



**MT. SAN JACINTO COLLEGE COMMUNITY COLLEGE DISTRICT**

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**REQUEST FOR PROPOSALS (RFP) #2021-001  
for  
MATERIALS TESTING AND SPECIAL INSPECTION SERVICES  
for  
MENIFEE VALLEY CAMPUS STADIUM**

**RFP Issue Date: Friday, June 19, 2020**

**RFP Due: Thursday, July 9, 2020 at 2:00 p.m.**

**Submit Response to: Tammy Cunningham  
Director of Procurement and General  
Services**

**Purchasing Dept., Bldg. AA  
1499 N. State Street  
San Jacinto, CA 92583**

**Questions and Clarifications All questions must be submitted via e-mail  
to: Tammy Cunningham Bids@msjc.edu**

**MT. SAN JACINTO COMMUNITY COLLEGE DISTRICT  
1499 N. State Street, San Jacinto, CA 92583**

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**NOTICE CALLING FOR  
REQUEST FOR PROPOSALS (RFP No. 2021-001)  
MATERIALS TESTING AND SPECIAL INSPECTION SERVICES FOR  
THE MVC STADIUM**

NOTICE IS HEREBY GIVEN that sealed proposals will be received at **Mt. San Jacinto Community College District, Purchasing Office**, until **July 9, 2020 @ 2:00 p.m.** local time, for all work necessary and incidental to:

**Materials Testing and Special Inspection Services**

Proposal shall be delivered and addressed to the **Mt. San Jacinto Community College District, Attn: Tammy Cunningham – Director of Procurement and General Services, 1499 N. State Street, Bldg. AA, San Jacinto, Ca 92583**, and shall be labeled “**Materials Testing and Special Inspection Services, RFP No. 2021-001**”, at or before **July 9, 2020, 2:00 p.m.**

The receiving time in the Purchasing Department will be governing time for acceptability of proposals. Proposals must bear original signatures and figures. No oral, telegraphic, electronic facsimile, or telephone proposals or modifications will be considered unless specified. It is the responsibility of the firm to see that the proposal submitted shall have sufficient time to be received by the Mt. San Jacinto Community College District, **Purchasing Office, Bldg. AA BEFORE** the proposal Submittal Deadline. Proposals received after the scheduled RFP Submittal Deadline will be returned unopened.

RFP documents are available at the Mt. San Jacinto Community College, Purchasing Office website at <http://www.msjc.edu/Purchasing/Pages/--Current-Bids.aspx>. Firms are responsible to regularly check the District’s website for addendums. Specifications may also be examined and obtained at no charge in the District’s Purchasing Office, or by calling (951) 487-3114.

**PURPOSE:**

The District is requesting quotes from certified Materials Testing and Special Inspectors qualified to provide services in support of the Menifee Valley Campus Stadium project. The District intends to enter into a contract based on competitive hourly rates.

The District generally utilizes the services of outside consultants to help ensure the District that its activities are in compliance will all applicable regulations and industry guideline.

Tammy Cunningham  
Director of Procurement and General Services, MSJC

Published: Press Enterprise  
June 19, 2020 and June 26, 2020

## 1. REQUEST FOR PROPOSALS

### 1.1 Purpose

Mt. San Jacinto Community College District (MSJC) is requesting proposals from qualified companies to provide Material and Special Inspection Services for the Menifee Valley Campus Stadium project. Mt. San Jacinto College in Menifee will be building a 5000 seat stadium and buildings.

### 1.2 Proposal Submission

If your firm is interested in providing full service Material and Special Inspection Services for the Project, proposals must be delivered to the address below, no later than **2:00 p.m. on Thursday, July 9, 2020.** Late proposals will not be considered. The District is not responsible for late mail or postal delivery errors. Proposers shall submit one electronic version of the proposal on a flash drive (optional); one (1) printed original proposal including any supporting documentation in a sealed box or package addressed as follows:

Attention: Tammy Cunningham

Mt. San Jacinto Community College District  
Purchasing Department  
Building AA  
1499 N. State Street  
San Jacinto, CA 92583

### 1.3 Response Format

Each Consultant is required to submit a Proposal it deems appropriate to this RFP. Submittals should be brief and concise, but provide sufficient clarity to meet the criteria in the evaluation process. Each Consultant shall submit one (1) electronic proposal on a flash drive (optional) and one (1) printed original proposal. The District will evaluate the Proposals based on the responsiveness to District requirements listed in Section 6, Selection Criteria/Evaluation Process.

**NOTE for Firms teaming with Sub-Consultants:** Each responding firm shall select its proposed sub-consultants based on its own criteria. However, MSJCCD reserves the right to approve sub-consultants proposed for any projects that may be awarded. Sub-Consultants do not need to complete all the Exhibits in this RFP. Carefully read each section to determine which forms the Sub-consultants need to submit.

#### 1.4 Questions

Consultants must carefully read the entire RFP prior to submitting questions as most questions will be answered in this RFP. All questions must be submitted in writing via e-mail to Tammy Cunningham [bids@msjc.edu](mailto:bids@msjc.edu). The question deadline for this RFP is **Monday, June 29, 2020 by 10:00 AM**. After this deadline, the District will not answer, address, and/or review any questions that interested Consultants might submit. Responses to all questions received prior to the deadline will be provided to all Consultants in an addendum.

#### 1.5 Request for Proposals

Pre-Qualified Consultants are in no way guaranteed to receive any work from the District. Each Proposal shall describe the Consultant's experience and expertise with respect to the services, if any, which are unique to the property or project that is the subject of this RFP. In addition, the Proposal shall set forth a detailed scope of services, a completion schedule, a schedule of professionals that will be used to supervise and staff the project, and a not-to-exceed dollar amount for the services to be performed. The District will allocate work to said Pre-qualified Consultants without having to request and evaluate additional information as to Consultant's qualifications. Consultant shall assign only trained and experienced personnel, support staff, and other Consultants to the requisite tasks. Consultant shall provide cost to perform the tasks outline in the Scope of Services referenced in this RFP.

#### 1.6 Pre-qualification of Bidders

As a condition of bidding for this Project, and in accordance with California Public Contract Code Section 20651.1, prospective bidders are required to submit to the District a completed set of prequalification documents on forms provided by the District. Prequalification documents are available at the Mt. San Jacinto Community College District, Office of Procurement and General Services, Bldg. AA, located at 1499 N. State St., San Jacinto, California 92583 or go to the Mt. San Jacinto Community College Purchasing Office website located at <http://www.msjc.edu/Purchasing/Pages/UPCCA.aspx> to download the UPCCA Pre-Qualification Questionnaire. The prequalification documents must be submitted prior to 10:00 a.m. on July 2, 2020. Bids will not be accepted if a Contractor has not been prequalified where qualification is required. Contractors will be notified by telephone or e-mail of their prequalification status within a reasonable period of time after submission of their prequalification documents.

## 1.7 DIR Registration:

A Construction Inspection firm shall not be qualified to submit a proposal, subject to the requirements of Section 4104 of the Public Contract Code, or engage in the performance of any contract for public work, as defined in the Labor Code, unless currently registered and qualified to perform public works pursuant to Section 1725.5. It is not a violation of this section for an unregistered inspection firm to submit a bid that is authorized by Section 7029.1 of the Business and Professions Code or by Section 10164 or 20103.5 of the Public Contract Code, provided the construction inspection firm is registered to perform public work pursuant to Section 1725.5 at the time the contract is awarded.

This Project is a public works project as defined in Labor Code section 1720. Each contractor bidding on this Project and all subcontractors (of any tier) performing any portion of the Work must comply with the Labor Code sections 1725.5 and 1771.1 and must be properly and currently registered with DIR and qualified to perform public works pursuant to Labor Code section 1725.5 throughout the duration of the Project. For more information and up to date requirements, architects are recommended to periodically review the DI's website at [www.dir.ca.gov](http://www.dir.ca.gov). Inspection firm shall be solely responsible for ensuring compliance with Labor Code section 1725.5 as well as any requirements implemented by DIR applicable to its services or its subcontractors throughout the term of the Agreement and in no event shall contractor be granted increased payment from the District or any time extensions to complete the Project as a result of contractor's efforts to maintain compliance with the Labor Code or any requirements implemented by DIR. Failure to comply with these requirements shall be deemed a material breach of this Agreement and grounds for termination for cause. The contractor and all subcontractors shall furnish certified payroll records as required pursuant Labor Code section 1776 directly to the Labor Commissioner in accordance with Labor Code section 1771.4 on at least on a monthly basis (or more frequently if required by the District or the Labor Commissioner) and in a format prescribed by the Labor Commissioner. The District reserves the right to withhold contract payments if the District is notified, or determines as the result of its own investigation, that contractor is in violation of any other the requirements set forth in Labor Code section 1720 et. Seq. at no penalty or cost to the District. Monitoring and enforcement of the prevailing wage laws and related requirements will be performed by the Labor Commissioner/Department of Labor Standards Enforcement (DLSE).

## **2. PROPOSAL SUBMISSION**

2.1 The proposals should include the following:

1. Cover Letter: Briefly describe the qualifications of the company and the proposed personnel for this project and provide a statement that you have reviewed the schedule listed in the RFP and agree to provide the necessary effort or staff allocation to meet the schedule listed in Section 4 of this RFP. (1 page max)
2. Approach to Work: provide (i) a statement of the proposed approach to the project scope of work with a description of the tasks, sub-tasks, deliverables that will be provided, and how the staff intend to coordinate and collaborate

- with the design team to meet the project schedule, and (ii) a description of the Quality Assurance/Control (QA/QC) plan to be followed during the duration of the work. The OA/QC plan shall address the accuracy, completeness and timeliness of all testing and related reports. (1 page Max)
3. List of the main point of contact for the project team and key personnel. Clearly identify the individual (s) role (s) and responsibilities in the testing program. Include resumes of the proposed personnel with relevant testing experience. (1 page max per individual).
  4. Relevant Project List: Provide project experience information of the company describing type, size, location, and any unique features or process of the project that may be relevant to this project. (1 page max).
  5. Fee proposal: Lump Sum Fee Proposal clearly listing professional testing services and assumptions. Please also include our hourly billing rates. (include number of pages as needed).

### **3. Selection Criteria**

1. Timeliness and Completeness: To receive consideration, Responses to this RFP must be received by the Response Deadline. In addition, RFP Response will be evaluated with respect to organization, clarity, completeness, and responsiveness to this RFP.
2. Technical Qualifications and Competence: This includes Company and Personnel's experience, expertise, and familiarity with providing Special Testing Services required by the RFP.
3. Approach to Work: This includes your overall approach/methodology and QA/QC plan to meet the project schedule.
4. Fee: Evaluation of proposed fee structure for requested services.

### **4. PROJECT DESCRIPTION**

- 4.1 Mt. San Jacinto Community College District is in need of Material and Special Inspection Services for the Meniffee Valley Campus Stadium.

The selected firm will include the following as part of services:

Each Consultant must be prepared to support multiple construction projects ranging from reconstruction/modernization, retrofit, infrastructure and new construction. Each Consultant must be prepared and equipped to provide such services in a timely manner and on a relatively short notice so as to enable the District to meet critical, and at times unpredictable, time deadlines and schedules.

#### **4.2 SCOPE OF SERVICES**

The scope of services shall include, but not necessarily be limited to, Materials Testing and Special Inspection services. Testing and inspections are based on the applicable California Building Code (CBC) and per the requirements of the DSA and the DSA-approved project contract documents including the DSA Form 103. Project Construction Cost \$40 Million.

The Stadium project will be divided in (3) planned increments:

Increment I: Rough and Finish Grading - Excavation of Drainage Swale and minor drainage precast boxes and pipelines - Install of U/G conduits and pull boxes.

Increment II: Construction of Softball Fields and Bleachers - Dugouts, Batting Cages and Pitching.

