.96	23.24	3.29	9.55	1.00	10.64	14.86	158.08	3.600	No	Yes	2.00
208	34.12	23.63	3.28	9.43	1.00	10.80	14.64	158.13	3.600	No	Yes	2.00
209	34.28	23.83	3.27	9.27	1.00	10.87	14.46	157.18	3.600	No	Yes	2.00
210	34.45	24.26	3.26	9.21	1.00	11.05	14.28	157.84	3.600	No	Yes	2.00
211	34.61	24.11	3.27	9.26	1.00	10.95	14.40	157.63	3.600	No	Yes	2.00
212	34.78	23.08	3.30	9.69	1.00	10.40	15.16	157.70	3.600	No	Yes	2.00
213	34.94	23.07	3.30	9.57	1.00	10.36	15.10	156.44	3.600	No	Yes	2.00
214	35.10	23.41	3.29	9.41	1.00	10.50	14.86	156.08	3.600	No	Yes	2.00
215	35.27	24.44	3.26	9.14	1.00	10.98	14.28	156.78	3.600	No	Yes	2.00
216	35.43	24.47	3.27	9.31	1.00	10.97	14.42	158.16	3.600	No	Yes	2.00
217	35.60	24.50	3.28	9.60	1.00	10.94	14.66	160.51	3.600	No	Yes	2.00
218	35.76	25.04	3.27	9.54	1.00	11.18	14.45	161.48	3.600	No	Yes	2.00
219	35.93	26.23	3.25	9.40	1.00	11.73	13.95	163.72	3.600	No	Yes	2.00
220	36.09	27.76	3.23	9.28	1.00	12.45	13.40	166.87	3.600	No	Yes	2.00
221	36.25	29.67	3.21	9.27	1.00	13.35	12.88	171.91	3.600	No	Yes	2.00
222	36.42	32.08	3.17	9.04	1.00	14.48	12.13	175.60	3.600	No	Yes	2.00
223	36.58	35.19	3.12	8.51	1.00	15.95	11.11	177.17	3.600	No	Yes	2.00
224	36.75	37.88	3.09	8.25	1.00	17.21	10.45	179.77	3.600	No	Yes	2.00
225	36.91	38.84	3.09	8.39	1.00	17.62	10.40	183.31	3.600	No	Yes	2.00
226	37.07	40.26	3.08	8.54	1.00	18.25	10.29	187.85	3.600	No	Yes	2.00
227	37.24	40.38	3.09	8.88	1.00	18.26	10.51	192.01	3.600	No	Yes	2.00
228	37.40	42.91	3.07	8.64	1.00	19.42	9.99	194.09	3.600	No	Yes	2.00
229	37.57	46.02	3.03	8.10	1.00	20.85	9.23	192.54	3.600	No	Yes	2.00
230	37.73	48.36	2.99	7.57	1.00	21.91	8.61	188.77	3.600	No	Yes	2.00
231	37.89	48.01	2.98	7.19	1.00	21.68	8.41	182.35	3.600	No	Yes	2.00
232	38.06	44.52	3.00	7.17	1.00	19.97	8.83	176.25	3.600	No	Yes	2.00
233	38.22	42.24	3.00	6.79	1.00	18.83	8.87	166.99	3.600	No	Yes	2.00
234	38.39	41.36	2.99	6.37	1.00	18.36	8.68	159.45	3.600	No	Yes	2.00
235	38.55	42.71	2.96	5.91	1.00	18.95	8.15	154.49	3.600	No	Yes	2.00
236	38.71	46.60	2.88	5.48	0.87	22.64	6.95	157.47	3.600	No	Yes	2.00
237	38.88	52.88	2.82	5.23	0.86	26.13	6.15	160.64	3.600	No	Yes	2.00
238	39.04	56.57	2.81	5.39	0.85	28.06	5.98	167.77	3.600	No	Yes	2.00
239	39.21	58.54	2.82	5.69	0.85	28.97	6.06	175.55	3.600	No	Yes	2.00
240	39.37	57.60	2.86	6.35	0.87	28.16	6.63	186.61	3.600	No	Yes	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
241	39.53	57.31	2.91	7.46	0.88	27.62	7.42	204.94	3.600	No	Yes	2.00
242	39.70	58.43	2.97	8.28	1.00	25.86	8.24	213.12	3.600	No	Yes	2.00
243	39.86	60.23	2.96	8.35	1.00	26.62	8.14	216.78	3.600	No	Yes	2.00
244	40.03	61.21	2.89	7.42	0.88	29.50	7.11	209.69	3.600	No	Yes	2.00
245	40.19	57.41	2.89	6.87	0.88	27.54	7.06	194.49	3.600	No	Yes	2.00
246	40.35	51.23	2.95	6.76	1.00	22.28	7.97	177.63	3.600	No	Yes	2.00
247	40.52	45.71	3.01	7.15	1.00	19.70	8.88	174.97	3.600	No	Yes	2.00
248	40.68	42.43	3.05	7.50	1.00	18.15	9.59	174.08	3.600	No	Yes	2.00
249	40.85	40.76	3.08	7.89	1.00	17.34	10.14	175.85	3.600	No	Yes	2.00
250	41.01	40.49	3.10	8.35	1.00	17.17	10.53	180.79	3.600	No	Yes	2.00
251	41.17	41.58	3.10	8.66	1.00	17.61	10.59	186.48	3.600	No	Yes	2.00
252	41.34	43.09	3.09	8.75	1.00	18.25	10.44	190.45	3.600	No	Yes	2.00
253	41.50	43.61	3.08	8.52	1.00	18.43	10.22	188.34	3.600	No	Yes	2.00
254	41.67	43.38	3.09	8.81	1.00	18.28	10.47	191.33	3.600	No	Yes	2.00
255	41.83	42.58	3.12	9.34	1.00	17.87	10.95	195.76	3.600	No	Yes	2.00
256	41.99	44.48	3.12	9.98	1.00	18.67	11.09	207.17	3.600	No	Yes	2.00
257	42.16	49.84	3.08	9.71	1.00	21.01	10.22	214.71	3.600	No	Yes	2.00
258	42.32	54.44	3.05	9.56	1.00	23.00	9.62	221.25	3.600	No	Yes	2.00
259	42.49	59.26	3.00	9.05	1.00	25.08	8.86	222.14	3.600	No	Yes	2.00
260	42.65	62.18	2.97	8.50	1.00	26.30	8.29	218.04	3.600	No	Yes	2.00
261	42.81	66.58	2.89	7.73	0.88	30.96	7.08	219.25	3.600	No	Yes	2.00
262	42.98	67.48	2.88	7.45	0.87	31.44	6.85	215.42	3.600	No	Yes	2.00
263	43.14	69.97	2.85	7.13	0.86	32.77	6.49	212.63	3.600	No	Yes	2.00
264	43.31	72.66	2.81	6.64	0.85	34.28	6.02	206.28	3.600	No	Yes	2.00
265	43.47	75.70	2.76	5.89	0.84	36.16	5.37	194.00	3.600	No	Yes	2.00
266	43.64	74.55	2.73	5.27	0.83	35.77	5.01	179.26	3.600	No	Yes	2.00
267	43.80	71.52	2.72	4.85	0.82	34.28	4.88	167.20	3.600	No	Yes	2.00
268	43.96	68.30	2.73	4.82	0.83	32.49	5.04	163.69	3.600	No	Yes	2.00
269	44.13	63.09	2.79	5.34	0.85	29.41	5.76	169.53	3.600	No	Yes	2.00
270	44.29	60.23	2.84	5.92	0.86	27.61	6.42	177.10	3.600	No	Yes	2.00
271	44.46	60.28	2.84	5.80	0.86	27.61	6.33	174.81	3.600	No	Yes	2.00
272	44.62	63.08	2.79	5.19	0.84	29.27	5.67	166.00	3.600	No	Yes	2.00
273	44.78	64.61	2.73	4.47	0.83	30.35	5.02	152.46	3.600	No	Yes	2.00
274	44.95	63.91	2.69	3.87	0.81	30.23	4.58	138.60	3.600	No	Yes	2.00
275	45.11	64.03	2.62	3.09	0.79	30.75	3.90	120.07	3.600	No	Yes	2.00
276	45.28	65.18	2.55	2.51	0.77	31.79	3.33	105.93	0.191	No	No	1.40
277	45.44	68.61	2.50	2.25	0.76	33.90	2.96	100.21	0.174	No	No	1.27
278	45.60	73.13	2.51	2.52	0.76	36.07	3.03	109.35	0.202	No	No	1.48
279	45.77	76.47	2.55	3.05	0.77	37.33	3.35	125.02	0.262	No	No	1.92
280	45.93	74.59	2.64	3.96	0.80	35.50	4.15	147.24	3.600	No	Yes	2.00
281	46.10	68.06	2.75	4.98	0.83	31.37	5.27	165.33	3.600	No	Yes	2.00
282	46.26	61.62	2.84	5.83	0.86	27.59	6.36	175.46	3.600	No	Yes	2.00
283	46.42	59.27	2.87	6.08	0.87	26.25	6.74	176.91	3.600	No	Yes	2.00
284	46.59	60.60	2.85	5.88	0.86	26.93	6.49	174.75	3.600	No	Yes	2.00
285	46.75	62.01	2.83	5.61	0.86	27.70	6.19	171.38	3.600	No	Yes	2.00
286	46.92	66.85	2.77	5.16	0.84	30.31	5.52	167.29	3.600	No	Yes	2.00
287	47.08	74.34	2.70	4.68	0.82	34.37	4.75	163.35	3.600	No	Yes	2.00
288	47.24	77.32	2.71	4.88	0.82	35.72	4.76	170.05	3.600	No	Yes	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
289	47.41	70.15	2.79	5.71	0.85	31.53	5.75	181.17	3.600	No	Yes	2.00
290	47.57	56.64	2.97	7.22	1.00	22.11	8.33	184.19	3.600	No	Yes	2.00
291	47.74	46.65	3.09	8.51	1.00	17.94	10.37	186.05	3.600	No	Yes	2.00
292	47.90	41.03	3.17	9.53	1.00	15.58	11.97	186.56	3.600	No	Yes	2.00
293	48.06	39.04	3.21	10.30	1.00	14.73	12.89	189.86	3.600	No	Yes	2.00
294	48.23	39.56	3.21	10.69	1.00	14.90	13.07	194.73	3.600	No	Yes	2.00
295	48.39	42.61	3.18	10.43	1.00	16.11	12.34	198.89	3.600	No	Yes	2.00
296	48.56	47.92	3.12	9.69	1.00	18.23	11.06	201.61	3.600	No	Yes	2.00
297	48.72	53.01	3.07	9.15	1.00	20.25	10.08	204.16	3.600	No	Yes	2.00
298	48.88	56.33	3.05	8.93	1.00	21.55	9.59	206.66	3.600	No	Yes	2.00
299	49.05	56.80	3.05	9.00	1.00	21.69	9.60	208.25	3.600	No	Yes	2.00
300	49.21	55.89	3.05	9.00	1.00	21.27	9.71	206.48	3.600	No	Yes	2.00
301	49.38	55.14	3.04	8.63	1.00	20.91	9.57	200.04	3.600	No	Yes	2.00
302	49.54	55.84	2.99	7.38	1.00	21.14	8.67	183.40	3.600	No	Yes	2.00
303	49.70	58.50	2.88	5.91	0.87	24.73	6.88	170.17	3.600	No	Yes	2.00
304	49.87	63.61	2.74	4.28	0.83	27.93	5.17	144.52	3.600	No	Yes	2.00
305	50.03	69.27	2.62	3.20	0.79	31.47	3.93	123.68	3.600	No	Yes	2.00
306	50.20	73.40	2.52	2.46	0.76	34.28	3.10	106.37	0.192	No	No	1.44
307	50.36	75.70	2.46	2.12	0.75	35.86	2.73	97.94	0.167	No	No	1.25
308	50.52	77.13	2.43	1.97	0.74	36.78	2.56	94.15	0.158	No	No	1.18
309	50.69	79.31	2.40	1.83	0.73	38.12	2.38	90.69	0.149	No	No	1.12
310	50.85	81.39	2.37	1.68	0.72	39.46	2.20	87.01	0.141	No	No	1.06
311	51.02	81.77	2.34	1.51	0.71	39.92	2.07	82.43	0.132	No	No	0.99
312	51.18	80.75	2.32	1.43	0.71	39.45	2.02	79.77	0.127	No	No	0.96
313	51.35	80.96	2.31	1.37	0.70	39.64	1.97	77.96	0.124	No	No	0.93
314	51.51	82.24	2.31	1.40	0.70	40.23	1.97	79.21	0.126	No	No	0.95
315	51.67	84.09	2.30	1.39	0.70	41.22	1.93	79.54	0.127	No	No	0.96
316	51.84	85.56	2.29	1.38	0.70	42.00	1.90	79.84	0.127	No	No	0.96
317	52.00	87.72	2.28	1.35	0.69	43.22	1.84	79.68	0.127	No	No	0.96
318	52.17	89.80	2.27	1.34	0.69	44.36	1.80	80.03	0.128	No	No	0.97
319	52.33	90.98	2.27	1.37	0.69	44.87	1.81	81.40	0.130	No	No	0.98
320	52.49	92.00	2.28	1.46	0.69	45.16	1.86	84.02	0.135	No	No	1.02
321	52.66	92.14	2.31	1.59	0.70	44.86	1.95	87.63	0.143	No	No	1.08
322	52.82	89.46	2.35	1.76	0.71	42.95	2.13	91.48	0.151	No	No	1.15
323	52.99	83.89	2.41	1.97	0.73	39.47	2.42	95.62	0.161	No	No	1.23
324	53.15	78.41	2.45	2.05	0.74	36.34	2.65	96.18	0.163	No	No	1.24
325	53.31	77.99	2.42	1.85	0.73	36.36	2.48	90.17	0.148	No	No	1.13
326	53.48	82.13	2.34	1.50	0.71	39.16	2.09	81.70	0.131	No	No	1.00
327	53.64	87.00	2.28	1.30	0.69	42.26	1.84	77.58	0.123	No	No	0.94
328	53.81	88.42	2.30	1.42	0.70	42.68	1.91	81.42	0.130	No	No	0.99
329	53.97	85.63	2.36	1.71	0.72	40.48	2.18	88.44	0.144	No	No	1.10
330	54.13	81.89	2.44	2.07	0.74	37.80	2.58	97.45	0.166	No	No	1.27
331	54.30	78.46	2.50	2.40	0.76	35.48	2.97	105.47	0.189	No	No	1.45
332	54.46	75.58	2.55	2.74	0.77	33.55	3.38	113.39	0.216	No	No	1.65
333	54.63	71.86	2.62	3.19	0.79	31.17	3.95	123.24	3.600	No	Yes	2.00
334	54.79	67.28	2.70	3.74	0.82	28.44	4.68	133.17	3.600	No	Yes	2.00
335	54.95	63.74	2.76	4.19	0.83	26.39	5.32	140.27	3.600	No	Yes	2.00
336	55.12	61.87	2.78	4.39	0.84	25.34	5.63	142.61	3.600	No	Yes	2.00

:: Cyclic Resistance Ratio (CRR) calculation data :: (continued)

Point ID	Depth (ft)	q_t (tsf)	I_c	Fr (%)	n	Q_{tn}	K_c	$Q_{tn,cs}$	$CRR_{7.5}$	Belongs to trans. layer	Clay-like behaviour	FS
337	55.28	61.87	2.78	4.37	0.84	25.29	5.62	142.17	3.600	No	Yes	2.00
338	55.45	62.27	2.78	4.34	0.84	25.44	5.58	141.87	3.600	No	Yes	2.00
339	55.61	63.27	2.76	4.25	0.84	25.92	5.43	140.64	3.600	No	Yes	2.00
340	55.77	63.56	2.75	4.13	0.83	26.08	5.31	138.39	3.600	No	Yes	2.00
341	55.94	62.59	2.76	4.11	0.84	25.57	5.37	137.20	3.600	No	Yes	2.00
342	56.10	60.40	2.79	4.29	0.84	24.38	5.70	138.96	3.600	No	Yes	2.00
343	56.27	58.53	2.81	4.47	0.85	23.37	6.02	140.68	3.600	No	Yes	2.00
344	56.43	58.56	2.81	4.39	0.85	23.37	5.95	139.05	3.600	No	Yes	2.00
345	56.59	60.63	2.76	3.88	0.83	24.57	5.32	130.80	3.600	No	Yes	2.00
346	56.76	63.16	2.68	3.21	0.81	26.15	4.52	118.20	3.600	No	Yes	2.00
347	56.92	67.29	2.55	2.28	0.77	28.95	3.37	97.70	0.167	No	No	1.30
348	57.09	71.57	2.45	1.74	0.74	31.76	2.66	84.63	0.136	No	No	1.06
349	57.25	75.11	2.40	1.57	0.73	33.83	2.39	80.81	0.129	No	No	1.01
350	57.41	75.59	2.45	1.85	0.74	33.57	2.64	88.77	0.145	No	No	1.13
351	57.58	74.27	2.49	2.07	0.75	32.53	2.90	94.37	0.158	No	No	1.23
352	57.74	74.41	2.47	1.97	0.75	32.69	2.80	91.52	0.151	No	No	1.18
353	57.91	77.49	2.41	1.69	0.73	34.66	2.44	84.52	0.136	No	No	1.06
354	58.07	81.41	2.37	1.54	0.72	36.94	2.21	81.46	0.130	No	No	1.02
355	58.23	85.78	2.36	1.64	0.72	38.99	2.19	85.50	0.138	No	No	1.08
356	58.40	92.69	2.33	1.61	0.71	42.63	2.04	86.97	0.141	No	No	1.11
357	58.56	113.93	2.17	1.24	0.66	55.21	1.54	85.29	0.138	No	No	1.08
358	58.73	142.23	1.98	0.87	0.60	73.21	1.29	94.58	0.159	No	No	1.25
359	58.89	156.58	1.92	0.79	0.58	82.22	1.25	102.58	0.180	No	No	1.42
360	59.06	149.92	2.00	1.01	0.61	76.61	1.31	100.30	0.174	No	No	1.37
361	59.22	140.13	2.09	1.24	0.64	69.56	1.41	97.87	0.167	No	No	1.32
362	59.38	152.65	2.06	1.24	0.63	76.60	1.36	104.50	0.186	No	No	1.47
363	59.55	178.23	1.99	1.20	0.61	91.39	1.30	118.90	0.236	No	No	1.87
364	59.71	203.01	1.97	1.31	0.60	104.85	1.29	134.83	0.308	No	No	2.00
365	59.88	227.29	1.97	1.48	0.60	117.51	1.29	151.05	0.401	No	No	2.00
366	60.04	262.22	1.91	1.43	0.58	138.04	1.25	172.02	0.553	No	No	2.00
367	60.20	310.90	N/A	-29562.96	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
368	60.37	371.99	N/A	-49316.96	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
369	60.53	477.63	N/A	-57480.47	1.00	-1.00	1.00	N/A	4.000	No	No	2.00
370	60.70	565.02	N/A	-48529.57	1.00	-1.00	1.00	N/A	4.000	No	No	2.00

Abbreviations

Depth: Depth from free surface, at which CPT was performed (ft)
q_t: Total cone resistance
I_c: Soil behavior type index
Fr: Normalized friction ratio (%)
n: Stress exponent
Q_{tn}: Normalized cone resistance
K_c: Cone resistance correction factor due to fines
$Q_{tn,cs}$: Normalized and adjusted cone resistance
$CRR_{7.5}$: Cyclic resistance ratio for M_w=7.5
FS: Factor of safety against soil liquefaction

:: Liquefaction Potential Index calculation data ::

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
0.16	2.00	0.00	0.00	0.16	0.00	0.33	2.00	0.00	0.00	0.16	0.00
0.49	2.00	0.00	0.00	0.16	0.00	0.66	2.00	0.00	0.00	0.16	0.00
0.82	2.00	0.00	0.00	0.16	0.00	0.98	2.00	0.00	0.00	0.16	0.00
1.15	2.00	0.00	0.00	0.16	0.00	1.31	2.00	0.00	0.00	0.16	0.00
1.48	2.00	0.00	0.00	0.16	0.00	1.64	2.00	0.00	0.00	0.16	0.00
1.80	2.00	0.00	0.00	0.16	0.00	1.97	2.00	0.00	0.00	0.16	0.00
2.13	2.00	0.00	0.00	0.16	0.00	2.30	2.00	0.00	0.00	0.16	0.00
2.46	2.00	0.00	0.00	0.16	0.00	2.62	2.00	0.00	0.00	0.16	0.00
2.79	2.00	0.00	0.00	0.16	0.00	2.95	2.00	0.00	0.00	0.16	0.00
3.12	2.00	0.00	0.00	0.16	0.00	3.28	2.00	0.00	0.00	0.16	0.00
3.44	2.00	0.00	0.00	0.16	0.00	3.61	2.00	0.00	0.00	0.16	0.00
3.77	2.00	0.00	0.00	0.16	0.00	3.94	2.00	0.00	0.00	0.16	0.00
4.10	2.00	0.00	0.00	0.16	0.00	4.27	2.00	0.00	0.00	0.16	0.00
4.43	2.00	0.00	0.00	0.16	0.00	4.59	2.00	0.00	0.00	0.16	0.00
4.76	2.00	0.00	0.00	0.16	0.00	4.92	2.00	0.00	0.00	0.16	0.00
5.09	2.00	0.00	0.00	0.16	0.00	5.25	2.00	0.00	0.00	0.16	0.00
5.41	2.00	0.00	0.00	0.16	0.00	5.58	2.00	0.00	0.00	0.16	0.00
5.74	2.00	0.00	0.00	0.16	0.00	5.91	2.00	0.00	0.00	0.16	0.00
6.07	2.00	0.00	0.00	0.16	0.00	6.23	2.00	0.00	0.00	0.16	0.00
6.40	2.00	0.00	0.00	0.16	0.00	6.56	2.00	0.00	0.00	0.16	0.00
6.73	2.00	0.00	0.00	0.16	0.00	6.89	2.00	0.00	0.00	0.16	0.00
7.05	2.00	0.00	0.00	0.16	0.00	7.22	2.00	0.00	0.00	0.16	0.00
7.38	2.00	0.00	0.00	0.16	0.00	7.55	2.00	0.00	0.00	0.16	0.00
7.71	2.00	0.00	0.00	0.16	0.00	7.87	2.00	0.00	0.00	0.16	0.00
8.04	2.00	0.00	0.00	0.16	0.00	8.20	2.00	0.00	0.00	0.16	0.00
8.37	2.00	0.00	0.00	0.16	0.00	8.53	2.00	0.00	0.00	0.16	0.00
8.69	2.00	0.00	0.00	0.16	0.00	8.86	2.00	0.00	0.00	0.16	0.00
9.02	2.00	0.00	0.00	0.16	0.00	9.19	2.00	0.00	0.00	0.16	0.00
9.35	2.00	0.00	0.00	0.16	0.00	9.51	2.00	0.00	0.00	0.16	0.00
9.68	2.00	0.00	0.00	0.16	0.00	9.84	2.00	0.00	0.00	0.16	0.00
10.01	2.00	0.00	0.00	0.16	0.00	10.17	2.00	0.00	0.00	0.16	0.00
10.33	2.00	0.00	0.00	0.16	0.00	10.50	2.00	0.00	0.00	0.16	0.00
10.66	2.00	0.00	0.00	0.16	0.00	10.83	2.00	0.00	0.00	0.16	0.00
10.99	2.00	0.00	0.00	0.16	0.00	11.15	2.00	0.00	0.00	0.16	0.00
11.32	2.00	0.00	0.00	0.16	0.00	11.48	2.00	0.00	0.00	0.16	0.00
11.65	2.00	0.00	0.00	0.16	0.00	11.81	2.00	0.00	0.00	0.16	0.00
11.98	2.00	0.00	0.00	0.16	0.00	12.14	2.00	0.00	0.00	0.16	0.00
12.30	2.00	0.00	0.00	0.16	0.00	12.47	2.00	0.00	0.00	0.16	0.00
12.63	2.00	0.00	0.00	0.16	0.00	12.80	2.00	0.00	0.00	0.16	0.00
12.96	2.00	0.00	0.00	0.16	0.00	13.12	2.00	0.00	0.00	0.16	0.00
13.29	2.00	0.00	0.00	0.16	0.00	13.45	2.00	0.00	0.00	0.16	0.00
13.62	2.00	0.00	0.00	0.16	0.00	13.78	2.00	0.00	0.00	0.16	0.00
13.94	2.00	0.00	0.00	0.16	0.00	14.11	2.00	0.00	0.00	0.16	0.00
14.27	2.00	0.00	0.00	0.16	0.00	14.44	2.00	0.00	0.00	0.16	0.00
14.60	2.00	0.00	0.00	0.16	0.00	14.76	2.00	0.00	0.00	0.16	0.00
14.93	2.00	0.00	0.00	0.16	0.00	15.09	2.00	0.00	0.00	0.16	0.00
15.26	2.00	0.00	0.00	0.16	0.00	15.42	2.00	0.00	0.00	0.16	0.00
15.58	2.00	0.00	0.00	0.16	0.00	15.75	2.00	0.00	0.00	0.16	0.00

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
15.91	2.00	0.00	0.00	0.16	0.00	16.08	2.00	0.00	0.00	0.16	0.00
16.24	2.00	0.00	0.00	0.16	0.00	16.40	2.00	0.00	0.00	0.16	0.00
16.57	2.00	0.00	0.00	0.16	0.00	16.73	2.00	0.00	0.00	0.16	0.00
16.90	2.00	0.00	0.00	0.16	0.00	17.06	2.00	0.00	0.00	0.16	0.00
17.22	2.00	0.00	0.00	0.16	0.00	17.39	2.00	0.00	0.00	0.16	0.00
17.55	2.00	0.00	0.00	0.16	0.00	17.72	2.00	0.00	0.00	0.16	0.00
17.88	2.00	0.00	0.00	0.16	0.00	18.04	2.00	0.00	0.00	0.16	0.00
18.21	2.00	0.00	0.00	0.16	0.00	18.37	2.00	0.00	0.00	0.16	0.00
18.54	2.00	0.00	0.00	0.16	0.00	18.70	2.00	0.00	0.00	0.16	0.00
18.86	2.00	0.00	0.00	0.16	0.00	19.03	2.00	0.00	0.00	0.16	0.00
19.19	2.00	0.00	0.00	0.16	0.00	19.36	2.00	0.00	0.00	0.16	0.00
19.52	2.00	0.00	0.00	0.16	0.00	19.69	2.00	0.00	0.00	0.16	0.00
19.85	2.00	0.00	0.00	0.16	0.00	20.01	2.00	0.00	0.00	0.16	0.00
20.18	2.00	0.00	0.00	0.16	0.00	20.34	2.00	0.00	0.00	0.16	0.00
20.51	2.00	0.00	0.00	0.16	0.00	20.67	2.00	0.00	0.00	0.16	0.00
20.83	2.00	0.00	0.00	0.16	0.00	21.00	2.00	0.00	0.00	0.16	0.00
21.16	2.00	0.00	0.00	0.16	0.00	21.33	2.00	0.00	0.00	0.16	0.00
21.49	2.00	0.00	0.00	0.16	0.00	21.65	2.00	0.00	0.00	0.16	0.00
21.82	2.00	0.00	0.00	0.16	0.00	21.98	2.00	0.00	0.00	0.16	0.00
22.15	2.00	0.00	0.00	0.16	0.00	22.31	2.00	0.00	0.00	0.16	0.00
22.47	2.00	0.00	0.00	0.16	0.00	22.64	2.00	0.00	0.00	0.16	0.00
22.80	2.00	0.00	0.00	0.16	0.00	22.97	2.00	0.00	0.00	0.16	0.00
23.13	2.00	0.00	0.00	0.16	0.00	23.29	2.00	0.00	0.00	0.16	0.00
23.46	2.00	0.00	0.00	0.16	0.00	23.62	2.00	0.00	0.00	0.16	0.00
23.79	2.00	0.00	0.00	0.16	0.00	23.95	2.00	0.00	0.00	0.16	0.00
24.11	2.00	0.00	0.00	0.16	0.00	24.28	2.00	0.00	0.00	0.16	0.00
24.44	2.00	0.00	0.00	0.16	0.00	24.61	2.00	0.00	0.00	0.16	0.00
24.77	2.00	0.00	0.00	0.16	0.00	24.93	2.00	0.00	0.00	0.16	0.00
25.10	2.00	0.00	0.00	0.16	0.00	25.26	2.00	0.00	0.00	0.16	0.00
25.43	2.00	0.00	0.00	0.16	0.00	25.59	2.00	0.00	0.00	0.16	0.00
25.75	2.00	0.00	0.00	0.16	0.00	25.92	2.00	0.00	0.00	0.16	0.00
26.08	2.00	0.00	0.00	0.16	0.00	26.25	2.00	0.00	0.00	0.16	0.00
26.41	2.00	0.00	0.00	0.16	0.00	26.57	2.00	0.00	0.00	0.16	0.00
26.74	2.00	0.00	0.00	0.16	0.00	26.90	2.00	0.00	0.00	0.16	0.00
27.07	2.00	0.00	0.00	0.16	0.00	27.23	2.00	0.00	0.00	0.16	0.00
27.40	2.00	0.00	0.00	0.16	0.00	27.56	2.00	0.00	0.00	0.16	0.00
27.72	2.00	0.00	0.00	0.16	0.00	27.89	2.00	0.00	0.00	0.16	0.00
28.05	2.00	0.00	0.00	0.16	0.00	28.22	2.00	0.00	0.00	0.16	0.00
28.38	2.00	0.00	0.00	0.16	0.00	28.54	2.00	0.00	0.00	0.16	0.00
28.71	2.00	0.00	0.00	0.16	0.00	28.87	2.00	0.00	0.00	0.16	0.00
29.04	2.00	0.00	0.00	0.16	0.00	29.20	2.00	0.00	0.00	0.16	0.00
29.36	2.00	0.00	0.00	0.16	0.00	29.53	2.00	0.00	0.00	0.16	0.00
29.69	2.00	0.00	0.00	0.16	0.00	29.86	2.00	0.00	0.00	0.16	0.00
30.02	2.00	0.00	0.00	0.16	0.00	30.18	2.00	0.00	0.00	0.16	0.00
30.35	2.00	0.00	0.00	0.16	0.00	30.51	2.00	0.00	0.00	0.16	0.00
30.68	2.00	0.00	0.00	0.16	0.00	30.84	2.00	0.00	0.00	0.16	0.00
31.00	2.00	0.00	0.00	0.16	0.00	31.17	2.00	0.00	0.00	0.16	0.00
31.33	2.00	0.00	0.00	0.16	0.00	31.50	2.00	0.00	0.00	0.16	0.00

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
31.66	2.00	0.00	0.00	0.16	0.00	31.82	2.00	0.00	0.00	0.16	0.00
31.99	2.00	0.00	0.00	0.16	0.00	32.15	2.00	0.00	0.00	0.16	0.00
32.32	2.00	0.00	0.00	0.16	0.00	32.48	2.00	0.00	0.00	0.16	0.00
32.64	2.00	0.00	0.00	0.16	0.00	32.81	2.00	0.00	0.00	0.16	0.00
32.97	2.00	0.00	0.00	0.16	0.00	33.14	2.00	0.00	0.00	0.16	0.00
33.30	2.00	0.00	0.00	0.16	0.00	33.46	2.00	0.00	0.00	0.16	0.00
33.63	2.00	0.00	0.00	0.16	0.00	33.79	2.00	0.00	0.00	0.16	0.00
33.96	2.00	0.00	0.00	0.16	0.00	34.12	2.00	0.00	0.00	0.16	0.00
34.28	2.00	0.00	0.00	0.16	0.00	34.45	2.00	0.00	0.00	0.16	0.00
34.61	2.00	0.00	0.00	0.16	0.00	34.78	2.00	0.00	0.00	0.16	0.00
34.94	2.00	0.00	0.00	0.16	0.00	35.10	2.00	0.00	0.00	0.16	0.00
35.27	2.00	0.00	0.00	0.16	0.00	35.43	2.00	0.00	0.00	0.16	0.00
35.60	2.00	0.00	0.00	0.16	0.00	35.76	2.00	0.00	0.00	0.16	0.00
35.93	2.00	0.00	0.00	0.16	0.00	36.09	2.00	0.00	0.00	0.16	0.00
36.25	2.00	0.00	0.00	0.16	0.00	36.42	2.00	0.00	0.00	0.16	0.00
36.58	2.00	0.00	0.00	0.16	0.00	36.75	2.00	0.00	0.00	0.16	0.00
36.91	2.00	0.00	0.00	0.16	0.00	37.07	2.00	0.00	0.00	0.16	0.00
37.24	2.00	0.00	0.00	0.16	0.00	37.40	2.00	0.00	0.00	0.16	0.00
37.57	2.00	0.00	0.00	0.16	0.00	37.73	2.00	0.00	0.00	0.16	0.00
37.89	2.00	0.00	0.00	0.16	0.00	38.06	2.00	0.00	0.00	0.16	0.00
38.22	2.00	0.00	0.00	0.16	0.00	38.39	2.00	0.00	0.00	0.16	0.00
38.55	2.00	0.00	0.00	0.16	0.00	38.71	2.00	0.00	0.00	0.16	0.00
38.88	2.00	0.00	0.00	0.16	0.00	39.04	2.00	0.00	0.00	0.16	0.00
39.21	2.00	0.00	0.00	0.16	0.00	39.37	2.00	0.00	0.00	0.16	0.00
39.53	2.00	0.00	0.00	0.16	0.00	39.70	2.00	0.00	0.00	0.16	0.00
39.86	2.00	0.00	0.00	0.16	0.00	40.03	2.00	0.00	0.00	0.16	0.00
40.19	2.00	0.00	0.00	0.16	0.00	40.35	2.00	0.00	0.00	0.16	0.00
40.52	2.00	0.00	0.00	0.16	0.00	40.68	2.00	0.00	0.00	0.16	0.00
40.85	2.00	0.00	0.00	0.16	0.00	41.01	2.00	0.00	0.00	0.16	0.00
41.17	2.00	0.00	0.00	0.16	0.00	41.34	2.00	0.00	0.00	0.16	0.00
41.50	2.00	0.00	0.00	0.16	0.00	41.67	2.00	0.00	0.00	0.16	0.00
41.83	2.00	0.00	0.00	0.16	0.00	41.99	2.00	0.00	0.00	0.16	0.00
42.16	2.00	0.00	0.00	0.16	0.00	42.32	2.00	0.00	0.00	0.16	0.00
42.49	2.00	0.00	0.00	0.16	0.00	42.65	2.00	0.00	0.00	0.16	0.00
42.81	2.00	0.00	0.00	0.16	0.00	42.98	2.00	0.00	0.00	0.16	0.00
43.14	2.00	0.00	0.00	0.16	0.00	43.31	2.00	0.00	0.00	0.16	0.00
43.47	2.00	0.00	0.00	0.16	0.00	43.64	2.00	0.00	0.00	0.16	0.00
43.80	2.00	0.00	0.00	0.16	0.00	43.96	2.00	0.00	0.00	0.16	0.00
44.13	2.00	0.00	0.00	0.16	0.00	44.29	2.00	0.00	0.00	0.16	0.00
44.46	2.00	0.00	0.00	0.16	0.00	44.62	2.00	0.00	0.00	0.16	0.00
44.78	2.00	0.00	0.00	0.16	0.00	44.95	2.00	0.00	0.00	0.16	0.00
45.11	2.00	0.00	0.00	0.16	0.00	45.28	1.40	0.00	0.00	0.16	0.00
45.44	1.27	0.00	0.00	0.16	0.00	45.60	1.48	0.00	0.00	0.16	0.00
45.77	1.92	0.00	0.00	0.16	0.00	45.93	2.00	0.00	0.00	0.16	0.00
46.10	2.00	0.00	0.00	0.16	0.00	46.26	2.00	0.00	0.00	0.16	0.00
46.42	2.00	0.00	0.00	0.16	0.00	46.59	2.00	0.00	0.00	0.16	0.00
46.75	2.00	0.00	0.00	0.16	0.00	46.92	2.00	0.00	0.00	0.16	0.00
47.08	2.00	0.00	0.00	0.16	0.00	47.24	2.00	0.00	0.00	0.16	0.00

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI
47.41	2.00	0.00	0.00	0.16	0.00	47.57	2.00	0.00	0.00	0.16	0.00
47.74	2.00	0.00	0.00	0.16	0.00	47.90	2.00	0.00	0.00	0.16	0.00
48.06	2.00	0.00	0.00	0.16	0.00	48.23	2.00	0.00	0.00	0.16	0.00
48.39	2.00	0.00	0.00	0.16	0.00	48.56	2.00	0.00	0.00	0.16	0.00
48.72	2.00	0.00	0.00	0.16	0.00	48.88	2.00	0.00	0.00	0.16	0.00
49.05	2.00	0.00	0.00	0.16	0.00	49.21	2.00	0.00	0.00	0.16	0.00
49.38	2.00	0.00	0.00	0.16	0.00	49.54	2.00	0.00	0.00	0.16	0.00
49.70	2.00	0.00	0.00	0.16	0.00	49.87	2.00	0.00	0.00	0.16	0.00
50.03	2.00	0.00	0.00	0.16	0.00	50.20	1.44	0.00	0.00	0.16	0.00
50.36	1.25	0.00	0.00	0.16	0.00	50.52	1.18	0.00	0.00	0.16	0.00
50.69	1.12	0.00	0.00	0.16	0.00	50.85	1.06	0.00	0.00	0.16	0.00
51.02	0.99	0.00	0.00	0.16	0.00	51.18	0.96	0.00	0.00	0.16	0.00
51.35	0.93	0.00	0.00	0.16	0.01	51.51	0.95	0.00	0.00	0.16	0.01
51.67	0.96	0.00	0.00	0.16	0.00	51.84	0.96	0.00	0.00	0.16	0.00
52.00	0.96	0.00	0.00	0.16	0.00	52.17	0.97	0.00	0.00	0.16	0.00
52.33	0.98	0.00	0.00	0.16	0.00	52.49	1.02	0.00	0.00	0.16	0.00
52.66	1.08	0.00	0.00	0.16	0.00	52.82	1.15	0.00	0.00	0.16	0.00
52.99	1.23	0.00	0.00	0.16	0.00	53.15	1.24	0.00	0.00	0.16	0.00
53.31	1.13	0.00	0.00	0.16	0.00	53.48	1.00	0.00	0.00	0.16	0.00
53.64	0.94	0.00	0.00	0.16	0.01	53.81	0.99	0.00	0.00	0.16	0.00
53.97	1.10	0.00	0.00	0.16	0.00	54.13	1.27	0.00	0.00	0.16	0.00
54.30	1.45	0.00	0.00	0.16	0.00	54.46	1.65	0.00	0.00	0.16	0.00
54.63	2.00	0.00	0.00	0.16	0.00	54.79	2.00	0.00	0.00	0.16	0.00
54.95	2.00	0.00	0.00	0.16	0.00	55.12	2.00	0.00	0.00	0.16	0.00
55.28	2.00	0.00	0.00	0.16	0.00	55.45	2.00	0.00	0.00	0.16	0.00
55.61	2.00	0.00	0.00	0.16	0.00	55.77	2.00	0.00	0.00	0.16	0.00
55.94	2.00	0.00	0.00	0.16	0.00	56.10	2.00	0.00	0.00	0.16	0.00
56.27	2.00	0.00	0.00	0.16	0.00	56.43	2.00	0.00	0.00	0.16	0.00
56.59	2.00	0.00	0.00	0.16	0.00	56.76	2.00	0.00	0.00	0.16	0.00
56.92	1.30	0.00	0.00	0.16	0.00	57.09	1.06	0.00	0.00	0.16	0.00
57.25	1.01	0.00	0.00	0.16	0.00	57.41	1.13	0.00	0.00	0.16	0.00
57.58	1.23	0.00	0.00	0.16	0.00	57.74	1.18	0.00	0.00	0.16	0.00
57.91	1.06	0.00	0.00	0.16	0.00	58.07	1.02	0.00	0.00	0.16	0.00
58.23	1.08	0.00	0.00	0.16	0.00	58.40	1.11	0.00	0.00	0.16	0.00
58.56	1.08	0.00	0.00	0.16	0.00	58.73	1.25	0.00	0.00	0.16	0.00
58.89	1.42	0.00	0.00	0.16	0.00	59.06	1.37	0.00	0.00	0.16	0.00
59.22	1.32	0.00	0.00	0.16	0.00	59.38	1.47	0.00	0.00	0.16	0.00
59.55	1.87	0.00	0.00	0.16	0.00	59.71	2.00	0.00	0.00	0.16	0.00
59.88	2.00	0.00	0.00	0.16	0.00	60.04	2.00	0.00	0.00	0.16	0.00
60.20	2.00	0.00	0.00	0.16	0.00	60.37	2.00	0.00	0.00	0.16	0.00
60.53	2.00	0.00	0.00	0.16	0.00	60.70	2.00	0.00	0.00	0.16	0.00

:: Liquefaction Potential Index calculation data :: (continued)

Depth (ft)	FS	F_L	w_z	d_z	LPI	Depth (ft)	FS	F_L	w_z	d_z	LPI

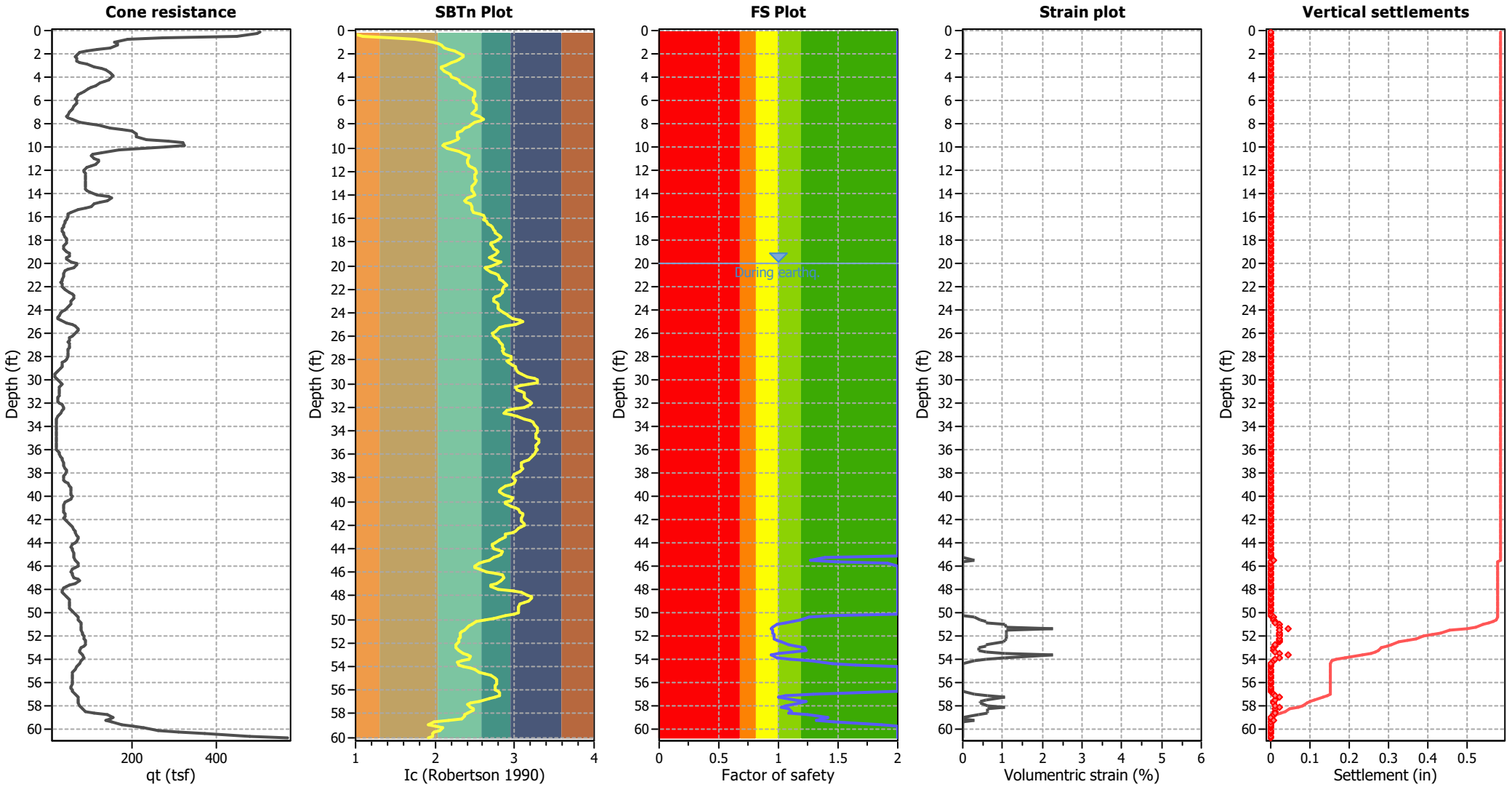
Overall liquefaction potential: 0.04

LPI = 0.00 - Liquefaction risk very low
LPI between 0.00 and 5.00 - Liquefaction risk low
LPI between 5.00 and 15.00 - Liquefaction risk high
LPI > 15.00 - Liquefaction risk very high

Abbreviations

FS: Calculated factor of safety for test point
F_L: 1 - FS
w_z: Function value of the extend of soil liquefaction according to depth
d_z: Layer thickness (ft)
LPI: Liquefaction potential index value for test point

Estimation of post-earthquake settlements



Abbreviations

q_t:	Total cone resistance (cone resistance q_c corrected for pore water effects)
I_c:	Soil Behaviour Type Index
FS:	Calculated Factor of Safety against liquefaction
Volumentric strain:	Post-liquefaction volumentric strain

:: Post-earthquake settlement due to soil liquefaction ::

Depth (ft)	$Q_{tn,cs}$	FS	e_v (%)	DF	Settlement (in)	Depth (ft)	$Q_{tn,cs}$	FS	e_v (%)	DF	Settlement (in)
20.01	251.71	2.00	0.00	1.00	0.00	20.18	228.72	2.00	0.00	1.00	0.00
20.34	203.45	2.00	0.00	1.00	0.00	20.51	189.38	2.00	0.00	1.00	0.00
20.67	180.15	2.00	0.00	1.00	0.00	20.83	176.85	2.00	0.00	1.00	0.00
21.00	173.86	2.00	0.00	1.00	0.00	21.16	171.12	2.00	0.00	1.00	0.00
21.33	176.59	2.00	0.00	1.00	0.00	21.49	180.58	2.00	0.00	1.00	0.00
21.65	182.97	2.00	0.00	1.00	0.00	21.82	173.35	2.00	0.00	1.00	0.00
21.98	169.66	2.00	0.00	1.00	0.00	22.15	179.10	2.00	0.00	1.00	0.00
22.31	200.48	2.00	0.00	1.00	0.00	22.47	219.69	2.00	0.00	1.00	0.00
22.64	231.27	2.00	0.00	1.00	0.00	22.80	234.87	2.00	0.00	1.00	0.00
22.97	235.90	2.00	0.00	1.00	0.00	23.13	233.52	2.00	0.00	1.00	0.00
23.29	228.95	2.00	0.00	1.00	0.00	23.46	220.32	2.00	0.00	1.00	0.00
23.62	211.10	2.00	0.00	1.00	0.00	23.79	201.55	2.00	0.00	1.00	0.00
23.95	194.51	2.00	0.00	1.00	0.00	24.11	183.63	2.00	0.00	1.00	0.00
24.28	170.81	2.00	0.00	1.00	0.00	24.44	156.98	2.00	0.00	1.00	0.00
24.61	157.43	2.00	0.00	1.00	0.00	24.77	168.38	2.00	0.00	1.00	0.00
24.93	184.30	2.00	0.00	1.00	0.00	25.10	207.79	2.00	0.00	1.00	0.00
25.26	229.18	2.00	0.00	1.00	0.00	25.43	244.20	2.00	0.00	1.00	0.00
25.59	246.96	2.00	0.00	1.00	0.00	25.75	237.47	2.00	0.00	1.00	0.00
25.92	224.61	2.00	0.00	1.00	0.00	26.08	216.30	2.00	0.00	1.00	0.00
26.25	210.92	2.00	0.00	1.00	0.00	26.41	205.49	2.00	0.00	1.00	0.00
26.57	200.78	2.00	0.00	1.00	0.00	26.74	202.49	2.00	0.00	1.00	0.00
26.90	209.33	2.00	0.00	1.00	0.00	27.07	211.20	2.00	0.00	1.00	0.00
27.23	208.47	2.00	0.00	1.00	0.00	27.40	207.44	2.00	0.00	1.00	0.00
27.56	218.45	2.00	0.00	1.00	0.00	27.72	221.19	2.00	0.00	1.00	0.00
27.89	222.24	2.00	0.00	1.00	0.00	28.05	213.78	2.00	0.00	1.00	0.00
28.22	203.02	2.00	0.00	1.00	0.00	28.38	189.32	2.00	0.00	1.00	0.00
28.54	187.25	2.00	0.00	1.00	0.00	28.71	184.14	2.00	0.00	1.00	0.00
28.87	179.96	2.00	0.00	1.00	0.00	29.04	169.93	2.00	0.00	1.00	0.00
29.20	156.51	2.00	0.00	1.00	0.00	29.36	145.50	2.00	0.00	1.00	0.00
29.53	147.16	2.00	0.00	1.00	0.00	29.69	156.45	2.00	0.00	1.00	0.00
29.86	169.72	2.00	0.00	1.00	0.00	30.02	176.52	2.00	0.00	1.00	0.00
30.18	178.09	2.00	0.00	1.00	0.00	30.35	173.12	2.00	0.00	1.00	0.00
30.51	169.67	2.00	0.00	1.00	0.00	30.68	169.56	2.00	0.00	1.00	0.00
30.84	172.60	2.00	0.00	1.00	0.00	31.00	174.59	2.00	0.00	1.00	0.00
31.17	173.03	2.00	0.00	1.00	0.00	31.33	171.11	2.00	0.00	1.00	0.00
31.50	170.16	2.00	0.00	1.00	0.00	31.66	172.66	2.00	0.00	1.00	0.00
31.82	173.52	2.00	0.00	1.00	0.00	31.99	170.52	2.00	0.00	1.00	0.00
32.15	161.29	2.00	0.00	1.00	0.00	32.32	157.73	2.00	0.00	1.00	0.00
32.48	154.03	2.00	0.00	1.00	0.00	32.64	152.85	2.00	0.00	1.00	0.00
32.81	156.28	2.00	0.00	1.00	0.00	32.97	159.85	2.00	0.00	1.00	0.00
33.14	160.78	2.00	0.00	1.00	0.00	33.30	160.37	2.00	0.00	1.00	0.00
33.46	159.27	2.00	0.00	1.00	0.00	33.63	158.56	2.00	0.00	1.00	0.00
33.79	158.34	2.00	0.00	1.00	0.00	33.96	158.08	2.00	0.00	1.00	0.00
34.12	158.13	2.00	0.00	1.00	0.00	34.28	157.18	2.00	0.00	1.00	0.00
34.45	157.84	2.00	0.00	1.00	0.00	34.61	157.63	2.00	0.00	1.00	0.00
34.78	157.70	2.00	0.00	1.00	0.00	34.94	156.44	2.00	0.00	1.00	0.00
35.10	156.08	2.00	0.00	1.00	0.00	35.27	156.78	2.00	0.00	1.00	0.00
35.43	158.16	2.00	0.00	1.00	0.00	35.60	160.51	2.00	0.00	1.00	0.00

:: Post-earthquake settlement due to soil liquefaction :: (continued)

Depth (ft)	$Q_{tn,cs}$	FS	e_v (%)	DF	Settlement (in)	Depth (ft)	$Q_{tn,cs}$	FS	e_v (%)	DF	Settlement (in)
35.76	161.48	2.00	0.00	1.00	0.00	35.93	163.72	2.00	0.00	1.00	0.00
36.09	166.87	2.00	0.00	1.00	0.00	36.25	171.91	2.00	0.00	1.00	0.00
36.42	175.60	2.00	0.00	1.00	0.00	36.58	177.17	2.00	0.00	1.00	0.00
36.75	179.77	2.00	0.00	1.00	0.00	36.91	183.31	2.00	0.00	1.00	0.00
37.07	187.85	2.00	0.00	1.00	0.00	37.24	192.01	2.00	0.00	1.00	0.00
37.40	194.09	2.00	0.00	1.00	0.00	37.57	192.54	2.00	0.00	1.00	0.00
37.73	188.77	2.00	0.00	1.00	0.00	37.89	182.35	2.00	0.00	1.00	0.00
38.06	176.25	2.00	0.00	1.00	0.00	38.22	166.99	2.00	0.00	1.00	0.00
38.39	159.45	2.00	0.00	1.00	0.00	38.55	154.49	2.00	0.00	1.00	0.00
38.71	157.47	2.00	0.00	1.00	0.00	38.88	160.64	2.00	0.00	1.00	0.00
39.04	167.77	2.00	0.00	1.00	0.00	39.21	175.55	2.00	0.00	1.00	0.00
39.37	186.61	2.00	0.00	1.00	0.00	39.53	204.94	2.00	0.00	1.00	0.00
39.70	213.12	2.00	0.00	1.00	0.00	39.86	216.78	2.00	0.00	1.00	0.00
40.03	209.69	2.00	0.00	1.00	0.00	40.19	194.49	2.00	0.00	1.00	0.00
40.35	177.63	2.00	0.00	1.00	0.00	40.52	174.97	2.00	0.00	1.00	0.00
40.68	174.08	2.00	0.00	1.00	0.00	40.85	175.85	2.00	0.00	1.00	0.00
41.01	180.79	2.00	0.00	1.00	0.00	41.17	186.48	2.00	0.00	1.00	0.00
41.34	190.45	2.00	0.00	1.00	0.00	41.50	188.34	2.00	0.00	1.00	0.00
41.67	191.33	2.00	0.00	1.00	0.00	41.83	195.76	2.00	0.00	1.00	0.00
41.99	207.17	2.00	0.00	1.00	0.00	42.16	214.71	2.00	0.00	1.00	0.00
42.32	221.25	2.00	0.00	1.00	0.00	42.49	222.14	2.00	0.00	1.00	0.00
42.65	218.04	2.00	0.00	1.00	0.00	42.81	219.25	2.00	0.00	1.00	0.00
42.98	215.42	2.00	0.00	1.00	0.00	43.14	212.63	2.00	0.00	1.00	0.00
43.31	206.28	2.00	0.00	1.00	0.00	43.47	194.00	2.00	0.00	1.00	0.00
43.64	179.26	2.00	0.00	1.00	0.00	43.80	167.20	2.00	0.00	1.00	0.00
43.96	163.69	2.00	0.00	1.00	0.00	44.13	169.53	2.00	0.00	1.00	0.00
44.29	177.10	2.00	0.00	1.00	0.00	44.46	174.81	2.00	0.00	1.00	0.00
44.62	166.00	2.00	0.00	1.00	0.00	44.78	152.46	2.00	0.00	1.00	0.00
44.95	138.60	2.00	0.00	1.00	0.00	45.11	120.07	2.00	0.00	1.00	0.00
45.28	105.93	1.40	0.00	1.00	0.00	45.44	100.21	1.27	0.29	1.00	0.01
45.60	109.35	1.48	0.00	1.00	0.00	45.77	125.02	1.92	0.00	1.00	0.00
45.93	147.24	2.00	0.00	1.00	0.00	46.10	165.33	2.00	0.00	1.00	0.00
46.26	175.46	2.00	0.00	1.00	0.00	46.42	176.91	2.00	0.00	1.00	0.00
46.59	174.75	2.00	0.00	1.00	0.00	46.75	171.38	2.00	0.00	1.00	0.00
46.92	167.29	2.00	0.00	1.00	0.00	47.08	163.35	2.00	0.00	1.00	0.00
47.24	170.05	2.00	0.00	1.00	0.00	47.41	181.17	2.00	0.00	1.00	0.00
47.57	184.19	2.00	0.00	1.00	0.00	47.74	186.05	2.00	0.00	1.00	0.00
47.90	186.56	2.00	0.00	1.00	0.00	48.06	189.86	2.00	0.00	1.00	0.00
48.23	194.73	2.00	0.00	1.00	0.00	48.39	198.89	2.00	0.00	1.00	0.00
48.56	201.61	2.00	0.00	1.00	0.00	48.72	204.16	2.00	0.00	1.00	0.00
48.88	206.66	2.00	0.00	1.00	0.00	49.05	208.25	2.00	0.00	1.00	0.00
49.21	206.48	2.00	0.00	1.00	0.00	49.38	200.04	2.00	0.00	1.00	0.00
49.54	183.40	2.00	0.00	1.00	0.00	49.70	170.17	2.00	0.00	1.00	0.00
49.87	144.52	2.00	0.00	1.00	0.00	50.03	123.68	2.00	0.00	1.00	0.00
50.20	106.37	1.44	0.00	1.00	0.00	50.36	97.94	1.25	0.29	1.00	0.01
50.52	94.15	1.18	0.42	1.00	0.01	50.69	90.69	1.12	0.59	1.00	0.01
50.85	87.01	1.06	0.60	1.00	0.01	51.02	82.43	0.99	1.06	1.00	0.02
51.18	79.77	0.96	1.09	1.00	0.02	51.35	77.96	0.93	2.27	1.00	0.04

:: Post-earthquake settlement due to soil liquefaction :: (continued)

Depth (ft)	$Q_{tn,cs}$	FS	e_v (%)	DF	Settlement (in)	Depth (ft)	$Q_{tn,cs}$	FS	e_v (%)	DF	Settlement (in)
51.51	79.21	0.95	1.10	1.00	0.02	51.67	79.54	0.96	1.09	1.00	0.02
51.84	79.84	0.96	1.09	1.00	0.02	52.00	79.68	0.96	1.09	1.00	0.02
52.17	80.03	0.97	1.09	1.00	0.02	52.33	81.40	0.98	1.07	1.00	0.02
52.49	84.02	1.02	1.04	1.00	0.02	52.66	87.63	1.08	0.60	1.00	0.01
52.82	91.48	1.15	0.58	1.00	0.01	52.99	95.62	1.23	0.42	1.00	0.01
53.15	96.18	1.24	0.42	1.00	0.01	53.31	90.17	1.13	0.59	1.00	0.01
53.48	81.70	1.00	1.07	1.00	0.02	53.64	77.58	0.94	2.28	1.00	0.04
53.81	81.42	0.99	1.07	1.00	0.02	53.97	88.44	1.10	0.60	1.00	0.01
54.13	97.45	1.27	0.29	1.00	0.01	54.30	105.47	1.45	0.00	1.00	0.00
54.46	113.39	1.65	0.00	1.00	0.00	54.63	123.24	2.00	0.00	1.00	0.00
54.79	133.17	2.00	0.00	1.00	0.00	54.95	140.27	2.00	0.00	1.00	0.00
55.12	142.61	2.00	0.00	1.00	0.00	55.28	142.17	2.00	0.00	1.00	0.00
55.45	141.87	2.00	0.00	1.00	0.00	55.61	140.64	2.00	0.00	1.00	0.00
55.77	138.39	2.00	0.00	1.00	0.00	55.94	137.20	2.00	0.00	1.00	0.00
56.10	138.96	2.00	0.00	1.00	0.00	56.27	140.68	2.00	0.00	1.00	0.00
56.43	139.05	2.00	0.00	1.00	0.00	56.59	130.80	2.00	0.00	1.00	0.00
56.76	118.20	2.00	0.00	1.00	0.00	56.92	97.70	1.30	0.29	1.00	0.01
57.09	84.63	1.06	0.61	1.00	0.01	57.25	80.81	1.01	1.08	1.00	0.02
57.41	88.77	1.13	0.60	1.00	0.01	57.58	94.37	1.23	0.42	1.00	0.01
57.74	91.52	1.18	0.43	1.00	0.01	57.91	84.52	1.06	0.62	1.00	0.01
58.07	81.46	1.02	1.07	1.00	0.02	58.23	85.50	1.08	0.61	1.00	0.01
58.40	86.97	1.11	0.60	1.00	0.01	58.56	85.29	1.08	0.61	1.00	0.01
58.73	94.58	1.25	0.42	1.00	0.01	58.89	102.58	1.42	0.00	1.00	0.00
59.06	100.30	1.37	0.00	1.00	0.00	59.22	97.87	1.32	0.29	1.00	0.01
59.38	104.50	1.47	0.00	1.00	0.00	59.55	118.90	1.87	0.00	1.00	0.00
59.71	134.83	2.00	0.00	1.00	0.00	59.88	151.05	2.00	0.00	1.00	0.00
60.04	172.02	2.00	0.00	1.00	0.00	60.20	-1.00	2.00	0.00	1.00	0.00
60.37	-1.00	2.00	0.00	1.00	0.00	60.53	-1.00	2.00	0.00	1.00	0.00
60.70	-1.00	2.00	0.00	1.00	0.00						

Total estimated settlement: 0.59

Abbreviations

$Q_{tn,cs}$:	Equivalent clean sand normalized cone resistance
FS:	Factor of safety against liquefaction
e_v (%):	Post-liquefaction volumentric strain
DF:	e_v depth weighting factor
Settlement:	Calculated settlement

:: Strength loss calculation (Robertson (2009) ::

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
0.16	501.19	805.21	1.00	805.21	0.89	1.24	1.24
0.33	494.79	794.91	1.00	794.91	0.96	1.24	1.24
0.49	444.84	714.65	1.00	714.65	1.10	1.21	1.21
0.66	271.36	435.91	1.00	435.91	1.44	1.07	1.07
0.82	190.30	305.65	1.08	330.56	1.75	1.00	1.00
0.98	159.59	256.31	1.28	328.98	1.97	1.00	1.00
1.15	168.77	271.02	1.34	364.21	2.04	1.02	1.02
1.31	168.56	270.68	1.38	373.53	2.07	1.03	1.03
1.48	150.32	241.36	1.44	347.75	2.11	1.01	1.01
1.64	121.16	194.49	1.54	299.81	2.17	0.98	0.98
1.80	95.40	153.08	1.75	267.50	2.25	0.95	0.95
1.97	78.52	125.95	1.99	250.17	2.32	0.94	0.94
2.13	71.09	113.99	2.15	245.63	2.36	0.93	0.93
2.30	70.24	112.60	2.13	239.35	2.35	0.93	0.93
2.46	71.81	115.11	1.95	224.29	2.31	0.91	0.91
2.62	72.75	116.61	1.81	211.46	2.27	0.90	0.90
2.79	79.00	126.63	1.65	208.88	2.21	0.90	0.90
2.95	95.25	152.73	1.48	225.39	2.13	0.91	0.91
3.12	114.21	183.17	1.39	255.50	2.08	0.94	0.94
3.28	129.98	208.49	1.39	290.12	2.08	0.97	0.97
3.44	139.98	224.53	1.44	323.60	2.11	1.00	1.00
3.61	148.75	238.60	1.50	358.80	2.15	1.02	1.02
3.77	154.79	248.29	1.57	389.43	2.18	1.04	1.04
3.94	155.65	249.66	1.65	411.04	2.21	1.05	1.05
4.10	151.64	243.20	1.76	429.22	2.25	1.07	1.07
4.27	145.94	234.01	1.90	443.80	2.29	1.07	1.07
4.43	137.64	220.66	1.98	437.58	2.32	1.07	1.07
4.59	127.45	204.27	2.13	434.58	2.35	1.07	1.07
4.76	116.54	186.72	2.30	429.28	2.39	1.07	1.07
4.92	105.96	169.72	2.63	446.84	2.45	1.08	1.08
5.09	97.73	156.48	2.84	444.01	2.48	1.07	1.07
5.25	89.44	143.13	2.98	426.78	2.50	1.06	1.06
5.41	82.27	131.60	2.98	391.99	2.50	1.04	1.04
5.58	75.27	120.33	2.95	354.79	2.50	1.02	1.02
5.74	70.92	113.33	2.89	327.47	2.49	1.00	1.00
5.91	69.89	111.66	2.85	318.66	2.48	0.99	0.99
6.07	70.55	112.70	2.88	324.80	2.49	1.00	1.00
6.23	70.72	112.95	2.93	331.32	2.49	1.00	1.00
6.40	68.35	109.13	3.10	337.75	2.52	1.01	1.01
6.56	65.31	104.23	3.17	330.73	2.53	1.00	1.00
6.73	62.90	100.34	3.13	313.91	2.52	0.99	0.99
6.89	59.72	95.21	2.98	283.83	2.50	0.96	0.96
7.05	55.91	89.08	2.79	248.93	2.47	0.93	0.93
7.22	51.30	81.65	2.92	238.27	2.49	0.93	0.93
7.38	48.79	77.61	3.43	266.24	2.56	0.95	0.95
7.55	51.21	81.48	3.90	317.74	2.62	0.99	0.99
7.71	62.57	99.71	3.51	349.93	2.57	1.01	1.01
7.87	79.26	126.50	3.02	381.90	2.51	1.04	1.04

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
8.04	100.92	157.94	2.65	419.06	2.45	1.06	1.06
8.20	122.46	187.90	2.50	470.53	2.42	1.09	1.09
8.37	150.14	225.02	2.26	507.49	2.38	1.11	1.11
8.53	177.31	259.95	2.06	534.80	2.33	1.12	1.12
8.69	202.07	289.69	1.87	541.17	2.28	1.13	1.13
8.86	212.11	299.43	1.83	546.76	2.27	1.13	1.13
9.02	210.87	294.38	1.87	549.57	2.28	1.13	1.13
9.19	212.04	293.13	1.94	567.51	2.30	1.14	1.14
9.35	233.90	317.98	1.84	585.39	2.28	1.15	1.15
9.51	285.95	378.74	1.58	597.49	2.18	1.15	1.15
9.68	321.41	417.10	1.46	607.97	2.12	1.16	1.16
9.84	323.08	413.31	1.42	588.08	2.10	1.15	1.15
10.01	280.19	356.68	1.50	535.18	2.15	1.12	1.12
10.17	225.03	285.79	1.66	473.97	2.22	1.09	1.09
10.33	172.15	218.11	1.90	414.33	2.29	1.06	1.06
10.50	130.16	164.46	2.24	368.62	2.37	1.03	1.03
10.66	108.48	136.13	2.49	338.58	2.42	1.01	1.01
10.83	106.72	132.40	2.50	331.14	2.42	1.00	1.00
10.99	114.10	139.84	2.43	339.92	2.41	1.01	1.01
11.15	122.35	148.20	2.38	352.97	2.40	1.02	1.02
11.32	122.03	146.41	2.46	360.25	2.42	1.02	1.02
11.48	116.75	138.76	2.56	355.71	2.43	1.02	1.02
11.65	106.14	125.05	2.74	342.37	2.46	1.01	1.01
11.81	95.71	111.78	2.94	328.86	2.49	1.00	1.00
11.98	89.14	103.12	3.08	317.38	2.51	0.99	0.99
12.14	88.98	101.82	3.05	310.06	2.51	0.99	0.99
12.30	91.31	103.34	2.97	306.73	2.50	0.98	0.98
12.47	92.92	104.11	2.96	308.24	2.50	0.98	0.98
12.63	92.98	103.20	3.02	311.62	2.51	0.99	0.99
12.80	93.29	102.54	3.04	311.95	2.51	0.99	0.99
12.96	93.35	101.56	3.01	305.68	2.50	0.98	0.98
13.12	93.94	101.12	2.87	290.65	2.48	0.97	0.97
13.29	94.11	100.27	2.78	278.62	2.47	0.96	0.96
13.45	92.71	97.85	2.77	271.14	2.47	0.95	0.95
13.62	93.41	97.68	2.75	268.55	2.47	0.95	0.95
13.78	95.31	98.84	2.82	278.94	2.48	0.96	0.96
13.94	103.19	106.18	2.93	311.15	2.49	0.99	0.99
14.11	121.12	123.57	2.79	344.77	2.47	1.01	1.01
14.27	145.28	146.83	2.43	356.66	2.41	1.02	1.02
14.44	154.49	154.70	2.25	347.32	2.37	1.01	1.01
14.60	144.10	143.09	2.35	335.70	2.39	1.00	1.00
14.76	126.17	124.23	2.60	322.57	2.44	1.00	1.00
14.93	114.38	111.64	2.78	310.31	2.47	0.99	0.99
15.09	106.93	103.42	2.69	278.69	2.46	0.96	0.96
15.26	93.89	89.96	2.71	243.94	2.46	0.93	0.93
15.42	76.29	72.36	2.86	206.65	2.48	0.89	0.89
15.58	59.81	56.08	3.33	186.53	2.55	0.87	0.87
15.75	51.79	48.06	3.78	181.59	2.60	0.87	0.87

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
15.91	50.99	46.92	3.94	185.00	2.62	0.87	0.87
16.08	51.79	47.30	3.88	183.52	2.61	0.87	0.87
16.24	48.92	44.27	4.18	185.22	2.65	0.87	0.87
16.40	46.30	41.51	4.40	182.66	2.67	0.87	0.87
16.57	43.85	38.95	4.65	181.14	2.69	0.87	0.87
16.73	41.65	36.64	4.88	178.75	2.72	0.86	0.86
16.90	40.17	35.02	5.06	177.19	2.73	0.86	0.86
17.06	39.55	34.18	5.23	178.67	2.75	0.86	0.86
17.22	39.44	33.82	5.38	182.06	2.76	0.87	0.87
17.39	40.88	34.77	5.89	204.78	2.80	0.89	0.89
17.55	42.43	35.82	6.22	222.65	2.83	0.91	0.91
17.72	45.41	38.12	6.04	230.26	2.81	0.92	0.92
17.88	48.79	40.81	5.22	213.14	2.75	0.90	0.90
18.04	49.59	41.25	4.80	197.95	2.71	0.88	0.88
18.21	48.92	40.41	4.62	186.89	2.69	0.87	0.87
18.37	45.96	37.60	4.84	181.90	2.71	0.87	0.87
18.54	43.20	34.99	5.11	178.96	2.74	0.86	0.86
18.70	41.93	33.63	5.54	186.21	2.77	0.87	0.87
18.86	43.99	35.04	5.78	202.61	2.79	0.89	0.89
19.03	49.82	39.60	5.39	213.64	2.76	0.90	0.90
19.19	54.30	43.06	4.85	208.71	2.71	0.90	0.90
19.36	53.65	42.31	4.56	193.06	2.69	0.88	0.88
19.52	48.83	37.98	5.35	203.34	2.76	0.89	0.89
19.69	48.59	37.36	6.25	233.58	2.83	0.92	0.92
19.85	58.27	44.78	5.80	259.76	2.80	0.94	0.94
20.01	70.46	54.36	4.63	251.71	2.69	0.94	0.94
20.18	73.08	56.27	4.06	228.72	2.63	0.92	0.92
20.34	64.83	49.45	4.11	203.45	2.64	0.89	0.89
20.51	52.68	39.54	4.79	189.38	2.71	0.88	0.88
20.67	44.96	33.23	5.42	180.15	2.76	0.86	0.86
20.83	41.24	30.11	5.87	176.85	2.80	0.86	0.86
21.00	40.42	29.28	5.94	173.86	2.81	0.86	0.86
21.16	40.20	28.93	5.92	171.12	2.81	0.85	0.85
21.33	38.50	27.39	6.45	176.59	2.85	0.86	0.86
21.49	37.03	26.05	6.93	180.58	2.88	0.87	0.87
21.65	35.93	25.02	7.31	182.97	2.91	0.87	0.87
21.82	37.40	26.03	6.66	173.35	2.86	0.86	0.86
21.98	37.74	26.13	6.49	169.66	2.85	0.85	0.85
22.15	40.70	28.11	6.37	179.10	2.84	0.86	0.86
22.31	45.08	31.03	6.46	200.48	2.85	0.89	0.89
22.47	53.84	37.18	5.91	219.69	2.80	0.91	0.91
22.64	62.34	43.15	5.36	231.27	2.76	0.92	0.92
22.80	66.97	46.27	5.08	234.87	2.73	0.92	0.92
22.97	66.12	45.33	5.20	235.90	2.75	0.92	0.92
23.13	61.57	41.74	5.59	233.52	2.78	0.92	0.92
23.29	58.24	39.08	5.86	228.95	2.80	0.92	0.92
23.46	56.97	38.00	5.80	220.32	2.80	0.91	0.91
23.62	56.01	37.16	5.68	211.10	2.79	0.90	0.90

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
23.79	51.44	33.75	5.97	201.55	2.81	0.89	0.89
23.95	45.20	29.17	6.67	194.51	2.86	0.88	0.88
24.11	39.64	25.16	7.30	183.63	2.91	0.87	0.87
24.28	35.68	22.35	7.64	170.81	2.93	0.85	0.85
24.44	31.52	18.60	8.44	156.98	2.98	0.84	0.84
24.61	27.02	15.70	10.03	157.43	3.07	1.14	1.12
24.77	26.95	15.55	10.83	168.38	3.11	1.30	1.11
24.93	34.97	20.35	9.06	184.30	3.02	1.63	1.45
25.10	47.88	29.65	7.01	207.79	2.89	0.90	0.90
25.26	60.91	38.16	6.01	229.18	2.81	0.92	0.92
25.43	69.64	43.74	5.58	244.20	2.78	0.93	0.93
25.59	74.99	47.11	5.24	246.96	2.75	0.93	0.93
25.75	75.84	47.54	5.00	237.47	2.73	0.92	0.92
25.92	71.95	44.79	5.01	224.61	2.73	0.91	0.91
26.08	65.46	40.25	5.37	216.30	2.76	0.90	0.90
26.25	60.36	36.66	5.75	210.92	2.79	0.90	0.90
26.41	56.80	34.14	6.02	205.49	2.81	0.89	0.89
26.57	54.12	32.26	6.22	200.78	2.83	0.89	0.89
26.74	52.95	31.37	6.45	202.49	2.85	0.89	0.89
26.90	53.85	31.78	6.59	209.33	2.86	0.90	0.90
27.07	53.92	31.71	6.66	211.20	2.86	0.90	0.90
27.23	54.03	31.71	6.57	208.47	2.86	0.90	0.90
27.40	52.15	30.40	6.82	207.44	2.87	0.89	0.89
27.56	51.38	29.67	7.36	218.45	2.91	0.91	0.91
27.72	50.45	27.29	8.11	221.19	2.96	0.91	0.91
27.89	50.61	27.29	8.14	222.24	2.96	0.91	0.91
28.05	50.91	29.14	7.34	213.78	2.91	0.90	0.90
28.22	47.28	26.84	7.56	203.02	2.92	0.89	0.89
28.38	43.32	22.98	8.24	189.32	2.97	0.88	0.88
28.54	39.73	20.92	8.95	187.25	3.01	1.77	1.49
28.71	38.54	20.20	9.12	184.14	3.02	1.78	1.44
28.87	37.06	19.33	9.31	179.96	3.03	1.69	1.38
29.04	33.87	17.52	9.70	169.93	3.05	1.50	1.25
29.20	29.49	15.07	10.39	156.51	3.09	1.17	1.08
29.36	24.74	12.43	11.70	145.50	3.15	0.93	0.89
29.53	21.63	10.71	13.75	147.16	3.24	0.89	0.76
29.69	21.15	10.41	15.02	156.45	3.29	1.15	0.74
29.86	22.97	11.36	14.94	169.72	3.29	1.30	0.81
30.02	29.12	14.64	12.06	176.52	3.17	1.52	1.05
30.18	34.88	17.69	10.06	178.09	3.07	1.64	1.26
30.35	37.86	19.24	9.00	173.12	3.01	1.58	1.37
30.51	35.73	18.04	9.41	169.67	3.04	1.40	1.29
30.68	32.38	16.20	10.47	169.56	3.09	1.39	1.16
30.84	31.56	15.71	10.98	172.60	3.12	1.44	1.12
31.00	31.44	15.60	11.19	174.59	3.13	1.50	1.11
31.17	31.66	15.66	11.05	173.03	3.12	1.48	1.12
31.33	30.29	14.90	11.49	171.11	3.14	1.38	1.06
31.50	28.10	13.70	12.42	170.16	3.19	1.36	0.98

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
31.66	27.20	13.18	13.10	172.66	3.22	1.36	0.94
31.82	28.39	13.77	12.61	173.52	3.19	1.46	0.98
31.99	31.60	15.40	11.07	170.52	3.12	1.43	1.10
32.15	37.24	18.29	8.82	161.29	3.00	1.32	1.31
32.32	41.15	21.79	7.24	157.73	2.90	0.84	0.84
32.48	42.61	22.67	6.79	154.03	2.87	0.83	0.83
32.64	39.19	19.13	7.99	152.85	2.95	0.83	0.83
32.81	34.64	16.74	9.34	156.28	3.03	1.23	1.20
32.97	30.31	14.46	11.05	159.85	3.12	1.23	1.03
33.14	27.21	12.83	12.53	160.78	3.19	1.22	0.92
33.30	25.82	12.08	13.27	160.37	3.22	1.18	0.86
33.46	24.96	11.61	13.72	159.27	3.24	1.17	0.83
33.63	24.00	11.09	14.30	158.56	3.27	1.15	0.79
33.79	23.46	10.78	14.69	158.34	3.28	1.12	0.77
33.96	23.24	10.64	14.86	158.08	3.29	1.15	0.76
34.12	23.63	10.80	14.64	158.13	3.28	1.13	0.77
34.28	23.83	10.87	14.46	157.18	3.27	1.13	0.78
34.45	24.26	11.05	14.28	157.84	3.26	1.11	0.79
34.61	24.11	10.95	14.40	157.63	3.27	1.16	0.78
34.78	23.08	10.40	15.16	157.70	3.30	1.12	0.74
34.94	23.07	10.36	15.10	156.44	3.30	1.09	0.74
35.10	23.41	10.50	14.86	156.08	3.29	1.11	0.75
35.27	24.44	10.98	14.28	156.78	3.26	1.11	0.78
35.43	24.47	10.97	14.42	158.16	3.27	1.14	0.78
35.60	24.50	10.94	14.66	160.51	3.28	1.16	0.78
35.76	25.04	11.18	14.45	161.48	3.27	1.20	0.80
35.93	26.23	11.73	13.95	163.72	3.25	1.19	0.84
36.09	27.76	12.45	13.40	166.87	3.23	1.28	0.89
36.25	29.67	13.35	12.88	171.91	3.21	1.38	0.95
36.42	32.08	14.48	12.13	175.60	3.17	1.46	1.03
36.58	35.19	15.95	11.11	177.17	3.12	1.52	1.14
36.75	37.88	17.21	10.45	179.77	3.09	1.54	1.23
36.91	38.84	17.62	10.40	183.31	3.09	1.67	1.26
37.07	40.26	18.25	10.29	187.85	3.08	1.71	1.30
37.24	40.38	18.26	10.51	192.01	3.09	1.80	1.30
37.40	42.91	19.42	9.99	194.09	3.07	1.87	1.39
37.57	46.02	20.85	9.23	192.54	3.03	1.90	1.49
37.73	48.36	21.91	8.61	188.77	2.99	0.87	0.87
37.89	48.01	21.68	8.41	182.35	2.98	0.87	0.87
38.06	44.52	19.97	8.83	176.25	3.00	1.57	1.43
38.22	42.24	18.83	8.87	166.99	3.00	1.41	1.35
38.39	41.36	18.36	8.68	159.45	2.99	0.84	0.84
38.55	42.71	18.95	8.15	154.49	2.96	0.83	0.83
38.71	46.60	22.64	6.95	157.47	2.88	0.84	0.84
38.88	52.88	26.13	6.15	160.64	2.82	0.84	0.84
39.04	56.57	28.06	5.98	167.77	2.81	0.85	0.85
39.21	58.54	28.97	6.06	175.55	2.82	0.86	0.86
39.37	57.60	28.16	6.63	186.61	2.86	0.87	0.87

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
39.53	57.31	27.62	7.42	204.94	2.91	0.89	0.89
39.70	58.43	25.86	8.24	213.12	2.97	0.90	0.90
39.86	60.23	26.62	8.14	216.78	2.96	0.90	0.90
40.03	61.21	29.50	7.11	209.69	2.89	0.90	0.90
40.19	57.41	27.54	7.06	194.49	2.89	0.88	0.88
40.35	51.23	22.28	7.97	177.63	2.95	0.86	0.86
40.52	45.71	19.70	8.88	174.97	3.01	1.53	1.41
40.68	42.43	18.15	9.59	174.08	3.05	1.49	1.30
40.85	40.76	17.34	10.14	175.85	3.08	1.47	1.24
41.01	40.49	17.17	10.53	180.79	3.10	1.55	1.23
41.17	41.58	17.61	10.59	186.48	3.10	1.71	1.26
41.34	43.09	18.25	10.44	190.45	3.09	1.78	1.30
41.50	43.61	18.43	10.22	188.34	3.08	1.79	1.32
41.67	43.38	18.28	10.47	191.33	3.09	1.62	1.31
41.83	42.58	17.87	10.95	195.76	3.12	1.91	1.28
41.99	44.48	18.67	11.09	207.17	3.12	1.98	1.33
42.16	49.84	21.01	10.22	214.71	3.08	2.26	1.50
42.32	54.44	23.00	9.62	221.25	3.05	2.49	1.64
42.49	59.26	25.08	8.86	222.14	3.00	2.50	1.79
42.65	62.18	26.30	8.29	218.04	2.97	0.91	0.91
42.81	66.58	30.96	7.08	219.25	2.89	0.91	0.91
42.98	67.48	31.44	6.85	215.42	2.88	0.90	0.90
43.14	69.97	32.77	6.49	212.63	2.85	0.90	0.90
43.31	72.66	34.28	6.02	206.28	2.81	0.89	0.89
43.47	75.70	36.16	5.37	194.00	2.76	0.88	0.88
43.64	74.55	35.77	5.01	179.26	2.73	0.86	0.86
43.80	71.52	34.28	4.88	167.20	2.72	0.85	0.85
43.96	68.30	32.49	5.04	163.69	2.73	0.84	0.84
44.13	63.09	29.41	5.76	169.53	2.79	0.85	0.85
44.29	60.23	27.61	6.42	177.10	2.84	0.86	0.86
44.46	60.28	27.61	6.33	174.81	2.84	0.86	0.86
44.62	63.08	29.27	5.67	166.00	2.79	0.85	0.85
44.78	64.61	30.35	5.02	152.46	2.73	0.83	0.83
44.95	63.91	30.23	4.58	138.60	2.69	0.81	0.81
45.11	64.03	30.75	3.90	120.07	2.62	0.78	0.78
45.28	65.18	31.79	3.33	105.93	2.55	0.76	0.76
45.44	68.61	33.90	2.96	100.21	2.50	0.75	0.75
45.60	73.13	36.07	3.03	109.35	2.51	0.76	0.76
45.77	76.47	37.33	3.35	125.02	2.55	0.79	0.79
45.93	74.59	35.50	4.15	147.24	2.64	0.82	0.82
46.10	68.06	31.37	5.27	165.33	2.75	0.85	0.85
46.26	61.62	27.59	6.36	175.46	2.84	0.86	0.86
46.42	59.27	26.25	6.74	176.91	2.87	0.86	0.86
46.59	60.60	26.93	6.49	174.75	2.85	0.86	0.86
46.75	62.01	27.70	6.19	171.38	2.83	0.85	0.85
46.92	66.85	30.31	5.52	167.29	2.77	0.85	0.85
47.08	74.34	34.37	4.75	163.35	2.70	0.84	0.84
47.24	77.32	35.72	4.76	170.05	2.71	0.85	0.85

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
47.41	70.15	31.53	5.75	181.17	2.79	0.87	0.87
47.57	56.64	22.11	8.33	184.19	2.97	0.87	0.87
47.74	46.65	17.94	10.37	186.05	3.09	1.64	1.28
47.90	41.03	15.58	11.97	186.56	3.17	1.59	1.11
48.06	39.04	14.73	12.89	189.86	3.21	1.63	1.05
48.23	39.56	14.90	13.07	194.73	3.21	1.74	1.06
48.39	42.61	16.11	12.34	198.89	3.18	1.84	1.15
48.56	47.92	18.23	11.06	201.61	3.12	1.92	1.30
48.72	53.01	20.25	10.08	204.16	3.07	2.02	1.45
48.88	56.33	21.55	9.59	206.66	3.05	2.12	1.54
49.05	56.80	21.69	9.60	208.25	3.05	2.15	1.55
49.21	55.89	21.27	9.71	206.48	3.05	2.12	1.52
49.38	55.14	20.91	9.57	200.04	3.04	1.99	1.49
49.54	55.84	21.14	8.67	183.40	2.99	0.87	0.87
49.70	58.50	24.73	6.88	170.17	2.88	0.85	0.85
49.87	63.61	27.93	5.17	144.52	2.74	0.82	0.82
50.03	69.27	31.47	3.93	123.68	2.62	0.79	0.79
50.20	73.40	34.28	3.10	106.37	2.52	0.76	0.76
50.36	75.70	35.86	2.73	97.94	2.46	0.74	0.74
50.52	77.13	36.78	2.56	94.15	2.43	0.74	0.74
50.69	79.31	38.12	2.38	90.69	2.40	0.73	0.73
50.85	81.39	39.46	2.20	87.01	2.37	0.72	0.72
51.02	81.77	39.92	2.07	82.43	2.34	0.71	0.71
51.18	80.75	39.45	2.02	79.77	2.32	0.57	0.71
51.35	80.96	39.64	1.97	77.96	2.31	0.49	0.70
51.51	82.24	40.23	1.97	79.21	2.31	0.55	0.71
51.67	84.09	41.22	1.93	79.54	2.30	0.56	0.71
51.84	85.56	42.00	1.90	79.84	2.29	0.58	0.71
52.00	87.72	43.22	1.84	79.68	2.28	0.57	0.71
52.17	89.80	44.36	1.80	80.03	2.27	0.59	0.71
52.33	90.98	44.87	1.81	81.40	2.27	0.66	0.71
52.49	92.00	45.16	1.86	84.02	2.28	0.72	0.72
52.66	92.14	44.86	1.95	87.63	2.31	0.72	0.72
52.82	89.46	42.95	2.13	91.48	2.35	0.73	0.73
52.99	83.89	39.47	2.42	95.62	2.41	0.74	0.74
53.15	78.41	36.34	2.65	96.18	2.45	0.74	0.74
53.31	77.99	36.36	2.48	90.17	2.42	0.73	0.73
53.48	82.13	39.16	2.09	81.70	2.34	0.67	0.71
53.64	87.00	42.26	1.84	77.58	2.28	0.48	0.70
53.81	88.42	42.68	1.91	81.42	2.30	0.66	0.71
53.97	85.63	40.48	2.18	88.44	2.36	0.73	0.73
54.13	81.89	37.80	2.58	97.45	2.44	0.74	0.74
54.30	78.46	35.48	2.97	105.47	2.50	0.76	0.76
54.46	75.58	33.55	3.38	113.39	2.55	0.77	0.77
54.63	71.86	31.17	3.95	123.24	2.62	0.79	0.79
54.79	67.28	28.44	4.68	133.17	2.70	0.80	0.80
54.95	63.74	26.39	5.32	140.27	2.76	0.81	0.81
55.12	61.87	25.34	5.63	142.61	2.78	0.82	0.82

:: Strength loss calculation (Robertson (2009) :: (continued)

Depth (ft)	q_t (tsf)	Q_{tn}	K_c	$Q_{tn,cs}$	I_c	$S_{u(liq)}/\sigma'_v$	$S_{u(peak)}/\sigma'_v$
55.28	61.87	25.29	5.62	142.17	2.78	0.82	0.82
55.45	62.27	25.44	5.58	141.87	2.78	0.82	0.82
55.61	63.27	25.92	5.43	140.64	2.76	0.81	0.81
55.77	63.56	26.08	5.31	138.39	2.75	0.81	0.81
55.94	62.59	25.57	5.37	137.20	2.76	0.81	0.81
56.10	60.40	24.38	5.70	138.96	2.79	0.81	0.81
56.27	58.53	23.37	6.02	140.68	2.81	0.81	0.81
56.43	58.56	23.37	5.95	139.05	2.81	0.81	0.81
56.59	60.63	24.57	5.32	130.80	2.76	0.80	0.80
56.76	63.16	26.15	4.52	118.20	2.68	0.78	0.78
56.92	67.29	28.95	3.37	97.70	2.55	0.74	0.74
57.09	71.57	31.76	2.66	84.63	2.45	0.72	0.72
57.25	75.11	33.83	2.39	80.81	2.40	0.62	0.71
57.41	75.59	33.57	2.64	88.77	2.45	0.73	0.73
57.58	74.27	32.53	2.90	94.37	2.49	0.74	0.74
57.74	74.41	32.69	2.80	91.52	2.47	0.73	0.73
57.91	77.49	34.66	2.44	84.52	2.41	0.72	0.72
58.07	81.41	36.94	2.21	81.46	2.37	0.66	0.71
58.23	85.78	38.99	2.19	85.50	2.36	0.72	0.72
58.40	92.69	42.63	2.04	86.97	2.33	0.72	0.72
58.56	113.93	55.21	1.54	85.29	2.17	0.72	0.72
58.73	142.23	73.21	1.29	94.58	1.98	0.74	0.74
58.89	156.58	82.22	1.25	102.58	1.92	0.75	0.75
59.06	149.92	76.61	1.31	100.30	2.00	0.75	0.75
59.22	140.13	69.56	1.41	97.87	2.09	0.74	0.74
59.38	152.65	76.60	1.36	104.50	2.06	0.76	0.76
59.55	178.23	91.39	1.30	118.90	1.99	0.78	0.78
59.71	203.01	104.85	1.29	134.83	1.97	0.81	0.81
59.88	227.29	117.51	1.29	151.05	1.97	0.83	0.83
60.04	262.22	138.04	1.25	172.02	1.91	0.86	0.86
60.20	310.90	-1.00	1.00	-1.00	-1.00	0.00	0.00
60.37	371.99	-1.00	1.00	-1.00	-1.00	0.00	0.00
60.53	477.63	-1.00	1.00	-1.00	-1.00	0.00	0.00
60.70	565.02	-1.00	1.00	-1.00	-1.00	0.00	0.00

Abbreviations

q_t: Total cone resistance
K_c: Cone resistance correction factor due to fines
$Q_{tn,cs}$: Adjusted and corrected cone resistance due to fines
I_c: Soil behavior type index
$S_{u(liq)}/\sigma'_v$: Calculated liquefied undrained strength ratio
$S_{u(peak)}/\sigma'_v$: Calculated peak undrained strength ratio

U.S. Geological Survey - Earthquake Hazards Program

Unified Hazard Tool

Please do not use this tool to obtain ground motion parameter values for the design code reference documents covered by the U.S. Seismic Design Maps web tools (e.g., the International Building Code and the ASCE 7 or 41 Standard). The values returned by the two applications are not identical.