Increment III: Stadium Structure and Playing Field - Infill for Offices, Class and Conference rooms, Locker Rooms and Mechanical Rooms

- a. Provide sufficient home office organization and support, personnel and management to carry out the requirements of this RFQ in an expeditious and economical manner consistent with the best interests of the District.
- b. Perform Materials Testing and Special Inspection services consistent with the highest standard of care for professionals performing similar scopes of services. Provide senior management support for all tasks.
- c. Coordinate and cooperate with other Project team members including the District staff, Architect, Construction Manager and DSA Project Inspector.
- d. The Consultant shall work under the direction of the DSA Project Inspector/Inspector of Record (IOR) and will notify the IOR immediately of any discrepancy between construction and contract documents, deficiency of workmanship or unacceptable results. The Consultant and IOR and District representatives shall meet periodically to plan and schedule testing and inspection services.
- e. Upon completion of inspection services, the Consultant shall provide a field report to the IOR prior to leaving the project site. Formal reports shall be delivered within 7 working days to the IOR and District representatives or as determined at the preconstruction meeting. Test reports shall be signed by a Registered Civil Engineer licensed in the State of California.
- f. Laboratory Certifications and Accreditations: Testing Laboratory personnel shall be certified by ICBO for the type of work they are performing and shall be accepted by the DSA prior to performance of any work on or off the project site. The laboratory must have been in operation for a minimum of five years within the State of California. The testing laboratory shall be responsible for the quality of services provided and maintain the necessary equipment required to satisfy the testing requirements.
- g. The Consultant shall establish a 24-hour contact during construction.
- h. The Consultant shall furnish all labor, supervision, technicians, tools, equipment, supplies, reports, documentation and tests to perform all sampling and testing and insure the contractors comply with applicable regulations and procedures.
- i. Testing firm is to take into consideration the accelerated construction schedule. The  
- manpower for welding inspection and all other testing requirements maybe required on  
- multiple levels simultaneously.
- j. Testing firm will include in the proposal attendance to project meetings for the first 4 months starting at the pre-construction.

## 5.0 WORKING CONDITIONS

Each Inspector shall be capable of working indoors and outdoors, in all weather and site conditions including, but not limited to, rain, dirt, mud, and ice. The Inspector's activities may require kneeling, bending, climbing ladders, stepping over trenches, etc.

Project Location: Mt. San Jacinto Community College District

Menifee Valley Campus  
28237 La Piedra Road  
Menifee, CA 92584

## 6.0 INSURANCE REQUIREMENTS INSPECTOR OF RECORD

6.1 Compliance with Laws, Workers Compensation Insurance, Hold District Harmless. The INSPECTOR shall comply with the applicable federal, state and local laws, rules, regulations and ordinances, including workers compensation insurance laws. The INSPECTOR understands that, as an independent contractor, INSPECTOR is not covered by any type of DISTRICT insurance, including workers compensation insurance. The INSPECTOR shall provide, through insurance policies or self-insurance, workers compensation insurance coverage for its employees who provide services hereunder. The DISTRICT understands that the INSPECTOR may use independent contractors, volunteers or others not covered by the INSPECTOR's worker's compensation coverage to provide services hereunder. The INSPECTOR shall advise such persons providing services hereunder at the direction of the INSPECTOR that workers compensation insurance is not provided by the District, and the INSPECTOR shall hold the DISTRICT harmless from any and all claims for damages that may be asserted by such persons.

6.2 Self-employment, Responsibility for Medical Insurance and Cost. If the INSPECTOR is a self-employed individual, the INSPECTOR agrees to arrange, in lieu of workers compensation insurance, for insurance for or financial responsibility for any and all medical and related treatment, and to pay the cost of such treatment, including emergency treatment that may be provided that the INSPECTOR did not arrange for which may be required due to any injuries of any type that may be sustained by the INSPECTOR while performing services under this AGREEMENT. The INSPECTOR shall, prior to commencing services herein, provide the DISTRICT with satisfactory evidence of medical coverage as set forth in Paragraph 1.5, below. Cancellation or lack of medical coverage for the INSPECTOR shall not relieve the INSPECTOR or INSPECTOR's financial responsibility for the cost of medical and related treatment.

6.3 Professional Liability (Errors and Omissions). The INSPECTOR shall carry and maintain during the term of this AGREEMENT a policy of Professional Liability Insurance (Errors and Omissions) with a limit of not less than \$500,000 per occurrence. The DISTRICT reserves the right to waive this insurance requirement and if so waived, the INSPECTOR shall hold the DISTRICT harmless from any and all claims for injury, damage, and loss.

6.4 Auto Liability. The INSPECTOR shall confirm that all individual inspection staff shall carry and maintain personal Auto Liability for owned, hired and non-owned vehicles, for injury damage and loss, including but not limited to, premises and operations, contractual liability and personal injury that may arise from and in connection with the performance or nonperformance of INSPECTOR's services herein. The INSPECTOR shall hold the DISTRICT harmless from any and all claims for injury, damage, and loss.



6.5 Evidence of Coverage, Cancellation or Material Changes. Not later than ten (10) calendar days after the date of execution of this AGREEMENT and, in any case, prior to commencement of any of the INSPECTOR's services herein, the INSPECTOR shall furnish certificates of insurance evidencing the insurance coverage required above, including endorsements, to the DISTRICT's Department administering the Agreement which certificates shall provide that such insurance shall not be terminated or expire or be materially changed without thirty (30) calendar days written notice to the Department, and INSPECTOR shall maintain such insurance from the time that the INSPECTOR commences performance of services hereunder until INSPECTOR's completion of such services. Within sixty (60) calendar days of the commencement of this Agreement, the INSPECTOR shall furnish certified copies of the policies and all endorsements.

6.6 Additional Named Insureds. All insurance policies, except for Workers Compensation shall contain additional endorsements naming the DISTRICT and its officers, employees, agents and volunteers as additional named insureds with respect to liabilities arising out of the performance of services hereunder.

6.7 Waiver of Subrogation Rights. INSPECTOR shall require the carriers of the coverages required above to waive all rights of subrogation against the DISTRICT, its officers, employees, agents, volunteers, contractors and subcontractors.

6.8 Policies Primary and Non-Contributory. All policies required above shall be primary and non-contributory with any insurance or self-insurance programs carried or administered by the DISTRICT.

6.9 Insurance Review. The above insurance requirements are subject to periodic review by the DISTRICT. The DISTRICT's Risk Manager is authorized, but not required, to reduce or waive any of the above insurance requirements whenever the Risk Manager determines that any of the above insurance is not available, is unreasonably priced, or is not needed to protect the interests of the DISTRICT. In addition, if the Risk Manager determines that heretofore unreasonably priced or unavailable types of insurance coverage or coverage limits become reasonably priced or available, the Risk Manager is authorized, but not required, to change the above insurance requirements to require additional types or insurance coverage or coverage limits, provided that any such change is reasonable in light of past claims against the DISTRICT, inflation, or any other item reasonably related to the DISTRICT's risk. Any such reduction or waiver for the entire term of the Agreement and any change requiring additional types or insurance coverage or higher coverage limits shall be made by amendment to the Agreement. INSPECTOR agrees to execute any such amendment with thirty (30) calendar days of receipt.

## 7.0 EVALUATION & RECOMMENDATION CRITERIA

### 7.1 Evaluation

Proposals will be evaluated by an evaluation panel consisting of individuals selected by the District. At the District's discretion, some, one, or all of the responding firms may be requested to participate in an oral interview. The interview will be used as another opportunity to clarify any issues with a given proposal and explore the approaches that may be used to satisfy all the District's requirements. The District reserves the right to request that some or all of the responding firms consent to being interviewed by selected District personnel and/or representatives and/or to submit additional written information. The District reserves the right to extend the Response Deadline and/or send out additional RFPs.

This RFP and any potential future RFP's associated with this solicitation, does not commit the District to award a contractual agreement to any vendor or to pay any costs incurred in the preparation of RFP Responses. The District reserves the right at its sole discretion to: (i) waive or correct any defect or informality in any response, (ii) withdraw this RFP, (iii) reissue this RFP, (iv) reject any and/or all RFP's, (v) prior to submission deadline for RFPs. Modify all or any portion of the selection procedures including deadlines for accepting responses, services to be provided under RFP, or the requirements for contents or format of the RFPs, (vi) waive irregularities, (vii) procure any services specified in this RFP by any other means, (viii) determine that no projects will be pursued and/or (ix) terminate or change the contracting process articulated in this RFP because of unforeseen circumstances.

The District shall not be responsible in any manner for the cost associated with preparing a response/proposal and/or participating in an interview. The RFP's, including

all drawings, plans, photos, and narrative materials, shall become the property of the District upon the District's receipt of same. The District shall have the right to copy, reproduce, publicize and/or dispose of each RFP in any way that the District may choose. The District reserves the right to negotiate the terms and conditions of any agreement for services that may hereafter be let by the District. The proposals will be evaluated by an evaluation panel consisting of individuals selected by the District. Selection of this proposal will not preclude nor guarantee the selected firm consideration for future District projects.

### 8.0 District Schedule

The schedule currently anticipated by the District is shown in the Preliminary Schedule below. Please note that although the timeframes indicated below represent current expectations, they are approximate and subject to change.

<u>Selection of Design Consultant</u>	
Issue RFP for Services	06/19/20
RFI Deadline	06/29/20by10:00a.m
<b>RFP Responses Due Review/</b>	<b>07/9/20 @ 2:00pm</b>
Evaluate	07/10/20
Issue Notice to Proceed	07/14/20
Commence Inspection Work	07/20/20

## **9.0 GENERAL**

### **9.1 Responsible Charge**

All licensed professionals in responsible charge of the work **MUST** be directly employed by responding Consultant and **NOT** employed as a sub-consultant.

### **9.2 District's Agreement**

The Consultant, upon selection, will be required to enter into the District's Services Agreement ("Agreement"), provided as Exhibit D –Services Agreement for reference. Consultant shall be familiar with the District's indemnity clause and insurance requirements and must have the ability to secure insurance coverage and provide Certificated Proof of Insurance in conformance with the Agreement.

### **9.3 Compliance with all Applicable Laws**

Consultants response must set forth Consultant's understanding of all applicable Health and Safety laws, guidelines, and requirements including Cal/OSHA Title 8, the EPA (Environmental Protection Agency), the Education Code, the Chancellor's Office, and DSA regulations (including the new Inspection Card requirements and PR 13-01), and local ordinances and/or other applicable zoning or planning ordinances/regulations, relative to the work to be undertaken as well as Consultant's ability to comply with the same and the methodology by which Consultant will do so. The proposal must confirm that the nature of the Work to be completed will meet all the aforementioned requirements for said Work as set by the applicable codes and regulations and all other applicable ordinances and guidelines.

### **9.4 Working Conditions**

Each Consultant shall be capable of working indoors, in all weather and site conditions including, but not limited to, rain, dirt, mud, and ice. The Consultant's activities may require kneeling, bending, climbing ladders, and other similar physical activities.

### **9.5 Disabled Veteran Business Enterprise Participation Goals**

The Mt. San Jacinto Community College District supports a participation goal of at least 3 percent (3%) of overall dollar amount expended each year to Disabled Veteran's Business Enterprises (DVBE). If Consultant is selected to provide services to the District, Consultant will be required to sign and return a Certification form (copy included with previous RFQ document) certifying that they will provide the District with information regarding the use of any DVBE contractors or consultants on the project. Information about DVBE resources can be found on the Executive Branch's website at <http://www.dgs.ca.gov/default.htm> or by calling the Office of Small Business and DVBE Certification at 916-375-4940. The DVBE documentation will be required if the Consultant is chosen to provided services as a result of an RFP process.

## **10.0 PROPOSAL STATEMENT**

### **10.1 Firm Information**

Provide a cover letter and introduction, including the company name, address, telephone number, and e-mail address of the person (s) authorized to represent the institution regarding all matters related to Consultant's proposal. A person authorized to bind the Firm to all commitments made in Consultant's proposal shall sign this letter.

### **10.2 Current Workload and Availability**

State Consultant's ability to provide the required Inspection services in a timely manner, and indicate if those types of services are offered exclusively. Provide a list of current and anticipated commitments that involve any of the personnel (Project Team) that Consultant intends to assign to this project, and define the anticipated start and completion dates of the involvement of those personnel in such other projects.

### **10.3 Project Team and Sub-Consultants**

Provide identification of Consultant's Project Team (including sub-consultants) and the District's main point of contact utilizing an organization chart. Identify the following key information for each team member: firm name, contact information, discipline, specific expertise, and experience in architectural and/or engineering services, especially as it relates to school sites/facilities and similar project types.

Utilize *Exhibit A – Team Member Resume Form* to provide additional detailed resumes of each team member, all of whom will be part of the designated team, thoroughly knowledgeable, regularly attentive, and fully available to work directly with the District.

Utilize *Exhibit B – Team Member Experience Form* to provide a minimum of five (5) relevant projects completed within the last five (5) years for EACH proposed team member (both for the prime Consultant as well as any sub-consultant). Prime consideration will be given to Consultants who propose team members with experience in community college projects of similar size, type, and difficulty, and which involve the same review and approval processes as those required by the DSA and other agencies having jurisdiction.

Any sub-consultants designated by the Consultant shall be subject to approval by the District in writing prior to performing any work on behalf of the Consultant. The District has the sole discretion to reject any sub-consultants proposed by the Consultant whether designated by Consultant in its RFP or not. Any replacement sub-consultants shall be subject to the District's prior written approval.

The members of the designated team shall not be charged unless agreed upon by the District. The District has the right to request additional sub-consultants in the future if those listed in this RFP are changed. All licensed professionals in responsible charge of the work MUST be directly employed by Consultant and NOT employed as a sub-consultant.

## 10.4 Billing Rates

Consultant shall propose an all-inclusive fixed fee for all the services described in this RFP. Consultant's proposed fee must include and account for all direct labor costs, fringe benefits, insurance, overhead, profit, and all other expenses the Consultant will incur in providing the required Inspection services.

Utilizing *Exhibit C – Billing Rate Form*, provide billing rates for all personnel and/or categories of employees (**including sub-consultants**) as well as any overhead or other special charges. If applicable, Consultant's RFP Response should include estimates for certain standardized components of the Inspection service process. All rates must include any escalation anticipated by Consultant during the entire duration of the *Service Agreement*. All other services not included herein shall be negotiable as required.

All proposed reimbursable expenses shall be directly related to the services required for the Project and must be supported by proper documentation and prior District authorization. Reimbursement shall not exceed cost plus 5%. Consultant shall review *Exhibit D – Service Agreement* for acceptable reimbursable items.

## 10.5 Services Agreement

Consultant shall review the District's *Service Agreement*, attached as *Exhibit D*, and shall note in its Proposal any suggested language revisions. Suggested language revisions **not** noted in Consultant's Proposal will **not** be considered by the District.

## 10.6 Evaluation

Proposals will be evaluated by an evaluation panel consisting of individuals selected by the District. At the District's discretion, some, one, or all of the responding firms may be requested to participate in an oral interview. The interview will be used as another opportunity to clarify any issues with a given proposal and explore the approaches that may be used to satisfy all the District's requirements. The District reserves the right to request that some or all of the responding firms consent to being interviewed by selected District personnel and/or representatives and/or to submit additional written information. The District reserves the right to extend the Response Deadline and/or send out additional RFPs.

This RFP and any potential future RFP's associated with this solicitation, does not commit the District to award a contractual agreement to any vendor or to pay any costs incurred in the preparation of RFP Responses. The District reserves the right at its sole discretion to: (i) waive or correct any defect or informality in any response, (ii) withdraw this RFP, (iii) reissue this RFP, (iv) reject any and/or all RFP's, (v) prior to submission deadline for RFPs. Modify all or any portion of the selection procedures including deadlines for accepting responses, services to be provided under RFP, or the requirements for contents or format of the RFPs, (vi) waive irregularities, (vii) procure any services specified in this RFP by any other means, (viii) determine that no projects will be pursued and/or (ix) terminate or change the contracting process articulated in this RFP because of unforeseen circumstances.

The District shall not be responsible in any manner for the cost associated with preparing a response/proposal and/or participating in an interview. The RFP's, including all drawings, plans, photos, and narrative materials, shall become the property of the District upon the District's receipt of same. The District shall have the right to copy, reproduce, publicize and/or dispose of each RFP in any way that the District may choose. The District reserves the right to negotiate the terms and conditions of any agreement for services that may hereafter be let by the District.

# Exhibit A

## Team Member Resume Form

Proposed Consultant Name

Title

Firm Name

Proposed Position

Years w/Firm

Years w/Previous Firm

Years w/Community Colleges

Availability

Education Specific to Position (School/Year/Degree/Subject):

Other Training/Experience w/MSJCCD, DSA, Community College Chancellors Office and other State Agencies (or equivalent)

Credentials/Certifications/Licenses/Registrations/Accreditations (related to position and years acquired): *Note: Do not list and certifications, licenses, etc. that are expired or not from the state of California.*

Skills Relevant to the Proposed Project:

List of Community College Districts Consultant has worked for:

# Exhibit B

## Team Member Experience Form

Provide a minimum of five (relevant) and similar projects types completed within the last five years.  
Use multiple sheets as necessary.

### Background

Proposed Team Member Name

Title

Firm Name (at time of Project)

### Project Details

Project Name

Client District

Project Lead Name Title

Phone E-Mail

Address

DSA PROJECT =	DSA CERTIFIED (Yes/No)	Project Scope <sup>(1)</sup>	School Type <sup>(2)</sup>	Project Start Date	Project Completion Date
Total Cost	= Change Orders	Cost of Change Orders			

**Change Order Notes** Include description and reason:

**Team Member Title and Duties for this Project:**

**Project Narrative** Firms role, responsibilities, challenges, how consultant met Client/District's needs. Describe project and responsibilities in detail, demonstration of how this project experience contributes to thorough knowledge of commissioning requirements of public school buildings in California and demonstration of how this project contributes to familiarity with California building code requirements relating to school sites and buildings

- (1) Project Scope – RE – Renovation/Remodel/Repurpose, ADD – Addition/Expansion, New – New Construction, FIX – Repair, PLAN – Planning
- (2) School Type ES-Elementary School, MS-Middle School, KS-Kindergarten-8<sup>th</sup> Grade School, HS-High School, CCD-Community College, HE-Other College, NS-Non-school/Other



**Exhibit C**

**Billing Rate Form**

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Firm Name

Billing Rates

Do rates include travel charges?  Yes

Note, all fees and rates must be inclusive of travel. Travel is not an acceptable reimbursable expense.

<b>Job Title</b>	<b>Personnel Name</b>	<b>Hourly Rate</b>

Consultant's proposed ALL INCLUSIVE NOT-TO EXCEED FEE: \$ \_\_\_\_\_

Estimate of Reimbursable Expenses in the fee stated above: \$ \_\_\_\_\_

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Authorized Signature

## CONSULTANT SERVICES AGREEMENT

This AGREEMENT is made and entered into this \_\_\_\_ day of \_\_\_\_\_ in the year 20\_\_ by and between the MT. SAN JACINTO COMMUNITY COLLEGE DISTRICT, hereinafter referred to as "DISTRICT," and \_\_\_\_\_, hereinafter referred to as "CONSULTANT." This AGREEMENT shall include all terms and conditions set forth herein. The DISTRICT and the CONSULTANT are sometimes referred to herein individually as a "PARTY" and collectively as the "PARTIES." This AGREEMENT is made with reference to the following facts:

**WHEREAS**, DISTRICT desires to obtain services for MATERIALS TESTING AND SPECIAL INSPECTION SERVICES AT MENIFEE VALLEY CAMPUS FOR THE STADIUM hereinafter collectively referred to as the "PROJECT"; and

**WHEREAS**, CONSULTANT is fully licensed to provide materials testing and special inspection services in conformity with the laws of the State of California;

**NOW, THEREFORE**, the PARTIES hereto agree as follows:

### **ARTICLE I** **SCOPE AND SERVICES AND RESPONSIBILITIES**

1. Services to be Provided by the CONSULTANT. The CONSULTANT shall provide to the DISTRICT on the terms set forth herein all the services articulated in the CONSULTANT's proposal which is attached hereto and incorporated herein as **EXHIBIT "A"** (the "CONSULTANT's WORK PLAN"). Where the CONSULTANT's WORK PLAN consists of a proposal or quote submitted in response to a Request for Proposals ("RFP") from the DISTRICT, the CONSULTANT's WORK PLAN shall be considered to include the DISTRICT's RFP. The DISTRICT and CONSULTANT expressly agree to incorporate the terms and conditions of the DISTRICT's RFP into this AGREEMENT by this reference and the PARTIES understand that the RFP shall constitute a binding part this AGREEMENT. In the event of a discrepancy, inconsistency, or other difference between the terms of the RFP or the CONSULTANT's WORK PLAN with this AGREEMENT, the PARTIES agree that the terms of this AGREEMENT shall govern and control.

2. Classification: To the extent it is determined under applicable law that CONSULTANT fails to meet the statutory prerequisites for classification as a professional expert operating under a personal services agreement, CONSULTANT resigns any and all rights and privileges derived from this AGREEMENT and any resulting relationship, which resignation is deemed accepted under such circumstances by the DISTRICT.

3. Contract Term. The effective period of this AGREEMENT is to be \_\_\_\_\_ through \_\_\_\_\_.

4. CONSULTANT's Certifications, Representations and Warranties. CONSULTANT makes the following certifications, representations, and warranties for the benefit of the DISTRICT and CONSULTANT acknowledges and agrees that the DISTRICT, in deciding to engage CONSULTANT pursuant to this AGREEMENT, is relying upon the truth and validity of the following certifications, representations and warranties and their effectiveness throughout the term of this AGREEMENT and the course of CONSULTANT's engagement hereunder:

a. CONSULTANT is qualified in all respects to provide to the DISTRICT all of the services contemplated by this AGREEMENT and, to the extent required by any applicable laws,

## EXHIBIT "D"

CONSULTANT has all such licenses and/or governmental approvals as would be required to carry out and perform for the benefit of the DISTRICT, such services as are called for hereunder.

b. CONSULTANT, in providing the services and in otherwise carrying out its obligations to the DISTRICT under this AGREEMENT, shall, at all times, comply with all applicable federal, state, and local laws, rules, regulations, and ordinances, including workers' compensation and equal protection and non-discrimination laws.

c. The CONSULTANT will perform its services hereunder in a professional manner, using the degree of care and skill ordinarily exercised by, and consistent with, the current professional practices and standards of a professional practicing in California. The CONSULTANT will furnish, at its expense, those services that are set forth in this AGREEMENT and **EXHIBIT "A"** and represents that the services set forth in said EXHIBIT are within the technical and professional areas of expertise of the CONSULTANT or any subconsultant the CONSULTANT has engaged or will engage to perform the service(s). The DISTRICT shall request in writing if the DISTRICT desires the CONSULTANT to provide services in addition to, or different from, the services described in **EXHIBIT "A"**. The CONSULTANT shall advise the DISTRICT in writing of any services that, in the CONSULTANT's opinion, lie outside of the technical and professional expertise of the CONSULTANT.

5. CONSULTANT has been selected to perform the work herein because of the skills and expertise of key individuals. Services under this AGREEMENT shall be performed only by competent personnel under this supervision of and/or in the employment of the CONSULTANT. CONSULTANT shall conform to DISTRICT's reasonable requests regarding assignment of personnel. All personnel, including those assigned at DISTRICT's request, shall be supervised by CONSULTANT.

6. CONSULTANT shall not change any of the key personnel without prior written approval by the DISTRICT, unless said personnel cease to be employed by CONSULTANT. In either case, DISTRICT shall be allowed to interview and approve replacement personnel. CONSULTANT agrees that reassignment of any of the listed personnel during the AGREEMENT period shall only be with other professional personnel who have equivalent experience and shall require prior consultation and written approval by the DISTRICT. Any costs associated with reassignment of personnel shall be borne exclusively by CONSULTANT and CONSULTANT shall not charge the DISTRICT for the cost of training or "bringing up to speed" replacement personnel. If any designated lead or key person fails to perform to the satisfaction of the DISTRICT, then upon written notice the CONSULTANT shall immediately remove that person from the PROJECT and provide a temporary replacement. CONSULTANT shall within thirty (30) work days, provide a permanent replacement person acceptable to the DISTRICT. DISTRICT may condition its approval of replacement personnel upon a reasonable transition period wherein new personnel will learn the PROJECT and get "up to speed" at CONSULTANT's cost.