Please also see the new USGS Earthquake Hazard Toolbox for access to the most recent NSHMs for the conterminous U.S. and Hawaii.

Input

Edition

Dynamic: Conterminous U.S. 2014 (update…

Spectral Period

Peak Ground Acceleration

Latitude

Decimal degrees

38.533

Time Horizon

Return period in years

2475

Longitude

Decimal degrees, negative values for western longitudes

-121.4781

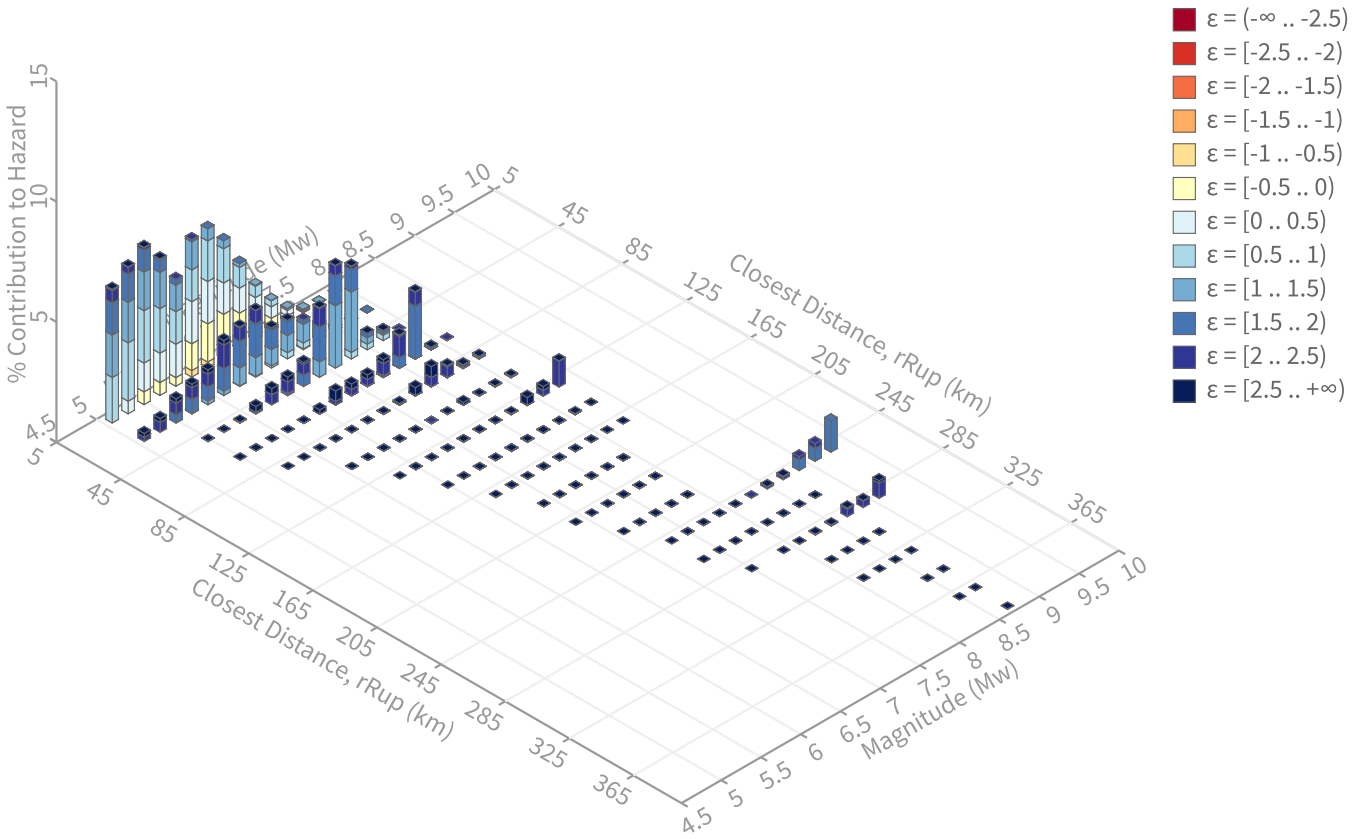
Site Class

360 m/s (C/D boundary)

Deaggregation

Component

Total



Summary statistics for, Deaggregation: Total

Deaggregation targets

Return period: 2475 yrs
Exceedance rate: 0.0004040404 yr^{-1}
PGA ground motion: 0.32459258 g

Recovered targets

Return period: 2782.8576 yrs
Exceedance rate: 0.00035934286 yr^{-1}

Totals

Binned: 100 %
Residual: 0 %
Trace: 0.4 %

Mean (over all sources)

m: 6.48
r: 38.27 km
ε_0: 1.22 σ

Mode (largest m-r bin)

m: 5.5
r: 10.96 km
ε_0: 0.89 σ
Contribution: 6.53 %

Mode (largest m-r-ε_0 bin)

m: 7.12
r: 47.83 km
ε_0: 1.3 σ
Contribution: 2.59 %

Discretization

r: min = 0.0, max = 1000.0, Δ = 20.0 km
m: min = 4.4, max = 9.4, Δ = 0.2
ε: min = -3.0, max = 3.0, Δ = 0.5 σ

Epsilon keys

ε0: [-∞ .. -2.5)
ε1: [-2.5 .. -2.0)
ε2: [-2.0 .. -1.5)
ε3: [-1.5 .. -1.0)
ε4: [-1.0 .. -0.5)
ε5: [-0.5 .. 0.0)
ε6: [0.0 .. 0.5)
ε7: [0.5 .. 1.0)
ε8: [1.0 .. 1.5)
ε9: [1.5 .. 2.0)
ε10: [2.0 .. 2.5)
ε11: [2.5 .. +∞]

Deaggregation Contributors

Source Set ↳ Source	Type	r	m	ε_0	lon	lat	az	%
UC33brAvg_FM32 (opt)	Grid							33.65
PointSourceFinite: -121.478, 38.600		8.60	5.78	0.47	121.478°W	38.600°N	0.00	3.07
PointSourceFinite: -121.478, 38.600		8.60	5.78	0.47	121.478°W	38.600°N	0.00	3.05
PointSourceFinite: -121.478, 38.573		6.69	5.69	0.23	121.478°W	38.573°N	0.00	2.77
PointSourceFinite: -121.478, 38.573		6.69	5.69	0.23	121.478°W	38.573°N	0.00	2.76
PointSourceFinite: -121.478, 38.636		11.40	5.91	0.75	121.478°W	38.636°N	0.00	1.36
PointSourceFinite: -121.478, 38.636		11.40	5.91	0.75	121.478°W	38.636°N	0.00	1.36
UC33brAvg_FM31 (opt)	Grid							33.45
PointSourceFinite: -121.478, 38.600		8.60	5.78	0.47	121.478°W	38.600°N	0.00	3.07
PointSourceFinite: -121.478, 38.600		8.60	5.78	0.47	121.478°W	38.600°N	0.00	3.05
PointSourceFinite: -121.478, 38.573		6.69	5.69	0.23	121.478°W	38.573°N	0.00	2.77
PointSourceFinite: -121.478, 38.573		6.69	5.69	0.23	121.478°W	38.573°N	0.00	2.77
PointSourceFinite: -121.478, 38.636		11.40	5.91	0.75	121.478°W	38.636°N	0.00	1.36
PointSourceFinite: -121.478, 38.636		11.40	5.91	0.75	121.478°W	38.636°N	0.00	1.36
UC33brAvg_FM31	System							14.84
Great Valley 04a Trout Creek [2]		47.52	7.11	1.46	122.013°W	38.526°N	269.26	4.34
Hunting Creek - Berryessa [0]		66.27	7.45	2.06	122.223°W	38.415°N	258.83	1.65
Great Valley 06 (Midland) alt1 [0]		33.07	6.85	1.62	121.814°W	38.396°N	242.55	1.57
UC33brAvg_FM32	System							13.57
Great Valley 04a Trout Creek [2]		47.52	7.22	1.35	122.013°W	38.526°N	269.26	4.55
Hunting Creek - Berryessa [0]		66.27	7.46	2.05	122.223°W	38.415°N	258.83	1.60
sub0_ch_bot.in	Interface							2.47
Cascadia Megathrust - whole CSZ Characteristic		245.33	9.15	1.88	122.945°W	40.376°N	328.89	2.47
sub0_ch_mid.in	Interface							1.07
Cascadia Megathrust - whole CSZ Characteristic		286.90	8.96	2.25	123.829°W	40.347°N	315.72	1.07

ENTEK
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HAZARDOUS MATERIALS SURVEY
FINAL REPORT

OWNER/CLIENT

Sacramento City Unified School District
425 1st Avenue
Sacramento, CA 95818

CONTACT

Mr. Chris Ralston, Director III
Facilities Management, Maintenance & Operations, and Resource Management

SURVEY ADDRESS

Ethel Phillips Elementary School
2930 21st Avenue
Sacramento, CA 95820

BUILDING(S) SURVEYED

Full Campus Survey
Campus Renewal Project

PREPARED BY

Jose Hernandez
CAC #22-6995 & CDPH I/A #10754
Entek Consulting Group, Inc.
4200 Rocklin Road, Suite 7
Rocklin, CA 95677

Entek Project #24-7284

September 16, 2024

ENTEK

TABLE OF CONTENTS

Executive Summary

The United States Environmental Protection Agency, National Emission Standards for Hazardous Air Pollutants (US EPA NESHAP), 40 CFR Part 61 - Nov. 20, 1990, requires an owner or operator of a demolition or renovation project to thoroughly inspect the affected facility or part of the facility where the demolition or renovation operation will occur for the presence of asbestos-containing materials (ACM) prior to the commencement of that project.

This inspection report was requested by Mr. Anthony Lea, Facilities Project Technician with the Sacramento City Unified School District (SCUSD) on behalf of Mr. Chris Ralston, Director III with the SCUSD.

The purpose of the inspection was to comply with US EPA NESHAP requirements and the Sacramento Metropolitan Air Quality Management District (SMAQMD) which has jurisdiction for this project site to determine if asbestos containing materials are present which may be impacted during an upcoming Modernization Project, which will include renovation of 11 buildings at Ethel Phillips Elementary School located at 2930 21st Avenue in Sacramento, California.

Paints, coatings, and glazed ceramic tiles were also tested for lead content for compliance with Cal/OSHA lead in construction regulations.

The attached drawings show approximate sample locations and also identify those bulk sample materials analyzed and found to contain asbestos greater than 1% with a (+) after the sample number. Materials analyzed and found to contain less than 1% asbestos or reported as none detected have a (-) after each sample number.

Contractors and other individuals who view the sample locations and associated results indicated with either a (-) or a (+) on the drawings to make determinations take the risk of misidentifying a material and may arrive at determinations which are in direct conflict with the written findings of this report. This use of the drawings and the information provided on it relating to individual sample results in determining if a material does or does not contain asbestos is not recommended.

This is a summary of the report. The report must be read in its entirety, and the reader must review all the detailed information provided in the body of the report prior to making any interpretations, or conclusions pertaining to the information. Any conclusions made by the reader about the information provided in the body of this report which are contradictory or not included in this report are the responsibility of the reader.

Asbestos

From August 5, 2024 to August 7, 2024, Entek conducted a survey specific to areas designated by the Owner which included all interior and exterior areas of all buildings at the Ethel Phillips Elementary School campus.

The results of testing for asbestos during this survey indicate asbestos is present in multiple materials throughout the campus. A quick summary is detailed in the following bullet points, with specifics pertaining to individual materials found in later sections of this report.

Materials Found to Contain Asbestos:

Throughout Campus

- Exterior Stucco - All buildings where found
- Window glazing putty - All buildings at windows where found
- Asbestos cement “transite” water or drain pipe - Assumed to exist below surface grade where found
- Hydronic pipe insulation - Assumed to exist on abandoned hot water pipes from old central boiler system in ceiling or wall cavities or below surface grade where found
- Metal door insulation - Assumed to exist in doors at old boiler rooms/mechanical spaces
- Roofing debris - Assumed to exist throughout attic & ceiling joist spaces NO ATTIC ACCESS WAS FOUND - ADDITIONAL INVESTIGATION SHOULD BE MADE IF CEILINGS WILL BE REMOVED DURING PROJECT
- White coated penetration mastic - Throughout roof penetrations on permanent buildings where found

MPR/Office Building

- Black 9" vinyl floor tile and black mastic – MPR Building, Room A-1 and adjacent storage rooms where found
- Dark green mottled 9" vinyl floor tile and black mastic – MPR Building, Room A-1 and adjacent storage rooms where found
- Gray-green streaked 9" vinyl floor tile and black mastic – MPR Building, Room A-1 and adjacent storage rooms where found
- Pink streaked 9" vinyl floor tile and black mastic – MPR Building, Room A-1 and adjacent storage rooms where found
- Tan mottled 9" vinyl floor tile and black mastic – MPR Building, Room A-1 and adjacent storage rooms where found
- Light gray mottled 12" vinyl floor tile and black mastic – MPR Building, south entry foyer where found
- Cementitious texture plaster - MPR Building, Room A-1 and Stage where found
- Drywall and joint compound - Throughout MPR building behind glue-on ceiling tiles where found
- Brown mottled 12" vinyl floor tile and black mastic – MPR Building, Mail Room and Southwest Room where found
- Black mastic associated with Brown square pattern sheet vinyl flooring with paper backing and tan mastic - Office Building, Manager’s Office Restroom
- Rough textured plaster - Hallway between MPR and Office Buildings where found
- Gray-black roof curb/penetration mastic - Office Building Roof, at HVAC curbs

Kindergarten Building

- Black mastic associated with brown mottled 12" vinyl floor tile - Throughout Kindergarten Building where found
- Black mastic associated with Gray sheet vinyl flooring - Kindergarten Building

restroom

Building with Rooms B2-B7

- Black mastic associated with beige mottled 12" vinyl floor tile - Classroom B4
- Green vinyl floor tile sublayer and black mastic associated with Gray with multi-colored specks sheet vinyl flooring and yellow mastic - Classroom B4
- Black/yellow carpet mastic – Classrooms B3-B7, beneath carpet
- Black mastic associated with brown mottled 12" vinyl floor tile - Classroom B3, & B5-B7

Building with Classrooms C-2 - C-5

- Black mastic associated with gray mottled 12" vinyl floor tile - Classroom C-2 where found
- Black mastic associated with brown mottled 12" vinyl floor tile - Classrooms C-3 & C-4 where found
- Black/yellow carpet mastic – Classrooms C-5 where found

Building with Classrooms C-6 - C-10

- Blue-green streaked 9" vinyl floor tile and black mastic – Classroom C-6 where found
- Light green with tan streaks 9" vinyl floor tile and black mastic – Classroom C-6 where found
- Dark green with tan streaks 9" vinyl floor tile and black mastic – Classroom C-6 where found
- Black mastic associated with brown mottled 12" vinyl floor tile - Classrooms C-8 - C-10 where found
- Black mastic associated with tan mottled 12" vinyl floor tile - Classroom C-7 where found
- Black mastic associated with gray mottled 12" vinyl floor tile - Classroom C-9 where found

Building with Classrooms D-1 - D-8

- Black/yellow carpet mastic – Throughout building, beneath the carpet where found
- Tan with brown streaks 12" vinyl floor tile and black mastic – Classroom D-1 where found
- Black 9" vinyl floor tile and black mastic – Classroom D-1 Closet where found
- Black mastic associated with brown mottled 12" vinyl floor tile - Classroom D-2 where found
- Black mastic associated with tan mottled 12" vinyl floor tile - Classroom D-3 where found

Portables B8-B10

- Metal roof mastic - At roof seams, holes, and edges

Portable C11

- Tan vinyl floor tile sublayer associated with gray mottled 12" vinyl floor tile and yellow mastic and leveling compound - Throughout floors where found
- Brown streaked 9" vinyl floor tile and black mastic – North and South closets
- Drywall and joint compound - Throughout building and assumed behind glued on

ceiling tiles where found

Lead

Entek investigated existing paints and applied coatings to determine if lead was present in these materials. The materials detailed in the following list were all found or assumed to contain more than 5,000 parts per million (ppm) lead and are classified as lead-based paint (LBP). If more than 100 square feet of these materials are impacted by a "trigger task", prior notification to Cal/OSHA will be required.

- Ceramic glazing - 6" Red ceramic wall base tile associated with the old locker rooms inside the MPR building
- Green colored paint - Interior wood door trim/components associated with the Laundry Room inside the MPR Building
- Blue colored paint - Interior wood doors - MPR Building where found
- White colored paint - Interior wood door frames - Office Building where found
- Blue colored paint - Exterior wood door/door frames associated with the permanent building throughout campus
- Beige colored paint - Exterior wood support beams associated with covered walkways throughout campus
- Blue colored paint - Metal round support columns associated with covered walkways throughout campus

The materials detailed in the following list were all found or assumed to contain lead in amounts less than 5,000 ppm and are classified as lead containing paint (LCP). Any work designated by California Occupational Safety Health Administration (Cal/OSHA) as a "trigger task" which will impact these paints, coatings, or materials must be done by properly trained personnel, in compliance with all lead related Cal/OSHA regulations and requirements.

- White colored paint - Interior plaster walls - MPR/Office Building where found
- Tan colored paint - Interior wood door frames - MPR/Office Building where found
- Tan colored paint - Interior wood doors - MPR/Office Building where found
- Light yellow colored paint - Interior drywall walls - Office Building, Nurse Office where found
- Tan colored paint - Interior wood cabinets/wooden components - Kindergarten Building where found
- Blue colored paint - Interior metal doors - Kindergarten Building where found
- Green colored paint - Interior plaster/stucco walls - Hallway between MPR and Office Buildings where found
- Beige colored paint - Interior rough textured plaster walls - Hallway between Office and MPR Buildings where found
- Teal colored paint - Interior wood wall panels - Office Building, Principal's Office
- Beige colored paint - Exterior concrete walls associated with the permanent building throughout campus
- Blue colored paint - Exterior wooden components associated with the CCTV Shed
- Beige colored paint - Exterior wood siding associated with the CCTV Shed

All other paints and materials were determined not to contain lead above the analysis method detection limits of 39-97 ppm.

Other Hazardous Materials

Entek did not specifically inspect for mercury containing fluorescent light tubes or light ballasts which may contain polychlorinated biphenyls (PCBs) or equipment or systems which may contain Freon or other fluorocarbons. However, due to the age of the school, information pertaining to these materials is included in this report for your use and reference.

Introduction

This report presents results of an asbestos and lead survey performed by Entek which included all accessible interior and exterior areas of all buildings for an upcoming campus renewal project at Ethel Phillips Elementary School located at 2930 21st Avenue Sacramento, California. It is our understanding that all structures are planned for renovation.

The inspection was conducted by Mr. Jose Hernandez from August 5-7, 2024. Mr. Hernandez is a Cal/OSHA Certified Asbestos Consultant (CAC) and State of California Department of Public Health (CDPH) certified Lead Inspector/Assessor.

This report was requested by Mr. Anthony Lea, Facilities Project Technician with the Sacramento City Unified School District (SCUSD) on behalf of Mr. Chris Ralston, Director III with the SCUSD.

Building Descriptions

For the purposes of this survey, the Ethel Phillips Elementary School campus has been divided up into eleven (11) distinct buildings or sections. These buildings or sections are referred to as follows:

- MPR/Office Building
- Kindergarten Building
- Building with Rooms B2-B7
- Building with Rooms C-2 - C-5
- Building with Room C-6 - C-10
- Building with Rooms D1-D8
- Portables B1 and C1
- Portables B8-B10
- Portables B11-B13
- Portable C11
- CCTV Shed

Interior finish materials found throughout this campus include carpet, vinyl floor tiles, sheet vinyl flooring, rubber vinyl base cove, drywall, plaster, ceramic tile, wood or fiberboard wall panels, nailed-on ceiling tiles, glued-on ceiling tiles, and acoustic ceiling panels.

Exterior finish materials include stucco, concrete, brick and mortar, wood and metal components, and painted wood siding. Select windows on the standalone classroom buildings consist of wood framing with glass panes and glazing putty. The rest of the buildings have aluminum framed windows. Roof systems on the majority of the buildings

were a combination of asphaltic and single-ply membrane roofing with various roofing mastics around penetrations. Mechanical systems are roof and wall mounted HVAC units.

The roofs from the majority of the portable buildings consisted of metal panels with mastics at the seams/edges/fasteners. Select portables have single-ply membrane roofs and asphalt shingles.

The CCTV Shed is a stand alone wood structure with a painted exterior wooden components. The only suspect asbestos material observed on this structure was the rolled asphaltic roofing system.

Asbestos Inspection and Sample Collection Protocols

Entek included all accessible interior and exterior areas of the buildings included in this report, but used only limited methods to look within enclosed wall or ceiling cavities during this investigation. Entek did include all suspect materials observed in, on, or associated with the areas included in this report.

Bulk samples were collected of various materials suspected to contain asbestos by utilizing a power drill and coring tube, cutting the materials with a razor knife, or use of other appropriate hand tools.

Surfacing materials were collected in a statistically random manner representative of the associated homogenous area as required in 40 CFR Part 763, Asbestos-Containing Materials in Schools; Final Rule and Notice, published October 30, 1987, and the Sacramento Metropolitan Air Quality Management District (SMAQMD) Compliance Assistance Advisory published in June 2010.

Thermal system insulation (TSI) materials were collected in a randomly distributed manner from each homogenous area that was not assumed to be ACM as required in 40 CFR Part 763, Asbestos-Containing Materials in Schools; Final Rule and Notice, published October 30, 1987.

Miscellaneous materials were collected from each homogenous area in a manner sufficient to determine whether the material is or is not ACM as required in 40 CFR Part 763, Asbestos-Containing Materials in Schools; Final Rule and Notice, published October 30, 1987.

Approximate locations of all samples collected during this inspection are indicated on the “Bulk Asbestos Material Analysis Request Form for Entek”, which served as the chain of custody for the samples, and on the building diagrams attached to this report.

Asbestos Bulk Sample Results

There were several materials observed which are considered “suspect” under US EPA guidelines. Under current US EPA guidelines for conducting building inspections for ACM, all "suspect" materials must be assumed to contain asbestos until otherwise determined by laboratory testing.

The samples of materials suspected of containing asbestos were submitted to Eurofins/EMlab P&K, a laboratory located in Tustin, California. These samples were subsequently analyzed by polarized light microscopy (PLM) with dispersion staining.

The US EPA NESHAP and SMAQMD uses the terms Regulated Asbestos Containing Material (RACM), Category I, and Category II when identifying materials which contain asbestos in amounts greater than 1%. Cal/OSHA uses the term ACCM which indicates a manufactured construction material contains greater than 0.1% asbestos by weight by the PLM method. This definition can be found in Title 8, 1529.

All samples found to contain <1% asbestos by PLM analysis which are not identified as containing >1% asbestos, classified as RACM, CAT-I, or CAT-II materials in the following results tables were additionally analyzed using the 400 point count (PC) method with analysis by PLM. This additional analysis is required by NESHAP and enforced by SMAQMD. The PC method analysis results were used only to verify a material did not contain >1% asbestos as a single layer material, or as a composite result which is provided for materials such as sheet rock/drywall and joint compound used for wall/ceiling systems. A result reported as none detected or “trace” by the PC method only verified the initial PLM result of <1% and shall not be used to determine the identified material does not contain asbestos. Copies of Asbestech’s laboratory reports and accreditations are attached.

Neither OSHA or Cal/OSHA allow for composite sampling of wall system materials, and neither address the use of the PC method to confirm a material identified as containing <1% asbestos by the PLM method either contains <1% asbestos or is non-detected for asbestos. As a result, reporting of the asbestos content related to a composited material such as sheet rock/drywall and joint compound does not apply to determining if a material is or is not an ACM by OSHA or an ACCM by Cal/OSHA.

A total of 378 bulk samples were collected of all the materials considered to be "suspect" which are expected to be impacted by the renovation/demolition project. Some of those samples contained multiple layers which were individually analyzed to determine their asbestos content. Analysis of all samples collected was by PLM with dispersion staining. Results of the analysis are listed in the following tables:

Suspect Materials Found or Assumed TO Contain Asbestos Throughout Campus & Roofs					
Sample ID#'s	**Suspect Material**	**Asbestos Content/Type (%) by PLM/PC**	**Location**	**NESHAP/ Cal/OSHA Classification**	**Total Estimated Quantity**
132A-G	Exterior Stucco	<1% CHRYSOTILE *Confirmed by 400 Point Count*	Throughout campus at permanent building exteriors	ACCM	>10,000 Sq.
n/a	Asbestos Cement "Transite" Pipe	Assumed to Contain Asbestos	Throughout campus below surface grade at water or drainage pipe	CAT-II	Unknown if Present
n/a	Hydronic Pipe Insulation	Assumed to Contain Asbestos	Interior ceiling or wall cavities, exterior below surface grade at old hot water pipe from central boiler units	RACM	Unknown if Present
n/a	Roofing Debris	Assumed to Contain Asbestos	Attic & ceiling joist spaces throughout campus at permanent buildings - Leftover from previous roofing projects.	CAT-I	Unknown if Present
No access to above ceilings spaces was obtained throughout campus. It is unknown if roofing debris from previous roof removal projects is present in any area. Additional investigation of above ceiling spaces should be made if ceilings will be removed.					
n/a	Door Core Insulation	Assumed to Contain Asbestos	Doors to old boiler and mechanical spaces	RACM	Unknown if Present
125A-B	Gray-Black curb & penetration mastic	**5% CHRYSOTILE** (Gray Roofing Mastic) NONE DETECTED (Black Roofing Material)	Office Building Roof, at HVAC curbs	CAT-II (Gray Roofing Mastic)	~20 Sq.

Suspect Materials Found or Assumed TO Contain Asbestos Throughout Campus & Roofs					
Sample ID#'s	**Suspect Material**	**Asbestos Content/Type (%) by PLM/PC**	**Location**	**NESHAP/ Cal/OSHA Classification**	**Total Estimated Quantity**
128A-E	White coated penetration mastic	**5% CHRYSOTILE**	Throughout roof penetrations on permanent buildings	CAT-II	~100 Sq.

Intentionally Blank

Suspect Materials Found or Assumed TO Contain Asbestos MPR/Office Building					
Sample ID#'s	**Suspect Material**	**Asbestos Content/Type (%) by PLM/PC**	**Location**	**NESHAP/ Cal/OSHA Classification**	**Total Estimated Quantity**
01A-B	Black 9" vinyl floor tile, black mastic, white compound	**3% CHRYSOTILE** (Floor Tile) **3% CHRYSOTILE** (Black Mastic) NONE DETECTED (White Compound)	Room A-1 and adjacent storage rooms, where found	CAT-I CAT-I	1,000 Sq. 1,000 Sq.
02A-B	Dark green mottled 9" vinyl floor tile, black mastic	**>1% CHRYSOTILE** (Floor Tile) **3% CHRYSOTILE** (Black Mastic)	Room A-1, where found	CAT-I CAT-I	Included in Quantity Above
Please note the dark green 9" floor tile associated with sample series 02 must be treated as greater than 1% asbestos since it was not verified by 400 point count to be less than 1%.					
03A-B	Gray-green streaked 9" vinyl floor tile, black mastic	**4% CHRYSOTILE** (Floor Tile) **4% CHRYSOTILE** (Black Mastic)	Room A-1, where found	CAT-I CAT-I	Included in Quantity Above
04A-B	Pink streaked 9" vinyl floor tile, black mastic	**5% CHRYSOTILE** (Floor Tile) **4% CHRYSOTILE** (Black Mastic)	Room A-1, where found	CAT-I CAT-I	Included in Quantity Above
06A-B	Tan mottled 9" vinyl floor tile, black mastic	NONE DETECTED (Floor Tile) **3% CHRYSOTILE** (Black Mastic)	Room A-1, where found	CAT-I (Black Mastic)	Included in Quantity Above
07A-B	Light gray mottled 12" vinyl floor tile, black mastic	**>1% CHRYSOTILE** (Floor Tile) **4% CHRYSOTILE** (Black Mastic)	MPR Building - South entry foyer, where found	CAT-I CAT-I	96 Sq. 96 Sq.
Please note the light gray 12" floor tile associated with sample series 07 must be treated as greater than 1% asbestos since it was not verified by 400 point count to be less than 1%.					
17A-C	Cementitious Textured Plaster	<1% CHRYSOTILE *Confirmed by 400 Point Count*	Room A-1 and Stage	ACCM	~950 Sq.
20A-B	Drywall with joint compound	<1% CHRYSOTILE (Composite) *Confirmed by 400 Point Count*	Throughout MPR building, at ceiling behind glue-on ceiling tiles where found	ACCM	Undetermined

Suspect Materials Found or Assumed TO Contain Asbestos MPR/Office Building					
Sample ID#'s	**Suspect Material**	**Asbestos Content/Type (%) by PLM/PC**	**Location**	**NESHAP/ Cal/OSHA Classification**	**Total Estimated Quantity**
28A-B	Brown mottled 12" vinyl floor tile, black mastic	NONE DETECTED (Floor Tile) **3% CHRYSOTILE** (Black Mastic)	Mail Room and Southwest Room, where found	CAT-I (Black Mastic)	350 Sq.
33A-B	Brown square pattern sheet vinyl flooring, tan mastic, black mastic	NONE DETECTED (Sheet Vinyl Flooring) NONE DETECTED (Tan Mastic) **5% CHRYSOTILE** (Black Mastic)	Office Building - Manager's Office Restroom	CAT-I (Black Mastic)	21 Sq.
38A-C	Rough Textured Plaster	<1% CHRYSOTILE *Confirmed by 400 Point Count*	Hallway between Office and MPR	ACCM	~900 Sq.
Please note that various colored 9" vinyl floor tiles where found inside Room A-1 and adjacent storage rooms, therefore a total quantity for the entire rooms is listed above to capture the various colored tiles. Please see sample series 05, 08-16, 18-19, 21-27, 29-32, 34-37, & 39-44 in Appendix A for materials found not to contain asbestos in this area. Please refer to table labeled Suspect Materials Found or Assumed TO Contain Asbestos Throughout Campus for additional materials.					

Suspect Materials Found or Assumed TO Contain Asbestos Kindergarten Building					
Sample ID#'s	**Suspect Material**	**Asbestos Content/Type (%) by PLM**	**Location**	**NESHAP Classification**	**Total Estimated Quantity**
47A-B	Brown mottled 12" vinyl floor tile, black mastic	NONE DETECTED (Floor Tile) **2% CHRYSOTILE** (Black Mastic)	Throughout Kindergarten Building where found	CAT-I (Black Mastic)	Up to 1,800 Sq.
48A-B	Gray sheet vinyl flooring, black mastic	NONE DETECTED (Sheet Vinyl Flooring) **2% CHRYSOTILE** (Black Mastic)	Restroom	CAT-I (Black Mastic)	65 Sq.
Please see sample series 45-46, & 49-54 in Appendix A for materials found not to contain asbestos in this area. Please refer to table labeled Suspect Materials Found or Assumed TO Contain Asbestos Throughout Campus for additional materials.					

Suspect Materials Found or Assumed TO Contain Asbestos Building with Rooms B2-B7					
Sample ID#'s	**Suspect Material**	**Asbestos Content/Type (%) by PLM**	**Location**	**NESHAP Classification**	**Total Estimated Quantity**
59A-B	Beige mottled 12" vinyl floor tile, black mastic, cream vinyl floor tile sublayer, transparent mastic	NONE DETECTED (Beige Floor Tile) **2% CHRYSOTILE** (Black Mastic) NONE DETECTED (Cream Floor Tile) NONE DETECTED (Transparent Mastic)	Classroom B4 at patch	CAT-I (Black Mastic)	3 Sq.
60A-B	Gray with multi-colored specks sheet vinyl flooring, yellow mastic, green vinyl floor tile sublayer, black mastic	NONE DETECTED (Sheet Vinyl Flooring) NONE DETECTED (Yellow Mastic) **2% CHRYSOTILE** (Green Floor Tile) **2% CHRYSOTILE** (Black Mastic)	Classroom B4	CAT-I CAT-I	354 Sq. 354 Sq.
61A-B	Yellow and black carpet mastic	**2% CHRYSOTILE** (Black Mastic) NONE DETECTED (Yellow Mastic)	Classrooms B3-B7	CAT-I (Black Mastic)	2,715 Sq.
62A-B	Brown mottled 12" vinyl floor tile, black mastic	NONE DETECTED (Floor Tile) **2% CHRYSOTILE** (Black Mastic)	Classrooms B3, B5-B7	CAT-I (Black Mastic)	1,416 Sq.
Please see sample series 55-58, & 63-71 in Appendix A for materials found not to contain asbestos in this area. Please refer to table labeled Suspect Materials Found or Assumed TO Contain Asbestos Throughout Campus for additional materials.					

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Suspect Materials Found or Assumed TO Contain Asbestos Building with Classrooms C-2 - C-5					
Sample ID#'s	**Suspect Material**	**Asbestos Content/Type (%) by PLM**	**Location**	**NESHAP Classification**	**Total Estimated Quantity**
72A-B	Gray mottled 12" vinyl floor tile, black mastic	NONE DETECTED (Floor Tile) **2% CHRYSOTILE** (Black Mastic)	Classroom C-2, where found	CAT-I (Black Mastic)	884 Sq.
73A-B	Brown mottled 12" vinyl floor tile, black mastic	NONE DETECTED (Floor Tile) **2% CHRYSOTILE** (Black Mastic)	Classrooms C-3 and C-4, where found	CAT-I (Black Mastic)	1,768 Sq.
75A-B	Black/Yellow carpet mastic	**2% CHRYSOTILE**	Classroom C-5	CAT-I	884 Sq.
Please see sample series 74, & 76-89 in Appendix A for materials found not to contain asbestos in this area. Please refer to table labeled Suspect Materials Found or Assumed TO Contain Asbestos Throughout Campus for additional materials.					

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Suspect Materials Found or Assumed TO Contain Asbestos Building with Classrooms C-6 - C-10					
Sample ID#'s	**Suspect Material**	**Asbestos Content/Type (%) by PLM**	**Location**	**NESHAP Classification**	**Total Estimated Quantity**
90A-B	Blue-Green streaked 9" vinyl floor tile, black mastic	**2% CHRYSOTILE** (Floor Tile) **2% CHRYSOTILE** (Black Mastic)	Classroom C-6 (multiple colored floor tiles inside room)	CAT-I CAT-I	Up to 884 Sq. 884 Sq.
91A-B	Light Green with tan streaks 9" vinyl floor tile, black mastic	**2% CHRYSOTILE** (Floor Tile) **2% CHRYSOTILE** (Black Mastic)	Classroom C-6 (multiple colored floor tiles inside room)	CAT-I CAT-I	Included in Quantity Above
92A-B	Dark Green with tan streaks 9" vinyl floor tile, black mastic	**2% CHRYSOTILE** (Floor Tile) **2% CHRYSOTILE** (Black Mastic)	Classroom C-6 (multiple colored floor tiles inside room)	CAT-I CAT-I	Included in Quantity Above
93A-B	Brown mottled 12" vinyl floor tile, black mastic	NONE DETECTED (Floor Tile) **2% CHRYSOTILE** (Black Mastic)	Classrooms C-8-C-10, where found	CAT-I (Black Mastic)	1,326 Sq.
94A-B	Tan mottled 12" vinyl floor tile, black mastic	NONE DETECTED (Floor Tile) **2% CHRYSOTILE** (Black Mastic)	Classroom C-7, where found	CAT-I (Black Mastic)	442 Sq.
95A-B	Gray mottled 12" vinyl floor tile, black mastic	NONE DETECTED (Floor Tile) **2% CHRYSOTILE** (Black Mastic)	Classroom C-9, where found	CAT-I (Black Mastic)	442 Sq.
Please note that various colored 9" vinyl floor tiles where found inside Classroom C-6 and therefore a total quantity for the entire room is listed above to capture the various colored tiles. Please see sample series 96-105 in Appendix A for materials found not to contain asbestos in this area. Please refer to table labeled Suspect Materials Found or Assumed TO Contain Asbestos Throughout Campus for additional materials.					

Suspect Materials Found or Assumed TO Contain Asbestos Building with Rooms D-1 - D-8					
Sample ID#'s	**Suspect Material**	**Asbestos Content/Type (%) by PLM**	**Location**	**NESHAP Classification**	**Total Estimated Quantity**
107A	Black/yellow carpet mastic	**2% CHRYSOTILE**	Throughout Building with Classrooms D-1 through D-8 at closets and where found	CAT-1	100 Sq.
108A-B	Tan with brown streaks 12" vinyl floor tile, black mastic	**4% CHRYSOTILE** (Floor Tile) **3% CHRYSOTILE** (Black Mastic)	Classroom D-6, where found	CAT-I (Floor Tile) CAT-I (Black Mastic)	884 Sq. 884 Sq.
109A-B	Tan with brown streaks 9" vinyl floor tile, black mastic	**4% CHRYSOTILE** (Floor Tile) **3% CHRYSOTILE** (Black Mastic)	Classroom D-1	CAT-I CAT-I	884 Sq. 884 Sq.
110A	Black 9" vinyl floor tile, black mastic	**5% CHRYSOTILE** (Floor Tile) **2% CHRYSOTILE** (Black Mastic)	Classroom D-1 Closet	CAT-I CAT-I	12 Sq. 12 Sq.
111A	Brown mottled 12" vinyl floor tile, black mastic	NONE DETECTED (Floor Tile) **2% CHRYSOTILE** (Black Mastic)	Classroom D-2, where found	CAT-I (Black Mastic)	884 Sq.
112A	Tan mottled 12" vinyl floor tile, black mastic	NONE DETECTED (Floor Tile) **2% CHRYSOTILE** (Black Mastic)	Classroom D-3, where found	CAT-I (Black Mastic)	884 Sq.
Please see sample series 106, & 113-122 in Appendix A for materials found not to contain asbestos in this area. Please refer to table labeled Suspect Materials Found or Assumed TO Contain Asbestos Throughout Campus for additional materials.					

Suspect Materials Found or Assumed TO Contain Asbestos Portable Rooms B1 & C1					
Sample ID#'s	**Suspect Material**	**Asbestos Content/Type (%) by PLM**	**Location**	**NESHAP Classification**	**Total Estimated Quantity**
None	None	None	None	None	None
Please see sample series 139-146 in Appendix A for materials found not to contain asbestos in this area.					

Suspect Materials Found or Assumed TO Contain Asbestos Portable Rooms B8-B10					
Sample ID#'s	**Suspect Material**	**Asbestos Content/Type (%) by PLM**	**Location**	**NESHAP Classification**	**Total Estimated Quantity**
153A-B	Metal Roof Mastic	NONE DETECTED (White Mastic) **2% CHRYSOTILE** (Gray Mastic)	Metal roof at seams, holes, and edges	CAT-II (Gray Mastic)	150 Sq. Distributed
Please see sample series 147-152 in Appendix A for materials found not to contain asbestos in this area.					

Suspect Materials Found or Assumed TO Contain Asbestos Portable Rooms B11-B13					
Sample ID#'s	**Suspect Material**	**Asbestos Content/Type (%) by PLM**	**Location**	**NESHAP Classification**	**Total Estimated Quantity**
None	None	None	None	None	None
Please see sample series 154-159 in Appendix A for materials found not to contain asbestos in this area.					

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Suspect Materials Found or Assumed TO Contain Asbestos Portable C11					
Sample ID#'s	**Suspect Material**	**Asbestos Content/Type (%) by PLM**	**Location**	**NESHAP/ Cal/OSHA Classification**	**Total Estimated Quantity**
160A-B	Gray mottled 12" vinyl floor tile, yellow mastic, gray leveling compound, tan floor tile sublayer	NONE DETECTED (Gray Floor Tile) NONE DETECTED (Yellow Mastic) NONE DETECTED (Leveling Compound) **3% CHRYSOTILE** (Tan Floor Tile)	Portable C11, where found	CAT-I (Tan Floor Tile)	Up to 780 Sq.
161A-B	Brown streaked 9" vinyl floor tile, black mastic	**3% CHRYSOTILE** (Floor Tile) **3% CHRYSOTILE** (Black Mastic)	Portable C11, At North and South Closets	CAT-I (Floor Tile) CAT-I (Black Mastic)	Up to 92 Sq. 92 Sq.
165A-B	Drywall with joint compound	<1% CHRYSOTILE (Composite) *Confirmed by 400 Point Count*	Portable C11, where found - Assumed above glued-on ceiling tiles	ACCM	~1,200 Sq.
Please see sample series 162-164, & 166-167 in Appendix A for materials found not to contain asbestos in this area. Please refer to table labeled Suspect Materials Found or Assumed TO Contain Asbestos Throughout Campus for additional materials.					

Suspect Materials Found or Assumed TO Contain Asbestos CCTV Shed					
Sample ID#'s	**Suspect Material**	**Asbestos Content/Type (%) by PLM**	**Location**	**NESHAP Classification**	**Total Estimated Quantity**
None	None	None	None	None	None
Please see sample series 131.5 in Appendix A for materials found not to contain asbestos in this area.					

NOTE: Any CAT-I or CAT-II materials identified in the previous tables which will be subjected to mechanical removal, must be considered RACM for the purposes of notification to SMAQMD and classification of waste. Removal of any CAT-I or CAT-II materials prior to demolition of a building is dependent upon how the materials will be impacted and if the impact will cause the materials to become friable. If any remaining CAT-I or CAT-II materials will become friable they must be removed prior to the initiation of demolition.

NOTE: Cal/OSHA regulates all materials containing greater than 0.1% asbestos. As a result, impact to materials identified as ACCM and ACM must be performed by properly asbestos trained personnel utilizing appropriate personal protection, work practices, as well as, properly constructed and demarcated work areas or containments, in accordance with Cal/OSHA asbestos regulations.

All sample number noted in the tables above start with EGG-24-7284-

The tables above provide an estimate of the amount of materials in square feet (Sq.) or linear feet (Ln.). **Contractors are responsible for quantifying the exact quantity of materials impacted by the renovation or demolition and shall not rely on the quantities in the above tables.**

US EPA AHERA uses three terms when determining the classification of a material for the purpose of sampling. These terms include miscellaneous, surfacing, and thermal system insulation (TSI).

Miscellaneous materials are building materials on structural components, structural members or fixtures, such as floor and ceiling tiles, and does not include surfacing material or TSI.

Surfacing materials are materials that are sprayed-on, troweled-on, or otherwise applied to surfaces, such as acoustical plaster on ceiling and fireproofing materials on structural members, or other materials on surfaces for acoustical, fireproofing, or other purposes.

TSI is material applied to pipes, fittings, boilers, breeching, tanks, ducts, or other structural components to prevent heat loss or gain, water condensation, or for other purposes.

The information provided in this report are for use by the Owner in determining where asbestos containing materials are located, and whether or not any future work may impact those materials. The information is also provided for use by any contractor who may perform work in areas impacting the materials listed in this report, and for use as appropriate by asbestos abatement contractors to provide costs related to work impacting ACM.

Any building materials which are considered “suspect” for containing asbestos which have not been identified in this report must be assumed to contain asbestos in amounts >1% until properly investigated and/or tested.

Materials commonly excluded from being suspected for containing asbestos include, but are not limited to: unwrapped pink and yellow fiberglass insulating materials or products, foam insulation, bare concrete, wood, metal, plastic, or glass. All other types of building materials or coatings on the materials listed above are commonly listed as “suspect” and must be tested prior to impact by a Contractor. Work impacting these untested or newly discovered materials must cease until an investigation can be completed.

Asbestos Regulatory Requirements

US EPA

The property included in this survey report is located in Sacramento County. Sacramento Metropolitan Air Quality Management District (SMAQMD) has been given authority for enforcement of the NESHAP regulations by means of their own rules (Rule 902).

A demolition is the wrecking, taking out, or burning of any load supporting structural member. A renovation is everything else. Ten day written notification to the SMAQMD is required prior to the performance of any demolition project regardless of asbestos being present or not. This notification would also apply to any renovation project which involves the wrecking, taking out, or burning of any load bearing structural member during a renovation as well.

There is a sufficient amount of ACM present to require a 10 day notification to the SMAQMD be submitted prior to starting work which will impact materials identified as RACM or Category I and Category II materials if they are made friable. If more than 160 square feet, 260 linear feet or 35 cubic feet of RACM is planned for removal on the project, formal written notification to SMAQMD is required.

Cal/OSHA

Disturbance of any ACM or ACCM could generate airborne asbestos fibers and would be regulated by Cal/OSHA. Cal/OSHA worker health and safety regulations apply during any disturbance of ACM or ACCM by a person while in the employ of another. This is true regardless of friability or quantity disturbed.

Since it has been estimated more than 100 square feet of ACCM and ACM does exist and may be impacted during the upcoming project, a licensed asbestos contractor, certified by the State of California, and registered with Cal/OSHA is recommended to perform the asbestos related removal work.

For compliance with Title 8, Section 341.9, the asbestos contractor must send written notice at least one day (24 hours) prior to start of any work which will impact any amount of asbestos to the local office for the State of California, Department of Occupational Safety and Health, and perform all work in accordance with Cal/OSHA requirements.

Lead Inspection, Sampling, & Results

An X-Ray Fluorescence (XRF) instrument was utilized as a screening tool in order to determine the presence or absence of lead in paints, coatings, and glazed ceramic tiles throughout the campus. Results shown in the following tables have a margin of error as indicated on the data sheet found in Appendix B.

A total of 15 bulk samples of the painted surfaces from various locations throughout the site that had inconclusive XRF results were collected and submitted to Eurofins/EMlab P&K a laboratory located in Tustin, CA. These samples were subsequently analyzed by atomic absorption spectrometry (AAS). Results of the XRF readings and laboratory results are listed in the following tables:

Paints/Coatings/ Materials Determined to be Lead Based Paint (LBP)		
Paint/Coating Color or Material	**Lead Content (mg/cm^2 or ppm)**	**Component/Location**
Ceramic Glazing	8.9 mg/cm^2	6"x6" Red Ceramic Wall Tile / MPR Building, At Base of Walls inside the Old Locker Rooms
Green Paint	2.8 mg/cm^2	Interior Wood Door Trim/Components / MPR Building, Where Found
Blue Paint	1.9 mg/cm^2	Interior Wood Doors / MPR Building, Where Found
White Paint	2.1 mg/cm^2	Interior Wood Door Frames / Office Building, Where Found
Blue Paint	1.0 mg/cm^2	Exterior Wood Doors/Door Frames / Throughout Permanent Classroom Buildings, Where Found
Beige Paint	1.4 mg/cm^2	Exterior Wood Support Beams / Throughout Ceilings of Covered Walkways, Where Found
Blue Paint	1.5 mg/cm^2	Exterior Metal Round Support Columns / Throughout Covered Walkways
Beige Paint	2.6 mg/cm^2	Exterior Wood Siding / Throughout Permanent Classroom Buildings, Where Found

LBP - Materials/coatings/paints meeting the definition of lead-based paint as defined by the CDPH and the US EPA, currently defined as containing lead in concentrations equal to or greater than 1.0 mg/cm^2, 5,000 ppm, or 0.5% by weight.

Paints/Coatings/ Materials Determined to be Lead Containing Paint (LCP)		
Paint/Coating Color or Material	**Lead Content (mg/cm^2 or ppm)**	**Component/Location**
White Paint	0.1 mg/cm^2	Interior Plaster Walls / Throughout MPR/Office Building, Where Found
Tan Paint	0.2 mg/cm^2	Interior Door Frames / Throughout MPR/Office Building, Where Found
Tan Paint	0.1 mg/cm^2	Interior Doors / Throughout MPR/Office Building, Where Found
Light Yellow Paint	0.1 mg/cm^2	Interior Drywall Walls / Office Building, Throughout Walls and Ceiling of the Nurse's Office
Tan Paint	0.2 mg/cm^2	Interior Wood Cabinets/Wooden Components / Throughout Kindergarten Building, Where Found
Blue Paint	0.8 mg/cm^2	Interior Metal Doors / Throughout Kindergarten Building, Where Found

Paints/Coatings/ Materials Determined to be Lead Containing Paint (LCP)		
Paint/Coating Color or Material	**Lead Content (mg/cm^2 or ppm)**	**Component/Location**
Green Paint	120 ppm	Interior Plaster-Stucco Walls / Throughout Hallway between MPR and Office Buildings, Where Found
Beige Paint	190 ppm	Interior Rough Textures Plaster Walls / Throughout Hallway between MPR and Office Buildings, Where Found
Teal Paint	81 ppm	Interior Wood Wall Panels / Office Building, Principal's Office
Beige Paint	0.6 mg/cm^2	Exterior Concrete Walls / Throughout Permanent Buildings, Where Found
Blue Paint	0.1 mg/cm^2	Exterior Wooden Components / CCTV Shed
Beige Paint	0.1 mg/cm^2	Exterior Wood Siding / CCTV Shed

LCP - Materials/coatings/paints which contain measurable amounts of lead. The disturbance of these materials/coatings/paints is regulated by Cal/OSHA.

All other paints and materials were determined not to contain lead above the analysis method detection limits of 39-97 ppm.

Lead Regulatory Compliance

Any upcoming project which may result in the disturbance of lead containing products or surfaces, but is not intended to remediate a lead hazard or specifically designed to remove LBP to reduce or eliminate a known hazard, would be considered "lead related construction work".

Lead related construction work does not fit the classification of a "lead abatement project" under CDPH Title 17 regulations. "*Abatement*" is defined in Title 17, Division 1, Chapter 8, Article 1 as "any set of measures designed to reduce or eliminate lead hazards or LBP for public and residential buildings, but does not include containment or cleaning." A *lead hazard* is defined in Title 17, Division 1, Chapter 8, Article 1 as "deteriorated LBP, lead contaminated dust, lead contaminated soil, disturbing LBP or presumed LBP without containment, or any other nuisance which may result in persistent and quantifiable lead exposure."

Lead related construction work means any "construction, alteration, painting, demolition, salvage, renovation, repair, or maintenance of any residential or public building, including preparation and cleanup, that, by using or disturbing lead-containing material or soil, may result in significant exposure of adults or children to lead". (Title 17, California Code of Regulations, Division 1, Chapter 8, Article 1).

Currently, Cal/OSHA has not established a definition for LBP, nor have they established minimum concentrations where their regulations do not apply. Cal/OSHA regulates all

construction activities involving materials containing lead, including LBP. These regulations are found in CCR, Title 8 Section 1532.1 (§1532.1) Lead in Construction.

Since Cal/OSHA has not established a concentration of lead in a product where their regulations do not apply, any disturbance to products containing lead come under the jurisdiction of Cal/OSHA and their regulations. Disturbance of paints/coatings or materials determined to be LBP may trigger a pre-work notification to Cal/OSHA if "trigger tasks" disturb 100 square feet or more of those paints/coatings or materials. Trigger tasks are described in Title 8 CCR 1532.1.

Fluorescent Light Tubes and Polychlorinated Biphenyls (PCBs)

Fluorescent light tubes which contain mercury are considered a universal waste and must be packaged and recycled appropriately if they are removed from a building and not used again. The regulation, called the Universal Waste Rule, are in the California Code of Regulations (CCR), Title 22, Division 4.5, Chapter 23.

Fluorescent light tubes are the bulb or tube portion of an electric lighting device and are commonly referred to as "lamps".Examples of other common electric lamps considered to be universal wastes include, but are not limited to, high intensity discharge, neon, mercury vapor, high pressure sodium, and metal halide lamps. Any lamp which is not spent and has been designated to be reused is not classified as a waste and does not meet the requirements of a hazardous waste or a universal waste.

Spent lamps typically contain concentrations of mercury exceeding the established Total Threshold Limit Concentration (TTLC) and/or the Soluble Threshold Limit Concentration (STLC) values. Therefore, these lamps must be sent to an authorized recycle facility or to a universal waste consolidator for shipment to an authorized recycling facility.

At a minimum, if removed lamps will not be reused they must be packaged in boxes/ packages/containers which are structurally sound, adequate to prevent breakage, and compatible with the content of the lamps. These packages must remain closed and be free of damage which could cause leakage under reasonably foreseeable conditions. Each container must be labeled or marked clearly with one of the following phrases: "Universal Waste Lamp(s)," or "Waste Lamp(s)," or "Used Lamp(s)." Entek recommends shipping any lamp not designated for reuse to a universal waste recycling facility once they have been packaged.

PCB containing light ballasts are to be considered a hazardous waste, and must be properly manifested for transport to a hazardous waste facility. Any contractor who may perform PCB related work (inspection, removal, clean-up) must be trained and qualified to do so. All workers must also follow current OSHA regulations including 29 CFR 1910.120 and 8 CCR 5192, as well as, other applicable federal, state, and local laws, and regulations. While light ballasts marked "No PCB" are not considered a hazardous waste, they are considered a universal waste. As a result, removal, packaging, and disposal/recycling of these types of ballasts must be conducted in accordance with current regulations of Title 22.

Freon and Fluorocarbons

Freon and other fluorocarbon products associated with HVAC systems, refrigerators, etc. may be present in or on the exterior of the buildings included in this investigation. Prior to demolition of a structure or removal of existing HVAC systems, refrigerators, or any other type of equipment which typically uses these types of coolant products shall have the coolant materials investigated prior to their demolition and removed from the mechanical systems and recycled in accordance with Cal/EPA requirements.

Limitations

Entek inspected all specified interior and exterior areas of all buildings located at the Ethel Phillips Elementary School campus. The information provided in this inspection report may not be used to extend the inspection results to areas not included in this report without additional review and sampling as necessary.

Entek did not perform destructive sampling to look into ceiling and wall cavities. As a result, it may be possible for materials to be hidden in these areas which are not included in this report. Entek also did not employ any destructive measures on floors of interior spaces or exterior areas covered with asphalt, concrete, or dirt.

If any new materials not listed as having been sampled, or listed as assumed for containing asbestos in this report are discovered, the new material must be assumed to contain asbestos until properly inspected and tested for asbestos content.

Entek's policy is to retain a full copy of these written documents for three (3) years once the file is closed. At the end of the 3 year period the written files will be destroyed without further notice. It is suggested copies of the file(s) are maintained as per the District's policy.

Entek will be providing only this electronic copy of the report and its attachments for your use. Thank you for choosing Entek for your environmental needs. Please call me at (916) 632-6800 if you have any questions regarding this report.

Prepared By:

Jose Hernandez, CAC, I/A
Project Manager

Reviewed By:

Blake Howes, CAC, I/A
Vice President

Appendices

A. Asbestos Related Documents
B. Lead Related Documents
C. Backup Documents

APPENDIX A

ASBESTOS RELATED DOCUMENTS

- Bulk Asbestos Analysis Report From Eurofins/EMLab P&K-Tustin
- Bulk Asbestos Material Analysis Request Form for Entek
- Asbestos Bulk Sample Location Drawing
- SMAQMD Asbestos Survey Form
- SMAQMD Demolition/Renovation Form
  (To be completed by Owner)

eurofins | Built Environment Testing

ENTEK CONSULTING GROUP, INC.

Report for:

Jose Hernandez
Entek Consulting Group
4200 Rocklin Road, Suite 7
Rocklin, CA 95677

Regarding:
Eurofins EPK Built Environment Testing, LLC
Project: 24-7284 Sacramento City Unified School District; Ethel Phillips Elementary School 2930 21st Avenue Sacramento, CA 95820
EML ID: 3750911

Approved by:

Approved Signatory
Danny Li

Dates of Analysis:
Asbestos PLM: 08-23-2024 to 08-26-2024

Service SOPs: Asbestos PLM (EPA 40CFR App E to Sub E of Part 763 & EPA METHOD 600/R-93-116, SOP EM-AS-S-1267)
NVLAP Lab Code 200757-0

Client: Entek Consulting Group
C/O: Jose Hernandez
Re: 24-7284 Sacramento City Unified School District;
Ethel Phillips Elementary School 2930 21st Avenue
Sacramento, CA 95820

Eurofins EPK Built Environment Testing, LLC
2841 Dow Avenue, Suite 300, Tustin, CA 92780
(833) 465-5857 www.eurofinsus.com/Built

Date of Sampling: 08-05-2024
Date of Receipt: 08-19-2024
Date of Report: 08-26-2024

ASBESTOS PLM REPORT

Total Samples Submitted:	378
Total Samples Analyzed:	347
Total Samples with Layer Asbestos Content > 1%:	36

Location: ECG-24-7284-01A, 9"X9" Black Vinyl Floor Tile with Black Mastic/MPR Building, Room A-1, Northeast Storage Room
Lab ID-Version‡: 18479167-1

Sample Layers	Asbestos Content
Black Floor Tile	3% Chrysotile
Black Mastic	3% Chrysotile
White Compound	ND
Sample Composite Homogeneity:	Moderate

Comments: Sample ECG-7284-01B was not analyzed due to prior positive series.

Location: ECG-24-7284-02A, 9"x9" Dark Green Mottled Vinyl Floor Tile with Black Mastic/MPR Building, Northeast Storage Room
Lab ID-Version‡: 18479169-1

Sample Layers	Asbestos Content
Green Floor Tile	< 1% Chrysotile
Black Mastic	3% Chrysotile
Sample Composite Homogeneity:	Moderate

Comments: Sample ECG-7284-02B was not analyzed due to prior positive series.

Location: ECG-24-7284-03A, 9"x9" Gray-Green Streaked Vinyl Floor tile with Black Mastic/MPR Building, Room A-1
Lab ID-Version‡: 18479171-1

Sample Layers	Asbestos Content
Gray Floor Tile	4% Chrysotile
Black Mastic	4% Chrysotile
Sample Composite Homogeneity:	Moderate

Comments: Sample ECG-7284-03B was not analyzed due to prior positive series.

All components not quantified as asbestos content and non-asbestos content are considered to be non-fibrous matrix components. Matrix components may include, but are not limited to, gypsum, paint, silicate minerals, vinyl, binder, calcium carbonate, tar, and foam.

Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.
‡ A "Version" indicated by -"x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

Client: Entek Consulting Group
C/O: Jose Hernandez
Re: 24-7284 Sacramento City Unified School District;
Ethel Phillips Elementary School 2930 21st Avenue
Sacramento, CA 95820

Eurofins EPK Built Environment Testing, LLC
2841 Dow Avenue, Suite 300, Tustin, CA 92780
(833) 465-5857 www.eurofinsus.com/Built

Date of Sampling: 08-05-2024
Date of Receipt: 08-19-2024
Date of Report: 08-26-2024

ASBESTOS PLM REPORT

Location: ECG-24-7284-04A, 9"x9" Pink Streaked Vinyl Floor Tile with Black Mastic/ MPR Building, Room A-1

Lab ID-Version‡: 18479173-1

Sample Layers	Asbestos Content
Pink Floor Tile	5% Chrysotile
Black Mastic	4% Chrysotile
Sample Composite Homogeneity:	Moderate

Comments: Sample ECG-7284-04B was not analyzed due to prior positive series.

All components not quantified as asbestos content and non-asbestos content are considered to be non-fibrous matrix components. Matrix components may include, but are not limited to, gypsum, paint, silicate minerals, vinyl, binder, calcium carbonate, tar, and foam.

Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.
‡ A "Version" indicated by -"x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

Client: Entek Consulting Group
C/O: Jose Hernandez
Re: 24-7284 Sacramento City Unified School District;
Ethel Phillips Elementary School 2930 21st Avenue
Sacramento, CA 95820

Eurofins EPK Built Environment Testing, LLC
2841 Dow Avenue, Suite 300, Tustin, CA 92780
(833) 465-5857 www.eurofinsus.com/Built

Date of Sampling: 08-05-2024
Date of Receipt: 08-19-2024
Date of Report: 08-26-2024

ASBESTOS PLM REPORT

Location: ECG-24-7284-05A, 9"x9" Light Gray Speckled Vinyl Floor Tile with Black Mastic/MPR Building, Room A-1

Lab ID-Version‡: 18479175-1

Sample Layers	Asbestos Content
Gray Floor Tile	ND
Sample Composite Homogeneity:	Moderate

Comments: Mastic not detected.

Location: ECG-24-7284-05B, 9"x9" Light Gray Speckled Vinyl Floor Tile with Black Mastic/MPR Building, Room A-1, Northeast Storage Room

Lab ID-Version‡: 18479176-1

Sample Layers	Asbestos Content
Gray Floor Tile	ND
Sample Composite Homogeneity:	Moderate

Comments: Mastic not detected.

Location: ECG-24-7284-06A, 9"x9" Tan Mottled Vinyl Floor Tile with Black Mastic/ MPR Building, Room A-1

Lab ID-Version‡: 18479177-1

Sample Layers	Asbestos Content
Tan Floor Tile	ND
Black Mastic	3% Chrysotile
Sample Composite Homogeneity:	Moderate

Comments: Sample ECG-7284-06B was not analyzed due to prior positive series.

Location: ECG-24-7284-07A, 12"x12" Light Gray Mottled Vinyl Floor Tile with Black & Yellow Mastic/MPR Building, South Entry Foyer

Lab ID-Version‡: 18479179-1

Sample Layers	Asbestos Content
Blue Floor Tile	< 1% Chrysotile
Black Mastic	4% Chrysotile
Sample Composite Homogeneity:	Moderate

Comments: Sample ECG-7284-07B was not analyzed due to prior positive series.

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ASBESTOS PLM REPORT

Location: ECG-24-7284-08A, 12"x12" Pink with Multi-Colored Specks Vinyl Floor Tile with Yellow Mastic/MPR Building, Multi-Purpose Room Lab ID-Version‡: 18479181-1

Sample Layers	Asbestos Content
Pink Floor Tile	ND
Yellow Mastic	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-08B, 12"x12" Pink with Multi-Colored Specks Vinyl Floor Tile with Yellow Mastic/MPR Building, Multi-Purpose Room Lab ID-Version‡: 18479182-1

Sample Layers	Asbestos Content
Pink Floor Tile	ND
Yellow Mastic	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-09A, Terrazzo Shower Pan with Grout/MPR Building, Old Boy's Locker Room Lab ID-Version‡: 18479183-1

Sample Layers	Asbestos Content
Multicolored Flooring	ND
Off-White Grout	ND
Sample Composite Homogeneity:	Poor

Location: ECG-24-7284-09B, Terrazzo Shower Pan with Grout/MPR Building, Old Boy's Locker Room Lab ID-Version‡: 18479184-1

Sample Layers	Asbestos Content
Multicolored Flooring	ND
Off-White Grout	ND
Sample Composite Homogeneity:	Poor

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ASBESTOS PLM REPORT

Location: ECG-24-7284-10A, 2"x2" Brown Ceramic Floor Tile with Grout and Mortar/ MPR Building, Old Boy's Locker Room

Lab ID-Version‡: 18479185-1

Sample Layers	Asbestos Content
Brown Ceramic Tile	ND
Gray Grout	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-10B, 2"x2" Brown Ceramic Floor Tile with Grout and Mortar/ MPR Building, Old Boy's Locker Room

Lab ID-Version‡: 18479186-1

Sample Layers	Asbestos Content
Brown Ceramic Tile	ND
Gray Grout	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-11A, Concrete Slab/MPR Building, South Stage Mechanical Room

Lab ID-Version‡: 18479187-1

Sample Layers	Asbestos Content
Gray Concrete	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-11B, Concrete Slab/MPR Building, Laundry Room

Lab ID-Version‡: 18479188-1

Sample Layers	Asbestos Content
Gray Concrete	ND
Sample Composite Homogeneity:	Good

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ASBESTOS PLM REPORT

Location: ECG-24-7284-12A, 6"x6" Red Ceramic Wall Base Tile with Grout and Mortar/ MPR Building, Old Boy's Locker Room

Lab ID-Version‡: 18479189-1

Sample Layers	Asbestos Content
Red Ceramic Tile	ND
Gray Grout	ND
Sample Composite Homogeneity:	Moderate

Location: ECG-24-7284-12B, 6"x6" Red Ceramic Wall Base Tile with Grout and Mortar/ MPR Building, Old Girl's Locker Room

Lab ID-Version‡: 18479190-1

Sample Layers	Asbestos Content
Red Ceramic Tile	ND
Gray Grout	ND
Sample Composite Homogeneity:	Moderate

Location: ECG-24-7284-13A, 4" Brown Vinyl Base Cove with Mastic/MPR Building, Room A-1

Lab ID-Version‡: 18479191-1

Sample Layers	Asbestos Content
Brown Cove Base	ND
Yellow Mastic	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-13B, 4" Brown Vinyl Base Cove with Mastic/MPR Building, Southwest Room

Lab ID-Version‡: 18479192-1

Sample Layers	Asbestos Content
Brown Cove Base	ND
Yellow Mastic	ND
Sample Composite Homogeneity:	Good

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ASBESTOS PLM REPORT

Location: ECG-24-7284-14A, 4" Black Vinyl Base Cove with Mastic/MPR Building, Room A-1

Lab ID-Version‡: 18479193-1

Sample Layers	Asbestos Content
Black Cove Base	ND
Brown Mastic	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-14B, 4" Black Vinyl Base Cove with Mastic/MPR Building, Stage

Lab ID-Version‡: 18479194-1

Sample Layers	Asbestos Content
Black Cove Base	ND
Brown Mastic	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-15A, 4" Light Gray Vinyl Base Cove with Mastic/MPR Building, Stage

Lab ID-Version‡: 18479195-1

Sample Layers	Asbestos Content
Light Gray Cove Base	ND
Yellow Mastic	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-15B, 4" Light Gray Vinyl Base Cove with Mastic/MPR Building, Kitchen

Lab ID-Version‡: 18479196-1

Sample Layers	Asbestos Content
Light Gray Cove Base	ND
Yellow Mastic	ND
Sample Composite Homogeneity:	Good

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ASBESTOS PLM REPORT

Location: ECG-24-7284-16A, Plaster/MPR Building, Multi-Purpose Room Lab ID-Version‡: 18479197-1

Sample Layers	Asbestos Content
White Skim Coat	ND
Gray Plaster	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-16B, Plaster/MPR Building, Kitchen Lab ID-Version‡: 18479198-1

Sample Layers	Asbestos Content
White Skim Coat	ND
Gray Plaster	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-16C, Plaster/MPR Building, Mail Room Lab ID-Version‡: 18479199-1

Sample Layers	Asbestos Content
White Skim Coat	ND
Gray Plaster	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-16D, Plaster/MPR Building, Stage Lab ID-Version‡: 18479200-1

Sample Layers	Asbestos Content
White Skim Coat	ND
Gray Plaster	ND
Sample Composite Homogeneity:	Good

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ASBESTOS PLM REPORT

Location: ECG-24-7284-16E, Plaster/MPR Building, Room A-1 Lab ID-Version‡: 18479201-1

Sample Layers	Asbestos Content
White Skim Coat	ND
Gray Plaster	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-16F, Plaster/MPR Building, Sprinkler Control Valve Room Lab ID-Version‡: 18479202-1

Sample Layers	Asbestos Content
White Skim Coat	ND
Gray Plaster	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-16G, Plaster/MPR Building, Custodian Closet Lab ID-Version‡: 18479203-1

Sample Layers	Asbestos Content
Gray Plaster	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-17A, Cementitious Textured Plaster/MPR Building, Stage Lab ID-Version‡: 18479204-1

Sample Layers	Asbestos Content
Light Gray Plaster	< 1% Chrysotile
Sample Composite Homogeneity:	Good

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ASBESTOS PLM REPORT

Location: ECG-24-7284-17B, Cementitious Textured Plaster/MPR Building, Room A-1

Lab ID-Version‡: 18479205-1

Sample Layers	Asbestos Content
Light Gray Plaster	< 1% Chrysotile
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-17C, Cementitious Textured Plaster/MPR Building, Room A-1

Lab ID-Version‡: 18479206-1

Sample Layers	Asbestos Content
Light Gray Plaster	< 1% Chrysotile
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-18A, Plastic Wall Panel Glue/MPR Building, Kitchen Lab ID-Version‡: 18479207-1

Sample Layers	Asbestos Content
Yellow Glue	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-18B, Plastic Wall Panel Glue/MPR Building, Kitchen Lab ID-Version‡: 18479208-1

Sample Layers	Asbestos Content
Yellow Glue	ND
Sample Composite Homogeneity:	Good

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ASBESTOS PLM REPORT

Location: ECG-24-7284-19A, 12"x12" Glue-on Ceiling Tile with Pinholes/MPR Building, Stage

Lab ID-Version‡: 18479209-1

Sample Layers	Asbestos Content
Brown Glue	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-19B, 12"x12" Glue-on Ceiling Tile with Pinholes/MPR Building, Stage

Lab ID-Version‡: 18479210-1

Sample Layers	Asbestos Content
Brown Glue	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-20A, Drywall with Joint Compound behind Ceiling Tile/MPR Building, Stage

Lab ID-Version‡: 18479211-1

Sample Layers	Asbestos Content
Off-White Joint Compound	2% Chrysotile
White Drywall	ND
Composite Asbestos Fibrous Content:	< 1% Asbestos
Composite Non-Asbestos Content:	5% Cellulose 2% Glass Fibers
Sample Composite Homogeneity:	Good

Comments: Composite asbestos content provided is only for Drywall/Joint compound. Composite content provided for this analysis has been performed by following the NESHAP guidelines. Sample ECG-24-7284-20B was not analyzed due to prior positive series.