7. CONSULTANT represents that the CONSULTANT has no existing interest and will not acquire any interest, direct or indirect, which would create a conflict of interest in violation of any applicable laws, and that no person having any such interest shall be employed by CONSULTANT.

### **ARTICLE II** **COMPENSATION TO THE CONSULTANT**

1. The DISTRICT shall compensate the CONSULTANT as follows:

a. The DISTRICT agrees to pay the CONSULTANT in accordance with the fee, rate and/or price schedule information set forth in **EXHIBIT "A"** for the services performed pursuant

## EXHIBIT "D"

to this AGREEMENT. In no event shall the total payment to CONSULTANT exceed DOLLARS (\$ \_\_\_\_\_.) for performing the services required by this AGREEMENT and **EXHIBIT "A"**.

b. CONSULTANT shall invoice costs monthly, or another periodic basis approved by the DISTRICT, for the services provided pursuant to this AGREEMENT from the time the CONSULTANT begins work on the PROJECT. All costs must be supported by an invoice, receipt, or other acceptable documentation as determined by the DISTRICT.

c. Except as expressly provided herein, CONSULTANT agrees that no other compensation, fringe benefits, or other remuneration is due to CONSULTANT by the DISTRICT for services rendered under this AGREEMENT. CONSULTANT shall not apply for or receive statutory benefits available to employees of the DISTRICT because CONSULTANT is not an employee of the DISTRICT; rather, CONSULTANT is operating under a personal services agreement pursuant to Education Code section 88003.1(b)(2) and has only the rights defined by this AGREEMENT.

2. The CONSULTANT shall submit one (1) invoice monthly to the DISTRICT for the fees incurred during the billing period and reimbursable expenses (if any). Invoices for fees must reflect the date of the service, identify the individual performing the service, state the hours worked and rate charged, and describe the service performed. Invoices requesting reimbursement for reimbursable expenses incurred during the billing period must clearly list items for which reimbursement is being requested and be accompanied by proper documentation (e.g. receipts, invoices) including a copy of the DISTRICT's authorization notice for invoiced item(s). Invoices requesting payment for overtime must reflect straight time and overtime hours being charged, and must include a copy of the DISTRICT's written authorization to incur additional overtime expense. No payments will be made by the DISTRICT to the CONSULTANT for monthly invoices requesting reimbursable expenses or overtime absent the prior written authorization of the DISTRICT. The DISTRICT shall make payment to the CONSULTANT of the approved invoiced amount within forty-five (45) days of the DISTRICT's receipt of the approved invoice.

3. The DISTRICT may withhold, or on account of subsequently discovered evidence, nullify the whole or a part of any payment to such extent as may be necessary to protect the DISTRICT from loss, including costs and attorneys' fees, on account of: (1) defective or deficient work product not remedied; (2) failure of the CONSULTANT to make payments properly to its employees or subconsultants; or (3) failure of CONSULTANT to perform its services in a timely manner so as to conform to the PROJECT schedule or other time constraints.

### **ARTICLE III** **REIMBURSABLE EXPENSES**

1. Reimbursable expenses are in addition to compensation for basic and extra services, and shall be paid to the CONSULTANT at one and one-tenth (1.1) times the expenses incurred by the CONSULTANT, the CONSULTANT's employees and consultants for the following specified items unless otherwise approved by the DISTRICT in writing:

a. Approved reproduction of reports and/or other documents otherwise not covered in this AGREEMENT and approved in advance by DISTRICT.

b. Fees advanced for securing approval of authorities in connection with the services rendered pursuant to this AGREEMENT.

## EXHIBIT "D"

- c. Express shipping, overnight mail, messenger, courier, or delivery services approved in advance by the DISTRICT.
- d. Mileage at IRS Rate if site exceeds more than 25 miles from the DISTRICT.
- e. Out of town travel approved in advance by DISTRICT.

2. Reimbursable expenses are estimated to be **TWENTY-FIVE THOUSAND DOLLARS (\$25,000.00)**, and this amount shall not be exceeded without the prior written approval of the DISTRICT.

### **ARTICLE IV** **TERMINATION**

1. This AGREEMENT may be terminated by either PARTY upon fourteen (14) days written notice to the other PARTY in the event of a substantial failure of performance by such other PARTY, including insolvency of CONSULTANT; or if the DISTRICT should decide to abandon or indefinitely postpone the PROJECT.

2. In the event of a termination based upon abandonment or postponement by DISTRICT, the DISTRICT shall pay to the CONSULTANT for all services performed and all expenses incurred under this AGREEMENT supported by documentary evidence, including payroll records, and expense reports up until the date of the abandonment or postponement plus any sums due the CONSULTANT for Board approved extra services. In ascertaining the services actually rendered hereunder up to the date of termination of this AGREEMENT, consideration shall be given to both completed work and work in process of completion and to complete and incomplete drawings and other documents whether delivered to the DISTRICT or in the possession of the CONSULTANT. In the event termination is for a substantial failure of performance, all damages and costs associated with the termination, including increased consultant and replacement consultant costs shall be deducted from payments to the CONSULTANT.

3. In the event a termination for cause is determined to have been made wrongfully or without cause, then the termination shall be treated as a termination for convenience in accordance with Article IV, Paragraph 4 below, and CONSULTANT shall have no greater rights than it would have had if a termination for convenience had been effected in the first instance. No other loss, cost, damage, expense or liability may be claimed, requested or recovered by CONSULTANT.

4. This AGREEMENT may be terminated without cause by DISTRICT upon twenty (20) days written notice to the CONSULTANT. In the event of a termination without cause, the DISTRICT shall pay to the CONSULTANT for all services performed and all expenses incurred under this AGREEMENT supported by documentary evidence, including payroll records, and expense reports up until the date of notice of termination plus any sums due the CONSULTANT for Board approved extra services. In ascertaining the services actually rendered hereunder up to the date of termination of this AGREEMENT, consideration shall be given to both completed work and work in process of completion and to other documents whether delivered to the DISTRICT or in the possession of the CONSULTANT.

5. In the event of a dispute between the PARTIES as to performance of the work or the interpretation of this AGREEMENT, or payment or nonpayment for work performed or not performed, the PARTIES shall attempt to resolve the dispute. Pending resolution of this dispute, CONSULTANT agrees to continue the work diligently to completion. If the dispute is not resolved, CONSULTANT agrees it will neither rescind the AGREEMENT nor stop the progress of the work, but CONSULTANT's sole remedy shall be to submit such controversy to determination by a court having competent jurisdiction of the dispute,

## EXHIBIT "D"

after the PROJECT has been completed, and not before. The PARTIES may agree in writing to submit any dispute between the PARTIES to arbitration. The DISTRICT agrees to pay the CONSULTANT the undisputed amounts due under this AGREEMENT.

6. The PARTIES understand and agree that Article IV of this AGREEMENT shall govern all termination rights and procedures between the PARTIES. Any termination provision that is attached to this AGREEMENT as an Exhibit shall be void and unenforceable between the PARTIES.

### **ARTICLE V** **ADDITIONAL CONSULTANT SERVICES**

1. CONSULTANT shall notify the DISTRICT in writing of the need for additional services required due to circumstances beyond the CONSULTANT's control. CONSULTANT shall obtain written authorization from the DISTRICT before rendering such services. The DISTRICT may require CONSULTANT to perform additional services which are, in the DISTRICT's discretion, necessary. Compensation for such services shall be negotiated and approved in writing by the DISTRICT. Such services shall include:

a. Making material revisions in reports or other documents when such revisions are required by the enactment or revision of laws, rules or regulations subsequent to the preparation and completion of such documents.

b. Preparing reports and other documentation and supporting data, and providing other services in connection with PROJECT modifications required by causes beyond the control of the CONSULTANT which are not the result of the direct or indirect negligence, errors or omissions on the part of CONSULTANT;

c. If the DISTRICT requests additional shifts to complete the services articulated in **EXHIBIT "A"** where the requests for additional shifts does not arise from the direct or indirect negligence, errors or omissions on the part of CONSULTANT and the CONSULTANT's compensation is expressly conditioned on the lack of fault of the CONSULTANT;

d. Providing any other services not otherwise included in this AGREEMENT or not customarily furnished in accordance with the generally accepted practice in the CONSULTANT's industry.

### **ARTICLE VI** **ACCOUNTING RECORDS OF THE CONSULTANT**

1. Records of the CONSULTANT's direct personnel and reimbursable expenses pertaining to any extra services provided by the CONSULTANT, which are in addition to those services already required by this AGREEMENT, and any records of accounts between the DISTRICT and CONSULTANT shall be kept on a generally recognized accounting basis and shall be available to the DISTRICT or DISTRICT's authorized representative at mutually convenient times.

EXHIBIT "D"

**ARTICLE VII**  
**REPORTS AND/OR OTHER DOCUMENTS**

1. The reports and/or other documents that are prepared, reproduced, maintained and/or managed by the CONSULTANT or CONSULTANT's consultants in accordance with this AGREEMENT (regardless of medium, format, etc.) shall be and remain the property of the DISTRICT (hereinafter "PROPERTY"). The DISTRICT may provide the CONSULTANT with a written request for the return of its PROPERTY at any time. Upon CONSULTANT's receipt of the DISTRICT's written request, CONSULTANT shall return the requested PROPERTY to the DISTRICT within five (5) calendar days. Failure to comply with any such written request shall be deemed a material breach of this AGREEMENT.

**ARTICLE VIII**  
**INDEMNITY & INSURANCE**

1. To the fullest extent permitted by law, CONSULTANT agrees to indemnify, and hold DISTRICT entirely harmless from all liability arising out of:

a. Workers' Compensation and Employers Liability: Any and all claims under Workers' Compensation acts and other employee benefit acts with respect to CONSULTANT's employees or CONSULTANT's subconsultant's employees arising out of CONSULTANT's work under this AGREEMENT; and

b. General Liability: Liability for damages for (1) death or bodily injury to person; (2) injury to, loss or theft of property; (3) any failure or alleged failure to comply with any provision of law or (4) any other loss, damage or expense arising under either (1), (2), or (3) above, sustained by the CONSULTANT or the DISTRICT, or any person, firm or corporation employed by the CONSULTANT or the DISTRICT upon or in connection with the PROJECT, except for liability resulting from the sole or active negligence, or willful misconduct of the DISTRICT, its officers, employees, agents or independent consultants who are directly employed by the DISTRICT;

c. Professional Liability: Any loss, injury to or death of persons or damage to property caused by any act, neglect, default or omission of the CONSULTANT, or any person, firm or corporation employed by the CONSULTANT, either directly or by independent contract, including all damages due to loss or theft, sustained by any person, firm or corporation including the DISTRICT, arising out of, or in any way connected with the services performed by CONSULTANT in accordance with this AGREEMENT, including injury or damage either on or off DISTRICT property; but not for any loss, injury, death or damages caused by the sole or active negligence, or willful misconduct of the DISTRICT.

d. The CONSULTANT, at its own expense, cost, and risk, shall defend any and all claims, actions, suits, or other proceedings, arising out of Article VIII, Paragraphs 1 (a) and (b) above, that may be brought or instituted against the DISTRICT, its officers, agents or employees, on any such claim or liability, and shall pay or satisfy any judgment that may be rendered against the DISTRICT, its officers, agents or employees in any action, suit or other proceedings as a result thereof.

e. The PARTIES understand and agree that Article VIII, Section 1 of this AGREEMENT shall be the sole indemnity, as defined by California Civil Code §2772, governing this AGREEMENT. Any other indemnity that is attached to this AGREEMENT as an Exhibit shall be void and unenforceable between the PARTIES.