Location: ECG-24-7284-21A, 12"x12" Glue-on Ceiling Tile with Pinholes & Fissures/ MPR Building, Multi-Purpose Room

Lab ID-Version‡: 18479213-1

Sample Layers	Asbestos Content
White Ceiling Tile	ND
Brown Glue	ND
Composite Non-Asbestos Content:	40% Cellulose 30% Glass Fibers
Sample Composite Homogeneity:	Good

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ASBESTOS PLM REPORT

Location: ECG-24-7284-21B, 12"x12" Glue-on Ceiling Tile with Pinholes & Fissures/ MPR Building, Multi-Purpose Room

Lab ID-Version‡: 18479214-1

Sample Layers	Asbestos Content
White Ceiling Tile	ND
Brown Glue	ND
Composite Non-Asbestos Content:	40% Cellulose 30% Glass Fibers
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-22A, HVAC Seam Tape and Mastic/MPR Building, North Stage Mechanical Room

Lab ID-Version‡: 18479215-1

Sample Layers	Asbestos Content
Tan Tape	ND
Yellow Mastic	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-22B, HVAC Seam Tape and Mastic/MPR Building, HVAC Closet adjacent Room A-1

Lab ID-Version‡: 18479216-1

Sample Layers	Asbestos Content
Tan Tape	ND
Yellow Mastic	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-23A, Vibration Dampener/MPR Building, HVAC Closet adjacent Room A-1

Lab ID-Version‡: 18479217-1

Sample Layers	Asbestos Content
Black Semi-Fibrous Material	ND
Composite Non-Asbestos Content:	20% Glass Fibers
Sample Composite Homogeneity:	Good

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ASBESTOS PLM REPORT

Location: ECG-24-7284-23B, Vibration Dampener/MPR Building, South Stage Mechanical Room

Lab ID-Version‡: 18479218-1

Sample Layers	Asbestos Content
Black Semi-Fibrous Material	ND
Composite Non-Asbestos Content:	20% Glass Fibers
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-24A, Canvas HVAC Duct Wrap with Fiberglass Insulation/MPR Building, PE Storage Room

Lab ID-Version‡: 18479219-1

Sample Layers	Asbestos Content
White Wrap	ND
Yellow Insulation	ND
Composite Non-Asbestos Content:	80% Glass Fibers 10% Cellulose
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-24B, Canvas HVAC Duct Wrap with Fiberglass Insulation/MPR Building, PE Storage Room

Lab ID-Version‡: 18479220-1

Sample Layers	Asbestos Content
White Wrap	ND
Yellow Insulation	ND
Composite Non-Asbestos Content:	80% Glass Fibers 10% Cellulose
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-24C, Canvas HVAC Duct Wrap with Fiberglass Insulation/MPR Building, PE Storage Room

Lab ID-Version‡: 18479221-1

Sample Layers	Asbestos Content
White Wrap	ND
Yellow Insulation	ND
Composite Non-Asbestos Content:	80% Glass Fibers 10% Cellulose
Sample Composite Homogeneity:	Good

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ASBESTOS PLM REPORT

Location: ECG-24-7284-25A, Drywall with Joint Compound (Patch)/MPR Building, North Stage Mechanical Room

Lab ID-Version‡: 18479222-1

Sample Layers	Asbestos Content
Off-White Joint Compound	ND
White Drywall	ND
Composite Non-Asbestos Content:	5% Cellulose 2% Glass Fibers
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-25B, Drywall with Joint Compound (Patch)/MPR Building, North Stage Mechanical Room

Lab ID-Version‡: 18479223-1

Sample Layers	Asbestos Content
Off-White Joint Compound	ND
White Drywall	ND
Composite Non-Asbestos Content:	5% Cellulose 2% Glass Fibers
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-26A, Drywall with Joint Compound/MPR Building, Old Girl's Locker Room

Lab ID-Version‡: 18479539-1

Sample Layers	Asbestos Content
White Joint Compound (Trace)	ND
Cream Tape	ND
White Joint Compound 2 (Trace)	ND
White Drywall with Brown Paper	ND
Composite Non-Asbestos Content:	5% Cellulose
Sample Composite Homogeneity:	Poor

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ASBESTOS PLM REPORT

Location: ECG-24-7284-26B, Drywall with Joint Compound/MPR Building, Old Girl's Locker Room

Lab ID-Version‡: 18479540-1

Sample Layers	Asbestos Content
Yellow Fibrous Material	ND
Blue Fibrous Material	ND
White Joint Compound (Trace)	ND
White Drywall with Brown Paper	ND
Composite Non-Asbestos Content:	5% Cellulose 5% Synthetic Fibers
Sample Composite Homogeneity:	Poor

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C/O: Jose Hernandez
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ASBESTOS PLM REPORT

Location: ECG-24-7284-27C, Skip Trowel Texture/MPR Building, Old Girl's Locker Room

Lab ID-Version‡: 18479541-1

Sample Layers	Asbestos Content
White Texture	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-27A, Skip Trowel Texture/MPR Building, Old Girl's Locker Room

Lab ID-Version‡: 18479224-1

Sample Layers	Asbestos Content
White Texture	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-27B, Skip Trowel Texture/MPR Building, Old Girl's Locker Room

Lab ID-Version‡: 18479225-1

Sample Layers	Asbestos Content
White Texture	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-28A, 12"x12" Brown Mottled Vinyl Floor Tile with Black Mastic/MPR Building, Mail Room Office

Lab ID-Version‡: 18479226-1

Sample Layers	Asbestos Content
Brown Floor Tile	ND
Black Mastic	ND
Composite Non-Asbestos Content:	< 1% Cellulose
Sample Composite Homogeneity:	Moderate

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ASBESTOS PLM REPORT

Location: ECG-24-7284-28B, 12"x12" Brown Mottled Vinyl Floor Tile with Black Mastic/ MPR Building, Southwest Room

Lab ID-Version‡: 18479227-1

Sample Layers	Asbestos Content
Brown Floor Tile	ND
Black Mastic	3% Chrysotile
Composite Non-Asbestos Content:	< 1% Cellulose
Sample Composite Homogeneity:	Moderate

Location: ECG-24-7284-29A, 2'x4' Ceiling Panel with Pinholes & Fissures/MPR Building, West Lobby

Lab ID-Version‡: 18479228-1

Sample Layers	Asbestos Content
Beige Ceiling Tile with White Surface	ND
Composite Non-Asbestos Content:	40% Cellulose 30% Glass Fibers
Sample Composite Homogeneity:	Moderate

Location: ECG-24-7284-29B, 2'x4' Ceiling Panel with Pinholes & Fissures/MPR Building, West Lobby

Lab ID-Version‡: 18479229-1

Sample Layers	Asbestos Content
Beige Ceiling Tile with White Surface	ND
Composite Non-Asbestos Content:	40% Cellulose 30% Glass Fibers
Sample Composite Homogeneity:	Moderate

Location: ECG-24-7284-30A, 2'x4' Ceiling Panel with 2'x2' Pattern/MPR Building, West Lobby

Lab ID-Version‡: 18479230-1

Sample Layers	Asbestos Content
Beige Ceiling Tile with White Surface	ND
Composite Non-Asbestos Content:	40% Cellulose 30% Glass Fibers
Sample Composite Homogeneity:	Moderate

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ASBESTOS PLM REPORT

Location: ECG-24-7284-30B, 2'x4' Ceiling Panel with 2'x2' Pattern/MPR Building, West Lobby

Lab ID-Version‡: 18479231-1

Sample Layers	Asbestos Content
Beige Ceiling Tile with White Surface	ND
Composite Non-Asbestos Content:	40% Cellulose 30% Glass Fibers
Sample Composite Homogeneity:	Moderate

Location: ECG-24-7284-30.5A, Cinder Block with Mortar/MPR Building, West Lobby

Lab ID-Version‡: 18479232-1

Sample Layers	Asbestos Content
Gray Cementitious Material (Cinder Block)	ND
Gray Mortar	ND
Sample Composite Homogeneity:	Moderate

Location: ECG-24-7284-30.5B, Cinder Block with Mortar/MPR Building, West Lobby

Lab ID-Version‡: 18479542-1

Sample Layers	Asbestos Content
Gray Cementitious Material (Cinder Block)	ND
Gray Mortar	ND
Sample Composite Homogeneity:	Moderate

Location: ECG-24-7284-30.6A, Black Roofing Debris/MPR Building, Attic above Mail Room Office

Lab ID-Version‡: 18479233-1

Sample Layers	Asbestos Content
Black Roofing Material Debris	ND
Composite Non-Asbestos Content:	< 1% Cellulose
Sample Composite Homogeneity:	Moderate

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ASBESTOS PLM REPORT

Location: ECG-24-7284-30.6B, Black Roofing Debris/MPR Building, Attic above Mail Room Office

Lab ID-Version‡: 18479234-1

Sample Layers	Asbestos Content
Black Roofing Material Debris	ND
Composite Non-Asbestos Content:	< 1% Cellulose
Sample Composite Homogeneity:	Moderate

Location: ECG-24-7284-31A, Plastic Wall Panel Glue/Office Building, Nurse's Office Restroom

Lab ID-Version‡: 18479235-1

Sample Layers	Asbestos Content
Yellow Glue	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-31B, Plastic Wall Panel Glue/Office Building, Nurse's Office Restroom

Lab ID-Version‡: 18479236-1

Sample Layers	Asbestos Content
Yellow Glue	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-32A, Gray Speckled Sheet Vinyl Flooring with Paper Backing and Mastic over Beige Sheet Vinyl Flooring with Paper Backing and Mastic/Office Building, Nurse's Office Restroom

Lab ID-Version‡: 18479237-1

Sample Layers	Asbestos Content
Gray Sheet Flooring	ND
Yellow Mastic	ND
Beige Sheet Flooring with Fibrous Backing	ND
Composite Non-Asbestos Content:	15% Cellulose
Sample Composite Homogeneity:	Moderate

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ASBESTOS PLM REPORT

Location: ECG-24-7284-32B, Gray Speckled Sheet Vinyl Flooring with Paper Backing and Mastic over Beige Sheet Vinyl Flooring with Paper Backing and Mastic/Office Building, Nurse's Office Restroom

Lab ID-Version‡: 18479238-1

Sample Layers	Asbestos Content
Gray Sheet Flooring	ND
Yellow Mastic	ND
Beige Sheet Flooring with Fibrous Backing	ND
Composite Non-Asbestos Content:	15% Cellulose
Sample Composite Homogeneity:	Moderate

Location: ECG-24-7284-33A, Brown Square Pattern Vinyl Sheet Flooring with Paper Backing and Mastic/Office Building, Manager's Office Restroom

Lab ID-Version‡: 18479239-1

Sample Layers	Asbestos Content
Brown Sheet Flooring with Fibrous Backing	ND
Tan Mastic	ND
Composite Non-Asbestos Content:	15% Cellulose
Sample Composite Homogeneity:	Moderate

Location: ECG-24-7284-33B, Brown Square Pattern Vinyl Sheet Flooring with Paper Backing and Mastic/Office Building, Manager's Office Restroom

Lab ID-Version‡: 18479240-1

Sample Layers	Asbestos Content
Brown Sheet Flooring with Fibrous Backing	ND
Tan Mastic	ND
Black Mastic	5% Chrysotile
Composite Non-Asbestos Content:	15% Cellulose
Sample Composite Homogeneity:	Moderate

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ASBESTOS PLM REPORT

Location: ECG-24-7284-34A, Blue-Gray Carpet Tile with Remnant Yellow Mastic/Office Building, Front Office

Lab ID-Version‡: 18479241-1

Sample Layers	Asbestos Content
Blue Carpet	ND
Yellow Mastic	ND
Composite Non-Asbestos Content:	75% Synthetic Fibers
Sample Composite Homogeneity:	Moderate

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ASBESTOS PLM REPORT

Location: ECG-24-7284-34B, Blue-Gray Carpet Tile with Remnant Yellow Mastic/Office Building, Manager's Office

Lab ID-Version‡: 18479242-1

Sample Layers	Asbestos Content
Blue Carpet	ND
Yellow Mastic	ND
Composite Non-Asbestos Content:	75% Synthetic Fibers
Sample Composite Homogeneity:	Moderate

Location: ECG-24-7284-35A, 4" Gray Vinyl Base Cove with Mastic/Office Building, Manager's Office

Lab ID-Version‡: 18479243-1

Sample Layers	Asbestos Content
Gray Cove Base	ND
Beige Mastic	ND
Sample Composite Homogeneity:	Moderate

Location: ECG-24-7284-35B, 4" Gray Vinyl Base Cove with Mastic/Office Building, Spare Office

Lab ID-Version‡: 18479244-1

Sample Layers	Asbestos Content
Gray Cove Base	ND
Beige Mastic	ND
Sample Composite Homogeneity:	Moderate

Location: ECG-24-7284-36A, 4" Brown Vinyl Base Cove with Mastic/Office Building, Nurse's Office

Lab ID-Version‡: 18479245-1

Sample Layers	Asbestos Content
Brown Cove Base	ND
Yellow Mastic	ND
Sample Composite Homogeneity:	Moderate

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ASBESTOS PLM REPORT

Location: ECG-24-7284-36B, 4" Brown Vinyl Base Cove with Mastic/Office Building, IT Room

Lab ID-Version‡: 18479246-1

Sample Layers	Asbestos Content
Brown Cove Base	ND
Yellow Mastic	ND
Sample Composite Homogeneity:	Moderate

Location: ECG-24-7284-37A, Gray Window Caulking/Office Building, Front Office

Lab ID-Version‡: 18479247-1

Sample Layers	Asbestos Content
Gray Caulk	ND
Sample Composite Homogeneity:	Moderate

Location: ECG-24-7284-37B, Gray Window Caulking/Office Building, Nurse's Office

Lab ID-Version‡: 18479248-1

Sample Layers	Asbestos Content
Gray Caulk	ND
Sample Composite Homogeneity:	Moderate

Location: ECG-24-7284-38A, Rough Textured Plaster/Hallway between Office and MPR Buildings

Lab ID-Version‡: 18479249-1

Sample Layers	Asbestos Content
Green Plaster	< 1% Chrysotile
Sample Composite Homogeneity:	Moderate

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ASBESTOS PLM REPORT

Location: ECG-24-7284-38B, Rough Textured Plaster/Hallway between Office and MPR Buildings

Lab ID-Version‡: 18479250-1

Sample Layers	Asbestos Content
Green Plaster	< 1% Chrysotile
Sample Composite Homogeneity:	Moderate

Location: ECG-24-7284-38C, Rough Textured Plaster/Hallway between Office and MPR Buildings

Lab ID-Version‡: 18479251-1

Sample Layers	Asbestos Content
Green Plaster	< 1% Chrysotile
Sample Composite Homogeneity:	Moderate

Location: ECG-24-7284-39A, Drywall with Joint Compound/Office Building, Office Storage

Lab ID-Version‡: 18479252-1

Sample Layers	Asbestos Content
Gray Cementitious Material	ND
White Joint Compound	ND
White Drywall with Brown Paper	ND
Blue Fibrous Material	ND
Yellow Fibrous Material	ND
Composite Non-Asbestos Content:	5% Synthetic Fibers 3% Cellulose
Sample Composite Homogeneity:	Poor

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ASBESTOS PLM REPORT

Location: ECG-24-7284-39B, Drywall with Joint Compound/Office Building, Manager's Office Restroom

Lab ID-Version‡: 18479253-1

Sample Layers	Asbestos Content
Gray Cementitious Material	ND
White Joint Compound	ND
White Drywall with Brown Paper	ND
Blue Fibrous Material	ND
Yellow Fibrous Material	ND
Composite Non-Asbestos Content:	5% Synthetic Fibers 3% Cellulose
Sample Composite Homogeneity:	Poor

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ASBESTOS PLM REPORT

Location: ECG-24-7284-40A, 12"x12" Glue-on Ceiling Tile with Pinholes/Office Building, IT Room

Lab ID-Version‡: 18479254-1

Sample Layers	Asbestos Content
Brown Glue	ND
Composite Non-Asbestos Content:	15% Cellulose
Sample Composite Homogeneity:	Moderate

Location: ECG-24-7284-40B, 12"x12" Glue-on Ceiling Tile with Pinholes/Office Building, IT Room

Lab ID-Version‡: 18479255-1

Sample Layers	Asbestos Content
Brown Glue	ND
Composite Non-Asbestos Content:	15% Cellulose
Sample Composite Homogeneity:	Moderate

Location: ECG-24-7284-41A, Drywall behind Ceiling Tiles/Office Building, IT Room

Lab ID-Version‡: 18479256-1

Sample Layers	Asbestos Content
White Drywall with Brown Paper	ND
Composite Non-Asbestos Content:	3% Cellulose < 1% Glass Fibers
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-41B, Drywall behind Ceiling Tiles/Office Building, IT Room

Lab ID-Version‡: 18479257-1

Sample Layers	Asbestos Content
White Drywall with Brown Paper	ND
Composite Non-Asbestos Content:	3% Cellulose < 1% Glass Fibers
Sample Composite Homogeneity:	Good

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ASBESTOS PLM REPORT

Location: ECG-24-7284-42A, Plaster Board/Office Building, Above Ceiling of Manager's Office

Lab ID-Version‡: 18479258-1

Sample Layers	Asbestos Content
White Drywall with Brown Paper	ND
Composite Non-Asbestos Content:	3% Cellulose
Sample Composite Homogeneity:	Moderate

Location: ECG-24-7284-42B, Plaster Board/Office Building, Above Ceiling of Manager's Office

Lab ID-Version‡: 18479259-1

Sample Layers	Asbestos Content
White Drywall with Brown Paper	ND
Composite Non-Asbestos Content:	3% Cellulose
Sample Composite Homogeneity:	Moderate

Location: ECG-24-7284-43A, 12"x12" Glue-On Ceiling Tile with Fissures/Office Building, Manager's Office

Lab ID-Version‡: 18479260-1

Sample Layers	Asbestos Content
White Cementitious Material	ND
Gray Ceiling Tile	ND
Yellow Foam	ND
Gray Fibrous Material	ND
Composite Non-Asbestos Content:	55% Glass Fibers 5% Synthetic Fibers
Sample Composite Homogeneity:	Moderate

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ASBESTOS PLM REPORT

Location: ECG-24-7284-43B, 12"x12" Glue-On Ceiling Tile with Fissures/Office Building, Principal's Office

Lab ID-Version‡: 18479261-1

Sample Layers	Asbestos Content
White Cementitious Material	ND
Gray Ceiling Tile	ND
Yellow Foam	ND
Gray Fibrous Material	ND
Brown Mastic	ND
Composite Non-Asbestos Content:	55% Glass Fibers 5% Synthetic Fibers
Sample Composite Homogeneity:	Moderate

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Re: 24-7284 Sacramento City Unified School District;
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ASBESTOS PLM REPORT

Location: ECG-24-7284-44A, Plaster/Office Building, Front Office Lab ID-Version‡: 18479262-1

Sample Layers	Asbestos Content
White Plaster	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-44B, Plaster/Office Building, Manager's Office Lab ID-Version‡: 18479263-1

Sample Layers	Asbestos Content
White Plaster	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-44C, Plaster/Office Building, Office Storage Lab ID-Version‡: 18479264-1

Sample Layers	Asbestos Content
Green Plaster	ND
White Plaster	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-45A, Concrete Slab/Kindergarten Building, HVAC Closet Lab ID-Version‡: 18479265-1

Sample Layers	Asbestos Content
Gray Concrete	ND
Sample Composite Homogeneity:	Good

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ASBESTOS PLM REPORT

Location: ECG-24-7284-45B, Concrete Slab/Kindergarten Building, HVAC Closet Lab ID-Version‡: 18479266-1

Sample Layers	Asbestos Content
Gray Concrete	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-46A, Brown Square Pattern Vinyl Sheet Flooring with Paper Backing and Black & Yellow Mastic/Kindergarten Building, Southeast Storage Room Lab ID-Version‡: 18479267-1

Sample Layers	Asbestos Content
Brown Sheet Flooring with Fibrous Backing	ND
Black/Yellow Mastic	ND
Composite Non-Asbestos Content:	20% Cellulose
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-46B, Brown Square Pattern Vinyl Sheet Flooring with Paper Backing and Black & Yellow Mastic/Kindergarten Building, Southeast Storage Room Lab ID-Version‡: 18479268-1

Sample Layers	Asbestos Content
Brown Sheet Flooring with Fibrous Backing	ND
Black/Yellow Mastic	ND
Composite Non-Asbestos Content:	20% Cellulose
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-47A, 12"x12" Brown Mottled Vinyl Floor Tile with Black & Yellow Mastic/Kindergarten Building, Classroom Lab ID-Version‡: 18479269-1

Sample Layers	Asbestos Content
Brown Floor Tile	ND
Black Mastic	2% Chrysotile
Sample Composite Homogeneity:	Good

Comments: Sample ECG-24-7284-47B was not analyzed due to prior positive series.

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ASBESTOS PLM REPORT

Location: ECG-24-7284-48A, Gray Sheet Vinyl Flooring with Mastic/Kindergarten Building, Restroom

Lab ID-Version‡: 18479271-1

Sample Layers	Asbestos Content
Gray Sheet Flooring with Fibrous Backing	ND
Black Mastic	2% Chrysotile
Sample Composite Homogeneity:	Good

Comments: Sample ECG-24-7284-48B was not analyzed due to prior positive series.

Location: ECG-24-7284-49A, Blue Carpet with Yellow Mastic/Kindergarten Building, Classroom

Lab ID-Version‡: 18479273-1

Sample Layers	Asbestos Content
Blue Carpet	ND
Yellow Mastic	ND
Composite Non-Asbestos Content:	60% Synthetic Fibers
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-49B, Blue Carpet with Yellow Mastic/Kindergarten Building, Classroom

Lab ID-Version‡: 18479274-1

Sample Layers	Asbestos Content
Blue Carpet	ND
Yellow Mastic	ND
Composite Non-Asbestos Content:	60% Synthetic Fibers
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-50A, 4" Brown Vinyl Base Cove with Mastic/Kindergarten Building, Classroom

Lab ID-Version‡: 18479275-1

Sample Layers	Asbestos Content
Brown Baseboard	ND
Yellow Mastic	ND
Sample Composite Homogeneity:	Good

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ASBESTOS PLM REPORT

Location: ECG-24-7284-50B, 4" Brown Vinyl Base Cove with Mastic/Kindergarten Building, Sink Room

Lab ID-Version‡: 18479276-1

Sample Layers	Asbestos Content
Brown Baseboard	ND
Yellow Mastic	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-51A, 4" Gray Vinyl Base Cove with Mastic/Kindergarten Building, Classroom

Lab ID-Version‡: 18479277-1

Sample Layers	Asbestos Content
Gray Baseboard	ND
Beige Mastic	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-51B, 4" Gray Vinyl Base Cove with Mastic/Kindergarten Building, Classroom

Lab ID-Version‡: 18479278-1

Sample Layers	Asbestos Content
Gray Baseboard	ND
Beige Mastic	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-52A, Plaster/Kindergarten Building

Lab ID-Version‡: 18479279-1

Sample Layers	Asbestos Content
White Plaster	ND
Green Plaster	ND
Sample Composite Homogeneity:	Good

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ASBESTOS PLM REPORT

Location: ECG-24-7284-52B, Plaster/Kindergarten Building Lab ID-Version‡: 18479280-1

Sample Layers	Asbestos Content
White Plaster	ND
Green Plaster	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-52C, Plaster/Kindergarten Building Lab ID-Version‡: 18479281-1

Sample Layers	Asbestos Content
White Plaster	ND
Green Plaster	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-52D, Plaster/Kindergarten Building Lab ID-Version‡: 18479282-1

Sample Layers	Asbestos Content
White Plaster	ND
Green Plaster	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-52E, Plaster/Kindergarten Building Lab ID-Version‡: 18479283-1

Sample Layers	Asbestos Content
White Plaster	ND
Green Plaster	ND
Sample Composite Homogeneity:	Good

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ASBESTOS PLM REPORT

Location: ECG-24-7284-53A, Plastic Wall Panel Glue/Kindergarten Building, Restroom

Lab ID-Version‡: 18479284-1

Sample Layers	Asbestos Content
Yellow Glue	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-53B, Plastic Wall Panel Glue/Kindergarten Building, Restroom

Lab ID-Version‡: 18479285-1

Sample Layers	Asbestos Content
Yellow Glue	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-54A, 12"x12" Nail-on Ceiling Tile with Pinholes/Kindergarten Building

Lab ID-Version‡: 18479286-1

Sample Layers	Asbestos Content
Brown Ceiling Tile	ND
Composite Non-Asbestos Content:	60% Cellulose
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-54B, 12"x12" Nail-on Ceiling Tile with Pinholes/Kindergarten Building

Lab ID-Version‡: 18479287-1

Sample Layers	Asbestos Content
Brown Ceiling Tile	ND
Composite Non-Asbestos Content:	60% Cellulose
Sample Composite Homogeneity:	Good

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ASBESTOS PLM REPORT

Location: ECG-24-7284-55A, Concrete Slab/Building B, Library B2 Lab ID-Version‡: 18479288-1

Sample Layers	Asbestos Content
Gray Concrete	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-55B, Concrete Slab/Building B, Library B2 Lab ID-Version‡: 18479289-1

Sample Layers	Asbestos Content
Gray Concrete	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-56A, Yellow Carpet Mastic/Building B, Library B2 Lab ID-Version‡: 18479290-1

Sample Layers	Asbestos Content
Yellow Mastic	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-56B, Yellow Carpet Mastic/Building B, Library B2 Lab ID-Version‡: 18479291-1

Sample Layers	Asbestos Content
Yellow Mastic	ND
Sample Composite Homogeneity:	Good

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ASBESTOS PLM REPORT

Location: ECG-24-7284-57A, 12"x12" Gray Mottled Vinyl Floor Tile with Black Mastic and Leveler/ Building B, Library B2

Lab ID-Version‡: 18479292-1

Sample Layers	Asbestos Content
Gray Floor Tile	ND
Black Mastic	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-57B, 12"x12" Gray Mottled Vinyl Floor Tile with Black Mastic/ Building B, Library B2

Lab ID-Version‡: 18479293-1

Sample Layers	Asbestos Content
Gray Floor Tile	ND
Black Mastic	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-58A, 4" Gray Vinyl Base Cove with Mastic/Building B, Library B2

Lab ID-Version‡: 18479294-1

Sample Layers	Asbestos Content
Gray Baseboard	ND
Cream Mastic	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-58B, 4" Gray Vinyl Base Cove with Mastic/Building B, Library B2

Lab ID-Version‡: 18479295-1

Sample Layers	Asbestos Content
Gray Baseboard	ND
Cream Mastic	ND
Sample Composite Homogeneity:	Good

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ASBESTOS PLM REPORT

Location: ECG-24-7284-59A, 12"x12" Beige Mottled Vinyl Floor Tile with Black Mastic over Beige Vinyl Floor Tile with Mastic/Building B, Classroom B4, At North Entry

Lab ID-Version‡: 18479296-1

Sample Layers	Asbestos Content
Beige Floor Tile	ND
Black Mastic	2% Chrysotile
Cream Floor Tile	ND
Transparent Mastic	ND
Sample Composite Homogeneity:	Good

Comments: Sample ECG-24-7284-59B was not analyzed due to prior positive series.

Location: ECG-24-7284-60A, Gray with Multi-Colored Specks Sheet Vinyl Flooring with Paper Backing and Black & Yellow Mastic/Building B, Classroom B4

Lab ID-Version‡: 18479298-1

Sample Layers	Asbestos Content
Green Floor Tile	2% Chrysotile
Black Mastic	2% Chrysotile
Gray Sheet Flooring with Fibrous Backing	ND
Yellow Mastic	ND
Composite Non-Asbestos Content:	20% Cellulose
Sample Composite Homogeneity:	Good

Comments: Samples ECG-24-7284-60B was not analyzed due to prior positive series.

Location: ECG-24-7284-61A, Yellow and Black Carpet Mastic/Building B, Classroom B4

Lab ID-Version‡: 18479300-1

Sample Layers	Asbestos Content
Black Mastic	2% Chrysotile
Yellow Mastic	ND
Sample Composite Homogeneity:	Good

Comments: Sample ECG-24-7284-61B was not analyzed due to prior positive series.

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ASBESTOS PLM REPORT

Location: ECG-24-7284-62A, 12"x12' Brown Mottled Vinyl Floor Tile with Black Mastic/ Building B, Classroom B3

Lab ID-Version‡: 18479302-1

Sample Layers	Asbestos Content
Brown Floor Tile	ND
Black Mastic	2% Chrysotile
Sample Composite Homogeneity:	Good

Comments: Sample ECG-24-7284-62B was not analyzed due to prior positive series.

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ASBESTOS PLM REPORT

Location: ECG-24-7284-63A, 4" Brown Vinyl Base Cove with Mastic/Building B, Classroom B3

Lab ID-Version‡: 18479304-1

Sample Layers	Asbestos Content
Brown Baseboard	ND
Beige Mastic	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-63B, 4" Brown Vinyl Base Cove with Mastic/Building B, Classroom B5

Lab ID-Version‡: 18479305-1

Sample Layers	Asbestos Content
Brown Baseboard	ND
Beige Mastic	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-64A, Gray-Blue Epoxy Coating/Building B, Boy's Restroom

Lab ID-Version‡: 18479306-1

Sample Layers	Asbestos Content
Gray Coating	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-64B, Gray-Blue Epoxy Coating/Building B, Girl's Restroom

Lab ID-Version‡: 18479307-1

Sample Layers	Asbestos Content
Gray Coating	ND
Sample Composite Homogeneity:	Good

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ASBESTOS PLM REPORT

Location: ECG-24-7284-65A, Drywall with Joint Compound/Building B, Boy's Restroom

Lab ID-Version‡: 18479308-1

Sample Layers	Asbestos Content
White Texture	ND
Cream Tape	ND
White Joint Compound	ND
White Drywall with Brown Paper	ND
Composite Non-Asbestos Content:	10% Cellulose
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-65B, Drywall with Joint Compound/Building B, Girl's Restroom

Lab ID-Version‡: 18479309-1

Sample Layers	Asbestos Content
White Texture	ND
Cream Tape	ND
White Joint Compound	ND
White Drywall with Brown Paper	ND
Composite Non-Asbestos Content:	10% Cellulose
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-66A, Skim Coat/Building B, Boy's Restroom

Lab ID-Version‡: 18479310-1

Sample Layers	Asbestos Content
White Skim Coat	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-66B, Skim Coat/Building B, Girl's Restroom

Lab ID-Version‡: 18479311-1

Sample Layers	Asbestos Content
White Skim Coat	ND
Sample Composite Homogeneity:	Good

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ASBESTOS PLM REPORT

Location: ECG-24-7284-66C, Skim Coat/Building B, Girl's Restroom Lab ID-Version‡: 18479312-1

Sample Layers	Asbestos Content
White Skim Coat	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-67D, Plaster/Building B, Classroom B5 Lab ID-Version‡: 18479316-1

Sample Layers	Asbestos Content
Beige Plaster	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-67E, Plaster/Building B, Classroom B6 Lab ID-Version‡: 18479317-1

Sample Layers	Asbestos Content
Beige Plaster	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-67A, Plaster/Building B, Library B2 Lab ID-Version‡: 18479313-1

Sample Layers	Asbestos Content
Beige Plaster	ND
Sample Composite Homogeneity:	Good

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ASBESTOS PLM REPORT

Location: ECG-24-7284-67B, Plaster/Building B, Classroom B3 Lab ID-Version‡: 18479314-1

Sample Layers	Asbestos Content
Beige Plaster	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-67F, Plaster/Building B, Classroom B7 Lab ID-Version‡: 18479318-1

Sample Layers	Asbestos Content
Beige Plaster	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-67G, Plaster/Building B, Classroom B7 Lab ID-Version‡: 18479319-1

Sample Layers	Asbestos Content
Beige Plaster	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-68A, Plaster/Building B, Classroom B5 HVAC Closet Lab ID-Version‡: 18479320-1

Sample Layers	Asbestos Content
Green Plaster	ND
White Plaster	ND
Sample Composite Homogeneity:	Good

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ASBESTOS PLM REPORT

Location: ECG-24-7284-68B, Plaster/Building B, Classroom B6 HVAC Closet Lab ID-Version‡: 18479321-1

Sample Layers	Asbestos Content
Green Plaster	ND
White Plaster	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-68C, Plaster/Building B, Classroom B7 HVAC Closet Lab ID-Version‡: 18479322-1

Sample Layers	Asbestos Content
Green Plaster	ND
White Plaster	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-68D, Plaster/Building B, Classroom B3 HVAC Closet Lab ID-Version‡: 18479323-1

Sample Layers	Asbestos Content
Green Plaster	ND
White Plaster	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-68E, Plaster/Building B, Classroom B4 HVAC Closet Lab ID-Version‡: 18479324-1

Sample Layers	Asbestos Content
Green Plaster	ND
White Plaster	ND
Sample Composite Homogeneity:	Good

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ASBESTOS PLM REPORT

Location: ECG-24-7284-69A, HVAC Seam Mastic/Building B, Classroom B3 HVAC Closet

Lab ID-Version‡: 18479325-1

Sample Layers	Asbestos Content
White Mastic	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-69B, HVAC Seam Mastic/Building B, Classroom B5 HVAC Closet

Lab ID-Version‡: 18479326-1

Sample Layers	Asbestos Content
White Mastic	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-70A, 12"x12" Nail-on Ceiling Tile with Pinholes/Building B, Library B2

Lab ID-Version‡: 18479327-1

Sample Layers	Asbestos Content
Brown Ceiling Tile	ND
Composite Non-Asbestos Content:	60% Cellulose
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-70B, 12"x12" Nail-on Ceiling Tile with Pinholes/Building B, Classroom B3

Lab ID-Version‡: 18479328-1

Sample Layers	Asbestos Content
Brown Ceiling Tile	ND
Composite Non-Asbestos Content:	60% Cellulose
Sample Composite Homogeneity:	Good

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ASBESTOS PLM REPORT

Location: ECG-24-7284-71A, Gray Mortar and Decorative Glass Black Wall/Building B, Library B2

Lab ID-Version‡: 18479329-1

Sample Layers	Asbestos Content
Gray Mortar	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-71B, Gray Mortar and Decorative Glass Black Wall/Building B, Library B2

Lab ID-Version‡: 18479330-1

Sample Layers	Asbestos Content
Gray Mortar	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-72A, 12"x12" Gray Mottled Vinyl Floor Tile with Black Mastic/ Building C, Classroom C-2

Lab ID-Version‡: 18479331-1

Sample Layers	Asbestos Content
Gray Floor Tile	ND
Black Mastic	2% Chrysotile
Sample Composite Homogeneity:	Good

Comments: Sample ECG-24-7284-72B was not analyzed due to prior positive series.

Location: ECG-24-7284-73A, 12"x12" Brown Mottled Vinyl Floor Tile with Black Mastic/Building C, Classroom C-3 Closet

Lab ID-Version‡: 18479333-1

Sample Layers	Asbestos Content
Brown Floor Tile	ND
Black Mastic	2% Chrysotile
Sample Composite Homogeneity:	Good

Comments: Sample ECG-24-7284-73B was not analyzed due to prior positive series.

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ASBESTOS PLM REPORT

Location: ECG-24-7284-74A, 12"x12" Tan Mottled Vinyl Floor Tile with Black Mastic/ Building C, Classroom C-5

Lab ID-Version‡: 18479335-1

Sample Layers	Asbestos Content
Tan Floor Tile	ND
Yellow Mastic	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-74B, 12"x12" Tan Mottled Vinyl Floor Tile with Black Mastic/ Building C, Classroom C-5

Lab ID-Version‡: 18479336-1

Sample Layers	Asbestos Content
Tan Floor Tile	ND
Yellow Mastic	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-75A, Black and Yellow Carpet Mastic/Building C, Classroom C-5

Lab ID-Version‡: 18479337-1

Sample Layers	Asbestos Content
Black/Yellow Mastic	2% Chrysotile
Sample Composite Homogeneity:	Good

Comments: Sample ECG-24-7284-75B was not analyzed due to prior positive series.

Location: ECG-24-7284-76A, 4" Gray Vinyl Base Cove with Mastic/Building C, Classroom C-2

Lab ID-Version‡: 18479339-1

Sample Layers	Asbestos Content
Gray Baseboard	ND
Beige Mastic	ND
Sample Composite Homogeneity:	Good

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ASBESTOS PLM REPORT

Location: ECG-24-7284-76B, 4" Gray Vinyl Base Cove with Mastic/Building C, Classroom C-2

Lab ID-Version‡: 18479340-1

Sample Layers	Asbestos Content
Gray Baseboard	ND
Beige Mastic	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-77A, 4" Brown Vinyl Base Cove with Mastic/Building C, Classroom C-3

Lab ID-Version‡: 18479341-1

Sample Layers	Asbestos Content
Brown Baseboard	ND
Beige Mastic	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-77B, 4" Brown Vinyl Base Cove with Mastic/Building C, Classroom C-4

Lab ID-Version‡: 18479342-1

Sample Layers	Asbestos Content
Brown Baseboard	ND
Beige Mastic	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-78A, Concrete Slab/Building C, Classroom C-4

Lab ID-Version‡: 18479343-1

Sample Layers	Asbestos Content
Gray Concrete	ND
Sample Composite Homogeneity:	Good

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ASBESTOS PLM REPORT

Location: ECG-24-7284-78B, Concrete Slab/Building C, Classroom C-4

Lab ID-Version‡: 18479344-1

Sample Layers	Asbestos Content
Gray Concrete	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-79A, Tan Epoxy Coating/Building C, Boy's Restroom adjacent Classroom C-2

Lab ID-Version‡: 18479345-1

Sample Layers	Asbestos Content
Tan Coating	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-79B, Tan Epoxy Coating/Building C, Girl's Restroom adjacent Classroom C-2

Lab ID-Version‡: 18479346-1

Sample Layers	Asbestos Content
Tan Coating	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-80A, 4" White Ceramic Tile with Grout and Mortar/Building C, Girl's Restroom adjacent Classroom C-2

Lab ID-Version‡: 18479347-1

Sample Layers	Asbestos Content
White Ceramic Tile	ND
White Grout	ND
White Mortar	ND
Sample Composite Homogeneity:	Good

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ASBESTOS PLM REPORT

Location: ECG-24-7284-80B, 4" White Ceramic Tile with Grout and Mortar/Building C, Girl's Restroom adjacent Classroom C-2

Lab ID-Version‡: 18479348-1

Sample Layers	Asbestos Content
White Ceramic Tile	ND
White Grout	ND
White Mortar	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-81A, Drywall with Joint Compound/Building C, Boy's Restroom adjacent Classroom C-2

Lab ID-Version‡: 18479349-1

Sample Layers	Asbestos Content
White Texture	ND
Cream Tape	ND
White Joint Compound	ND
White Drywall with Brown Paper	ND
Composite Non-Asbestos Content:	10% Cellulose
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-81B, Drywall with Joint Compound/Building C, Boy's Restroom adjacent Classroom C-2

Lab ID-Version‡: 18479350-1

Sample Layers	Asbestos Content
White Texture	ND
Cream Tape	ND
White Joint Compound	ND
White Drywall with Brown Paper	ND
Composite Non-Asbestos Content:	10% Cellulose
Sample Composite Homogeneity:	Good

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ASBESTOS PLM REPORT

Location: ECG-24-7284-82A, Skip Trowel Texture/Building C, Boy's Restroom adjacent Classroom C-2

Lab ID-Version‡: 18479351-1

Sample Layers	Asbestos Content
White Texture	ND
Sample Composite Homogeneity:	Good

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ASBESTOS PLM REPORT

Location: ECG-24-7284-82B, Skip Trowel Texture/Building C, Boy's Restroom adjacent Classroom C-2

Lab ID-Version‡: 18479352-1

Sample Layers	Asbestos Content
White Texture	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-82C, Skip Trowel Texture/Building C, Boy's Restroom adjacent Classroom C-2

Lab ID-Version‡: 18479353-1

Sample Layers	Asbestos Content
White Texture	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-83A, Plaster/Building C, Classroom C-2

Lab ID-Version‡: 18479354-1

Sample Layers	Asbestos Content
White Plaster	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-83B, Plaster/Building C, Classroom C-2

Lab ID-Version‡: 18479355-1

Sample Layers	Asbestos Content
White Plaster	ND
Sample Composite Homogeneity:	Good

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ASBESTOS PLM REPORT

Location: ECG-24-7284-83C, Plaster/Building C, Classroom C-3 Lab ID-Version‡: 18479356-1

Sample Layers	Asbestos Content
White Plaster	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-83D, Plaster/Building C, Classroom C-4 Lab ID-Version‡: 18479357-1

Sample Layers	Asbestos Content
White Plaster	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-83E, Plaster/Building C, Classroom C-5 Lab ID-Version‡: 18479358-1

Sample Layers	Asbestos Content
White Plaster	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-84A, Plaster Board/Building C, HVAC Closet for Classrooms C-4 & C-5 Lab ID-Version‡: 18479359-1

Sample Layers	Asbestos Content
White Drywall with Brown Paper	ND
Composite Non-Asbestos Content:	10% Cellulose
Sample Composite Homogeneity:	Good

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ASBESTOS PLM REPORT

Location: ECG-24-7284-84B, Plaster Board/Building C, HVAC Closet for Classrooms C-2 & C-3

Lab ID-Version‡: 18479360-1

Sample Layers	Asbestos Content
White Drywall with Brown Paper	ND
Composite Non-Asbestos Content:	10% Cellulose
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-85A, Drywall with Joint Compound/Building C, HVAC Closet for Classrooms C-2 & C-3

Lab ID-Version‡: 18479361-1

Sample Layers	Asbestos Content
White Joint Compound	ND
White Drywall with Brown Paper	ND
Composite Non-Asbestos Content:	10% Cellulose
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-85B, Drywall with Joint Compound/Building C, HVAC Closet for Classrooms C-4 & C-5

Lab ID-Version‡: 18479362-1

Sample Layers	Asbestos Content
White Joint Compound	ND
White Drywall with Brown Paper	ND
Composite Non-Asbestos Content:	10% Cellulose
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-86A, HVAC Seam Mastic/Building C, HVAC Closet for Classrooms C-4 & C-5

Lab ID-Version‡: 18479363-1

Sample Layers	Asbestos Content
White Mastic	ND
Sample Composite Homogeneity:	Good

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ASBESTOS PLM REPORT

Location: ECG-24-7284-86B, HVAC Seam Mastic/Building C, HVAC Closet for Classrooms C-2 & C-3

Lab ID-Version‡: 18479364-1

Sample Layers	Asbestos Content
White Mastic	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-87A, Vibration Dampener/Building C, HVAC Closet for Classrooms C-4 & C-5

Lab ID-Version‡: 18479365-1

Sample Layers	Asbestos Content
Black Non-Fibrous Material	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-87B, Vibration Dampener/Building C, HVAC Closet for Classrooms C-2 & C-3

Lab ID-Version‡: 18479366-1

Sample Layers	Asbestos Content
Black Non-Fibrous Material	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-88A, 12"x12" Nail-on Ceiling Tile with Pinholes/Building C, Classroom C-3

Lab ID-Version‡: 18479367-1

Sample Layers	Asbestos Content
Yellow Ceiling Tile	ND
Composite Non-Asbestos Content:	60% Cellulose
Sample Composite Homogeneity:	Good

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ASBESTOS PLM REPORT

Location: ECG-24-7284-88B, 12"x12" Nail-on Ceiling Tile with Pinholes/Building C, Classroom C-2

Lab ID-Version‡: 18479368-1

Sample Layers	Asbestos Content
Yellow Ceiling Tile	ND
Composite Non-Asbestos Content:	60% Cellulose
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-89A, Gray Mortar and Decorative Glass Block Wall/Building C, Classroom C-2

Lab ID-Version‡: 18479369-1

Sample Layers	Asbestos Content
Gray Mortar	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-89B, Gray Mortar and Decorative Glass Block Wall/Building C, Classroom C-2

Lab ID-Version‡: 18479370-1

Sample Layers	Asbestos Content
Gray Mortar	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-90A, 9"x9" Blue-Green Streaked Vinyl Floor Tile with Black Mastic/Building C, Classroom C-6

Lab ID-Version‡: 18479371-1

Sample Layers	Asbestos Content
Green Floor Tile	2% Chrysotile
Black Mastic	2% Chrysotile
Sample Composite Homogeneity:	Good

Comments: Sample ECG-24-7284-90B was not analyzed due to prior positive series.

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ASBESTOS PLM REPORT

Location: ECG-24-7284-91A, 9"x9" Light Green with Tan Streaks Vinyl Floor Tile and Black Mastic/Building C, Classroom C-6

Lab ID-Version‡: 18479373-1

Sample Layers	Asbestos Content
Green Floor Tile	2% Chrysotile
Black Mastic	2% Chrysotile
Sample Composite Homogeneity:	Good

Comments: Sample ECG-24-7284-91B was not analyzed due to prior positive series.

Location: ECG-24-7284-92A, 9"x9" Dark Green with Tan Streaks Vinyl Floor Tile and Black Mastic/Building C, Classroom C-6

Lab ID-Version‡: 18479375-1

Sample Layers	Asbestos Content
Green Floor Tile	2% Chrysotile
Black Mastic	2% Chrysotile
Beige Compound	ND
Sample Composite Homogeneity:	Good

Comments: Sample ECG-24-7284-92B was not analyzed due to prior positive series.

Location: ECG-24-7284-93A, 12"x12" Brown Mottled Vinyl Floor Tile with Black Mastic/Building C, Classroom C-8

Lab ID-Version‡: 18479377-1

Sample Layers	Asbestos Content
Brown Floor Tile	ND
Black Mastic (Trace)	2% Chrysotile
Sample Composite Homogeneity:	Good

Comments: Sample ECG-24-7284-93B was not analyzed due to prior positive series.

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ASBESTOS PLM REPORT

Location: ECG-24-7284-94A, 12"x12" Tan Mottled Vinyl Floor Tile with Black Mastic/ Building C, Classroom C-7

Lab ID-Version‡: 18479379-1

Sample Layers	Asbestos Content
Tan Floor Tile	ND
Black Mastic (Trace)	2% Chrysotile
Sample Composite Homogeneity:	Good

Comments: Sample ECG-24-7284-94B was not analyzed due to prior positive series.

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ASBESTOS PLM REPORT

Location: ECG-24-7284-95A, 12"x12" Gray Mottled Vinyl Floor Tile with Black Mastic/ Building C, Classroom C-9

Lab ID-Version‡: 18479381-1

Sample Layers	Asbestos Content
Gray Floor Tile	ND
Black Mastic	2% Chrysotile
Sample Composite Homogeneity:	Good

Comments: Sample ECG-24-7284-95B was not analyzed due to prior positive series.

Location: ECG-24-7284-96A, 4" Gray Vinyl Base Cove with Mastic/Building C, Classroom C-7

Lab ID-Version‡: 18479383-1

Sample Layers	Asbestos Content
Gray Baseboard	ND
Beige Mastic	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-96B, 4" Gray Vinyl Base Cove with Mastic/Building C, Classroom C-9

Lab ID-Version‡: 18479384-1

Sample Layers	Asbestos Content
Gray Baseboard	ND
Beige Mastic	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-97A, 4" Brown Vinyl Base Cove with Mastic/Building C, Classroom C-7

Lab ID-Version‡: 18479385-1

Sample Layers	Asbestos Content
Brown Baseboard	ND
Yellow Mastic	ND
Sample Composite Homogeneity:	Good

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ASBESTOS PLM REPORT

Location: ECG-24-7284-97B, 4" Brown Vinyl Base Cove with Mastic/Building C, Classroom C-9

Lab ID-Version‡: 18479386-1

Sample Layers	Asbestos Content
Brown Baseboard	ND
Yellow Mastic	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-98A, Yellow Carpet Mastic/Building C, Classroom C-6

Lab ID-Version‡: 18479387-1

Sample Layers	Asbestos Content
Yellow Mastic	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-98B, Yellow Carpet Mastic/Building C, Classroom C-7

Lab ID-Version‡: 18479388-1

Sample Layers	Asbestos Content
Yellow Mastic	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-99A, Gray-Blue Epoxy Coating/Building C, Boy's Restroom Adjacent Classroom C-9

Lab ID-Version‡: 18479389-1

Sample Layers	Asbestos Content
Gray Coating	ND
Sample Composite Homogeneity:	Good

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ASBESTOS PLM REPORT

Location: ECG-24-7284-99B, Gray-Blue Epoxy Coating/Building C, Girl's Restroom Adjacent Classroom C-9

Lab ID-Version‡: 18479390-1

Sample Layers	Asbestos Content
Gray Coating	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-100A, Drywall with Joint Compound/Building C, Boy's Restroom adjacent Classroom C-9

Lab ID-Version‡: 18479391-1

Sample Layers	Asbestos Content
White Joint Compound	ND
White Drywall with Brown Paper	ND
Composite Non-Asbestos Content:	10% Cellulose
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-100B, Drywall with Joint Compound/Building C, Girl's Restroom adjacent Classroom C-9

Lab ID-Version‡: 18479392-1

Sample Layers	Asbestos Content
White Joint Compound	ND
White Drywall with Brown Paper	ND
Composite Non-Asbestos Content:	10% Cellulose
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-101A, Skim Coat/Building C, Boy's Restroom adjacent Classroom C-9

Lab ID-Version‡: 18479393-1

Sample Layers	Asbestos Content
White Skim Coat	ND
Sample Composite Homogeneity:	Good

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ASBESTOS PLM REPORT

Location: ECG-24-7284-101B, Skim Coat/Building C, Boy's Restroom adjacent Classroom C-9

Lab ID-Version‡: 18479394-1

Sample Layers	Asbestos Content
White Skim Coat	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-101C, Skim Coat/Building C, Girl's Restroom adjacent Classroom C-9

Lab ID-Version‡: 18479395-1

Sample Layers	Asbestos Content
White Skim Coat	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-102A, Plaster/Building C, Classroom C-6

Lab ID-Version‡: 18479396-1

Sample Layers	Asbestos Content
White Plaster	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-102B, Plaster/Building C, Classroom C-8

Lab ID-Version‡: 18479397-1

Sample Layers	Asbestos Content
White Plaster	ND
Sample Composite Homogeneity:	Good

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ASBESTOS PLM REPORT

Location: ECG-24-7284-102C, Plaster/Building C, Classroom C-9 Lab ID-Version‡: 18479398-1

Sample Layers	Asbestos Content
White Plaster	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-103A, Plaster/Building C, Classroom C-6 HVAC Closet Lab ID-Version‡: 18479399-1

Sample Layers	Asbestos Content
Green Plaster	ND
White Plaster	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-103B, Plaster/Building C, Classroom C-8 HVAC Closet Lab ID-Version‡: 18479400-1

Sample Layers	Asbestos Content
Green Plaster	ND
White Plaster	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-103C, Plaster/Building C, Classroom C-9 HVAC Closet Lab ID-Version‡: 18479401-1

Sample Layers	Asbestos Content
Green Plaster	ND
White Plaster	ND
Sample Composite Homogeneity:	Good

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ASBESTOS PLM REPORT

Location: ECG-24-7284-104A, 12"x12" Nail-on Ceiling Tile with Pinholes/Building C, Classroom C-3

Lab ID-Version‡: 18479402-1

Sample Layers	Asbestos Content
Brown Ceiling Tile	ND
Composite Non-Asbestos Content:	60% Cellulose
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-104B, 12"x12" Nail-on Ceiling Tile with Pinholes/Building C, Classroom C-2

Lab ID-Version‡: 18479403-1

Sample Layers	Asbestos Content
Brown Ceiling Tile	ND
Composite Non-Asbestos Content:	60% Cellulose
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-105A, HVAC Seam Mastic/Building C, Classroom C-6 HVAC Closet

Lab ID-Version‡: 18479404-1

Sample Layers	Asbestos Content
White Mastic	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-105B, HVAC Seam Mastic/Building C, Classroom C-6 HVAC Closet

Lab ID-Version‡: 18479405-1

Sample Layers	Asbestos Content
White Mastic	ND
Sample Composite Homogeneity:	Good

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ASBESTOS PLM REPORT

Location: ECG-24-7284-106A, Concrete Slab/Building D, HVAC Closet for Classrooms D-1 & D-2

Lab ID-Version‡: 18479406-1

Sample Layers	Asbestos Content
Gray Concrete	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-106B, Concrete Slab/Building D, HVAC Closet for Classrooms D-3 & D-4

Lab ID-Version‡: 18479407-1

Sample Layers	Asbestos Content
Gray Concrete	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-107A, Black and Yellow Carpet Mastic/Building D, Classroom D-5 Closet

Lab ID-Version‡: 18479408-1

Sample Layers	Asbestos Content
Black/Yellow Mastic	2% Chrysotile
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-108A, 12"x12" Tan with Brown Streaks Vinyl Floor Tile and Black Mastic/Building D, Classroom D-6 Closet

Lab ID-Version‡: 18479409-1

Sample Layers	Asbestos Content
Tan Floor Tile	4% Chrysotile
Black Mastic	3% Chrysotile
Sample Composite Homogeneity:	Moderate

Comments: Sample ECG-24-7284-108B was not analyzed due to prior positive series.

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ASBESTOS PLM REPORT

Location: ECG-24-7284-109A, 9"x9" Tan with Brown Streaks Vinyl Floor Tile and Black Mastic/Building D, Classroom D-1

Lab ID-Version‡: 18479411-1

Sample Layers	Asbestos Content
Tan Floor Tile	4% Chrysotile
Black Mastic	3% Chrysotile
Sample Composite Homogeneity:	Moderate

Comments: Sample ECG-24-7284-109B was not analyzed due to prior positive series.

Location: ECG-24-7284-110A, 9"x9" Black Vinyl Floor Tile and Black Mastic/Building D, Classroom D-1 Closet

Lab ID-Version‡: 18479413-1

Sample Layers	Asbestos Content
Black Floor Tile	5% Chrysotile
Black Mastic (Trace)	2% Chrysotile
Sample Composite Homogeneity:	Moderate

Location: ECG-24-7284-111A, 12"x12" Brown Mottled Vinyl Floor Tile with Black Mastic/Building D, Classroom D-2

Lab ID-Version‡: 18479414-1

Sample Layers	Asbestos Content
Brown Floor Tile	ND
Black Mastic	2% Chrysotile
Sample Composite Homogeneity:	Moderate

Location: ECG-24-7284-112A, 12"x12" Brown Mottled Vinyl Floor Tile with Black Mastic/Building D, Classroom D-3

Lab ID-Version‡: 18479415-1

Sample Layers	Asbestos Content
Brown Floor Tile	ND
Black Mastic	2% Chrysotile
Sample Composite Homogeneity:	Moderate

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ASBESTOS PLM REPORT

Location: ECG-24-7284-113A, 4" Brown Vinyl Base Cove with Mastic/Building D, Classroom D-4

Lab ID-Version‡: 18479416-1

Sample Layers	Asbestos Content
Brown Cove Base	ND
White Mastic	ND
Sample Composite Homogeneity:	Moderate

Location: ECG-24-7284-114A, Gray Sheet Vinyl Flooring with Paper Backing and Blue Mastic over Leveler/Building D, Restroom between Classrooms D-7 & D-8

Lab ID-Version‡: 18479417-1

Sample Layers	Asbestos Content
Gray Sheet Flooring with Fibrous Backing	ND
Blue Mastic	ND
Gray Leveling Compound	ND
Composite Non-Asbestos Content:	10% Cellulose
Sample Composite Homogeneity:	Poor

Location: ECG-24-7284-114B, Gray Sheet Vinyl Flooring with Paper Backing and Blue Mastic over Leveler/Building D, Restroom between Classrooms D-7 & D-8

Lab ID-Version‡: 18479418-1

Sample Layers	Asbestos Content
Gray Sheet Flooring with Fibrous Backing	ND
Blue Mastic	ND
Gray Leveling Compound	ND
Brown Floor Tile	ND
Composite Non-Asbestos Content:	10% Cellulose
Sample Composite Homogeneity:	Poor

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C/O: Jose Hernandez
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Date of Sampling: 08-05-2024
Date of Receipt: 08-19-2024
Date of Report: 08-26-2024

ASBESTOS PLM REPORT

Location: ECG-24-7284-115A, Gray Wood Pattern Vinyl Plank Flooring with Clear Mastic over Beige Vinyl Floor Tile and Mastic/Building D, Classroom D-7

Lab ID-Version‡: 18479419-1

Sample Layers	Asbestos Content
Gray Flooring	ND
Transparent Mastic	ND
Beige Floor Tile	ND
Gray Mastic	ND
Sample Composite Homogeneity:	Poor

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ASBESTOS PLM REPORT

Location: ECG-24-7284-115B, Gray Wood Pattern Vinyl Plank Flooring with Clear Mastic over Beige Vinyl Floor Tile and Mastic/Building D, Classroom D-7 Lab ID-Version‡: 18479420-1

Sample Layers	Asbestos Content
Gray Flooring	ND
Transparent Mastic	ND
Beige Floor Tile	ND
Gray Mastic	ND
Yellow Mastic	ND
Sample Composite Homogeneity:	Poor

Location: ECG-24-7284-116A, Plaster/Building D, Classroom D-2 Lab ID-Version‡: 18479421-1

Sample Layers	Asbestos Content
Gray Plaster	ND
White Skim Coat	ND
Sample Composite Homogeneity:	Moderate

Location: ECG-24-7284-116B, Plaster/Building D, Classroom D-4 Lab ID-Version‡: 18479422-1

Sample Layers	Asbestos Content
Gray Plaster	ND
White Skim Coat	ND
Sample Composite Homogeneity:	Moderate

Location: ECG-24-7284-116C, Plaster/Building D, Classroom D-5 Lab ID-Version‡: 18479423-1

Sample Layers	Asbestos Content
Gray Plaster	ND
White Skim Coat	ND
Sample Composite Homogeneity:	Moderate

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ASBESTOS PLM REPORT

Location: ECG-24-7284-117A, Wallpaper over Drywall and Joint Compound/Building D, Classroom D-3

Lab ID-Version‡: 18479424-1

Sample Layers	Asbestos Content
Beige Wallpaper	ND
White Texture	ND
Cream Tape	ND
White Joint Compound	ND
White Drywall with Brown Paper	ND
Composite Non-Asbestos Content:	10% Cellulose 5% Synthetic Fibers
Sample Composite Homogeneity:	Poor

Location: ECG-24-7284-117B, Wallpaper over Drywall and Joint Compound/Building D, Classroom D-3

Lab ID-Version‡: 18479425-1

Sample Layers	Asbestos Content
Beige Wallpaper	ND
White Texture	ND
Cream Tape	ND
White Joint Compound	ND
White Drywall with Brown Paper	ND
Composite Non-Asbestos Content:	10% Cellulose 5% Synthetic Fibers
Sample Composite Homogeneity:	Poor

Location: ECG-24-7284-118A, Plaster/Building D, Classroom D-7

Lab ID-Version‡: 18479426-1

Sample Layers	Asbestos Content
White Plaster	ND
Sample Composite Homogeneity:	Good

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ASBESTOS PLM REPORT

Location: ECG-24-7284-118B, Plaster/Building D, Classroom D-7

Lab ID-Version‡: 18479427-1

Sample Layers	Asbestos Content
White Plaster	ND
Sample Composite Homogeneity:	Good

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ASBESTOS PLM REPORT

Location: ECG-24-7284-118C, Plaster/Building D, Classroom D-8

Lab ID-Version‡: 18479428-1

Sample Layers	Asbestos Content
White Plaster	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-119A, Drywall with Joint Compound/Building D, Restroom between Classrooms D-7 & D-8

Lab ID-Version‡: 18479429-1

Sample Layers	Asbestos Content
White Texture	ND
Cream Tape	ND
White Joint Compound	ND
White Drywall with Brown Paper	ND
Composite Non-Asbestos Content:	10% Cellulose
Sample Composite Homogeneity:	Poor

Location: ECG-24-7284-119B, Drywall with Joint Compound/Building D, Restroom between Classrooms D-7 & D-8

Lab ID-Version‡: 18479430-1

Sample Layers	Asbestos Content
White Texture	ND
Cream Tape	ND
White Joint Compound	ND
White Drywall with Brown Paper	ND
Composite Non-Asbestos Content:	10% Cellulose
Sample Composite Homogeneity:	Poor

Location: ECG-24-7284-120A, 12"x12" Nail-on Ceiling Tile with Pinholes/Building D, Classroom D-6

Lab ID-Version‡: 18479431-1

Sample Layers	Asbestos Content
Brown Ceiling Tile with White Surface	ND
Composite Non-Asbestos Content:	90% Cellulose
Sample Composite Homogeneity:	Good

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ASBESTOS PLM REPORT

Location: ECG-24-7284-121A, 12"x12" Glue-on Ceiling Tile with Pinholes/Building D, Classroom D-3

Lab ID-Version‡: 18479432-1

Sample Layers	Asbestos Content
White Ceiling Tile	ND
Composite Non-Asbestos Content:	40% Cellulose 30% Glass Fibers
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-121B, 12"x12" Glue-on Ceiling Tile with Pinholes/Building D, Classroom D-3

Lab ID-Version‡: 18479433-1

Sample Layers	Asbestos Content
White Ceiling Tile	ND
Composite Non-Asbestos Content:	40% Cellulose 30% Glass Fibers
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-122A, 12"x12" Nail-on Ceiling Tile with Pinholes/Building D, Classroom D-8

Lab ID-Version‡: 18479434-1

Sample Layers	Asbestos Content
White Ceiling Tile	ND
Composite Non-Asbestos Content:	90% Cellulose
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-122B, 12"x12" Nail-on Ceiling Tile with Pinholes/Building D, Classroom D-7

Lab ID-Version‡: 18479435-1

Sample Layers	Asbestos Content
White Ceiling Tile	ND
Composite Non-Asbestos Content:	90% Cellulose
Sample Composite Homogeneity:	Good

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ASBESTOS PLM REPORT

Location: ECG-24-7284-123A, White Rolled Asphalt Roofing/Building B, Roof, East Lab ID-Version‡: 18479436-1

Sample Layers	Asbestos Content
White Asphalt Roof Material	ND
Composite Non-Asbestos Content:	20% Glass Fibers 10% Cellulose
Sample Composite Homogeneity:	Poor

Location: ECG-24-7284-123B, White Rolled Asphalt Roofing/MPR Building Lower Roof, South Lab ID-Version‡: 18479437-1

Sample Layers	Asbestos Content
White Asphalt Roof Material	ND
Composite Non-Asbestos Content:	20% Glass Fibers 10% Cellulose
Sample Composite Homogeneity:	Poor

Location: ECG-24-7284-123C, White Rolled Asphalt Roofing/Building C Roof, West Lab ID-Version‡: 18479438-1

Sample Layers	Asbestos Content
White Asphalt Roof Material	ND
Composite Non-Asbestos Content:	20% Glass Fibers 10% Cellulose
Sample Composite Homogeneity:	Poor

Location: ECG-24-7284-123D, White Rolled Asphalt Roofing/Building C Roof, East Lab ID-Version‡: 18479439-1

Sample Layers	Asbestos Content
White Asphalt Roof Material	ND
Composite Non-Asbestos Content:	20% Glass Fibers 10% Cellulose
Sample Composite Homogeneity:	Poor

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ASBESTOS PLM REPORT

Location: ECG-24-7284-123E, White Rolled Asphalt Roofing/Building D Roof, East Lab ID-Version‡: 18479440-1

Sample Layers	Asbestos Content
White Asphalt Roof Material	ND
Composite Non-Asbestos Content:	20% Glass Fibers 10% Cellulose
Sample Composite Homogeneity:	Poor

Location: ECG-24-7284-123F, White Rolled Asphalt Roofing/Building D Roof, West Lab ID-Version‡: 18479441-1

Sample Layers	Asbestos Content
White Asphalt Roof Material	ND
Composite Non-Asbestos Content:	20% Glass Fibers 10% Cellulose
Sample Composite Homogeneity:	Poor

Location: ECG-24-7284-124A, Red-Brown Composition Roof Shingle with Felt Paper/ Office Building Roof, Southwest Lab ID-Version‡: 18479442-1

Sample Layers	Asbestos Content
Black Roofing Shingle	ND
Black Roofing Felt 1	ND
Black Roofing Felt 2	ND
Composite Non-Asbestos Content:	20% Cellulose 15% Glass Fibers
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-124B, Red-Brown Composition Roof Shingle with Felt Paper/ MPR Building Roof, Southwest Lab ID-Version‡: 18479443-1

Sample Layers	Asbestos Content
Black Roofing Shingle	ND
Black Roofing Felt	ND
Composite Non-Asbestos Content:	20% Cellulose 15% Glass Fibers
Sample Composite Homogeneity:	Good

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ASBESTOS PLM REPORT

Location: ECG-24-7284-124C, Red-Brown Composition Roof Shingle with Felt Paper/ Building B, Library Roof, East

Lab ID-Version‡: 18479444-1

Sample Layers	Asbestos Content
Black Roofing Shingle	ND
Black Roofing Felt 1	ND
Black Roofing Felt 2	ND
Composite Non-Asbestos Content:	20% Cellulose 15% Glass Fibers
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-124D, Red-Brown Composition Roof Shingle with Felt Paper/ Kindergarten Building Roof, East

Lab ID-Version‡: 18479445-1

Sample Layers	Asbestos Content
Black Roofing Shingle 1	ND
Black Roofing Shingle 2	ND
Black Roofing Felt	ND
Composite Non-Asbestos Content:	20% Cellulose 15% Glass Fibers
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-124E, Red-Brown Composition Roof Shingle with Felt Paper/ Building C Roof, East

Lab ID-Version‡: 18479446-1

Sample Layers	Asbestos Content
Black Roofing Shingle 1	ND
Black Roofing Shingle 2	ND
Composite Non-Asbestos Content:	20% Glass Fibers
Sample Composite Homogeneity:	Good

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ASBESTOS PLM REPORT

Location: ECG-24-7284-124F, Red-Brown Composition Roof Shingle with Felt Paper/ Building D Roof, West

Lab ID-Version‡: 18479447-1

Sample Layers	Asbestos Content
Black Roofing Shingle 1	ND
Black Roofing Shingle 2	ND
Black Roofing Felt	ND
Composite Non-Asbestos Content:	20% Cellulose 15% Glass Fibers
Sample Composite Homogeneity:	Good

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ASBESTOS PLM REPORT

Location: ECG-24-7284-125A, Gray-Black Curb & Penetration Mastic/Office Building Roof, West

Lab ID-Version‡: 18479448-1

Sample Layers	Asbestos Content
Gray Roofing Mastic	5% Chrysotile
Black Roofing Material	ND
Composite Non-Asbestos Content:	20% Cellulose
Sample Composite Homogeneity:	Good

Comments: Sample ECG-24-7284-125B was not analyzed due to prior positive series.

Location: ECG-24-7284-126A, Beige Penetration Mastic/Office Building Roof, East

Lab ID-Version‡: 18479450-1

Sample Layers	Asbestos Content
Beige Mastic	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-127A, Gray Penetration Mastic/Office Building Roof, East

Lab ID-Version‡: 18479451-1

Sample Layers	Asbestos Content
Gray Mastic	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-128A, White Coated Penetration Mastic/MPR Building Lower Roof, South

Lab ID-Version‡: 18479452-1

Sample Layers	Asbestos Content
White Mastic	ND
Sample Composite Homogeneity:	Good

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ASBESTOS PLM REPORT

Location: ECG-24-7284-128B, White Coated Penetration Mastic/Building B Roof, Near Center

Lab ID-Version‡: 18479453-1

Sample Layers	Asbestos Content
White Mastic	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-128C, White Coated Penetration Mastic/Building C Roof, East

Lab ID-Version‡: 18479454-1

Sample Layers	Asbestos Content
White Mastic	5% Chrysotile
Sample Composite Homogeneity:	Good

Comments: Samples ECG-24-7284-128D and ECG-24-7284-128E were not analyzed due to prior positive series.

Location: ECG-24-7284-129A, Gray HVAC Flashing Mastic/Building C Roof, West at HVAC Unit Base

Lab ID-Version‡: 18479457-1

Sample Layers	Asbestos Content
Gray Mastic	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-129B, Gray HVAC Flashing Mastic/Building D Roof, West at HVAC Unit Base

Lab ID-Version‡: 18479458-1

Sample Layers	Asbestos Content
Gray Mastic	ND
Sample Composite Homogeneity:	Good

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ASBESTOS PLM REPORT

Location: ECG-24-7284-130A, Beige Flashing Mastic/Building C Roof, West at Vent Fan Base

Lab ID-Version‡: 18479459-1

Sample Layers	Asbestos Content
Beige Mastic	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-130B, Beige Flashing Mastic/Building D Roof, West at Vent Fan Base

Lab ID-Version‡: 18479460-1

Sample Layers	Asbestos Content
Beige Mastic	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-131A, Black Roof Patch/Covered Walkway Roofs, North of Building D

Lab ID-Version‡: 18479461-1

Sample Layers	Asbestos Content
Black Roofing Material (Patch)	ND
Composite Non-Asbestos Content:	5% Cellulose
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-131B, Black Roof Patch/Covered Walkway Roofs, North of Building D

Lab ID-Version‡: 18479462-1

Sample Layers	Asbestos Content
Black Roofing Material (Patch)	ND
Composite Non-Asbestos Content:	5% Cellulose
Sample Composite Homogeneity:	Good

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ASBESTOS PLM REPORT

Location: ECG-24-7284-131.5A, Rolled Asphalt Roofing/CCTV Shed Roof Lab ID-Version‡: 18479543-1

Sample Layers	Asbestos Content
Black Asphalt Roofing	ND
Composite Non-Asbestos Content:	20% Glass Fibers 15% Cellulose
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-132A, Stucco/Exterior, Office Building, South Lab ID-Version‡: 18479463-1

Sample Layers	Asbestos Content
Beige Stucco	< 1% Chrysotile
Gray Stucco	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-132B, Stucco/Exterior, MPR Building, Southeast Lab ID-Version‡: 18479464-1

Sample Layers	Asbestos Content
Gray Stucco	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-132C, Stucco/Exterior, Kindergarten Building, Southeast Corner Lab ID-Version‡: 18479465-1

Sample Layers	Asbestos Content
Gray Stucco	ND
Sample Composite Homogeneity:	Good

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ASBESTOS PLM REPORT

Location: ECG-24-7284-132D, Stucco/Exterior, Building B, Southeast Lab ID-Version‡: 18479466-1

Sample Layers	Asbestos Content
White Stucco	ND
Gray Stucco	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-132E, Stucco/Exterior, Building C, South Lab ID-Version‡: 18479467-1

Sample Layers	Asbestos Content
Gray Stucco	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-132F, Stucco/Exterior, Building D, Northeast Corner Lab ID-Version‡: 18479468-1

Sample Layers	Asbestos Content
Gray Stucco	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-132G, Stucco/Exterior, Building D, Southwest Corner Lab ID-Version‡: 18479469-1

Sample Layers	Asbestos Content
Gray Stucco	ND
Sample Composite Homogeneity:	Good

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ASBESTOS PLM REPORT

Location: ECG-24-7284-133A, Brick and Mortar/Exterior, Office Building, Southwest Corner

Lab ID-Version‡: 18479470-1

Sample Layers	Asbestos Content
Beige Brick	ND
Gray Mortar	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-133B, Brick and Mortar/Exterior, Kindergarten Building, Northeast Corner

Lab ID-Version‡: 18479471-1

Sample Layers	Asbestos Content
Beige Brick	ND
Gray Mortar	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-134A, Concrete Wall/Exterior, Building B, Northeast Corner

Lab ID-Version‡: 18479472-1

Sample Layers	Asbestos Content
Gray Concrete	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-134B, Concrete Wall/Exterior, Building C, East

Lab ID-Version‡: 18479473-1

Sample Layers	Asbestos Content
Gray Concrete	ND
Sample Composite Homogeneity:	Good

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ASBESTOS PLM REPORT

Location: ECG-24-7284-135A, Cementitious Wall Panel/Exterior, Northeast Side of Building C

Lab ID-Version‡: 18479474-1

Sample Layers	Asbestos Content
Gray Cementitious Material	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-135B, Cementitious Wall Panel/Exterior, Northeast Side of Building D

Lab ID-Version‡: 18479475-1

Sample Layers	Asbestos Content
Gray Cementitious Material	ND
Composite Non-Asbestos Content:	40% Cellulose
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-136A, White Window Caulking/Exterior, East Side of Kindergarten Building

Lab ID-Version‡: 18479476-1

Sample Layers	Asbestos Content
White Caulk	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-136B, White Window Caulking/Exterior, East Side of Kindergarten Building

Lab ID-Version‡: 18479477-1

Sample Layers	Asbestos Content
White Caulk	ND
Sample Composite Homogeneity:	Good

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ASBESTOS PLM REPORT

Location: ECG-24-7284-137A, Gray Window Caulking/Exterior, Building D, North Lab ID-Version‡: 18479478-1

Sample Layers	Asbestos Content
Gray Caulk	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-137B, Gray Window Caulking/Exterior, Building C, South Lab ID-Version‡: 18479479-1

Sample Layers	Asbestos Content
Gray Caulk	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-138A, Window Glazing Putty/Exterior, Office Building, South

Lab ID-Version‡: 18479480-1

Sample Layers	Asbestos Content
Gray Window Putty	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-138B, Window Glazing Putty/Exterior, Building B, Northwest Lab ID-Version‡: 18479481-1

Sample Layers	Asbestos Content
Gray Window Putty	ND
Sample Composite Homogeneity:	Good

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ASBESTOS PLM REPORT

Location: ECG-24-7284-138C, Window Glazing Putty/Exterior, Building C, Northwest Lab ID-Version‡: 18479482-1

Sample Layers	Asbestos Content
Gray Window Putty	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-139A, Yellow Carpet Mastic/Portable Classroom B1 Lab ID-Version‡: 18479483-1

Sample Layers	Asbestos Content
Yellow Carpet Mastic	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-139B, Yellow Carpet Mastic/Portable Classroom C1 Lab ID-Version‡: 18479484-1

Sample Layers	Asbestos Content
Yellow Carpet Mastic	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-140A, 12"x12" Gray Mottled Vinyl Floor Tile with Black Mastic/ Portable Classroom B1 Lab ID-Version‡: 18479485-1

Sample Layers	Asbestos Content
Gray Floor Tile	ND
Black Mastic	ND
Sample Composite Homogeneity:	Good

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ASBESTOS PLM REPORT

Location: ECG-24-7284-140B, 12"x12" Gray Mottled Vinyl Floor Tile with Black Mastic/ Portable Classroom C1

Lab ID-Version‡: 18479486-1

Sample Layers	Asbestos Content
Gray Floor Tile	ND
Black Mastic	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-141A, 4" Gray Vinyl Base Cove with Mastic/Portable Classroom B1

Lab ID-Version‡: 18479487-1

Sample Layers	Asbestos Content
Gray Cove Base	ND
Yellow Mastic	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-141B, 4" Gray Vinyl Base Cove with Mastic/Portable Classroom C1

Lab ID-Version‡: 18479488-1

Sample Layers	Asbestos Content
Gray Cove Base	ND
Yellow Mastic	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-142A, Drywall behind Tagboard/Portable Classroom B1

Lab ID-Version‡: 18479489-1

Sample Layers	Asbestos Content
White Drywall with Brown Paper	ND
Composite Non-Asbestos Content:	10% Cellulose 2% Glass Fibers
Sample Composite Homogeneity:	Good

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ASBESTOS PLM REPORT

Location: ECG-24-7284-142B, Drywall behind Tagboard/Portable Classroom C1 Lab ID-Version‡: 18479490-1

Sample Layers	Asbestos Content
White Drywall with Brown Paper	ND
Composite Non-Asbestos Content:	10% Cellulose 2% Glass Fibers
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-143A, 2'x4' Ceiling Panel/Portable Classroom B1 Lab ID-Version‡: 18479491-1

Sample Layers	Asbestos Content
White Ceiling Tile	ND
Composite Non-Asbestos Content:	40% Cellulose 30% Glass Fibers
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-143B, 2'x4' Ceiling Panel/Portable Classroom C1 Lab ID-Version‡: 18479544-1

Sample Layers	Asbestos Content
White Ceiling Tile	ND
Composite Non-Asbestos Content:	40% Cellulose 30% Glass Fibers
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-144A, Expansion Joint Caulking/Portable Classroom B1 Lab ID-Version‡: 18479492-1

Sample Layers	Asbestos Content
White Caulk	ND
Sample Composite Homogeneity:	Good

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ASBESTOS PLM REPORT

Location: ECG-24-7284-144B, Expansion Joint Caulking/Portable Classroom C1 Lab ID-Version‡: 18479493-1

Sample Layers	Asbestos Content
White Caulk	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-145A, Single Ply Membrane Roofing/Portable Classroom B1 Lab ID-Version‡: 18479494-1

Sample Layers	Asbestos Content
Gray Roofing Material	ND
Composite Non-Asbestos Content:	10% Glass Fibers
Sample Composite Homogeneity:	Moderate

Location: ECG-24-7284-145B, Single Ply Membrane Roofing/Portable Classroom C1 Lab ID-Version‡: 18479495-1

Sample Layers	Asbestos Content
Gray Roofing Material	ND
Composite Non-Asbestos Content:	10% Glass Fibers
Sample Composite Homogeneity:	Moderate

Location: ECG-24-7284-146A, Penetration Mastic/Portable Classroom B1 Lab ID-Version‡: 18479496-1

Sample Layers	Asbestos Content
White Mastic	ND
Gray Mastic	ND
Sample Composite Homogeneity:	Good

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ASBESTOS PLM REPORT

Location: ECG-24-7284-146B, Penetration Mastic/Portable Classroom C1 Lab ID-Version‡: 18479497-1

Sample Layers	Asbestos Content
White Mastic	ND
Gray Mastic	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-147A, Yellow Carpet Mastic/Portable Classroom B8 Lab ID-Version‡: 18479498-1

Sample Layers	Asbestos Content
Yellow Mastic	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-147B, Yellow Carpet Mastic/Portable Classroom B10 Lab ID-Version‡: 18479499-1

Sample Layers	Asbestos Content
Yellow Mastic	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-148A, 12"x12" Gray Mottled Vinyl Floor Tile with Black Mastic/ Portable Classroom B8 Lab ID-Version‡: 18479500-1

Sample Layers	Asbestos Content
Gray Floor Tile	ND
Black Mastic	ND
Sample Composite Homogeneity:	Moderate

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ASBESTOS PLM REPORT

Location: ECG-24-7284-148B, 12"x12" Gray Mottled Vinyl Floor Tile with Black Mastic/ Portable Classroom B10

Lab ID-Version‡: 18479501-1

Sample Layers	Asbestos Content
Gray Floor Tile	ND
Black Mastic	ND
Sample Composite Homogeneity:	Moderate

Location: ECG-24-7284-149A, 4" Gray Vinyl Base Cove with Mastic/Portable Classroom B8

Lab ID-Version‡: 18479502-1

Sample Layers	Asbestos Content
Gray Cove Base	ND
White Mastic	ND
Sample Composite Homogeneity:	Moderate

Location: ECG-24-7284-149B, 4" Gray Vinyl Base Cove with Mastic/Portable Classroom B10

Lab ID-Version‡: 18479503-1

Sample Layers	Asbestos Content
Gray Cove Base	ND
White Mastic	ND
Sample Composite Homogeneity:	Moderate

Location: ECG-24-7284-150A, Drywall behind Tagboard/Portable Classroom B9

Lab ID-Version‡: 18479504-1

Sample Layers	Asbestos Content
White Drywall with Brown Paper	ND
Composite Non-Asbestos Content:	10% Cellulose
Sample Composite Homogeneity:	Good

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ASBESTOS PLM REPORT

Location: ECG-24-7284-150B, Drywall behind Tagboard/Portable Classroom B10 Lab ID-Version‡: 18479505-1

Sample Layers	Asbestos Content
White Drywall with Brown Paper	ND
Composite Non-Asbestos Content:	10% Cellulose
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-151A, 2'x4' Ceiling Panel/Portable Classroom B9 Lab ID-Version‡: 18479506-1

Sample Layers	Asbestos Content
Gray Ceiling Tile	ND
Composite Non-Asbestos Content:	50% Cellulose 30% Glass Fibers
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-151B, 2'x4' Ceiling Panel/Portable Classroom B10 Lab ID-Version‡: 18479507-1

Sample Layers	Asbestos Content
Gray Ceiling Tile	ND
Composite Non-Asbestos Content:	50% Cellulose 30% Glass Fibers
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-152A, Expansion Joint Caulking/Portable Classroom B9 Lab ID-Version‡: 18479508-1

Sample Layers	Asbestos Content
White Caulk	ND
Sample Composite Homogeneity:	Good

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ASBESTOS PLM REPORT

Location: ECG-24-7284-152B, Expansion Joint Caulking/Portable Classroom B9 Lab ID-Version‡: 18479509-1

Sample Layers	Asbestos Content
White Caulk	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-153A, Roof Mastic/Portable Classroom B8 Lab ID-Version‡: 18479510-1

Sample Layers	Asbestos Content
White Mastic	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-153B, Roof Mastic/Portable Classroom B9 Lab ID-Version‡: 18479511-1

Sample Layers	Asbestos Content
White Mastic	ND
Gray Mastic	2% Chrysotile
Sample Composite Homogeneity:	Moderate

Location: ECG-24-7284-154A, Yellow Carpet Mastic with White Leveler/Portable Classroom B11 Lab ID-Version‡: 18479512-1

Sample Layers	Asbestos Content
Yellow Mastic	ND
Sample Composite Homogeneity:	Good

All components not quantified as asbestos content and non-asbestos content are considered to be non-fibrous matrix components. Matrix components may include, but are not limited to, gypsum, paint, silicate minerals, vinyl, binder, calcium carbonate, tar, and foam.

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ASBESTOS PLM REPORT

Location: ECG-24-7284-154B, Yellow Carpet Mastic with White Leveler/Portable Classroom B12

Lab ID-Version‡: 18479513-1

Sample Layers	Asbestos Content
Yellow Mastic	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-155A, 12"x12" Gray Mottled Vinyl Floor Tile with Yellow Mastic/Portable Classroom B11

Lab ID-Version‡: 18479514-1

Sample Layers	Asbestos Content
Gray Floor Tile	ND
Yellow Mastic	ND
Sample Composite Homogeneity:	Moderate

Location: ECG-24-7284-155B, 12"x12" Gray Mottled Vinyl Floor Tile with Yellow Mastic/Portable Classroom B12

Lab ID-Version‡: 18479515-1

Sample Layers	Asbestos Content
Gray Floor Tile	ND
Yellow Mastic	ND
Sample Composite Homogeneity:	Moderate

Location: ECG-24-7284-156A, 4" Gray Vinyl Base Cove with Mastic/Portable Classroom B11

Lab ID-Version‡: 18479516-1

Sample Layers	Asbestos Content
Gray Cove Base	ND
Yellow Mastic	ND
Sample Composite Homogeneity:	Moderate

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ASBESTOS PLM REPORT

Location: ECG-24-7284-156B, 4" Gray Vinyl Base Cove with Mastic/Portable Classroom B12

Lab ID-Version‡: 18479517-1

Sample Layers	Asbestos Content
Gray Cove Base	ND
Yellow Mastic	ND
Sample Composite Homogeneity:	Moderate

Location: ECG-24-7284-157A, Drywall behind Tagboard/Portable Classroom B11

Lab ID-Version‡: 18479518-1

Sample Layers	Asbestos Content
White Drywall with Brown Paper	ND
Composite Non-Asbestos Content:	10% Cellulose
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-157B, Drywall behind Tagboard/Portable Classroom B12

Lab ID-Version‡: 18479519-1

Sample Layers	Asbestos Content
White Drywall with Brown Paper	ND
Composite Non-Asbestos Content:	10% Cellulose
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-158A, Expansion Joint Caulking/Portable Classroom B11

Lab ID-Version‡: 18479520-1

Sample Layers	Asbestos Content
White Caulk	ND
Sample Composite Homogeneity:	Good

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ASBESTOS PLM REPORT

Location: ECG-24-7284-158B, Expansion Joint Caulking/Portable Classroom B12 Lab ID-Version‡: 18479521-1

Sample Layers	Asbestos Content
White Caulk	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-159A, Roof Mastic/Portable Classroom B11 Lab ID-Version‡: 18479522-1

Sample Layers	Asbestos Content
Dark Gray Mastic	ND
Composite Non-Asbestos Content:	5% Cellulose
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-159B, Roof Mastic/Portable Classroom B12 Lab ID-Version‡: 18479523-1

Sample Layers	Asbestos Content
Dark Gray Mastic	ND
Composite Non-Asbestos Content:	5% Cellulose
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-160A, 12"x12" Gray Mottled Vinyl Floor Tile with Yellow Mastic/Portable C11, Southwest Lab ID-Version‡: 18479524-1

Sample Layers	Asbestos Content
Gray Floor Tile	ND
Yellow Mastic	ND
Gray Leveling Compound	ND
Tan Floor Tile	3% Chrysotile
Sample Composite Homogeneity:	Poor

Comments: Sample ECG-24-7284-160B was not analyzed due to prior positive series.

All components not quantified as asbestos content and non-asbestos content are considered to be non-fibrous matrix components. Matrix components may include, but are not limited to, gypsum, paint, silicate minerals, vinyl, binder, calcium carbonate, tar, and foam.

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ASBESTOS PLM REPORT

Location: ECG-24-7284-161A, 9"x9" Brown Streaked Vinyl Floor Tile with Black Mastic/ Portable C11, North Closet

Lab ID-Version‡: 18479526-1

Sample Layers	Asbestos Content
Brown Floor Tile	3% Chrysotile
Black Mastic	3% Chrysotile
Sample Composite Homogeneity:	Moderate

Comments: Sample ECG-24-7284-161B was not analyzed due to prior positive series.

Location: ECG-24-7284-162A, Gray Speckled Sheet Vinyl Flooring with Yellow Mastic/ Portable C11 Restroom

Lab ID-Version‡: 18479528-1

Sample Layers	Asbestos Content
Gray Sheet Flooring	ND
Yellow Mastic	ND
Sample Composite Homogeneity:	Moderate

Location: ECG-24-7284-162B, Gray Speckled Sheet Vinyl Flooring with Yellow Mastic/ Portable C11 Restroom

Lab ID-Version‡: 18479529-1

Sample Layers	Asbestos Content
Gray Sheet Flooring	ND
Yellow Mastic	ND
Sample Composite Homogeneity:	Moderate

Location: ECG-24-7284-163A, 4" Gray Vinyl Base Cove with Mastic/Portable C11, North

Lab ID-Version‡: 18479530-1

Sample Layers	Asbestos Content
Gray Cove Base	ND
Dark Brown Mastic	ND
Composite Non-Asbestos Content:	< 1% Talc
Sample Composite Homogeneity:	Moderate

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ASBESTOS PLM REPORT

Location: ECG-24-7284-163B, 4" Gray Vinyl Base Cove with Mastic/Portable C11, East

Lab ID-Version‡: 18479531-1

Sample Layers	Asbestos Content
Gray Cove Base	ND
Dark Brown Mastic	ND
Composite Non-Asbestos Content:	< 1% Talc
Sample Composite Homogeneity:	Moderate

Location: ECG-24-7284-164A, 12"x12" Glue-on Ceiling Tile/Portable C11, East

Lab ID-Version‡: 18479532-1

Sample Layers	Asbestos Content
Gray Ceiling Tile	ND
White Drywall with Brown Paper	ND
Composite Non-Asbestos Content:	50% Cellulose 30% Glass Fibers
Sample Composite Homogeneity:	Moderate

Location: ECG-24-7284-164B, 12"x12" Glue-on Ceiling Tile/Portable C11, Restroom

Lab ID-Version‡: 18479533-1

Sample Layers	Asbestos Content
Brown Ceiling Tile	ND
Brown Mastic	ND
White Drywall with Brown Paper	ND
Composite Non-Asbestos Content:	80% Cellulose
Sample Composite Homogeneity:	Moderate

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ASBESTOS PLM REPORT

Location: ECG-24-7284-165A, Drywall with Joint Compound/Portable C-11, Northwest Corner adjacent to Closet

Lab ID-Version‡: 18479534-1

Sample Layers	Asbestos Content
Off-White Texture	2% Chrysotile
Cream Tape	ND
Off-White Joint Compound	2% Chrysotile
White Drywall with Brown Paper	ND
Composite Asbestos Fibrous Content:	< 1% Asbestos
Composite Non-Asbestos Content:	10% Cellulose
Sample Composite Homogeneity:	Moderate

Comments: Composite asbestos content provided is only for Drywall/Joint compound. Composite content provided for this analysis has been performed by following the NESHAP guidelines. Sample ECG-24-7284-165B was not analyzed due to prior positive series.

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ASBESTOS PLM REPORT

Location: ECG-24-7284-166A, Plastic Wall Panel Glue/Portable C11 Restroom Lab ID-Version‡: 18479536-1

Sample Layers	Asbestos Content
White Glue	ND
Sample Composite Homogeneity:	Good

Location: ECG-24-7284-167A, Brown Composition Shingle Roof/Portable C11 Lab ID-Version‡: 18479537-1

Sample Layers	Asbestos Content
Black Roofing Shingle with Light Brown Rocks	ND
Black Roofing Shingle with Dark Brown Rocks	ND
Composite Non-Asbestos Content:	15% Glass Fibers
Sample Composite Homogeneity:	Moderate

Location: ECG-24-7284-167B, Brown Composition Shingle Roof/Portable C11 Lab ID-Version‡: 18479538-1

Sample Layers	Asbestos Content
Black Roofing Shingle with Dark Brown Rocks	ND
Composite Non-Asbestos Content:	15% Glass Fibers
Sample Composite Homogeneity:	Good

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ASBESTOS PLM REPORT

Total Samples Submitted:	378
Total Samples Analyzed:	347
Total Samples Not Analyzed:	31

ECG-24-7284-01B, 9"X9" Black Vinyl Floor Tile with Black Mastic/MPR Building, Room A-1, Sprinkler Control Valve Room Lab ID-Version‡: 18479168-0

NOT ANALYZED	**POSITIVE STOP**

ECG-24-7284-02B, 9"x9" Dark Green Mottled Vinyl Floor Tile with Black Mastic/MPR Building, Room A-1 Lab ID-Version‡: 18479170-0

NOT ANALYZED	**POSITIVE STOP**

ECG-24-7284-03B, 9"x9" Gray-Green Streaked Vinyl Floor tile with Black Mastic/MPR Building, Room A-1, Northeast Storage Lab ID-Version‡: 18479172-0

NOT ANALYZED	**POSITIVE STOP**

ECG-24-7284-04B, 9"x9" Pink Streaked Vinyl Floor Tile with Black Mastic/ MPR Building, Room A-1 Lab ID-Version‡: 18479174-0

NOT ANALYZED	**POSITIVE STOP**

ECG-24-7284-06B, 9"x9" Tan Mottled Vinyl Floor Tile with Black Mastic/MPR Building, Room A-1 Lab ID-Version‡: 18479178-0

NOT ANALYZED	**POSITIVE STOP**

ECG-24-7284-07B, 12"x12" Light Gray Mottled Vinyl Floor Tile with Black & Yellow Mastic/MPR Building, South Entry Foyer Lab ID-Version‡: 18479180-0

NOT ANALYZED	**POSITIVE STOP**

ECG-24-7284-20B, Drywall with Joint Compound behind Ceiling Tile/MPR Building, Stage Lab ID-Version‡: 18479212-0

NOT ANALYZED	**POSITIVE STOP**

Sample results described as "Positive Stop" were not analyzed because the previous sample layer(s) contained asbestos >1%. Sample results described as "Sample Bag Empty" were not analyzed because while the sample bag was submitted it did not contain a discernible sample. Sample results described as "No Sample Submitted" were not analyzed because the sample bag was not submitted with the project. Sample results described as "Insufficient Sample" were not analyzed because while the sample was submitted for analysis, there was insufficient material present to analyze the sample confidently. Sample results described as "Per Client Request" were submitted to the laboratory but not analyzed because the laboratory was requested to hold the sample.

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ECG-24-7284-47B, 12"x12" Brown Mottled Vinyl Floor Tile with Black & Yellow Mastic/Kindergarten Building, Southeast Closet Lab ID-Version‡: 18479270-0

NOT ANALYZED	**POSITIVE STOP**

ECG-24-7284-48B, Gray Sheet Vinyl Flooring with Mastic and Leveler/ Kindergarten Building, Restroom Lab ID-Version‡: 18479272-0

NOT ANALYZED	**POSITIVE STOP**

ECG-24-7284-59B, 12"x12" Beige Mottled Vinyl Floor Tile with Black Mastic over Beige Vinyl Floor Tile with Mastic/Building B, Classroom B4, At North Entry Lab ID-Version‡: 18479297-0

NOT ANALYZED	**POSITIVE STOP**

ECG-24-7284-60B, Gray with Multi-Colored Specks Sheet Vinyl Flooring with Paper Backing and Black & Yellow Mastic/Building B, Classroom B4 Lab ID-Version‡: 18479299-0

NOT ANALYZED	**POSITIVE STOP**

ECG-24-7284-61B, Yellow and Black Carpet Mastic/Building B, Classroom B3 Lab ID-Version‡: 18479301-0

NOT ANALYZED	**POSITIVE STOP**

ECG-24-7284-62B, 12"x12' Brown Mottled Vinyl Floor Tile with Black Mastic/ Building B, Classroom B5 Lab ID-Version‡: 18479303-0

NOT ANALYZED	**POSITIVE STOP**

ECG-24-7284-67C, Plaster/Building B, Classroom B4 Lab ID-Version‡: 18479315-0

NOT ANALYZED	**POSITIVE STOP**

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ECG-24-7284-72B, 12"x12" Gray Mottled Vinyl Floor Tile with Black Mastic/ Building C, Classroom C-2 Closet Lab ID-Version‡: 18479332-0

NOT ANALYZED	**POSITIVE STOP**

ECG-24-7284-73B, 12"x12" Brown Mottled Vinyl Floor Tile with Black Mastic/ Building C, Classroom C-4 Lab ID-Version‡: 18479334-0

NOT ANALYZED	**POSITIVE STOP**

ECG-24-7284-75B, Black and Yellow Carpet Mastic/Building C, Classroom C-5 Closet Lab ID-Version‡: 18479338-0

NOT ANALYZED	**POSITIVE STOP**

ECG-24-7284-90B, 9"x9" Blue-Green Streaked Vinyl Floor Tile with Black Mastic/Building C, Classroom C-6 Lab ID-Version‡: 18479372-0

NOT ANALYZED	**POSITIVE STOP**

ECG-24-7284-91B, 9"x9" Light Green with Tan Streaks Vinyl Floor Tile and Black Mastic/Building C, Classroom C-6 Lab ID-Version‡: 18479374-0

NOT ANALYZED	**POSITIVE STOP**

ECG-24-7284-92B, 9"x9" Dark Green with Tan Streaks Vinyl Floor Tile and Black Mastic/Building C, Classroom C-6 Lab ID-Version‡: 18479376-0

NOT ANALYZED	**POSITIVE STOP**

ECG-24-7284-93B, 12"x12" Brown Mottled Vinyl Floor Tile with Black Mastic/ Building C, Classroom C-8 Lab ID-Version‡: 18479378-0

NOT ANALYZED	**POSITIVE STOP**

Sample results described as "Positive Stop" were not analyzed because the previous sample layer(s) contained asbestos >1%. Sample results described as "Sample Bag Empty" were not analyzed because while the sample bag was submitted it did not contain a discernible sample. Sample results described as "No Sample Submitted" were not analyzed because the sample bag was not submitted with the project. Sample results described as "Insufficient Sample" were not analyzed because while the sample was submitted for analysis, there was insufficient material present to analyze the sample confidently. Sample results described as "Per Client Request" were submitted to the laboratory but not analyzed because the laboratory was requested to hold the sample.

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ECG-24-7284-94B, 12"x12" Tan Mottled Vinyl Floor Tile with Black Mastic/ Building C, Classroom C-7 Lab ID-Version‡: 18479380-0

NOT ANALYZED	**POSITIVE STOP**

ECG-24-7284-95B, 12"x12" Gray Mottled Vinyl Floor Tile with Black Mastic/ Building C, Classroom C-9 Lab ID-Version‡: 18479382-0

NOT ANALYZED	**POSITIVE STOP**

ECG-24-7284-108B, 12"x12" Tan with Brown Streaks Vinyl Floor Tile and Black Mastic/Building D, Classroom D-6 Closet Lab ID-Version‡: 18479410-0

NOT ANALYZED	**POSITIVE STOP**

ECG-24-7284-109B, 9"x9" Tan with Brown Streaks Vinyl Floor Tile and Black Mastic/Building D, Classroom D-1 Lab ID-Version‡: 18479412-0

NOT ANALYZED	**POSITIVE STOP**

ECG-24-7284-125B, Gray-Black Curb & Penetration Mastic/Office Building Roof, East Lab ID-Version‡: 18479449-0

NOT ANALYZED	**POSITIVE STOP**

ECG-24-7284-128D, White Coated Penetration Mastic/Building C Roof, West Lab ID-Version‡: 18479455-0

NOT ANALYZED	**POSITIVE STOP**

ECG-24-7284-128E, White Coated Penetration Mastic/Building D Roof, West Lab ID-Version‡: 18479456-0

NOT ANALYZED	**POSITIVE STOP**

Sample results described as "Positive Stop" were not analyzed because the previous sample layer(s) contained asbestos >1%. Sample results described as "Sample Bag Empty" were not analyzed because while the sample bag was submitted it did not contain a discernible sample. Sample results described as "No Sample Submitted" were not analyzed because the sample bag was not submitted with the project. Sample results described as "Insufficient Sample" were not analyzed because while the sample was submitted for analysis, there was insufficient material present to analyze the sample confidently. Sample results described as "Per Client Request" were submitted to the laboratory but not analyzed because the laboratory was requested to hold the sample.

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Date of Sampling: 08-05-2024
Date of Receipt: 08-19-2024
Date of Report: 08-26-2024

ASBESTOS PLM REPORT

Total Samples Submitted:	378
Total Samples Analyzed:	347
Total Samples Not Analyzed:	31

ECG-24-7284-160B, 12"x12" Gray Mottled Vinyl Floor Tile with Yellow Mastic/Portable C11, West Lab ID-Version‡: 18479525-0

NOT ANALYZED	**POSITIVE STOP**

ECG-24-7284-161B, 9"x9" Brown Streaked Vinyl Floor Tile with Black Mastic/ Portable C11, South Closet Lab ID-Version‡: 18479527-0

NOT ANALYZED	**POSITIVE STOP**

ECG-24-7284-165B, Drywall with Joint Compound/Portable C-11, North Closet, Southeast Corner Lab ID-Version‡: 18479535-0

NOT ANALYZED	**POSITIVE STOP**

Sample results described as "Positive Stop" were not analyzed because the previous sample layer(s) contained asbestos >1%. Sample results described as "Sample Bag Empty" were not analyzed because while the sample bag was submitted it did not contain a discernible sample. Sample results described as "No Sample Submitted" were not analyzed because the sample bag was not submitted with the project. Sample results described as "Insufficient Sample" were not analyzed because while the sample was submitted for analysis, there was insufficient material present to analyze the sample confidently. Sample results described as "Per Client Request" were submitted to the laboratory but not analyzed because the laboratory was requested to hold the sample.

‡ A "Version" indicated by -"x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

eurofins | Built Environment Testing

ENTEK CONSULTING GROUP, INC.

Report for:

Jose Hernandez
Entek Consulting Group
4200 Rocklin Road, Suite 7
Rocklin, CA 95677

Regarding:

Eurofins EPK Built Environment Testing, LLC
Project: 24-7284 Sacramento City Unified School District; Ethel Phillips Elementary School 2930 21st Avenue Sacramento, CA 95820
EML ID: 3750911

Approved by:

Approved Signatory
Danny Li

Dates of Analysis:
Asbestos-EPA 400 point count: 09-05-2024

Service SOPs: Asbestos-EPA 400 point count (EPA 40CFR App E to Sub E of Part 763 & EPA METHOD 600/R-93-116, SOP EM-AS-S-1262)
NVLAP Lab Code 200757-0

All samples were received in acceptable condition unless noted in the Report Comments portion in the body of the report. Due to the nature of the analyses performed, field blank correction of results is not applied. The results relate only to the samples as received and tested.

Client: Entek Consulting Group
C/O: Jose Hernandez
Re: 24-7284 Sacramento City Unified School District;
Ethel Phillips Elementary School 2930 21st Avenue
Sacramento, CA 95820

Eurofins EPK Built Environment Testing, LLC
2841 Dow Avenue, Suite 300, Tustin, CA 92780
(833) 465-5857 www.eurofinsus.com/Built

Date of Sampling: 08-05-2024
Date of Receipt: 08-19-2024
Date of Report: 09-05-2024

ASBESTOS POINT COUNT REPORT

Location:	ECG-24-7284-17A Cementitious Textured Plaster/MPR Building, Stage		
Total Points Counted:	400		
Lab ID-Version‡:	18554046-1		
Sample Layers	**Asbestos Type**	**Asbestos Points Counted**	**Asbestos Concentration (%)**
Light Gray Plaster	Chrysotile	1	0.25
Layer Totals:		1	0.25

Location:	ECG-24-7284-17B Cementitious Textured Plaster/MPR Building, Room A-1		
Total Points Counted:	400		
Lab ID-Version‡:	18554047-1		
Sample Layers	**Asbestos Type**	**Asbestos Points Counted**	**Asbestos Concentration (%)**
Light Gray Plaster	Chrysotile	0	< 0.25
Layer Totals:		0	NA

Comments: Asbestos was detected, but no points counted.

Location:	ECG-24-7284-17C Cementitious Textured Plaster/MPR Building, Room A-1		
Total Points Counted:	400		
Lab ID-Version‡:	18554048-1		
Sample Layers	**Asbestos Type**	**Asbestos Points Counted**	**Asbestos Concentration (%)**
Light Gray Plaster	Chrysotile	1	0.25
Layer Totals:		1	0.25

The analytical sensitivity is 1 asbestos point. The limit of detection is 1 asbestos point divided by the total number of points counted and multiplied by 100.

The results relate only to the items tested. Interpretation is left to the company and/or persons who conducted the field work. The test report shall not be reproduced except in full, without written approval of the laboratory. The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government.

All samples were received in acceptable condition unless otherwise noted. The Company reserves the right to dispose of all samples after a period of thirty (30) days, according to all state and federal guidelines, unless otherwise specified.
Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.

‡ A "Version" indicated by -"x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

Client: Entek Consulting Group
C/O: Jose Hernandez
Re: 24-7284 Sacramento City Unified School District;
Ethel Phillips Elementary School 2930 21st Avenue
Sacramento, CA 95820

Eurofins EPK Built Environment Testing, LLC
2841 Dow Avenue, Suite 300, Tustin, CA 92780
(833) 465-5857 www.eurofinsus.com/Built

Date of Sampling: 08-05-2024
Date of Receipt: 08-19-2024
Date of Report: 09-05-2024

ASBESTOS POINT COUNT REPORT

Location:	ECG-24-7284-20A Drywall with Joint Compound behind Ceiling Tile/MPR Building, Stage		
Total Points Counted:	400		
Lab ID-Version‡:	18554049-1		
Sample Layers	**Asbestos Type**	**Asbestos Points Counted**	**Asbestos Concentration (%)**
Off-White Joint Compound with White Drywall (Composite)	Chrysotile	2	0.5
Layer Totals:		2	0.5

Location:	ECG-24-7284-38A Rough Textured Plaster/Hallway between Office and MPR Buildings		
Total Points Counted:	400		
Lab ID-Version‡:	18554050-1		
Sample Layers	**Asbestos Type**	**Asbestos Points Counted**	**Asbestos Concentration (%)**
Green Plaster	Chrysotile	0	< 0.25
Layer Totals:		0	NA

Comments: Asbestos was detected, but no points counted.

Location:	ECG-24-7284-38B Rough Textured Plaster/Hallway between Office and MPR Buildings		
Total Points Counted:	400		
Lab ID-Version‡:	18554051-1		
Sample Layers	**Asbestos Type**	**Asbestos Points Counted**	**Asbestos Concentration (%)**
Green Plaster	Chrysotile	1	0.25
Layer Totals:		1	0.25

The analytical sensitivity is 1 asbestos point. The limit of detection is 1 asbestos point divided by the total number of points counted and multiplied by 100.

The results relate only to the items tested. Interpretation is left to the company and/or persons who conducted the field work. The test report shall not be reproduced except in full, without written approval of the laboratory. The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government.

All samples were received in acceptable condition unless otherwise noted. The Company reserves the right to dispose of all samples after a period of thirty (30) days, according to all state and federal guidelines, unless otherwise specified.
Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.

‡ A "Version" indicated by -"x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

Client: Entek Consulting Group
C/O: Jose Hernandez
Re: 24-7284 Sacramento City Unified School District;
Ethel Phillips Elementary School 2930 21st Avenue
Sacramento, CA 95820

Eurofins EPK Built Environment Testing, LLC
2841 Dow Avenue, Suite 300, Tustin, CA 92780
(833) 465-5857 www.eurofinsus.com/Built

Date of Sampling: 08-05-2024
Date of Receipt: 08-19-2024
Date of Report: 09-05-2024

ASBESTOS POINT COUNT REPORT

Location:	ECG-24-7284-38C Rough Textured Plaster/Hallway between Office and MPR Buildings		
Total Points Counted:	400		
Lab ID-Version‡:	18554052-1		
Sample Layers	**Asbestos Type**	**Asbestos Points Counted**	**Asbestos Concentration (%)**
Green Plaster	Chrysotile	2	0.5
Layer Totals:		2	0.5

Location:	ECG-24-7284-132A Stucco/Exterior, Office Building, South		
Total Points Counted:	400		
Lab ID-Version‡:	18554053-1		
Sample Layers	**Asbestos Type**	**Asbestos Points Counted**	**Asbestos Concentration (%)**
Beige Stucco	Chrysotile	2	0.5
Layer Totals:		2	0.5

Location:	ECG-24-7284-165A Drywall with Joint Compound/Portable C-11, Northwest Corner adjacent to Closet		
Total Points Counted:	400		
Lab ID-Version‡:	18554054-1		
Sample Layers	**Asbestos Type**	**Asbestos Points Counted**	**Asbestos Concentration (%)**
Off-White Joint Compound with White Drywall (Composite)	Chrysotile	3	0.75
Layer Totals:		3	0.75

The analytical sensitivity is 1 asbestos point. The limit of detection is 1 asbestos point divided by the total number of points counted and multiplied by 100.

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All samples were received in acceptable condition unless otherwise noted. The Company reserves the right to dispose of all samples after a period of thirty (30) days, according to all state and federal guidelines, unless otherwise specified.
Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.

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ENTEK
BULK ASBESTOS MATERIAL Analysis *Request*

003750911

ENTEK CONSULTING GROUP, INC.
4200 ROCKLIN ROAD, SUITE 7
ROCKLIN, CA 95677
(916) 632-6800 PHONE
(916) 632-6812 FAX
mainoffice@entekgroup.com

Date of Sampling: 8/5/24-8/7/24
Job Number: 24-7284
Client Name: Sacramento City Unified School District
Site Address: Ethel Phillips Elementary School
2930 21st Avenue
Sacramento, CA 95820

Lab: Eurofins/EmLab P&K - Tustin
Collected by: Jose Hernandez
Turnaround Time: 5 Days

Analysis Requested: Asbestos by PLM with Dispersion Staining

Special Instructions: *Stop analysis upon first positive result (>1%) for sample in a series. Also stop analysis upon first positive result (>1%) in the joint compound for sample series.*

Please e-mail results at mainoffice@entekgroup.com and jhernandez@entekgroup.com as soon as available and include copy of submittal with those results.

SAMPLE #	MATERIAL DESCRIPTION/LOCATION
ECG-24-7284-01A	9"x9" Black Vinyl Floor Tile with Black Mastic / MPR Building, Room A-1, Northeast Storage Room
ECG-24-7284-01B	9"x9" Black Vinyl Floor Tile with Black Mastic / MPR Building, Room A-1, Sprinkler Control Valve Room
ECG-24-7284-02A	9"x9" Dark Green Mottled Vinyl Floor Tile with Black Mastic / MPR Building, Northeast Storage Room
ECG-24-7284-02B	9"x9" Dark Green Mottled Vinyl Floor Tile with Black Mastic / MPR Building, Room A-1
ECG-24-7284-03A	9"x9" Gray-Green Streaked Vinyl Floor Tile with Black Mastic / MPR Building, Room A-1
ECG-24-7284-03B	9"x9" Gray-Green Streaked Vinyl Floor Tile with Black Mastic / MPR Building, Room A-1, Northeast Storage Room
ECG-24-7284-04A	9"x9" Pink Streaked Vinyl Floor Tile with Black Mastic / MPR Building, Room A-1
ECG-24-7284-04B	9"x9" Pink Streaked Vinyl Floor Tile with Black Mastic / MPR Building, Room A-1
ECG-24-7284-05A	9"x9" Light Gray Speckled Vinyl Floor Tile with Black Mastic / MPR Building, Room A-1
ECG-24-7284-05B	9"x9" Light Gray Speckled Vinyl Floor Tile with Black Mastic / MPR Building, Room A-1, Northeast Storage Room
ECG-24-7284-06A	9"x9" Tan Mottled Vinyl Floor Tile with Black Mastic / MPR Building, Room A-1
ECG-24-7284-06B	9"x9" Tan Mottled Vinyl Floor Tile with Black Mastic / MPR Building, Room A-1
ECG-24-7284-07A	12"x12" Light Gray Mottled Vinyl Floor Tile with Black & Yellow Mastic / MPR Building, South Entry Foyer

Delivered by: _____ via FedEx____ **Date:** 8/15/24 **Time:** 7:00 PM

Received by: STEVEN CASTILLO **Date:** 8/9/24 **Time:** 9:30 AM/PM

ENTEK
BULK ASBESTOS MATERIAL Analysis *Request*

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ENTEK CONSULTING GROUP, INC.
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ROCKLIN, CA 95677
(916) 632-6800 PHONE
(916) 632-6812 FAX
mainoffice@entekgroup.com

Date of Sampling: 8/5/24-8/7/24
Job Number: 24-7284
Client Name: Sacramento City Unified School District
Site Address: Ethel Phillips Elementary School
2930 21st Avenue
Sacramento, CA 95820

Lab: Eurofins/EmLab P&K - Tustin
Collected by: Jose Hernandez
Turnaround Time: 5 Days

Analysis Requested: Asbestos by PLM with Dispersion Staining

Special Instructions: *Stop analysis upon first positive result (>1%) for sample in a series. Also stop analysis upon first positive result (>1%) in the joint compound for sample series.*

Please e-mail results at mainoffice@entekgroup.com and jhernandez@entekgroup.com as soon as available and include copy of submittal with those results.

SAMPLE #	MATERIAL DESCRIPTION/LOCATION
ECG-24-7284-07B	12"x12" Light Gray Mottled Vinyl Floor Tile with Black & Yellow Mastic / MPR Building, South Entry Foyer
ECG-24-7284-08A	12"x12" Pink with Multi-colored Specks Vinyl Floor Tile with Yellow Mastic / MPR Building, Muti-Purpose Room
ECG-24-7284-08B	12"x12" Pink with Multi-colored Specks Vinyl Floor Tile with Yellow Mastic / MPR Building, Muti-Purpose Room
ECG-24-7284-09A	Terrazzo Shower Pan with Grout / MPR Building, Old Boy's Locker Room
ECG-24-7284-09B	Terrazzo Shower Pan with Grout / MPR Building, Old Boy's Locker Room
ECG-24-7284-10A	2"x2" Brown Ceramic Floor Tile with Grout and Mortar / MPR Building, Old Boy's Locker Room
ECG-24-7284-10B	2"x2" Brown Ceramic Floor Tile with Grout and Mortar / MPR Building, Old Boy's Locker Room
ECG-24-7284-11A	Concrete Slab / MPR Building, South Stage Mechanical Room
ECG-24-7284-11B	Concrete Slab / MPR Building, Laundry Room
ECG-24-7284-12A	6"x6" Red Ceramic Wall Base Tile with Grout and Mortar / MPR Building, Old Boy's Locker Room
ECG-24-7284-12B	6"x6" Red Ceramic Wall Base Tile with Grout and Mortar / MPR Building, Old Girl's Locker Room
ECG-24-7284-13A	4" Brown Vinyl Base Cove with Mastic / MPR Building, Room A-1

Delivered by: _____ via FedEx____ **Date:** __8_/_15_/_24_ **Time:** _7:00_PM

Received by: STEVEN CASTILLO **Date:** 8/19/24 **Time:** 9:30 AM/PM

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BULK ASBESTOS MATERIAL Analysis *Request*

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Date of Sampling: 8/5/24-8/7/24
Job Number: 24-7284
Client Name: Sacramento City Unified School District
Site Address: Ethel Phillips Elementary School
2930 21st Avenue
Sacramento, CA 95820

Lab: Eurofins/EmLab P&K - Tustin
Collected by: Jose Hernandez
Turnaround Time: 5 Days

Analysis Requested: Asbestos by PLM with Dispersion Staining

Special Instructions: *Stop analysis upon first positive result (>1%) for sample in a series. Also stop analysis upon first positive result (>1%) in the joint compound for sample series.*

Please e-mail results at mainoffice@entekgroup.com and jhernandez@entekgroup.com as soon as available and include copy of submittal with those results.

SAMPLE #	MATERIAL DESCRIPTION/LOCATION
ECG-24-7284-13B	4" Brown Vinyl Base Cove with Mastic and Mesh / MPR Building, Southwest Room
ECG-24-7284-14A	4" Black Vinyl Base Cove with Mastic / MPR Building, Room A-1
ECG-24-7284-14B	4" Black Vinyl Base Cove with Mastic / MPR Building, Stage
ECG-24-7284-15A	4" Light Gray Vinyl Base Cove with Mastic / MPR Building, Stage
ECG-24-7284-15B	4" Light Gray Vinyl Base Cove with Mastic / MPR Building, Kitchen
ECG-24-7284-16A	Plaster / MPR Building, Multi-Purpose Room
ECG-24-7284-16B	Plaster / MPR Building, Kitchen
ECG-24-7284-16C	Plaster / MPR Building, Mail Room
ECG-24-7284-16D	Plaster / MPR Building, Stage
ECG-24-7284-16E	Plaster / MPR Building, Room A-1
ECG-24-7284-16F	Plaster / MPR Building, Sprinkler Control Valve Room
ECG-24-7284-16G	Plaster / MPR Building, Custodian Closet
ECG-24-7284-17A	Cementitious Textured Plaster / MPR Building, Stage
ECG-24-7284-17B	Cementitious Textured Plaster / MPR Building, Room A-1
ECG-24-7284-17C	Cementitious Textured Plaster / MPR Building, Room A-1
ECG-24-7284-18A	Plastic Wall Panel Glue / MPR Building, Kitchen

Delivered by: _____ via FedEx____ **Date:** _8_/_15_/_24_ **Time:** _7:00_**PM**

Received by: STEVEN CASTILLO **Date:** 8/17/24 **Time:** 9:30 **AM/PM**

ENTEK
BULK ASBESTOS MATERIAL Analysis *Request*

003750911

ENTEK CONSULTING GROUP, INC.
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ROCKLIN, CA 95677
(916) 632-6800 PHONE
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Date of Sampling: 8/5/24-8/7/24
Job Number: 24-7284
Client Name: Sacramento City Unified School District
Site Address: Ethel Phillips Elementary School
2930 21st Avenue
Sacramento, CA 95820

Lab: Eurofins/EmLab P&K - Tustin
Collected by: Jose Hernandez
Turnaround Time: 5 Days

Analysis Requested: Asbestos by PLM with Dispersion Staining

Special Instructions: *Stop analysis upon first positive result (>1%) for sample in a series. Also stop analysis upon first positive result (>1%) in the joint compound for sample series.*

Please e-mail results at mainoffice@entekgroup.com and jhernandez@entekgroup.com as soon as available and include copy of submittal with those results.

SAMPLE #	MATERIAL DESCRIPTION/LOCATION
ECG-24-7284-18B	Plastic Wall Panel Glue / MPR Building, Kitchen
ECG-24-7284-19A	12"x12" Glue-on Ceiling Tile with Pinholes / MPR Building, Stage
ECG-24-7284-19B	12"x12" Glue-on Ceiling Tile with Pinholes / MPR Building, Stage
ECG-24-7284-20A	Drywall with Joint Compound behind Ceiling Tile / MPR Building, Stage
ECG-24-7284-20B	Drywall with Joint Compound behind Ceiling Tile / MPR Building, Stage
ECG-24-7284-21A	12"x12" Glue-on Ceiling Tile with Pinholes & Fissures / MPR Building, Multi-Purpose Room
ECG-24-7284-21B	12"x12" Glue-on Ceiling Tile with Pinholes & Fissures / MPR Building, Multi-Purpose Room
ECG-24-7284-22A	HVAC Seam Tape and Mastic / MPR Building, North Stage Mechanical Room
ECG-24-7284-22B	HVAC Seam Tape and Mastic / MPR Building, HVAC Closet adjacent Room A-1
ECG-24-7284-23A	Vibration Dampener / MPR Building, HVAC Closet adjacent Room A-1
ECG-24-7284-23B	Vibration Dampener / MPR Building, South Stage Mechanical Room
ECG-24-7284-24A	Canvas HVAC Duct Wrap with Fiberglass Insulation / MPR Building, PE Storage Room
ECG-24-7284-24B	Canvas HVAC Duct Wrap with Fiberglass Insulation / MPR Building, PE Storage Room
ECG-24-7284-24C	Canvas HVAC Duct Wrap with Fiberglass Insulation / MPR Building, PE Storage Room
ECG-24-7284-25A	Drywall with Joint Compound (Patch) / MPR Building, North Stage Mechanical Room

Delivered by: _____ via FedEx____ **Date:** 8/15/24 **Time:** 7:00 PM

Received by: STEVEN CASTILLO **Date:** 8/19/24 **Time:** 9:30 AM/PM

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Date of Sampling: 8/5/24-8/7/24
Job Number: 24-7284
Client Name: Sacramento City Unified School District
Site Address: Ethel Phillips Elementary School
2930 21st Avenue
Sacramento, CA 95820

Lab: Eurofins/EmLab P&K - Tustin
Collected by: Jose Hernandez
Turnaround Time: 5 Days

Analysis Requested: Asbestos by PLM with Dispersion Staining

Special Instructions: *Stop analysis upon first positive result (>1%) for sample in a series. Also stop analysis upon first positive result (>1%) in the joint compound for sample series.*

Please e-mail results at mainoffice@entekgroup.com and jhernandez@entekgroup.com as soon as available and include copy of submittal with those results.

SAMPLE #	MATERIAL DESCRIPTION/LOCATION
ECG-24-7284-25B	Drywall with Joint Compound (Patch) / MPR Building, North Stage Mechanical Room
ECG-24-7284-26A	Drywall with Joint Compound / MPR Building, Old Girl's Locker Room
ECG-24-7284-26B	Drywall with Joint Compound / MPR Building, Old Girl's Locker Room
ECG-24-7284-27A	Skip Trowel Texture / MPR Building, Old Girl's Locker Room
ECG-24-7284-27B	Skip Trowel Texture / MPR Building, Old Girl's Locker Room
ECG-24-7284-27C	Skip Trowel Texture / MPR Building, Old Girl's Locker Room
ECG-24-7284-28A	12"x12" Brown Mottled Vinyl Floor Tile with Black Mastic / MPR Building, Mail Room Office
ECG-24-7284-28B	12"x12" Brown Mottled Vinyl Floor Tile with Black Mastic / MPR Building, Southwest Room
ECG-24-7284-29A	2'x4' Ceiling Panel with Pinholes & Fissures / MPR Building, West Lobby
ECG-24-7284-29B	2'x4' Ceiling Panel with Pinholes & Fissures / MPR Building, West Lobby
ECG-24-7284-30A	2'x4' Ceiling Panel with 2'x2' Pattern / MPR Building, West Lobby
ECG-24-7284-30B	2'x4' Ceiling Panel with 2'x2' Pattern / MPR Building, West Lobby
ECG-24-7284-30.5A	Cinder Block with Mortar / MPR Building, West Lobby
ECG-24-7284-30.5B	Cinder Block with Mortar / MPR Building, West Lobby
ECG-24-7284-30.6A	Black Roofing Debris / MPR Building, Attic above Mail Room Office
ECG-24-7284-30.6B	Black Roofing Debris / MPR Building, Attic above Mail Room Office

Delivered by: _____ via FedEx____ **Date:** __8_/_15_/_24_ **Time:** _7:00_PM

Received by: STEVEN CASTILLO **Date:** 8/19/24 **Time:** 9:30 AM/PM

ENTEK
BULK ASBESTOS MATERIAL Analysis *Request*

003750911

ENTEK CONSULTING GROUP, INC.
4200 ROCKLIN ROAD, SUITE 7
ROCKLIN, CA 95677
(916) 632-6800 PHONE
(916) 632-6812 FAX
mainoffice@entekgroup.com

Date of Sampling: 8/5/24-8/7/24
Job Number: 24-7284
Client Name: Sacramento City Unified School District
Site Address: Ethel Phillips Elementary School
2930 21st Avenue
Sacramento, CA 95820

Lab: Eurofins/EmLab P&K - Tustin
Collected by: Jose Hernandez
Turnaround Time: 5 Days

Analysis Requested: Asbestos by PLM with Dispersion Staining

Special Instructions: *Stop analysis upon first positive result (>1%) for sample in a series. Also stop analysis upon first positive result (>1%) in the joint compound for sample series.*

Please e-mail results at mainoffice@entekgroup.com and jhernandez@entekgroup.com as soon as available and include copy of submittal with those results.

SAMPLE #	MATERIAL DESCRIPTION/LOCATION
ECG-24-7284-31A	Plastic Wall Panel Glue / Office Building, Nurse's Office Restroom
ECG-24-7284-31B	Plastic Wall Panel Glue / Office Building, Nurse's Office Restroom
ECG-24-7284-32A	Gray Speckled Sheet Vinyl Flooring with Paper Backing and Mastic over Beige Sheet Vinyl Flooring with Paper Backing and Mastic / Office Building, Nurse's Office Restroom
ECG-24-7284-32B	Gray Speckled Sheet Vinyl Flooring with Paper Backing and Mastic over Beige Sheet Vinyl Flooring with Paper Backing and Mastic / Office Building, Nurse's Office Restroom
ECG-24-7284-33A	Brown Square Pattern Vinyl Sheet Flooring with Paper Backing and Mastic / Office Building, Manager's Office Restroom
ECG-24-7284-33B	Brown Square Pattern Vinyl Sheet Flooring with Paper Backing and Mastic / Office Building, Manager's Office Restroom
ECG-24-7284-34A	Blue-Gray Carpet Tile with Remnant Yellow Mastic / Office Building, Front Office
ECG-24-7284-34B	Blue-Gray Carpet Tile with Remnant Yellow Mastic / Office Building, Manager's Office
ECG-24-7284-35A	4" Gray Vinyl Base Cove with Mastic / Office Building, Manager's Office
ECG-24-7284-35B	4" Gray Vinyl Base Cove with Mastic / Office Building, Spare Office
ECG-24-7284-36A	4" Brown Vinyl Base Cove with Mastic / Office Building, Nurse's Office
ECG-24-7284-36B	4" Brown Vinyl Base Cove with Mastic / Office Building, IT Room
ECG-24-7284-37A	Gray Window Caulking / Office Building, Front Office
ECG-24-7284-37B	Gray Window Caulking / Office Building, Nurse's Office

Delivered by: _____ via FedEx____ **Date:** 8/15/24 **Time:** 7:00 PM

Received by: STEVEN CASTILLO **Date:** 8/19/24 **Time:** 9:30 AM/PM

ENTEK
BULK ASBESTOS MATERIAL Analysis *Request*

003750911

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mainoffice@entekgroup.com

Date of Sampling: 8/5/24-8/7/24
Job Number: 24-7284
Client Name: Sacramento City Unified School District
Site Address: Ethel Phillips Elementary School
2930 21st Avenue
Sacramento, CA 95820

Lab: Eurofins/EmLab P&K - Tustin
Collected by: Jose Hernandez
Turnaround Time: 5 Days

Analysis Requested: Asbestos by PLM with Dispersion Staining

Special Instructions: *Stop analysis upon first positive result (>1%) for sample in a series. Also stop analysis upon first positive result (>1%) in the joint compound for sample series.*

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SAMPLE #	MATERIAL DESCRIPTION/LOCATION
ECG-24-7284-38A	Rough Textured Plaster / Hallway between Office and MPR Buildings
ECG-24-7284-38B	Rough Textured Plaster / Hallway between Office and MPR Buildings
ECG-24-7284-38C	Rough Textured Plaster / Hallway between Office and MPR Buildings
ECG-24-7284-39A	Drywall with Joint Compound / Office Building, Office Storage
ECG-24-7284-39B	Drywall with Joint Compound / Office Building, Manager's Office Restroom
ECG-24-7284-40A	12"x12" Glue-on Ceiling Tile with Pinholes / Office Building, IT Room
ECG-24-7284-40B	12"x12" Glue-on Ceiling Tile with Pinholes / Office Building, IT Room
ECG-24-7284-41A	Drywall behind Ceiling Tiles / Office Building, IT Room
ECG-24-7284-41B	Drywall behind Ceiling Tiles / Office Building, IT Room
ECG-24-7284-42A	Plaster Board / Office Building, Above Ceiling of Manager's Office
ECG-24-7284-42B	Plaster Board / Office Building, Above Ceiling of Manager's Office
ECG-24-7284-43A	12"x12" Glue-on Ceiling Tile with Fissures / Office Building, Manager's Office
ECG-24-7284-43B	12"x12" Glue-on Ceiling Tile with Fissures / Office Building, Principal's Office
ECG-24-7284-44A	Plaster / Office Building, Front Office
ECG-24-7284-44B	Plaster / Office Building, Manager's Office
ECG-24-7284-44C	Plaster / Office Building, Office Storage

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ENTEK
BULK ASBESTOS MATERIAL Analysis *Request*

003750911

ENTEK CONSULTING GROUP, INC.
4200 ROCKLIN ROAD, SUITE 7
ROCKLIN, CA 95677
(916) 632-6800 PHONE
(916) 632-6812 FAX
mainoffice@entekgroup.com

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SAMPLE #	MATERIAL DESCRIPTION/LOCATION
ECG-24-7284-45A	Concrete Slab / Kindergarten Building, HVAC Closet
ECG-24-7284-45B	Concrete Slab / Kindergarten Building, HVAC Closet
ECG-24-7284-46A	Brown Square Pattern Vinyl Sheet Flooring with Paper Backing and Black & Yellow Mastic / Kindergarten Building, Southeast Storage Room
ECG-24-7284-46B	Brown Square Pattern Vinyl Sheet Flooring with Paper Backing and Black & Yellow Mastic / Kindergarten Building, Southeast Storage Room
ECG-24-7284-47A	12"x12" Brown Mottled Vinyl Floor Tile with Black & Yellow Mastic / Kindergarten Building, Classroom
ECG-24-7284-47B	12"x12" Brown Mottled Vinyl Floor Tile with Black & Yellow Mastic / Kindergarten Building, Southeast Closet
ECG-24-7284-48A	Gray Sheet Vinyl Flooring with Mastic / Kindergarten Building, Restroom
ECG-24-7284-48B	Gray Sheet Vinyl Flooring with Mastic and Leveler / Kindergarten Building, Restroom
ECG-24-7284-49A	Blue Carpet with Yellow Mastic / Kindergarten Building, Classroom
ECG-24-7284-49B	Blue Carpet with Yellow Mastic / Kindergarten Building, Classroom
ECG-24-7284-50A	4" Brown Vinyl Base Cove with Mastic / Kindergarten Building, Classroom
ECG-24-7284-50B	4" Brown Vinyl Base Cove with Mastic / Kindergarten Building, Sink Room
ECG-24-7284-51A	4" Gray Vinyl Base Cove with Mastic / Kindergarten Building, Classroom
ECG-24-7284-51B	4" Gray Vinyl Base Cove with Mastic / Kindergarten Building, Classroom

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SAMPLE #	MATERIAL DESCRIPTION/LOCATION
ECG-24-7284-52A	Plaster / Kindergarten Building
ECG-24-7284-52B	Plaster / Kindergarten Building
ECG-24-7284-52C	Plaster / Kindergarten Building
ECG-24-7284-52D	Plaster / Kindergarten Building
ECG-24-7284-52E	Plaster / Kindergarten Building
ECG-24-7284-53A	Plastic Wall Panel Glue / Kindergarten Building, Restroom
ECG-24-7284-53B	Plastic Wall Panel Glue / Kindergarten Building, Restroom
ECG-24-7284-54A	12"x12" Nail-on Ceiling Tile with Pinholes / Kindergarten Building
ECG-24-7284-54B	12"x12" Nail-on Ceiling Tile with Pinholes / Kindergarten Building
ECG-24-7284-55A	Concrete Slab / Building B, Library B2
ECG-24-7284-55B	Concrete Slab / Building B, Library B2
ECG-24-7284-56A	Yellow Carpet Mastic / Building B, Library B2
ECG-24-7284-56B	Yellow Carpet Mastic / Building B, Library B2
ECG-24-7284-57A	12"x12" Gray Mottled Vinyl Floor Tile with Black Mastic and Leveler / Building B, Library B2
ECG-24-7284-57B	12"x12" Gray Mottled Vinyl Floor Tile with Black Mastic / Building B, Library B2

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SAMPLE #	MATERIAL DESCRIPTION/LOCATION
ECG-24-7284-58A	4" Gray Vinyl Base Cove with Mastic / Building B, Library B2
ECG-24-7284-58B	4" Gray Vinyl Base Cove with Mastic / Building B, Library B2
ECG-24-7284-59A	12"x12" Beige Mottled Vinyl Floor Tile with Black Mastic over Beige Vinyl Floor Tile with Mastic / Building B, Classroom B4, At North Entry
ECG-24-7284-59B	12"x12" Beige Mottled Vinyl Floor Tile with Black Mastic over Beige Vinyl Floor Tile with Mastic / Building B, Classroom B4, At North Entry
ECG-24-7284-60A	Gray with Multi-colored Specks Sheet Vinyl Flooring with Paper Backing and Black & Yellow Mastic / Building B, Classroom B4
ECG-24-7284-60B	Gray with Multi-colored Specks Sheet Vinyl Flooring with Paper Backing and Black & Yellow Mastic / Building B, Classroom B4
ECG-24-7284-61A	Yellow and Black Carpet Mastic / Building B, Classroom B4
ECG-24-7284-61B	Yellow and Black Carpet Mastic / Building B, Classroom B3
ECG-24-7284-62A	12"x12" Brown Mottled Vinyl Floor Tile with Black Mastic / Building B, Classroom B3
ECG-24-7284-62B	12"x12" Brown Mottled Vinyl Floor Tile with Black Mastic / Building B, Classroom B5
ECG-24-7284-63A	4" Brown Vinyl Base Cove with Mastic / Building B, Classroom B3
ECG-24-7284-63B	4" Brown Vinyl Base Cove with Mastic / Building B, Classroom B5
ECG-24-7284-64A	Gray-Blue Epoxy Coating / Building B, Boy's Restroom
ECG-24-7284-64B	Gray-Blue Epoxy Coating / Building B, Girl's Restroom

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SAMPLE #	MATERIAL DESCRIPTION/LOCATION
ECG-24-7284-65A	Drywall with Joint Compound / Building B, Boy's Restroom
ECG-24-7284-65B	Drywall with Joint Compound / Building B, Girl's Restroom
ECG-24-7284-66A	Skim Coat / Building B, Boy's Restroom
ECG-24-7284-66B	Skim Coat / Building B, Girl's Restroom
ECG-24-7284-66C	Skim Coat / Building B, Girl's Restroom
ECG-24-7284-67A	Plaster / Building B, Library B2
ECG-24-7284-67B	Plaster / Building B, Classroom B3
ECG-24-7284-67C	Plaster / Building B, Classroom B4
ECG-24-7284-67D	Plaster / Building B, Classroom B5
ECG-24-7284-67E	Plaster / Building B, Classroom B6
ECG-24-7284-67F	Plaster / Building B, Classroom B7
ECG-24-7284-67G	Plaster / Building B, Classroom B7
ECG-24-7284-68A	Plaster / Building B, Classroom B5 HVAC Closet
ECG-24-7284-68B	Plaster / Building B, Classroom B6 HVAC Closet
ECG-24-7284-68C	Plaster / Building B, Classroom B7 HVAC Closet
ECG-24-7284-68D	Plaster / Building B, Classroom B3 HVAC Closet

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SAMPLE #	MATERIAL DESCRIPTION/LOCATION
ECG-24-7284-68E	Plaster / Building B, Classroom B4 HVAC Closet
ECG-24-7284-69A	HVAC Seam Mastic / Building B, Classroom B3 HVAC Closet
ECG-24-7284-69B	HVAC Seam Mastic / Building B, Classroom B5 HVAC Closet
ECG-24-7284-70A	12"x12" Nail-on Ceiling Tile with Pinholes / Building B, Library B2
ECG-24-7284-70B	12"x12" Nail-on Ceiling Tile with Pinholes / Building B, Classroom B3
ECG-24-7284-71A	Gray Mortar around Decorative Glass Block Wall / Building B, Library B2
ECG-24-7284-71B	Gray Mortar around Decorative Glass Block Wall / Building B, Library B2
ECG-24-7284-72A	12"x12" Gray Mottled Vinyl Floor Tile with Black Mastic / Building C, Classroom C-2
ECG-24-7284-72B	12"x12" Gray Mottled Vinyl Floor Tile with Black Mastic / Building C, Classroom C-2 Closet
ECG-24-7284-73A	12"x12" Brown Mottled Vinyl Floor Tile with Black Mastic / Building C, Classroom C-3 Closet
ECG-24-7284-73B	12"x12" Brown Mottled Vinyl Floor Tile with Black Mastic / Building C, Classroom C-4
ECG-24-7284-74A	12"x12" Tan Mottled Vinyl Floor Tile with Black Mastic / Building C, Classroom C-5
ECG-24-7284-74B	12"x12" Tan Mottled Vinyl Floor Tile with Black Mastic / Building C, Classroom C-5
ECG-24-7284-75A	Black and Yellow Carpet Mastic / Building C, Classroom C-5
ECG-24-7284-75B	Black and Yellow Carpet Mastic / Building C, Classroom C-5 Closet

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SAMPLE #	MATERIAL DESCRIPTION/LOCATION
ECG-24-7284-76A	4" Gray Vinyl Base Cove with Mastic / Building C, Classroom C-2
ECG-24-7284-76B	4" Gray Vinyl Base Cove with Mastic / Building C, Classroom C-2
ECG-24-7284-77A	4" Brown Vinyl Base Cove with Mastic / Building C, Classroom C-3
ECG-24-7284-77B	4" Brown Vinyl Base Cove with Mastic / Building C, Classroom C-4
ECG-24-7284-78A	Concrete Slab / Building C, Classroom C-4
ECG-24-7284-78B	Concrete Slab / Building C, Classroom C-4
ECG-24-7284-79A	Tan Epoxy Coating / Building C, Boy's Restroom adjacent Classroom C-2
ECG-24-7284-79B	Tan Epoxy Coating / Building C, Girl's Restroom adjacent Classroom C-2
ECG-24-7284-80A	4" White Ceramic Wall Tile with Grout and Mortar / Building C, Girl's Restroom adjacent Classroom C-2
ECG-24-7284-80B	4" White Ceramic Wall Tile with Grout and Mortar / Building C, Girl's Restroom adjacent Classroom C-2
ECG-24-7284-81A	Drywall with Joint Compound / Building C, Boy's Restroom adjacent Classroom C-2
ECG-24-7284-81B	Drywall with Joint Compound / Building C, Boy's Restroom adjacent Classroom C-2
ECG-24-7284-82A	Skip Trowel Texture / Building C, Boy's Restroom adjacent Classroom C-2
ECG-24-7284-82B	Skip Trowel Texture / Building C, Boy's Restroom adjacent Classroom C-2
ECG-24-7284-82C	Skip Trowel Texture / Building C, Boy's Restroom adjacent Classroom C-2

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SAMPLE #	MATERIAL DESCRIPTION/LOCATION
ECG-24-7284-83A	Plaster / Building C, Classroom C-2
ECG-24-7284-83B	Plaster / Building C, Classroom C-2
ECG-24-7284-83C	Plaster / Building C, Classroom C-3
ECG-24-7284-83D	Plaster / Building C, Classroom C-4
ECG-24-7284-83E	Plaster / Building C, Classroom C-5
ECG-24-7284-84A	Plaster Board / Building C, HVAC Closet for Classrooms C-4 & C-5
ECG-24-7284-84B	Plaster Board / Building C, HVAC Closet for Classrooms C-2 & C-3
ECG-24-7284-85A	Drywall with Joint Compound / Building C, HVAC Closet for Classrooms C-2 & C-3
ECG-24-7284-85B	Drywall with Joint Compound / Building C, HVAC Closet for Classrooms C-4 & C-5
ECG-24-7284-86A	HVAC Seam Mastic / Building C, HVAC Closet for Classrooms C-4 & C-5
ECG-24-7284-86B	HVAC Seam Mastic / Building C, HVAC Closet for Classrooms C-2 & C-3
ECG-24-7284-87A	Vibration Dampener / Building C, HVAC Closet for Classrooms C-4 & C-5
ECG-24-7284-87B	Vibration Dampener / Building C, HVAC Closet for Classrooms C-2 & C-3
ECG-24-7284-88A	12"x12" Nail-on Ceiling Tile with Pinholes / Building C, Classroom C-3
ECG-24-7284-88B	12"x12" Nail-on Ceiling Tile with Pinholes / Building C, Classroom C-2
ECG-24-7284-89A	Gray Mortar around Decorative Glass Block Wall / Building C, Classroom C-2

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SAMPLE #	MATERIAL DESCRIPTION/LOCATION
ECG-24-7284-89B	Gray Mortar around Decorative Glass Block Wall / Building C, Classroom C-2
ECG-24-7284-90A	9"x9" Blue-Green Streaked Vinyl Floor Tile with Black Mastic / Building C, Classroom C-6
ECG-24-7284-90B	9"x9" Blue-Green Streaked Vinyl Floor Tile with Black Mastic / Building C, Classroom C-6
ECG-24-7284-91A	9"x9" Light Green with Tan Streaks Vinyl Floor Tile and Black Mastic / Building C, Classroom C-6
ECG-24-7284-91B	9"x9" Light Green with Tan Streaks Vinyl Floor Tile and Black Mastic / Building C, Classroom C-6
ECG-24-7284-92A	9"x9" Dark Green with Tan Streaks Vinyl Floor Tile and Black Mastic / Building C, Classroom C-6
ECG-24-7284-92B	9"x9" Dark Green with Tan Streaks Vinyl Floor Tile and Black Mastic / Building C, Classroom C-6
ECG-24-7284-93A	12"x12" Brown Mottled Vinyl Floor Tile with Black Mastic / Building C, Classroom C-8
ECG-24-7284-93B	12"x12" Brown Mottled Vinyl Floor Tile with Black Mastic / Building C, Classroom C-8
ECG-24-7284-94A	12"x12" Tan Mottled Vinyl Floor Tile with Black Mastic / Building C, Classroom C-7
ECG-24-7284-94B	12"x12" Tan Mottled Vinyl Floor Tile with Black Mastic / Building C, Classroom C-7
ECG-24-7284-95A	12"x12" Gray Mottled Vinyl Floor Tile with Black Mastic / Building C, Classroom C-9
ECG-24-7284-95B	12"x12" Gray Mottled Vinyl Floor Tile with Black Mastic / Building C, Classroom C-9
ECG-24-7284-96A	4" Gray Vinyl Base Cove with Mastic / Building C, Classroom C-7

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SAMPLE #	MATERIAL DESCRIPTION/LOCATION
ECG-24-7284-96B	4" Gray Vinyl Base Cove with Mastic / Building C, Classroom C-9
ECG-24-7284-97A	4" Brown Vinyl Base Cove with Mastic / Building C, Classroom C-7
ECG-24-7284-97B	4" Brown Vinyl Base Cove with Mastic / Building C, Classroom C-8
ECG-24-7284-98A	Yellow Carpet Mastic / Building C, Classroom C-6
ECG-24-7284-98B	Yellow Carpet Mastic / Building C, Classroom C-7
ECG-24-7284-99A	Gray-Blue Epoxy Coating / Building C, Boy's Restroom adjacent Classroom C-9
ECG-24-7284-99B	Gray-Blue Epoxy Coating / Building C, Girl's Restroom adjacent Classroom C-9
ECG-24-7284-100A	Drywall with Joint Compound / Building C, Boy's Restroom adjacent Classroom C-9
ECG-24-7284-100B	Drywall with Joint Compound / Building C, Girl's Restroom adjacent Classroom C-9
ECG-24-7284-101A	Skim Coat / Building C, Boy's Restroom adjacent Classroom C-9
ECG-24-7284-101B	Skim Coat / Building C, Boy's Restroom adjacent Classroom C-9
ECG-24-7284-101C	Skim Coat / Building C, Girl's Restroom adjacent Classroom C-9
ECG-24-7284-102A	Plaster / Building C, Classroom C-6
ECG-24-7284-102B	Plaster / Building C, Classroom C-8
ECG-24-7284-102C	Plaster / Building C, Classroom C-9
ECG-24-7284-103A	Plaster / Building C, Classroom C-6 HVAC Closet

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ENTEK
BULK ASBESTOS MATERIAL Analysis *Request*

003750911

ENTEK CONSULTING GROUP, INC.
4200 ROCKLIN ROAD, SUITE 7
ROCKLIN, CA 95677
(916) 632-6800 PHONE
(916) 632-6812 FAX
mainoffice@entekgroup.com

Date of Sampling: 8/5/24-8/7/24
Job Number: 24-7284
Client Name: Sacramento City Unified School District
Site Address: Ethel Phillips Elementary School
2930 21st Avenue
Sacramento, CA 95820

Lab: Eurofins/EmLab P&K - Tustin
Collected by: Jose Hernandez
Turnaround Time: 5 Days

Analysis Requested: Asbestos by PLM with Dispersion Staining

Special Instructions: *Stop analysis upon first positive result (>1%) for sample in a series. Also stop analysis upon first positive result (>1%) in the joint compound for sample series.*

Please e-mail results at mainoffice@entekgroup.com and jhernandez@entekgroup.com as soon as available and include copy of submittal with those results.

SAMPLE #	MATERIAL DESCRIPTION/LOCATION
ECG-24-7284-103B	Plaster / Building C, Classroom C-8 HVAC Closet
ECG-24-7284-103C	Plaster / Building C, Classroom C-9 HVAC Closet
ECG-24-7284-104A	12"x12" Nail-on Ceiling Tile with Pinholes / Building C, Classroom C-3
ECG-24-7284-104B	12"x12" Nail-on Ceiling Tile with Pinholes / Building C, Classroom C-2
ECG-24-7284-105A	HVAC Seam Mastic / Building C, Classroom C-6 HVAC Closet
ECG-24-7284-105B	HVAC Seam Mastic / Building C, Classroom C-8 HVAC Closet
ECG-24-7284-106A	Concrete Slab / Building D, HVAC Closet for Classrooms D-1 & D-2
ECG-24-7284-106B	Concrete Slab / Building D, HVAC Closet for Classrooms D-3 & D-4
ECG-24-7284-107A	Black and Yellow Carpet Mastic / Building D, Classroom D-5 Closet
ECG-24-7284-108A	12"x12" Tan with Brown Streaks Vinyl Floor Tile and Black Mastic / Building D, Classroom D-6 Closet
ECG-24-7284-108B	12"x12" Tan with Brown Streaks Vinyl Floor Tile and Black Mastic / Building D, Classroom D-6 Closet
ECG-24-7284-109A	9"x9" Tan with Brown Streaks Vinyl Floor Tile and Black Mastic / Building D, Classroom D-1
ECG-24-7284-109B	9"x9" Tan with Brown Streaks Vinyl Floor Tile and Black Mastic / Building D, Classroom D-1
ECG-24-7284-110A	9"x9" Black Vinyl Floor Tile and Black Mastic / Building D, Classroom D-1 Closet

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Date of Sampling: 8/5/24-8/7/24
Job Number: 24-7284
Client Name: Sacramento City Unified School District
Site Address: Ethel Phillips Elementary School
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Sacramento, CA 95820

Lab: Eurofins/EmLab P&K - Tustin
Collected by: Jose Hernandez
Turnaround Time: 5 Days

Analysis Requested: Asbestos by PLM with Dispersion Staining

Special Instructions: *Stop analysis upon first positive result (>1%) for sample in a series. Also stop analysis upon first positive result (>1%) in the joint compound for sample series.*

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SAMPLE #	MATERIAL DESCRIPTION/LOCATION
ECG-24-7284-111A	12"x12" Brown Mottled Vinyl Floor Tile with Black Mastic / Building D, Classroom D-2
ECG-24-7284-112A	12"x12" Tan Mottled Vinyl Floor Tile with Black Mastic / Building D, Classroom D-3
ECG-24-7284-113A	4" Brown Vinyl Base Cove with Mastic / Building D, Classroom D-4
ECG-24-7284-114A	Gray Sheet Vinyl Flooring with Paper Backing and Blue Mastic over Leveler / Building D, Restroom between Classrooms D-7 & D-8
ECG-24-7284-114B	Gray Sheet Vinyl Flooring with Paper Backing and Blue Mastic over Leveler / Building D, Restroom between Classrooms D-7 & D-8
ECG-24-7284-115A	Gray Wood Pattern Vinyl Plank Flooring with Clear Mastic over Beige Viny Floor Tile and Mastic / Building D, Classroom D-7
ECG-24-7284-115B	Gray Wood Pattern Vinyl Plank Flooring with Clear Mastic over Beige Viny Floor Tile and Mastic / Building D, Classroom D-7
ECG-24-7284-116A	Plaster / Building D, Classroom D-2
ECG-24-7284-116B	Plaster / Building D, Classroom D-4
ECG-24-7284-116C	Plaster / Building D, Classroom D-5
ECG-24-7284-117A	Wallpaper over Drywall and Joint Compound / Building D, Classroom D-3
ECG-24-7284-117B	Wallpaper over Drywall and Joint Compound / Building D, Classroom D-3
ECG-24-7284-118A	Plaster / Building D, Classroom D-7
ECG-24-7284-118B	Plaster / Building D, Classroom D-7

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Date of Sampling: 8/5/24-8/7/24
Job Number: 24-7284
Client Name: Sacramento City Unified School District
Site Address: Ethel Phillips Elementary School
2930 21st Avenue
Sacramento, CA 95820

Lab: Eurofins/EmLab P&K - Tustin
Collected by: Jose Hernandez
Turnaround Time: 5 Days

Analysis Requested: Asbestos by PLM with Dispersion Staining

Special Instructions: *Stop analysis upon first positive result (>1%) for sample in a series. Also stop analysis upon first positive result (>1%) in the joint compound for sample series.*

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SAMPLE #	MATERIAL DESCRIPTION/LOCATION
ECG-24-7284-118C	Plaster / Building D, Classroom D-8
ECG-24-7284-119A	Drywall with Joint Compound / Building D, Restroom between Classrooms D-7 & D-8
ECG-24-7284-119B	Drywall with Joint Compound / Building D, Restroom between Classrooms D-7 & D-8
ECG-24-7284-120A	12"x12" Nail-on Ceiling Tile with Pinholes / Building D, Classroom D-6
ECG-24-7284-121A	12"x12" Glue-on Ceiling Tile with Pinholes / Building D, Classroom D-3
ECG-24-7284-121B	12"x12" Glue-on Ceiling Tile with Pinholes / Building D, Classroom D-3
ECG-24-7284-122A	12"x12" Nail-on Ceiling Tile with Pinholes / Building D, Classroom D-8
ECG-24-7284-122B	12"x12" Nail-on Ceiling Tile with Pinholes / Building D, Classroom D-7
ECG-24-7284-123A	White Rolled Asphalt Roofing / Building B Roof, East
ECG-24-7284-123B	White Rolled Asphalt Roofing / MPR Building Lower Roof, South
ECG-24-7284-123C	White Rolled Asphalt Roofing / Building C Roof, West
ECG-24-7284-123D	White Rolled Asphalt Roofing / Building C Roof, East
ECG-24-7284-123E	White Rolled Asphalt Roofing / Building D Roof, East
ECG-24-7284-123F	White Rolled Asphalt Roofing / Building D Roof, West
ECG-24-7284-124A	Red-Brown Composition Roof Shingle with Felt Paper / Office Building Roof, Southwest
ECG-24-7284-124B	Red-Brown Composition Roof Shingle with Felt Paper / MPR Building Roof, Southwest

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mainoffice@entekgroup.com

Date of Sampling: 8/5/24-8/7/24
Job Number: 24-7284
Client Name: Sacramento City Unified School District
Site Address: Ethel Phillips Elementary School
2930 21st Avenue
Sacramento, CA 95820

Lab: Eurofins/EmLab P&K - Tustin
Collected by: Jose Hernandez
Turnaround Time: 5 Days

Analysis Requested: Asbestos by PLM with Dispersion Staining

Special Instructions: *Stop analysis upon first positive result (>1%) for sample in a series. Also stop analysis upon first positive result (>1%) in the joint compound for sample series.*

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SAMPLE #	MATERIAL DESCRIPTION/LOCATION
ECG-24-7284-124C	Red-Brown Composition Roof Shingle with Felt Paper / Building B, Library Roof, East
ECG-24-7284-124D	Red-Brown Composition Roof Shingle with Felt Paper / Kindergarten Building Roof, East
ECG-24-7284-124E	Red-Brown Composition Roof Shingle with Felt Paper / Building C Roof, East
ECG-24-7284-124F	Red-Brown Composition Roof Shingle with Felt Paper / Building D Roof, West
ECG-24-7284-125A	Gray-Black Curb & Penetration Mastic / Office Building Roof, West
ECG-24-7284-125B	Gray-Black Curb & Penetration Mastic / Office Building Roof, East
ECG-24-7284-126A	Beige Penetration Mastic / Office Building Roof, East
ECG-24-7284-127A	Gray Penetration Mastic / Office Building Roof, East
ECG-24-7284-128A	White Coated Penetration Mastic / MPR Building Lower Roof, South
ECG-24-7284-128B	White Coated Penetration Mastic / Building B Roof, Near Center
ECG-24-7284-128C	White Coated Penetration Mastic / Building C Roof, East
ECG-24-7284-128D	White Coated Penetration Mastic / Building C Roof, West
ECG-24-7284-128E	White Coated Penetration Mastic / Building D Roof, West
ECG-24-7284-129A	Gray HVAC Flashing Mastic / Building C Roof, West at HVAC Unit Base
ECG-24-7284-129B	Gray HVAC Flashing Mastic / Building D Roof, West at HVAC Unit Base
ECG-24-7284-130A	Beige Flashing Mastic / Building C Roof, West at Vent Fan Base

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Date of Sampling: 8/5/24-8/7/24
Job Number: 24-7284
Client Name: Sacramento City Unified School District
Site Address: Ethel Phillips Elementary School
2930 21st Avenue
Sacramento, CA 95820

Lab: Eurofins/EmLab P&K - Tustin
Collected by: Jose Hernandez
Turnaround Time: 5 Days

Analysis Requested: Asbestos by PLM with Dispersion Staining

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SAMPLE #	MATERIAL DESCRIPTION/LOCATION
ECG-24-7284-130B	Beige Flashing Mastic / Building D Roof, West at Vent Fan Base
ECG-24-7284-131A	Black Roof Patch / Covered Walkway Roofs, North of Building D
ECG-24-7284-131B	Black Roof Patch / Covered Walkway Roofs, North of Building D
ECG-24-7284-131.5A	Rolled Asphalt Roofing / CCTV Shed Roof
ECG-24-7284-132A	Stucco / Exterior, Office Building, South
ECG-24-7284-132B	Stucco / Exterior, MPR Building, Southeast
ECG-24-7284-132C	Stucco / Exterior, Kindergarten Building, Southeast Corner
ECG-24-7284-132D	Stucco / Exterior, Building B, Southeast
ECG-24-7284-132E	Stucco / Exterior, Building C, South
ECG-24-7284-132F	Stucco / Exterior, Building D, Northeast Corner
ECG-24-7284-132G	Stucco / Exterior, Building D, Southwest Corner
ECG-24-7284-133A	Brick and Mortar / Exterior, Office Building, Southwest Corner
ECG-24-7284-133B	Brick and Mortar / Exterior, Kindergarten Building, Northeast Corner
ECG-24-7284-134A	Concrete Wall / Exterior, Building B, Northeast Corner
ECG-24-7284-134B	Concrete Wall / Exterior, Building C, East

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Date of Sampling: 8/5/24-8/7/24
Job Number: 24-7284
Client Name: Sacramento City Unified School District
Site Address: Ethel Phillips Elementary School
2930 21st Avenue
Sacramento, CA 95820

Lab: Eurofins/EmLab P&K - Tustin
Collected by: Jose Hernandez
Turnaround Time: 5 Days

Analysis Requested: Asbestos by PLM with Dispersion Staining

Special Instructions: *Stop analysis upon first positive result (>1%) for sample in a series. Also stop analysis upon first positive result (>1%) in the joint compound for sample series.*

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SAMPLE #	MATERIAL DESCRIPTION/LOCATION
ECG-24-7284-135A	Cementitious Wall Panel / Exterior, Northeast Side of Building C
ECG-24-7284-135B	Cementitious Wall Panel / Exterior, Northeast Side of Building D
ECG-24-7284-136A	White Window Caulking / Exterior, East Side of Kindergarten Building
ECG-24-7284-136B	White Window Caulking / Exterior, East Side of Kindergarten Building
ECG-24-7284-137A	Gray Window Caulking / Exterior, Building D, North
ECG-24-7284-137A	Gray Window Caulking / Exterior, Building C, South
ECG-24-7284-138A	Window Glazing Putty / Exterior, Office Building, South
ECG-24-7284-138B	Window Glazing Putty / Exterior, Building B, Northwest
ECG-24-7284-138C	Window Glazing Putty / Exterior, Building C, Northwest
ECG-24-7284-139A	Yellow Carpet Mastic / Portable Classroom B1
ECG-24-7284-139B	Yellow Carpet Mastic / Portable Classroom C1
ECG-24-7284-140A	12"x12" Gray Mottled Vinyl Floor Tile with Black Mastic / Portable Classroom B1
ECG-24-7284-140B	12"x12" Gray Mottled Vinyl Floor Tile with Black Mastic / Portable Classroom C1
ECG-24-7284-141A	4" Gray Vinyl Base Cove with Mastic / Portable Classroom B1
ECG-24-7284-141B	4" Gray Vinyl Base Cove with Mastic / Portable Classroom C1
ECG-24-7284-142A	Drywall behind Tagboard / Portable Classroom B1

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Sacramento, CA 95820

Lab: Eurofins/EmLab P&K - Tustin
Collected by: Jose Hernandez
Turnaround Time: 5 Days

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SAMPLE #	MATERIAL DESCRIPTION/LOCATION
ECG-24-7284-142B	Drywall behind Tagboard / Portable Classroom C1
ECG-24-7284-143A	2'x4' Ceiling Panel / Portable Classroom B1
ECG-24-7284-143B	2'x4' Ceiling Panel / Portable Classroom C1
ECG-24-7284-144A	Expansion Joint Caulking / Portable Classroom B1
ECG-24-7284-144B	Expansion Joint Caulking / Portable Classroom C1
ECG-24-7284-145A	Single Ply Membrane Roofing / Portable Classroom B1
ECG-24-7284-145B	Single Ply Membrane Roofing / Portable Classroom C1
ECG-24-7284-146A	Penetration Mastic / Portable Classroom B1
ECG-24-7284-146B	Penetration Mastic / Portable Classroom C1
ECG-24-7284-147A	Yellow Carpet Mastic / Portable Classroom B8
ECG-24-7284-147B	Yellow Carpet Mastic / Portable Classroom B10
ECG-24-7284-148A	12"x12" Gray Mottled Vinyl Floor Tile with Black Mastic / Portable Classroom B8
ECG-24-7284-148B	12"x12" Gray Mottled Vinyl Floor Tile with Black Mastic / Portable Classroom B10
ECG-24-7284-149A	4" Gray Vinyl Base Cove with Mastic / Portable Classroom B8
ECG-24-7284-149B	4" Gray Vinyl Base Cove with Mastic / Portable Classroom B10
ECG-24-7284-150A	Drywall behind Tagboard / Portable Classroom B9

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Lab: Eurofins/EmLab P&K - Tustin
Collected by: Jose Hernandez
Turnaround Time: 5 Days

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SAMPLE #	MATERIAL DESCRIPTION/LOCATION
ECG-24-7284-150B	Drywall behind Tagboard / Portable Classroom B10
ECG-24-7284-151A	2'x4' Ceiling Panel / Portable Classroom B9
ECG-24-7284-151B	2'x4' Ceiling Panel / Portable Classroom B10
ECG-24-7284-152A	Expansion Joint Caulking / Portable Classroom B9
ECG-24-7284-152B	Expansion Joint Caulking / Portable Classroom B9
ECG-24-7284-153A	Roof Mastic / Portable Classroom B8
ECG-24-7284-153B	Roof Mastic / Portable Classroom B9
ECG-24-7284-154A	Yellow Carpet Mastic with White Leveler / Portable Classroom B11
ECG-24-7284-154B	Yellow Carpet Mastic with White Leveler / Portable Classroom B12
ECG-24-7284-155A	12"x12" Gray Mottled Vinyl Floor Tile with Yellow Mastic / Portable Classroom B11
ECG-24-7284-155B	12"x12" Gray Mottled Vinyl Floor Tile with Yellow Mastic / Portable Classroom B12
ECG-24-7284-156A	4" Gray Vinyl Base Cove with Mastic / Portable Classroom B11
ECG-24-7284-156B	4" Gray Vinyl Base Cove with Mastic / Portable Classroom B12
ECG-24-7284-157A	Drywall behind Tagboard / Portable Classroom B11
ECG-24-7284-157B	Drywall behind Tagboard / Portable Classroom B12
ECG-24-7284-158A	Expansion Joint Caulking / Portable Classroom B11

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Site Address: Ethel Phillips Elementary School
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Lab: Eurofins/EmLab P&K - Tustin
Collected by: Jose Hernandez
Turnaround Time: 5 Days

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SAMPLE #	MATERIAL DESCRIPTION/LOCATION
ECG-24-7284-158B	Expansion Joint Caulking / Portable Classroom B12
ECG-24-7284-159A	Roof Mastic / Portable Classroom B11
ECG-24-7284-159B	Roof Mastic / Portable Classroom B12
ECG-24-7284-160A	12"x12" Gray Mottled Vinyl Floor Tile with Yellow Mastic / Portable C11, Southwest
ECG-24-7284-160B	12"x12" Gray Mottled Vinyl Floor Tile with Yellow Mastic / Portable C11, West
ECG-24-7284-161A	9"x9" Brown Streaked Vinyl Floor Tile with Black Mastic / Portable C11, North Closet
ECG-24-7284-161B	9"x9" Brown Streaked Vinyl Floor Tile with Black Mastic / Portable C11, South Closet
ECG-24-7284-162A	Gray Speckled Sheet Vinyl Flooring with Yellow Mastic / Portable C11 Restroom
ECG-24-7284-162B	Gray Speckled Sheet Vinyl Flooring with Yellow Mastic / Portable C11 Restroom
ECG-24-7284-163A	4" Gray Vinyl Base Cove with Mastic / Portable C11, North
ECG-24-7284-163B	4" Gray Vinyl Base Cove with Mastic / Portable C11, East
ECG-24-7284-164A	12"x12" Glue-on Ceiling Tile / Portable C11, East
ECG-24-7284-164B	12"x12" Glue-on Ceiling Tile / Portable C11 Restroom
ECG-24-7284-165A	Drywall with Joint Compound / Portable C11, Northwest Corner adjacent to Closet
ECG-24-7284-165B	Drywall with Joint Compound / Portable C11, North Closet, Southeast Corner
ECG-24-7284-166A	Plastic Wall Panel Glue / Portable C11 Restroom

Delivered by: _____ via FedEx____ **Date:** _8_/_15_/_24_ **Time:** _7:00_ **PM**

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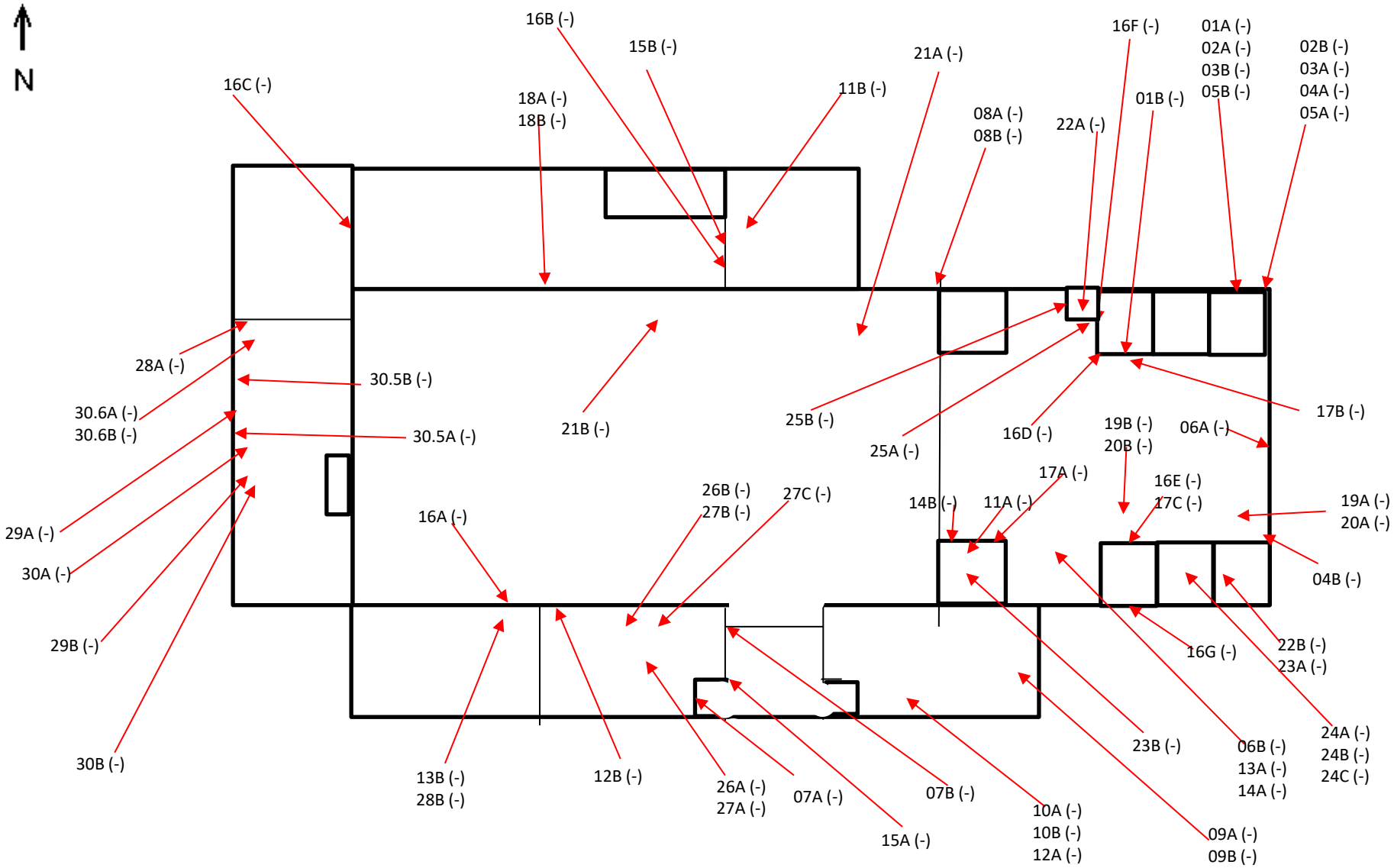
SAMPLE #	MATERIAL DESCRIPTION/LOCATION
ECG-24-7284-167A	Brown Composition Shingle Roof / Portable C11
ECG-24-7284-167B	Brown Composition Shingle Roof / Portable C11

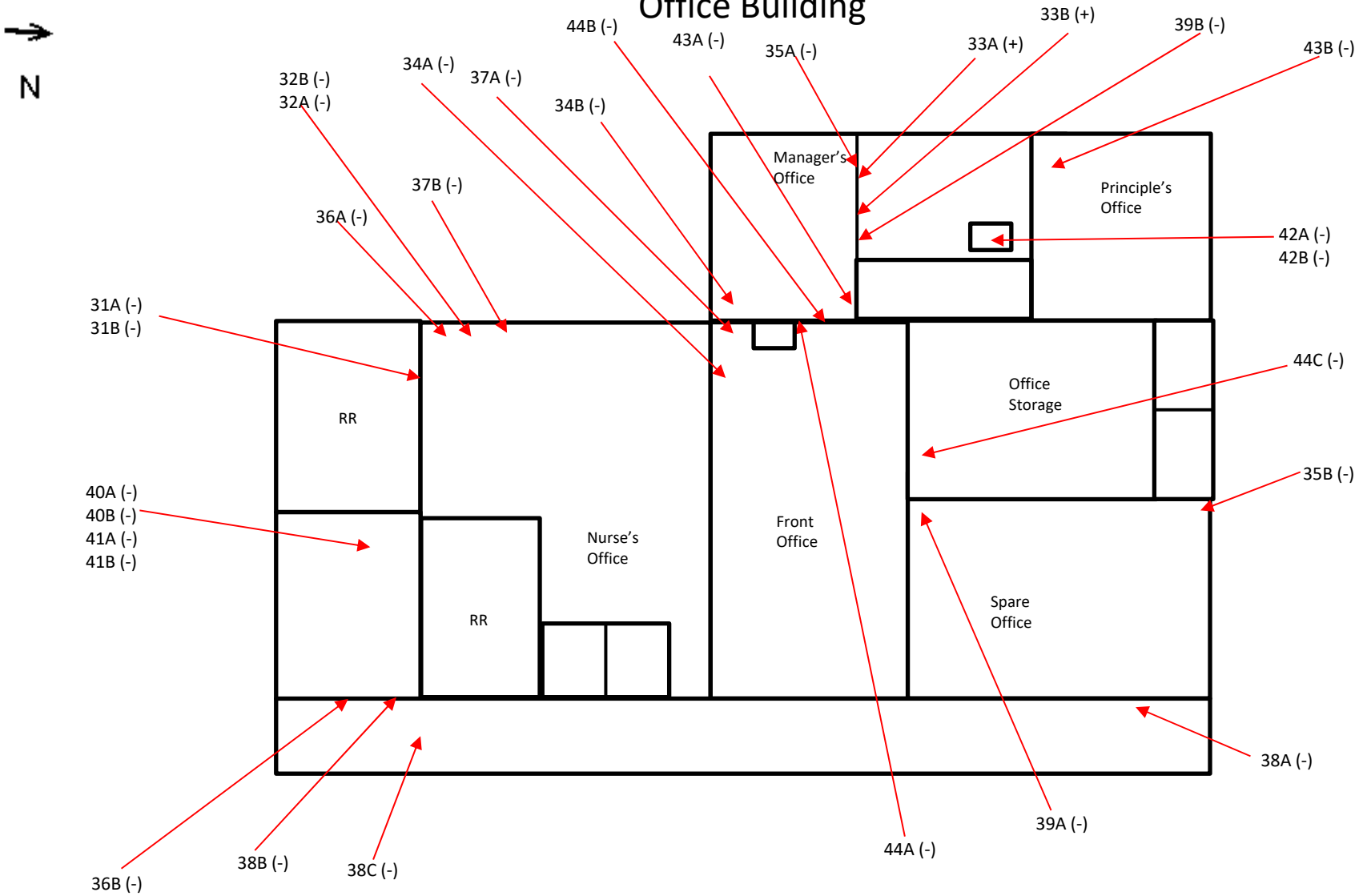
Delivered by: _____ via FedEx ____ **Date:** 8/15/24 **Time:** 7:00 PM

Received by: STEVEN CASTILLO **Date:** 8/16/24 **Time:** 930 AM/PM



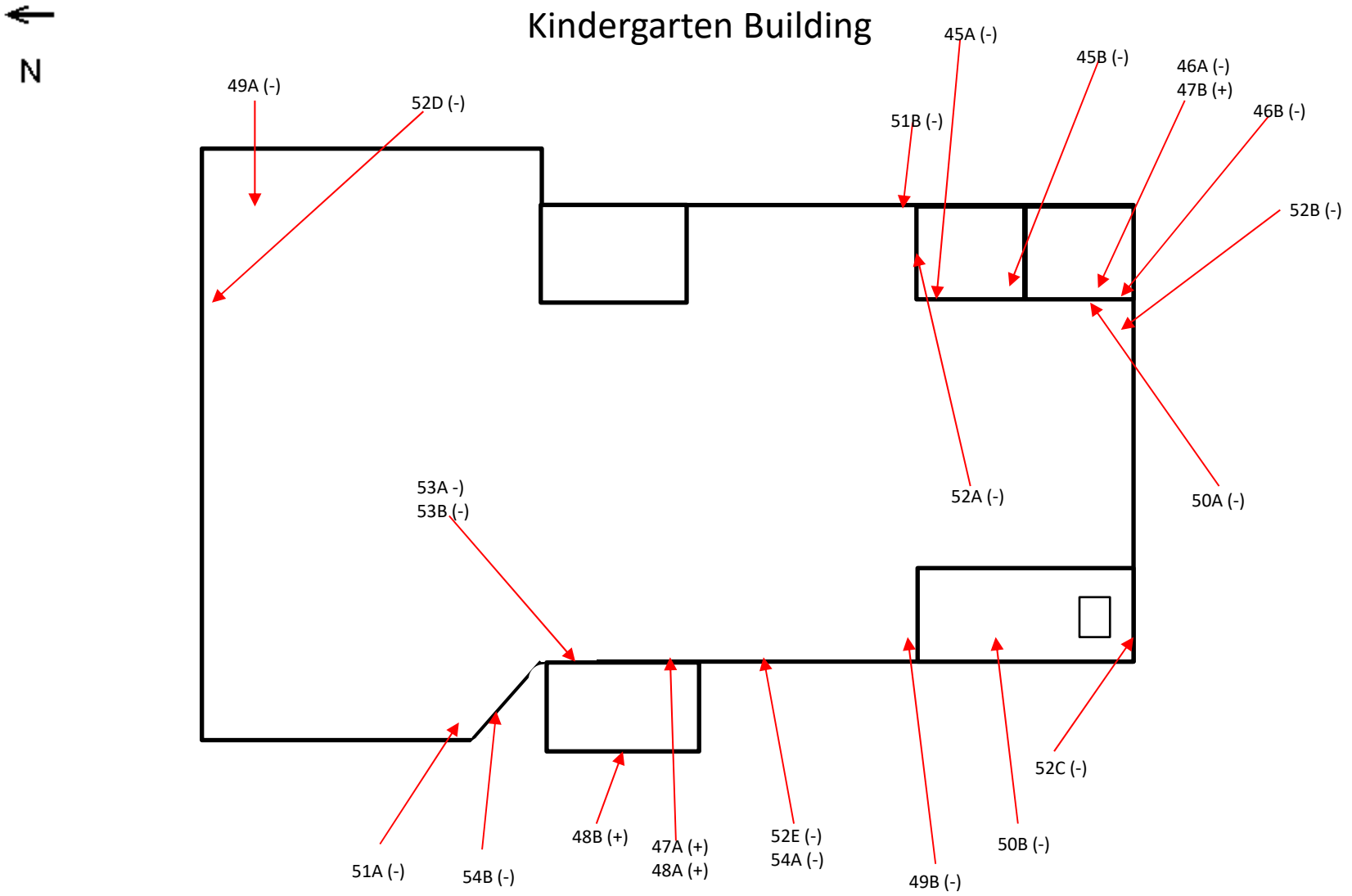
Sacramento City Unified School District Ethel Phillips Elementary School Campus Renewal Project 2930 21st Avenue Sacramento, CA 95820	Entek Consulting Group, Inc. 4200 Rocklin Road, Suite 7 Rocklin, CA 95677 Map Not to Scale	Asbestos Bulk Sample Locations Collected by Jose Hernandez On August 5 -7, 2024 Project Number 24-7284

Office Building

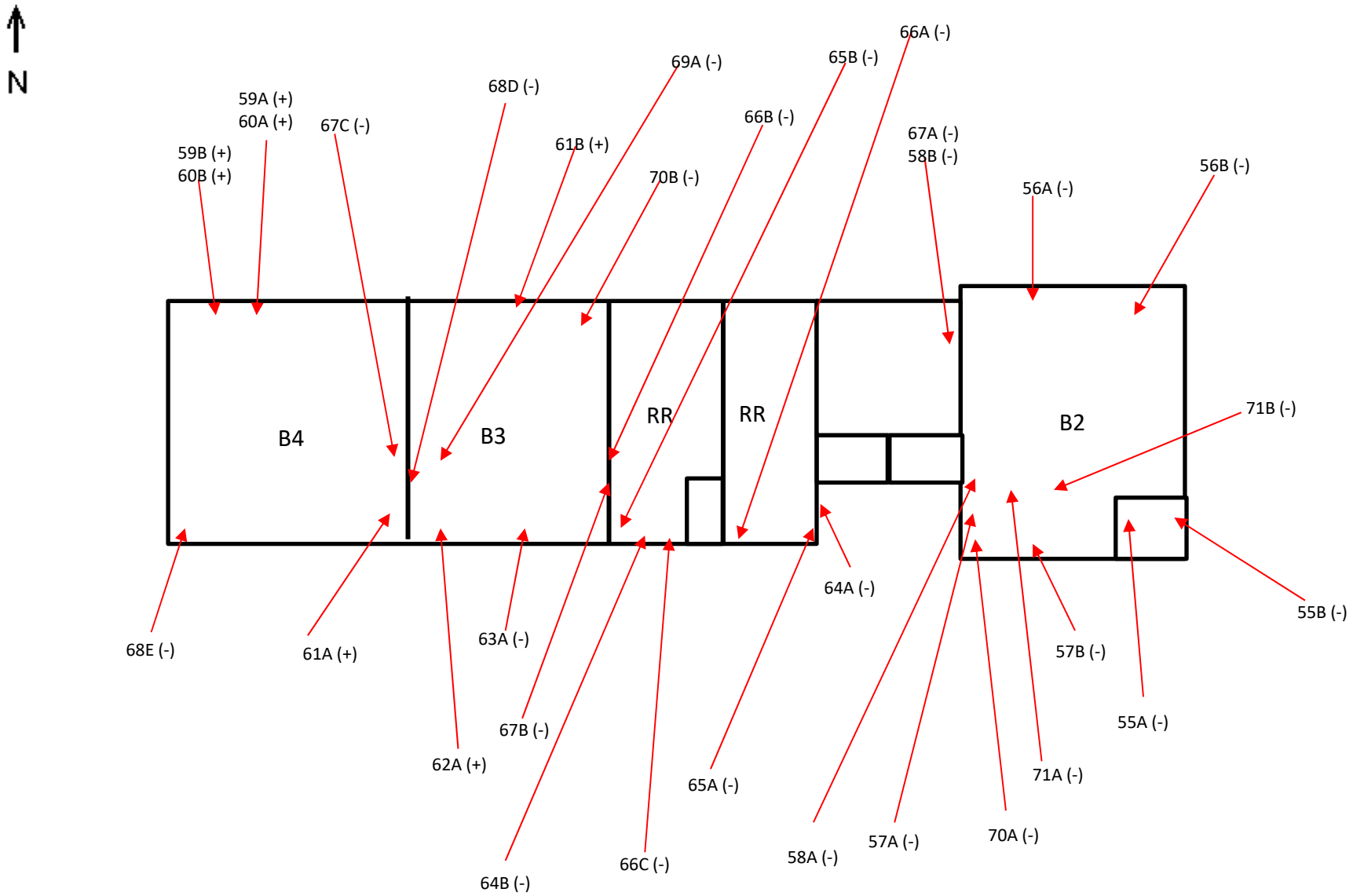


Sacramento City Unified School District Ethel Phillips Elementary School Campus Renewal Project 2930 21st Avenue Sacramento, CA 95820	Entek Consulting Group, Inc. 4200 Rocklin Road, Suite 7 Rocklin, CA 95677 Map Not to Scale	Asbestos Bulk Sample Locations Collected by Jose Hernandez On August 5 -7, 2024 Project Number 24-7284

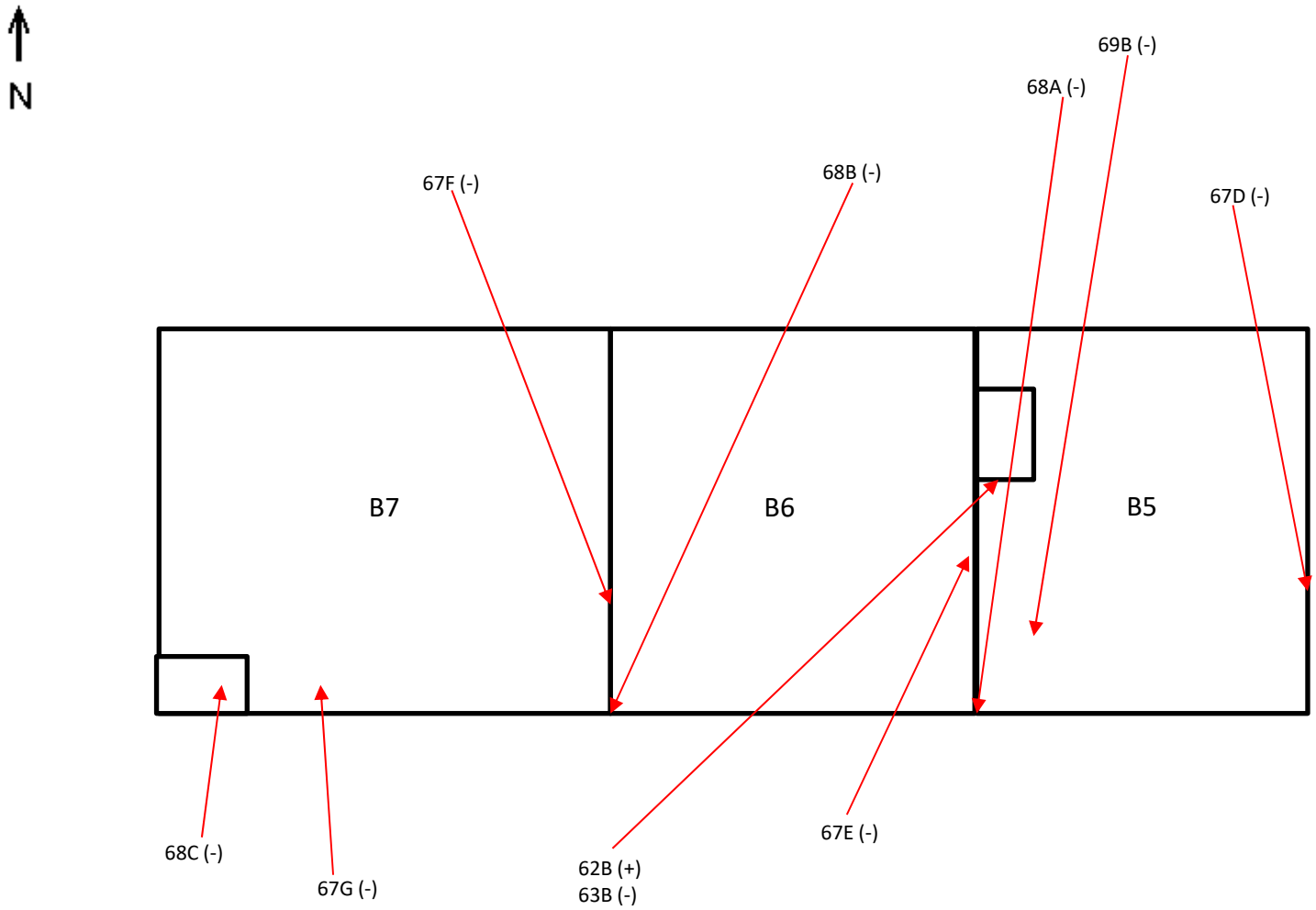
Kindergarten Building



Sacramento City Unified School District Ethel Phillips Elementary School Campus Renewal Project 2930 21st Avenue Sacramento, CA 95820	Entek Consulting Group, Inc. 4200 Rocklin Road, Suite 7 Rocklin, CA 95677 Map Not to Scale	Asbestos Bulk Sample Locations Collected by Jose Hernandez On August 5 -7, 2024 Project Number 24-7284