EXHIBIT "D"

f. Any attempt to limit the CONSULTANT's liability to the DISTRICT in an attached Exhibit shall be void and unenforceable between the PARTIES. In no event shall the CONSULTANT's liability be limited to any amount including, but not limited to, the amount of fees received by the CONSULTANT for performing services related to this AGREEMENT.

2. CONSULTANT shall purchase and maintain policies of insurance with an insurer or insurers, qualified to do business in the State of California and acceptable to DISTRICT which will protect CONSULTANT and DISTRICT from claims which may arise out of or result from CONSULTANT's actions or inactions relating to the AGREEMENT, whether such actions or inactions be by themselves or by any subconsultant or by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable. The aforementioned insurance shall include coverage for:

a. The CONSULTANT shall carry Workers' Compensation and Employers Liability Insurance in accordance with the laws of the State of California. However, such amount shall not be less than ONE MILLION DOLLARS (\$1,000,000).

b. Comprehensive general and auto liability insurance with limits of not less than ONE MILLION DOLLARS (\$1,000,000) combined single limit, bodily injury and property damage liability per occurrence, including:

1. Owned, non-owned and hired vehicles;
2. Blanket contractual;
3. Broad form property damage;
4. Products/completed operations; and
5. Personal injury.

c. Professional liability insurance, including contractual liability, with limits of ONE MILLION DOLLARS (\$1,000,000), per claim. Such insurance shall be maintained during the term of this AGREEMENT and renewed for a period of at least five (5) years thereafter and/or at rates consistent with the time of execution of this AGREEMENT adjusted for inflation. In the event that CONSULTANT subcontracts any portion of CONSULTANT's duties, CONSULTANT shall require any such subconsultant to purchase and maintain insurance coverage as provided in this subparagraph. Failure to maintain professional liability insurance is a material breach of this AGREEMENT and grounds for immediate termination.

d. Each policy of insurance required in Article VIII, Section 2 (b) above shall name DISTRICT and its officers, agents and employees as additional insureds; shall state that, with respect to the operations of CONSULTANT hereunder, such policy is primary and any insurance carried by DISTRICT is excess and non-contributory with such primary insurance; shall state that not less than thirty (30) days written notice shall be given to DISTRICT prior to cancellation; and, shall waive all rights of subrogation. CONSULTANT shall notify DISTRICT in the event of material change in, or failure to renew, each policy. Prior to commencing work, CONSULTANT shall deliver to DISTRICT certificates of insurance as evidence of compliance with the requirements herein. In the event CONSULTANT fails to secure or maintain any policy of insurance required hereby, DISTRICT may, at its sole discretion, secure such policy of insurance in the name of and for the account of CONSULTANT, and in such event CONSULTANT shall reimburse DISTRICT upon demand for the cost thereof.



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**ARTICLE IX**  
**MISCELLANEOUS**

1. CONSULTANT, in the performance of this AGREEMENT, shall be and act as an independent contractor. CONSULTANT understands and agrees that CONSULTANT and all of CONSULTANT's employees shall not be considered officers, employees or agents of the DISTRICT, and are not entitled to benefits of any kind or nature normally provided employees of the DISTRICT and/or to which DISTRICT's employees are normally entitled, including, but not limited to, State Unemployment Compensation or Workers' Compensation. CONSULTANT assumes the full responsibility for the acts and/or omissions of CONSULTANT's employees or agents as they relate to the services to be provided under this AGREEMENT. CONSULTANT shall assume full responsibility for payment of any applicable prevailing wages and all federal, state and local taxes or contributions, including unemployment insurance, social security and income taxes for the respective CONSULTANT's employees.

2. Nothing contained in this AGREEMENT shall create a contractual relationship with or a cause of action in favor of any third party against either the DISTRICT or CONSULTANT.

3. The DISTRICT and CONSULTANT, respectively, bind themselves, their partners, officers, successors, assigns and legal representatives to the other PARTY to this AGREEMENT with respect to the terms of this AGREEMENT. CONSULTANT shall not assign this AGREEMENT.

4. This AGREEMENT shall be governed by the laws of the State of California.

5. This AGREEMENT shall not include or incorporate the terms of any general conditions, conditions, master agreement or any other boilerplate terms or form documents prepared by the CONSULTANT. The attachment of any such document to this AGREEMENT as **EXHIBIT "A"** shall not be interpreted or construed to incorporate such terms into this AGREEMENT unless the DISTRICT approves of such incorporation in a separate writing signed by the DISTRICT. Any reference to such boilerplate terms and conditions in the proposal or quote submitted by the CONSULTANT shall be null and void and have no effect upon this AGREEMENT. Proposals, quotes, statement of qualifications and other similar documents prepared by the CONSULTANT may be incorporated into this AGREEMENT as **EXHIBIT "A"** but such incorporation shall be strictly limited to those portions describing the CONSULTANT's scope of work, rate and price schedule and qualifications.

6. The PARTIES have had the opportunity to, and have to the extent each deemed appropriate, obtained legal counsel concerning the content and meaning of this AGREEMENT. Each of the PARTIES agrees and represents that no promise, inducement or agreement not herein expressed has been made to effectuate this AGREEMENT. This AGREEMENT represents the entire AGREEMENT between the DISTRICT and CONSULTANT and supersedes all prior negotiations, representations or agreements, either written or oral. This AGREEMENT may be amended or modified only by an agreement in writing signed by both the DISTRICT and the CONSULTANT.

7. The rule of construction that any ambiguities are to be resolved against the drafting PARTY shall not be employed in the interpretation of this AGREEMENT. It is expressly understood and agreed that the PARTIES to this AGREEMENT have participated equally, or have had equal opportunity to participate, in the drafting hereof.

8. Time is of the essence with respect to all provisions of this AGREEMENT.

EXHIBIT "D"

9. If either PARTY becomes involved in litigation arising out of this AGREEMENT or the performance thereof, each PARTY shall bear its own litigation costs and expenses, including reasonable attorney's fees.

10. All exhibits referenced herein and attached hereto shall be deemed incorporated into and made a part of this AGREEMENT by each reference as though fully set forth in each instance in the text hereof unless otherwise excluded by the terms of this AGREEMENT. In the event that the provisions of any exhibit conflict with the terms of this AGREEMENT, the terms of this AGREEMENT shall control.

11. This AGREEMENT may be executed in any number of counterparts, each of which shall be deemed an original, and the counterparts shall constitute one and the same instrument, all of which shall be sufficient evidence of this AGREEMENT.

12. Confidentiality. The CONSULTANT shall not disclose or permit the disclosure of any confidential information, except to its agents, employees and other consultants who need such confidential information in order to properly perform their duties relative to this AGREEMENT.

13. Severability. If any portion of this AGREEMENT is held as a matter of law to be unenforceable, the remainder of this AGREEMENT shall be enforceable without such provisions.

14. Notices. All notices or demands to be given under this AGREEMENT by either PARTY to the other shall be in writing and given either by: (a) personal service; or (b) by U.S. Mail, mailed either by registered, overnight, or certified mail, return receipt requested, with postage prepaid. Service shall be considered given when received if personally served or if mailed on the fifth day after deposit in any U.S. Post Office. The address to which notices or demands may be given by either PARTY may be changed by written notice given in accordance with the notice provisions of this Paragraph. At the date of this AGREEMENT, the addresses of the PARTIES are as follows:

To the DISTRICT:  
Mt. San Jacinto Community College District  
Attn: Beth Gomez  
1499 N. State Street  
San Jacinto, CA 92583  
Telephone: 951-487-3013

To the CONSULTANT:  
<<Name of Contractor>>  
Attn: <<Name>>  
<< Address>>  
<<City, State, Zip>>  
Telephone:  
Email:

15. Tobacco Prohibited. Any tobacco use (smoking, chewing, etc.) by anyone, is prohibited at all times on any DISTRICT property.

16. Profanity on any DISTRICT property is prohibited, including, but not limited to, racial, ethnic, or sexual slurs or comments which could be considered harassment.

17. Appropriate dress is mandatory. Therefore, tank tops, cut-offs and shorts are not allowed. Additionally, what is written or pictured on clothing must comply with the requirements of acceptable language as stated above in Paragraph 16.

18. Images. If applicable, the CONSULTANT is prohibited from capturing on any visual medium images of any property, logo, student, or employee of the DISTRICT, or any image that represents the DISTRICT without express written consent from the DISTRICT.

EXHIBIT "D" -

19. Prevailing Wages. If applicable and required, CONSULTANT shall pay, and shall cause all subconsultants of every tier to pay, not less than the specified prevailing wage rates, to the extent applicable, to all workers employed to perform work or services under this AGREEMENT. CONSULTANT shall fully indemnify and defend the DISTRICT from any claims arising from CONSULTANT's failure to meet and prevailing wage requirements.

20. In accordance with California Education Code section 81655, this AGREEMENT is not a valid or enforceable obligation against the DISTRICT until approved or ratified by motion of the Governing Board of the DISTRICT duly passed and adopted.

The PARTIES, through their authorized representatives, have executed this AGREEMENT as of the day and year first written above.

<<NAME OF CONSULTANT>>

**MT. SAN JACINTO COMMUNITY COLLEGE DISTRICT**

By \_\_\_\_\_

By \_\_\_\_\_

Print Name \_\_\_\_\_

Beth Gomez

Title \_\_\_\_\_

Vice President, Business Services

Date \_\_\_\_\_

Date \_\_\_\_\_

Address \_\_\_\_\_

Phone \_\_\_\_\_

Fax \_\_\_\_\_

Tax ID# \_\_\_\_\_

Email \_\_\_\_\_

EXHIBIT "D"

**CONSULTANT 'S WORK PLAN, SCOPE OF SERVICES, AND COMPENSATION**

## DSA 103: LISTING OF STRUCTURAL TESTS & SPECIAL INSPECTIONS

**Application Number:** 04-118898

**School Name:** Mt. San Jacinto

**School District:** Mt. San Jacinto

Community College

Community College District

**DSA File Number:**

**Increment Number:** 3

**Date Submitted:** 4/1/2020

**IMPORTANT:** This form is only a summary list of structural tests and some of the special inspections required for the project. Generally, the structural tests and special inspections noted on this form are those that will be performed by the Geotechnical Engineer of Record, Laboratory of Record, or Special Inspector. The actual complete test and inspection program must be performed as detailed on the DSA approved documents. The appendix at the bottom of this form identifies work NOT subject to DSA requirements for special inspection or structural testing. The project inspector is responsible for providing inspection of all facets of construction, including but not limited to, special inspections not listed on this form such as structural wood framing, high-load wood diaphragms, cold-formed steel framing, anchorage of non-structural components, etc., per Title 24, Part 2, Chapter 17A.

### KEY TO COLUMNS

1. TYPE	2. PERFORMED BY
<p><b>Continuous</b> – Indicates that a continuous special inspection is required</p> <p><b>Periodic</b> – Indicates that a periodic special inspection is required</p> <p><b>Test</b> – Indicates that a test is required</p>	<p><b>GE</b> – Indicates that the special inspection shall be performed by a registered geotechnical engineer or his or her authorized representative.</p> <p><b>LOR</b> – Indicates that the test or special inspection shall be performed by a testing laboratory accepted in the DSA Laboratory Evaluation and Acceptance (LEA) Program. See CAC Section 4-335.</p> <p><b>PI</b> – Indicates that the special inspection may be performed by a project inspector when specifically approved by DSA.</p> <p><b>SI</b> – Indicates that the special inspection shall be performed by an appropriately qualified/approved special inspector.</p>

**\*\*NOTE:** Undefined section and table references found in this document are from the CBC, or California Building Code.

## DSA 103: LISTING OF STRUCTURAL TESTS & SPECIAL INSPECTIONS (SOILS)

**Application Number:** 04-118898

**School Name:** Mt. San Jacinto

**School District:** Mt. San Jacinto

Community College

Community College District

**DSA File Number:**

**Increment Number:** 3

**Date Submitted:** 4/1/2020

**Geotechnical Reports: Project has a geotechnical report, or CDs indicate soils special inspection is required by GE**

1. GENERAL:		Table 1705A.6		
Test or Special Inspection	Type	Performed By	Code References and Notes	
<input checked="" type="checkbox"/> <p>a. Verify that:</p> <ul style="list-style-type: none"> <li>• Site has been prepared properly prior to placement of controlled fill and/or excavations for foundations.</li> <li>• Foundation excavations are extended to proper depth and have reached proper material.</li> <li>• Materials below footings are adequate to achieve the design bearing capacity.</li> </ul>	Periodic	GE*	* By geotechnical engineer or his or her qualified representative. (See Appendix for exemptions.)	