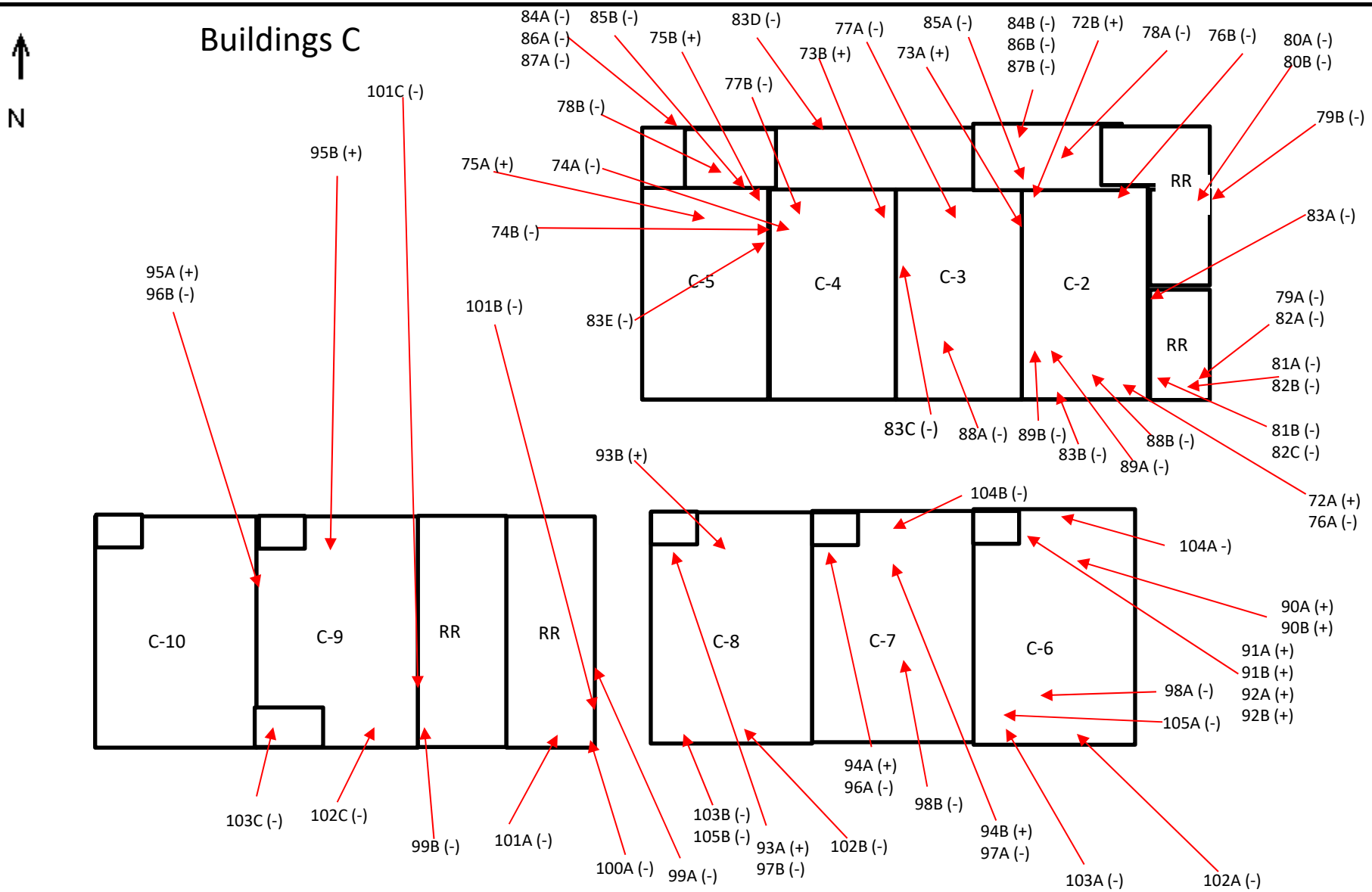


Sacramento City Unified School District Ethel Phillips Elementary School Campus Renewal Project 2930 21st Avenue Sacramento, CA 95820	Entek Consulting Group, Inc. 4200 Rocklin Road, Suite 7 Rocklin, CA 95677 Map Not to Scale	Asbestos Bulk Sample Locations Collected by Jose Hernandez On August 5 -7, 2024 Project Number 24-7284



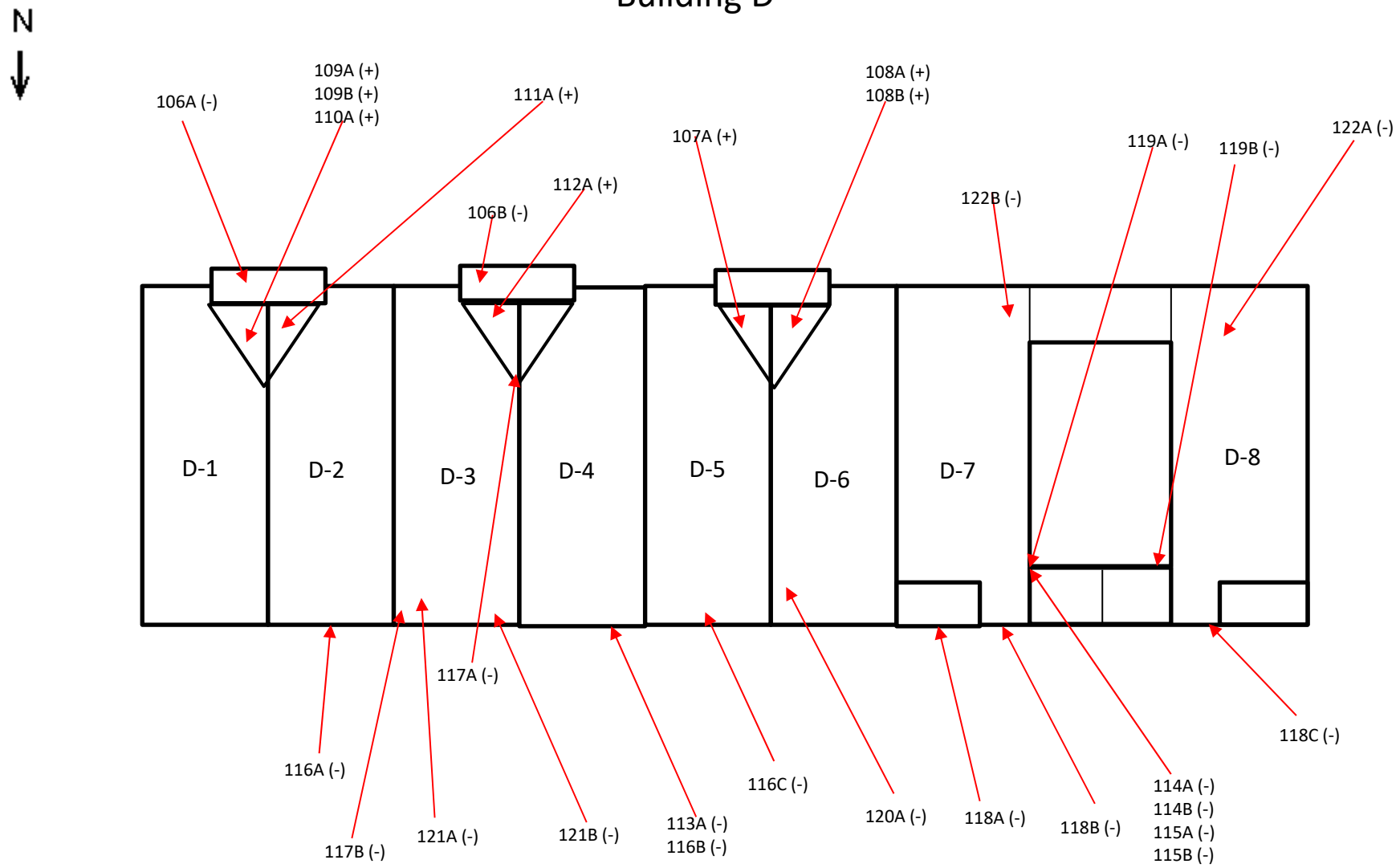
Sacramento City Unified School District Ethel Phillips Elementary School Campus Renewal Project 2930 21st Avenue Sacramento, CA 95820	Entek Consulting Group, Inc. 4200 Rocklin Road, Suite 7 Rocklin, CA 95677 Map Not to Scale	Asbestos Bulk Sample Locations Collected by Jose Hernandez On August 5 -7, 2024 Project Number 24-7284

Buildings C



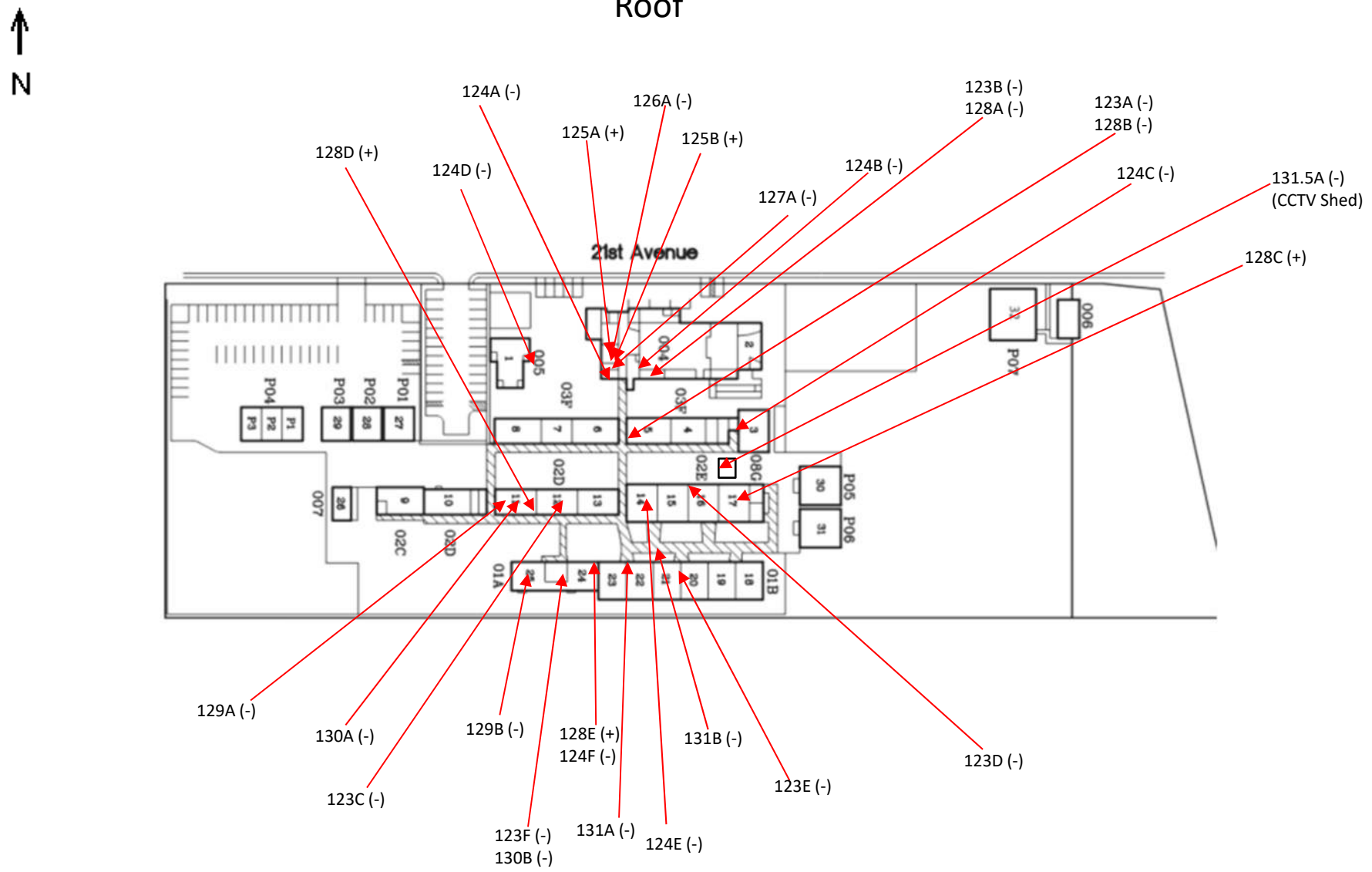
Sacramento City Unified School District Ethel Phillips Elementary School Campus Renewal Project 2930 21st Avenue Sacramento, CA 95820	Entek Consulting Group, Inc. 4200 Rocklin Road, Suite 7 Rocklin, CA 95677 Map Not to Scale	Asbestos Bulk Sample Locations Collected by Jose Hernandez On August 5 -7, 2024 Project Number 24-7284

Building D



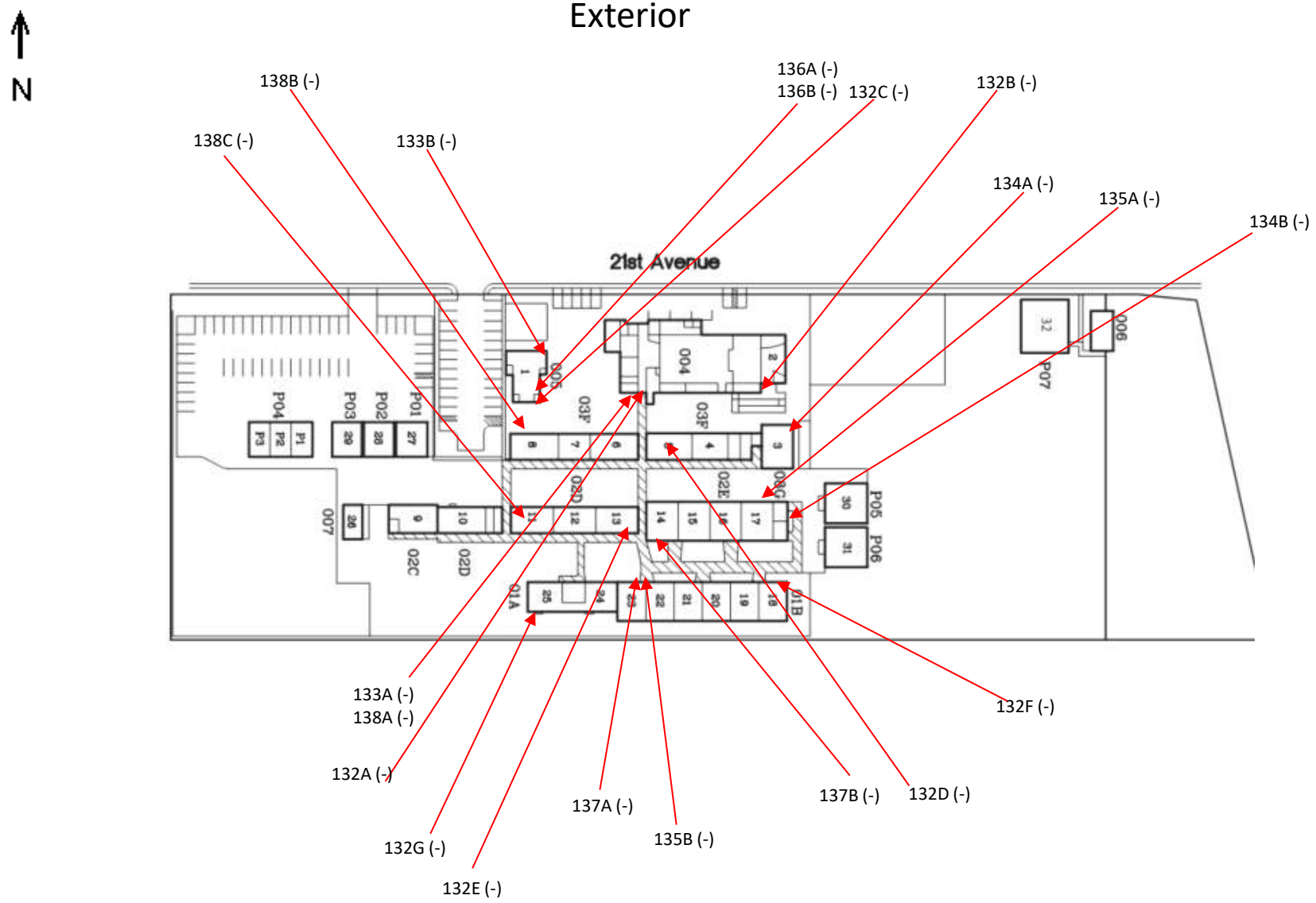
Sacramento City Unified School District Ethel Phillips Elementary School Campus Renewal Project 2930 21st Avenue Sacramento, CA 95820	Entek Consulting Group, Inc. 4200 Rocklin Road, Suite 7 Rocklin, CA 95677 Map Not to Scale	Asbestos Bulk Sample Locations Collected by Jose Hernandez On August 5 -7, 2024 Project Number 24-7284

Roof

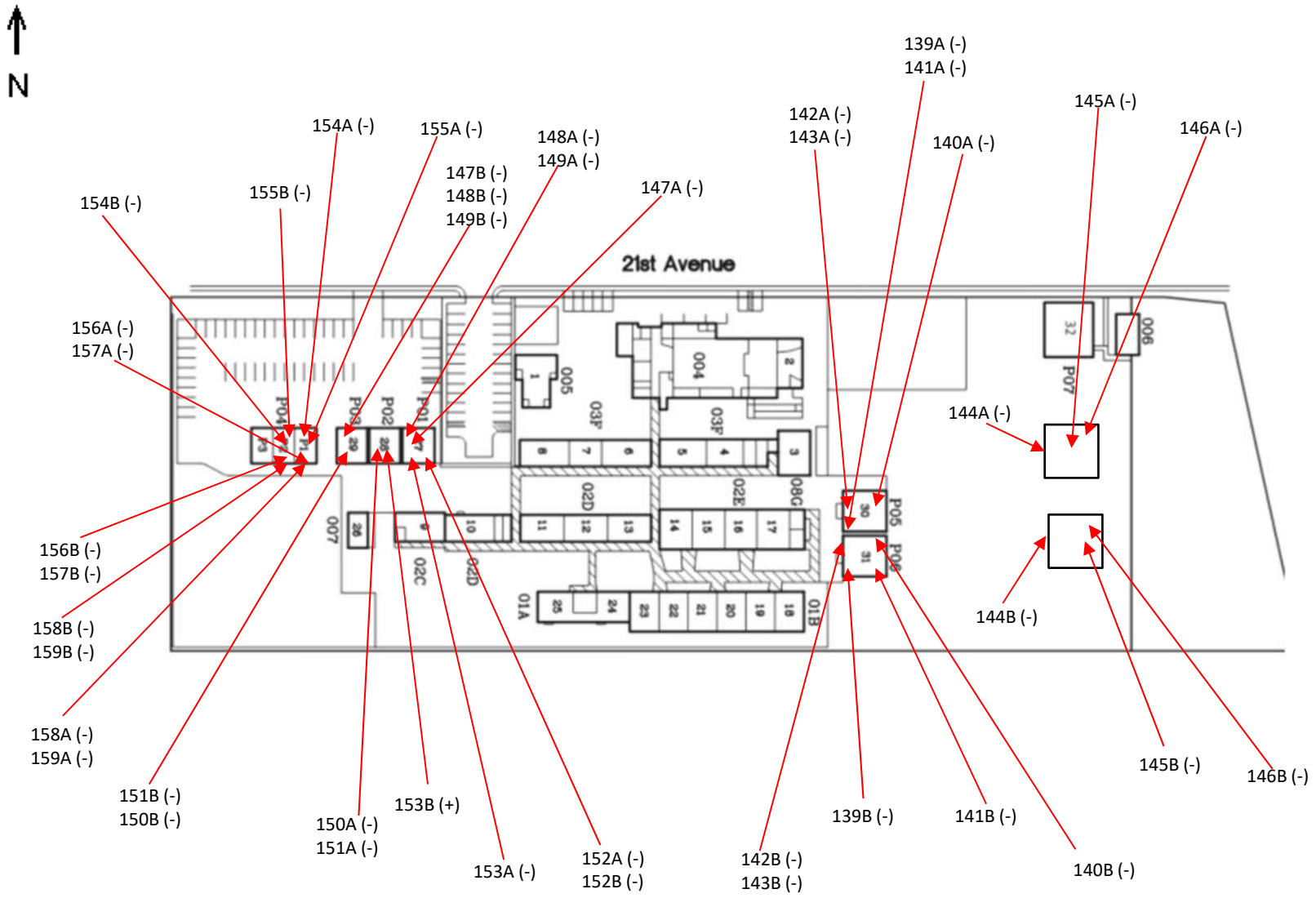


Sacramento City Unified School District Ethel Phillips Elementary School Campus Renewal Project 2930 21st Avenue Sacramento, CA 95820	Entek Consulting Group, Inc. 4200 Rocklin Road, Suite 7 Rocklin, CA 95677 Map Not to Scale	Asbestos Bulk Sample Locations Collected by Jose Hernandez On August 5 -7, 2024 Project Number 24-7284

Exterior

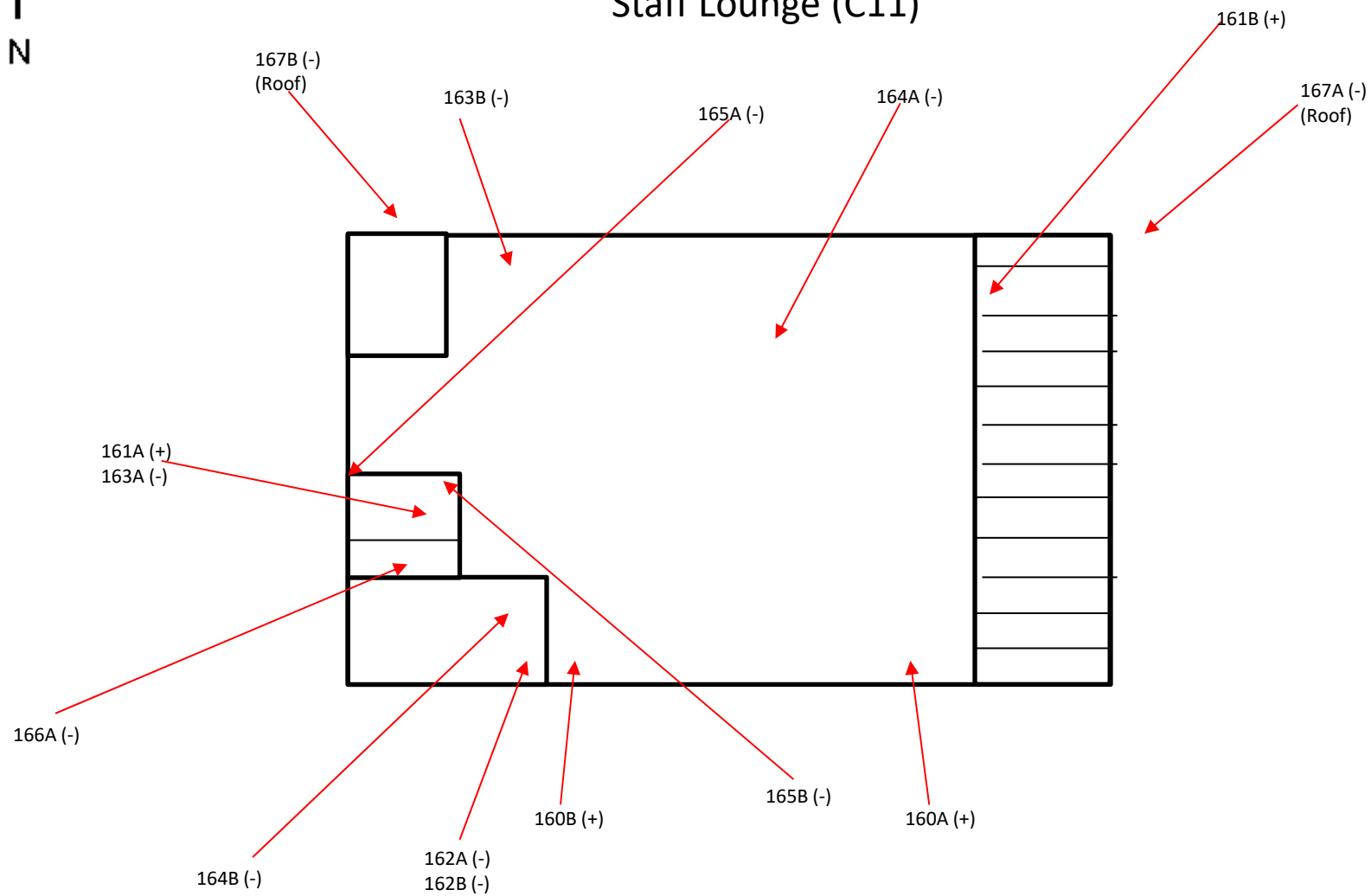


Sacramento City Unified School District Ethel Phillips Elementary School Campus Renewal Project 2930 21st Avenue Sacramento, CA 95820	Entek Consulting Group, Inc. 4200 Rocklin Road, Suite 7 Rocklin, CA 95677 Map Not to Scale	Asbestos Bulk Sample Locations Collected by Jose Hernandez On August 5 -7, 2024 Project Number 24-7284



Sacramento City Unified School District Ethel Phillips Elementary School Campus Renewal Project 2930 21st Avenue Sacramento, CA 95820	Entek Consulting Group, Inc. 4200 Rocklin Road, Suite 7 Rocklin, CA 95677 Map Not to Scale	Asbestos Bulk Sample Locations Collected by Jose Hernandez On August 5 -7, 2024 Project Number 24-7284

Staff Lounge (C11)



Sacramento City Unified School District Ethel Phillips Elementary School Campus Renewal Project 2930 21st Avenue Sacramento, CA 95820	Entek Consulting Group, Inc. 4200 Rocklin Road, Suite 7 Rocklin, CA 95677 Map Not to Scale	Asbestos Bulk Sample Locations Collected by Jose Hernandez On August 5 -7, 2024 Project Number 24-7284

Asbestos Survey Form
(See Instructions)

777 12th Street, 3rd Floor
Sacramento, CA 95814
Office (916) 874-4800
Fax (916) 874-4899
Email:
asbestos@airquaility.org

1. Purpose of Survey	☑ Renovation	☐ Demolition

2. Facility Information

Project Area(s) Description		
Ethel Phillips Elementary School Campus Renewal Project		
Address: 2930 21st Avenue	City: Sacramento	# of Structures: 11

3. Owner Information

Name: Sacramento City Unified School District			
Address: 425 1st Avenue	City/State: Sacramento	Zip: 95818	
Contact: Anthony Lea	Phone: (916) 317-9480	Fax:	Email: anthony-lea@scusd.edu

4. Consultant Information — **Survey Date(s):** 08/05/24 to 08/07/2024

Company Name: Entek Consulting Group, Inc.			
Name: Jose Hernandez			DOSH #: 22-6995
Address: 4200 Rocklin Road, Suite 7	City/State: Rocklin, California	Zip: 95677	
Phone: (916) 632-6800	Fax: (916) 632-6812	Email: jhernandez@entekgroup.com	Signature:

5. Client Information (If different than owner) ☐ General Contractor ☐ Insurance Company ☐ Architect ☐ Property Manager ☐ Other _____

Name			
Address	City/State	Zip: 95678	
Contact	Phone / Fax	Email	

6. Have all of the suspect materials that will be disturbed been sampled?	■ Yes ☐ No

If no, explain why:

7. Summary of Total Asbestos Containing Material (ACM) Findings

Regulated Asbestos Containing Material (RACM) (Includes materials subject to known mechanical removal and fire damaged materials)			Category II		Category I	
Square Ft.	Linear Ft.	Cubic Ft.	Square Ft.	Linear Ft.	Square Ft.	Linear Ft.
0	0	0	270	0	18970	0

To receive future SMAQMD Rule updates and changes affecting your industry (check one box):

☐ Please send e-mail notices to ☐ I will sign up myself at www.airquality.org/listserve/ to receive emailed notices.

■ I am already subscribed. ☐ I want the District to mail notices to the address on this application: ☐ Owner ☐ Consultant

SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT

Asbestos Renovation/Demolition Notification Form

777 12th Street, 3rd Floor
Sacramento, CA 95814
Office (279) 207-1122
Fax (279) 207-1144
Asbestos@airquality.org

1	Building Department Permit Application # (if known) : _____	☑ Renovation (Do not complete Section 5) ☐ Demolition (Complete all sections) ☐ Ordered Demo - Attach ordered demo letter ☐ Emergency Demo - SMAQMD Emergency #: _____
2	Contractor	Owner Sacramento City Unified School District-Anthony Lea
	Address	Address 425 1st Avenue
	City, State / Zip	City, State / Zip Sacramento, CA 95820
	Email	Email anthony-lea@scusd.edu
	Telephone	Telephone (916) 317-9480

3	Structure Name Ethel Phillips Elementary School	Renovation Area Campus Renewal Project	# of Floors 1
	Project Address 2930 21st Avenue	City / Zip Sacramento / 958118	Year Built 1980

4	**Preference for return of form**	☐ **E-mail :**	☐ **Other :**

DEMOLITION ONLY – Start date must be at least 10 working days from the day of your postmark or hand delivery of this form.

5	Start Date _____ _____ _____ Completion Date _____ _____ _____	Revision # 1 2 3 4 5 6 7 8 9 (circle) New Start Date _____ _____ _____ New Completion Date _____ _____ _____
	Method of Demo (Check Applicable): ☐Manual/Hand Tools ☐Mechanical/Heavy Equipment ☐Other	
	Procedure to be followed if RACM is found or Category II material becomes friable:	

I have read and understand the directions. The information on this form is true and accurate.
I certify that the asbestos survey conducted represents the facility as built.

6	Applicant Name (Print)	☐ Owner ☐ Rep / Agent ☐ Contractor	**Permit may be issued on:**
	Phone Number		
	Applicant's Signature	Date	

Have DOSH Consultant complete and sign below OR attach completed Asbestos Survey Form and Consultant's report.

CONSULTANT USE ONLY

Company Name Entek Consulting Group, Inc.		Telephone (916) 632-6800	
Surveyor Name Jose Hernandez		DOSH # 22-6995	Survey Date 08/05/24 to 08/07/2024
Analytical Method PLM by Dispersion Staining		Pt Count Materials <10%? ☐Yes ☑ No ☐ Declined by Client	
Amount of RACM	Square Feet 0	Linear Feet 0	Cubic Feet 0
Amount of Category I 18970		Amount of Category II 270	
Project Address 2930 21st Avenue		City Sacramento	Zip 95820
Suspect Materials Present? ☑Yes ☐ No		Consultant's Signature	

SMAQMD USE ONLY

Date Received / Date Postmarked _____ Date Approved & Returned _____

Project # _____ Check # _____ Receipt # _____ Amount Paid _____ Staff _____

APPENDIX B

LEAD RELATED DOCUMENTS

- Lead in Paint Samples Analysis Report From Eurofins/EMLab P&K-Tustin
- Bulk Lead Material Analysis Request Form for Entek
- Lead Bulk Sample Location Drawing
- Lead Hazard Evaluation Report (CDPH 8552)
- X-Ray Fluorescence Instrument Data Sheet

eurofins | Built Environment Testing

ENTEK CONSULTING GROUP, INC.

Report for:

Jose Hernandez
Entek Consulting Group
4200 Rocklin Road, Suite 7
Rocklin, CA 95677

Regarding:
Eurofins EPK Built Environment Testing, LLC
Project: 24-7284 Sacramento City Unified School District; Ethel Phillips Elementary School 2930 21st Avenue Sacramento, CA 95820
EML ID: 3750872

Approved by:

Approved Signatory
Andrew Arestegui

Dates of Analysis:
Lead - Flame AA: 08-22-2024

Service SOPs: Lead - Flame AA (EM-BC-S-8443)
AIHA LAP, LLC accredited service, Lab ID #178697

All samples were received in acceptable condition unless noted in the Report Comments portion in the body of the report. Due to the nature of the analyses performed, field blank correction of results is not applied. The results relate only to the samples as received and tested. Sample size, as it relates to Wipe samples only, is supplied by the client.

Eurofins EPK Built Environment Testing, LLC ("the Company"), a member of the Eurofins Built Environment Testing group of companies, shall have no liability to the client or the client's customer with respect to decisions or recommendations made, actions taken or courses of conduct implemented by either the client or the client's customer as a result of or based upon the Test Results. In no event shall the Company be liable to the client with respect to the Test Results except for the Company's own willful misconduct or gross negligence nor shall the Company be liable for incidental or consequential damages or lost profits or revenues to the fullest extent such liability may be disclaimed by law, even if the Company has been advised of the possibility of such damages, lost profits or lost revenues. In no event shall the Company's liability with respect to the Test Results exceed the amount paid to the Company by the client therefor.
Eurofins EPK Built Environment Testing, LLC's LabServe® reporting system includes automated fail-safes to ensure that all AIHA LAP, LLC quality requirements are met and notifications are added to reports when any quality steps remain pending.

Client: Entek Consulting Group
C/O: Jose Hernandez
Re: 24-7284 Sacramento City Unified School District;
Ethel Phillips Elementary School 2930 21st Avenue
Sacramento, CA 95820

Eurofins EPK Built Environment Testing, LLC
2841 Dow Avenue, Suite 300, Tustin, CA 92780
(833) 465-5857 www.eurofinsus.com/Built

Date of Sampling: 08-05-2024
Date of Receipt: 08-19-2024
Date of Report: 08-23-2024

LEAD: FLAME ATOMIC ABSORPTION SPECTROMETRY

Location:	ECG-24-7284-01Pb: Tan Paint on Plaster Wall/MPR Building, Multi-Purpose Room	ECG-24-7284-02Pb: White Paint on Cementitious Textured Plaster/ MPR Building, Stage	ECG-24-7284-03Pb: White Paint on Drywall/MPR Building, Old Girl's Locker Room	ECG-24-7284-04Pb: Gray Paint on Plaster Wall/MPR Building, Old Girl's Locker Room
Comments (see below)	None	None	None	None
Lab ID-Version‡:	18477032-1	18477033-1	18477034-1	18477035-1
Analysis Date:	08/22/2024	08/22/2024	08/22/2024	08/22/2024
Sample type	Paint Chip sample	Paint Chip sample	Paint Chip sample	Paint Chip sample
Method*	NIOSH 7082 & EPA 7000B modified	NIOSH 7082 & EPA 7000B modified	NIOSH 7082 & EPA 7000B modified	NIOSH 7082 & EPA 7000B modified
† Method Reporting Limit	40 ppm	40 ppm	39 ppm	40 ppm
Sample size	0.2504 grams	0.2530 grams	0.2542 grams	0.2531 grams
§Total Lead Result	< 40 ppm	< 40 ppm	< 39 ppm	< 40 ppm

Comments:

Sample results have not been corrected for blank values.

Bulk samples are not covered under the AIHA LAP, LLC service accreditation.

Wipe samples must meet ASTM E1792 criteria. Method Reporting Limits may not be valid for non-ASTM E1792 wipe samples.

*Sample preparation and analytical methods are based upon NIOSH 7082 and EPA 7000B.

† The Method Reporting Limit is the minimum concentration of Lead that the laboratory can confidently detect in the sample.

§ Total Lead Result has been rounded to two significant figures to reflect analytical precision.

‡ A "Version" indicated by -"x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

Client: Entek Consulting Group
C/O: Jose Hernandez
Re: 24-7284 Sacramento City Unified School District;
Ethel Phillips Elementary School 2930 21st Avenue
Sacramento, CA 95820

Eurofins EPK Built Environment Testing, LLC
2841 Dow Avenue, Suite 300, Tustin, CA 92780
(833) 465-5857 www.eurofinsus.com/Built

Date of Sampling: 08-05-2024
Date of Receipt: 08-19-2024
Date of Report: 08-23-2024

LEAD: FLAME ATOMIC ABSORPTION SPECTROMETRY

Location:	ECG-24-7284-05Pb: Green Paint on Plaster-Stucco/ MPR Building, Laundry Room	ECG-24-7284-06Pb: Beige Paint on Rough Textured Plaster/Hallway Between Office and MPR Buildings	ECG-24-7284-07Pb: Teal Paint on Plywood Walls/ Office Building, Principal's Office	ECG-24-7284-08Pb: White Paint on Plaster Walls/ Kindergarten Building
Comments (see below)	None	None	None	None
Lab ID-Version‡:	18477036-1	18477037-1	18477038-1	18477039-1
Analysis Date:	08/22/2024	08/22/2024	08/22/2024	08/22/2024
Sample type	Paint Chip sample	Paint Chip sample	Paint Chip sample	Paint Chip sample
Method*	NIOSH 7082 & EPA 7000B modified	NIOSH 7082 & EPA 7000B modified	NIOSH 7082 & EPA 7000B modified	NIOSH 7082 & EPA 7000B modified
† Method Reporting Limit	39 ppm	39 ppm	40 ppm	39 ppm
Sample size	0.2549 grams	0.2591 grams	0.2512 grams	0.2540 grams
§Total Lead Result	120 ppm	190 ppm	81 ppm	< 39 ppm

Comments:

Sample results have not been corrected for blank values.

Bulk samples are not covered under the AIHA LAP, LLC service accreditation.

Wipe samples must meet ASTM E1792 criteria. Method Reporting Limits may not be valid for non-ASTM E1792 wipe samples.

*Sample preparation and analytical methods are based upon NIOSH 7082 and EPA 7000B.

† The Method Reporting Limit is the minimum concentration of Lead that the laboratory can confidently detect in the sample.

§ Total Lead Result has been rounded to two significant figures to reflect analytical precision.

‡ A "Version" indicated by -"x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

Client: Entek Consulting Group
C/O: Jose Hernandez
Re: 24-7284 Sacramento City Unified School District;
Ethel Phillips Elementary School 2930 21st Avenue
Sacramento, CA 95820

Eurofins EPK Built Environment Testing, LLC
2841 Dow Avenue, Suite 300, Tustin, CA 92780
(833) 465-5857 www.eurofinsus.com/Built

Date of Sampling: 08-05-2024
Date of Receipt: 08-19-2024
Date of Report: 08-23-2024

LEAD: FLAME ATOMIC ABSORPTION SPECTROMETRY

Location:	ECG-24-7284-09Pb: Tan Paint on Plaster Walls/Kindergarten Building	ECG-24-7284-10Pb: Glazing on 4" Ceramic Wall Tile/ Building C, Girl's Restroom Adjacent Classroom C-2	ECG-24-7284-11Pb: Off-White Paint on Metal HVAC Duct/ Building B, Classroom B-3	ECG-24-7284-12Pb: Beige Paint on Stucco/Exterior, Building B, West of Classroom B-4
Comments (see below)	None	None	None	None
Lab ID-Version‡:	18477040-1	18477041-1	18477042-1	18477043-1
Analysis Date:	08/22/2024	08/22/2024	08/22/2024	08/22/2024
Sample type	Paint Chip sample	Bulk sample	Paint Chip sample	Paint Chip sample
Method*	NIOSH 7082 & EPA 7000B modified	NIOSH 7082 & EPA 7000B modified	NIOSH 7082 & EPA 7000B modified	NIOSH 7082 & EPA 7000B modified
† Method Reporting Limit	40 ppm	40 ppm	97 ppm	39 ppm
Sample size	0.2528 grams	0.2515 grams	0.1028 grams	0.2541 grams
§Total Lead Result	< 40 ppm	< 40 ppm	< 97 ppm	< 39 ppm

Comments:

Sample results have not been corrected for blank values.

Bulk samples are not covered under the AIHA LAP, LLC service accreditation.

Wipe samples must meet ASTM E1792 criteria. Method Reporting Limits may not be valid for non-ASTM E1792 wipe samples.

*Sample preparation and analytical methods are based upon NIOSH 7082 and EPA 7000B.

† The Method Reporting Limit is the minimum concentration of Lead that the laboratory can confidently detect in the sample.

§ Total Lead Result has been rounded to two significant figures to reflect analytical precision.

‡ A "Version" indicated by -"x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

Client: Entek Consulting Group
C/O: Jose Hernandez
Re: 24-7284 Sacramento City Unified School District;
Ethel Phillips Elementary School 2930 21st Avenue
Sacramento, CA 95820

Eurofins EPK Built Environment Testing, LLC
2841 Dow Avenue, Suite 300, Tustin, CA 92780
(833) 465-5857 www.eurofinsus.com/Built

Date of Sampling: 08-05-2024
Date of Receipt: 08-19-2024
Date of Report: 08-23-2024

LEAD: FLAME ATOMIC ABSORPTION SPECTROMETRY

Location:	ECG-24-7284-13Pb: Beige Paint on Wood Siding/Exterior, Portable Classroom B8	ECG-24-7284-14Pb: Blue Paint on Metal Roof Flashing/Exterior, At Covered Walkways Between Classroom Building B&C	ECG-24-7284-15Pb: Blue Paint on Wood Fascia/ Exterior, East Side of Library B-2
Comments (see below)	None	None	None
Lab ID-Version‡:	18477044-1	18477045-1	18477046-1
Analysis Date:	08/22/2024	08/22/2024	08/22/2024
Sample type	Paint Chip sample	Paint Chip sample	Paint Chip sample
Method*	NIOSH 7082 & EPA 7000B modified	NIOSH 7082 & EPA 7000B modified	NIOSH 7082 & EPA 7000B modified
† Method Reporting Limit	39 ppm	40 ppm	39 ppm
Sample size	0.2563 grams	0.2524 grams	0.2542 grams
§Total Lead Result	< 39 ppm	< 40 ppm	< 39 ppm

Comments:

Sample results have not been corrected for blank values.

Bulk samples are not covered under the AIHA LAP, LLC service accreditation.

Wipe samples must meet ASTM E1792 criteria. Method Reporting Limits may not be valid for non-ASTM E1792 wipe samples.

*Sample preparation and analytical methods are based upon NIOSH 7082 and EPA 7000B.

† The Method Reporting Limit is the minimum concentration of Lead that the laboratory can confidently detect in the sample.

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‡ A "Version" indicated by -"x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

ENTEK
BULK LEAD MATERIAL *Analysis Request*

003750872

ENTEK CONSULTING GROUP, INC.
4200 ROCKLIN ROAD, SUITE 7
ROCKLIN, CA 95677
(916) 632-6800 PHONE
(916) 632-6812 FAX
mainoffice@entekgroup.com

Date of Sampling: 8/5/24-8/7/24
Job Number: 24-7284
Client Name: Sacramento City Unified School District
Site Address: Ethel Phillips Elementary School
2930 21st Avenue
Sacramento, CA 95820

Lab: Eurofins/EmLab P&K - Tustin
Collected by: Jose Hernandez
Turnaround Time: Standard Turnaround Time

Analysis Requested: Lead by Flame Atomoic Absorption Spectroscopy

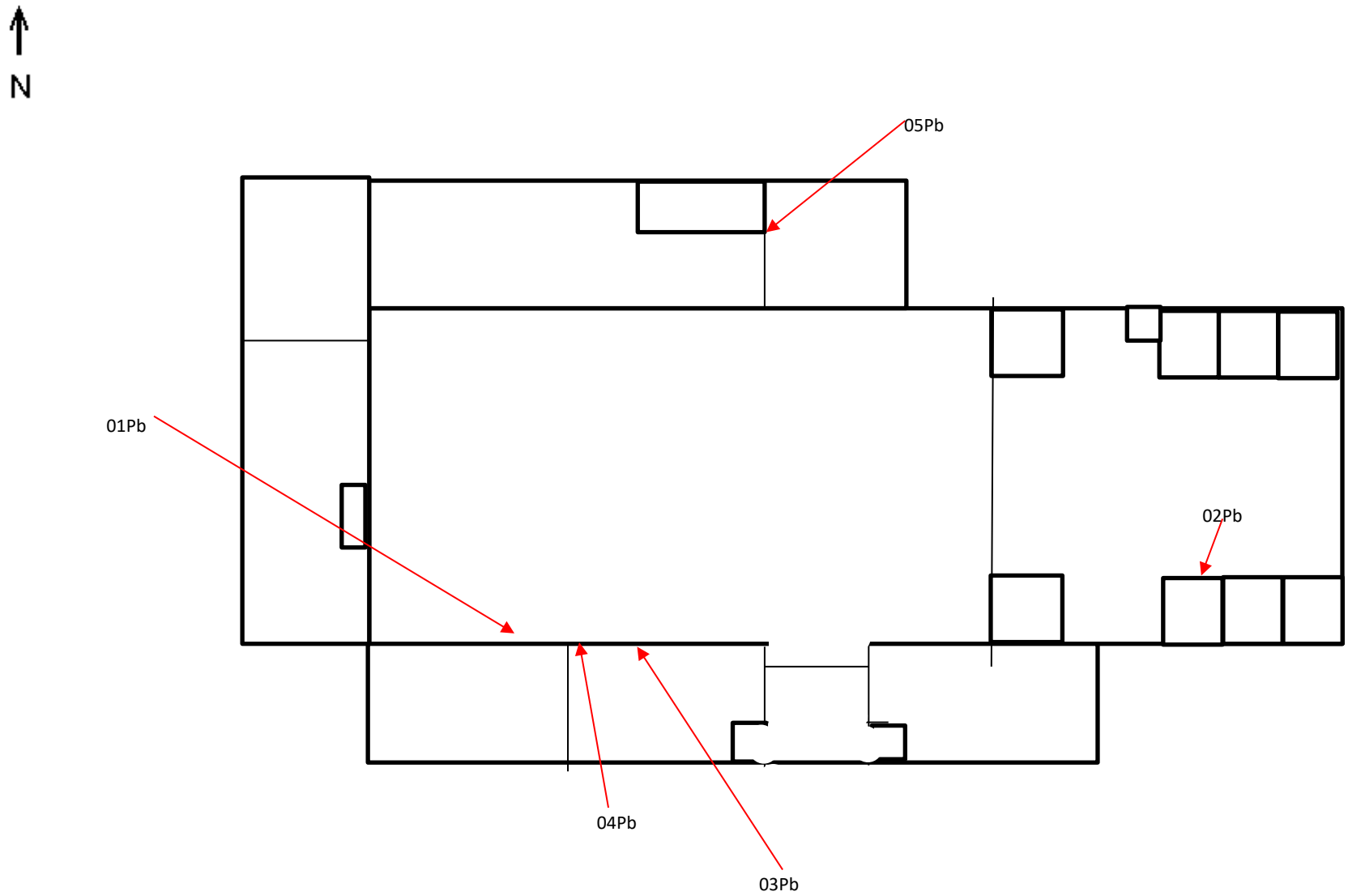
Special Instructions: Please report result in PPM and % by weight.

Please e-mail results at mainoffice@entekgroup.com and jhernandez@entekgroup.com as soon as available and include copy of submittal with those results.

SAMPLE #	MATERIAL DESCRIPTION/LOCATION
ECG-24-7284-01Pb	Tan Paint on Plaster Wall / MPR Building, Multi-Purpose Room
ECG-24-7284-02Pb	White Paint on Cementitious Textured Plaster / MPR Building, Stage
ECG-24-7284-03Pb	White Paint on Drywall / MPR Building, Old Girl's Locker Room
ECG-24-7284-04Pb	Gray Paint on Plaster Wall / MPR Building, Old Girl's Locker Room
ECG-24-7284-05Pb	Green Paint on Plaster-Stucco / MPR Building, Laundry Room
ECG-24-7284-06Pb	Beige Paint on Rough Textured Plaster / Hallway between Office and MPR Buildings
ECG-24-7284-07Pb	Teal Paint on Plywood Walls / Office Building, Principal's Office
ECG-24-7284-08Pb	White Paint on Plaster Walls / Kindergarten Building
ECG-24-7284-09Pb	Tan Paint on Plaster Walls / Kindergarten Building
ECG-24-7284-10Pb	Glazing on 4" Ceramic Wall Tile / Building C, Girl's Restroom adjacent Classroom C-2
ECG-24-7284-11Pb	Off-White Paint on Metal HVAC Duct / Building B, Classroom B-3
ECG-24-7284-12Pb	Beige Paint on Stucco / Exterior, Building B, West of Classroom B-4
ECG-24-7284-13Pb	Beige Paint on Wood Siding / Exterior, Portable Classroom B8
ECG-24-7284-14Pb	Blue Paint on Metal Roof Flashing / Exterior, At Covered Walkways between Classroom Buildings B & C
ECG-24-7284-15Pb	Blue Paint on Wood Fascia / Exterior, East Side of Library B-2

Delivered by: _____ via FedEx____ **Date:** 8/15/24 **Time:** 7:00 PM

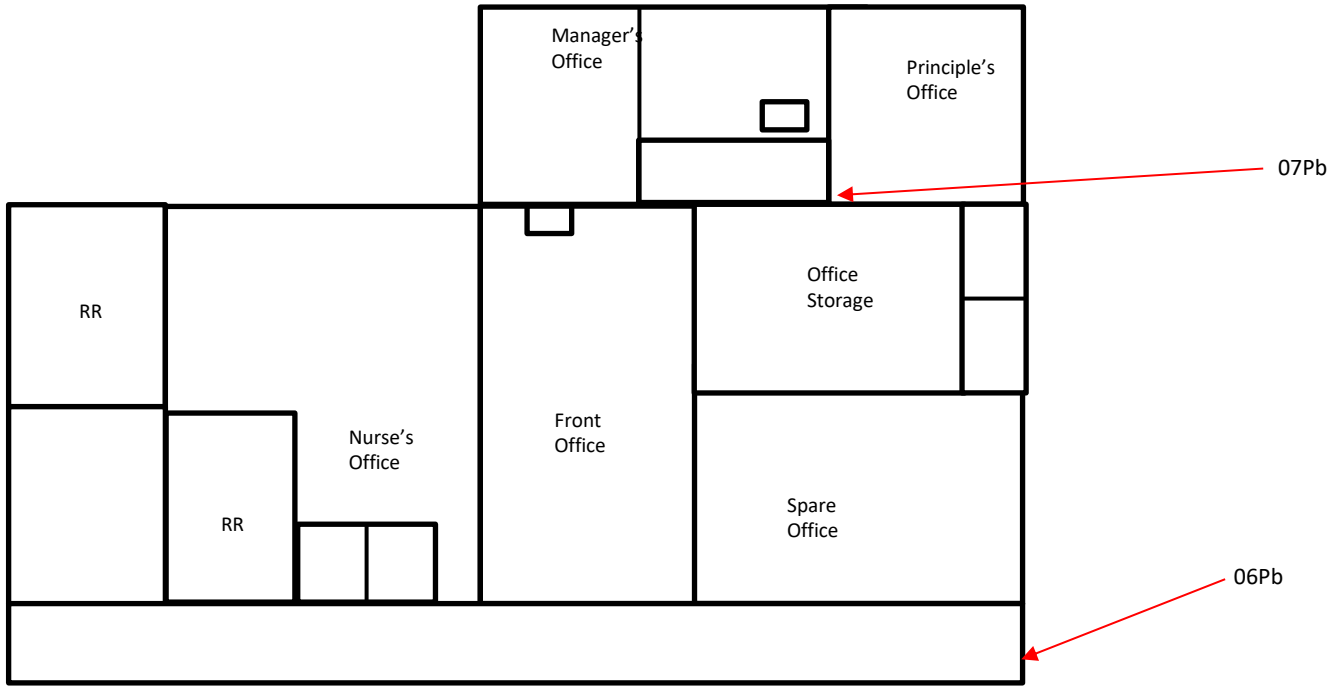
Received by: STEVEN CASTILLO **Date:** 8/19/24 **Time:** 9:30A AM/PM



Sacramento City Unified School District Ethel Phillips Elementary School Campus Renewal Project 2930 21st Avenue Sacramento, CA 95820	Entek Consulting Group, Inc. 4200 Rocklin Road, Suite 7 Rocklin, CA 95677 Map Not to Scale	Lead Bulk Sample Locations Collected by Jose Hernandez On August 5 -7, 2024 Project Number 24-7284

Office Building

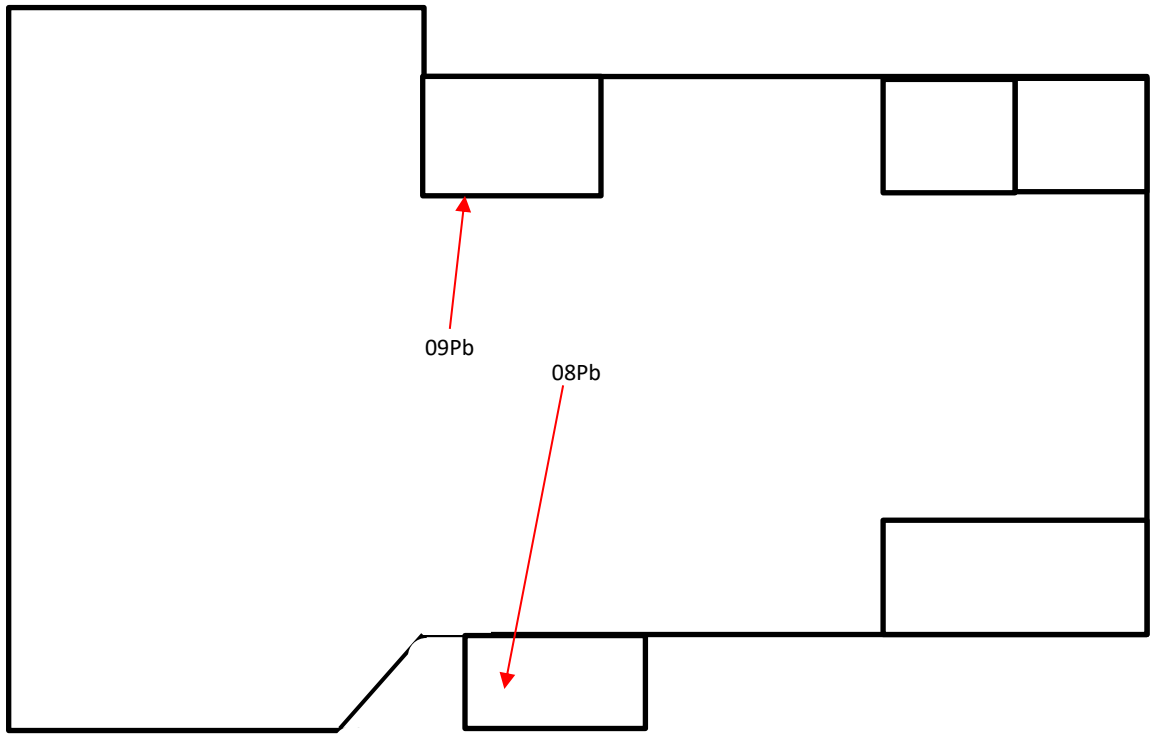
N



Sacramento City Unified School District Ethel Phillips Elementary School Campus Renewal Project 2930 21st Avenue Sacramento, CA 95820	Entek Consulting Group, Inc. 4200 Rocklin Road, Suite 7 Rocklin, CA 95677 Map Not to Scale	Lead Bulk Sample Locations Collected by Jose Hernandez On August 5 -7, 2024 Project Number 24-7284

Kindergarten Building

N



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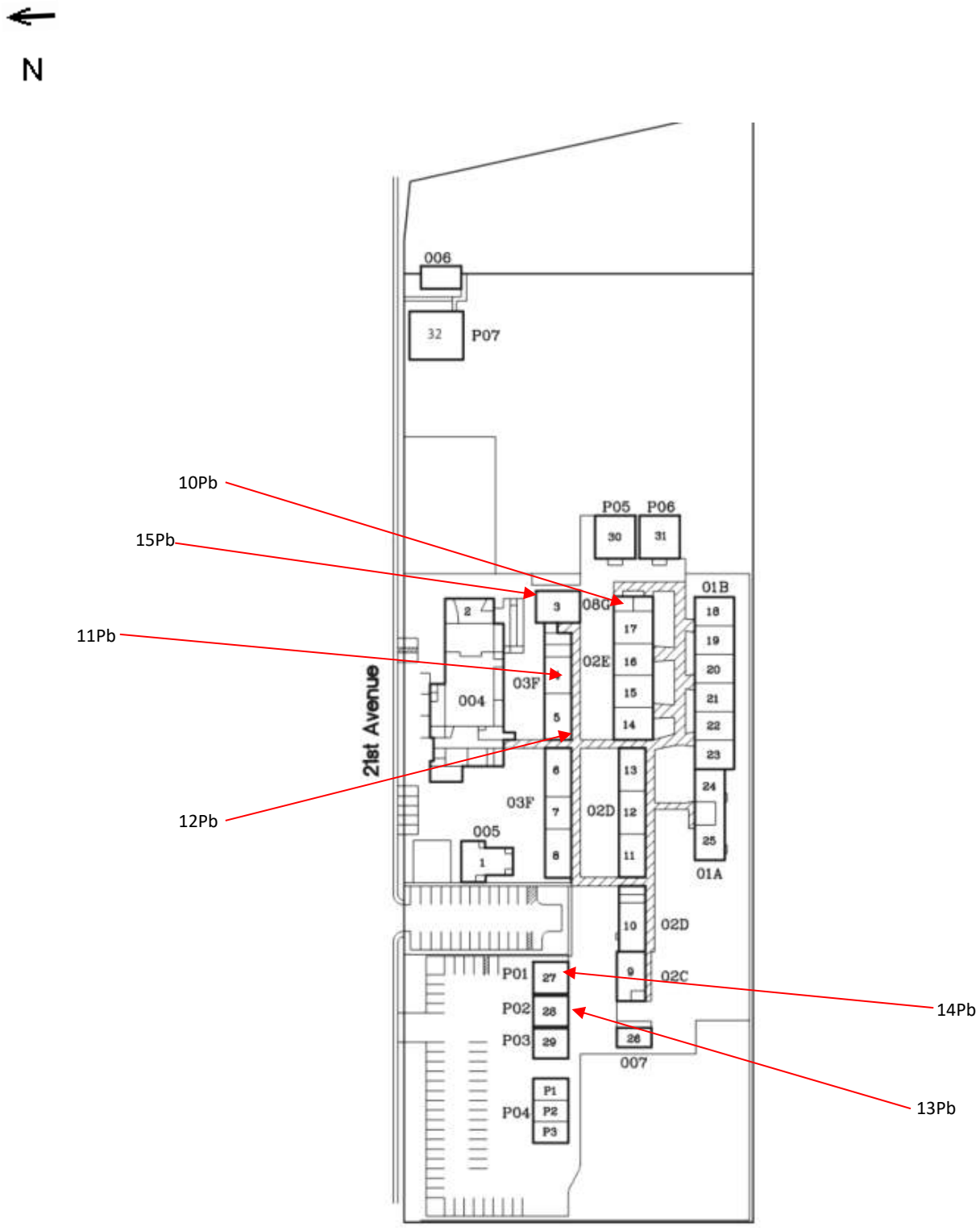


Sacramento City Unified School District Ethel Phillips Elementary School Campus Renewal Project 2930 21st Avenue Sacramento, CA 95820	Entek Consulting Group, Inc. 4200 Rocklin Road, Suite 7 Rocklin CA 95677 Map Not to Scale	Lead Bulk Sample Locations Collected by Jose Hernandez On August 5 -7, 2024 Project Number 24-7284

LEAD HAZARD EVALUATION REPORT

Section 1 — Date of Lead Hazard Evaluation 08/05/24 to 08/07/2024

Section 2 — Type of Lead Hazard Evaluation (Check one box only)

☑ Lead Inspection ☐ Risk assessment ☐ Clearance Inspection ☐ Other (specify) _____

Section 3 — Structure Where Lead Hazard Evaluation Was Conducted

Address [number, street, apartment (if applicable)]	City	County	Zip Code
2930 21st Avenue	Sacramento	Sacramento	95820

Construction date (year) of structure	Type of structure	Children living in structure?
1980	☐ Multi-unit building ☑ School or daycare ☐ Single family dwelling ☐ Other_____	☐ Yes ☑ No ☐ Don't Know

Section 4 — Owner of Structure (if business/agency, list contact person)

Name	Telephone number
Sacramento City Unified School District (Anthony Lea)	(916) 317-9480

Address [number, street, apartment (if applicable)]	City	State	Zip Code
425 1st Avenue	Sacramento	California	95818

Section 5 — Results of Lead Hazard Evaluation (check all that apply)

☐ No lead-based paint detected ☑ Intact lead-based paint detected ☐ Deteriorated lead-based paint detected

☐ No lead hazards detected ☐ Lead-contaminated dust found ☐ Lead-contaminated soil found ☑ Other intact lead containing paint detected

Section 6 — Individual Conducting Lead Hazard Evaluation

Name	Telephone number
Entek Consulting Group, Inc. - Jose Hernandez	(916) 632-6800

Address [number, street, apartment (if applicable)]	City	State	Zip Code
4200 Rocklin Road, Suite 7	Rocklin	CA	95677

CDPH certification number	Signature	Date
10754		9-16-24

Name and CDPH certification number of any other individuals conducting sampling or testing (if applicable)

N/A

Section 7 — Attachments

A. A foundation diagram or sketch of the structure indicating the specifc locations of each lead hazard or presence of lead-based paint;
B. Each testing method, device, and sampling procedure used;
C. All data collected, including quality control data, laboratory results, including laboratory name, address, and phone number.

First copy and attachments retained by inspector

Second copy and attachments retained by owner

Third copy only (no attachments) mailed or faxed to:

California Department of Public Health
Childhood Lead Poisoning Prevention Branch Reports
850 Marina Bay Parkway, Building P, Third Floor
Richmond, CA 94804-6403
Fax: (510) 620-5656

Date	Test #	Serial #	Pass/Fail	Unit type	Calibration Pb	Pb +/-	Pb P/F	Description
8/5/2024 0:00	931	X550-0240	Pass	mg/cm2	PCS Cal	1	0.1 Positive	Calibration Test #1
8/5/2024 0:00	932	X550-0240	Pass	mg/cm2	PCS Cal	1	0.1 Positive	Calibration Test #2
8/5/2024 0:00	933	X550-0240	Pass	mg/cm2	PCS Cal	1	0.1 Positive	Calibration Test #3
8/5/2024 0:00	934	X550-0240	Pass	mg/cm2	PCS Cal	1	0.1 Positive	Calibration Average
8/5/2024 0:00	936	X550-02401		mg/cm2	LeadPaint	0.1	0.1 Negative	White plaster walls - MPR/Office Building
8/5/2024 0:00	937	X550-02401		mg/cm2	LeadPaint	8.9	0.1 Positive	Red 6" ceramic wall tile - MPR/Office Building
8/5/2024 0:00	939	X550-02401		mg/cm2	LeadPaint	0.2	0.1 Negative	Tan door frames - MPR/Office Building
8/5/2024 0:00	943	X550-02401		mg/cm2	LeadPaint	0.1	0.1 Negative	Tan doors - MPR/Office Building
8/5/2024 0:00	947	X550-02401		mg/cm2	LeadPaint	2.8	0.1 Positive	Green wood door trim/components - MPR Building
8/5/2024 0:00	948	X550-02401		mg/cm2	LeadPaint	1.9	0.1 Positive	Blue wood doors - MPR/Office building
8/5/2024 0:00	950	X550-02401		mg/cm2	LeadPaint	2.1	0.1 Positive	White wood door frames - Office Building
8/5/2024 0:00	951	X550-02401		mg/cm2	LeadPaint	0.1	0.1 Negative	Light yellow plaster - Office Building
8/6/2024 8:28	952	X550-0240	Pass	mg/cm2	PCS Cal	0.9	0.1 Negative	Calibration Test #1
8/6/2024 8:28	953	X550-0240	Pass	mg/cm2	PCS Cal	1	0.1 Positive	Calibration Test #2
8/6/2024 8:29	954	X550-0240	Pass	mg/cm2	PCS Cal	1	0.1 Positive	Calibration Test #3
8/6/2024 8:29	955	X550-0240	Pass	mg/cm2	PCS Cal	0.9	0.1 Negative	Calibration Average
8/6/2024 8:47	964	X550-02401		mg/cm2	LeadPaint	0.2	0.1 Negative	Tan wood cabinets/components - Kindergarten Building
8/6/2024 8:49	967	X550-02401		mg/cm2	LeadPaint	0.8	0.1 Negative	Blue metal doors - Kindergarten Building
8/7/2024 0:00	968	X550-0240	Pass	mg/cm2	PCS Cal	1	0.1 Positive	Calibration Test #1
8/7/2024 0:00	969	X550-0240	Pass	mg/cm2	PCS Cal	1.1	0.1 Positive	Calibration Test #2
8/7/2024 0:00	970	X550-0240	Pass	mg/cm2	PCS Cal	1	0.1 Positive	Calibration Test #3
8/7/2024 0:00	971	X550-0240	Pass	mg/cm2	PCS Cal	1	0.1 Positive	Calibration Average
8/7/2024 0:00	975	X550-02401		mg/cm2	LeadPaint	1	0.1 Positive	Blue exterior wood doors/door frames - Permanent Classroom Buildings
8/7/2024 0:00	977	X550-02401		mg/cm2	LeadPaint	1.4	0.1 Positive	Beige exterior wood support beams - Covered walkways
8/7/2024 0:00	978	X550-02401		mg/cm2	LeadPaint	1.5	0.1 Positive	Blue exterior metal support columns - Covered walkways
8/7/2024 0:00	979	X550-02401		mg/cm2	LeadPaint	2.6	0.1 Positive	Blue exterior wood siding - Permanent Classrooms Buildings
8/7/2024 0:00	980	X550-02401		mg/cm2	LeadPaint	0.6	0.1 Negative	Beige concrete walls - Permanent Classroom Buildings
8/7/2024 0:00	987	X550-02401		mg/cm2	LeadPaint	0.1	0.1 Negative	Blue exterior wood components - CCTV Shed
8/7/2024 0:00	988	X550-02401		mg/cm2	LeadPaint	0.1	0.1 Negative	Beige wood siding - CCTV Shed

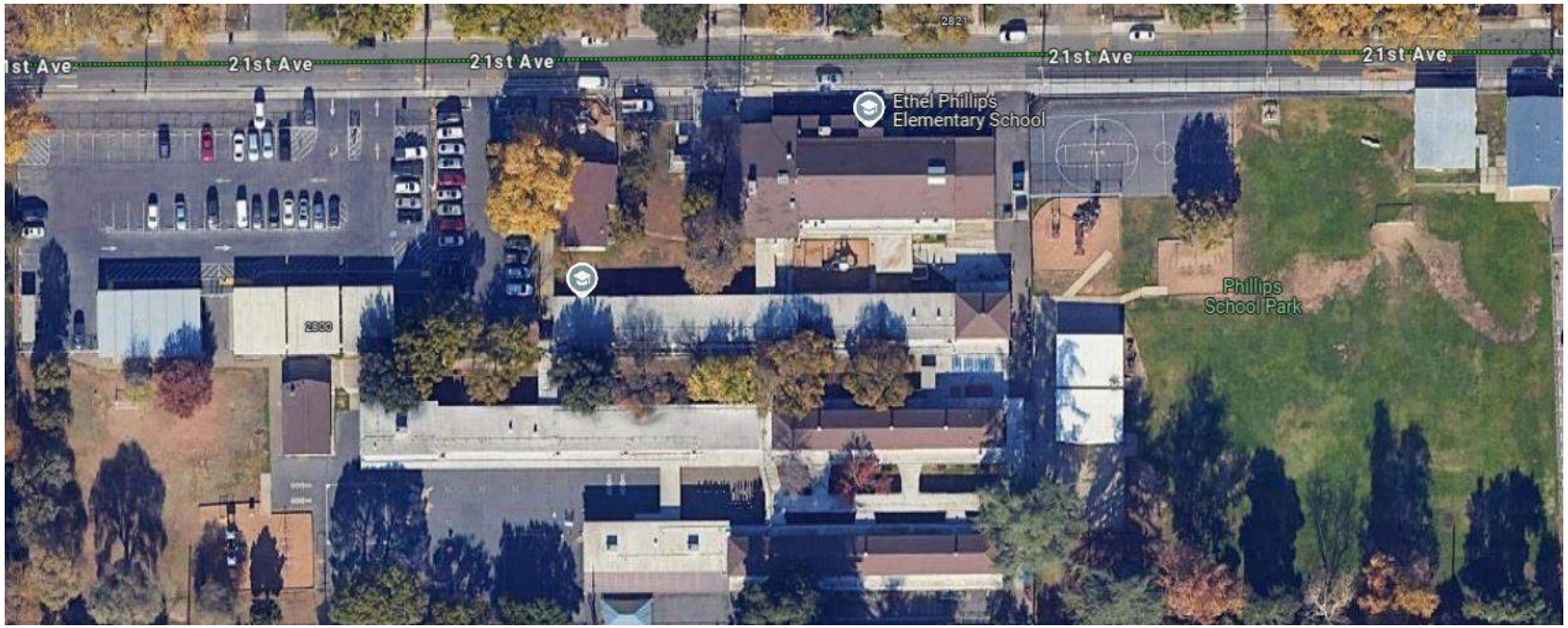
APPENDIX C

BACK UP DOCUMENTS

- Site Map
- Inspector Accreditations and Certifications
- Laboratory Accreditations for Asbestos and Lead Analysis

N

Site Map



Sacramento City Unified School District Ethel Phillips Elementary School Campus Renewal Project 2930 21st Avenue Sacramento, CA 95820	Entek Consulting Group, Inc. 4200 Rocklin Road, Suite 7 Rocklin, CA 95677 Map Not to Scale	Site Map Project Number 24-7284

State of California
Division of Occupational Safety and Health
Certified Asbestos Consultant

Name **Jose A Hernandez**

Certification No. **22-6995**

Expires on **01/21/25**

This certification was issued by the Division of Occupational Safety and Health as authorized by Sections 7180 et seq. of the Business and Professions Code.

California Department of PublicHealth

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC HEALTH

LEAD-RELATED CONSTRUCTION CERTIFICATE

INDIVIDUAL:	CERTIFICATE TYPE:	NUMBER:	EXPIRATION DATE:
 **Jose Hernandez**	Lead Inspector/Assessor	LRC-00010754	1/9/2025

Disclaimer: This document alone should not be relied upon to confirm certification status. Compare the individual's photo and name to another valid form of government issued photo identification. Verify the individual's certification status by searching for Lead-Related Construction Professionals at www.cdph.ca.gov/programs/clppb or calling (800) 597-LEAD

CALIFORNIA
Water Boards
STATE WATER RESOURCES CONTROL BOARD
REGIONAL WATER QUALITY CONTROL BOARDS

CALIFORNIA STATE

ENVIRONMENTAL LABORATORY ACCREDITATION PROGRAM

CERTIFICATE OF ENVIRONMENTAL LABORATORY ACCREDITATION

Is hereby granted to

Eurofins EMLab P&K -Tustin

2841 Dow Avenue, Suite #300

Tustin, CA 92780

Scope of the certificate is limited to the
"Fields of Accreditation"
which accompany this Certificate.

Continued accredited status depends on compliance with applicable laws and regulations, proficiency testing studies, and payment of applicable fees.

This Certificate is granted in accordance with provisions of Section 100825, et seq. of the Health and Safety Code.

Certificate No.: **3047**

Effective Date: **5/1/2023**

Expiration Date: **4/30/2025**

Sacramento, California
subject to forfeiture or revocation

Christine Sotelo, Program Manager
Environmental Laboratory Accreditation Program

CALIFORNIA STATE
ENVIRONMENTAL LABORATORY ACCREDITATION PROGRAM
Fields of Accreditation

Eurofins EMLab P&K -Tustin

2841 Dow Avenue, Suite #300
Tustin, CA 92780
Phone: 5232981015

Certificate Number: **3047**
Expiration Date: **4/30/2025**

Field of Accreditation:121 - Bulk Asbestos Analysis of Hazardous Waste

121.010	001	Bulk Asbestos	EPA 600/M4-82-020

As of 5/1/2023, this list supersedes all previous lists for this certificate number.
Customers: Please verify the current accreditation standing with the State.

AIHA Laboratory Accreditation Programs, LLC

acknowledges that

Eurofins EPK Built Environment Testing, LLC - Tustin

2841 Dow Ave Suite 300 Tustin, CA 92780

Laboratory ID: LAP-178697

along with all premises from which key activities are performed, as listed above, has fulfilled the requirements of the AIHA Laboratory Accreditation Programs, LLC (AIHA LAP) accreditation to the ISO/IEC 17025:2017 international standard, General Requirements for the Competence of Testing and Calibration Laboratories in the following:

LABORATORY ACCREDITATION PROGRAMS

☑	**INDUSTRIAL HYGIENE**	Accreditation Expires: November 01, 2025
☑	**ENVIRONMENTAL LEAD**	Accreditation Expires: November 01, 2025
☑	**ENVIRONMENTAL MICROBIOLOGY**	Accreditation Expires: November 01, 2025
☐	**FOOD**	Accreditation Expires:
☐	**UNIQUE SCOPES**	Accreditation Expires:
☐	**BE FIELD/MOBILE**	Accreditation Expires:

Specific Field(s) of Testing/Method(s) within each Accreditation Program for which the above named laboratory maintains accreditation is outlined on the attached Scope of Accreditation. Continued accreditation is contingent upon successful on-going compliance with ISO/IEC 17025:2017 and AIHA LAP requirements. This certificate is not valid without the attached Scope of Accreditation. Please review the AIHA LAP website (www.aihaaccreditedlabs.org) for the most current Scope.

Cheryl O. Morton

Cheryl O Morton
Managing Director, AIHA Laboratory Accreditation Programs, LLC

Revision21: 10/24/2023

Date Issued: 01/01/2024

AIHA Laboratory Accreditation Programs, LLC

SCOPE OF ACCREDITATION

Eurofins EPK Built Environment Testing, LLC - Tustin

Laboratory ID: LAP-178697

2841 Dow Ave Suite 300 Tustin, CA 92780

Issue Date: 01/01/2024
Expire Date: 11/01/2025

The laboratory is approved for those specific field(s) of testing/methods listed in the table below. Clients are urged to verify the laboratory's current accreditation status for the particular field(s) of testing/Methods, since these can change due to proficiency status, suspension and/or withdrawal of accreditation.

The EPA recognizes the AIHA LAP, LLC ELLAP program as meeting the requirements of the National Lead Laboratory Accreditation Program (NLLAP) established under Title X of the Residential Lead-Based Paint Hazard Reduction Act of 1992 and includes paint, soil and dust wipe analysis. Air and composited wipes analyses are not included as part of the NLLAP.

Environmental Lead Laboratory Accreditation Program (ELLAP)

Initial Accreditation Date: 03/01/2017

Component, parameter, characteristic, material, or product tested	Technology sub-type/Detector	Method	Method Description *(for internal methods only)*
Paint	AA	EPA SW-846 7000B Modified	N/A
		NIOSH 7082	N/A
Settled Dust by Wipe	AA	EPA SW-846 7000B Modified	N/A
		NIOSH 7082	N/A

A complete listing of currently accredited ELLAP laboratories is available on the AIHA LAP, LLC website at: *http://www.aihaaccreditedlabs.org*

EXHIBIT D
GENERAL CONSTRUCTION TERMS AND CONDITIONS

Table of Contents

ACKNOWLEDGMENTS

The Sacramento City Unified School District (the "District") and **[Entity Name].** (the "Entity") acknowledge the following as of the Effective Date of the Facilities Lease:

a. The District desires to have the Entity construct, at **Ethel Phillips Elementary School,** the **Ethel Phillips Elementary School Campus Renewal Project** located on the District's property, which is subject to a Site Lease and a Facilities Lease between the District and the Entity; and

b. The District owns the Site; and

c. The District has entered into an agreement for architectural services with respect to the design of the Project (the "Architectural Services Agreement"); and

d. To the extent required by law, construction documents for the Project, including Plans and Specifications as defined in the Facilities Lease, will be submitted to the Division of State Architect ("DSA") for approval; no work for which Entity is required to be licensed in accordance with Article 5 (commencing with Section 7065) of Chapter 9 of Division 3 of the Business and Professions Code and for which DSA approval is required may be performed before receipt of the required DSA approval. Upon approval, those construction documents are incorporated herein by this reference; and

e. Upon commencement of construction under the Plans and Specifications, the Entity will have thoroughly investigated the site conditions and reviewed the applicable Plans and Specifications to establish that there are no known problems with respect to the site conditions or the Plans and Specifications and that Entity can and will construct the Project for the Total Base Rent as set forth and defined in Article 4 of the Facilities Lease, and the Entity will not seek any additional compensation whatsoever, including, without limitation, any requests based upon known site conditions, unless otherwise provided in the Facilities Lease, these General Construction Terms and Conditions and/or the Construction Documents as defined herein; and

f. The Entity is experienced in the construction of the type of facility desired by District and will have all construction performed by firms with all necessary licenses and qualifications which are required to build and deliver the Project.

ARTICLE 1. DEFINITIONS AND PRINCIPLES OF INTERPRETATION

The definitions in the Facilities Lease have the same meanings where the terms are used herein. Additionally, the following definitions and principles of interpretation also apply:

Section 1.01. Definitions and Principles of Interpretation.
Whenever the following terms, titles, or phrases are used in the Construction Documents, the intent and meaning thereof shall be as defined in this article.

Section 1.02. Architect.
The "Architect" is the architectural firm engaged as an agent by the District to perform the services set forth in the Construction Documents. The Architect is designated by the Board of Education as the District's agent to perform all functions delegated to the Architect by the Construction Documents.

Section 1.03. Architect's Instruction Bulletin.
"Architect's Instruction Bulletins" are supplemental drawings or instructions, which may be issued as necessary from time to time to make clear or define in greater detail the intent of the Plans and Specifications. There may be a change in the Total Base Rent or Contract Time involved with the work shown in the Bulletin.

Section 1.04. Board of Education
"Board of Education" shall mean the duly elected officials constituting the Board of Education of the Sacramento City Unified School District.

Section 1.05. Change Order.
"Change Order" shall mean a written order to the Entity signed by the District and the Entity or signed unilaterally by the District, issued after execution of the Facilities Lease, authorizing a change in the Work and/or an adjustment in the Total Base Rent and/or the Contract Time. A Change Order shall be memorialized as an "Amendment" to the Facilities Lease.

Section 1.06. Closeout Documents.
Documents as required to meet the requirements of final completion.

Section 1.07. Construction.
"Construction" means all labor and services necessary for the construction and delivery of the Project, and all materials, equipment, tools, supplies and incidentals incorporated or to be incorporated in such construction as described in the Facilities Lease and the Construction Documents. Unless otherwise expressly stipulated, the Entity shall perform all Work and provide and pay for all materials, labor, tools equipment and utilities, including, but not limited to, light, water and power, necessary for the proper execution and completion of the Project pursuant to the Facilities Lease and the Construction Documents.

Section 1.08. Construction Change Directive ("Directive").
"Construction Change Directive", or "Directive" shall mean a written order to the Entity, issued after execution of the Facilities Lease, signed by the Owner or the District Representative directing a change in the Work and stating a proposed basis for adjustment, if any, in the Total Base Rent or Contract Time, or both, and which shall be used in the absence of total agreement with the Entity on the terms of a Change Order or when time does not permit processing of a Change Order prior to implementation of the change.

Section 1.09. Contract Change Document (CCD).
A "Contract Change Document" or "CCD" shall mean the following documents, which may be required to be submitted to DSA for approval prior to being implemented and incorporated into a Change Order: Architect's Instruction Bulletins, Construction Change Directives, Interpretations, RFI's or Substitutions. Any CCD including any change to the Plans and Specifications related to Structure, Fire, Life and Safety and Accessibility must be accompanied by a DSA-stamped and signed Form DSA-140 for a "Category A" change for which DSA approval is required or a "Category B" change for which DSA approval is not required in the professional opinion of the Architect. The Entity is not authorized to proceed with any work specified on a Form DSA-140 unless and until approval is received from DSA and provided to the Entity.

Section 1.10. Construction Documents.
The "Construction Documents" shall include the Plans and Specifications including any addenda, these General Construction Terms and Conditions, Change Orders, Interpretations, Directives, Supplemental Drawings, the Entity's Guarantee Form, Architects Instruction Bulletins, the Performance Bond and the Payment Bond, and other documents as defined in the Facilities Lease to be prepared and/or assembled by Architect with input from Entity to define the Work to be constructed as part of the Project.

Section 1.11. Construction Schedule.
The "Construction Schedule" is the schedule produced by the Entity for the construction of the Project. See Article 13 for specific requirements.

Section 1.12. Contract Time.
"Contract Time" shall mean the period specified for completion of the Work, as set forth in the Facilities Lease and adjusted by any Change Order issued pursuant to the Construction Documents.

Section 1.13. Contract Documents.
The "Contract Documents" consist of the Lease Agreements, together with any exhibits, Drawings, Specifications, Schedules, Performance Bond, Payment Bond, Addenda issued prior to execution of the Lease Agreements, other documents listed in the Lease Agreement, and Modifications issued after execution of the Lease Agreement. A Modification is (1) a written amendment to the Lease Agreements signed by both parties, (2) a Change Order, (3) a Construction Change Directive (4) a written order for a minor change in the Work issued by Architect or the District. The Contract Documents do not include other documents such as bidding requirements (advertisement or invitation to bid, Instructions to Bidders, or sample forms).

Section 1.14. Date of Completion.
The "Date of Completion" is the date certified by the District's Representative when construction of the Work is 100% complete including acceptance by the Architect of all punch list corrections.

Section 1.15. Day.
Unless otherwise expressly defined, a "day" shall mean a calendar day of 24 hours, including each and every day of the year.

Section 1.16. District's Consultants
Those consultants retained by District identified in the Project Roster (or later added) who will assist District in carrying out the Project.

Section 1.17. District Representative.
"District Representative" shall mean the District's designated agent engaged to perform all functions delegated to the District Representative by the Contract Documents. The District Representative will be the Entity's primary contact during Construction of the Project.

Section 1.18. Division of the State Architect (DSA).
"Division of the State Architect" is the California State agency responsible for checking construction documents for compliance with Title 24, California Code of Regulations, and monitoring compliance on the construction site. The Division of the State Architect also approves inspectors on all public school projects.

Section 1.19. Drawings
The graphic and pictorial portions of the Contract Documents, showing the design, location and dimensions of the Work, generally including plans, elevations, sections, details, schedules and diagrams. This information may be developed and stored in a 3D or 4D model of the Project.

Section 1.20. Entity
The Lease-Leaseback Entity hired to provide preconstruction services and is anticipated to build the Project under a Facilities Lease per Education Code section 17406 et seq.

Section 1.21. Final Completion
Includes completion of all contract work, including punch list items and final cleaning completed and all close-out documents, including as-builts and other documents required in the Facilities Lease.

Section 1.22. Interpretations.
"Interpretations" are all clarifications, additional instructions, and explanations issued by the Architect pursuant to Article 5 hereof.

Section 1.23. Materials and Equipment.
"Materials" is a generic term, which shall include all building materials, articles, supplies, and equipment delivered to the Project for incorporation into the Work. "Materials" includes everything incorporated into the Work except labor, unless otherwise noted.

"Equipment" shall mean all pre-manufactured or partially pre-assembled products or components, assembled or partially assembled before delivery to the Site.

Section 1.24. Notice to Proceed.
"Notice to Proceed" is the notice given to the Entity following approval of the Plans and Specifications by DSA (if required) and approval of the Total Base Rent and Lease Payment Schedule by the Board, which establishes the start of the construction of the Work and the time for completion of the entire Work, and authorizes the Entity to begin construction.

Section 1.25. Office of Public School Construction (OPSC).
"Office of Public School Construction" is the California State agency responsible for apportionment, disbursement and monitoring of state provided school district capital improvement funds.

Section 1.26. Product Data.
"Product Data" shall mean illustrations, standard schedules, performance charts, instructions, brochures,

diagrams and other information furnished by the Entity to illustrate a material, product or system for some portion of the Work.

Section 1.27 . Project
The total design and construction of which the Work performed under the Contract Documents may be the whole or a part and which may include construction by District or by separate contractors

Section 1.28. Project Evaluation Criteria
Benchmarks, metrics, or standards of evaluation developed by the District, Entity, and Architect and used throughout the Project as a basis for evaluating and continuously improving Project performance.

Section 1.29. Project Inspector.
The "Project Inspector" shall mean the person or persons employed or engaged as (an) independent contractor(s) by the District to inspect the performance of the Work by the Entity for compliance with the Construction Documents. The Project Inspector is hereby designated as an agent of the District for such purpose and no other. The Project Inspector is supervised by, and reports to, the Architect. The authority of the Project Inspector to monitor the work shall be strictly limited to that authority specified herein and in Title 24, California Code of Regulations, and no additional authority has been granted nor shall be inferred.

Section 1.30. Proposed Change Order/Work Order (PCO).
A "Proposed Change Order/Work Order" is the name given to a document issued by the Entity proposing a change to the Work and stating a proposed basis for adjustment, if any, in the Total Base Rent or Contract Time, or both. A PCO shall be used by the Entity to respond to a Request for Proposal. A PCO is not effective to authorize the proposed change to the Work, to the Total Base Rent or to the Contract Time unless it is accepted in writing by the District.

Section 1.31. Provide.
"Provide" shall mean to furnish, install, and connect complete and ready for use.

Section 1.32. Reference to Codes.
Unless otherwise noted, all references to statutes are to the laws of the State of California as codified in the various specified codes.

Section 1.33. Request for Information (RFI).
"Request for Information", or "RFI" is the name given to a document issued by the Entity seeking clarification and/or additional information regarding an aspect of the Work. The response to the RFI does not constitute authorization or direction to proceed with any changed or additional work. Changed or additional work must be separately authorized by the Owner.

1. Should the Contractor require clarification or additional information of the Contract Documents, and after the Contractor has consulted with the Project Inspector, the Contractor will direct the request to the District Representative on a Request for Information (RFI) form. (See appendix.)

2. Each RFI will be submitted to the District Representative un-numbered. The District Representative will number each RFI sequentially and will maintain an RFI log. The Contractor shall describe on the RFI the problem or clarification being requested. The description provided should be complete and adequate to permit a written response without additional communications with the Contractor. The Contractor shall attach any

related information or correspondence that may have been received from Subcontractors or vendors on the subject. In instances where the Contractor believes there may be a conflict between elements of the plans and specifications, the Contractor should identify the conflict and indicate the manner in which it interprets the Contract Documents.

3. The District Representative will review the request and take one or more of the following steps:
   a. Return the request to the Contractor for additional information.
   b. Forward the request to the Architect for response, copying the Project Inspector.
   c. Provide response and return to the Contractor with copies to the Architect and Project Inspector.

4. The Architect or other appropriate party receiving the RFI, will attempt to provide a response to the District Representative within fourteen (14) calendar days of receipt. The District Representative will in turn review the response and forward it to the Contractor. Should the response to an RFI be required by a specific critical date the Contractor shall indicate that date on the RFI.

5. If the Architect's review indicates a change or revision is necessary to the Contract Documents, the Architect will prepare the appropriate drawings and/or specifications required to define the change or revision and obtain DSA approval, if necessary. These documents will be transmitted to the District Representative for review and incorporation into the Contract Documents. The District Representative will transmit the revised documents to the Contractor.

6. If the Contractor believes the clarification or direction provided by the response to the RFI will impact the cost or schedule of the Project, the Contractor shall provide prompt notification to the District Representative, according to the General Conditions. After consultation with the Architect, the District Representative may prepare a Request for Proposal, PCO/Work Order and/or Change Order (see appendix) that shall be processed as outlined in the Change Order Procedure section of the Manual.

Section 1.34. Request for Proposal (RFP).

A "Request for Proposal", or "RFP" is the name given to a document issued by the District Representative requesting pricing information and/or an adjustment in Contract Time for a described scope of Work. An RFP is not a Change Order, a Directive or a direction to proceed with the scope of work described in the RFP. The Entity's response to the RFP shall be in the form of a Proposed Change Order.

Section 1.35. Samples.

"Samples" shall mean physical examples, which illustrate materials, equipment or workmanship and establish standards by which the Work will be judged.

Section 1.36. Shop Drawings.

"Shop Drawings" shall mean drawings, diagrams, schedules and other data specifically prepared for the Work by the Entity or any Subcontractor, manufacturer, supplier or distributor to illustrate some portion of the Work.

Section 1.37. Special Inspector.

The "Special Inspector" shall mean the person or persons employed or engaged as (an) independent contractor(s) by the District to inspect the performance of specific aspects of the work as required by Title 24, California Code of Regulations.

Section 1.38. Specifications
That portion of the Contract Documents consisting of the written requirements for materials, equipment, systems, standards, execution and workmanship for the Work, and performance of related services.

Section 1.39. Subcontractor.
"Subcontractor" shall mean each person or firm who is required by law to be and who is licensed to and will perform work, labor, or render services to the Entity in or about the construction of the Work, or who, under subcontract to the Entity, fabricates and installs a portion of the Work. To the extent the term Subcontractor is referred to as if singular in number it shall include the plural and shall means a Subcontractor or an authorized representative the Subcontractor.

Section 1.40. Submittal.
"Submittal" shall include all product data, shop drawings, manufacturers' installation instructions, samples, equal or substitution requests and all other submissions that the Entity is required to make to the District and/or Architect.

Section 1.41. Substantial Completion
The stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so Owner can occupy or utilize the Work for its intended use, and only minor corrective Work remains to be performed, all required approvals, certificates of occupancy and other sign-off from any public agencies with jurisdiction have been obtained, (provided such approvals are not delayed as a result of causes unrelated to Entity's or its Subcontractors', Sub-subcontractors', or Suppliers' performance or failure to perform the Work or to satisfy its obligations under the Contract Documents) and Entity has cleaned up and removed all equipment, tools and other materials from the Work area. Entity shall secure and deliver to Owner written warranties and guaranties from its Subcontractors, Sub-subcontractors and Suppliers bearing the date of Substantial Completion or some other date as may be agreed to by Owner and stating the period of warranty as required by the Contract Documents.

Section 1.42. Substitution.
"Substitution" shall mean a system, process, product or material similar in form or function and equal in quality and performance to that shown or specified. Note: Substitutions may be subject to DSA approval prior to fabrication or use.

Section 1.43. Supply.
"Supply" shall mean to furnish only, complete and ready for installation, including shipping, delivery, protection, and any assembly required prior to installation.

Section 1.44. Work.
The construction and services required from Entity by the Contract Documents, whether completed or partially completed, and includes all other labor, materials, equipment and services provided or to be provided by Entity to fulfill its obligations to provide a complete, usable and functional Project consistent with the design intent of the District's Architect. The Work may constitute the whole or a part of the Project.

Section 1.45. Work Plan
The resource-loaded Work Plan prepared by Entity (or any other party as requested by the District) depicting the activities to be accomplished for the Project and the anticipated labor (and resulting personnel costs), together with anticipated Reimbursable Expenses.

ARTICLE 2. CONSTRUCTION DOCUMENTS

Section 2.01. General Intent of Construction Documents.

It is the overriding intent of the Construction Documents that the work performed shall result in a complete and operable project in satisfactory condition for occupancy, with all mechanical equipment in functional operating condition and fit for the use for which it is intended, and which complies in all respects with the Construction Documents. No extra compensation will be allowed for anything omitted but fairly implied to be included in the Construction Documents.

Section 2.02. Labor and Materials.

Unless otherwise provided in the Construction Documents, the Entity shall provide and pay for all labor, materials, equipment, tools, construction equipment and machinery, water, light, heat, utilities, transportation and other facilities and services necessary for the execution and completion of the Work in accordance with the Construction Documents, whether or not specifically described herein, as long as same is reasonably inferable there from as being necessary to produce the intended results, whether temporary or permanent, and whether or not incorporated or to be incorporated in the Work.

Section 2.03. Complementary Feature of Various Parts of Construction Documents.

The Construction Documents, including the specifications and plans and drawings, are complementary and what is called for by any one shall be as binding as if called for by all. In case of conflict, large scale (detail) drawings shall govern over small-scale drawings, the Specifications shall govern over the Plans except as noted below, and subsequent addenda, Interpretations, or Change Orders shall govern over the original documents, unless a different order of precedence is noted elsewhere in conjunction with a specific portion of the documents.

In case of conflict between the Plans and Specifications, the Plans shall govern in matters of quantity, the Specifications in matters of quality. In case of conflict within the Plans involving quantities or within the Specifications involving quality, the greater quantity and the higher quality shall be provided.

Where on any drawing a portion of the Work is drawn out and the remainder is indicated in outline, the drawn-out parts shall apply to all other like portions of the Work. Where ornament or other detail is indicated as starting, such detail shall be continued throughout the courses or parts in which it occurs and shall also apply to other similar parts in the Work, unless otherwise indicated.

Scale drawings, full-size details, and specifications are intended to be fully coordinated and to agree. Where not specifically stated otherwise, all work and materials necessary for each unit of construction, even though only briefly mentioned or indicated, shall be furnished and installed fully and completely, including, but not limited to, the manufacturer's instructions and/or recommendations.

Any material specified by reference to the number, symbol, or title of a specified standard such as a Commercial Standard, a Federal Specification, a trade association standard, or other similar standards, shall comply with the requirements in the latest approved revision thereof and any amendments or supplements thereto in effect on the Effective Date, except as limited to type, class, or grade, or modified in such reference. The standards referred to, except as modified in the Specifications, shall have full force and effect as though printed in the Specifications.

Section 2.04. Ownership and Use of Documents.

The Plans and Specifications prepared by the Architect are and shall remain the property of the District.

Section 2.05. Written Notice.

Written notice may be accomplished by personal delivery, United States mail, overnight mail, facsimile, e-mail (with confirmation of receipt), or any other form of commercially accepted communication. The written notice shall become effective upon delivery. Delivery is complete when the notice is hand delivered to Entity's home office, job-site office, or to Entity's superintendent; or when the facsimile transmission is complete if completed by 5:00 p.m. on a business day, or otherwise on the following business day; or when an e-mail return receipt is sent; or two business days after mailing by U.S. mail; or upon actual delivery as evidenced by a delivery receipt.

Section 2.06. Not Used.

Section 2.07. Rights and Remedies.

The duties and obligations of the Entity imposed by the Construction Documents and the rights and remedies of the parties available hereunder shall be in addition to and not a limitation of any duties, obligations, rights and remedies otherwise imposed or available by law.

The failure of the District, the District's Representative, the Project Inspector or the Architect to insist in any one or more instances upon the strict performance of any one or more of the provisions of the Construction Documents or to exercise any right herein contained or provided by law, shall not be construed as a waiver or relinquishment of the performance of such provision or right(s) or of the right to subsequently demand such strict performance or exercise such right(s) and the rights shall continue unchanged and remain in full force and effect.

ARTICLE 3. BONDS

Section 3.01. Bonds: Time to Submit.
Within ten (10) days after receipt of a Notice to Proceed for Construction, the Entity shall furnish and deliver to the District bonds as set forth below in Sections 3.03 and 3.04.

Section 3.02. Qualifications of Surety.
All bonds shall be duly executed by a responsible corporate surety listed in the current version of the United States Department of the Treasury circular entitled "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies," admitted by the State of California Department of Insurance to do business in the State of California and acceptable to District.

Section 3.03. Performance Bond.
The Entity shall submit a faithful Performance Bond on the form provided by the District, conditioned upon the faithful performance by the Entity of all requirements of the Facilities Lease and the Construction Documents. The amount of the bond shall be in a sum no less than one hundred percent (100%) of the Total Base Rent.

Section 3.04. Labor and Materials Payment Bond.
The Entity shall also submit a bond on the form provided by the District, which in all respects complies with Civil Code sections 3247-3252, inclusive. This bond, hereinafter referred to as a "Payment Bond," shall be in a sum no less than one hundred percent (100%) of the Total Base Rent.

Section 3.05. Additional Bonding Requirements.
All bonds submitted shall include the following:

1. Full name and address of the Entity, Surety, and District
2. Effective Date of the Facilities Lease
3. Total Base Rent
4. Project name and address
5. Signature of the Entity
6. Corporate Seal if Applicable
7. Signature of authorized Surety representative
8. Notarization of the Entity and Surety
9. Power of Attorney
10. Local contact for Surety, with name, phone number, and address to which legal notices may be sent

ARTICLE 4. PERMITS, LICENSES, ORDINANCES, AND REGULATIONS

Section 4.01. Basic Standard.

The Entity shall conduct the Work so that all laws and ordinances for the protection of the public and the workers shall be obeyed fully both by the Entity and by all Subcontractors on the Site.

The Entity shall comply with the requirements of the California State Licensing Board and have a valid contractor's license, which is to be active and maintained in "Good Standing" throughout full completion of the Project.

The Entity, and any used subcontractor shall be registered pursuant to Labor Code section 1725.5 prior to executing any contract or engaging in any work, whichever is earlier, that involves the performance of any public work contract that is subject to the requirements of Division 2, Part 7, Chapter 1 of the California Labor Code, and shall maintain current registration throughout the term of this Contract.

Section 4.02. Permits.

The District shall pay all fees required by the Division of the State Architect, Department of General Services, State of California. The District shall reimburse the Entity for specific construction permits related exclusively to the project and/or project location that could include but are not limited to encroachment permits, water usage permits, meter permits, fire alarm permits, elevator permits, confined space and special work permits, storm water permits, erosion control permits and any applicable State, County or City permits related to agency inspections, utility connection fees, encroachment permits, utility service charges other than temporary utility charges unless otherwise indicated, necessary for the completion of the Work. All other fees and permits shall be at the expense of the Entity. Proper documentation of fee, permit, and utility service charges shall be submitted to the District through the District's Representative. No mark-up shall be allowed the Entity on these reimbursable charges.

The Entity shall give all notices and comply with all laws, ordinances, rules, regulations or orders of any public authority bearing on the performance of the Work.

Except as provided above, the District shall secure and pay for necessary approvals, easements, assessments and charges required for the Construction, use or occupancy of permanent structures or for permanent changes in existing facilities.

Section 4.03. Compliance with Laws and Regulations.

The Entity shall keep itself fully informed of and shall observe and shall conduct its operations so as to comply with, and shall cause any and all persons, firms, or corporations employed by it or under it to observe and comply with all federal and state laws, and county or municipal ordinances, regulations, orders, and decrees which in any manner affect those engaged or employed on the Work, or the materials used in the Work, or in any way affect the conduct of the Work.

All work shall be performed in accordance with the rules and regulations, latest Edition of Title 24, Parts 1-5 and 9, California Code of Regulations, and Division of the State Architect, and a copy shall be kept on the job at all times during construction.

ARTICLE 5. INTERPRETATION OF PLANS AND SPECIFICATIONS

Section 5.01. Sections of Plans and Specifications.

For convenience, the Plans and Specifications in the Construction Documents are arranged in several sections, but this separation shall not be considered as the limits of the work required of any separate trade. The terms and conditions of the work to be performed by any Subcontractor are strictly between the Entity and the Subcontractor.

Section 5.02. Diagrammatic Drawings.

Drawings showing the locations of equipment, wiring, piping, etc., unless dimensioned, are diagrammatic, and conditions will not always permit their installation in the exact location shown. In such event, the Entity shall notify the District's Representative and obtain an Interpretation before proceeding with the work in question. Unless there is a material increase in the Entity's scope of Work, installation as specified in the Interpretation shall be without any additional compensation to the Entity. Any work done after discovery of the issue, until authorization to proceed based on the Interpretation provided will be done at the Entity's risk.

Section 5.03. Interpretation and Additional Instructions.

The goal of the preconstruction involvement of Entity and key Subcontractors is to maximize the parties' understanding of the design requirements, including the design intent and all technical requirements of the Project, prior to field construction. In particular, if provided for in Preconstruction Services, the District expects Entity to have conducted extensive constructability review using BIM models provided to Entity and to have resolved all potential conflicts that reasonably could be identified in a thorough review prior to notice to proceed with construction. If the parties have maximized this opportunity, then there will be little or no need for RFIs or clarifications after construction is commenced.

To the extent that the need for clarification does arise, the party seeking clarification should first raise the issue either in a face-to-face conversation or via telephone with the Architect. The initial conversation shall describe the issue, identify the area affected, and request the clarification needed. If the parties to that conversation resolve the issue in the course of that conversation, they shall also agree on how the clarification shall be documented. If the parties to that conversation are not able to resolve the issue in the course of that conversation, they shall agree on how the issue will be resolved (who, will do what, by when) and shall agree which of them will notify the District concerning the issue and the plan for resolution. It is the parties' goal that RFI's will only be issued to document solutions, rather than raise questions that have not previously been the subject of a conversation. To the extent that resolution of the issue may affect progress of the Work, the issue shall be included in the schedule updates.

Should the Entity proceed with the work affected before receipt of instructions from the Architect, and, in the case of a change to the Work, before authorization to proceed, it shall remove and replace or adjust any work which is not in accordance therewith, and it shall be responsible for any resultant damage, defect, or added cost, without an extension of the Contract Time.

Section 5.04. Architect's Instruction Bulletins and Drawings.

In addition to the drawings incorporated in the Construction Documents, the Architect may furnish such supplemental drawings or instructions from time to time as may be necessary to make clear or to define in greater detail the intent of the Plans and Specifications. In furnishing additional drawings or instructions, the Architect shall have the authority to make minor changes in the Work, not involving any extra cost, and not inconsistent with the overall design of the Project. Any Architect's Instruction Bulletin including a change to

the Plans and Specifications must be accompanied by a Form DSA-140. If extra cost is known to be involved, and time permits, these instructions will be accompanied by a RFP. The Entity shall have up to ten (10) days to respond to the RFP in the form of a Proposed Change Order which shall be accompanied by the supplemental drawings or instructions signed by the Entity. Upon approval of the PCO, the supplemental drawings or instructions shall become a part of the Construction Documents; the Entity shall make its Work conform to them. If time does not permit the processing of a Change Order, the supplemental drawings or instructions will be accompanied by a Construction Change Directive.

Section 5.05. Notification of Disagreement Regarding Scope of Work.

When the Entity does not agree that work due to an Interpretation or supplemental drawing or instruction is within the scope of the Construction Documents, the Entity shall nevertheless perform such work without delay. Within seven (7) days after receipt of the Interpretation or instruction, the Entity shall submit a Proposed Change Order to the District's Representative specifying in detail in what particulars the construction requirements were exceeded and the change in cost resulting therefrom. **Failure of the Entity to provide timely written notice waives the Entity's right to claim that the Interpretation or Architect's Instruction Bulletin constitutes a change to the Contract Documents.** The District's Representative shall then determine whether the work should be covered by a contingency or allowance per Section 4.4.2.4 or an amendment to the Total Base Rent is warranted. Change Orders shall be issued in accordance with Article 15 of these General Construction Terms and Conditions. The time during which the request is pending shall not affect the Contract Time.

Section 5.06. As-Built Drawings and Specifications.

The Entity shall maintain a hard copy or PDF master set of red line Drawings and Specifications at the Site which shall be updated weekly to reflect current as-built conditions of the Work as the Work progresses. The information to be recorded by the Entity will be determined by the Architect, who will be responsible for preparing the final, reproducible as-built drawings based upon the information submitted by the Entity. The Entity's as-built information shall be clear and legible, and at a minimum, the following information shall be inserted and dimensioned on those Drawings and Specifications, in RED, by the Entity: the exact horizontal and vertical location of all installations in their finished condition, including all electrical, plumbing and mechanical installations; all changes in construction, materials and installed equipment; posting of all issued addenda, Request for Information (RFI) signed by the Architect and Architect's Instruction Bulletins with back-up to the bid documents in all applicable locations along with adequate dimensional data, both horizontal and vertical, to allow location of covered installations; the identification of each change authorized by Directive, and the number of that Directive. The updated drawings and specifications shall be available for review by the District Representative and the Inspector. If as-builts are marked up in PDF format, the file shall be made available remotely in a manner acceptable to the District Representative and Inspector.

Written confirmation from the District Representative that the as-builts have been properly updated weekly shall be submitted with each pay application request, and the existence of such properly updated as-builts shall be a condition precedent to payment. Failure to comply with the preparation and submission of as-builts may result in the District withholding the current lease payment.

As a condition to certification of final completion, the Entity shall provide signed and dated original as-built drawings and specifications in a PDF color format, with a resolution of 600 DPI and each plan sheet and specification section bookmarked by name, number or title, together with all additional information requested by the Architect to enable the Architect to prepare a set of final, reproducible as-built drawings

and specifications. Timely submission of complete as-built documents shall be a condition precedent to certification of final completion. Delays in the submission of complete as-built documents may subject the Entity to liquidated damages.

ARTICLE 6. SUBCONTRACTORS

Section 6.01. Subcontracting.
The Entity shall give personal attention to the fulfillment of the Construction Documents and all Work of the Project and shall control the Work.

If the Entity subcontracts any Work to be performed or materials to be supplied pursuant to this Agreement, the Entity shall be as fully responsible to the District for the acts and/or omissions of such subcontractor or supplier and of the persons either directly or indirectly employed or engaged as subcontractors by such subcontractor or supplier as it is for its own acts and omissions.

The Entity shall bind every Subcontractor or supplier, and every subcontractor of a Subcontractor, by the terms of the Construction Documents. Every subcontract at every level shall include and incorporate Exhibit E, the insurance requirements.

The Entity shall be responsible to ensure that each of its Subcontractors has an active contractor's license pertaining to its classification of work maintained in "good standing" from commencement of the Subcontractor's work through final completion of the Project.

All Subcontractors shall be registered pursuant to Labor Code section 1725.5 before performing any public work contract that is subject to the requirements of Division 2, Part 7, Chapter 1 of the California Labor Code, and shall maintain current registration throughout through final completion of the Project.

The Entity shall not perform work on the Project with a Subcontractor who is ineligible to perform work on public works project pursuant to Labor Code sections 1725.5, 1777.1, or 1777.7.

Section 6.02. Compliance with Project Labor Agreement.
The Entity must comply with requirements in the Project Labor Agreement ("PLA"), including without limitation that the Entity and all subcontractors at every tier will use a skilled and trained workforce to perform all work on the Project that falls within an apprenticeable occupation in the building and construction trades.

Section 6.03. Disputes Between Subcontractors and/or the Entity.
If, through acts or neglect on the part of the Entity, including failure to supervise and control its subcontractors or suppliers, any other contractor, subcontractor or supplier, or worker suffers loss or damage, the Entity agrees to resolve any resulting dispute with such other contractor, subcontractor, supplier, or worker by agreement, arbitration or litigation, if such other contractor, subcontractor, or worker shall assert any claim against the District or any of its officers, agents, or employees, on account of any damage alleged to have been so sustained.

In the event of the receipt of any such claim, the District shall notify the Entity, who shall defend, indemnify, and save harmless the District and all of its officers, agents, and employees against any such claim, as provided in the Facilities Lease paragraph 5.5.2..

Section 6.04. Dealings with Subcontractors.
Nothing contained in the Construction Documents shall create any contractual relationship between any Subcontractor or supplier and the District or any of its representatives, nor shall the Facilities Lease or the Construction Documents be construed to be for the benefit of any Subcontractor or supplier.

Section 6.05. Termination of Unsatisfactory Subcontractors.
When any portion of the Work that has been subcontracted by the Entity is not being prosecuted in a satisfactory manner, or when materials supplied do not conform to the Construction Documents, the District may direct the Entity to discharge the subcontractor or supplier.

Any Subcontractor or supplier that is discharged shall not again be employed on this Project.

Section 6.06. Payment of Subcontractors and Suppliers.
The Entity shall make all payments to Subcontractors and suppliers as expeditiously and timely as possible, consistent with any applicable law so as to prevent any stop notices, liens or claims from being filed against the District or the Site. Provided that the District has not withheld payments contrary to the provisions of the Facilities Lease, these General Construction Terms and Conditions or law, the Entity shall indemnify, defend and hold the District harmless from any claims or actions which allege that any Subcontractor or supplier was not paid with respect to the Project, except for claims resulting from dispute between District and Entity. Election to bond subcontractors and include the cost of subcontractor bond in the TBR is Entity's with prior approval of the District.

Section 6.07. Subguard.
To the extent the Entity obtains subguard insurance and includes the premiums in the Total Base Rent, the Entity shall refund to the District at the completion of the Project any savings in the premiums.

ARTICLE 7. STATE REQUIREMENTS REGARDING WAGES, HOURS, AND EQUAL OPPORTUNITY

Section 7.01. Prevailing Wage Rate; Notice.

As provided under Labor Code Sections 1726-1861, the Director of the Department of Industrial Relations (DIR) of the State of California has determined the prevailing rate of wages in the locality in which the work on the project is to be performed for each craft, classification, or type of worker needed to execute this Contract. The prevailing rates so determined are on file with the District, and they are available for public inspection. They may also be obtained on the Internet at http://www.dir.ca.gov/DIR/S&R/statistics_research.html. Those prevailing wage rates hereby are incorporated in this agreement and made a part hereof.

The Entity shall obtain and post copies of these prevailing wage rates in a prominent place at the job site, in accordance with the regulations of the Department of Industrial Relations.

The Project is subject to compliance monitoring and enforcement by the Department of Industrial Relations. The Entity shall post on the jobsite a Notice containing the following language:

> This public works project is subject to monitoring and investigative activities by the Department of Industrial Relations ("DIR"), State of California. This Notice is intended to provide information to all workers employed in the execution of the contract for public work and to all contractors and other persons having access to the job site to enable the DIR to ensure compliance with and enforcement of prevailing wage laws on public works projects.
>
> The prevailing wage laws require that all workers be paid at least the minimum hourly wage as determined by the Director of Industrial Relations for the specific classification (or type of work) performed by workers on the project. These rates are listed on a separate job site posting of minimum prevailing rates required to be maintained by the public entity which awarded the public works contract. Complaints concerning nonpayment of the required minimum wage rates to workers on this project may be filed with the DIR at any office of the Division of Labor Standards Enforcement ("DLSE").
> Local Office Telephone Number: please refer to the DLSE website
>
> Complaints should be filed in writing immediately upon discovery of any violations of the prevailing wage laws due to the short period of time following the completion of the Project that the DIR may take legal action against those responsible.
>
> Complaints should contain details about the violations alleged (for example, wrong rate paid, not all hours paid, overtime rate not paid for hours worked in excess of 8 per day or 40 per week, etc) as well as the name of the employer, the public entity which awarded the public works contract, and the location and name of the project.
>
> For general information concerning the prevailing wage laws and how to file a complaint concerning any violation of these prevailing wage laws, you may contact any DLSE office. Complaint forms are also available at the DIR website found at:

www.dir.ca.gov/dlse/PublicWorks.html.

Section 7.02. Payment of Prevailing Wage Rates.

Pursuant to Labor Code Section 1772, workers employed by contractors or subcontractors in the execution of any contract for public work, including the Preconstruction Services, are deemed to be employed upon public work as defined in Labor Code Sections 1720-1725. Therefore, the Entity shall pay, and shall cause all subcontractors, whether under contract with the Entity or under contract with any Subcontractor, to pay not less than the specified prevailing wage rates to all workers employed in the execution of this Contract.

In accordance with Labor Code Section 1775, the Entity shall monitor the payment of the specified general prevailing rate of per diem wages by subcontractors to employees by periodic review of the certified payrolls of the subcontractors.

Section 7.03. Wage Rate for Crafts Not Listed.

The responsibility to check prevailing wage rates is the Entity's. Pursuant to Labor Code Section 1773, the Entity may file with the Director of DIR or the Chief of the Division of Labor Standards Enforcement ("DLSE") a petition to review a determination of any rate or rates made by the Director of DIR. The Entity may also petition the Director of DIR to make a determination for a particular craft, classification or type of work not covered by a general determination. Pending the review or determination, the wages may be assumed to be those in the applicable collective bargaining agreement, but no adjustment in the Total Base Rent shall be made if such assumption is incorrect.

Section 7.04. Records of Hours Worked and Wages.

The Entity shall keep, and shall cause all subcontractors on the Project to keep, certified payroll records of the hours and wages of all employees employed on the Project, and those records shall be open at all times for inspection by the District and/or the Division of Labor Statistics and Enforcement, in accordance with Sections 1776 and 1812 of the Labor Code. The certified payroll records shall be submitted to DIR including all required information and including, at a minimum, the following information: the name, address, social security number, work classification, dates of payroll period, straight time, and overtime hours worked each day and week, and the actual per diem wages paid to each journeyman, apprentice, worker, or other employee employed by the Entity and/or each subcontractor in connection with the Work.

If the District requests copies of the certified payroll records, then the Entity and/or any subcontractor must provide the requested records within ten (10) days of the request. In the event that the Entity and/or any subcontractor fails to submit certified payroll records within ten (10) calendar days of a request from the District for the records, then the Entity and/or the subcontractor shall, as a penalty, forfeit one hundred dollars ($100) per calendar day, per worker, until strict compliance is effectuated. These penalties shall be withheld from lease payments then due and/or to become due. The Entity is not subject to this penalty assessment due to the failure of a subcontractor to comply with these requirements if the Entity can demonstrate that it has fully complied with the provisions of Labor Code Section 1776.

The Entity shall not carry on its payrolls any person not actually employed by the Entity, including without limitation employees of any subcontractor. The Entity shall show on its payrolls all persons actually employed by the Entity on the Project, in any capacity. The Entity shall cause all subcontractors on the Project, whether under contract with the Entity or under contract with any Subcontractor, to comply with this Section.

In accordance with Government Code Section 8546.7, or any amendments thereto, all books, records, and files of the Entity, or any subcontractor connected with the performance of this Contract, shall be subject to

examination and audit by the Auditor General for a period of three (3) years after final payment. The Entity shall preserve and cause all subcontractors to preserve such books, records and files for the audit period.

Section 7.05. Additional Requirements for Labor Compliance.

The Entity shall comply with all applicable and current requirements of the DIR and the DLSE, including without limitation the following additional requirements, and shall cause all subcontractors on the Project, whether under contract with the Entity or under contract with any Subcontractor, to comply. The records kept by the Contactor and all subcontractors of the hours and wages of all employees employed on Project also shall be open at all times for inspection by the DIR and DLSE, in accordance with Sections 1776 and 1812 of the Labor Code. Such records shall be furnished electronically to the Labor Commissioner of the DIR monthly, unless more frequent submission is required herein, and shall be furnished within 10 days of any separate request by the DIR or DLSE. Payroll records shall be furnished in a format prescribed by the DIR and uploaded into the electronic certified payroll reporting (eCPR) system.

On a random basis and at such other times as it deems appropriate, the DIR also may confirm the accuracy of payroll reports, including by corroboration of information in payroll reports through independent sources, including without limitation worker interviews, examination of any time and pay records found within the definition of "Payroll Records" in section 16000 of Title 8 of the California Code of Regulations, direct verification of "Employer Payments" (as defined at section 16000 of Title 8 of the California Code of Regulations) through third-party recipients of those payments, or any other legal and reasonable method of corroboration. As part of its confirmation process, the DIR may require the Entity and any of its subcontractors to furnish for inspection itemized statements prepared in accordance with Labor Code Section 226. The DIR may conduct random confirmation based on a recognized statistical sampling of the records submitted.

The DIR may conduct in-person inspection(s) at the site or sites at which the Work of the Project is being performed ("On-Site Visits"). On-Site Visits may include visual inspection of required job site notices, including but not limited to (1) the determination(s) of the Director of DIR of the prevailing wage rate of per diem wages required to be posted at each job site in compliance with Labor Code Section 1773.2; (2) the Notice of pay days and time and place of payment required by Labor Code Section 207; and (3) any other notices prescribed by law. On-Site Visits may also include inspections of records, inspections of the work site and observation of work activities, interviews of workers and others involved with the Project, and any other activities deemed necessary by the DIR to ensure compliance with prevailing wage requirements. Under Labor Code Section 90, the Labor Commissioner and his deputies and agents shall have free access to any construction site or other place of labor and may obtain any information or statistics pertaining to the lawful duties of the Labor Commissioner, including but not limited to evidence of compliance with Labor Code Section 226 (itemized wage statements for employees) and other laws enforced by the Labor Commissioner.

In accordance with Section 16463 of Title 8 of the California Code of Regulations ("8 CCR Section 16463"), the District may, on its own or if required by the Labor Commissioner, withhold funds due to the Entity when payroll records are delinquent or inadequate. The amount withheld shall be those payments due or estimated to be due to the Entity or subcontractor whose payroll records are delinquent or inadequate, plus any additional amount that the Labor Commissioner has reasonable cause to believe may be needed to cover a back wage and penalty assessment against the Entity or subcontractor whose payroll records are delinquent or inadequate. The Entity shall cease all payments to a subcontractor whose payroll records are delinquent or inadequate until the Labor Commissioner provides notice that the subcontractor has cured the delinquency or deficiency. When payments are withheld under 8 CCR Section 16463, the Labor Commissioner will provide the Entity and subcontractor, if applicable, with immediate written notice that includes all of the following: (1) a

statement that payments are being withheld due to delinquent or inadequate payroll records, and that identifies what records are missing or states why records that have been submitted are deemed inadequate; (2) specifies what amounts the District has been directed to withhold; and (3) informs the Entity or subcontractor of the right to request an expedited hearing to review the withholding of payments under Labor Code Section 1742, limited to the issue of whether the records are delinquent or inadequate or the Labor Commissioner has exceeded his or her authority under 8 CCR Section 16463. Where the violation is by a subcontractor, the Entity shall be notified of the nature of the violation and reference shall be made to Entity's rights to withhold or recover payments from the subcontractor under Labor Code Section 1729. The withholdings under 8 CCR Section 16463 do not preclude assessment of penalties under Labor Code Section 1776(g) for failure to timely comply with a written request for certified payroll records, as set forth below.

Section 7.06. Underpayment of Wages.

The Entity agrees that in the event of underpayment of wages to any employee on the Project, whether by the Entity or any subcontractor on the Project, the District may retain from payments due to the Entity, an amount sufficient to pay such worker the difference between the wages required to be paid by the DIR, and the wages actually paid such worker for the total number of hours worked, plus any penalties and forfeitures. The District may disburse such retention to such employees.

Section 7.07. Apprentices.

Attention is directed to the provisions of the PLA and Sections 1777.5, 1777.6 and 1777.7 of the Labor Code concerning the employment of apprentices by the Entity or any subcontractor.

The Entity and all subcontractors on the Project shall comply with the requirements of the PLA and Sections 1777.5 and Section 1777.6 of the Labor Code in the employment of apprentices. Violation of these requirements shall subject the Entity and/or subcontractor to the penalties set forth in Section 1777.7 of the Labor Code and/or otherwise provided by law or Contract.

Information relative to apprentice standards, wage schedules, and other requirements may be obtained from the Director of Industrial Relations, ex-officio the Administrator of Apprenticeship, San Francisco, California, from the Division of Apprenticeship Standards or its branch offices, and/or on the DLSR website at www.dir.ca.gov/DLSR/PWD. Apprentices employed on the Project must at all times work with or be under the direct supervision of a journeyman or journeymen.

Section 7.08. Penalties.

In accordance with Articles 2 and 3, Chapter 1, Part 7, Division 2 of the Labor Code, particularly Sections 1775, 1776, 1777.7 and 1813, the Entity shall forfeit to District as a penalty the sum specified below, over and above any retention or withholds otherwise authorized by the agreement, as follows:

A. Up to two hundred dollars ($200) for each calendar day, or portion thereof, for each worker paid less than the applicable prevailing wages for any work done by him/her under this Contract or under any subcontract on the Project, with the amount to be determined by the Labor Commissioner in accordance with the considerations set forth in Labor Code section 1775. If a worker employed by a subcontractor on the Project is paid less than the prevailing wages by the subcontractor, the Entity is not subject to this penalty assessment if the Entity can demonstrate that it did not have knowledge of that failure of the subcontractor to pay the prevailing wages and that it strictly complied with the requirements of Labor Code Section 1775(b).

B. Twenty-five dollars ($25) for each worker employed in the execution of this agreement by the Entity or by any subcontractor on the Project for each calendar day during which such worker is required or permitted to work more than eight (8) hours in any one calendar day and forty (40) hours in any one calendar week in violation of the provisions of Article 3.

C. Failure to provide certified payroll records to the District or to the Labor Commissioner within ten (10) calendar days of a request, shall, in addition to resulting in a withholding of payments due, result in a penalty in the amount of one hundred dollars ($100) for each calendar day, or portion thereof, for each worker until strict compliance is effectuated. The Entity is not subject to this penalty assessment due to the failure of a subcontractor to comply with these requirements if the Entity can demonstrate that it has fully complied with the provisions of Labor Code Section 1776.

D. Knowing violation of Labor Code Section 1777.5 shall yield a penalty in an amount not exceeding one hundred dollars ($100) for each full calendar day of non-compliance. A contractor or subcontractor who knowingly commits a second or subsequent violation of Section 1777.5 within a three-year period, where noncompliance results in apprenticeship training not being provided as required, shall forfeit as a civil penalty the sum of no more than three hundred dollars ($300) for each full calendar day of noncompliance.

Section 7.09. Hours of Work; Approval of Schedules.

Eight (8) hours of labor constitutes a legal day's work, and forty (40) hours constitutes a legal work week. No worker employed at any time by the Entity, or by any subcontractor upon the Project, shall be required or permitted to work more than eight (8) hours in any one calendar day or forty (40) hours in any one week, except as provided in Labor Code Sections 1810 through 1815.

Overtime shall be paid at the rate of not less than one and one-half (1-1/2) times the basic rate of pay, or at such other rate as stated on the applicable Determination issued by the DIR, or as may be required by applicable statutes or collective bargaining agreements.

The District reserves the right to approve or disapprove the days scheduled for work, and the hours during which work is in progress.

Section 7.10. Compliance with State Anti-Discrimination Laws.

The Entity shall comply with Section 1735 of the Labor Code, which provides as follows:

> "A contractor shall not discriminate in the employment of persons upon public works on any basis listed in subdivision (a) of Section 12940 of the Government Code, as those bases are defined in Sections 12926 and 12926.1 of the Government Code, except as otherwise provided in Section 12940 of the Government Code. Every contractor for public works who violates this section is subject to all the penalties imposed for a violation of this chapter."

Section 7.11. Workers' Compensation Insurance.

The Entity shall provide, at all times during the term of this Facilities Lease, at its sole cost and expense, workers' compensation insurance for all of the employees engaged in work for the Project. In case any of the Entity's work is sublet, the Entity shall require the Subcontractor similarly to ensure that all workers performing Project work are covered by workers' compensation insurance required by law. Any class of employee or employees not covered by a Subcontractor's insurance shall be covered by the Entity's

insurance. In case any class of employees engaged in work on or at the site of the Project is not protected under Workers' Compensation laws, the Entity shall provide or shall cause a Subcontractor to provide, adequate insurance coverage for the protection of such employee, not otherwise protected. The Entity shall file with the District certificates of its workers' compensation insurance, as required in Exhibit E. The Entity is required to secure payment of compensation to its employees in accordance with the provisions of Section 3700 of the Labor Code.

ARTICLE 8. SUPERVISION AND LABOR

Section 8.01. Supervision Procedures.

The Entity shall supervise and direct the Work using its best skill and attention. The Entity shall be solely responsible for all construction means, methods, techniques, and procedures and for coordinating all portions of the Work under the Facilities Lease and the Construction Documents.

The Entity shall be responsible to the District for the acts and omissions of its employees, all subcontractors and their agents and employees and other persons performing any of the Work.

The Entity shall not be relieved from its obligations to perform the Work in accordance with the Facilities Lease and/or the Construction Documents either by the activities or duties of the Architect or the District's Representative in their administration of the Project or by inspections, tests or approvals (or the lack thereof) required or performed under Article 9 by persons other than the Entity.

Section 8.02. Skilled Labor.

All non-apprentice labor shall have the skills of a journeyperson in the applicable trade. All workmanship shall be of the highest quality and finish in all respects.

All of the workers on the Project must be either "skilled journeypersons" or apprentices registered in an apprenticeship program approved by the Chief of the Division of Apprenticeship Standards of the Department of Industrial Relations ("Chief"). A "skilled journeyperson" is a worker that either a) graduated from an apprenticeship program for the applicable occupation that was approved by the Chief or located outside California and approved for federal purposes pursuant to the apprenticeship regulations adopted by the federal Secretary of Labor, or b) has at least as many hours of on-the-job experience in the applicable occupation as would be required to graduate from an apprenticeship program for the applicable occupation that is approved by the Chief. In addition, the following percentages of the skilled journeypersons employed to perform work on the Project must be graduates of an apprenticeship program for the applicable occupation that was either approved by the Chief pursuant to Section 3075 of the Labor Code or located outside California and approved for federal purposes pursuant to the apprenticeship regulations adopted by the federal Secretary of Labor:

- For work performed by an acoustical installer, bricklayer, carpenter, cement mason, drywall installer or lather, marble mason, finisher, or setter, modular furniture or systems installer, operating engineer, pile driver, plasterer, roofer or waterproofer, stone mason, surveyor, terrazzo worker or finisher, or tile layer, setter, or finisher: thirty percent (30%) or more;
- For all others except teamsters: sixty percent (60%) or more.

The requirement that the specified percentage of skilled journeypersons be graduates of an apprenticeship program shall not apply to work performed by teamsters. For an apprenticeable occupation in which no apprenticeship program had been approved by the Chief before January 1, 1995, up to one-half of the graduation percentage requirements above may be satisfied by skilled journeypersons who commenced working in the apprenticeable occupation before the Chief's approval of an apprenticeship program for that occupation in the Sacramento County.

In addition to relying upon the Department of Apprenticeship Standards website for proof of journeymen graduated from DIR-approved apprenticeship programs, the Entity and its subcontractors may rely upon Union hiring hall representation that it holds a valid apprenticeship certificate for its dispatched members, which Union hiring hall representation shall be in writing and maintained by the Entity.

Section 8.03. No Tenancy.
All workers, subcontractors, or subcontractors' representatives are admitted to the Site only for the proper execution of the Work, and have no tenancy.

Section 8.04. Dismissal of Unsatisfactory Employees.
The Entity shall at all times enforce strict discipline and good order among all employees including compliance with the District Guidelines for Conduct on School Sites and shall not employ on the Work any unfit person or anyone not skilled in the assigned task as defined in Section 8.02. The Entity shall remove, or cause a subcontractor to remove from the Project, any incompetent employee, or any employee not skilled for the type of work required as defined in Section 8.02, or any employee who does not comply with the District Guidelines for Conduct on School Sites. The District may require that the Entity immediately remove from the Work any employee for cause.

Section 8.05. Personal Attention and Superintendence; Entity's Agent.
The Entity shall supervise the Work to the end that it shall be faithfully prosecuted. The Entity shall at all times while the Entity's scope of work is in progress keep a full-time superintendent who is fully empowered to act as agent for the Entity on the Site. The Entity shall advise the District in writing of its agent prior to the start of any work. The Entity shall be responsible for the faithful observation of all instructions delivered to its authorized agent(s).

Section 8.06. Continuity of Entity's Key Personnel.
The Entity's Key Personnel as stated in the Entity's Proposal shall remain fully engaged in the Project throughout the duration of the Project. The Entity's Key Personnel shall not be substituted without written approval by the District. For the purposes of this section, Entity's Key Personnel shall include at least the Entity's project manager and superintendent, as well as any other Key Personnel specifically identified in the Proposal.

Section 8.07. Entity's Coordination of Work.
The District reserves the right to do other work in connection with the Project by separate contract or otherwise, including, without limitation, with respect to installing relocatable buildings. The District shall give the Entity written notice at least thirty (30) days in advance of any work to be done by the District's contractors, agents or employees. The Entity and the District shall at all times conduct their work so as to impose no hardship on the other and shall coordinate with each other so that no delays or discrepancies shall result in the whole Project.

Section 8.08. Fingerprinting.
Education Code section 45125.1 applies to this Agreement. Entity shall, prior to commencement of Work, require any person affiliated with Entity (or, in appropriate cases, himself or herself) to be fingerprinted by the Department of Justice ("DOJ") if that person will have unsupervised access to school campuses. Upon verification from DOJ that those persons fingerprinted have no record of a serious or violent felony, Entity will so certify by signing and submitting to the Governing Board of District the certification in the form provided by the District. In addition, Entity shall submit the names of those persons who have received clearance and are authorized to have unsupervised access to school campuses on a form provided by the District. Any person whose name is not on the cleared list may not have such access. In that case, Entity must make arrangements with District for appropriate access. No person with a violent or serious felony as

reported by DOJ may have access to the school campuses.

Failure to comply with these terms, or permitting unsupervised access by an employee whose name has not been cleared by DOJ as certified by Entity shall constitute grounds for termination of this Agreement.

ARTICLE 9. INSPECTION AND TESTING

Section 9.01. Inspection.
Inspection shall be provided as required under CCR Title 24, latest Edition. All inspection costs will be paid for by the District, including special inspection required by Title 24, except as noted otherwise below. A list of required inspections for the Project is included in the Construction Documents.

The Project Inspector shall be approved by the District, DSA, the Architect and the Structural Engineer. The Project Inspector will be employed by the District and will perform all inspections in accordance with Title 24, parts 1-5.

Section 9.02. Authority of Project Inspector; Stop Work Notices.
The designated Project Inspector shall be considered to be a representative of the District. It is the Project Inspector's duty to inspect the Work.

The Project Inspector shall have the authority to order the work designated for inspection stopped if a determination is made that work is proceeding in violation of the Construction Documents or any orders issued by the District, District's Representative, or Architect. The failure of the Project Inspector to order the work stopped does not excuse the Entity from complying with the Construction Documents for that work.

Upon issuing a stop work notice, the Project Inspector shall notify the Architect, who shall review the work in question and determine whether it does or does not comply with the Construction Documents. The decision of the Architect shall be final, subject to the dispute resolution provisions in Article 23. The Entity shall thereafter comply with the instructions of the Architect regarding corrections needed to cure the defect. The suspended work shall be resumed only when the instructions are fulfilled. The Entity shall not be entitled to an extension of time in the event of such suspension of work if the stop work notice is determined to be validly supported by facts.

Section 9.03. Effect of Inspections.
Neither the final inspection and payment, nor any interim inspection or payment shall relieve the Entity of its obligation to fulfill the Work of the Project as required by the Facilities Lease and/or the Construction Documents.

Any work, materials or equipment not meeting the requirements and intent of the Construction Documents may be rejected, and unsuitable work or materials shall be made good, notwithstanding the fact that such work or materials may previously have been inspected and/or payment therefore may have been made.

Section 9.04. Inspection of Completed Work.
Should the District's Representative or the Architect determine that it is necessary or advisable to make an inspection of work already completed at any time before final inspection and acceptance of the Work, by removing or exposing any work, the Entity shall, upon instruction of the District's Representative, promptly furnish all necessary facilities, labor, and materials to do so. If the work is found to be defective in any respect due to the fault of the Entity or any subcontractor, the Entity shall bear all expenses of such examination and satisfactory reconstruction. If, however, the work is found to meet the requirements of the Construction Documents, the additional cost of labor and material necessarily involved in the examination and replacement shall be allowed the Entity and a Change Order shall be issued for such cost and any time extension justified by delays to the critical path.

Section 9.05. Notice to District of Inspection.
Where the Construction Documents, instructions by the Project Inspector, District's Representative or the Architect, laws, ordinances, or any public authority having jurisdiction require work to be inspected, tested or approved before the Work proceeds, such work shall not proceed, nor shall it be covered up without inspection. If any part of the Work is covered prior to inspection, the District may order the Work to be uncovered so that inspection may be accomplished. The Entity shall bear all expenses of such examination and satisfactory reconstruction.

The Entity shall provide notice to the Project Inspector at least twenty-four (24) hours in advance of the readiness for inspection, except for special inspection, which requires at least forty-eight (48) hours advance notice.

All work shall be available for inspection and the Project Inspector shall have full access to review all work during all working times. The Entity shall provide all necessary means of access (e.g. ladders) for the Project Inspector to perform its duties. The Entity shall furnish the Project Inspector with any information necessary to fully inform him/her of conditions. Inspection does not relieve the Entity from fulfilling the requirements of the Facilities Lease and/or the Construction Documents.

Section 9.06. DSA Field Representative.
For projects requiring DSA approval, the Division of the State Architect will designate a field representative who will visit the Site periodically to review with the Project Inspector compliance of the Project with CCR Title 24 requirements. The DSA field representative may require certain modifications to the Project as constructed. In the event the Entity believes they are outside the scope of the Facilities Lease and/or Construction Documents, it shall proceed as provided in Section 5.05.

Section 9.07. Overtime Work.
Whenever the Entity arranges to work at night or any time when work is conducted other than the normal forty (40) hour week, or to vary the period during which work is carried on each day, it shall give the District's Representative and the Project Inspector a minimum of forty-eight (48) hours notice for weekend work and twenty-four (24) hours notice for daily work so that inspection may be provided. Additional inspection costs incurred because of overtime or shift work shall be paid by the District. If this overtime work is necessitated by the Entity's error or failure to perform, the cost of inspection will be borne by the Entity.

Section 9.08. Materials Which May be Tested.
The District reserves the right to require the Entity to provide samples, and to perform tests on any materials, articles, equipment, installations, or Construction performed by the Entity in addition to those specified in the Construction Documents. The District shall assume the cost of sampling and testing materials only when the Construction Documents do not require the Entity to do so.

Section 9.09. Testing.
All tests shall be performed under the supervision of the testing laboratory or consultant employed by the District, and approved by DSA and at such times as are convenient to the Project. The Entity shall provide written notice to the District's Representative at least twenty-four (24) hours prior to the need for off-site tests or inspections, and the District's Representative will arrange such tests or inspections. The Entity shall bear all expenses of tests performed where the Entity failed to provide this minimum notice.

Section 9.10. Selection of Samples.
All samples and specimens for testing shall be selected by the Project Inspector or by the testing laboratory, but not by the Entity.

Section 9.11. Delivery of Samples.
The Entity shall, at its sole cost and expense, furnish, package, mark, and deliver all samples to be tested at locations other than the Site. Samples shall be delivered either to the Project Inspector or to the testing laboratory or such other address specified by the District's Representative.

Delivery of all samples to the testing laboratory shall be made in ample time to allow the test to be made without delaying construction. No extra time will be allowed for the completion of the Work by reason of delay in testing samples required by the Construction Documents or due to the Entity's request for substitution.

The Entity shall allow free access at all times to the representatives of the testing laboratory to the Work, and shall point out the sources from which samples are taken.

All test reports shall be sent to all parties specified by the District's Representative.

Section 9.12. Approval of Samples.
No materials or work of which samples and/or tests are required shall be used or covered until the District's Representative informs the Entity that such samples and/or tests have been approved. If the Entity installs, uses, or covers any such material, article, or work prior to testing and approval, such shall be at the Entity's sole risk and expense, and it shall bear all costs of uncovering, repair, and replacement thereof.

The approval of any samples shall be for the characteristics thereof, or for the uses named in such approval, and no other. No approval of any samples shall be deemed a change or modification in any requirement of the Construction Documents. Upon testing of any sample of material or work, no additional sample shall be considered. All material or work installed after the sampling and testing is performed and approved shall be equal to or better than the approved sample in all respects and shall be accompanied by documentary proof that the materials and work sampled is representative of that installed.

Section 9.13. Damage Due to Testing.
The Entity shall, at its sole cost and expense, repair all damage resulting from testing specified in the Construction Documents. The District shall issue a Change Order for repair of damage due to sampling or testing other than specified in the Construction Documents.

The Entity shall not make any tests upon portions of the Project already completed, except with the prior written consent and under the direction and supervision of the District's Representative.

Section 9.14. Retesting.
If as a result of any test, whether originally specified or not, any material or work is found to be unacceptable, it shall be rejected, and all further sampling and testing required by the District or District's Representative shall be at the Entity's expense. The District shall pay initial costs; however the District may deduct that cost from a subsequent payment.

Section 9.15. Effect of Sampling and Testing.

The District assumes no obligation, and the Entity shall be relieved of no obligation undertaken pursuant to the Construction Documents by virtue of sampling and testing specified in this Article.

The responsibility for incorporating satisfactory materials and workmanship which meet the Construction Documents into the Work rest entirely with the Entity, notwithstanding any prior samples or tests.

ARTICLE 10. PROTECTION OF WORKERS, PUBLIC AND PROPERTY

Section 10.01. Safety Precautions and Programs.

The Entity shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work, for maintaining all safety and health conditions on the Site, and for ensuring against and/or correcting any hazardous conditions on the Site. Also, in no case shall the District, the District's Representative, the Architect, the Inspector, or their agents, employees or representatives, have either direct or indirect responsibility for the means, methods, techniques, sequences or procedures utilized by the Entity, or for safety precautions and programs in connection with the Work, or for maintaining any safety or health conditions on the Site, or for ensuring or correcting any hazardous conditions on the Site.

Certain work may be ongoing at the time school is in session; therefore, the Entity shall take precautions to prevent injury and access to children and staff and shall comply with the District's Guidelines for Onsite Safety. Material storage and vehicle access and parking shall be subject to District approval.

The Entity shall designate a responsible member of its organization at the Site whose duty shall be the prevention of accidents and overall jobsite safety for contractors'/subcontractors' employees, District's Representative, Architect, Project Inspector and visitors. This person shall be the Entity's superintendent unless otherwise designated by the Entity in writing to the District's Representative.

Section 10.02. Protection of Persons and Property.

The Entity shall at all times, until final acceptance, maintain adequate protection against injury to persons, including employees, or damage to property, on or near the Project, or adjacent to the Site. The Entity shall be responsible for maintaining all safety and health conditions on the Site and for ensuring against and/or correcting any hazardous conditions on the Site, except as stated in the Site Lease related to hazardous materials that are pre-existing on Site or brought to the Site by others for whom Entity is not liable. With respect to the Entity's operations and/or duties under this Facilities Lease, in no case shall the District, the District Representative, the Architect, the Inspector, or their agents, employees or representatives, have either direct or indirect responsibility for maintaining any safety or health conditions, or for ensuring against or correcting any hazardous conditions, on or near the Site, or adjacent to the Site.

The Entity shall provide a safe environment for all functions to be performed by the District's Representative, Architect and Project Inspector, and a safe place for all employees to work. The use of alcohol, drugs, or tobacco will not be permitted on the Site and/or on District property.

The Entity shall comply with all Occupational Safety laws, rules and regulations applicable to the Work.

Section 10.03. Protection and Repair of Work.

The Entity shall take all reasonable measures to protect the District's structures, facilities, equipment, tools, materials, and any other property on or adjacent to the Site against damage, loss, or theft by providing adequate security measures for its work. The Entity shall, until final completion of the Project and acceptance by the District, maintain protection of all of its work and work performed by others for the Work of the Project from damage, loss, defacement, or vandalism, except that if the District takes occupancy, in whole or in part, of any portion of the Project prior to the date of final completion, the Entity shall no longer have any obligation to protect the occupied portion(s) of the Project except (1) to the extent they may be affected by the Entity's ongoing work, and/or (2) as provided in Sections 10.01, 10.02, 10.04 through 10.10, and 10.12 through 10.14 hereof. The Entity shall provide protection of completed work (even if the District has taken

beneficial occupancy) that may be subject to damage as a result of the Entity's failure to perform as scheduled.

Section 10.04. Protection of Workers.

The Entity shall take every precaution for the safety of all employees and others on the Work, and to comply with all applicable provisions of federal, state and local safety laws and building codes to prevent accidents or injury to persons on, about, or adjacent to the premises where the Work is being performed.

The Entity shall erect and properly maintain at all times, as required by the conditions and progress of the Work, all necessary safeguards for the protection of workers and the public, and shall post danger signs warning against hazards created by Construction including, but not limited to, protruding nails or reinforcing steel, hod hoists, elevator hatchways, scaffolding, window openings, stairways, and falling materials.

The Entity shall immediately replace or repair any unsafe ladder, scaffolding, shoring, or bracing, or correct any other dangerous or hazardous situation that may exist. In the event that such situation is due to a pre-existing condition of the facility, the Entity may be entitled to additional compensation under provisions of Article 15 to repair or replace such condition in order to maintain a sage worksite. The responsibility for maintaining a safe working site shall be the Entity's, and the District and District's Representative undertake no obligation to suspend the work or notify the Entity of any hazardous conditions or noncompliance with safety laws. In no case shall the District, the District's Representative, the Architect, the Inspector, or their agents, employees or representatives, have either direct or indirect responsibility for maintaining any safety or health conditions, or for ensuring against or correcting any hazardous conditions on the Site.

Section 10.05. Working Limits and Regulations.

The Entity shall confine its apparatus, storage and materials, and construction operations within the limits established by the District's Representative, and shall not unreasonably encumber the Site or adjacent areas with its materials and/or equipment.

The Entity shall enforce any reasonable instructions from the District's Representative or District regarding placement of signs, fires, danger signals, barricades, radios, noise and smoking, provided such instructions are in compliance with health and safety laws governing construction activities.

Section 10.06. Protection of Existing Improvements.

The Entity shall clean the portions of existing improvements and facilities which are used by, traversed or dirtied by the workers on the Work, normal maintenance due to use by District employees or the public excepted.

All existing improvements and facilities shall be protected from any damage resulting from the operations, equipment or workers of the Entity during the course of the construction.

The Entity shall take all necessary precautions to protect existing facilities against the effects of the elements and Entity shall be strictly liable for failure to adequately protect any facility.

All damaged improvements and facilities to the extent the damages is caused by the Entity or a party for whom the Entity is liable, shall be replaced, repaired, and restored to their original condition without additional cost to the District and without an extension of the Contract Time, subject to payment for damage by insurance proceeds for policies required to be carried under this Lease.

Section 10.07. Traffic Signals and Traffic Control.
Existing signs, lights, traffic signals, control boxes, hydrants, meters, and other similar items occurring within the street or sidewalk areas shall be kept free of obstructions and accessible at all times. All such items shall be protected from the Entity's operations and shall not be obliterated or obscured by its equipment or materials.

Should it be necessary to cover up, move, or alter such items, this shall be done only with permission of the authorities having jurisdiction over the items involved.

Should it be necessary to block a street or sidewalk, the Entity shall first notify the District's Representative and the police and fire departments and other agencies with jurisdiction, and shall comply with their instructions, including scheduling limitations.

Section 10.08. Security of the Site.
The Entity's attention is directed to Specification Section 01500 regarding requirements for fencing the Site, gates, and screening.

Section 10.09. Removal of Barricades.
Upon completion of the work, the Entity shall remove from the Site all materials used for barricades, temporary scaffolding, or any other temporary uses.

Section 10.10. Protection of Adjacent Property; Notices.
In addition to any requirements imposed by law, the Entity shall shore up, brace, underpin, and protect as may be necessary all foundations and other parts of all existing structures on the Site or adjacent to the Site which are in any way affected by the excavations or other operations connected with the completion of the Work.

Prior to excavation, the Entity shall notify all public utilities and governmental agencies of the work proposed, and shall ascertain from them the exact location of their utilities.

Prior to commencing any work which in any way affects adjoining or adjacent land or buildings thereon, or public utilities, the Entity shall notify the District's Representative, who will send the District and occupants thereof a notice, which specifies the type of work to be done, the schedule of the work, the impacts expected from the work and the protective measures being taken by the Entity. The notice shall also specify that any person receiving notice who has questions regarding it may contact the District's Representative.

Whenever any notice is required to be given to any adjoining or adjacent landowner, utility, governmental agency or other party before commencement of any work, the notice shall be given by the Entity at least seven (7) days in advance of the work, or longer if required by law or regulation, with a copy delivered to the District's Representative.

The Entity shall, at the written instruction of the District's Representative, meet with any recipient of such notice to explain and discuss the proposed work.

Section 10.11. Indemnification of Adjacent Property Owners.
In the event the Entity enters any agreement with the owners of any adjacent property to enter upon or adjacent to such property for the purpose of performing the Work, the Entity shall, unless a written agreement with the owners of the adjacent property provides otherwise, fully indemnify, defend and save harmless such

person, firm, or Entity, state or other governmental agency which owns or has any interest in the adjacent property. The form and content of the indemnification agreement shall be approved by the District prior to commencement of any work on or about such property.

Section 10.12. Fire Protection.
The Entity shall take all steps necessary to protect all structures from fires and sparks originating from the Work, shall comply with all laws and regulations regarding fire protection, and shall comply with all instructions of the fire department with jurisdiction.

The Entity shall notify the District's Representative and the fire department in writing at least seventy-two (72) hours prior to disconnection of either water or electrical service to the Site, and shall comply with the fire department's instructions regarding fire safety.

The Entity must keep the fire intrusion detection systems operational throughout the duration and scope of its Work.

Section 10.13. Repairs or Replacement.
Any damage to existing conditions, or to any other improvement or property above or below the surface of the ground, whether private or public, arising from performance of this contract by the Entity or any party for whom the Entity is liable, shall be repaired within forty-eight (48) hours by the Entity without expense to the District (subject to coverage under insurance in accordance with all applicable provisions in this Lease related to insurance), unless disruption of school operation or creation of a safety hazard has occurred, in which case damage will be corrected immediately. If the work cannot be completed within forty-eight (48) hours, then the Entity must be able to show substantial progress toward completion within that time frame.

If, in the opinion of the Architect, the best interest of the District requires that repairs be made prior to the execution of any further work, the District's Representative will so notify the Entity who shall delay or discontinue that part of the Work until the necessary repair has been made. Such delay shall be considered non-compensable.

Upon the failure of the Entity to comply with any such order, or upon the Entity's failure to make immediate emergency repairs which are necessary to protect the Work, the District shall do that work itself as is necessary to protect life and property, in its sole discretion, and deduct the total cost of such work from the next Lease Payment. No prior notice to the Entity shall be necessary for the District to take this action.

Section 10.14. Emergency Safety Actions.
In an emergency affecting the safety of life or property, including adjoining property, the Entity, without previous instructions or authorizations from the District, is authorized and shall act at its discretion and risk to prevent such threatened loss or injury, and the Entity shall bear all costs of that action, unless such emergency is cause by the District's negligence or willful misconduct. The Entity shall immediately notify the District's Representative of such actions, and thereafter shall comply with any instructions issued by the District's Representative.

ARTICLE 11. SUBMITTALS, SUBSTITUTIONS AND MATERIALS

Section 11.01. Submittals.

The Entity, at its sole cost and expense, shall furnish to the District's Representative all submittals and other descriptive material as are required by the Specifications or requested by the Architect.

Shop drawings shall be done with sufficient detail to adequately describe items proposed to be furnished or methods of installation to enable the District and Architect to determine compliance with the Specifications and with the design and arrangement shown on the working drawings.

The Entity shall check and coordinate all submittals with the work of all trades involved before they are submitted. The Entity shall review each submittal for conformance with the requirements of the Construction Documents.

All submittals for the Project shall be made within Thirty-five (35) days of the approval of the schedule of submittals or as otherwise agreed with the District; however, the Entity shall have the additional responsibility to coordinate the schedule of its submittals with the requirements of the Construction Schedule so as not to delay the Project. No delay claims related to submittals will be entertained on the Project for any submittal originally received after the thirty-five (35) day submittal period or such other period agreed upon by the District. The District shall not accept limitations in materials, colors, quality, or any other aspect of products or materials due to the Entity's failure to provide submittals as required. At the District's discretion, the Entity may be directed to furnish and install temporary materials until the District selected material is available. Further, the District may require the Entity to install the District selected materials during non-school hours/days without an increase in the Total Base Rent and without an extension of the Contract Time.

The Entity shall submit a schedule of submittals organized by Specification section required for the Project. It shall delineate whether product data, installation instructions, shop drawings, samples, extra stock or mock-ups are required. The schedule of Submittals shall indicate whether the Submittal will be in electronic format, as set forth below. In general, other than items requiring color selections, samples and shop drawings, Submittals will be in electronic format. This schedule of Submittals shall be submitted using an approved Excel Template within ten (10) calendar days of the issuance of the Notice to Proceed for Construction. Any omissions or inaccuracies shall not relieve the Contractor of the obligation for conforming to the requirements in the Contract Documents. The Contractor's Submittal schedule shall provide sufficient time for delivering the Submittal to the Architect, the Architect's review of each Submittal, delivering the Submittal to the Contractor and re-submittal as necessary. In no case shall the Contractor allow fewer than fourteen (14) days, exclusive of delivery time, for the District Representative and the Architect to review each Submittal.

Section 11.02. Submission of Submittals.

The Entity shall submit electronically. Electronic Submittals which are submitted together shall be compiled into a single, bookmarked PDF file, containing links to enable navigation to each item within the Submittal package. The Entity shall name the electronic Submittal file with a consistent project identifier, composed of the project name, bid package number, and specification section number. Electronic Submittals shall be transmitted via the District Representative's Collaboration Site address,. Submittals shall be submitted to the District Representative who will not review the Submittals for technical compliance, but may reject any Submittal found, in the District Representative's judgment, to be incomplete. The District Representative will maintain a Submittal log, and weekly meeting minutes shall note if Submittals have been accepted. Submittals requiring color selections, samples, or shop drawings will be logged into a Sacramento City USD Project

Management Software to be selected.
For shop drawings, color selections and samples, the Entity shall submit no less than three (3) originals. All Submittals of shop drawings, color selections and samples shall be marked with the project name, the Contractor's name, and the specification section number, and shall be accompanied by a letter of transmittal to the District Representative. The letter of transmittal for shop drawings shall list the identifying number of the drawings submitted and cross-reference them to the page or sheet in the specifications and/or working drawings to which they are related.

By approving and submitting shop drawings, product data, manufacturer's installation instructions and samples, the Entity represents that it has determined and verified all materials, field measurements and field construction criteria related thereto and that it has checked and coordinated the information contained within those submittals with the requirements of the Work and to the Construction Documents. The Entity shall adhere to any supplementary processing and scheduling instructions pertaining to shop drawings as may be issued by the District's Representative.

The District's Representative will not accept shop drawings, product data or manufacturers' installation instructions, which are not sufficiently dimensioned and detailed to demonstrate compliance with the Construction Documents.

The Submittals shall be submitted promptly, so as to cause no delay in the Work. The Submittals shall be submitted so as to allow the District's Representative and the Architect a review period of no less than fourteen (14) days.

Section 11.03. Review of Submittals.
Following submission, the Submittals will be reviewed and returned with one or more of five possible responses by the District's Representative or Architect. These possible responses are as follows:

A. Unreviewed: If the Submittal is not required, or if it is not complete, or if it does not meet the form, format, and number requirements specified, it may be returned unreviewed. If the Submittal is not required, work may commence; if the Submittal was returned due to form requirements, it shall be resubmitted and approval obtained prior to commencement of the work.

B. Approved, Reviewed, or No exceptions taken: In the event the Submittal is acceptable as submitted, it will be returned with this status. Work may proceed upon receipt of approved Submittal.

C. Make Corrections Noted: If the Submittal is acceptable except for certain items, which have been noted by the Architect, it will be so designated. Work may proceed with the corrections made, and no resubmittal is necessary.

D. Revise and Resubmit: This status indicates that revisions are noted on the Submittal, and an additional Submittal is required to reflect those revisions and/or additional information. Work may not commence until the resubmittal is approved.

E. Rejected: A Submittal may be rejected if it is not in compliance with the Construction Documents, or if it proposes a substitution which is not acceptable to the Architect. A superseding Submittal shall be submitted and approved prior to commencement of the work.

Should the Entity proceed with the work shown on a Submittal before approval is received, it shall remove and replace or adjust any work which is not in accordance with the shop drawings or manufacturers' instructions

as ultimately approved, and it shall be responsible for any resultant damage, defect, or added cost.
The Entity shall resubmit Submittals in categories "D" and "E" above after making any changes required so that Submittals will comply with the Construction Documents. When resubmitting, the Entity shall direct specific attention to deficient areas. Resubmittals shall be made within ten (10) days of return of previous Submittal, and in any event in sufficient time so as to avoid delay to the Work. No delay claims related to resubmittals will be entertained on the Project for any resubmittal originally received after the ten (10) days.

The Architect shall determine the adequacy and completeness of all Submittals. Where the Architect deems a Submittal to be inadequate, incomplete, or otherwise unsuitable for proper review, the Entity shall submit all additional information requested by the Architect. There shall be no change to the Contract Time or the Total Base Rent when such additional information is required.

Section 11.04 Submittals Showing Variation from Contract.
It shall be the responsibility of the Entity to specifically point out any variation or discrepancy between the shop drawings, product data or manufacturers' installation instructions submitted and the Construction Documents.

The Entity shall make specific mention of all variations, along with an explanation of why they are requested, in its letter of transmittal.

Failure by the Entity to identify in its letter of transmittal any variation, discrepancy, or conflict with the Construction Documents shall render the approval null and void, and the Entity shall bear all risk of loss and reconstruction costs or delays.

If any architectural, plumbing, mechanical, electrical, or structural modifications are required as a result of the approval of shop drawings or manufacturers' instructions, which deviate from or do not comply with the Construction Documents, those modifications shall be made without extra cost to the District, and without extension of the Contract Time. Any other resultant costs, including but not limited to design fees, and cost incurred by other contractors, or inspection fees, shall be at the expense of the Entity.

Section 11.05. Effect of Approval of Submittals.
The approval of Submittals or other descriptive material shall not relieve the Entity of the obligation for accuracy of dimensions and details or for conforming the Work to the requirements of the Construction Documents at no extra cost to the District, within the Contract Time.

Section 11.06. Substitutions.
Unless otherwise provided in the technical specifications, the Entity may make proposals for substitutions to materials and/or processes shown or specified. Substitutions approved in the creation of the TBR are not subject to this section 11.06.

A proposal for substitution shall include all information required by the Architect to evaluate the substitute material or process. All substitutions shall be submitted with an approved "Substitution Request Form". Such proposal constitutes a certification that the Entity:

A. Has investigated the proposed product and determined that it meets or exceeds the performance requirements of the specified product.

B. Will provide the same or better warranty for substitution as for specified product.

C. Will coordinate installation and make other changes, including relating to work of others, which may be required for the Work to be complete in all respects at no additional cost to the District.

D. Waives claims for additional costs and/or Contract time, which may subsequently become apparent.

The Architect then will evaluate whether or not the proposed material is equal in quality and utility to the material specified, make its recommendation to the Owner. Based on the Architect's recommendation, and following discussion amongst the project team, the Owner will render a decision. If the request is not accepted, the Entity shall provide the specified product.

Substitutions and Requests for Information that affect Structural Safety, Fire and Life Safety or Access Compliance shall be submitted to DSA for review and approval.

Section 11.07. Not Used

Section 11.08. Samples and Testing of Proposed Substitutions; Costs of Adapting to Work.
When the District's Representative or Architect determines that samples and testing are required to evaluate a request for a substitution, the District's Representative shall so advise the Entity, and specify the materials or work to be sampled. The Entity shall, at no cost to the District, provide samples as required by Article 9, dealing with samples and testing, or the technical specifications.

The Entity shall bear all costs of sampling and testing required to decide a request for substitution.

Section 11.09. Effect of Approval of Substitution Request.
If the substitution request is approved, the Entity shall be solely and directly responsible for setting substituted materials and/or equipment into the available space, and for the proper operation of the substituted equipment with all other equipment with which it may be associated, all in a manner acceptable to the District.

Neither time extensions nor any increases in the Total Base Rent shall be granted on account of a substitution. In the event of a savings, the Total Base Rent shall be adjusted by the price difference between the substitution and the originally specified item.

Section 11.10. Quality of Materials and Products.
The Entity shall, if required by the Architect, Project Inspector, or District's Representative, furnish satisfactory evidence as to the kind and quality of materials provided.

The District's Representative may require, and the Entity shall submit if required, a list designating the source of supply of each item of materials incorporated into the Work, and in such event, those materials or products shall not be delivered to the Site or incorporated therein until after the District's Representative has approved the list.

The Entity shall certify that the materials and equipment installed comply with the Construction Documents and to the best of the Entity's knowledge, no installed materials or equipment contain asbestos.

Section 11.11. Better Material or Process.
In the event that the Entity furnishes a material, product, process, or article better than that specified in the

Construction Documents, the difference in cost of that material, product, process, or article shall be borne by the Entity.

Section 11.12. Industry Standards.

A. Any material specified by reference to the number, symbol, or title of a specified standard such as a Commercial Standard, a Federal Specification, a Trade Association Standard, or other similar standard, shall comply with the requirements in the latest revision thereof, including any amendments or supplements thereto, in effect on the effective date of the Facilities Lease, except as limited to type, class, or grade, or modified in that reference.

B. The standard referred to, except as modified in the Specifications, shall have full force and effect as though printed in the Specifications.

1. Where Federal Specifications are referred to as a measure of quality and standard, they refer to Federal Specifications established by the Procurement Division of the United States Government and are available from the Superintendent of Documents, U.S. Government Printing Office.

2. Where Federal Specification numbers are used, they refer to the latest edition including amendments thereto.

3. Where Commercial Standards (CS) or Product Standards (PS) are referred to as a measure of quality, standard, and method of fabrication, they refer to Commercial Standards and Product Standards issued by the U.S. Department of Commerce.

4. Where ASTM serial numbers are used, they refer to the latest tentative specifications, standard specifications, standard method or standard methods of testing, issued by the American Society for Testing Materials, unless specifically noted.

Section 11.13. Original Packages or Containers; Labels.

All materials delivered to the Site shall be new, unless otherwise specified, of the type, capacity, and quality specified, and free from defects. All materials shall remain in their original packages or containers until ready for use. The labels of all packages or containers shall remain affixed, and kept legible. No product shall be stored in any container, the label of which does not accurately describe the contents of the container.

Section 11.14. Providing and Paying for Materials.

Except as otherwise specifically stated in the Construction Documents, the Entity shall provide and pay for all materials, products, articles, processes, labor, tools, equipment, and installation, and all associated superintendence of every nature whatsoever necessary to execute and complete the Work within the Contract Time.

Section 11.15. Warranty of Title.

No material, article, product, supplies, or equipment for the Work shall be subject to any chattel mortgage, or a conditional sale or other agreement by which an interest therein or in any part thereof is retained by the seller or supplier.

The Entity warrants good and sufficient title to all material, supplies, and equipment installed or incorporated in the Work, and agrees upon completion of the Work to deliver the premises, together with all improvements

and appurtenances, constructed or placed thereon by the Entity, to District, free from any claims, liens, or charges.

The Entity agrees that neither it nor any person, firm, or Entity furnishing any materials or labor for any work covered by this contract shall have any right to a lien upon the premises or any improvement or appurtenances thereon; provided, however, that nothing contained in this Section shall defeat or impair the rights of persons furnishing materials or labor under the payment bond given by the Entity, nor any rights under any law permitting such persons to look to funds due to the Entity but retained by District.

The Entity shall cause the substance of these provisions to be included in all subcontracts and material contracts executed by the Entity and notice of this provision shall be given to all persons furnishing materials for the Work.

This Section shall not disallow the Entity's installing any devices or equipment of utility companies or of governmental agencies, the title to which is commonly retained by the utility company or the agency.

Section 11.16. Patents and Royalties.

The Entity and its sureties shall protect, indemnify and hold harmless the District, the District's Representative, the Project Inspector, the Architect, and its consultants and each of their respective officers, agents, and employees against any and all demands made for such fees or claims and against any and all suits, demands, claims or causes of action brought or made by the holder of any invention, patent, copyright, or trademark, or arising from any alleged infringement of any invention, patent, copyright, or trademark by the Entity in the course of its performance under this Facilities Lease.

Section 11.17. Payment of Federal or State Taxes.

Any federal, state or local tax, specifically including sales and use taxes, payable on materials furnished by the Entity pursuant to the Construction Documents shall be paid by the Entity.

ARTICLE 12. LEASE PAYMENTS

Section 12.01. Lease Payments.
The schedule of Lease Payments is set forth Exhibit C to the Facilities Lease. All Lease Payments are subject to the terms and conditions of the Facilities Lease, including its exhibits.

Section 12.02. Schedule of Values.
Within ten (10) days of the Notice to Proceed with construction, the Entity shall submit to the District's Representative a Schedule of Values broken down by phase, and within each phase by building, in sufficient detail to evaluate progress and costs at any point during construction. In no event shall an individual line item on the schedule of values exceed five percent of the Total Base Rent unless so approved by the District's Representative in advance. Labor, material and subcontract costs shall be shown separately. It is expressly acknowledged that the purpose of the Schedule of Values is not to establish the amount due for any Lease Payment but is for the District's internal cost tracking purposes and to assist with evaluation of the progress of the construction of the Project.

Section 12.03. Submissions Required for Lease Payments During Construction.
No later than five (5) days prior to the date for each Lease Payment established in the Lease Payment Schedule (Exhibit C to the Facilities Lease) prior to Project acceptance, and as a condition of each such Lease Payment, the Entity shall submit all of the following to the District's Representative:

A. Entity shall submit a conditional waiver and release on progress payment under Civil Code section 8132 covering all work, labor, materials and equipment; an unconditional waiver and release on progress payment under Civil Code section 8134 for all work through the prior lease payment; and an Affidavit of Payment in the form specified in the District's Construction Administrative Procedures Manual. Entity, for itself and all of its Subcontractors and Suppliers, shall submit, as a requirement for Final Construction Lease Payment only, a conditional waiver and release on final payment under Civil Code section 8136 covering all work, labor, materials and equipment provided on the Project. Within ten (10) business days following receipt of Final Construction Lease Payment, Entity, for itself and all of its Subcontractors and Suppliers, shall provide an unconditional waiver and release on final payment for all Project work, labor, materials and equipment. For purposes of this paragraph, "Final Construction Lease Payment" shall mean the Lease Payment made following Entity's submittal of conditional lien releases on final payment for Subcontractors and Suppliers. If Entity fails to submit all required unconditional waivers and releases on final payment, then District may withhold some or all of the Lease Payments following the Final Construction Lease Payment in an amount that is necessary, in the District's sole discretion, to protect the District from potential subcontractor and supplier claims, until the required unconditional waivers and releases are submitted.

B. Copy of the schedule of values, marked to show the percentage of completion.

C. Schedule updates will include phasing plans as applicable.

D. For the Final Construction Lease Payment and to the extent requested by the District prior to the final payment, certifications by the Entity and all subcontractors that a skilled and trained workforce was used for construction of the Project.

Section 12.04. Effect of Lease Payments.
Neither the payment, the withholding, nor the retention of all or any portion of any Lease Payment claimed to be due and owing to the Entity shall operate in any way to relieve the Entity from its obligations under the Facilities Lease and/or the Construction Documents. Except to the extent provided otherwise in the Facilities Lease or applicable law, in the event of a District default, the Entity shall continue diligently to prosecute the Work without reference to the payment, withhold, or retention of any Lease Payment. Except as provided in the Facilities Lease or applicable law, the payment, withhold, or retention of any Lease Payment shall not be grounds for an extension of the Contract Time.

ARTICLE 13. TIME OF WORK

Section 13.01. Construction Schedule Development.

Within seven (7) days after receiving the Notice to Proceed with construction, the Entity shall submit a detailed proposed Construction Schedule consistent with its Preliminary Project Schedule developed during Phase I, Preconstruction Services, presenting an orderly and realistic plan for completion of the Work, in conformance with the requirements of this Article.

The Contract Schedule shall furnish and comply with the following requirements:

A. A time scaled CPM type schedule prepared in MS Project Software. Submit the PS project schedule electronically (pdf, tiff or jpeg format not acceptable)- and hard copy format

B. No activity on the schedule shall have a duration longer than fourteen (14) days, with the exception of fabrication and procurement activities, unless otherwise approved by the District Representative. Activity durations shall be the total number of actual days required to perform that activity including consideration of weather impact on completion of that activity.

C. Procurement of major equipment, through receipt and inspection at the job site, identified as a separate activity.

D. Owner furnished materials and equipment if any, identified as separate activities.

E. Dependencies (or relationships) between activities.

F. Processing/approval of submittals and shop drawings for major equipment. Activities that are dependent on submittal acceptance and/or material delivery shall not be scheduled to start earlier than the expected acceptance or delivery dates.

G. Separate buildings and other independent project elements shall be individually identified in the network.

H. Fourteen (14*)* days for developing punch list(s), completion of punch list items, and final clean up for the work or any designated portion thereof. No other activities shall be scheduled during this period.

I. Interface with the work of other Contractors (or entities).

No unspecified milestones, contractor-designated Constraints, Float suppression techniques, or use-of-Activity durations, logic ties and/or sequences deemed unreasonable by the District Representative shall be used in the Project Schedule.

The Entity shall submit the reports and the number of copies as required under Section 13.05 of these General Construction Terms and Conditions.

The District Representative will review the proposed Construction Schedule for conformance with the requirements of the Facilities Lease and the Construction Documents. Within ten (10) days after receipt, the District's Representative will accept the Construction Schedule or will return it with comments. If the

Proposed Construction Schedule is not accepted, the Entity shall revise the schedule to incorporate comments and become the Construction Schedule. The Entity shall have the right to modify the schedule to alter sequences or durations of work in the interests of the Project provided it gives timely notice to the District of such modifications. The District shall have the right to reasonably object to any modifications. In the event of such objection by the District, the Entity will not make the modification(s).

The Construction Schedule shall be the basis for evaluating job progress and time extension requests and for District planning purposes. The responsibility for developing the Construction Schedule and monitoring actual progress as compared to the schedule rests with the Entity.

Failure of the Construction Schedule to include any element of the Work or any inaccuracy in the Construction Schedule will not relieve the Entity from responsibility for accomplishing all the Work in accordance with the Facilities Lease and the Construction Documents.

Acceptance of the Construction Schedule will not relieve the Entity of the responsibility for accomplishing the Work in accordance with the Facilities Lease and the Construction Documents.

Section 13.02. Not Used.

Section 13.03. Monthly Updates.
The Entity shall submit to the District's Representative each month an up-to-date status report of the Work. The status report shall include:

A. The Entity's estimated percentage complete and remaining duration for each activity not yet complete.

B. Actual start/finish dates for activities as appropriate.

C. Identification of processing errors, if any on the previous update reports.

D. Revisions, if any, to the assumed activity durations including revisions for weather impact for any activities due to the effect of the previous update on the schedule.

E. Best efforts to identify activities that are affected by Proposed Change Orders issued during the update period. The parties recognize that depending on the nature, amount, or timing of changes this may be difficult to accomplish. (See Fragnet, Section 13.04).

F. Best efforts to resolve any conflicts between actual work progress and schedule logic. When out of sequence activities develop in the Construction Schedule because of actual construction progress, the Entity shall submit revision to schedule logic to conform to current status and direction. The parties recognize that depending on the nature, amount, or timing of changes this may be difficult to accomplish.

The Construction Schedule shall be updated on a monthly basis throughout the entire construction period until Project completion is achieved. No Lease Payments will be made without the required monthly update of the Construction Schedule.

The District's Representative will review the updated information and meet with the Entity each month at the Site to determine the status of the Work. If agreement cannot be reached on any issue, the Entity will use the Architect's determination in the processing of the update.

Section 13.04. Schedule Revisions.

If the sequence of construction differs significantly, as determined by the District's Representative, from the Construction Schedule, the Entity shall submit within fifteen (15) days a revised schedule to the District's Representative for acceptance. Updating the Construction Schedule to reflect actual progress shall not be considered revisions to the Construction Schedule.

When a Proposed Change Order is issued which has the potential to impact specified completion dates, a Fragnet shall be prepared by the Entity to reflect the impact of such changes as expeditiously as is reasonably possible in light of the nature, quantity and timing of potential changes. The District's Representative will promptly review and act on the Fragnet. If the Fragnet has been accepted by the Owner and the Entity permitted by the Owner to proceed with the Proposed Change Order, the Fragnet shall be incorporated into the Construction Schedule. Time extensions will be considered only to the extent there is insufficient remaining float to accommodate these changes, and pursuant to Article 14 of these General Construction Terms and Conditions. No additional cost beyond that provided in Article 15 will be allowed for the incorporation of approved Proposed Change Orders into the Construction Schedule, except that, if Owner Initiated Changes, as defined and described in Section 15.02, exceed twelve percent (12%) of the Total Base Rent, the Entity shall be entitled to compensation for its added costs of updating and maintaining the schedule as a result of such changes. Such added costs must be properly substantiated by supporting data.

Should the Entity, after acceptance of the Construction Schedule, intend to change its plan of Construction, it shall submit their requested revisions to the District's Representative, along with a written statement of the revision, including a description of the logic for rescheduling the Work, methods of maintaining adherence to Intermediate milestones and other specific dates and the reasons for the revisions. If the requested changes are acceptable to the District's Representative, they will be incorporated into the Construction Schedule in the next reporting period.

Schedule revisions shall be submitted at least seven (7) days prior to the date of submission of update information. The Owner will have seven (7) days to review the revisions.

Section 13.05. Construction Schedule Reports.

Together with the monthly schedule updates, the Entity shall submit the following reports for the proposed Construction Schedule, Construction Schedule Updates, Construction Schedule Revisions and Recovery Schedules:

A. A Schedule Logic Report listing the activities, their early/late and actual start and finish dates, duration, float and the logic relationship of activities sorted by early start.

B. Network Plots presenting time scaled network diagram showing activities and their relationships.

C. A narrative providing additional clarification/explanation of items such that District is informed of the approach used to plan and sequence the work, coordinate with other contractors to the extent applicable, and an updated Construction Schedule showing the current status of construction. Upon written request of the District, the updated Construction Schedule shall be resource and cost loaded.