2. SOIL COMPACTION AND FILL:		Table 1705A.6		
Test or Special Inspection	Type	Performed By	Code References and Notes	
<input checked="" type="checkbox"/> <p>a. Perform classification and testing of fill materials.</p>	Test	LOR*	* Under the supervision of the geotechnical engineer.	
<input checked="" type="checkbox"/> <p>b. Verify use of proper materials, densities and inspect lift thicknesses, placement and compaction during placement of fill.</p>	Continuous	GE*	* By geotechnical engineer or his or her qualified representative. (Refer to specific items identified in the Appendix for exemptions where soils SI and testing may be conducted under the supervision of a geotechnical engineer or LOR's engineering manager. In such cases, the LOR's form DSA 291 shall satisfy the soil SI and test reporting requirements for the exempt items.)	
<input checked="" type="checkbox"/> <p>c. Compaction testing.</p>	Test	LOR*	* Under the supervision of the geotechnical engineer. (Refer to specific items identified in the Appendix for exemptions where soils testing may be conducted under the supervision of a geotechnical engineer or LOR's engineering manager. In such cases, the LOR's form DSA 291 shall satisfy the soil test reporting requirements for the exempt items.)	

## DSA 103: LISTING OF STRUCTURAL TESTS & SPECIAL INSPECTIONS (SOILS)

Application Number: 04-118898

School Name: Mt. San Jacinto

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<b>3. DRIVEN DEEP FOUNDATIONS (PILES):</b>		<b>Table 1705A.7</b>		
<b>Test or Special Inspection</b>		<b>Type</b>	<b>Performed By</b>	<b>Code References and Notes</b>
<input type="checkbox"/>	<b>a.</b> Verify pile materials, sizes and lengths comply with the requirements.	<b>Continuous</b>	<b>GE*</b>	* By geotechnical engineer or his or her qualified representative.
<input type="checkbox"/>	<b>b.</b> Determine capacities of test piles and conduct additional load tests as required.	<b>Test</b>	<b>LOR*</b>	* Under the supervision of the geotechnical engineer.
<input type="checkbox"/>	<b>c.</b> Inspect driving operations and maintain complete and accurate records for each pile.	<b>Continuous</b>	<b>GE*</b>	* By geotechnical engineer or his or her qualified representative.
<input type="checkbox"/>	<b>d.</b> Verify locations of piles and their plumbness, confirm type and size of hammer, record number of blows per foot of penetration, determine required penetrations to achieve design capacity, record tip and butt elevations and record any pile damage.	<b>Continuous</b>	<b>GE*</b>	* By geotechnical engineer or his or her qualified representative.
<input type="checkbox"/>	<b>e.</b> Steel piles.	Provide tests and inspections per STEEL section below.		
<input type="checkbox"/>	<b>f.</b> Concrete piles and concrete filled piles.	Provide tests and inspections per CONCRETE section below.		
<input type="checkbox"/>	<b>g.</b> For specialty piles, perform additional inspections as determined by the registered design professional in responsible charge.	*	*	* As defined on drawings or specifications.

<b>4. CAST-IN-PLACE DEEP FOUNDATIONS (PIERS):</b>		<b>Table 1705A.8</b>		
<b>Test or Special Inspection</b>		<b>Type</b>	<b>Performed By</b>	<b>Code References and Notes</b>
<input checked="" type="checkbox"/>	<b>a.</b> Inspect drilling operations and maintain complete and accurate records for each pier.	<b>Continuous</b>	<b>GE*</b>	* By geotechnical engineer or his or her qualified representative. (See Appendix for exemptions.)
<input checked="" type="checkbox"/>	<b>b.</b> Verify pier locations, diameters, plumbness, bell diameters (if applicable), lengths and embedment into	<b>Continuous</b>	<b>GE*</b>	* By geotechnical engineer or his or her qualified representative. (See Appendix for exemptions.)

## DSA 103: LISTING OF STRUCTURAL TESTS & SPECIAL INSPECTIONS (SOILS)

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	bedrock (if applicable); record concrete or grout volumes.			
<input checked="" type="checkbox"/>	c. Confirm adequate end strata bearing capacity.	<b>Continuous</b>	<b>GE*</b>	* By geotechnical engineer or his or her qualified representative. (See Appendix for exemptions.)
<input checked="" type="checkbox"/>	d. Concrete piers.	Provide tests and inspections per CONCRETE section below.		

<b>5. RETAINING WALLS:</b>				
	<b>Test or Special Inspection</b>	<b>Type</b>	<b>Performed By</b>	<b>Code References and Notes</b>
<input type="checkbox"/>	a. Placement, compaction and inspection of backfill.	<b>Continuous</b>	<b>GE*</b>	<b>1705A.6.1.</b> * By geotechnical engineer or his or her qualified representative. (See Section 2 above).
<input type="checkbox"/>	b. Placement of soil reinforcement and/or drainage devices.	<b>Continuous</b>	<b>GE*</b>	* By geotechnical engineer or his or her qualified representative.
<input type="checkbox"/>	c. Segmental retaining walls; inspect placement of units, dowels, connectors, etc.	<b>Continuous</b>	<b>GE*</b>	* By geotechnical engineer or his or her qualified representative. See DSA IR 16-3.
<input type="checkbox"/>	d. Concrete retaining walls.	Provide tests and inspections per CONCRETE section below.		
<input type="checkbox"/>	e. Masonry retaining walls.	Provide tests and inspections per MASONRY section below.		

<b>6. OTHER SOILS:</b>				
	<b>Test or Special Inspection</b>	<b>Type</b>	<b>Performed By</b>	<b>Code References and Notes</b>
<input type="checkbox"/>	a. Soil Improvements	<b>Test</b>	<b>GE*</b>	Submit a comprehensive report documenting final soil improvements constructed, construction observation and the results of the confirmation testing and analysis to CGS for final



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				acceptance. * By geotechnical engineer or his or her qualified representative.
<input type="checkbox"/>	<b>b.</b> Inspection of Soil Improvements	<b>Continuous</b>	<b>GE*</b>	* By geotechnical engineer or his or her qualified representative.
<input type="checkbox"/>				

# DSA 103: LISTING OF STRUCTURAL TESTS & SPECIAL INSPECTIONS (Concrete)

## Table 1705A.3; ACI 318-14 Sections 26.12 & 26.13

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7. CAST-IN-PLACE CONCRETE				
Material Verification and Testing:				
	Test or Special Inspection	Type	Performed By	Code References and Notes
<input checked="" type="checkbox"/>	a. Verify use of required design mix.	Periodic	SI	Table 1705A.3 Item 5, 1910A.1.
<input checked="" type="checkbox"/>	b. Identify, sample, and test reinforcing steel.	Test	LOR	1910A.2; ACI 318-14 Section 26.6.1.2; DSA IR 17-10. (See Appendix for exemptions.)
<input checked="" type="checkbox"/>	c. During concrete placement, fabricate specimens for strength tests, perform slump and air content tests, and determine the temperature of the concrete.	Test	LOR	Table 1705A.3 Item 6; ACI 318-14 Sections 26.5 & 26.12.
<input checked="" type="checkbox"/>	d. Test concrete ( $f_c$ ).	Test	LOR	1905A.1.15; ACI 318-14 Section 26.12.
Inspection:				
<input checked="" type="checkbox"/>	e. Batch plant inspection: <b>Periodic</b>	See Notes	SI	Default of ' <b>Continuous</b> ' per 1705A.3.3. If approved by DSA, batch plant inspection may be reduced to ' <b>Periodic</b> ' subject to requirements in Section 1705A.3.3.1, or eliminated per 1705A.3.3.2. (See Appendix for exemptions.)
<input checked="" type="checkbox"/>	f. Welding of reinforcing steel.	Provide special inspection per STEEL, Category 19.1(d) & (e) and/or 19.2(g) & (h) below.		

8. PRESTRESSED / POST-TENSIONED CONCRETE (in addition to Cast-in-Place Concrete tests and inspections):				
	Test or Special Inspection	Type	Performed By	Code References and Notes
<input checked="" type="checkbox"/>	a. Sample and test prestressing tendons and anchorages.	Test	LOR	1705A.3.4, 1910A.3
<input checked="" type="checkbox"/>	b. Inspect placement of prestressing tendons.	Periodic	SI	1705A.3.4, Table 1705A.3 Items 1 & 9.

# DSA 103: LISTING OF STRUCTURAL TESTS & SPECIAL INSPECTIONS (Concrete)

## Table 1705A.3; ACI 318-14 Sections 26.12 & 26.13

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<input checked="" type="checkbox"/>	<b>c.</b> Verify in-situ concrete strength prior to stressing of post-tensioning tendons.	<b>Periodic</b>	<b>SI</b>	<b>Table 1705A.3 Item 11.</b> Special inspector to verify specified concrete strength test prior to stressing.
<input checked="" type="checkbox"/>	<b>d.</b> Inspect application of post-tensioning or prestressing forces and grouting of bonded prestressing tendons.	<b>Continuous</b>	<b>SI</b>	<b>1705A.3.4, Table 1705A.3 Item 9;</b> ACI 318-14 Section 26.13

<b>9. PRECAST CONCRETE (in addition to Cast-in-Place Concrete tests and inspections):</b>				
	<b>Test or Special Inspection</b>	<b>Type</b>	<b>Performed By</b>	<b>Code References and Notes</b>
<input checked="" type="checkbox"/>	<b>a.</b> Inspect fabrication of precast concrete members.	<b>Continuous</b>	<b>SI</b>	ACI 318-14 Section 26.13.
<input checked="" type="checkbox"/>	<b>b.</b> Inspect erection of precast concrete members.	<b>Periodic</b>	<b>SI*</b>	<b>Table 1705A.3 Item 10.</b> * May be performed by PI when specifically approved by DSA.

<b>10. SHOTCRETE (in addition to Cast-in-Place Concrete tests and inspections):</b>				
	<b>Test or Special Inspection</b>	<b>Type</b>	<b>Performed By</b>	<b>Code References and Notes</b>
<input type="checkbox"/>	<b>a.</b> Inspect shotcrete placement for proper application techniques.	<b>Continuous</b>	<b>SI</b>	<b>1705A.19, Table 1705A.3 Item 7, 1908A.6, 1908A.7, 1908A.8, 1908A.9, 1908A.11, 1908A.12.</b> See ACI 506.2-13 Section 3.4, ACI 506R-16.
<input type="checkbox"/>	<b>b.</b> Sample and test shotcrete ( $f'_c$ ).	<b>Test</b>	<b>LOR</b>	<b>1908A.5, 1908A.10.</b>

<b>11. POST-INSTALLED ANCHORS:</b>				
	<b>Test or Special Inspection</b>	<b>Type</b>	<b>Performed By</b>	<b>Code References and Notes</b>
<input checked="" type="checkbox"/>	<b>a.</b> Inspect installation of post-installed anchors	<b>See Notes</b>	<b>SI*</b>	<b>1617A.1.19, Table 1705A.3 Item 4a (Continuous) &amp; 4b (Periodic), 1705A.3.8</b> (See Appendix for exemptions). ACI 318-14

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**Table 1705A.3; ACI 318-14 Sections 26.12 & 26.13**

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				Sections 17.8 & 26.13. * May be performed by the project inspector when specifically approved by DSA.
<input checked="" type="checkbox"/>	<b>b.</b> Test post-installed anchors.	<b>Test</b>	<b>LOR</b>	<b>1910A.5.</b> (See Appendix for exemptions.)