This narrative shall also address the following: (1) description of Work performed during the reporting period; (2) Description of the primary, secondary and tertiary Critical Paths; (3) description of the Work anticipated to be performed during the next reporting period; (4) number of days ahead/behind the Completion Date; (5) discussion of the changes to the primary Critical Path since the prior month's update; (6) description of problem areas and anticipated problem areas; (7) current and anticipated delays including cause of delay, corrective actions taken, and impact of the delay on other activities, milestones, and completion dates; (8) the actual weather days used (9) pending items (change orders, requests for time extensions, etc) and status thereof.

D. A MS Project Schedule Calculation Summary Report which includes listing of constraints, open-ends, out-of-sequence work, and scheduling statistics. This report is computer generated when the Construction Schedule is calculated upon completion of inputting all activity progress at the month end processing.

The Entity shall provide four (4) copies of all reports. The reports shall include one (1) reproducible and three (3) copies.

The Entity shall also provide flash drives containing all the schedule files in the original electronic format (files in pdf format are not allowed).

Section 13.06. Short Interval Schedules.

The Entity shall prepare a Short Interval Schedule (SIS) to be used throughout the duration of Work. The SIS shall include all current activities and projected activities for the succeeding two (2) weeks. The SIS shall include actual start/finish dates for the preceding one (1) week and it shall be tied to the updated Construction Schedule. The SIS shall be submitted to the District's Representative prior to the weekly construction meeting. The Entity shall participate in short interval scheduling coordination during the weekly construction meetings.

Section 13.07. Time of Essence.

Time is of the essence. The Entity shall, to the fullest extent possible, carry on the various classes or parts of the Work concurrently, and shall not defer construction of any portion of the Work in favor of any other portion of the Work, without the express approval of the District's Representative.

Section 13.08 Date of Completion.

The Entity shall fully and satisfactorily complete the Work within the Contract Time. The Date of Completion is set forth in the Facilities Lease, as it may be revised in a Notice to Proceed.

Section 13.09 Responsibility for Completion.

The Entity shall furnish sufficient manpower, materials, facilities and equipment and shall work sufficient hours, including night shifts, overtime operations, Sundays and holidays as may be necessary to insure the prosecution and completion of the Work in accordance with the accepted Construction Schedule. Unless there are excusable and/or compensable grounds for delay, if work on the critical path is seven (7) days or more behind the currently updated Construction Schedule and it becomes apparent that the Work will not be completed within the Contract Time, the Entity will implement whatever steps it deems necessary to make up all lost time. If the Entity's solution is not successful, it will make further attempts using the following sequence of events:

A. Reschedule activities to achieve maximum practical concurrence of accomplishment of activities.

B. If the above cannot be achieved then;

1. The Entity shall increase manpower in such quantities and crafts as will substantially eliminate, in the judgment of the District's Representative, the backlog of work; or increase the number of working hours, shifts per working day, working days per week or the amount of equipment or any combination of the foregoing sufficiently to substantially eliminate in the judgment of the District's Representative the backlog of work.

2. In addition, the District's Representative may require the Entity to submit a recovery schedule demonstrating its program and proposed plan to make up a lag in scheduled progress and to ensure completion of the Work within the Contract Time. If the District's Representative finds the proposed recovery schedule unacceptable, it may require the Entity to submit a new plan. If the actions taken by the Entity or the second plan proposed are unsatisfactory, the District's Representative may require the Entity to take any of the actions set forth in the previous paragraph without additional cost to the District to make up the lag in scheduled progress.

Float, the amount of time an activity can be delayed without affecting the Completion Date, is considered a project commodity jointly shared between District and Entity and shall be used in the best interest of completing the Project on time by the party who needs it first.

Failure of the Entity to comply with the requirements of this Section 13.09 shall be considered grounds for a determination by the District, pursuant to the Facilities Lease and these General Construction Terms and Conditions, that the Entity is failing to prosecute the Work with such diligence as will ensure its completion within the time specified.

Section 13.10. Daily Reports.

No less than on a weekly basis, the Entity's superintendent shall submit to the District Representative daily reports on the District's furnished form– refer to CAPM or Entities' own form containing same information. The daily reports shall include, without limitation, the identity of subcontractors on the Site; an accurate headcount of workers on the Site; materials and equipment delivered to the Site; visitors to the Site; any problems encountered; and photos as necessary to appropriately document the Work.

ARTICLE 14. DELAYS AND EXTENSIONS OF TIME

Section 14.01. Extensions of Time; Unavoidable Delays.
The Entity shall not be granted an extension of time except on the issuance of a Change Order by the Board of Education, upon a finding of good cause for such extension.

A. As used herein, the following terms shall have the following meanings:

1. "Excusable Delay" means any delay in completion of the Work beyond the expiration of the allowable Contract Time caused by conditions beyond the control and without the fault or negligence of the Entity or the District or its agents. These events may include strikes, embargoes, fire, unavoidable casualties, national emergency, and stormy and inclement weather conditions beyond the number of days included in the weather allowance in Article 3.3 of the Facilities Lease in which the District's Representative and Project Inspector agree that work on the critical path cannot continue. The financial inability of the Entity or any Subcontractor or supplier and any default of any Subcontractor, without limitation, shall not be deemed conditions beyond the Entity's control. An Excusable Delay will entitle the Entity to an extension of the Contract Time, in accordance with this Section of the General Construction Term and Conditions and shall not entitle the Entity to any adjustment of the Total Base Rent but shall be a permitted use of the Construction Contingency for the period of delay.

2. "Compensable Delay" means any delay in the completion of the Work beyond the expiration date of the allowable Contract Time caused solely by the wrongful acts of the District or its agents, including but not limited to the District's architect, and which delay is unreasonable under the circumstances and not within the contemplation of the parties. A Compensable Delay entitles the Entity to an extension of the Contract Time and an adjustment of the General Conditions at the time of the contract extension based on actual General Conditions costs as allowed by the Contract Documents but not to exceed the daily rate of **One thousand five hundred dollars ($1,500.00)** for every day of delay. Except as provided herein, the Entity shall have no claim for damage or compensation for any delay, interruption, hindrance, or disruption.

3. "Inexcusable Delay" means any delay in completion of the Work beyond the expiration of the allowable Contract Time resulting from causes other than those listed in Subparagraphs A1 and A2, above. An Inexcusable Delay will not entitle the Entity to an extension of the Contract Time or an adjustment of the Total Base Rent or any Lease Payment and subjects the Entity to liquidated damages.

B. The Entity may make a claim for an extension of the Contract Time, for an Excusable Delay or a Compensable Delay, subject to the following:

1. If an Excusable Delay and a Compensable Delay occur concurrently, the maximum extension of the Contract Time shall be the number of days from the commencement of the first delay to the cessation of the delay which ends last. Any adjustment of the Lease Payments shall be based on an adjustment of the General Conditions at the time of the contract extension based on actual General Conditions costs as allowed by the Contract Documents but not to exceed the daily rate of **One thousand five hundred dollars ($1,500.00)**. For the period of concurrency, the adjustment is a permitted use of the Construction Contingency. An increase in the Total Base Rent shall be based

only on the non-concurrent portion of any Compensable Delay.

2. If an Inexcusable Delay occurs concurrently with either an Excusable Delay and/or a Compensable Delay, the maximum extension of the Contract Time shall be the number of days, if any, from commencement of the first Excusable and/or Compensable Delay to the cessation of the Excusable Delay and/or the Compensable Delay. For the concurrency period, regardless of whether with an Excusable or Compensable Delay, the Entity shall be entitled to an adjustment of Lease Payments based on an adjustment of the General Conditions at the time of the contract extension based on actual General Conditions costs as allowed by the Contract Documents but not to exceed the daily rate of **One thousand five hundred dollars ($1,500.00)**, which shall be a permitted use of the Construction Contingency but not an increase in the Total Base Rent. An increase in the Total Base Rent shall be based only on the non-concurrent portion of any Compensable Delay. The non-concurrent Inexcusable Delay will not entitle the Entity to an extension of the Contract Time or an adjustment of the Total Base Rent or any Lease Payment and subjects the Entity to liquidated damages.

Delays in the prosecution of parts or classes of the Work, which do not prevent or delay the completion of the whole Work within the Contract Time, are not to be considered Excusable or Compensable.

Section 14.02. Notice of Delays; Requests for Time Extensions.
No later than ten (10) calendar days from the occurrence of any delay that the Entity regards as good cause for an extension of time, the Entity shall notify the District's Representative in writing of the delay. The notice shall specify with detail the cause asserted by the Entity to constitute good cause for an extension and a quantification of the length of the requested extension of time. Failure of the Entity to submit such timely notice shall constitute a waiver by the Entity of any request for extension to the extent of any prejudice to the District on account of such delay, and no extension shall be granted as a consequence of such delay.

The District shall consider and respond promptly to time extension requests that comply with the terms of the Facilities Lease and the Construction Documents. The District shall not be responsible or liable to the Entity for any constructive acceleration due to failure of the District to grant time extensions should the Entity fail to reasonably comply with the submission and justification requirements of the Construction Documents for time extension requests.

Section 14.03. Investigation; Procedure.
Upon receipt of a request for extension, the District's Representative shall conduct an investigation of the facts asserted by the Entity to constitute good cause for an extension. The District's Representative shall report the results of this investigation, as well as the propriety of the time extension requested, to the Entity in writing within ten (10) days of receipt of the request and shall indicate whether it will recommend for or against the extension. Upon receiving the District's Representative's recommendation, the Entity may either concur in the recommendation, or reject the recommendation and proceed with a claim as provided for in Article 23.

Section 14.04. Discretionary Time Extensions for Best Interest of District.
The District reserves the right to extend the time for completion of the Work if the Board of Education determines that such extension is in the best interest of the District. In the event that a discretionary extension is granted at the request of the Entity, the District shall have the right to charge to the Entity all or any part, as the Board of Education may deem proper, of the actual cost of project management, engineering, inspection, supervision, incidental and other overhead expenses that accrue during the period of the extension, and to

deduct all or any portion of that amount from the Final Lease Payment.

In the event a discretionary time extension is ordered over the objection of the Entity, and the decision rests solely with the Board of Education and is not legally compelled for any cause, the Entity shall be entitled to a Change Order adjusting the price paid to reflect the actual costs incurred by the Entity as a direct result of the delay, upon its written application therefore, accompanied with such verification of costs as the District's Representative requires. The decision of the Board of Education on any discretionary time extension and the costs thereof shall be final and binding on the District and the Entity.

Section 14.05. Liquidated Damages.
If the Work is not completed by the Entity in the time specified in the Notice to Proceed, or within any period of extension authorized pursuant to this Article, the Entity acknowledges and admits that the District will suffer damage, and that it is impracticable and infeasible to fix the amount of actual damages. Therefore, it is agreed by and between the Entity and the District that the Entity shall pay to the District as fixed and Liquidated Damages, and not as a penalty, the sum specified in the Facilities Lease, and that both the Entity and the Entity's surety shall be liable for the total amount thereof, and that District may deduct Liquidated Damages from any monies due or that may become due to the Entity.

Pursuant to Government Code Section 4215, the Entity shall not pay fixed and Liquidated Damages for delay in completing the Project caused by the failure of the District or the owner of utility facilities located on the Project Site to provide for removal or relocation of such facilities.

Section 14.06. Extension of Time Not a Waiver.
Any extension of time granted the Entity pursuant to this Article shall not constitute a waiver by the District of, nor a release of the Entity from the Entity's obligation to perform its Work in the time specified by the Facilities Lease, as modified by the particular extension in question.

The District's decision to grant a time extension due to one circumstance set forth in one request, shall not be construed as a grant of an extension for any other circumstance or the same circumstance occurring at some other time, and shall not be viewed by the Entity as a precedent for any other request for extension.

Section 14.07. Effect of Stop Work Notice.
If the District issues a Stop Work Notice pursuant to Article 9, the days on which the suspension is in effect shall be included in determining the required completion date, and shall not otherwise modify or extend the time within which the Entity is to perform. In such event, the Entity shall not be entitled to any damages or compensation on account of such suspension or delay, unless the Entity can establish that Stop Work Notice was not warranted.

ARTICLE 15. CHANGES TO THE WORK

Section 15.01. No Changes Without Consent.

Subject to the Entity's right to access the Contingencies and Allowances, Entity will complete the Project for the compensation stated in the Facilities Lease except as provided below. Entity agrees, for itself and on behalf of its Subcontractors and Suppliers, that no increase in the Facilities Lease will be made for work that Entity or its Subcontractors and Suppliers might otherwise claim as a Change Order or extra work unless Entity establishes that the additional cost is the result of one of the following: (a) a material change in the scope of work directed or authorized by Owner; (b) a change required by regulatory authorities (including inspections) that was not reasonably ascertainable from the Contract Documents and not reasonably inferable from Entity's or Subcontractor's knowledge of local practices or circumstances; (c) regulatory fees not included in the Total Base Rent; (d) Differing Site Conditions; (e) whenever costs are more than or less than Allowances and District's Contingency, the compensation shall be adjusted accordingly by Change Order, the amount of the Change Order shall reflect the difference between actual costs and the Allowances and District's Contingency; (f) design errors beyond those reasonably observable in the Plans and Specifications by an experienced construction professional; or (g) wrongful acts of District or a separate contractor employed by District, or by damage to the Work caused by fire or other unavoidable casualties not the fault of the Entity or Subcontractors, Suppliers, or delay authorized by District pending mediation or dispute resolution. Entity further acknowledges that its contractual obligation to indemnify District extends to claims asserted by Subcontractors or Suppliers seeking compensation for alleged Change Orders or extra work for which District is not liable to Entity as a result of these provisions. Subject to the provisions in Article 4 of the Facilities Lease, nothing in this section shall foreclose Entity from access to the Construction Contingency for properly incurred Costs of the Work that are attributable to causes for which a Change Order is prohibited by this section.

No extra work shall be performed, and no change shall be made, except pursuant to a written Change Order or Proposed Change Order, signed by the District, or by a Directive (signed by either the District or the District's Representative) stating that the extra work or change is authorized, and no claim for any addition to the Total Base Rent or Contract Time shall be valid unless so authorized; provided, however, that nothing in this Article shall excuse the Entity from proceeding with the prosecution of the work so changed. The Entity shall furnish an itemized breakdown of the quantities and prices used in computing the value of any change, including permitted uses of Contingencies and Allowances requested by the Entity, or that may have been ordered by the District, including all items listed in Section 15.06 and 15.07, below.

Change Orders shall specify the cost adjustments associated therewith, and in no case shall the District pay or become liable to pay any sums different than those specified or those established under Section 15.06 and 15.07.

Substitutions may be considered Construction Change Directives, if DSA approval is required.

Section 15.02. Change Orders.

The District may require changes in, additions to, or deductions from the Work to be performed or the materials to be furnished pursuant to the Construction Documents. Changes may be made pursuant to a written Change Order (signed by the District), which shall state the agreement of the District, the Entity, and the Architect, all of the following:

A. The scope of the change in the Work;

B. The amount of the adjustment in the Total Base Rent, if any; and

C. The extent of the adjustment in the Contract Time, if any.

The District may delete from the Work any item of work. The Entity will be paid for all work done toward the completion of the item prior to such deletion, as provided herein, but in no event will the amount paid exceed the Schedule of Values amount less the value of the deleted work. The Entity shall make no claim, nor receive any compensation for profits, for loss of profit, for damages, or for any extra payment whatever because of any deleted items of work.

The District may also issue unilateral Change Orders based upon a previously issued Directive. Unilateral Change Orders shall be approved by the District, the Architect and the District Representative, but need not be signed by the Entity.

All adjustments to the Total Base Rent or the Contract Time must be approved by the District Board of Education.

Signature by the Entity on the Change Order constitutes its agreement with and acceptance of the adjustments in the Total Base Rent and Contract Time, if any, set forth in the Change Order as full and complete satisfaction of any direct or indirect additional cost and/or time incurred by the Entity in connection with performance of the change work.

Section 15.03. Not Used.

Section 15.04. Change Orders Regarding Time for Completion.
Any time extension authorized by the District pursuant to Article 14 hereof shall be set forth in a Change Order signed by the District.

Section 15.05. Construction Change Directive/Directive.
Changes also may be made pursuant to a Directive, which shall direct a change in the Work and state a proposed basis for adjustment, if any, in the Total Base Rent or Contract Time, or both. A Directive shall be used in the absence of total agreement on the terms of a Change Order, or when time does not permit processing of a Change Order prior to implementation of the change. Directives shall be approved by the District and the Architect, but need not be signed by the Entity. Only Construction Change Documents or CCD's that affect Structural Safety, Fire Life Safety or Access Compliance require submittal to DSA under the cover of the DSA-140 form. See DSA IR A-6.

Upon receipt of a Directive, the Entity shall promptly proceed with the change in the Work involved. It is the intent of the District that all Directives will be converted to a Change Order.

When a Directive is used because time does not permit processing of a Change Order prior to implementation of the change, signature by the Entity on the Directive constitutes its agreement with and acceptance of the adjustments in the Total Base Rent and Contract Time, if any, set forth in the Directive as full and complete satisfaction of any direct or indirect additional cost and/or time incurred by the Entity in connection with performance of the changed work.

If the Entity disagrees with the method for adjustment in the Total Base Rent, the adjustment shall be determined by the District Representative on the basis of any of the methods described in Section 15.06A, Paragraphs 2, 3, or 4.

Section 15.06. Pricing of Changes.

A. The following pricing methods shall apply to (1) permitted uses of any Contingency or Allowance or (2) any change order or Directive that provides for an adjustment to the Total Base Rent:

1. Mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation;

2. Unit prices as mutually agreed upon;

3. The District Representative's estimate of the value of the change; or

4. A "cost plus" adjustment subject to the limitations in Section 15.08.

Section 15.07. Allowable Costs.

A. Allowable costs for any Change Order or permitted use of contingency or allowance shall be limited to the following:

1. Costs of labor, including social security, Medicare and unemployment insurance, fringe benefits required pursuant to Article 7, and workers' compensation insurance;

2. Costs of first line supervision labor, including labor burden as described in Paragraph 1. "First Line Supervision" shall mean a working foreman or lead craft worker other than the project superintendent;

3. Actual cost of the project superintendent associated with any period of compensable delay caused by issuance of the Change Order. In the absence of a compensable delay, all of the project superintendent's time is considered to have been paid for as part of the Overhead;

4. Actual costs of materials, including sales tax and delivery;

5. Rental costs of machinery and equipment, exclusive of small tools, whether rented from the Entity or others;

6. Overhead and Profit as specified below. "Overhead" shall include the following:

   Preparation of all paperwork related to changes in the Work, including field review, estimating and cost breakdown; coordination and supervision, both office and field, including the project superintendent; vehicles including gas and maintenance; small tools, incidentals and consumables; engineering, detailing, and revisions to shop drawings and as-built drawings; general office and administrative expense; extended and unabsorbed home office overhead; warranty; costs of bonds, liability insurance, builder's risk insurance, all taxes; and all other necessary expenses not specifically included in Paragraph A above.

B. For changes above the Total Base Rent, the following markups shall apply: (1) the Entity's combined

Overhead and Profit for Work performed by its own forces shall be fifteen percent (15 %) of the costs specified in Section 15.07A (1)-(5); (2) if the changed Work is performed by a Subcontractor, the Subcontractor shall be entitled to an allowance of fifteen percent (15%) of its labor, material and rental costs for Overhead and Profit, and the Entity shall be allowed to mark-up the Subcontractor's price ten percent (10%) for its Overhead and Profit. Cumulative total markup for all tiers of contractors and subcontractors shall not exceed twenty-five percent (25%).

C. For permitted use of the Contingencies or Allowances included in the TBR, the following markups shall apply: (1) the Entity's combined Overhead and Profit for Work performed by its own forces shall be its actual fee as stated in its Proposal in response to the RFP plus its actual percentage as stated in its Proposal in response to RFP of costs for bonds and insurance of the costs specified in Section 15.07 (1) – (5) unless previously paid; (2) If the changed Work is performed by a Subcontractor, the Subcontractor shall be entitled to an allowance of up to fifteen percent (15%) as determined by the Entity, for its labor, material and rental costs for Overhead and Profit and the Entity shall be allowed to markup the Subcontractor's price its actual fee as noted in the RFP plus its actual percentage as noted in the RFP of costs for bonds and insurance for its Overhead and Profit. Cumulative total markup for all tiers of contractors and subcontractors shall not exceed twenty two percent (22%).

D. If the net value of a change results in a credit from the Entity or subcontractor, the credit shall be the actual net cost. When both additions and credits covering related work or substitutions are involved in any one change, the allowance for Overhead and Profit shall be figured on the basis of the net increase or decrease, if any, with respect to the change.

Section 15.08. Time and Materials Adjustment.

A. Record Keeping. In the event that the pricing method selected is the "time and materials" method described in Section 15.06A, Paragraph 4, the pricing shall be calculated using the formula and costs set forth in Section 15.07, except that time and material (T&M) labor rates shall be pre-approved by the District Representative for T&M work. The Entity shall keep and present daily, in such form as the District Representative may prescribe, an itemized accounting together with appropriate invoices and other supporting data of the labor, materials, and equipment used during that day. All labor shall be recorded on separate time sheets clearly identified with the Directive number and scope of extra work involved. These time sheets shall be signed daily by the District's Representative. No costs will be allowed for time not recorded and signed the same day the work takes place. The Entity and the District's Representative shall discuss and attempt to resolve any disputes concerning the Entity's daily records at the time the report is submitted.

B. Reconciliation. The Entity shall on a monthly basis accompanying its Lease Payment submissions submit a reconciliation for all work performed under a cost plus Directive during the period of the Lease Payment. A final reconciliation shall be submitted within thirty (30) days after the work of the Directive is completed. The reconciliation shall recap all costs and appropriate markups for the period. No costs will be allowed for work not included in a reconciliation within the time periods specified.

Section 15.09. Effect on Sureties.

All changes authorized by the Construction Documents may be made without notice to or consent of the sureties on the contract bonds, and shall not reduce the sureties' liability on the bonds.

The District reserves the right to require additional payment or performance bonds to secure a Change Order.

Section 15.10. Differing Site Conditions.

If the Construction Documents require the digging of trenches or other excavations that extend deeper than four feet below the existing surface, the following provision shall apply to those trenches or excavations:

A. In the event that any of the following described conditions is suspected to exist in the trench or excavation, the Entity shall promptly, and before the condition is disturbed, notify the District's Representative, in writing, of any:
   1. Material that the Entity believes may be material that is hazardous waste, as defined in Section 25117 of the Health and Safety Code, that is required to be removed to a Class I, Class II, or Class III disposal site in accordance with provisions of existing law.

   2. Subsurface or latent physical conditions at the Site differing materially from those indicated in the Construction Documents.

   3. Unknown physical conditions at the Site of any unusual nature, differing materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for in the Construction Documents.

B. Upon receipt of notice from the Entity, the District's Representative, the District and the Architect shall promptly investigate the conditions, and if it is determined that the conditions do materially so differ or do involve hazardous waste, and cause a decrease or increase in the Entity's cost of, or the time required for, performance of any part of the work shall issue a Change Order or Directive under the procedures described in the Construction Documents.

C. In the event that a dispute arises between the District and the Entity as to whether the conditions materially differ, or involve hazardous waste, or cause a decrease or increase in the Entity's cost of, or time required for, performance of any part of the Work, the Entity shall not be excused from any scheduled completion date provided for by the Construction Documents, but shall proceed with all Work to be performed under the Construction Documents. The Entity shall retain any and all rights provided either by the Construction Documents or by law, which pertain to the resolution of disputes and protests between the contracting parties.

D. No cost or time adjustment, which results in a benefit to the Entity, will be allowed unless the Entity has provided the required written notice under Paragraph A of this Section 15.10.

E. No cost or time adjustment will be allowed under the provisions specified in this Section for any effects caused on unchanged work.

As between the Entity and the District, the District is responsible for the timely removal, relocation, or protection of existing main or trunkline utility facilities located on the Site if such utilities are not identified in the Plans and Specifications. If the Entity, while performing its work, discovers utility facilities not identified in the Plans or Specifications, it shall immediately notify the District and the associated utility in writing. Thereafter, and provided it has given such notice, the Entity shall be entitled to an adjustment of the Total Base Rent and an extension of the Contract Time, in accordance with Articles 14 and 15 of these General Construction Terms and Conditions, for the costs of locating, repairing damage not due to the failure of the Entity to exercise reasonable care, and removing or relocating such utility facilities not indicated in the Plans

and Specifications with reasonable accuracy, and for equipment on the project necessarily idled during such work when such costs and time are caused by the failure of the District or the owner of the utility to provide for removal or relocation of such utility facilities. Notwithstanding anything to the contrary herein, the District is not required to indicate the presence of existing service laterals or appurtenances whenever the presence of such utilities on the Site can be inferred from the presence of other visible facilities, such as buildings, meter and junction boxes, on or adjacent to the Site. Nothing herein shall preclude the District from pursuing any appropriate remedy against the utility for delays which are the responsibility of the utility.

ARTICLE 16. NOT USED

ARTICLE 17. REJECTION AND REPLACEMENT OF WORK AND MATERIALS

Section 17.01. Rejection of Materials and Workmanship.
The District shall have the right to reject materials and workmanship, which are determined, by the District's Representative, the Architect, or the Project Inspector to be defective or fail to comply with the Construction Documents. Rejected workmanship shall be corrected to the satisfaction of the District and/or Architect, and rejected materials shall be removed from the premises and replaced, all without added cost or time to the District.

If the Entity does not correct such rejected work and/or materials within a reasonable time, fixed by the District's Representative or the Architect in a written notice to the Entity, the District may correct the same and charge the expense to the Entity, and deduct such expense from the next Lease Payment otherwise payable to the Entity.

If the District determines that it is in its best interest not to correct defective workmanship and/or materials, or work not done in accordance with the Construction Documents, the Entity agrees that an equitable deduction from the Total Base Rent shall be made therefore.

Section 17.02. Correction of Work.
The Entity shall promptly correct all work rejected by the District's Representative, Project Inspector or the Architect as defective or as failing to conform to the Construction Documents, whether observed before or after final completion and whether or not fabricated, installed or completed. The Entity shall bear all costs of correcting such rejected work including compensation for the Architect's, Project Inspector's and the District's Representative's additional services.

If within two (2) years after the earlier of early occupancy of the applicable portion of the Project or the Date of Completion and acceptance of the Work or within such longer period of time as may be prescribed by law or by the terms of any applicable special warranty required by the Construction Documents, any of the Work is found to be defective or not in accordance with the Construction Documents, the Entity shall correct any or all such work, together with any other work which may be displaced in so doing, without expense to the District, promptly after receipt of a written notice from the District unless the District has previously given the Entity a written acceptance of such condition. The District shall issue a correction notice promptly after discovering the condition. The Entity shall notify the District upon completion of repairs. This obligation shall survive termination of the Facilities Lease with respect to work in place prior to termination.

The Entity shall bear the cost of making good work destroyed or damaged by such correction or removal.

Nothing contained in this Section shall be construed to establish a period of limitation with respect to any other obligations which the Entity might have under the Construction Documents or by operation of law. The establishment of the time period of two (2) years after the Date of Completion, or such longer period of time as may be prescribed by law or by the terms of any warranty required by the Construction Documents, relates only to the specific obligation of the Entity to correct the Work and has no relationship to the time within which an action may be commenced to establish the Entity's liability with respect to its obligations other than specifically to correct the work.

ARTICLE 18. NOT USED

ARTICLE 19. PRESERVATION AND CLEANING

Section 19.01. Periodic Cleaning of Project.

The Entity shall properly clean its Work and the Site, and maintain its Work area in an orderly manner. The Entity shall remove all dirt, debris, waste, rubbish, and implements of service from the Project, the adjacent sidewalks and streets, and the working area daily or as directed by the District's Representative. Debris, waste, or unused construction materials shall not be left under, in, or about the Project, nor allowed to accumulate on the Site or in the working area.

The Entity, at its sole cost, shall contract with a disposal company to remove all rubbish, and shall have the refuse containers emptied at frequent enough intervals so that waste does not overflow the containers.

If the Entity fails to clean up during progress or upon completion of the Work, the District may perform the clean up, at the Entity's expense and reduce the amount of the Total Base Rent, including any Lease Payment(s) due or to become due, accordingly.

Section 19.02. Final Cleaning of Project.

Prior to final acceptance, the Entity shall thoroughly clean the interior and exterior of the buildings, and the Site and adjacent areas, of all material related to its performance of the Work, including spots, stains, paint spots, trade markings and labels, and accumulated dust and dirt. In the event the Entity fails to do so, the District may cause this work to be done at the Entity's expense and reduce the amount of the Total Base Rent, including any Lease Payment(s) due or to become due, accordingly.

The following list is not inclusive but to act as a guideline to include:

A. Removal of all paint spots, stains, rubbish, debris, tools and equipment from all areas and broom clean. Steam clean all carpets and mop floors.

B. Cleaning interior and exterior of the buildings including all windows in any area affected by the Work.

C. Brush off, broom sweep, dust and clean ledges, stairs, doors, hardware, chalk board trays and any adjoining rooms or areas that were affected by the Work.

D. The Entity shall clear grounds and exterior paved areas and walks of all construction debris, dirt and dust and shall repair any Site areas damaged during the course of construction.

Prior to final completion or Owner occupancy, the Entity shall conduct an inspection of sight-exposed surfaces, and all work areas, to verify that the entire work is clean. In the event the Entity fails to do so, the District may cause this work to be done at the Entity's expense and reduce the amount of the Total Base Rent, including any Lease Payment(s) due or to become due, accordingly.

See also Section 01 74 23 Final Cleaning.

ARTICLE 20. COMPLETION, INSPECTION, AND OCCUPANCY BY DISTRICT

Section 20.01. Inspection.
When the Entity believes that its construction Work is complete, it shall request in writing a final inspection. Before calling for final inspection, the Entity shall determine that the following work has been performed:

A. General construction has been completed.

B. Mechanical and electrical work complete, tested, commissioned and fully functional, and fixtures and portables, in place, connected and ready for tryout and test.

C. Electrical circuits scheduled in panels and disconnect switches labeled.

D. Painting and special finishes complete.

E. Doors complete with hardware, cleaned of protective film and relieved of sticking or binding and in working order.

F. Tops and bottoms of doors sealed, if needed.

G. Floors waxed and polished to the extent specified.

H. Broken glass replaced and glass cleaned.

I. Grounds cleared of Entity's equipment, raked clean of debris, and trash removed from the Site.

J. Work cleaned, free of stains, scratches, and other foreign matter, replacement of damaged and broken material.

K. Finish and decorative work shall have marks, dirt and superfluous labels removed.

Final inspection will be made upon written notification from the Entity to District that the Work has been completed. The Entity shall receive a list (punch list) of items found unacceptable and shall promptly correct them. Upon written notification from the Entity that all items have been corrected, re-inspection for final acceptance of the Project will be made. Failure of the Entity to complete punch list items will necessitate further re-inspection. Costs of re-inspection will be deducted from any amounts due to the Entity.

Section 20.02. Use of Work Prior to Acceptance.
Whenever, in the opinion of the District, the Work or any part thereof, is in a condition suitable for use, and the best interests of the District require such use, the District may take possession of, connect to, and open for public or District use that portion of the Work. The District shall provide Entity not less than ten (10) days' notice of such possession or use.

Section 20.03. Repairs or Renewal in the Work.
Prior to the Date of Completion, the Entity shall make all repairs or renewals in the portion of the Work occupied pursuant to Section 20.02 made necessary due to defective material or workmanship, or the operations of the Entity, ordinary wear and tear accepted.

Section 20.04. Effect of Occupancy.
The District's occupancy as contemplated in this Article shall not constitute acceptance by the District of the Work or any part thereof. Such use shall neither relieve the Entity of any of its responsibilities under the Construction Documents, nor act as a waiver by the District of any of the terms or conditions of the Construction Documents. Except as provided in Article 10 of Exhibit D, any damage done by the District is the responsibility of the District, and warranties applicable to the portion of the work occupied will commence upon that occupancy.

Section 20.05. Coordination with Other Activities.
The Entity shall conduct its operations so as not to interfere unreasonably with the District's use of the occupied portions of the Site. The Entity shall submit periodic schedules to the District's Representative proposing the times, areas, and types of work to be done within such areas.

If the Work produces conditions rendering the occupied portions of building, the Site, or other areas uninhabitable, either because of noise, dust, vibration, smoke, fumes, or for any other cause whatsoever, the District's Representative may suspend the Work or request the Entity to modify the Construction Schedule, and the Entity shall comply.

If the District takes occupancy pursuant to Section 20.02 it shall not unreasonably interfere with the Entity's ability to complete its work in a timely and efficient manner.

Except as provided by Change Order, the Entity shall not be entitled to a time extension or increase in the Total Base Rent by virtue of conflicts between the Entity's work and the District's occupancy.

ARTICLE 21. PROJECT CLOSEOUT

Section 21.01. Entity's Certificate of Completion.
When the Entity determines that the Project is complete and all items on the punch list have been satisfied, the Entity shall submit a Certificate of Completion to the District's Representative.

Section 21.02. Additional Submissions.
Simultaneously with the Entity's Certificate of Completion, the Entity shall submit the following items to the District's Representative:

A. As-built drawing information pursuant to Section 5.06.

B. One (1) original set of documentation and one (1) PDF file(s) in electronic format on a separate flash drive completely covering the operation and maintenance of the mechanical and electrical installation, elevators, kitchen equipment, and all other equipment required by the technical specifications to be furnished with such manuals. The documentation shall include charts, diagrams, performance curves, catalog information, lubrication manuals, and details pertaining to the functioning of various items of equipment. The documentation shall be divided logically into "systems" on the basis of operation, without respect to trades, subcontractors or arbitrary specifications sections. The relationship of the "systems" shall be clearly and concisely detailed.

C. Hazardous material documentation if required.

D. DSA Form 6C - Final Verified Report.

E. All other required DSA, California Department of Education, State Allocation Board and Office of Public School Construction forms.

F. Any extra stock material and equipment and manufacturer warranties/guarantees as required by the contract documents.

G. Other items as required in the Construction Administrative Procedures Manual.

Section 21.03. Final Lease Payment.
The Final Lease Payment shall be made at the expiration of the Lease Term in accordance with the Lease Payment Schedule, but in no event earlier than the expiration of the post-construction lease period, as that period may be extended, specified in Section 4.2 of the Facilities Lease, which post-construction lease period shall not commence until a) receipt by the District of the submittals required by this Article and the Entity's Certification of Completion, b) verification that all of the Work is complete, including all punch list items, in accordance with the Facilities Lease and the Construction Documents, and c) acceptance by the District of the Project.

ARTICLE 22. GUARANTEES

Section 22.01. Guarantee Required.

Neither the final Lease Payment nor any provision in the Construction Documents shall relieve the Entity of responsibility for faulty materials or workmanship incorporated in the Project. The Entity warrants that all Work done and facilities constructed pursuant to these General Construction Terms and Conditions and the Construction Documents will be free of faulty materials or workmanship and hereby agrees, immediately upon receiving notification from District, to remedy, repair or replace, without cost to District, all defects which may appear as a result of faulty materials or workmanship in the Project, at any time, or from time to time, during a period beginning with commencement of the Project and ending two (2) years after the Notice of Completion date for the Project or early occupancy by the District of the portion of the Project on which the warranty claim is made, whichever is earlier. The foregoing warranty of the Entity applies to the remedy, repair or replacement of defects which may appear as a result of faulty designs prepared by the Entity and/or any party retained by, through or under the Entity in connection with the Project, but the foregoing warranty of Entity does not guarantee against damage to the Project sustained by lack of normal maintenance or as a result of changes or additions to the Project made or done by parties not directly responsible to the Entity, except where such changes or additions to the Project are made in accordance with the Entity's directions. No guarantee furnished by a party other than the Entity with respect to equipment manufactured or supplied by such party shall relieve the Entity from the foregoing warranty obligation of the Entity. The warranty period set forth hereinabove shall not apply to latent defects appearing in the Project, and with respect to such defects, the applicable statute of limitations shall apply.

In the event of failure of the Entity to comply with above mentioned conditions within one (1) week after being notified in writing, the District is hereby authorized to proceed to have defects repaired and made good at expense of the Entity who hereby agrees to pay reasonable costs and charges therefore immediately on demand.

If, in the opinion of the District, defective work creates a dangerous condition or requires immediate correction or attention to prevent further loss to the District, the District will attempt to give the notice required by this Article. If the Entity cannot be contacted or does not comply with the District's requirements for correction within a reasonable time as determined by the District, the District may, notwithstanding the provisions of this Article, proceed to make such correction and the reasonable cost shall be charged against the Entity. Such action by the District will not relieve the Entity of the guarantee provided in this Article or elsewhere in the Facilities Lease and/or Construction Documents.

This Article does not in any way limit the guarantee on any items for which a longer guarantee is specified or on any items for which a manufacturer gives a guarantee for a longer period. The Entity shall furnish District all appropriate guarantee and warranty certificates upon completion of the Project.

The guarantee period for corrected defective work shall continue for a duration equivalent to the original guarantee period.

The guarantee is in addition to, and not in lieu of, the District's rights under the Facilities Lease, these General Construction Terms and Conditions and/or the Construction Documents.

ARTICLE 23. CLAIMS AND DISPUTES

Claims shall be subject to the requirements of Public Contract Code sections 20104 *et seq.* and 9204. A summary of those provisions is set forth below in Sections 23.02 and 23.03. A waiver of the rights granted by the referenced statutes is void and contrary to public policy, provided, however, that (1) upon receipt of a Claim, the parties may mutually agree to waive, in writing, mediation and proceed directly to the commencement of a civil action or binding arbitration, as applicable; and (2) the District may prescribe reasonable change order, claim, and dispute resolution procedures and requirements in addition to the statutory requirements, so long as the contractual provisions do not conflict with or otherwise impair the statutory timeframes and procedures. To the extent that the summary below is inconsistent with any requirement of those statutes, the statutes shall control. The terms below are intended to be consistent with the governing statutes, and any modifications shall be understood as lawful modifications or additions to the statutory requirements if at all possible.

Section 23.01. Notice of Potential Claim.

The Entity shall promptly provide a written Notice of Potential Claim to the District upon discovery of concealed or unknown conditions or discovery of facts regarding any disagreement, protest, direction, situation, event, or occurrence that may result in a claim, including but not limited to changes in work and delays. The written Notice of Potential Claim shall set forth the reasons for which the Entity believes adjustment to the TBR or time for construction will or may be due, the nature of the costs and/or time involved, and, insofar as possible, the amount of the potential claim. The Notice shall be submitted as soon as practical, but no more than five (5) working days after the discovery of any facts or event that does or may give rise to the claim, unless a different period for notice is specified in this Facilities Lease. **Failure to timely submit the Notice of Potential Claim constitutes acknowledgement that the condition(s), fact(s), occurrence(s) or event(s) did not cause any increase in cost or time to perform and waives any Claim that the Entity otherwise may have had the right to submit based on such condition(s), fact(s), occurrence(s) or event(s).**

Section 23.02. Definitions.

"Claim" means a separate demand by Entity sent by registered mail or certified mail with return receipt requested, for one or more of the following:

(A) a time extension for construction of the Project, including, without limitation, for relief from damages or penalties for delay assessed by the District under the Facilities Lease.

(B) payment by the District of money or damages arising from construction work done by, or on behalf of, Entity pursuant to the Facilities Lease and payment for which is not otherwise expressly provided or to which the claimant is not otherwise entitled.

(C) payment of an amount related to construction of the Project that the District disputes.

"Mediation" means any nonbinding process, including, but not limited to, neutral evaluation or a dispute review board, in which an independent third party or board assists the parties in dispute resolution through negotiation or by issuance of an evaluation.

"Subcontractor" means any type of contractor within the meaning of Chapter 9 (commencing with Section 7000) of Division 3 of the Business and Professions Code who either is in direct contract with the Entity or is

a lower tier subcontractor.

Section 23.03. Claims Procedure.

All Claims under the Facilities Lease shall be resolved using the following procedure.

23.03.01 The Claim shall be in writing and include the documents necessary to substantiate the Claim. The evaluation of the Entity's Claim will be based on the District's records and the Claim documentation submitted by the Entity, which shall include but not be limited to the following: an explanation of the background; a chronology (including dates of all key events and date(s) that the Notice of Potential Claim was given); an explanation of the Entity's position; supporting documentation of merit; analysis of delay for any claimed additional time, including CPM schedules; and a calculation of damages or additional amounts claimed, if any. Supporting documentation of merit may include, but not be limited to, Construction Documents, correspondence, conference or meeting notes, shop drawing logs, survey books, inspection reports, delivery schedules, test reports, daily reports, subcontracts, CPM schedules, photos, RFIs, Directives, and other such records. Supporting documentation of damages may include, but not be limited to, certified payroll reports; purchase orders; invoices; project as-planned and as-built costs; Subcontractor payment releases; quantity reports; other related records; general ledger and any other accounting materials.

Claims must be submitted within thirty (30) days of when the Entity becomes aware of the facts giving rise to the Claim, except that the Claim must be submitted no later than thirty (30) days from the date that a Notice of Completion is filed. Any Claim shall be certified under penalty of perjury and in compliance with the California False Claims Act, as set forth in Section 23.04 below. Failure to include these required certifications will constitute grounds for immediate rejection of the Claim and shall be deemed a waiver and absolute bar of the Claim, including any right to pursue the Claim further.

23.03.02 If a Subcontractor, including a lower tier Subcontractor, lacks legal standing to assert a Claim against the District because privity of contract does not exist, then the Entity may present a Claim on behalf of such a Subcontractor. A first-tier Subcontractor may request in writing, either on its own behalf or on behalf of a lower tier Subcontractor, that the Entity present a Claim on behalf of the Subcontractor for work that was performed by the Subcontractor. The Subcontractor requesting that the claim be presented shall furnish reasonable documentation to support the Claim. Within forty-five (45) days of receipt of this written request, the Entity shall notify the Subcontractor in writing as to whether the Entity presented the Claim and, if the Entity did not present the Claim, provide the Subcontractor with a statement of the reasons for not having done so.

23.03.03 Upon receipt of a Claim, the District shall conduct a reasonable review of the Claim. Within thirty (30) days of receipt of the Claim, the District may request, in writing, any additional documentation supporting the Claim or relating to defenses to the Claim that the District may have against the Entity. Where additional information is requested by the District, the time in which the District must respond to a Claim shall be tolled until all requested information is provided. If additional information is

thereafter required, then it shall be requested and provided upon mutual agreement of the District and the Entity.

23.03.04 Within forty-five (45) days of receipt of the Claim, as that time may be tolled as provided in Section 23.03.03 above, the District shall provide the Entity with a written statement identifying what portion of the Claim is disputed and what portion is undisputed. Upon receipt of a Claim, the District and the Entity may, by mutual agreement, extend the time period for a response. Failure by the District to respond to a Claim within the time periods described herein shall result in the Claim being deemed rejected in its entirety. A Claim that is denied by failure of the District to respond shall not constitute an adverse finding with regard to the merits of the Claim or the responsibility or qualifications of the Entity.

23.03.05 Any payment due on an undisputed portion of the Claim shall be processed and made within sixty (60) days after the District issues its written statement. The District shall not fail to pay money as to any portion of a claim which is undisputed except as otherwise provided in the Facilities Lease.

23.03.06 If the Entity disputes the District's written response, or the District fails to respond within the time prescribed, the Entity may so notify the District, in writing, either within fifteen (15) days of receipt of the District's response or within fifteen (15) days of the District's failure to respond within the time prescribed, respectively, and demand an informal conference to meet and confer for settlement of the issues in dispute. Upon receipt of a demand, sent by registered mail or certified mail, return receipt requested, the District shall schedule a meet and confer conference within thirty (30) days for settlement of the dispute.

23.03.07 Within ten (10) business days following the conclusion of the meet and confer conference, if the Claim or any portion of the Claim remains in dispute, then the District shall provide the Entity a written statement identifying the portion of the Claim that remains in dispute and the portion that is undisputed. Failure by the District to provide the written statement within the time periods described herein shall result in the remaining Claim issues being deemed rejected in their entirety. Denial by failure of the District to respond shall not constitute an adverse finding with regard to the merits of the remaining Claim issues or the responsibility or qualifications of the Entity. Any payment due on an undisputed portion of the Claim shall be processed and made within sixty (60) days after the District issues its written statement.

23.03.08 Any remaining disputed portion of the Claim following the meet and confer conference shall be submitted to nonbinding mediation, with the District and the Entity sharing the associated costs equally. The District and Entity shall mutually agree to a mediator within ten (10) business days after the disputed portion of the Claim has been identified in writing. If the parties cannot agree upon a mediator, each party shall select a mediator and those mediators shall select a qualified neutral third party to mediate with regard to the disputed portion of the Claim. Each party shall bear the fees and costs charged by its respective mediator in connection with the

selection of the neutral mediator. Unless otherwise agreed to by the District and the Entity in writing, the mediation conducted pursuant to this Section shall excuse any further obligation under Public Contract Code Section 20104.4 to mediate after litigation has been commenced. This Section does not preclude arbitration if mediation under this Section does not resolve the parties' dispute.

23.03.09 If mediation is unsuccessful, then the Entity may file a claim as provided in Chapter 1 (commencing with Section 900) and Chapter 2 (commencing with Section 910) of Part 3 of Division 3.6 of Title 1 of the Government Code with respect to the parts of the Claim remaining in dispute. For purposes of those provisions, the running of the period of time within which a claim must be filed shall be tolled from the time the Entity submits its written Claim pursuant to Section 23.03.01 until the time that mediation of disputed portions of that Claim is completed. This Section does not apply to tort claims, and nothing in this Section is intended nor shall be construed to change the time periods for filing tort claims or actions specified by Chapter 1 (commencing with Section 900) and Chapter 2 (commencing with Section 910) of Part 3 of Division 3.6 of Title 1 of the Government Code.

23.03.10 Amounts not paid in a timely manner as required by this Section shall bear interest at seven percent (7%) per year.

23.03.11 Claims of $375,000 or less are subject to the following procedures for civil actions filed to resolve the claims:

(a) The case shall be submitted to judicial arbitration pursuant to Chapter 2.5 (commencing with Section 1141.10) of Title 3 of Part 3 of the Code of Civil Procedure, notwithstanding Section 1141.11 of that code. The Civil Discovery Act (Title 4 (commencing with Section 2016.010) of Part 4 of the Code of Civil Procedure) shall apply to any such proceeding, consistent with the rules pertaining to judicial arbitration.

(b) The parties stipulate that the arbitrator shall be experienced in construction law and shall be paid necessary and reasonable hourly rates of pay not to exceed their customary rate, and such fees and expenses shall be paid equally by the parties, except in the case of arbitration where the arbitrator, for good cause, determines a different division. In no event shall these fees or expenses be paid by state or county funds.

(c) In addition to Chapter 2.5 (commencing with Section 1141.10) of Title 3 of Part 3 of the Code of Civil Procedure, any party who, after receiving an arbitration award, requests a trial *de novo* but does not obtain a more favorable judgment shall, in addition to payment of costs and fees under that chapter, pay the attorneys' fees of the other party arising out of trial *de novo.*

(d) The court may, upon request by any party, order any witnesses to participate in arbitration process.

In any suit filed under Public Contract Code Section 20104.4, the District shall pay interest at the legal rate on any arbitration award or judgment. The interest shall begin to accrue on the date the suit is filed in a court of law.

Section 23.04. Claim Certification.

Entity acknowledges that it has read and is familiar with the provisions of the False Claims Act (California Government Code Sections 12650 *et seq*.). Submission by Entity of any claim (as the term "claim" is defined in False Claims Act) to the District in connection with the Project, whether on its behalf or on behalf of a subcontractor or material supplier, shall constitute a representation by Entity to the District that submission of the claim does not, in any respect, violate the False Claims Act. Any party with an interest in the claim, including Entity and any subcontractor or material supplier, shall certify under penalty of perjury the validity and accuracy of any claim submitted to the District, as provided below. Compliance with this claims certification requirement shall be a condition precedent to any obligation District might otherwise have to review the claim and failure to provide such certification shall constitute a waiver of the claim.

CLAIM CERTIFICATION

Under penalty of perjury, and with specific reference to the California False Claims Act, Government Code sections 12650 *et seq*., I certify that submission of the attached claim is made in good faith; that the supporting data prepared by the undersigned company are accurate and complete to the best of my knowledge and belief; that submission of the claim to the District does not violate the False Claims Act; and that I am duly authorized to certify the claim on behalf of the claimant.

Dated:_____ _____

(Company)

_____

(Signature)

Title:_____

Section 23.05. Continuance of Work.

In the event of a dispute between the parties as to performance of the Work or the interpretation of the Construction Documents, or payment or nonpayment for Work performed or not performed, the parties shall attempt to resolve the dispute. Pending resolution of this dispute, the Entity agrees to continue the Work diligently to completion. If the dispute is not resolved, except as provided otherwise in the Facilities Lease, the Entity agrees it will neither rescind the Facilities Lease, nor stop the progress of the Work on the Project.

ARTICLE 24. ADDITIONAL PROVISIONS

Section 24.01. Conflict of Interest.
No official of the District who is authorized on behalf of the District to negotiate, make, accept, or approve, any architectural, engineering, inspection, Construction, or materials supply contract, or any subcontract in connection with the Construction of the Project, or any land acquisition in connection with the Project, shall become directly or indirectly interested personally in the contract or in any part thereof.

No officer, employee, architect, attorney, consultant, engineer, or inspector of or for the District who is authorized on behalf of the District to exercise any executive, supervisory, or other similar function in connection with the Construction of the Project shall become directly or indirectly interested personally in the contract or any part thereof.

Section 24.02. No Oral Agreements.
No oral agreement or conversation with any officer, agent, or employee of the District, either before, during, or after the execution of the Facilities Lease and/or the Construction Documents shall affect or modify any term or condition contained in the Facilities Lease and/or Construction Documents, nor shall such oral agreement or conversation entitle the Entity to any additional payment or time to perform whatsoever under the terms thereof.

Section 24.03. Anti-Trust Assignment.
By execution of the Construction Documents, or any Subcontract awarded by the Entity, the Entity or any Subcontractor offers and agrees to assign and hereby does assign to the District all rights, title, and interest in and to all causes of action the Entity or Subcontractor may have under Section 4 of the Clayton Act (15 USC section 15) or under the Cartwright Act (Chapter 2 of Part 2 of Division 7 of the Business and Professions Code, commencing with Section 16700), arising from purchases of goods, services, or materials pursuant to the Facilities Lease, Construction Documents or subcontract. This assignment shall be made and shall become effective at the time the District tenders the Final Lease Payment to the Entity, without further acknowledgement by the parties.

Section 24.04. Entity Not Agent, Nor Employee.
Neither the Entity nor any subcontractor, or any officer, agent, or employee of either, is, nor shall they represent themselves to be, an officer, agent, or employee of the District for any purpose whatsoever. No person employed by the Entity, or by any subcontractors, are, nor shall they be construed to be in any manner or for any purpose whatsoever, employees of the District.

Section 24.05. Access to Records.
All accounting records shall be maintained on a generally accepted accounting basis. The District or the District's Authorized Representative shall have access, upon reasonable notice, during normal business hours, to any books, contracts, documents, accounting records, papers, project correspondence, project files, scheduling information and other relevant records of the Entity and all subcontractors directly or indirectly pertinent to the Work (including without limitation preconstruction services, original work, and changed or claimed extra work), to verify and evaluate the accuracy of percentage completion of preconstruction or construction services, cost and pricing data submitted with any permitted use of the Contingencies or Allowances, Change Order prospective or executed, or any claim for which additional compensation has been requested. Such access shall include the right to examine and audit such records, and make excerpts, transcriptions and photocopies at the District's cost. Records shall be maintained for three years following

termination of this Facilities Lease.

DIVISION 1 - GENERAL REQUIREMENTS

The following constitute the General Requirements applicable to the construction of the Project.

All references herein to “Contractor” or “the Contractor” shall be deemed to apply to the Entity.

SECTION 01 31 00 PROJECT MANAGEMENT INTERNET COMMUNICATION REQUIREMENTS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. All Contract Documents, including General Conditions, Supplementary Conditions, and other Division 1 - General Requirements, apply to the work of this section.

B. This section contains general information that applies to all work performed under the Contract, and is made inherently a part of each specification section.

1.02 GENERAL PROJECT MANAGEMENT OBJECTIVES

A. Sacramento City Unified School District (SCUSD) has directed its Entity to use the project's existing Internet/Web-based project management software to track and manage the project.

B. Use of this project management software will not replace or change any contractual responsibilities of the construction team members.

C. Each project team member of the Entity: Superintendent, Project Engineer, Scheduler, and Project Manager, et al., shall have access to the Internet and an Internet e-mail address in order to communicate with various project team members. The Entity shall provide immediately upon receipt of the Notice to Proceed confirmation of these conditions and the names, positions, and e-mail addresses to SCUSD's Representative.

1.03 SOFTWARE AND HARDWARE REQUIREMENTS

A. TBD.

END OF SECTION

Section 01 31 19 - PROJECT MEETINGS & PROCEDURES

PART 1 – GENERAL

1.01 SECTION INCLUDES

A. The District Representative will schedule and administer a preconstruction meeting, regular progress meetings, and specially called meetings throughout progress of the Work, and will:

1. Prepare agenda for meetings.
2. Make physical arrangements for meetings.
3. Preside at meetings.
4. Record the minutes; include significant proceedings and decisions.
5. Reproduce and distribute copies of minutes after each meeting to participants in the meeting and to parties affected by decisions made at meeting.

B. Representatives of the Entity, subcontractors and suppliers attending meetings shall be experienced supervisory staff with written authorization to act on behalf of the entity each represents.

1.02 PRECONSTRUCTION MEETING

A. Timing: Prior to start of construction.

B. Attendance: Architect and consultants as appropriate, District's Representative, Entity, subcontractors as requested, Project Inspector.

C. Purpose: Discuss and familiarize contractors with construction administrative procedures to be used on Project.

1.03 PROGRESS MEETINGS

A. Timing: Frequency, day and time to be mutually determined by the District and the Entity.

B. Attendance: District's Representative, Entity; Architect, consultants, Project inspector and subcontractors when required.

C. Purpose: The purpose of these meetings is to provide a formal and regular forum for the District, District's Representative, Architect/Engineer and the Entity to present questions, problems or issues that need to be addressed. It will also provide an opportunity to review the progress on previous issues and action items along with submittal and schedule review.

1.04 SPECIALLY CALLED MEETINGS

A. The District's Representative may call a special meeting at any time during the course of the Project. Special Project meetings shall include representatives of the Project as requested in order to discuss problems and/or solutions that are common to the Project.

END OF SECTION

Section 01 35 16 - ALTERATION PROJECT PROCEDURES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Products and installation for patching and extending Work.

B. Transition and adjustments.

C. Repair of damaged surfaces, finishes, and cleaning.

D. Salvage materials.

1.02 RELATED SECTIONS

A. Section 0173 29- Cutting and Patching.

B. Section 02 41 00 - Minor Demolition for Remodeling.

1.03 ALTERATIONS, CUTTING AND PROTECTION

A. Assign the work of moving, removal, cutting and patching, to trades qualified to perform the work in manner to cause least damage to each type of work, and provide means of returning surfaces to appearance of new work.

B. Perform cutting and removal work to remove minimum necessary, and in a manner to avoid damage to adjacent work.

1. Cut finish surfaces such as concrete, masonry, drywall, plaster or metals, by methods to terminate surfaces in a straight line at a natural point of division, or where indicated.

C. Protect existing finishes, equipment, and adjacent work, which are scheduled to remain, from damage.

1. Protect existing and new' work from extremes of temperature.
   a. Maintain existing Interior work above 60 degrees F
   b. Provide heat and humidity control as needed to prevent damage to remaining existing work and to new work.

D. Provide temporary enclosures to separate work areas from existing building and from areas occupied by the District.

PART 2 PRODUCTS

2.01 PRODUCTS FOR PATCHING AND EXTENDING WORK

A. New Materials. As specified in product Sections; match new materials to existing work.

1. Provide same products or types of construction as that in existing structure, as needed to patch, extend or match existing work.

2. Presence of a product, finish, or type of construction, requires that patching, extending or matching shall be performed consistent to, or better than, existing standards of quality.

B. Type and Quality of Existing Products: Determine by inspection and testing existing products where necessary, referring to existing Work as a standard.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that demolition is complete, and areas are ready for installation of new Work.

B. Beginning of restoration Work means acceptance of existing conditions.

3.02 PREPARATION

A. Cut, move, or remove items as necessary for access to alterations and/or renovation Work. Replace and restore at completion. The full extent of cutting and patching is not shown or specified. The Entity shall perform all cutting and patching as required.

B. Remove unsuitable material not marked for salvage, such as rotted wood, corroded metals, and deteriorated masonry and concrete. Replace materials as specified for finished Work.

C. Remove debris and abandoned items from area and from concealed spaces.

D. Prepare surface and remove surface finishes to provide for proper installation of new work and finishes.

3.03 INSTALLATION

A. Coordinate work of alterations and renovations to expedite completion and to accommodate District occupancy. Patch and extend existing work using skilled mechanics that are capable of matching existing quality of workmanship. Quality of patched or extended work shall be not less than that Specified for new work.

B. Room Finishes. Complete in all respects consistent with the Contract Documents.

C. Remove, cut, and patch Work in a manner to minimize damage and to provide a means of restoring Products and finishes to specified condition.

D. Install Products as specified In Individual Sections.

3.04 TRANSITIONS

A. Where new Work abuts or aligns with existing, perform a smooth and even transition.

B. Patch Work to match existing adjacent Work in texture and appearance, without breaks, steps or bulkheads.

C. When finished surfaces are cut so that a smooth transition with new work is not possible, terminate existing surface along a straight line at a natural line of division and make recommendation to Architect.

3.05 ADJUSTMENTS

A. Where change of plane of 1/4 inch or more occurs, submit recommendation for providing a smooth transition.

B. Where extreme change of plane of two inches or more occurs, request Instructions from Architect as to method of making transition.

C. Trim existing doors as necessary to clear new threshold Installation. Refinish trim as required.

D. Fit work at penetrations of surfaces as shown on drawings.

3.06 SALVAGED MATERIALS

A. Salvaged Materials from existing facilities, which are specified in the Special Provisions, identified in bid doc's or tagged in the field are to be salvaged and shall remain the property of the District. The Entity shall include the removal, disassembly, preparation, marking, bundling, packaging, tagging, hauling, and stockpiling of salvaged materials or facilities to the location specified in the Special Provisions, or as directed by the District Representative. Materials include, but are not limited to, parts, articles, and equipment of assembled facilities. Salvaging does not include the preparation of existing material that is to be reused in the work.

B. When only specific materials from the facility are designated to be salvaged, the remaining materials from that facility shall be removed and disposed of as provided for elsewhere in the Contract Documents. Materials to be salvaged shall not be removed until their use in the existing facility is no longer required, as determined by the District Representative.

C. When practicable, salvaged materials shall be hauled directly to the location specified in the Special Provisions and stockpiled; however, salvaged materials may be temporarily stored at a location selected by the Entity and approved by the District Representative and later hauled to and stockpiled at their final location. Materials which are lost before stockpiling at their final location shall either be replaced by the Entity, at the Entity's expense, or, at the discretion of the District Representative, the estimated cost of replacement may be deducted from any moneys due or to become due to the Entity.

D. Materials designated to be salvaged that are damaged, as determined by the District Representative, shall be segregated from undamaged material. After review of the damaged materials by the District Representative, all damaged materials that are rejected by the Districts Representative shall become the property of the Entity and shall be disposed of as provided elsewhere in the Contract Documents.

E. Materials to be salvaged that are damaged as a result of the Entity's operations shall be repaired by the Entity, at the Entity's expense, to the satisfaction of the District Representative. Materials that are damaged beyond repair as a result of the Entity's operations shall be disposed of as provided elsewhere in the Contract Documents and replaced at the Entity's expense; or, at the discretion of the District Representative, the estimated cost of replacement may be deducted from any moneys due or to become due to the Entity.

F. Replacements for lost or damaged materials shall be of the same kind and of the same or better quality and condition as the lost or damaged materials were prior to their removal. Replacement materials should also be of the same size, color, weight etc. of the original materials. Matching or exceeding quality and condition alone may not permit the reuse of material.

3.07 REPAIR OF DAMAGED SURFACES

A. Patch or replace portions of existing surfaces, which are damaged, lifted, discolored, or showing other imperfections.

B. Repair substrate prior to patching finish.

3.08 FINISHES

A. Finish surfaces as specified in Individual Product Sections.

B. Finish patches to produce uniform finish and texture over entire area. When finish cannot be matched, refinish entire surface to nearest Intersections.

C. Unless otherwise specified or shown, subsurfaces shall be prepared as recommended by finish material manufacturers for project conditions for the proper application of new finishes.

3.09 CLEANING

A. Clean adjacent Owner occupied areas of work soiled by work of this contract (See Exhibit D – General Conditions).

END OF SECTION

Section 01 41 00 - ADDITIONAL REQUIREMENTS FOR DSA-REVIEWED PROJECTS

PART 1 - GENERAL

1.01 GENERAL

A The following additional requirements apply to this Project, which is being reviewed by the Division of the State Architect (DSA).

B. Entity's responsibility to follow DSA IR A-24 and PR 13-01 throughout the project.

1.02 ADDITIONAL REQUIREMENTS

A. The Entity shall maintain full compliance with the requirements specified in Parts 1 thru 5 and Part 9, Title 24, California Code of Regulations (CCR). Unless otherwise indicated or specified, work shall be performed in full conformance with the latest edition of applicable regulatory requirements. All work shall be performed in accordance with the rules and regulations, Title 24, Parts 1-5 and Part 9, California Code of Regulations, and Division of the State Architect, and a copy shall be kept on the job at all times during construction. The codes adopted by the City, County, State and Federal agencies shall govern minimum requirements for this Project. The Entity shall notify the District of any conflicts between the requirements of the Contract Documents and the requirements of this paragraph.

B. In addition to the duties specified in the Contract Documents, the duties of the Entity shall be in accordance with the requirements specified in Section 4-343 of Part 1, Title 24, California Code of Regulations (CCR).

C. In addition to the duties specified in the Contract Documents, the duties of the Architect and the Architect's consultants shall be in accordance with the requirements specified in Section 4-341 of Part 1, Title 24, CCR.

D. Neither DSA, nor the decisions and instructions rendered by DSA, are subject to arbitration proceedings.

E. Architect shall notify DSA at start of construction in accordance with 4-341 of Part 1, Title 24, CCR.

F. All Addenda and applicable Contract Change Documents (CCD) shall be signed by the District and approved by the Architect. All Addenda and Construction Change Documents are to be submitted for DSA approval. Do not begin work under a written order until the Construction Change Document(s) that requires DSA approval have been submitted to and approved by DSA in accordance with California Administrative Code Section **Part 1, Title 24, CCR.**

G. If DSA approval is required for Proposed Construction Changes, it will be so noted on the Draw and Amendment / Change Order (For District use only) and the Construction Change Document(s) sent for DSA approval.. In such cases, do not begin work under a written order until the Construction Changes have been submitted to and approved by DSA in accordance with California Administrative Code Section 4-338 (c) of Part 1, Title 24, CCR and DSA IR A-6. Substitutions are changes to the Contract Documents and shall be considered Construction Changes, and, if DSA

approval is required, shall be approved by DSA prior to fabrication or use.

H. Entity shall submit verified reports in accordance with Sections 4-343(c) of Part 1, Title 24, CCR. Architect shall submit verified reports in accordance with Sections 4-341(f) of Part 1, Title 24, CCR.

I. DSA may supervise construction, reconstruction, or repair in accordance with Section 4-334 of Part 1, Title 24, CCR.

J. Construction shall be observed by a full-time Project Inspector employed by the District, approved by the Architect, Structural Engineer and DSA in accordance with Sections 4-333(b) and 4-342 of Part 1, Title 24, CCR.

K. Testing requirements of the District's Testing Laboratory shall be in accordance with Section 4-335 of Part 1, Title 24, CCR.

L. Special inspection of masonry construction, glued laminated lumber, wood framing using timber connections, ready-mixed concrete, high strength steel bolt installation, welding, and mechanical and electrical work shall be as required by Section 4-333(c) of Part 1, Title 24, CCR. The costs of special inspection will be paid for by the District. Nothing in this paragraph shall limit the District's rights under Articles 9 or 17 of Exhibit D- General Conditions.

M. The intent of these Drawings and Specifications is that the work of the alteration, rehabilitation or reconstruction is to be in accordance with Title 24, California Code of Regulations. Should any existing conditions such as deterioration or non-complying construction be discovered which is not covered by the Contract Documents wherein the finished work will not comply with Title 24, California Code of Regulations, a construction change document, or separate set of plans and specifications, detailing and specifying the required work shall be submitted to and approved by DSA before proceeding with the work.

N. Substitutions relating to structural, Fire-Life-Safety (FLS), and access shall be submitted to DSA for review and approval prior to fabrication and installation.

END OF SECTION

Section 01 42 00 – REFERENCES

PART 1 - GENERAL

1.1 SUMMARY

A. DESCRIPTION:

1. General: Standards, codes, definition of words and terms, are identified in this Section.

1.2 REFERENCES

A. GENERAL: References are made throughout the technical specifications to various standard specifications, codes, practices, and requirements for materials, work quality, installation, inspections and tests, which are published and issued by the organizations, societies and associations listed below by abbreviation and name.

B. REFERENCED STANDARDS: Obtain copies direct from publication sources as needed for proper performance and completion of the Work. Addresses for these organizations are available from the Architect.

1.3 STANDARDS

A. GENERAL: All references to established Standards mean and include the latest edition of such Standards, as of the date of issue of this Facilities Lease.

1.4 CODES

A. GENERAL: Work of this project shall conform to applicable codes, current editions adopted by enforcing agencies.

B. APPLICABLE CODES THE LATEST EDITION OF THE FOLLOWING:

1. Building Standards Administrative Code, Part 1, Title 24 C.C.R.

2. California Building Code, Part 2, Title 24 C.C.R. (International Building Code with 2013 California Amendments)

3. California Electrical Code, Part 3, Title 24 C.R.R. (National Electrical Code with 2013 California Amendments)

4. California Mechanical Code, Part 4, Title 24 C.C.R. (Uniform Mechanical Code with California Amendments)

5. California Plumbing Code, Part 5, Title 24 C.C.R. (Uniform Plumbing Code with California Amendments)

6. California Energy Code, Part 6, Title 24 C.C.R.

7. California Fire Code, Part 9, Title 24 C.C.R. (International Fire Code & California Amendments)

8. California Referenced Standards, Part 12, Title 24 C.C.R.

9. Title 19 C.C.R., Public Safety, State Fire Marshal Regulations.

10. Chapter 4, Part 1, Title 24 C.C.R Administrative Requirements.

11. CFC Chapter 33 – Fire Safety During Construction and Demolition.

12. NFPA 10, Current Edition, Standard for Portable Fire Extinguishers

13. NFPA 13, Current Edition, The Standard for the Installation of Automatic Sprinkler Systems

14. NFPA 14, Current Edition, Standard for the Installation of Standpipe and Hose Systems.

15. NFPA 24, Current Edition, Standard for the Installation of Private Fire Service Mains and Their Appurtenances.

16. NFPA 72, Current Edition, National Fire Alarm and Signaling Code.

17. ASME A17.1, ASME A18.1

1.5 DEFINITIONS

A. WORDS AND TERMS:

1. General: The following are used in addition to those defined in the General Construction Terms and Conditions, and are defined as follows:

a. Approved: As accepted by the Architect.

b. As Required: As required by regulatory requirements, referenced standards, existing conditions, or by the Construction Documents.

c. Building Code or Code: Refers to regulations of governmental agencies having jurisdiction.

d. Directed: As instructed by the Architect in writing.

e. Furnish: Supply and deliver to the site.

f. Indicated: As shown, noted, or scheduled on the Drawings.

g. Install: Anchor, fasten, or connect in place and adjust for use; place or apply in proper position and location; establish in place for use or service.

h. Product: Includes materials, systems and equipment.

i. Provide: Furnish and install.

j. Shown: As indicated, noted or scheduled on the Drawings.

B. ABBREVIATIONS:

1. General: Definition of abbreviations and symbols used on the Drawings are identified on the Drawings.

2. Governing Dictionary: The definitions of words and abbreviations used in these Specifications are given in "The American Heritage Dictionary of the English Language".

PART 2 - PRODUCTS

2.1 REFERENCE STANDARDS

A. GENERAL: The reference standards applicable to this Project are specifically identified in the technical specification Sections listed in the Table of Contents - Divisions 2 through 16.

B. ASSOCIATION NAMES: The following abbreviation or acronym shall be understood to mean the full name of the respective organization or document, as follows:

AA	Aluminum Association
AABC	Associated Air Balance Council
AAC	Aluminum Anodizers Council
AAMA	American Architectural Manufacturers Association
AAN	American Association of Nurserymen
AASHTO	American Association of State Highway and Transportation Officials
AATCC	American Association of Textile Chemists and Colorists
AAU	Amateur Athletic Union
ABMA	American Boiler Manufacturers Association
ACI	American Concrete Institute
ACIL	American Council of Independent Laboratories
ACPA	American Concrete Pipe Association
ADC	Air Diffusion Council
AFPA	American Forest and Paper Association
AGA	American Gas Association
AGC	Associated General Contractors of America
AHA	American Hardboard Association
AHAM	Association of Home Appliance Manufacturers
AI	Asphalt Institute

AIA	American Institute of Architects
AIA	American Insurance Association (successor to NBFU)
AIHA	American Industrial Hygiene Association
AIMA	Acoustical and Insulating Materials Association
AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
AITC	American Institute of Timber Construction
ALI	Associated Laboratories, Inc.
ALSC	American Lumber Standards Committee
AMCA	Air Movement and Control Association
ANSI	American National Standards Institute
AOSA	Association of Official Seed Analysts
APA	American Plywood Association
API	American Petroleum Institute
ARI	Air-Conditioning and Refrigeration Institute
ARMA	Asphalt Roofing Manufacturers Association
ASA	Acoustical Society of America
ASC	Adhesive and Sealant Council
ASHRAE	American Society of Heating, Refrigerating, and Air-Conditioning Engineers
ASME	American Society of Mechanical Engineers
ASPA	American Sod Producers Association
ASPE	American Society of Plumbing Engineers
ASSE	American Society of Sanitary Engineering
ASTM	American Society for Testing and Materials
ATIS	Alliance for Telecommunications Industry Solutions
AWC	American Wood Council
AWI	Architectural Woodwork Institute
AWPA	American Wood Preservers Association
AWS	American Welding Society
AWWA	American Water Works Association
BHMA	Builder's Hardware Manufacturers Association
BIA	Brick Industry Association
BIFMA	The Business and Institutional Furniture Manufacturer's Association
BSI	Building Stone Institute
CAGI	Compressed Air and Gas Institute
CalTrans	State of California, Department of Transportation
CAUS	Color Association of the United States
CBHF	Bureau of Home Furnishings and Thermal Insulation, State of California, Dept. of Consumer Affairs
CBM	Certified Ballast Manufacturers
CCC	Carpet Cushion Council
CDA	Copper Development Association
CFFA	Chemical Fabrics and Film Association, Inc.
CGA	Compressed Gas Association
CISCA	Ceiling and Interior Systems Construction Association
CISPI	Cast Iron Soil Pipe Institute
CLFMI	Chain Link Fence Manufacturing Institute
CRA	California Redwood Association

CRI	Carpet and Rug Institute
CRSI	Concrete Reinforcing Steel Institute
CS	Commercial Standard
CSA	Canadian Standards Association
CSI	Construction Specifications Institute
CPSC	Consumer Product Safety Commission
CSSB	Cedar Shingle and Shake Bureau
CTI	Ceramic Tile Institute of America
DHI	Door Hardware Institute
DIPRA	Ductile Iron Pipe Research Association
DLPA	Decorative Laminate Products Association
DSA	Division of the State Architect, Office of Regulation Services
EIA	Electronic Industries Association
EIMAEIFS	Industry Manufacturers Association
EJMA	Expansion Joint Manufacturers Association
ETLETL	Testing Laboratories
FCI	Fluid Controls Institute
FCICA	Floor Covering Installation Contractors Association
FGMA	Flat Glass Marketing Association
FM	Factory Mutual Research and Engineering Corporation
FMRC	Factory Mutual Research Corporation
FTI	Facing Tile Institute
FS	Federal Specification General Services Administration
GA	Gypsum Association
GANA	Glass Association of North America
GIS	Germany Institute for Standardization
HEI	Heat Exchange Institute
HI	Hydronics Institute
HI	Hydraulic Institute
HMA	Hardwood Manufacturers Association
HPVA	Hardwood Plywood and Veneer Association
HUD	U.S. Department of Housing and Urban Development
IAPMO	International Association of Plumbing and Mechanical Officials
IBD	Institute of Business Designers
ICC	International Code Council
ICEA	Insulated Cable Engineers Association
IEC	International Electrotechnical Commission
IEEE	Institute of Electrical and Electronics Engineers
IESNA	Illuminating Engineering Society of North America
IFAI	Industrial Fabrics Association International
IGCC	Insulating Glass Certification Council
ILI	Indiana Limestone Institute of America
IMSA	International Municipal Signal Association
IRI	Industrial Risk Insurers
ISA	Instrument Society for Measurement and Control
ISO	International Standards Organization
KCMA	Kitchen Cabinet Manufacturers Association
LIA	Lead Industries Association, Inc.

LPI	Lightning Protection Institute
LSGA	Laminators Safety Glass Association
MBMA	Metal Building Manufacturers Association
MCAA	Mechanical Contractors Association of America
MFMA	Maple Flooring Manufacturers Association
MIA	Marble Institute of America
ML/SFA	Metal Lath/Steel Framing Association Division of NAAMM
MSSVFI	Manufacturers Standardization Society of the Valve and Fittings Industry
NAA	National Arborist Association
NAAMM	National Association of Architectural Metal Manufacturers
NAIMA	North American Insulation Manufacturers Association
NAPA	National Asphalt Pavement Association
NBFU	National Board of Fire Underwriters - See American Insurance Assn. (AIA)
NCAA	National Collegiate Athletic Association
NCMA	National Concrete Masonry Association
NCPI	National Clay Pipe Institute
NCRPM	National Council on Radiation Protection and Measurements
NCSPA	National Corrugated Steel Pipe Association
NECA	National Electrical Contractors Association
NEI	National Elevator Industry, Inc.
NEMA	National Electrical Manufacturers Association
NETA	International Electrical Testing Association
NFPA	National Forest and Paper Association
NHLA	National Hardwood Lumber Association
NIST	National Institute of Standards and Technology
NLGA	National Lumber Grades Authority
NOFMA	National Oak Flooring Manufacturers Association
NPA	National Particleboard Association
NPCA	National Paint and Coatings Association
NRCA	National Roofing Contractors Association
NRMCA	National Ready-Mix Concrete Association
NSF	National Sanitation Foundation
NSSEA	National School Supply and Equipment Association
NSWMA	National Sanitation and Waste Management Association
NTMA	National Terrazzo and Mosaic Association
NWWDA	National Wood Window and Door Association
OSHA	Occupational Safety and Health Administration
OSHPD	Office of Statewide Health Planning and Development
PATMI	Power Actuated Tool Manufacturers' Institute, Inc.
PCA	Portland Cement Association
PCI	Precast Prestressed Concrete Institute
PDCA	Painting and Decorating Contractors of America
PDI	Plumbing and Drainage Institute
PEI	Porcelain Enamel Institute
PS	Product Standard of National Bureau of Standards
RFCI	Resilient Floor Covering Institute
RIS	Redwood Inspection Service
RMA	Rubber Manufacturers Association

SAMA	Scientific Apparatus Makers Association
SDI	Steel Deck Institute
SDI	Steel Door Institute
SIGMA	Sealed Insulating Glass Manufacturers Association
SFM	State Fire Marshal
SGCC	Safety Glazing Certification Council
SJI	Steel Joist Institute
SMA	Screen Manufacturers Association
SMA	Stucco Manufacturers Association
SMACNA	Sheet Metal and Air Conditioning Contractors National Association
SPIB	Southern Pine Inspection Bureau
SPR	Simplified Practice Recommendation
SPRI	Single-Ply Roofing Institute
SSPC	Steel Structures Painting Council
SSPMA	Sump and Sewage Pump Manufacturers Association
STI	Steel Tank Institute
SWI	Steel Window Institute
SWPA	Submersible Wastewater Pump Association
SWRI	Sealant, Waterproofing and Restoration Institute
TCA	Tile Council of America
TIMA	Thermal Insulation Manufacturers Association
TPI	Truss Plate Institute
UL	Underwriters' Laboratories, Inc.
UNI	Uni-Bel PVC Pipe Association
USGBCUS	Green Building Council
USP	United States Pharmacopoeial Convention
USDA	United States Department of Agriculture
USTC&TBA	United States Tennis Court and Track Builders Association
VWDI	Vinyl Window and Door Institute
WA	Wallcoverings Association
WCLIB	West Coast Lumber Inspection Bureau
WCMA	Window Covering Manufacturers Association
WCRSI	Western Concrete Reinforcing Steel Institute
WH	Warnock Hersey International, Inc.
WIC	Woodwork Institute of California
WLPDIA	Western Lath, Plaster, Drywall Industries Association
WRI	Wire Reinforcement Institute
WSC	Water Systems Council
WSFI	Wood and Synthetic Flooring Institute
WWPA	Western Wood Products Association
WWPA	Woven Wire Products Association

PART 3 - EXECUTION - Not Used

END SECTION

Section 01 45 00 - QUALITY CONTROL

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Quality assurance and control of installation.

B. References.

C. Field samples.

D. Mock-up.

E. Inspection and testing laboratory services.

F. Manufacturers' field services and reports.

1.02 RELATED SECTIONS

A. General Construction Terms and Conditions, Article 11- Submittals

B. Technical Specifications

1.03 QUALITY ASSURANCE/CONTROL OF INSTALLATION

A. Monitor quality control over suppliers, manufacturers, Products, services, site conditions, and workmanship, to produce Work of specified quality.

B. Comply fully with manufacturers' instructions, including each step in sequence.

C. Should manufacturers' instructions conflict with the Construction Documents, request clarification from Architect before proceeding.

D. Comply with specified standards as a minimum quality for the Work except when more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.

E. Perform work by persons qualified to produce workmanship of specified quality.

F. Secure Products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion or disfigurement.

G. Entity’s Line of Authority: Entity shall provide one person who shall be both knowledgeable and responsible for all work to be performed on this project at all times during normal work hours. In Entity’s absence, Entity’s appointed representative shall be responsible for all directions given him and said directions shall be binding as if given to the Entity. Entity’s representative shall be responsible to coordinate all work to be performed.

H. Shop and fieldwork shall be performed by mechanics skilled and experienced in the fabrication and installation of the work involved. All work on this project shall be done in accordance with the best practices of the various trades involved and in accordance with the drawings, approved shop drawings and these specifications.

I. All work shall be erected and installed plumb, level, square and true and in proper alignment and relationship to the work of other trades. All finished work shall be free from defects. The Architect, Engineer, District and its Representatives reserve the right to reject any materials and workmanship which are not considered to be up to the highest standards of the various trades involved. Such Inferior material or workmanship shall be replaced by the Entity at no additional cost to the Owner and without a time extension.

J. All work shall be installed by a knowledgeable Entity and defined "certified to install" by the specified materials manufacturers. The specifications and recommendations of the manufacturer whose materials are used shall be strictly adhered to during the application or installation of materials.

K. Any additional work beyond that specified or illustrated, or any modification thereto, that is necessary for the furnishing of guarantee shall be provided by the Entity without additional cost to the District.

1.04 REFERENCES

A. Conform to reference standards by date of issue current on date of the Construction Documents.

B. Should specified reference standards conflict with Construction Documents, request clarification from Architect before proceeding.

C. The contractual relationship of the parties to the Contract shall not be altered from the Construction Documents by mention or inference otherwise in any reference document.

D. The Entity shall be responsible for being current and knowledgeable of all building codes involved for all trades under his direction.

E. Provide all work and materials in full accordance with the California Building Standards Administrative Code , the California Building Code (CBC), California Electrical Code (CEC), California Mechanical Code (CMC), California Plumbing Code (CPC), California Energy Code, California Fire Code (CFC), California Referenced Standards, State Fire Marshal Regulations, Cal/OSHA, and any other applicable laws or regulations. Nothing in these plans or specifications is to be construed to permit work not conforming to these Codes.

F. Furnish without extra charge any additional material and labor required to comply with these Rules and Regulations.

1.05 FIELD SAMPLES

A. Install field samples at the site as required by individual specifications Sections for review.

B. Acceptable samples represent a quality level for the Work.

C. Where field sample is specified in Individual Sections to be removed, clear area after field sample has been accepted by Architect.

1.06 MOCK-UP

A. Assemble and erect specified items, with specified attachment and anchorage devices, flashings, seals, and finishes.

B. Where mock-up is specified in Individual Sections to be removed, clear area after mock-up has been accepted by Architect.

1.07 INSPECTION AND TESTING LABORATORY SERVICES

A. Owner will appoint, employ, and pay for services of an independent firm approved by the Structural Engineer, Architect and *Division of the State Architect (DSA)* to perform inspection and testing.

B. The Independent firm will perform inspections, tests, and other services specified in Individual specification Sections and as required by the Architect.

C. Reports will be submitted by the independent firm to the Architect, in duplicate, indicating observations and results of tests and indicating compliance or noncompliance with the Construction Documents.

D. Cooperate with independent firm; furnish samples of materials, design mix, equipment, tools, storage and assistance as requested.

1. Notify Architect and independent firm Twenty Four (24) hours prior to expected time for operations requiring services.

2. Make arrangements with independent firm and pay for additional samples and tests required for Entities use.

E. The special inspector shall perform inspection of all work to determine conformance with these Standards.

1. Request for inspection must be made to the office of the special inspector a minimum of twenty-four (24) hours in advance of the time the inspection is desired.

2. Underground work shall not be backfilled or covered until an inspection by the special inspector or its representative has been completed and the work approved. Any work that is covered without inspection shall be uncovered at the Entity's expense so an inspection can be made.

3. The Engineer shall have access to the work at all times and shall be furnished every reasonable facility for ascertaining that the work done, materials used and workmanship performed are in accordance with the requirements of these Standards.

4. Inspection of the work shall not relieve the Entity of any of its obligations to satisfactorily perform the work.

F. Re-testing required because of non-conformance to specified requirements shall be performed by the same independent firm on instructions by the Architect. Payment for re-testing will be charged to the Entity by deducting inspection or testing charges from the Total Base Rent.

G. Project Inspector shall be employed by Owner and approved by Architect, Structural Engineer, and DSA.

1.08 MANUFACTURERS' FIELD SERVICES AND REPORTS

A. Submit qualifications of observer to Architect thirty (30) days in advance of required observations.

B. When specified in individual specification Sections, require material or Product suppliers or manufacturers to provide qualified staff personnel to observe site conditions, conditions of surfaces and installation, quality of workmanship, start-up of equipment, test, adjust, and balance of equipment as applicable, and to initiate instructions when necessary.

C. Individuals to report observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturers' written instructions.

D. Submit report in duplicate within thirty (30) days of observation to Architect for review.

PART 2 - PRODUCTS - Not Used

PART 3 - EXECUTION - Not Used

END OF SECTION

Section 01 50 00 - TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

SECTION 1.01 WORK INCLUDED

Temporary Facilities and controls required for this Work include, but are not necessarily limited to:

1. Temporary water, power, light, and heat.
2. Field office and associated telephone and utilities.
3. Temporary weather protection.
4. Parking and storage areas.
5. Site fencing and security.
6. Sanitary facilities.
7. Dewatering.
8. Storm Water Run-Off Plan Compliance
9. Final and course of construction cleanup and removal of debris.

SECTION 1.02 TEMPORARY UTILITIES

General: Charges for the use of utility services other than those associated with individual field offices or planned electrical service interruptions will be paid for by the District. Entity shall provide temporary heating, or ventilating, or cooling when permanent services are interrupted due to performance of the Work. Any planned interruption of permanent services, facilities, or operations must be coordinated with the Owner's Representative.

Temporary Power:
Entity shall construct all temporary power facilities required to complete the Work and maintain in accordance with Division of Industrial Safety "Electrical Safety Orders" (ESO), Public Utilities Commission "Rules of Overhead Line Construction" (G.O. 95), and CAL-OSHA. Materials, devices and equipment used for these facilities shall be in good and safe condition but need not be new. Entity is responsible for the removal of the temporary power. Existing school electric outlets may be utilized, if permitted by the District and authorized by the Owner's Representative. Any additional power required shall be provided and paid for by the Entity.

Temporary Lighting:
Entity shall provide, maintain, and remove temporary lighting necessary to complete the Work.

Temporary Heat:
Entity shall provide, maintain, and remove temporary heat necessary to complete the Work.

Temporary Cooling:
Entity shall provide, maintain, and remove temporary cooling necessary to complete the Work.

Temporary Water:
Entity shall provide sufficient hose to carry water to every required part of construction and allow use of water facilities to subcontractors engaged in the Work. Entity is also responsible for the removal of the temporary water. Existing school water outlets may be utilized. Any additional water

required shall be provided by the Entity.

Temporary Telephone:
Entity shall provide its own telephone system. Use of District telephones will not be allowed.

Temporary Fire Protection:
Entity shall provide and maintain fire extinguishers and first aid kits in accordance with OSHA requirements to be used in the event of an emergency.

Temporary Weather Protection:
Entity shall provide and maintain protection measures to ensure that damage(s) will not occur to District property during course of construction.

Temporary Dewatering:
Entity shall provide and maintain a dewatering system as required to perform the Work. This temporary dewatering system may, and should, be reviewed by the Architect and/or Owner's Representative.

SECTION 1.03 FIELD OFFICE/STORAGE CONTAINERS

The Entity shall provide a temporary field office(s) of sufficient size to accommodate the Project Inspector and District Representative. Locate field office(s)/storage container(s) for Entity's use as directed by Owner's Representative. Upon completion of Work, Entity shall remove any and all temporary field office(s) and storage container(s).

SECTION 1.04 PARKING OF VEHICLES

Entity shall assume **all** responsibility for job site vehicle parking of its and its subcontractor's vehicles. Locations of parking shall be as directed by the District's Representative.

SECTION 1.05 STORAGE AND LAYDOWN AREAS

The Owner's Representative will coordinate use of available lay down areas. Only areas designated by Owner's Representative can be used by Entity. Entity is responsible for providing its own fenced storage facilities (trailers or cargo containers.)

SECTION 1.06 TEMPORARY SITE FENCING AND SECURITY

Entity shall provide and maintain temporary fencing surrounding the buildings and/or rooms under construction, and staging areas. Set-up/relocation of temporary fencing shall be included for each phase of work as shown on the Construction Schedule. Entity is responsible for the security of all equipment, material, and completed construction items. Entity is also responsible for securing any breeches to existing security system/building caused by its Work. Temporary measures may include watchman (allowable cost from Construction Contingency), temporary doors, temporary alarm, etc.

SECTION 1.07 SANITARY FACILITIES
Entity shall provide sanitary toilet facilities for use of all Workers employed on Project, in accordance with State and Local health departments. Use of District toilet facilities will not be allowed.

SECTION 1.08 CLEANUP AND REMOVAL OF DEBRIS

Entity shall assume all responsibility for cleanup and removal of debris created by the Work on a daily basis. No community dumpsters will be provided. In the event unidentifiable job site clutter or debris becomes a problem, at Owner's Representative's request, Entity shall provide sufficient labor to be directed by Owner's Representative's personnel in a group cleanup effort. If Entity's clean-up is found to be deficient, the District may back charge the Entity for clean-up and/or withhold Lease Payments as determined appropriate by the District.

SECTION 1.09 TEMPORARY CONSTRUCTION, EQUIPMENT AND PROTECTION

Entity shall provide, maintain and remove upon completion of Work, all temporary rigging, scaffolding, hoisting equipment, rubbish chutes, ladders, barricades, lights and all other protective structures or devices necessary for safety of Workers and public property as required to complete the Work.

Safety: Entity is responsible for the complete safety of district personnel, students, and the general public at all times.

Walkways and barricades: If Entity's Work interferes with pedestrian traffic, provide pedestrian walkway protection conforming to City standards and CAL OSHA requirements.

Access: Entity is responsible to maintain access to the buildings at all times. Temporary covered walkways and/or barricades may be required.

Protection: Entity must protect all Workers and equipment from power lines by maintaining safe distances and by providing protective devices where and as required by Industrial Safety Commission and CAL-OSHA.

Temporary construction and equipment: All temporary construction and equipment shall conform to all regulations, ordinances, laws and other requirements of State and any other authorities having jurisdiction (including insurance companies), with regards to safety precautions, operations and fire hazards.

SECTION 1.10 STORM WATER RUN-OFF PLAN:

Entity shall implement, provide and maintain an erosion control and storm water pollution prevention plan in accordance with all local agencies having jurisdiction.

SECTION 1.11 ACCESS TO SITE

Access to the site shall be as directed by the Owner District's Representative.

END OF SECTION

Section 01 71 23 - FIELD ENGINEERING & SURVEY CONTROLS

PART 1 – GENERAL

1.01 SECTION INCLUDES

A. Entity to provide and pay for field engineering services required for the execution of Work, including, but not limited to:

1. Survey Work required in execution of the Work scope.
2. Civil, structural or other professional engineering services specified, or required to execute Entity's construction methods.

B. Provide field staking of site improvements included in the Work; identify existing survey reference points and property line corner stakes indicated on Drawings.

C. Locate and be aware of all existing on-site utility lines and improvements.

1.02 QUALIFICATIONS OF SURVEYOR OR ENGINEER

A. Qualified California registered professional engineer or registered land surveyor, acceptable to Entity and the District Representative.

B. Registered professional engineer of discipline required for specific service on Project, licensed in State of California.

1.03 SUBMITTALS:

A. Submit name address, and license of surveyor and professional engineer to the District Representative.

1.04 PROJECT SURVEY REQUIREMENTS

A. Establish and maintain lines and levels as necessary to locate and layout entire scope of Work.

B. Preserve and protect all on-site underground utilities lines and existing on-site improvements in the area of construction.

END OF SECTION

Section 01 73 29 - CUTTING AND PATCHING

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Execute cutting, fitting or patching of Work, required to:
   1. Make parts fit properly.
   2. Uncover Work to provide for installation of ill-timed Work.
   3. Remove and replace Work not conforming to requirements of Contract Documents.
   4. Remove and replace defective Work.
   5. Remove samples of installed Work as specified for testing.
   6. Remove existing materials (demolition) required prior to installation of specified Work.
   7. Uncover Work to provide for Architect's observation of covered Work.

B. Do not endanger structural integrity of any Work by cutting or altering any part of it.

C. The subcontractor with structural responsibility within their scope of Work shall solely execute structural cutting and patching required for this Project, according to DSA Approved Drawings.

D. Minor cutting and patching of finishes and/or trim will be performed by the subcontractor where required for the execution of their Work. Locations of all cutting and patching (core boring, etc.) shall be reviewed and approved by the Architect prior to the start of Work.

E. The Entity and its subcontractor shall make the field measurements necessary for its Work and be responsible for its accuracy. Also, should any structural difficulties prevent a subcontractor from installing its material properly, the District Representative and Architect shall be notified in writing within 24 hours. Cutting into the walls, ceilings and floors, if necessary, shall be carefully and neatly performed and then be repaired as specified in the Contract Documents. The Architect shall be consulted prior to the start of Work in all cases where cutting into a structural portion of the building is either desirable or necessary so that satisfactory reinforcement may be provided.

F. Patching of all exposed architectural finishes shall be performed under the supervision of the Inspector. Cutting and patching of existing architectural finishes shall be minimized to the extent possible through careful routing and placement of new Work. The Architect or Inspector shall have the authority to reject substandard or unacceptable patching.

G. Patching of openings that are cut in any fire rated walls or membranes shall be sealed tightly using approved materials only. Verify that fire rating envelopes are maintained and inspections provided prior to concealing Work. Cutting and patching, if required by Agencies to verify adequacy of protection after concealment, shall be performed at no cost to the District.

1.02 RELATED SECTIONS

A. Section Exhibit D - General Conditions.

B. Section 01 35 16 - Alteration Project Procedures.

C. Section 01 45 00 - Quality Control.

D. Section 01 50 00 Temporary Facilities and Controls.

E. Section 02 41 00 - Minor Demolition For Remodeling.

1.03 SUBMITTALS

A. Prior to cutting which affects structural safety of Project, submit written notice to Architect requesting consent to proceed with cutting. See items "C" and "E", Section 1.01.

B. Should conditions of Work or schedule require change of materials or methods, submit written recommendation to Architect, within 48 hours, including:
   1. Conditions requiring change.
   2. Recommendations for alternative materials or methods.
   3. Submittals as required for substitutions.
   4. Quotations of charges or credits.

C. Submit 48-hour advance written notice to Architect (with a copy to the District Representative) designating the time Work will be uncovered.

D. Submit all materials to be used in cutting and patching in accordance with Exhibit D – General Conditions.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Primary Products: Materials for replacement of Work removed are to comply with Technical Specifications and are required to match original installation.

B. Product Substitution: For any proposed change in materials, submit request for substitution in accordance with Exhibit D – General Conditions.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Examine existing conditions prior to commencing Work, including elements subject to movement or damage during cutting and patching.

B. After uncovering existing Work, examine conditions affecting installation of new products and performance of Work.

C. Beginning of cutting or patching operations means acceptance of existing conditions.

3.02 PREPARATION

A. Provide means of shoring, bracing and temporary supports as required to maintain structural integrity of the Work.

B. Provide devices, enclosures and methods to protect adjacent surfaces and areas of the property from damage, dust or disruption.

C. Provide protection from the elements for areas, which may be exposed during cutting or patching.

D. Maintain excavations free of water.

3.03 CUTTING

A. Execute cutting, fitting and adjustment of products to permit finished installation to comply with specified tolerances and finishes.

B. Perform cutting and demolition by methods, which will prevent damage to other Work, and will provide proper surfaces to receive installation of repairs and new Work.

C. Uncover Work to install improperly sequenced Work.

D. Remove and replace defective, rejected or non-conforming Work.

E. Remove samples of installed Work for testing when requested.

F. Provide openings in the Work for penetration of Mechanical and Electrical Work.

G. Employ only experienced installers to perform cutting for weather exposed, moisture resistant and sight-exposed surfaces.

H. Cut concrete, tile plaster and other rigid materials using masonry/concrete saws and core drills. Pneumatic tools are not allowed without prior approval.

3.04 PATCHING

A. Execute patching to match adjacent Work.

B. Fit products together to integrate seamlessly with adjacent Work.

C. Execute patching by methods to avoid damage to adjacent Work, and which will provide appropriate surfaces to receive finishing Work.

D. Employ only experienced installers to perform patching for weather exposed, moisture resistant and sight-exposed surfaces.

E. Restore Work with new products in accordance with requirements of the Contract Documents.

F. At penetrations of fire rated walls, partitions, ceiling or floor construction, completely seal voids with approved fire rated material in accordance with the manufacturers installation instructions and applicable Codes.

G. Fit Work to pipes, sleeves, ducts, conduits and other penetrations through affected surfaces neatly and leave in finished condition.

H. All patched surfaces are to match adjacent finishes in all respects: Type, texture, thickness and color. For continuous surfaces, refinish to nearest intersection or natural break. For an assembly, refinish entire unit or area.

END OF SECTION

Section 01 74 23 – FINAL CLEANING

PART 1 - GENERAL

1.01 SUMMARY

1. Entity is responsible for daily cleanup and a final cleaning prior to occupancy and prior to acceptance of the Project by the District. This section only addresses the final cleaning required prior to punch listing and occupancy.

2. Cleaning Program:

- The cleaning program shall include all construction areas and surrounding areas affected by the construction including site, exteriors of buildings / structures, roofs and interior of buildings.
- The areas to be cleaned shall be turned over to the owner in a "move-in" condition.
- All areas shall be free of all construction materials, dust, debris, markings and dirt.
- All surfaces shall be washed, cleaned and cleared of markings.
- All existing and new fixtures shall be cleaned, sanitized and ready for use.
- Only if directed by the District, new and existing hard surface floors will be stripped and waxed.

1.02 PROJECT CONDITIONS

1. Comply fully with Federal and local environmental and antipollution regulations.

- Do not dispose of volatile wastes, such as mineral spirits, oil, or paint thinner, in storm or sanitary drains.
- Burning or burying of debris, rubbish, or other waste material on the premises is not permitted.

1.03 PRODUCTS

A. MATERIALS AND METHODS

1. Use cleaning materials and methods which will not create hazards to health or property or cause damage to products and which are recommended by manufacturers of products to be cleaned.

1.04 EXECUTION

A. FINAL CLEANING

1. General: Provide final cleaning operations. Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit of Work to the condition expected from a commercial building cleaning and maintenance program. Comply with manufacturer's instructions.

2. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for the entire Project or a portion of the Project.

- Clean the Project Site, yard and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and foreign substances.
- Sweep paved areas broom clean. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.
- Remove petrochemical spills, stains, and other foreign deposits.
- Remove tools, construction equipment, machinery, and surplus material from the site.
- Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
- All walls not newly painted shall be washed to clean readily removable dirt, markings, dust, and grime.
- Remove debris and surface dust from limited access spaces, including roofs, attics and similar spaces.
- To the extent directed by the District, existing floors shall be thoroughly stripped of old wax and have at least four (4) coats of a combination wax/sealer, or two (2) coats of sealer and four (4) coats of wax. Entity shall submit for prior approval manufacturer's information on floor finish to be applied. All new floors shall have their factory seal stripped off and shall have a floor finish applied according to the recommendations of the manufacturer.
- New carpeted areas shall be thoroughly vacuumed, including edges. Any spotting during construction shall be removed. Existing carpeted areas shall be thoroughly shampooed.
- Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other substances that are noticeable vision obscuring materials. Replace chipped or broken glass and other damaged transparent materials. Polish mirrors and glass, taking care not to scratch surfaces. Clean interior and exterior of all windows.
- Clean all Toilet Rooms thoroughly and sanitized. All wall surfaces shall be free of grime, dirt, dust, markings and graffiti. All mirrors, fixtures, and partitions will be cleaned free of dirt and markings.
- Scrub and seal all ceramic and terrazzo floors and walls.
- Remove labels that are not permanent labels.
- Touch up and otherwise repair and restore marred, exposed finishes and surfaces. Replace finishes and surfaces that cannot be satisfactorily repaired or restored or that already show evidence of repair or restoration.
- Wipe surfaces of mechanical and electrical equipment, elevator equipment, and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.
- Clean plumbing fixtures to a sanitary condition, free of stains, including stains resulting from water exposure.
- Replace disposable air filters and clean permanent air filters. Clean all exposed surfaces of diffusers, registers, and grilles.

- Clean ducts, blowers, and coils if units were operated without filters during construction.
- Clean light fixtures, lamps, globes, and reflectors to function with full efficiency. Replace burned out bulbs; defective and noisy starters in fluorescent fixtures, and defective dimming switches.
- Leave the Project clean and ready for occupancy.

3. Removal of Protection: Remove temporary protection and facilities installed during construction to protect previously completed installations during the remainder of the construction period. Repair any damage from removal.

4. Compliances: Comply with governing regulations and safety standards for cleaning operations. Remove waste materials from the site and dispose of lawfully.

Where extra materials of value remain after completion of associated Work, they become the Owner's property. Dispose of these materials as directed by the Owner.

END OF SECTION

SECTION 01 91 13 GENERAL COMMISSIONING REQUIREMENTS

PART 1 – GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division Specification Sections, apply to this Section.

1.02 SUMMARY

A. This Section includes general commissioning processes and requirements that apply to the implementation of commissioning. Commissioning is a process of review and verification of specific building systems consisting of design and submittal reviews, contractor completed installation checklists, verification of Test and Balance values, and contractor performed functional testing which are all reviewed or witnessed by the CxA.

B. Related Sections include the following:

District does not apply for CHPS due to expense.

1. Section 03 31 00: Structural Concrete
2. Section 07 21 00: Building Insulation
3. Section 07 25 00: Weather Barriers
4. Section 07 54 19: Single Ply Roofing System
5. Section 07 62 00: Sheet Metal Flashing and Trim
6. Section 07 70 00: Roof Specialties and Accessories
7. Section 08 80 00: Glazing
8. Section 22 05 93: Testing, Adjusting and Balancing for Plumbing.
9. Section 23 05 93: Testing, Adjusting and Balancing for HVAC.
10. Section 23 05 50: Basic Mechanical Materials & Methods.
11. Section 23 09 23: Energy Management System Design Build.
12. Section 26 82 00: Lighting Controls
13. Section 32 80 00: Irrigation

1.03 DEFINITIONS

A. Basis of Design (BoD) document: A document that records concepts, calculations, decisions, and product selections used to meet the OPR and to satisfy applicable regulatory requirements, standards, and guidelines. The document includes both narrative descriptions and lists of individual items that support the design process.

B. Building Envelope: All parts for the exterior shell of a building that provide insulation and air and water resistance such as roofing, windows, flashing, exterior wall cladding, ground contact waterproofing, etc.

C. Commissioning: - A process to verify that the identified project systems perform as defined in the approved project documents.

D. CxA: Commissioning Authority.

E. Owner's Project Requirements (OPR): A collection of documents that details the functional requirements of Project and expectations of how it will be used and operated. This document includes Project and design goals, measurable performance criteria, budgets, schedules, success criteria, and supporting information.

F. Owner-Sacramento City Unified School District or designated representative.

G. Systems, Subsystems, and Equipment: Where these terms are used together or separately, they shall mean "as-built" systems, subsystems, and equipment.

H. TAB: Testing, Adjusting, and Balancing.

1.04 COMMISSIONING TEAM

A. A project team created to coordinate the commissioning effort that coordinates and communicates with the rest of the project team, attend meetings, and solve problems. This team includes representatives from the contractor, subcontractors and owner.

B. The prime contractor shall in addition to their representative also appoint a representative from each subcontractor involved in commissioned systems including mechanical, electrical, controls, Test and Balance, plumbing, building envelope, low voltage systems, etc.

C. The owner shall appoint the CxA, facility operations and maintenance, and architect and design members to the commissioning team.

1.05 OWNER'S RESPONSIBILITIES

A. Participate in resolution of issues that may occur as a result of the commissioning process.

B. Assign operation and maintenance personnel and schedule them to participate in commissioning team activities including, but not limited to, the following:

1. Coordination meetings.

2. Training in operation and maintenance of systems, subsystems, and equipment.

3. Testing meetings.

4. Demonstration of operation of systems, subsystems, and equipment.

1.06 CONTRACTOR'S AND SUBCONTRACTOR'S RESPONSIBILITIES

A. Provide utility services required for the commissioning process.

B. Schedule and perform building enclosure testing specified as the contractor's responsibility. Coordinate testing with the architect and CxA.

C. Provide access to building enclosure testing locations as defined by the building enclosure test plan.

D. Provide boom lift with operator, scaffold, power and hose bibb at testing locations performed by the CxA and defined by the building enclosure test plan.

E. Contractor is responsible for construction means, methods, job safety, or management function related to commissioning on the job site.

F. Contractor shall assign representatives with expertise and authority to act on behalf of the Contractor and schedule them to participate in and perform commissioning team activities including, but not limited to, the following:

1. Participate in construction-phase commissioning meetings including controls coordination meeting to review and resolve any issues with the sequence of operations.

2. Participate in maintenance orientation and inspection.

3. Participate in operation and maintenance training sessions.

4. Certify that Work is complete, and systems are operational according to the Contract Documents, including calibration of instrumentation and controls.

5. Perform quality control of all work and certify it is complete prior to request for inspection.

G. Evaluate performance deficiencies identified in test reports and, in collaboration with entity responsible for system and equipment installation, recommend corrective action.

H. Contractor shall integrate all commissioning activities into Contractor's master construction schedule. See Exhibit A of this specification section.

I. Subcontractors shall assign representatives with expertise and authority to act on behalf of subcontractors and schedule them to participate in and perform commissioning team activities including, but not limited to, the following:

1. Participate in construction-phase coordination meetings.

2. Participate in maintenance orientation and inspection.

3. Complete pre-functional checklists for all equipment. Submit completed forms with start-up reports immediately after start up.

4. Complete building enclosure construction checklists as required throughout the installation of building enclosure systems as identified. Submit completed forms upon installation completion of each building enclosure system.

5. Schedule and perform building enclosure testing as specified in the technical specification sections with CxA as witness.

6. Schedule and perform duct air leakage testing as specified in the technical specification sections with CxA as witness. Duct leakage testing required for ducted systems over 3-inch water column static pressure.

7. Provide flushing plans, disinfection reports and water treatment reports to the CxA for review.

8. Participate in pre-TAB meeting and jobsite inspections to verify TAB readiness.

9. Provide draft completed TAB report to CxA for review. CxA will identify up to 20% of TAB report for TAB contractor to demonstrate compliance to the completed TAB report.

10. Participate in procedures meeting for testing.

11. Perform point-to-point, calibration and checkout of the building automation system and provide completed report to the CxA for review.

12. Participate in final review at acceptance meeting.

13. Provide schedule for operation and maintenance data submittals, equipment startup, and testing to CxA for incorporation into the commissioning plan. Update schedule on a weekly basis throughout the construction period.

14. Provide information to the CxA for developing construction-phase commissioning plan.

15. Participate in training sessions for operation and maintenance personnel.

16. Verify that all systems function correctly by testing each mode of operation, alarm and system function.

17. Gather and submit operation and maintenance data for systems, subsystems, and equipment to the CxA, as specified.

18. Perform quality control of all work and certify it is complete prior to request for observation and or testing.

19. Complete and sign Systems Functional Testing Readiness Certification and Notification Letter for Commissioning and provide to CxA (See Exhibit B of this specification section).

20. Provide technicians who are familiar with the construction and operation of installed systems and who shall develop specific test procedures and participate in testing of installed systems, subsystems, and equipment.

21. Perform seasonal testing, at the direction of the CxA, to prove functional performance of the HVAC and controls in the opposite season.

1.07 ARCHITECT AND DESIGN ENGINEER RESPONSIBILITIES

A. Responsible for developing the construction contract documents and clarifying the design intent during the construction phase of the project.

B. Performs construction observation.

C. Contracted directly to District.

D. Coordinate with the CxA specified building enclosure test plans developed by the architect and or CxA.

1.08 CXA'S RESPONSIBILITIES

A. Organize and lead the commissioning team.

B. Prepare a Commissioning Plan. Collaborate with design team, owner, contractor and subcontractors to develop test and inspection procedures. Identify commissioning team member responsibilities, by name, firm, and trade specialty, for performance of each commissioning task.

C. Work with the Contractor to schedule commissioning activities. The Contractor shall integrate all commissioning activities into the master construction schedule. All parties will address scheduling issues in a timely manner in order to expedite the commissioning process.

D. Review and comment on submittals for compliance with the approved project documents and identify any potential conflicts.

E. Conduct commissioning team meetings for the purpose of coordination, communication, and conflict resolution; discuss progress of the commissioning processes. The CxA shall prepare and distribute minutes to commissioning team members and attendees within five (5) workdays of the commissioning meeting.

F. At the beginning of the construction phase, conduct an initial construction-phase coordination meeting for the purpose of reviewing the commissioning activities and establishing tentative schedules for permanent power; operation and maintenance data submittals; operation and maintenance training sessions; TAB Work; and Project completion.

G. Periodically observe and inspect construction and report progress and deficiencies. In addition to compliance with the Contract Documents, inspect systems and equipment installation for adequate accessibility for maintenance and component replacement or repair.

H. Prepare Project-specific pre-functional checklists, functional test procedures checklists and building enclosure construction checklists.

I. Compile test data, inspection reports, and certificates and include them in the systems manual and commissioning report.

J. Review and comment on operation and maintenance documentation for compliance with the Contract Documents. Operation and maintenance documentation requirements are specified in Division 01 Section "Operation and Maintenance Data."

K. Review Contractor's operation and maintenance training program. Operation and maintenance training is specified in Division 01 Section "Demonstration and Training."

L. Prepare commissioning status reports.

M. Assemble the final commissioning documentation, including the Commissioning Report including applicable Project Record Documents.

1.09 COMMISSIONING DOCUMENTATION

A. Commissioning Plan: A document, prepared by CxA, that outlines the process, schedule, allocation of resources, and documentation requirements of the commissioning effort, and shall include, but is not limited to the following:

1. Description of the organization, layout, and content of commissioning documentation to be provided along with identification of responsible parties.

2. Identification of systems and equipment to be commissioned.

3. Description of the level of commissioning for each system and define levels of commissioning.

4. Description of schedules for testing procedures along with identification of parties

involved in performing and verifying tests.

5. Identification of items that must be completed before the next operation can proceed.

6. Description of responsibilities of commissioning team members.

7. Description of observations to be made.

8. Description of requirements for operation and maintenance training, including required training materials.

9. Provide a schedule for commissioning activities with specific dates coordinated with overall construction schedule.

10. Define the process for completing pre functional and startup checklists for systems, subsystems, and list of specific equipment requiring these checklists.

11. Include Step-by-step procedures for Functional testing systems, subsystems, and equipment with descriptions for methods of verifying relevant data, recording the results obtained, and listing parties involved in performing and verifying tests. Meet Title-24 minimum functional requirements only.

B. Pre-Functional Checklists: CxA shall develop pre-functional checklists for all equipment to be commissioned.

C. Functional Performance Testing: CxA shall develop functional performance test procedures for all equipment and systems to be commissioned that meet Title-24 minimum requirements only.

D. Building Enclosure Construction Checklists: CxA shall develop BECx checklists for the installation and verification of procedures.

E. BECx Test Plan: CxA shall develop building enclosure tests plans as specified. If test plans are developed by the architect CxA shall review and provide comments as required.

D. Site Visit Reports: CxA shall record test data, observations, and measurements on site visit forms. Photographs and other means appropriate for the application shall be included with data.

E. Test and Inspection Reports: CxA shall compile test and inspection reports and test and inspection certificates and include them in systems manual and commissioning report.

F. Commissioning Schedule: CxA shall review and provide input to the master project and construction schedules for commissioning activities.

G. Issues Log: CxA shall prepare and maintain an issues log that describes installation, and performance issues that are at variance with the Contract Documents. CxA will identify and track issues as they are encountered, documenting the status of unresolved and resolved issues.

1. Creating an Issues Log Entry:

    a. Identify the issue with unique numeric or alphanumeric identifier by which the issue may be tracked.

    b. Assign a descriptive title of the issue.

    c. Identify issue date.

    d. Identify test number of test being performed at the time of the observation, if applicable, for cross-reference.

    e. Identify system, subsystem, and equipment to which the issue applies.

    f. Identify location of system, subsystem, and equipment.

    g. Include information that may be helpful in diagnosing or evaluating the issue.

    h. Note recommended corrective action.

    i. Identify commissioning team member responsible for corrective action.

    j. Identify expected date of correction.

    k. Identify person documenting the issue.

    l. List the issue's code and contract document reference, i.e., specification or plan sheet location.

2. Documenting Issue Resolution:

    a. Log date correction is completed or the issue is resolved.

    b. Describe corrective action or resolution taken. Include description of diagnostic steps taken to determine root cause of the issue, if any.

    c. Identify changes to the Contract Documents that may require action, if any.

    d. State that correction was completed, and system, subsystem, and equipment are ready for retest, if applicable.

    e. Identify person(s) who corrected or resolved the issue.

    f. Identify person(s) documenting the issue resolution.

    g. Identify RFI or ASI references to the issue resolution.

G. Commissioning Report: CxA shall document results of the commissioning process including performance of systems, subsystems, equipment and issues. The commissioning report shall indicate whether systems, subsystems, and equipment have been completed and are performing according to the OPR, BoD and Contract Documents. The commissioning report shall include, but is not limited to, the following:

1. Discussion of performance of commissioned systems including any variance from OPR, BOD and the Contract Documents; record of conditions; and, if appropriate, recommendations for resolution. This report shall be used to evaluate systems, subsystems, and equipment and shall serve as a future reference document during District occupancy and operation. It may also include a recommendation for accepting or rejecting systems, subsystems, and equipment.

2. Commissioning Plan. (Define the plan for this project.)

3. Testing plans and reports. (Title-24 MCH-XXX and Electrical functional tests only.)

4. Issues log.

5. Completed test checklists.

6. Listing of off-season test(s) not performed and a schedule for their completion.

H. Systems Manual: CxA shall gather required information and compile systems manual. Systems manual shall include, but is not limited to, the following:

1. As-built system narratives, schematics, and list of installed equipment, including; Building Envelope, HVAC, Laboratory HVAC, Fire Protection and Alarm, Irrigation Control, Power and Lighting Controls installed schematics.

2. Operation and maintenance manuals.

1.10 CXA SUBMITTALS

A. Commissioning Plan: CxA shall submit a draft commissioning plan. Deliver one copy to Contractor and one to District. Present submittal in sufficient detail to evaluate data collection and arrangement process. One copy, with review comments, will be returned to the CxA for preparation of the final commissioning plan.

B. Pre functional Checklists: CxA shall submit sample checklists and forms to Contractor and subcontractors for review and comment.

C. Functional Test Plan: CxA shall submit draft Functional Test Plan and checklists for comment. The final Functional Test Plan will be submitted and used for functional testing. Submit the Title-24 required functional tests.

D. Site visit reports: CxA shall submit site visit reports as they are created.

E. Final Commissioning Report: CxA shall submit the draft commissioning report. One copy, with review comments, will be returned to the CxA for preparation of final submittal. The final report submittal must address previous review comments.

1.11 COORDINATION

A. Coordinating Meetings: CxA shall conduct coordination meetings of the commissioning team as needed to review progress on the commissioning plan, to discuss scheduling conflicts, and to discuss upcoming commissioning process activities.

B. Pretesting Meetings: CxA shall conduct pretest meetings with the commissioning team to review startup reports, coordinate controls sequence of operations, review pretest inspection results, review testing and balancing procedures, review testing personnel and instrumentation requirements, and manufacturers' authorized service representative services for each system, subsystem, equipment, and component to be tested.

C. Testing Coordination: CxA shall coordinate with the OWNER and Contractor to plan the sequence of testing activities to accommodate required quality-assurance and -control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.

1. Schedule times for tests, inspections, obtaining samples, and similar activities.

PART 2 - PRODUCTS (Not Used)

PART 3 – EXECUTION

3.01 BUILDING ENCLOSURE CONSTRUCTION CHECKLISTS

A. Building Enclosure Construction Checklists are developed by the CxA and completed by the appropriate installing contractors for all major building enclosure systems being commissioned. The checklists are to be completed during the installation phase of each system. These checklists are to ensure that each building enclosure system is being installed according to the specified installation standards. The building enclosure checklists are in addition to the manufacturer’s installation checklists and DO NOT replace the manufacturer’s installation checklists. The Contractor and vendors shall also execute manufacturer’s installation check provide CxA with a copy of the signed and dated completed checklists which will be submitted with the Building Enclosure Construction Checklists.

B Execution of Building Enclosure Construction Checklists

1. Construction checklists will be provided to the project site by the CxA.

2. The contractor shall maintain a master copy of signed checklists.

3. The installing contractors shall update the checklists as work is completed. Only individuals that have direct knowledge and witnessed that a line item task on the pre-functional checklist was actually performed shall initial or check that item off.

4. The CxA will periodically review the checklists for completeness and report on progress at the Cx meetings.

3.02 PRE-FUNCTIONAL CHECKLISTS AND FACTORY START UP REPORTS

A. Pre-functional Checklists are developed by the CxA and completed by the appropriate installing contractors for all major equipment and systems being commissioned before functional testing can begin. The checklist captures equipment nameplate and characteristics data, confirming the as-built status of the equipment or system. These checklists also ensure that the systems are complete and operational, so that the functional performance testing can be scheduled. The Contractor and vendors shall execute factory startup and provide the CxA with a copy of the signed and dated completed start-up checklists which will be submitted with the Pre-Functional checklists.

B. Execution of Pre-functional Checklists and Startup.

1. Pre-Functional checklists will be provided to the project site by the CxA.

2. The contractor shall maintain a master copy of signed checklists.

3. The installing contractors shall update the checklists as work is completed. Only individuals that have direct knowledge and witnessed that a line item task on the pre-functional checklist was actually performed shall initial or check that item off.

4. The CxA will periodically review the checklists for completeness and report on progress at the Cx meetings.

C. Deficiencies, Non-Conformance and Approval in Checklists and Startup.

1. The Contractor shall clearly list any outstanding items of the initial start-up and pre-functional procedures that were not completed successfully, at the bottom of the procedures form or on an attached sheet. The procedures form and any outstanding deficiencies are provided to the CxA within two days of test completion.

2. The CxA reviews the report and reports to the District. The CxA shall work with the Contractor and vendors to correct and retest deficiencies or uncompleted items.

3.03 FUNCTIONAL PERFORMANCE TESTING

A. Objectives and Scope. The objective of functional performance testing is to demonstrate that each system is operating according to the Contract Documents Title-24 test requirements. Each system will be tested to verify that the system response is as designed. HVAC and Laboratory systems will be checked for conformance to the design sequences of operation

and stable control, lighting control will be checked in each type of lighting area, and irrigation control will be checked. Proper system responses to such conditions as power failure, out of limit condition, equipment failure, etc. shall also be tested.

B. Early duct air leakage tests shall be performed to ensure green and building code compliance to duct systems with over 3-inch w.c. static pressure. Point-to-point testing will be performed by controls contractor on all applicable systems, with results given to CxA prior to functional performance testing.

C. Development of Test Procedures: The test procedures are written by the CxA based upon the final operational sequences from available project documentation. The CxA shall develop specific test procedures and forms to verify and document proper operation of each system. Prior to execution, the CxA shall provide a copy of the test procedures to the Contractor who shall review the tests for feasibility, safety, equipment and warranty protection. The test procedure checklists developed by the CxA shall include the following information:

1. System and equipment or component name(s).

2. Equipment location and ID number.

3. Date.

4. Project name.

5. Participating parties.

6. Reference to the specification section describing the test requirements, if applicable.

7. A copy of the specific sequence of operations.

8. Prerequisites for the test.

9. Special cautions, alarm limits, etc.

10. Specific step-by-step procedures to execute the test.

11. Acceptance criteria of proper performance with a Yes / No/NA check box.

12. A section for comments.

D. Test Methods.

1. Functional testing is performed by the contractors with the method and degree of testing as defined in this specification for each system. Each function and test shall be performed under conditions that simulate actual conditions as close as is practically possible. The Contractor executing the test shall provide all necessary materials, system modifications, etc. to produce the necessary flows, pressures, temperatures, etc. necessary to execute the test according to the specified conditions.

At completion of the test, the Contractor shall return all affected building equipment and systems to their pre-test condition.

2. Multiple identical pieces of equipment may be functionally tested using a sampling strategy. The sampling strategy will be defined in these specifications with the commissioned systems list.

E. Coordination and Scheduling: The Contractor shall provide two weeks' notice to the CxA regarding their completion schedule for the pre-functional checklists and startup of all equipment and systems. The CxA will schedule functional tests through the District Representative and Contractor. Problem Solving: The CxA will recommend solutions to problems found; however, the burden of responsibility to solve, correct and retest problems is with the Contractor and District's consultants.

3.04 OPERATION AND MAINTENANCE TRAINING REQUIREMENTS

A. Before the operation and maintenance training, CxA shall review training preparation for compliance with project documents.

B. Training is required per contract specifications. At a minimum, training is required for Mechanical, Lighting, Irrigation and Controls systems.

C. The CxA requires submission of training records including attendance lists to verify appropriate people received the training.

3.05 COSTS OF COMMISSIONING WORK

A. The cost to the Contractor and Subcontractors to comply with the specified requirements and to support the work of the CxA shall be included in the Contractor's and Subcontractor's bid price.

B. If CxA arrives onsite, on the scheduled date for functional testing (as indicated on the Systems Functional Testing Readiness Certification and Notification Letter for Commissioning, see Exhibit B of this specification section) which cannot be completed due to systems readiness failure, systems technician no-show, or other circumstances not caused by CxA resulting in failed functional testing; it is understood that the CxA's client (listed on Exhibit B) will be invoiced for expenses incurred by CxA. The contractor also agrees to reimburse said client for incurred expenses. CxA expenses will be invoiced as follows:

- Travel expenses as applicable

3.06 COMMISSIONED SYSTEMS

System	Equipment	Level
	Split system heat pumps	3
	Rooftop air conditioners	3
	Split system air conditioners	3

System	Equipment	Level
HVAC&R Systems	Make up air unit	3
	Kitchen exhaust system	3
	Test and balance report values	3
Building Management System	Sequences of operation, monitored points, and alarms	3
	Metering/monitoring devices and equipment	3
	Software commissioning, GUI presentation commissioning, system access performance criteria, software tools/source code commissioning, instrument data sheets, middleware commissioning, Internet Protocol commissioning	3
Building Envelope	Foundation/slab	3
	Exterior wall systems	3
	Roof systems	3
Electrical Systems	Scheduled lighting controls	3
	Day-light savings and dimming controls	3
	Lighting occupancy sensors	3
Plumbing Systems	Domestic water heaters	5
	Thermostatic mixing valves	5
Irrigation	Irrigation Controllers	2

A. Levels Defined:

Level 1 - The CxA will periodically observe and inspect the installation of equipment and systems and review project documentation (test reports) to verify operational requirements meet the contract documents.

Level 2 - The CxA will periodically observe and inspect the installation of equipment and systems and review project documentation (test reports). The CxA may spot check some of the system functions verify operational requirements are met.

Level 3 - The CxA will periodically observe and inspect the installation of equipment and systems and review project documentation (test reports) and will witness contractor performance testing of the system. Contractor shall test up to 20% of the system to prove operational requirements are met. The test sections shall be chosen at random by the CxA. Failure of any test section shall require retesting of that section and an additional test section equivalent in scope.

Level 4 - The CxA will periodically observe and inspect the installation of equipment and systems and review project documentation (test reports) and will witness contractor performance testing of the system. Contractor shall test up to 50% of the

system to prove operational requirements are met. The test sections shall be chosen at random by the CxA. Failure of any test section shall require retesting of that section and an additional test section equivalent in scope.

Level 5 - The CxA will periodically observe and inspect the installation of equipment and systems and review project documentation (test reports) and will witness contractor performance testing of the system. Contractor shall test up to 100% of the system to prove operational requirements are met. The test sections shall be chosen at random by the CxA. Failure of any test section shall require retesting of that section and an additional test section equivalent in scope.

3.07 METHODS OF TESTING

A. HVAC&R Systems

1. Contractor will demonstrate to the CxA that the operation of each system through all modes, alarms, and operating parameters meet the project specifications.

2. The TAB contactor will re-measure up to 25% of the final TAB Report for the CxA to observe. The points to be verified will be selected by the CxA.

B. Building Management System

1. The Controls contactor will re-measure some of the points for the CxA to observe that the calibration is correct. The points to be verified will be selected by the CxA.

2. All the user graphics interfaces and displayed operating points will be demonstrated for the CxA by the contractor.

3. Controls contractor shall manipulate the system to demonstrate that it performs all the specified modes of operation.

4. Points selected by the CxA will be trended by the Controls Contractor to verify control operation and response.

C. Building Envelope

1. Specified building enclosure systems installation and testing is defined in each applicable specification section. Specified installation and testing may include but not limited to the following installation and testing standards:

   a. Vapor Barrier Installation – ASTM E1643 – Standard Practice for Selection, Design, Installation and Inspection of Water Vapor Retarders Used in Contact with Earth or Granular Fill Under Concrete Slabs.

   b. Insulation Installation Inspection – ASTM C1060-90 – Standard Practice for Thermographic Inspection of Insulation Installations in Envelope Cavities of Frame Buildings.

c. Windows and Curtain Wall Installation – ASTM E1105 – Standard Test Method for Field Determination of Water Penetration of Installed Window, Skylights, Doors and Curtain Walls by Uniform or Cyclic Static Air Pressure Difference.

d. Dissimilar Enclosure Material Intersections – AAMA 501.2 – Quality Assurance and Diagnostic Water Leakage Field Check of Installed Storefronts, Curtain Walls and Sloped Glazing Systems.

e. Exterior Sealants – ASTM C1193 – Standard Guide for Use of Joint Sealants, Appendix X1 – Method A, Field Applied Sealant Joint Hand Pull Tab.

f. Horizontal Waterproofing Installation – ASTM D 5957 – Standard Guide for Flood Testing Horizontal Waterproofing Installations.

2. Copies of any required enclosure testing and test plans will be submitted to CxA for review and comment prior to performing any tests.

3. CxA will be notified 14 days prior to any scheduled building enclosure field tests allowing time for CxA to witness field tests, as required.

D. Electrical Systems

1. Upon completion of the lighting control installation and contractor testing the CxA will verify the performance of the system by witnessing its operation.

2. Upon completion of the uninterruptible power supply and contractor pretesting, the CxA will witness a Contractor test to verify complete system power loss and verify proper power provision of critical systems.

E. Plumbing

1. Domestic hot water will be tested by the CxA by measuring the hot water temperature at a percentage of the fixtures along with the time it takes to reach that temperature.

2. After receipt of completed prefunctional checklists and manufacturer's authorized start-up reports, the CxA will test the shops, dental compressed air and vacuum systems for proper operation.

F. Irrigation

1. The CxA will witness the contractor demonstration of the irrigation controller.

2. The CxA will witness, verify and note the sequence of operation and timing of sequences.

EXHIBIT E

INSURANCE REQUIREMENTS

Section I. Insurance.
The Entity shall obtain, and maintain during the entire Lease Term, and for any extended length of time identified under these requirements, all insurance required by Sections III and IV; Entity shall obtain, and maintain during the entire construction phase of Phase II of the Facilities Lease, all insurance required by Section VI. Certificates of Insurance and required endorsements, including but not limited to Additional Insured Endorsements and Waivers of Subrogation in favor of the District, the Architect, the Construction Manager, and any other District Consultants, and each of their officers, officials, directors, trustees, agents, employees and volunteers (herein after collectively referred to as "Additional Insureds"), **shall be delivered to the District a) within five (5) days of execution of the Facilities Lease by the District for insurance required by Sections III and IV and b) within five (5) days of issuance of the Notice to Proceed with Phase II for insurance required by Section VI. The Entity shall not commence work until all required insurance documentation has been submitted to and accepted by the District.** If the District requests copies of the Insurance Policy or Policies, the Entity agrees to provide certified copies within 30 days of the District's request.

Every policy shall be endorsed or shall provide in the policy form to state that the policy shall not be canceled, materially reduced, or non-renewed without thirty (30) days prior written notice to District (ten [10] days for non-payment of premium).

Failure of Entity to maintain all required insurance as required during the Lease Term shall constitute a default entitling the District to all rights and remedies that exist under this Agreement and/or by law.

The insurance required in this agreement shall be with carriers, on forms, and in amounts acceptable to the District and shall be subject to the approval of the District. Any acceptance of insurance certificates by the District, however, shall in no way limit or relieve the Entity of duties and responsibilities in this agreement.

Section II. Effective Date of Policies.
The insurance required by Sections III and IV of this Exhibit shall be maintained by the Entity in full force and effect at all times during prosecution of the work and, in regards to the insurance required by Section IV, for the period of time the District may be held liable for the Entity's work; evidence of such will be provided to the District for a period of time no less than five (5) years after the final completion and acceptance thereof by District. This requirement includes, but is not limited to, Entity's obligation to maintain Products & Completed Operations coverage for itself and the Additional Insureds. The insurance required by Section VI of this Exhibit (Builder's Risk) shall be maintained by the Entity in full force and effect from the time of Notice to Proceed with Phase II of the work until acceptance of the Project by the District.

Section III. Workers' Compensation and Employers' Liability Insurance.
In accordance with the provisions of Section 3700 of the Labor Code, the Entity, and each Subcontractor, shall secure the payment of compensation to its employees. The Entity and each Subcontractor shall provide Workers' Compensation insurance and occupational disease insurance, as required by law, and Employer's Liability insurance with minimum limits of $1,000,000 covering all workplaces involved in the Construction Documents.

The Entity shall sign and file with the District the following certificate on the form provided by the District:

I am aware of the provisions of Section 3700 of the Labor Code which require every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of that Code, and I will comply with such provisions before commencing the performance of the work of this Contract.

The Entity shall require each Subcontractor to file such statement prior to allowing that Subcontractor to commence Work.

The Entity shall furnish a certificate of insurance or a certificate of permission to self-insure under the Workers' Compensation and Employers' Liability Insurance statutes of the State of California. The certificate shall provide that at least thirty (30) days' prior written notice (ten [10] days for non-payment of premium) shall be served on District prior to the cancellation or change of such insurance or self-insurance. Said certificate shall also include an endorsement evidencing that the insurer shall waive all rights of subrogation against the District, the Architect, the Construction Manager, and any other District Consultants, and each of their officers, officials, directors, trustees, agents, employees and volunteers. Such insurance shall be delivered to the District Representative within five (5) days of being notified of the intent to award the Contract, and before the District will execute the Facilities Lease.

With the exception of insurance provided by The State Compensation Insurance Fund of California, insurance is to be placed with insurers approved by the State of California Department of Insurance or otherwise authorized to transact insurance business in California and with a Bests' rating of no less than A-VII.

Any deductibles or self-insured retentions must be declared to and approved by the District.

Section IV. Liability Insurance.
Insurance is to be placed with insurers approved by the State of California Department of Insurance to transact insurance business in California and with a Bests' rating of no less than A- VII.

A. The Entity shall procure and maintain insurance on all of their operations with insurance companies and on forms acceptable to District for the following minimum insurance coverages:

1. **Commercial General Liability** Occurrence form insurance policy (ISO CG 00 01 or equivalent) covering all operations by or on behalf of Entity, not excluding coverage for:
    a. Premises and Operations
    b. Products and Completed Operations
    c. Contractual Liability insuring the obligations assumed by the Entity in this agreement or Blanket Contractual Liability Coverage
    d. Broad Form Property Damage (including Completed Operations)
    e. Explosion, Collapse, Subsidence, and Underground Hazards
    f. Personal Injury Liability

    Commercial General Liability Limits shall not be less than:

    $2,000,000 Each Occurrence (Combined Single Limit for Bodily Injury & Property Damage)
    $2,000,000 Personal Injury Liability Each Occurrence
    $4,000,000 Aggregate for Products and Completed Operations
    $4,000,000 General Aggregate

The required General Liability limits must be present on the primary General Liability policy and cannot be met with Umbrella policy limits.

2. **Commercial Automobile Liability** insurance policy (ISO CA 00 01 or equivalent) covering Bodily Injury, Property Damage and Contractual Liability coverage for "Any Auto" (Symbol 1) which includes coverage for any owned, hired, borrowed and non-owned automobile, trailer, and equipment coverage, with combined single limit of not less than $1,000,000. The District and the "Additional Insured" entities shall be named as additional insureds on a primary and non-contributory basis, with subrogation rights waived against each.

3. **Umbrella Policy** The Entity shall have in place an Umbrella Policy in the amount of **$20,000,000** The policy shall be "Following Form" in excess of the above captioned policies and Workers' Compensation Employer's Liability. Evidence of this coverage shall be provided on the certificate of insurance.

4. **Professional Liability** Should any work in the Entity's contract contain any element of design or any professional element that would not otherwise be covered under Entity's General Liability policy, Entity shall obtain at its own expense Professional Liability (Errors & Omissions) coverage to protect, defend, and hold harmless the District and its officers, officials, directors, trustees, agents, employees and volunteers from all claims arising out of the professional services provided by the Entity under the Contract Documents. Entity's policy shall have limits of not less than $5,000,000 and shall agree to waive all rights of subrogation against the District and the "Additional Insured" entities designated in this contract. Entity shall maintain coverage for this policy and retroactive dates that will continue coverage for a period of at least five years from the completion of the project. The District may require higher limits by written request.

5. **Pollution Liability** Should any work include any elements that may give rise to a Pollution claim, the Entity shall be required to carry Pollution Liability coverage with limits no less than $5,000,000 per pollution event. The District may require higher limits by written request. The policy shall be endorsed to include by name the "Additional Insureds," as defined by Section I, as additional insureds and shall include a waiver of subrogation endorsement in favor of the "Additional Insureds."

B. Additional coverages and/or limits may be required in the Facilities Lease. If the Facilities Lease requires limits of General Liability and Automobile Liability insurance exceeding those stated above, the Entity shall carry Umbrella Liability insurance providing excess coverage at least as broad as the underlying coverage with a limit equal to the amount stated in the Facilities Lease.

C. Should Entity or any of its Subcontractors or Consultants maintain broader coverage and/or limits than those listed in this contract, those limits/coverages are hereby required and shall be made available to the District.

D. The following terms shall be included in the General Liability and Auto Liability insurance, either within the policy or by endorsement:

1. General Liability policy shall be endorsed to include by name "Additional Insureds," as defined by Section I., as additional insureds (the General Liability endorsement shall be at least as broad as ISO form CG 20 10 11 85), and shall provide coverage for Ongoing Operations as well as Products & Completed Operations for the period of time the "Additional Insureds" may be held liable for the Entity's work, and shall state that these policies are primary and that any Insurance, Self Insurance or Memorandum of Liability Coverage (MDLC) maintained by District shall be in excess of the Entity's insurance and shall not be called upon to contribute to any loss. Evidence of such shall be provided to the District for a period of time no less than ten (10) years after completion of the project.

2. Except with respect to bodily injury and property damage included within the Products and Completed Operations hazards, the aggregate limit, where applicable, shall apply separately to the project under this subcontract.

3. All liability insurance shall be written on an "occurrence" basis and defense costs shall be outside the policy limits of liability. Modified Occurrence policies and sunset-type clauses shall not be accepted.

4. The Commercial Auto Policy shall include the District and the "Additional Insured" entities as additional insureds on a primary and non-contributory basis, with subrogation rights waived against each.

5. Any failure to comply with reporting provisions of the policies shall not affect coverage provided to the "Additional Insureds."

6. General Liability Coverage shall state that the Entity's insurance shall apply separately to each Insured against whom claim is made or suit is brought, except with respect to the limits of the insurer's liability, and shall contain a severability of interest/cross liability clause to the effect that each Insured and Additional Insured is covered as if separate policies had been issued to each.

7. The insurer(s) issuing the required General Liability and Auto Liability policies shall, by separate endorsement, agree to waive all rights of subrogation against the "Additional Insureds." The General Liability waiver of subrogation must apply to both ongoing operations and completed operations.

8. The policy must provide, by policy provisions or endorsement, that it shall not be canceled, suspended, voided, materially changed or any renewal or replacement policy be changed without thirty (30) days' prior written notice to the District (ten [10] for non-payment of premium). Evidence of such must be provided to the District.

9. The Contractual Liability coverage may be either on a blanket basis or a policy which specifically identifies this Agreement with a contractual liability endorsement.

10. Any deductibles or self-insured retentions must be declared to and approved by the District which amounts shall be no greater than $50,000. Any and all deductibles or self-insurance retentions in the above described liability insurance policies shall be assumed by and be for the account of, and at the sole risk of the Entity.

11. All policies and endorsements are subject to approval at the sole discretion of the District. Endorsements with expiration dates will not be accepted.

Section V. Subcontractor's Insurance.

With the exception of policy limits as outlined in this Section, the Entity shall require each and every Subcontractor to maintain insurance coverages commensurate to that which is required of the Entity per Sections I, II, III, and IV of this Exhibit, and shall incorporate this Exhibit E into each subcontract. This includes, but is not limited to, the Additional Insured and Waiver of Subrogation provisions.

Subcontractors must carry General Liability limits no less than as outlined below:

General Liability:
$1,000,000 Each Occurrence (Combined Single Limit for Bodily Injury & Property Damage)
$1,000,000 Personal Injury Liability Each Occurrence
$2,000,000 Aggregate for Products and Completed Operations
$2,000,000 General Aggregate

Commercial Automobile Liability: $1,000,000 Combined Single Limit

Employers Liability: $1,000,000

Umbrella Policy: $1,000,000

Any Subcontractors with any design-element to their work must provide evidence of Professional Liability insurance in an amount no less than $2,000,000 per claim; such policies shall contain a waiver of subrogation in favor of the District and the "Additional Insured" entities.

Should Subcontractor's work include any elements that may give rise to a Pollution claim, Subcontractor shall be required to carry Pollution Liability coverage with limits of at least $2,000,000 per pollution event. The District may require higher limits by written request. The policy shall be endorsed to include by name the "Additional Insureds," as defined by Section I, as additional insureds and shall include a waiver of subrogation endorsement in favor of the "Additional Insureds."

Should any Subcontractor maintain broader coverage and/or limits than those listed in this contract, those limits/coverages are hereby required and shall be made available to the District.

The Entity shall not allow any Subcontractor to commence work on its Subcontract until the Subcontractor has provided Entity with Certificates of Insurance and applicable endorsements as well as the signed statement acknowledging compliance with Section 3700 of the Labor Code, as required in Section III. It shall be the responsibility of the Entity to ensure that all Subcontractors comply with this provision, and to verify their compliance when requested by the District.

If requested by the District, the Entity shall deliver certificates of insurance or copies of the insurance policies and endorsements of all Subcontractors; provided, however, that this authority shall not relieve the Entity of its obligation to ascertain the existence of such insurance.

Section VI. Builder's Risk Insurance. The Entity shall, at its sole expense, purchase, maintain and keep in force at all times during the construction phase of the Facilities Lease Phase II term, until the date of transfer of the insurable interest to and acceptance by the District, a Builder's Risk Insurance (Property Insurance). Such insurance shall protect the District, the Contractor, Subcontractors, Sub-Subcontractors and Material Suppliers at every tier, as their interests may appear, from loss or damage to work in the course of construction. Property insurance shall be on a "Special Form" or equivalent policy and shall not exclude the perils of fire (with extended coverage) and physical loss or damage not excluding theft, vandalism, malicious mischief, collapse, earthquake (including full coverage for all losses caused by "Acts of God," as defined by California Public Contract Code section 7105), flood, windstorm, falsework, mechanical breakdown or electrical damage including testing and startup, magnetic disturbance, changes in temperature or humidity, temporary buildings, loss that ensues from defective material or workmanship, explosion, and debris removal including demolition occasioned by enforcement of any applicable legal requirements, and shall cover reasonable compensation for the District's Representative's, Architect's, Construction Manager's, other District Consultants' and Contractor's services and expenses required as a result of such insured loss in the amount of one hundred percent (100%) of the replacement cost of the Project.

A. The following terms shall apply to such coverage:

1. Coverage shall be written on a replacement cost, completed value, non-reporting form and shall cover the property against all risks of physical loss or damage required above.

2. The property covered shall include the work and improvements of the Project, including any materials, equipment or other items to be incorporated therein while the same are located at the construction Site, with reasonable sub-limits for materials stored offsite, or while in transit. The policy shall contain a provision that the Entity and the District are Named Insureds under this policy and that the Subcontractors, Sub-Subcontractors, and Material Suppliers at every tier are Named Insureds or Additional Insureds as their interest may appear. A loss insured under the Builder's Risk/Installation Floater policy shall be adjusted by the Entity as fiduciary and made payable to the Entity as fiduciary for the insureds, as their interests may appear, subject to requirements of any applicable mortgagee clause. The Entity shall pay Subcontractors their just shares of insurance proceeds received by the Entity, and by appropriate agreements, written where legally required for validity, shall require Subcontractors to make payments to their sub-subcontractors in similar manner.

3. When stated in the Facilities Lease, Builder's Risk insurance shall include Delay in Opening coverage with limits of liability, and for the period of time, as set forth in the Facilities Lease. Coverage shall include interest and/or principal payments that become due and payable by the District upon completion of Construction or other date as set forth in the Facilities Lease, debt service, expense, loss of earnings or rental income or other loss incurred by the District, without deduction, due to the failure of the Project being completed on schedule.

4. The maximum deductible for earth movement, Acts of God, and flood allowable under this policy shall not be more than five percent (5%) of the values in place at the time loss per occurrence. The maximum deductible for all other perils allowable under this policy shall be one hundred thousand dollars ($100,000). All deductibles shall be borne solely by the Entity, and the District shall not be responsible to pay any deductible in whole or in part.

B. The insurer shall by separate endorsement or policy provisions agree to waive all rights of subrogation against the District, the other "Additional Insureds," as defined by Section I., the Entity, Subcontractors, Sub-Subcontractors, and Material Suppliers at every tier for losses covered by the policy. If the policies of insurance referred to in this Section require an endorsement or consent of the insurance company to provide for continued coverage where there is a waiver of subrogation, the owners of such policies will cause them to be so endorsed to obtain such consent.

C. The Entity shall provide a copy of the Builder's Risk policy to the District for approval. Such policy shall provide all the coverages required of this section as well as conform to the requirements of this contract.

D. If not covered by Builder's Risk policy or any other property or equipment insurance required by the Facilities Lease, the Entity shall, at its sole expense, purchase, maintain and keep in force at all times during the term of the Facilities Lease property insurance for portions of the Entity's work and/or equipment to be incorporated therein stored offsite or in transit.

E. The District shall maintain in effect during the term of this Lease, property insurance on all pre-existing utilities, buildings, structures, paving, and equipment on the Site which are not part of the Construction project.

Exhibit F

General Conditions Costs

[TO BE ADDED BY AMENDMENT]

A		Item				UNIT COSTS				TOTAL COSTS					
L	DETAILS	Code	Description	Qty.	Manhours/	Labor	Material	Equip.	Sub	Labor	Material	Equip.	Sub	Line Item	Item
T					Unit	$	$	$	$	$	$	$	$	Unit$	Total $
Report DOES NOT include Taxes & Insurance or Indirect Costs.															
Administrative requirements															
			Site permits By Owner		LSUM										
			Mailing & shipping		MO										
			Drug testing & finger printing program		LS										
Administrative requirements															
Minor Item Code 01310.000 Project management and coordination															
			Project Manager(3/4 Time)		Week										
			Superintendent-full time		Week										
			Project engineer		Week										
			Project coordinator (full time)		Week										
			Certified payroll clerk 8hrs/wk		Week										
			Building layout - C&S Assist Super		MH										
			Site layout - C&S Assist Super		MH										
			Preconstruction Services		LS										
Project management and coordination															
Construction progress documentation															
			Project photographs & videos		LS										
			Schedule - C&S in house		Week										
			Expediting - 4 hours per week		Week										
			Job office supplies		MO										
			As-built drawings		LSUM										
			O & M manuals		EACH										
Construction progress documentation															
Administrative requirements															

A		Item				UNIT COSTS				TOTAL COSTS					
L	DETAILS	Code	Description	Qty.	Manhours/	Labor	Material	Equip.	Sub	Labor	Material	Equip.	Sub	Line Item	Item
T					Unit	$	$	$	$	$	$	$	$	Unit$	Total $
Temporary facilities and controls															
Temporary utilities															
			Construction electrical utilities		Month										
			Temp Power - SMUD		MO										
			Temp elect is in place		LS										
			Elect Distribution by C&S Assist Super		Sq ft										
			Temporary Lighting by C&S Assist Super		Sq ft										
			Construction water utilities by Owner		Month										
			Drinking water & ice		WEEK										
			Water distribution by C&S Assist Super		WK										
Temporary utilities															
Construction facilities															
			Move in & out by Owner		Each										
			Weekly SWPPP in box 3		Week										
			Job office trailer for IOR		Month										
			Temporary toilets (5 ea)		MO										
			Project plans by District		LSUM										
			Temporary telephone		mo										
			Construction cellular phones		Month										
01520.000 Construction facilities															
01540.000 Construction aids															
			Equipment Rental		MO										
			Expendable tools & equip		LS										
			Gas, oil & grease		MO										
			Weather protection not included		ls										
			Temporary heat not included		ls										
			Forklifts		Month										
01540.000 Construction aids															

A		Item				UNIT COSTS				TOTAL COSTS					
L	DETAILS	Code	Description	Qty.	Manhours/	Labor	Material	Equip.	Sub	Labor	Material	Equip.	Sub	Line Item	Item
T					Unit	$	$	$	$	$	$	$	$	Unit$	Total $
Temporary barriers and enclosures															
			Construction fencing		LNFT										
			Temp fire protection		MO										
			Safety work		LS										
Temporary barriers and enclosures															
Project identification															
			Project sign		Each										
			Other signs		Each										
Project identification															
Temporary facilities and controls															
Execution requirements															
Cleaning															
			Housekeeping C&S by Assist Super		WK										
			Final Cleaning C&S by Assist Super		WK										
			Final clean-up - sub		LS										
			Dumpsters 2ea/month		Month										
Cleaning															
Execution requirements															
ESTIMATE TOTALS															

EXHIBIT G

CONSTRUCTION SCHEDULE

[TO BE ADDED BY AMENDMENT]

EXHIBIT H
PRECONSTRUCTION SERVICES

A. Entity's General Duties and Status:

Entity covenants with the District to furnish Entity's best skill and judgment and to cooperate with any other consultants and any design professionals employed by the District in connection with the Project. Entity agrees to perform the Preconstruction Services in the best way and in the most expeditious and economical manner consistent with the interests of the District.

Entity shall supervise and direct the Preconstruction Services using its best skill and attention, and shall be responsible for coordinating all portions of its Preconstruction Services. Entity shall be responsible to the District for the acts and omissions of its employees, subcontractors, and their agents and employees, and other persons performing any of the Preconstruction Services under a contract with Entity. Entity shall at all times enforce strict discipline and good order among its employees, and shall not employ on the Project any unfit person or anyone not skilled in the task assigned to him or her.

Entity affirms that, to the best of its knowledge, there exists no actual or potential conflict between family, business, or financial interests of Entity and performance of the Preconstruction Services. In the event of change in either interests or services under this Agreement, Entity affirms that it will raise with the District any question regarding possible conflict of interest which may arise as a result of such change.

B. Items of Preconstruction Services:

1. *Collaboration/Meetings*: Entity, with Architect, shall jointly schedule and attend regular meetings with the District and the District's consultants. Entity shall collaborate with Architect, the District and the District's consultants regarding site use and improvements, and the selection of materials, building systems and equipment. Entity shall provide on-going review and recommendations on construction feasibility; actions designed to minimize adverse effects of labor or material shortages; time requirements for procurement, installation and construction completion; and factors related to construction cost, including estimates of alternative designs or materials, preliminary budgets, and possible economies. Entity also shall participate in developing a construction plan to address project risk and minimize disruptions to the District’s educational programs at the Project site.

   The recommendations and advice of Entity concerning design alternatives shall be subject to the review and approval of the District and the District's professional consultants. It is not Entity's responsibility to ascertain that the drawings and specifications are in accordance with applicable laws, statutes, ordinances, building codes, rules and regulations. However, if Entity recognizes, or should reasonably have recognized, that portions of the drawings and specifications are at variance therewith, Entity shall promptly notify Architect and the District in writing.

2. *Site Investigation*: Entity shall carefully examine the site at which the work will be performed and all of the documents included in the contract documents; perform all reasonable investigations essential to a full understanding of the difficulties that may

be encountered in performing the work; and acquaint itself through reasonable discovery with the conditions under which the work is to be performed, including, without limitation, local labor conditions, local weather patterns, restriction in access to and from the Project site, prior work performed by others on the Project, and obstructions and other conditions relevant to the work, the site of the work and its surroundings. With the exception of subsurface conditions or other conditions which qualify under the differing site condition clause, if any, Entity expressly assumes the risk of any variance between the actual conditions, either discovered or discoverable through reasonable investigation in the performance of Preconstruction Services hereunder, and the conditions shown or represented in the contract documents.

Notwithstanding the foregoing, Entity may need to perform site investigation to confirm utilities and other infrastructure impacted or incorporated into the design to confirm location and or condition at the District's discretion. Entity's fee includes an allowance of **$15,000** to be used on a time and material basis for this site investigation to be used at the District's discretion. Any unused allowance amount will be returned to the District via a deductive amendment.

3. *Preliminary Project Schedule*: Entity shall prepare and update a preliminary Project schedule for the District's review and approval consistent with the timeline dates noted herein. The schedule shall provide for expeditious and practicable execution of the Project. As design proceeds, the preliminary Project schedule shall be updated as needed to indicate proposed activity sequences and durations, milestone dates for receipt and approval of pertinent information, submittal of the TBR and Lease Payment Schedule, preparation and processing of shop drawings and samples, delivery of materials or equipment requiring long-lead time procurement, and proposed date of final completion of the Project and any discrete portions of the Project (if different). Entity shall provide a detailed Construction CPM schedule that identifies the critical path within the construction phase. A minimum of two weeks of float for the District's use needs to be identified.

4. *Preliminary Cost Estimates*: Entity shall provide estimating services as needed throughout development of the construction documents. Depending on the stage of document development, the scope and nature of the estimating services may change. Entity will be expected to provide estimating of portions of the work, systems being considered, details as they are developed, and other estimating exercises that the District, Architect and Entity deem advisable. Entity also will be required to provide detailed estimates of the Work at each design phase milestone based on the drawings and specifications received from the Architect, and shall set forth any assumptions or interpretations that Entity used in making the estimate. Entity also will be required to participate in estimate reconciliation meetings to review any discrepancies from the Architect's estimates.

5. *Value Engineering*: While providing its Preconstruction Services, Entity shall be continuously pursuing opportunities to create additional value by identifying options to reduce capital or life cycle cost, improve constructability and functionality, or provide operational flexibility, while satisfying the District's programmatic needs. Entity shall develop value engineering proposals ("VEP") for the District's and Architect's approval for alternative systems, means, methods, finishes, equipment and the like that satisfy the general design criteria of the Project, but which result in

savings of time or money in constructing or operating and maintaining the Project. Each VEP shall describe the proposed change, identify all aspects of the Project directly or indirectly affected by the change, specify the cost or time savings to be achieved if the VEP is accepted, and detail any anticipated effect on the Project's service life, economy of operation, ease of maintenance, appearance, design or safety standards. Formal VEP will be required of the Entity to be submitted for consideration as determined by the District's Representative.

6. *Constructability Review of Construction Documents*: During development of the plans and specifications, Entity shall continually review the design and construction documents for clarity, consistency, constructability and coordination among the design disciplines' drawings, the Project construction phases (if any), and the construction trades, and shall collaborate with Architect and the District in developing solutions to any identified issues.

   Entity shall engage those subcontractors it deems necessary to participate in the constructability reviews. Regardless of whether Entity engages subcontractors, Entity shall remain fully responsible for the constructability reviews. This includes, unless excepted, the Entity's obligation during preconstruction services to use BIM modeling and complete constructability review to bring documents from level 300 to level 400 for constructability, clash detection, and pricing of the TBR.

   A. BIM Review:

      Within five (5) days following execution of the Facilities Lease, Entity shall provide to District for approval a schedule for BIM review, broken down into identifiable or defined modules, prior to DSA submittal. In accordance with the approved schedule, Entity shall communicate any questions or concerns regarding constructability, including any potential clashes detected, to Architect and shall raise any issues requiring discussion at the regular design meetings. At the time scheduled for completion of review of each module, Entity shall certify to the District that it has had a full and fair opportunity to fully evaluate the module or shall identify any additional review Entity concludes is necessary to perform prior to preparation of the TBR.

      If, during construction, Entity proposes a change due to a conflict, then Entity shall have the burden to establish that such conflict could not reasonably have been identified during preconstruction BIM constructability review.

   B. Constructability Review following DSA Submittal:

      If Entity has not conducted constructability review, including BIM review, prior to submittal to DSA then, no later than three (3) weeks after submission of construction documents to DSA for approval, Entity shall commence a formal, documented constructability review. The formal constructability review shall be completed within two (2) weeks so that the comments therein can be evaluated and incorporated as appropriate prior to DSA approval. Entity shall also perform a "back-check" prior to DSA approval to ensure the design team has addressed the review comments. The purpose of all of Entity's constructability reviews, including those before submission of the construction documents to DSA for approval and the formal constructability review(s), is to

determine that the design comprises complete, accurate and fully coordinated drawings and specifications for construction, and thereby reduce the risk of disruption, delay, change orders and potential claims. Entity will focus on accuracy, completeness, sequencing and coordination. Entity's reviews also will seek out alternative construction materials and systems that may result in a cost or time savings to the District. The results of the reviews shall be provided in writing and as notations on the construction documents. Nothing in the contract documents shall relieve the Architect and the other design professionals from their obligation to perform their services and design the Project in accordance with the terms of their respective contracts and the applicable standard of care, and final decision on all such cost or time saving reviews shall be with the District and/or its separately retained construction management or design consultants.

7. *Development of Total Base Rent*:. Entity shall prepare a plan to develop the TBR, including without limitation a bidding approach and schedule to obtain competitive bids from potential subcontractors and suppliers, and submit the plan to the District for approval sufficiently prior to DSA approval to allow for District review and comment and any revision by the time DSA approval is secured. The plan shall include at least the following elements:

a. Entity shall seek to develop subcontractor interest in the Project and shall collaborate with the District and Architect to develop a list of possible subcontractors, including suppliers, from whom bids will be requested for each principal portion of the work;

b. Entity shall prepare bid packages for the complete scope of work for all trades that will be subcontracted, other than those for which a subcontractor or supplier was listed in Entity's Proposal;

c. Entity shall provide public notice (under the District's public works notice procedures) of availability of work to be subcontracted, including a fixed date and time on which qualifications statements, bids, or proposals will be due. Entity will submit a copy of the bid advertisement and any addenda affecting the bid date to the District;

d. Entity shall establish reasonable qualification and selection criteria and standards, and state such criteria in its solicitation documents;

e. Entity shall require prequalification if required by law or by the District. Mechanical, electrical, and plumbing subcontractors (those with any of the following license classifications: C-4, C-7, C-10, C-16, C-20, C-34, C-36, C-38, C-42, C-43 and C-46) must be prequalified prior to submitting bids for the Project. Entity shall work with the District in prequalifying such subcontractors, using the District's standard Prequalification Questionnaire and uniform rating system;

f. Entity shall require all potential subcontractors, truckers and any suppliers and/or vendors subject to California's prevailing wage laws to be registered with

the Department of Industrial Relations pursuant to Labor Code section 1725.5 at the time of bidding;

g. If Entity plans to self-perform any work, Entity must submit a sealed bid directly to the District a minimum of 48 hours in advance of the bid due date for the subcontractors; the cumulative amount of self-perform work not required to be blind bid is $50,000;

h. The District has a local business participation goal of 20% of the direct cost of construction being performed by contractors within the District boundary, which goal must be noted in the solicitation document. Entity shall address its plan to achieve this goal and shall follow this plan during preconstruction services. Bids must identify associated zip codes for location of business address and business owner home address to identify such local subcontractors and suppliers;

i. DVBE outreach is required and goal of 3% must be noted in the solicitation document. Entity shall address its plan to achieve this goal in its bid and shall follow this plan during preconstruction services;

j. Entity shall specify how it will determine that the subcontractor or supplier has the financial resources, qualifications, and experience to complete the work for which it is proposed;

k. Entity shall propose award of subcontracts in accordance with the following competitive selection processes:

i. For work that has a value of $5000 or more but less than one-half of one percent of the construction price that is subcontracted, a minimum of three bids is expected for each trade. Such bids may be solicited through informal bidding and contracts awarded based on low bid or best value. The LLB Entity will provide the District with a copy of their bid advertisement and subsequent addenda.

ii. For work that has a value equal to or greater than one-half of one percent of the construction price that is subcontracted, the competitive sub-bid selection process (i) will require advertisement in accordance with that required of the District, fixing a date on which qualifications, bids or proposals are due; (ii) will permit selection and award of subcontracts on either a best value basis or to the lowest responsible bidder; and (iii), if a best value basis will be used, establish in the solicitation reasonable qualification criteria and standards. The Entity shall will provide the District with a copy of their bid advertisement and subsequent addenda. Subcontractors awarded construction subcontracts under this process shall be afforded all protections of the Subletting and Subcontracting Fair Practices Act (commencing with Section 4100 of the California Public Contract Code.

l. District shall have the right to review the proposed subcontractors and to object to or reject any proposed subcontractor or supplier;

m. For any work not required to be bid, Entity shall provide a detailed estimate of the cost of the work, including documentation sufficient to support that the price is reasonable;

n. Entity shall propose a TBR, which shall be the sum of the i) general conditions cost as bid, ii) the cost of any actual construction work performed by Entity's own forces, iii) the cost of all subcontract bids, iv) Entity's fee, as bid, v) costs of bonds and insurance, vi) contingencies and allowances, and vii) financing costs.

o. Entity shall develop a final price proposal to include the written rationale for the price and objectively-verifiable documentation of its costs to perform the construction work under the Facilities Lease. The documentation shall include:

- A written evaluation for each of the portions of work, including a summary of the bids received, the actual bid proposals, and identify the subcontract bidder(s) that Entity recommends;

- For any DVBEs listed in the proposal, documentation supporting the DVBE's price, including a written rationale explaining why the price is reasonable;

- A list of the drawings and specifications, including all addenda, that were used in preparation of the price proposal;

- "Good Faith Efforts" documentation to reflect DVBE outreach (by the Entity and its selected subcontractors) if the 3% DVBE participation goal is not met (*see* Attachment 1 hereto);

- The proposed TBR broken down by element comprising the TBR, including a statement of the estimated cost and a schedule of values organized by trade categories;

- A list of the clarifications and assumptions made by Entity in preparing the final proposed TBR to supplement the information contained in the drawings and specifications;

- The date of commencement and the date of completion upon which the proposed TBR is based;

- A list of allowances and a statement of their basis; and

- A detailed cost breakdown of all general conditions and jobsite management expenses included in the TBR.

p. Entity shall develop a proposed Lease Payment Schedule based on its proposed TBR.

Entity shall meet with the District and Architect to review the final price proposal, proposed TBR, and proposed Lease Payment Schedule and the written statement of its basis. If the District or Architect discover any inconsistencies or inaccuracies in the information presented, they shall promptly notify Entity, who shall make appropriate adjustments to the documentation.

Entity shall be present at the Board meeting at which the TBR and Lease Payment Schedule is proposed for approval and be available to answer any Board questions regarding the TBR or Lease Payment Schedule. The cost of any revisions to the proposed TBR or Lease Payment Schedule or supporting documentation or analysis required by the Board as a condition of approval of Phase II of the Work is included in Preconstruction Services.

8. *Long Lead Time Items*: Entity shall recommend to the District and Architect a schedule for procurement of any long-lead time items which will constitute part of the work as required to meet the Project schedule. If such long-lead time items are procured by the District, they shall be procured on terms and conditions acceptable to Entity. [The District will add an allowance for procurement of long-lead time items by an Amendment during Preconstruction, subject to approval of the District prior to purchase of such items.] Upon Notice to Proceed with Phase II of the Work, all contracts for such items shall be assigned by the District to Entity, who shall accept responsibility for such items as if procured by Entity. Entity shall expedite the delivery of long-lead time items to ensure delivery and installation to meet the scheduled completion date.
9. *Insurance costs for pre-construction services: In accordance with Exhibit E, the Entity shall provide insurance, as required by Sections III and IV.*

C. Term, Progress and Completion:

Time is of the essence. The District desires to submit the construction documents to DSA no later than **October, 2024**. DSA approval is estimated to occur no later than end of **December, 2024**, followed by development and approval of the Total Base Rent and Lease Payment Schedule, which is anticipated to require approximately eight weeks. The District desires to submit the proposed Total Base Rent and Lease Payment Schedule to the Board for approval no later than the meeting scheduled for **20, March, 2025**. Entity shall perform all of its Preconstruction Services consistent with these timelines.

D. Compensation:

The District shall compensate Entity for performing the Preconstruction Services as follows: the fixed fee of **$_____[Amount from Fee Proposal],** divided as follows among the required preconstruction services:

	ITEM Description	Amount
1	**Proposed Preconstruction Services Fee –** Collaboration/Meetings	**$**
2	**Proposed Preconstruction Services Fee** – Site Investigation Allowance	**$15,000**

3	**Proposed Preconstruction Services Fee** – Preliminary Construction Project Schedule and Preliminary Site Logistics Plan	**$**
4	**Proposed Preconstruction Services Fee** – Preliminary Cost Estimates	**$**
5	**Proposed Preconstruction Services Fee –** Value Engineering	**$**
6	**Proposed Preconstruction Services Fee –** Constructability Review of Construction Documents (including BIM).	**$**
7	**Proposed Preconstruction Services Fee – Development of Total Base Rent**	**$**
8	**Proposed Preconstruction Services Fee –** Assessment of Long Lead Time Items (Does not include Allowance; to be added via Amendment during Preconstruction)	**$**
9	**Total for Preconstruction Services (Rows 1-8)**	**$**

Entity shall submit an invoice monthly to the District for the fee, itemized by percentage of completion for the different tasks identified above, and the expenses incurred for the billing period. No expenses above those included above in the fixed fee amount are to be charged to the District or will be allowable. The District shall pay Entity one hundred percent of the approved invoiced amount within thirty (30) calendar days of the District's receipt of the invoice.

The District may withhold, or on account of subsequently-discovered evidence nullify, the whole or a part of any payment as may be necessary to protect the District from loss, including costs and attorneys' fees, which may arise for reasons including, but not limited to, the following: 1) defective or deficient work not remedied; 2) failure of Entity to make payments properly to its employees or subcontractors; 3) a reasonable doubt that the Preconstruction Services can be completed for the then-unpaid balance of the contract price; 4) failure to achieve sufficient progress with the Preconstruction Services such that Entity is unlikely to achieve timely completion; or 5) failure of Entity to provide required certificates of insurance.

If the District adds Preconstruction Services by change order, the following rates shall apply to such additional work, unless otherwise agreed by the Entity and the District:

Classification	Rates
Principal in Charge	
Project Executive	

Pre-Construction Manager	
Senior Estimator	
Estimator/Buyer	
MEP Manager	
Purchasing Agent	
Administrative Asst.	
Project Manager	
Graphics Specialist	
Project Engineer	
VDC Manager	
Detailer	

E. Changes/Extra Work:

The District may order changes in the Preconstruction Services within the general scope thereof, consisting of additions, deletions, or other revisions. The compensation stated above shall be adjusted accordingly, which may or may not include an extension of the time for performance. All such changes in the Preconstruction Services, including changes in the compensation and/or time for performance, shall be authorized only by written change order, signed by the District. If Entity claims that performance of any work entitles it to additional compensation or affects the time for performance of the Preconstruction Services, Entity shall provide written notice to the District of any such claim prior to undertaking such work. If the District refuses to issue a change order for such work, Entity shall perform that work and shall submit a complete and specific claim for additional compensation or extension of the time for performance within ten (10) days after such work is performed. Failure to provide written notice of claim prior to undertaking such work, or failure to submit timely a complete and specific claim for additional compensation or extension of the time for performance, shall be deemed a waiver and abandonment of any such claim. No claim, dispute or controversy shall interfere with the progress or performance of the Preconstruction Services, and Entity shall proceed with the Preconstruction Services as directed by the District. Failure to so proceed shall be a default.

F. Dispute Resolution:

Initially, and promptly after identification of a claim or dispute, the District's and Entity's project managers shall meet face-to-face to review and consider the claim or dispute. If the District's and Entity's project managers are unable to resolve the claim or dispute, a senior representative from the District and a senior representative from Entity each shall review the matter in detail, and then shall meet face-to-face as soon as practicable to discuss and resolve the matter. If the senior representatives are unable to resolve the matter, then the parties agree to submit the dispute to mediation as a condition precedent to the institution of legal or equitable proceedings by either party.

G. Fingerprinting:

The District shall, pursuant to Education Code section 45125.1 and District policy and guidelines, determine whether fingerprinting is required of Entity or its employees for purposes of performing Preconstruction Services. If such fingerprinting is required, then the Entity shall comply with fingerprinting requirements stated in Exhibit D, General Construction Terms and Conditions, prior to performing any Preconstruction Services for which fingerprinting is required.

EXHIBIT I

Skilled and Trained Workforce Report

The following report must be provided to the District at completion of construction by the Entity for itself and all subcontractors of every tier and at any other time requested by the District, for the specified contractors. Receipt of this report is a condition on entitlement to payments for any month in which it is required.

Project Name_____ Date: _____

ENTITY AND TRADE/ SUBCONTRACTORS (if a contractor performs work in multiple apprenticeable occupations, list each on a separate line)	**LICENSE NUMBER**	**COMPLIANCE BY HOURS OR PERCENT OF WORKFORCE?** **(H) OR (%)**	**FOR EACH TRADE, THE PERCENTAGE OF SKILLED JOURNEYPERSON WORK OR HOURS WORKED BY GRADUATES OF AN APPROVED APPRENTICESHIP PROGRAM TO DATE**

Under penalty of perjury, and with specific reference to the California False Claims Act, Government Code sections 12650 *et seq*., I certify that I have made reasonable investigation to verify the accuracy of data reported above, that the information is accurate and complete to the best of my knowledge and belief, and that I am duly authorized to certify the report on behalf of the company identified below. I acknowledge that submission of this report is an express condition on payment.

Dated: _____ Company_____

Signature _____ Title_____

Attachment 1
DVBE Good Faith Efforts Outreach Requirements

Definitions:

"Disabled Veteran Business Enterprise" (DVBE) means a business concern that is certified as a DVBE by the Department of General Services, Office of Small Business and Disabled Veteran Business Enterprise Services (OSDS).

"Entity" means the Lease-Leaseback Entity that will construct the Project.

"Participation Goal" or "Goal" means a numerically expressed DVBE objective that the Entity is required to make efforts to achieve in accordance with Section 17076.11 of the Education Code.

"Good Faith Efforts" means that the Entity took all necessary and reasonable steps to achieve the DVBE Participation Goal which, by their scope, intensity, and appropriateness to the objective, could reasonably be expected to obtain sufficient DVBE participation, even if they were not fully successful. Good Faith Efforts are further delineated below.

DVBE Certification:

In accordance with Education Code section 17076.11, this District has a Participation Goal for DVBEs of three percent (3%) per year. For any work performed by a DVBE subcontractor (including materials suppliers) to be counted toward meeting the DVBE Participation Goal, such business concern must possess current and valid certification as a DVBE through the OSDS. In addition, the work must conform to the most current regulations and requirements as published by the California Department of General Services (DGS) and/or OSDS.

A DVBE cannot self-certify. An OSDS certification letter or printout from the DGS certification website (https://caleprocure.ca.gov/pages/PublicSearch/supplier-search.aspx) verifying current DVBE status must be provided for each DVBE participating in the contract. The OSDS certification letter or website printout must be provided with the Proposal or during establishment of the Total Base Rent. The District will not give Entity DVBE credit for any DVBE for which Entity fails to provide the required status verification.

Good Faith Efforts

The Entity shall either commit to meeting the Participation Goal or demonstrate Good Faith Efforts to do so, as described below. All DVBEs for which the Entity is claiming credit (including the Entity itself if it is a DVBE) must be listed on the Subcontractor listing form and identified as DVBEs, even if the work to be performed is less than one-half of one percent (0.5%) of the bid amount, involves supply of materials, or is to be performed by a lower-tier subcontractor.

Although Good Faith Efforts have been eliminated from Public Contract Code sections 10115 *et seq*., the District's obligation is separately stated under Education Code section 17076.10, so the District may find Entity to have complied with the DVBE requirements if it establishes Good Faith Efforts. In order to establish Good Faith Efforts, Entity must demonstrate at least the following directly and/or through bidders for the subcontracts:

1. Select portions of the work for which to solicit DVBEs in order to increase the likelihood that the DVBE goals will be achieved. This may include breaking out contract work items into smaller units.
2. Search at least the OSDS DVBE database to identify DVBEs to solicit to perform the portions of work identified. Print the search results to include with the Good Faith Efforts documentation.
3. Advertise for DVBE participation in focus or trade publications reasonably expected to reach DVBEs in the region as early in the process as is practicable. Depending on the project and results, multiple advertisements may be appropriate. Generally, the first publication should occur no later than one week before bids are due, whichever is earlier. Submit a copy of the advertisement(s) with the Good Faith Efforts documentation.
4. Solicit interest from identified DVBEs (from the OSDS database or otherwise) as early in the bidding process as practicable to allow the DVBEs to respond to the solicitation and submit a timely bid. Solicitations may be by phone, fax, email, letter, or other reasonable means, but must be documented. Submit documentation of all outreach efforts with the Good Faith Efforts documentation. Include copies of all DVBE responses.
5. Follow up initial solicitations. Document all such efforts and DVBE responses as part of the Good Faith Efforts documentation.
6. Work with interested DVBEs, including providing adequate information about the project and portions of work available and negotiating in good faith with interested DVBEs to assist them with being able to bid. Document all such efforts with the Good Faith Efforts documentation.

Substitutions

Entity and its subcontractors must use the DVBE subcontractor(s) and/or supplier(s) proposed unless Entity requests and receives authorization to substitute from the District. A DVBE subcontractor or supplier shall be replaced by another DVBE if possible. At a minimum, any request for substitution must include:

(1) The reason for the substitution, which shall be limited to the circumstances permitted under Public Contract Code section 4107(a).
(2) The identity of the listed DVBE and the name, address, contractor number, and DIR registration number of the proposed replacement.
(3) If a DVBE cannot be identified as a replacement, documentation of efforts to find available DVBEs.

The DVBE shall be given the rights afforded by Public Contract Code section 4107 prior to the District acting on a requested substitution.

FAILURE TO ADHERE TO AT LEAST THE DVBE PARTICIPATION PROPOSED WHEN ADOPTING THE TOTAL BASE RENT MAY BE CAUSE FOR CONTRACT TERMINATION AND RECOVERY OF DAMAGES FOR DEFAULT.

END OF DOCUMENT