<b>12. OTHER CONCRETE:</b>				
	<b>Test or Special Inspection</b>	<b>Type</b>	<b>Performed By</b>	<b>Code References and Notes</b>
<input type="checkbox"/>				

# DSA 103: LISTING OF STRUCTURAL TESTS & SPECIAL INSPECTIONS (Masonry)

1705A.4; TMS 602-16, Tables 3 and 4.

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13. STRUCTURAL MASONRY: 2000 psi				
Material Verification and Testing: (See Appendix for exemptions.)				
	Test or Special Inspection	Type	Performed By	Code References and Notes
<input checked="" type="checkbox"/>	a. Mill certificate indicates compliance with requirements for reinforcement, anchors, ties, fasteners and metal accessories. See item 7b for identification, sampling and testing of reinforcing steel.	Periodic	SI*	2103A.4; TMS 602-16 Articles 1.5B.2 & 2.4. *To be performed by qualified LOR representative. Applicable testing by LOR. See DSA IR 17-10 for unidentified reinforcing steel.
<input checked="" type="checkbox"/>	b. Producer's certificate of compliance for masonry units, mortar and grout materials.	Test	LOR	1705A.4, 2103A.2.1, 2103A.3, 2103A.5; TMS 602-16 Articles 2.1, 2.2, 2.6A and 2.6B, and Table 6 footnote 3.
<input checked="" type="checkbox"/>	c. Test masonry ( $f'_m$ ).	Test	LOR	1705A.4. For Unit Strength: 2105A.3 (2114.6.1+); TMS 602-16 Articles 1.4B.2, 1.5B.1 & 1.5B.2. For Prism (required when $f'_m > 2000$ psi): 2105A.2; TMS 602-16 Articles 1.4B.3, 1.4B.4, 1.5B.1 & 1.5B.2.
<input checked="" type="checkbox"/>	d. Verify proportions of site-prepared, premixed or preblended mortar and grout.	Periodic	SI	TMS 602-16 Table 3 Item 5, Table 4 Item 1a & 2d.
<input checked="" type="checkbox"/>	e. Test core-drilled samples.	Test	LOR	2105A.4. (See Appendix for exemptions.)
Inspection: (See Appendix for exemptions.)				
<input checked="" type="checkbox"/>	f. Inspect preparation of prisms.	Continuous	SI	TMS 602-16 Articles 1.4.B.3 & 1.4.B.4 & Table 4 Item 4.
<input checked="" type="checkbox"/>	g. Verify size, location and condition of all dowels, construction supporting masonry, etc.	Periodic	SI	

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1705A.4; TMS 602-16, Tables 3 and 4.

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<input checked="" type="checkbox"/>	<b>h.</b> Verify size, grade and type of reinforcement and anchor bolts.	<b>Periodic</b>	<b>SI</b>	TMS 602-16 Table 4 Item 1c.
<input checked="" type="checkbox"/>	<b>i.</b> Welding of reinforcing steel.	TMS 602-16 Table 4 Item 3e. Provide special inspection per STEEL, Category 19.1(d) & (e) and/or 19.2(g) & (h) below.		
<input checked="" type="checkbox"/>	<b>j.</b> Inspect placement of reinforcement and connectors.	<b>Continuous</b>	<b>SI</b>	TMS 602-16 Table 4 Item 2c.
<input checked="" type="checkbox"/>	<b>k.</b> Inspect placement of masonry units and construction of mortar joints.	<b>Periodic</b>	<b>SI</b>	TMS 602-16 Table 4 Item 3b.
<input checked="" type="checkbox"/>	<b>l.</b> Verify preparation, construction and protection of masonry during cold weather (temperature below 40° F) or hot weather (temperature above 90° F).	<b>Periodic</b>	<b>SI*</b>	TMS 602-16 Table 4 Item 3f. * May be performed by the project inspector when specifically approved by DSA.
<input checked="" type="checkbox"/>	<b>m.</b> Inspect type, size and location of anchors and all other items to embedded in masonry including other details of anchorage of masonry to structural members, frames and other construction.	<b>Continuous</b>	<b>SI</b>	TMS 602-16 Table 4 Item 3d.
<input checked="" type="checkbox"/>	<b>n.</b> Inspect grout space prior to placement of grout.	<b>Continuous</b>	<b>SI</b>	TMS 602-16 Table 4 Item 2a.

## 14. VENEER OR GLASS BLOCK PARTITIONS: 1705A.4.1; TMS 602-16 Tables 3 and 4.

	Test or Special Inspection	Type	Performed By	Code References and Notes
<input type="checkbox"/>	<b>a.</b> Verify proportions of site-prepared mortar and grout and/or verify certification of premixed mortar.	<b>Periodic</b>	<b>SI</b>	TMS 602-16 Table 3 Item 5 and Table 4 Items 1a & 2d.
<input type="checkbox"/>	<b>b.</b> Inspect placement of units and construction of mortar joints.	<b>Periodic</b>	<b>SI</b>	TMS 602-16 Table 4 Item 3b.

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1705A.4; TMS 602-16, Tables 3 and 4.

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<input type="checkbox"/>	<b>c.</b> Inspect placement of reinforcement, connectors and anchors.	<b>Periodic</b>	<b>SI</b>	TMS 602-16 Table 4 Item 2c.
<input type="checkbox"/>	<b>d.</b> Inspect type, size and location of anchors and all other items to be embedded in masonry including details of anchorage of masonry to structural members, frames and other construction.	<b>Periodic</b>	<b>SI</b>	TMS 602-16 Table 4 Item 3d.
<input type="checkbox"/>	<b>e.</b> Verify preparation, construction and protection of masonry during cold weather (temperature below 40° F) or hot weather (above 90° F).	<b>Periodic</b>	<b>SI*</b>	TMS 602-16 Table 4 Item 3f. * May be performed by the project inspector when specifically approved by DSA.
<input type="checkbox"/>	<b>f.</b> Test veneer bond strength.	<b>Test</b>	<b>LOR</b>	<b>1410.2.1; TMS 402 Article 12.3.2.4. (Field constructed mock-up laboratory tested in accordance with ASTM C482).</b>
<b>15. POST-INSTALLED ANCHORS IN MASONRY:</b>				
	Test or Special Inspection	<b>Type</b>	<b>Performed By</b>	<b>Code References and Notes</b>
<input checked="" type="checkbox"/>	<b>a.</b> Inspect installation of post-installed anchors	<b>See Notes</b>	<b>SI*</b>	<b>1617A.1.19, 1705A.4, Table 1705A.3 Item 4a (Continuous) &amp; 4b (Periodic);</b> ACI 318-14 Sections 17.8 & 26.13. * May be performed by the project inspector when specifically approved by DSA. (See Appendix for exemptions.)
<input checked="" type="checkbox"/>	<b>b.</b> Test post-installed anchors.	<b>Test</b>	<b>LOR</b>	<b>1705A.4, 1910A.5.</b> (See Appendix for exemptions.)
<b>16. OTHER MASONRY:</b>				
	Test or Special Inspection	<b>Type</b>	<b>Performed By</b>	<b>Code References and Notes</b>
<input type="checkbox"/>				

# DSA 103: LISTING OF STRUCTURAL TESTS & SPECIAL INSPECTIONS (Steel and Aluminum)

1705A.2.1, Table 1705A.2.1; AISC 303-16, AISC 341-16, AISC 358-16, AISC 360-16; AISI S100-16

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17. STRUCTURAL STEEL, COLD-FORMED STEEL AND ALUMINUM USED FOR STRUCTURAL PURPOSES				
Material Verification and Testing:				
	Test or Special Inspection	Type	Performed By	Code References and Notes
<input checked="" type="checkbox"/>	a. Verify identification of all materials and: <ul style="list-style-type: none"> <li>• Mill certificates indicate material properties that comply with requirements.</li> <li>• Material sizes, types and grades comply with requirements.</li> </ul>	Periodic	*	Table 1705A.2.1 Item 3a–3c. 2202A.1; AISI S100-16 Section A3.1 & A3.2, AISI S240-15 Section A3 & A5, AISI S220-15 Sections A4 & A6. * By special inspector or qualified technician when performed off-site.
<input checked="" type="checkbox"/>	b. Test unidentified materials	Test	LOR	2202A.1.
<input checked="" type="checkbox"/>	c. Examine seam welds of HSS shapes	Periodic	SI	DSA IR 17-3.
Inspection:				
<input checked="" type="checkbox"/>	d. Verify and document steel fabrication per DSA-approved construction documents.	Periodic	SI	Not applicable to cold-formed steel light-frame construction, except for trusses (1705A.2.4).

18. HIGH-STRENGTH BOLTS: RCSC 2014				
Material Verification and Testing of High-Strength Bolts, Nuts and Washers:				
	Test or Special Inspection	Type	Performed By	Code References and Notes
<input checked="" type="checkbox"/>	a. Verify identification markings and manufacturer's certificates of compliance conform to ASTM standards specified in the DSA-approved documents.	Periodic	SI	Table 1705A.2.1 Items 1a & 1b, 2202A.1; AISC 360-16 Section A3.3, J3.1, and N3.2; RCSC 2014 Section 1.5 & 2.1; DSA IR 17-8 & DSA IR 17-9.
<input checked="" type="checkbox"/>	b. Test high-strength bolts, nuts and washers.	Test	LOR	Table 1705A.2.1 Item 1c, 2213A.1; RCSC 2014 Section 7.2; DSA IR 17-8.
Inspection of High-Strength Bolt Installation:				



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1705A.2.1, Table 1705A.2.1; AISC 303-16, AISC 341-16, AISC 358-16, AISC 360-16; AISI S100-16

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<input checked="" type="checkbox"/>	c. Bearing-type ("snug tight") connections.	Periodic	SI	Table 1705A.2.1 Item 2a, 1705A.2.6, 2204A.2; AISC 360-16 J3.1, J3.2, M2.5 & N5.6; RCSC 2014 Section 9.1; DSA IR 17-9.
<input checked="" type="checkbox"/>	d. Pretensioned and slip-critical connections.	*	SI	Table 1705A.2.1 Items 2b & 2c, 1705A.2.6, 2204A.2; AISC 360-16 J3.1, J3.2, M2.5 & N5.6; RCSC 2014 Sections 9.2 & 9.3; DSA IR 17-9. * "Continuous" or "Periodic" depends on the tightening method used.

<b>19. WELDING:</b>	<b>1705A.2.5, Table 1705A.2.1 Items 4 &amp; 5;</b> AWS D1.1 and AWS D1.8 for structural steel; AWS D1.2 for Aluminum; AWS D1.3 for cold-formed steel; AWS D1.4 for reinforcing steel; DSA IR 17-3 (See Appendix for exemptions.)
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**Verification of Materials, Equipment, Welders, etc.:**

	Test or Special Inspection	Type	Performed By	Code References and Notes
<input checked="" type="checkbox"/>	a. Verify weld filler material identification markings per AWS designation listed on the DSA-approved documents and the WPS.	Periodic	SI	DSA IR 17-3.
<input checked="" type="checkbox"/>	b. Verify weld filler material manufacturer's certificate of compliance.	Periodic	SI	DSA IR 17-3.
<input checked="" type="checkbox"/>	c. Verify WPS, welder qualifications and equipment.	Periodic	SI	DSA IR 17-3.

**19.1 SHOP WELDING:**

	Test or Special Inspection	Type	Performed By	Code References and Notes
<input checked="" type="checkbox"/>	a. Inspect groove welds, multi-pass fillet welds, single pass fillet welds > 5/16", plug and slot welds.	Continuous	SI	Table 1705A.2.1 Items 5a.1-4; AISC 360-16 (and AISC 341-16 as applicable); DSA IR 17-3.
<input checked="" type="checkbox"/>	b. Inspect single-pass fillet welds ≤ 5/16", floor and roof deck welds.	Periodic	SI	1705A.2.2, Table 1705A.2.1 Items 5a.5 & 5a.6; AISC 360-16 (and AISC 341-16 as applicable); DSA IR 17-3.
<input checked="" type="checkbox"/>	c. Inspect welding of stairs and railing systems.	Periodic	SI	1705A.2.1; AISC 360-16 (and AISC 341-16 as applicable); AWS D1.1 & D1.3; DSA IR 17-3.

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1705A.2.1, Table 1705A.2.1; AISC 303-16, AISC 341-16, AISC 358-16, AISC 360-16; AISI S100-16

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<input checked="" type="checkbox"/>	<b>d.</b> Verification of reinforcing steel weldability other than ASTM A706.	<b>Periodic</b>	<b>SI</b>	<b>1705A.3.1</b> ; AWS D1.4; DSA IR 17-3. Verify carbon equivalent reported on mill certificates.
<input checked="" type="checkbox"/>	<b>e.</b> Inspect welding of reinforcing steel.	<b>Continuous</b>	<b>SI</b>	<b>Table 1705A.2.1 Item 5b, 1705A.3.1, Table 1705A.3 Item 2, 1903A.8</b> ; AWS D1.4; DSA IR 17-3.
<b>19.2 FIELD WELDING:</b>				
	<b>Test or Special Inspection</b>	<b>Type</b>	<b>Performed By</b>	<b>Code References and Notes</b>
<input checked="" type="checkbox"/>	<b>a.</b> Inspect groove welds, multi-pass fillet welds, single pass fillet welds > 5/16", plug and slot welds.	<b>Continuous</b>	<b>SI</b>	<b>Table 1705A.2.1 Items 5a.1–4</b> ; AISC 360-16 (AISC 341-16 as applicable); DSA IR 17-3.
<input checked="" type="checkbox"/>	<b>b.</b> Inspect single-pass fillet welds ≤ 5/16".	<b>Periodic</b>	<b>SI</b>	<b>Table 1705A.2.1 Item 5a.5</b> ; AISC 360-16 (AISC 341-16 as applicable); DSA IR 17-3.
<input checked="" type="checkbox"/>	<b>c.</b> Inspect end-welded studs (ASTM A-108) installation (including bend test).	<b>Periodic</b>	<b>SI</b>	<b>2213A.2</b> ; AISC 360-16 (AISC 341-16 as applicable); AWS D1.1; DSA IR 17-3.
<input checked="" type="checkbox"/>	<b>d.</b> Inspect floor and roof deck welds.	<b>Periodic</b>	<b>SI</b>	<b>1705A.2.2, Table 1705A.2.1 Item 5a.6</b> ; AISC 360-16 (AISC 341-16 as applicable); AWS D1.3; DSA IR 17-3.
<input checked="" type="checkbox"/>	<b>e.</b> Inspect welding of structural cold-formed steel.	<b>Periodic</b>	<b>SI*</b>	<b>1705A.2.5; AWS D1.3; DSA IR 17-3.</b> The quality control provisions of AISI S240-15 Chapter D shall also apply. * May be performed by the project inspector when specifically approved by DSA.
<input checked="" type="checkbox"/>	<b>f.</b> Inspect welding of stairs and railing systems.	<b>Periodic</b>	<b>SI*</b>	<b>1705A.2.1</b> ; AISC 360-16 (AISC 341-16 as applicable); AWS D1.1 & D1.3; DSA IR 17-3. * May be performed by the project inspector when specifically approved by DSA.
<input checked="" type="checkbox"/>	<b>g.</b> Verification of reinforcing steel weldability.	<b>Periodic</b>	<b>SI</b>	<b>1705A.3.1</b> ; AWS D1.4; DSA IR 17-3. Verify carbon equivalent reported on mill certificates.
<input checked="" type="checkbox"/>	<b>h.</b> Inspect welding of reinforcing steel.	<b>Continuous</b>	<b>SI</b>	<b>Table 1705A.2.1 Item 5b, 1705A.3.1, Table 1705A.3 Item 2, 1903A.8</b> ; AWS D1.4; DSA IR 17-3.

# DSA 103: LISTING OF STRUCTURAL TESTS & SPECIAL INSPECTIONS (Steel and Aluminum)

1705A.2.1, Table 1705A.2.1; AISC 303-16, AISC 341-16, AISC 358-16, AISC 360-16; AISI S100-16

**Application Number:** 04-118898

**School Name:** Mt. San Jacinto

**School District:** Mt. San Jacinto

Community College

Community College District

**DSA File Number:**

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**Date Submitted:** 4/1/2020

<b>20. NONDESTRUCTIVE TESTING: 1705A.2.1, Table 1705A.2.1; AISC 303-16, AISC 341-16, AISC 358-16, AISC 360-16; AISI S100-16</b>				
	<b>Test or Special Inspection</b>	<b>Type</b>	<b>Performed By</b>	<b>Code References and Notes</b>
<input checked="" type="checkbox"/>	a. Ultrasonic	Test	LOR	<b>1705A.2.1, 1705A.2.5;</b> AISC 341-16 J6.2, AISC 360-16 N5.5; ANSI/ASNT CP-189, SNT-TC-1A; AWS D1.1, AWS D1.8; DSA IR 17-2.
<input checked="" type="checkbox"/>	b. Magnetic Particle	Test	LOR	<b>1705A.2.1, 1705A.2.5;</b> AISC 341-16 J6.2, AISC 360-16 N5.5; ANSI/ASNT CP-189, SNT-TC-1A; AWS D1.1, AWS D1.8; DSA IR 17-2.
<input type="checkbox"/>	c.	Test	LOR	

<b>21. STEEL JOISTS AND TRUSSES: 1705A.2.1, Table 1705A.2.1; AISC 303-16, AISC 341-16, AISC 358-16, AISC 360-16; AISI S100-16</b>				
	<b>Test or Special Inspection</b>	<b>Type</b>	<b>Performed By</b>	<b>Code References and Notes</b>
<input type="checkbox"/>	a. Verify size, type and grade for all chord and web members as well as connectors and weld filler material; verify joist profile, dimensions and camber (if applicable); verify all weld locations, lengths and profiles; mark or tag each joist.	Continuous	SI	<b>1705A.2.3, Table 1705A.2.3;</b> AWS D1.1; DSA IR 22-3 for steel joists only. <b>1705A.2.4;</b> AWS D1.3 for cold-formed steel trusses.

<b>22. SPRAY APPLIED FIRE-PROOFING: 1705A.2.1, Table 1705A.2.1; AISC 303-16, AISC 341-16, AISC 358-16, AISC 360-16; AISI S100-16</b>				
	<b>Test or Special Inspection</b>	<b>Type</b>	<b>Performed By</b>	<b>Code References and Notes</b>

# DSA 103: LISTING OF STRUCTURAL TESTS & SPECIAL INSPECTIONS (Steel and Aluminum)

1705A.2.1, Table 1705A.2.1; AISC 303-16, AISC 341-16, AISC 358-16, AISC 360-16; AISI S100-16

**Application Number:** 04-118898

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<input type="checkbox"/>	<b>a.</b> Examine structural steel surface conditions, inspect application, take samples, measure thickness and verify compliance of all aspects of application with DSA-approved documents.	<b>Periodic</b>	<b>SI</b>	<b>1705A.14.</b>
<input type="checkbox"/>	<b>b.</b> Test bond strength.	<b>Test</b>	<b>LOR</b>	<b>1705A.14.6.</b>
<input type="checkbox"/>	<b>c.</b> Test density.	<b>Test</b>	<b>LOR</b>	<b>1705A.14.5.</b>

<b>23. ANCHOR BOLTS AND ANCHOR RODS:</b>				
<input checked="" type="checkbox"/>	<b>a.</b> Anchor Bolts and Anchor Rods	<b>Test</b>	<b>LOR</b>	Sample and test anchor bolts and anchor rods not readily identifiable per procedures noted in DSA IR 17-11.
<input checked="" type="checkbox"/>	<b>b.</b> Threaded rod not used for foundation anchorage.	<b>Test</b>	<b>LOR</b>	Sample and test threaded rods not readily identifiable per procedures noted in DSA IR 17-11.

<b>23.1 OTHER STEEL:</b>				
	<b>Test or Special Inspection</b>	<b>Type</b>	<b>Performed By</b>	<b>Code References and Notes</b>
<input type="checkbox"/>				

## Appendix: Work Exempt from DSA Requirements for Structural Tests / Special Inspections

**Application Number:** 04-118898

**School Name:** Mt. San Jacinto

**School District:** Mt. San Jacinto

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Community College District

**DSA File Number:**

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**Date Submitted:** 4/1/2020

Exempt items given in DSA IR A-22 or the 2019 CBC (including DSA amendments) and those items identified below with an "X" by the design professional are NOT subject to DSA requirements for the structural tests / special inspections noted. **Items marked as exempt shall be identified on the approved construction documents.** The project inspector shall verify all construction complies with the approved construction documents.

<b>SOILS:</b>	
<input type="checkbox"/>	1. Deep foundations acting as a cantilever footing designed based on minimum allowable pressures per CBC Table 1806A.2 and having no geotechnical report for the following cases: A) free standing sign or scoreboard, B) cell or antenna towers and poles less than 35'-0" tall (e.g., lighting poles, flag poles, poles supporting open mesh fences, etc.), C) single-story structure with dead load less than 5 psf (e.g., open fabric shade structure), or D) covered walkway structure with an apex height less than 10'-0" above adjacent grade.
<input type="checkbox"/>	2. Shallow foundations, etc. are exempt from special inspections and testing by a Geotechnical Engineer for the following cases: A) buildings without a geotechnical report and meeting the exception Item #1 criteria in CBC Section 1803A.2 supported by native soil (any excavation depth) or fill soil (not exceeding 12" depth per CBC, Section 1804A.6), B) soil scarification/recompaction not exceeding 12" depth, C) native or fill soil supporting exterior non-structural flatwork (e.g., sidewalks, site concrete ramps, site stairs, parking lots, driveways, etc.), D) unpaved landscaping and playground areas, or E) utility trench backfill.

<b>CONCRETE/MASONRY:</b>	
<input type="checkbox"/>	1. Post-installed anchors for the following: A) exempt non-structural components (e.g., mechanical, electrical, plumbing equipment - see Item 7 for "Welding") given in CBC Section 1617A.1.18 (which replaces ASCE 7-16, Section 13.1.4) or B) interior nonstructural wall partitions meeting criteria listed in exempt Item 3 for "Welding."
<input type="checkbox"/>	2. Concrete batch plant inspection is not required for items given in CBC Section 1705A.3.3.2 subject to the requirements and limitations in that section.
<input type="checkbox"/>	3. Non-bearing non-shear masonry walls may be exempt from certain DSA masonry testing and special inspection items as allowed per DSA IR 21-1. Refer to construction documents for specific exemptions accordingly for each applicable wall condition.
<input type="checkbox"/>	4. Epoxy shear dowels in site flatwork and/or other non-structural concrete.
<input type="checkbox"/>	5. Testing of reinforcing bars is not required for items given in CBC Section 1910A.2 subject to the requirements and limitations in that section.

## Appendix: Work Exempt from DSA Requirements for Structural Tests / Special Inspections

**Application Number:** 04-118898

**School Name:** Mt. San Jacinto

**School District:** Mt. San Jacinto

Community College

Community College District

**DSA File Number:**

**Increment Number:** 3

**Date Submitted:** 4/1/2020

	<b>Welding:</b>
<input type="checkbox"/>	1. Solid-clad and open-mesh gates with maximum leaf span or rolling section for rolling gates of 10' and apex height less than 8'-0" above lowest adjacent grade. When located above circulation or occupied space below, these gates are not located within 1.5x gate/fence height (max 8'-0") to the edge of floor or roof.
<input type="checkbox"/>	2. Handrails, guardrails and modular or relocatable ramps associated with walking surfaces less than 30" above adjacent grade (excluding post base connections per the 'Exception' language in Section 1705A.2.1); fillet welds shall not be ground flush.
<input type="checkbox"/>	3. Non-structural interior cold-formed steel framing spanning less than 15'-0", such as in interior partitions, interior soffits, etc. supporting only self weight and light-weight finishes or adhered tile, masonry, stone, or terra cotta veneer no more than 5/8" thickness and apex less than 20'-0" in height and not over an exit way. Maximum tributary load to a member shall not exceed the equivalent of that occurring from a 10'x10' opening in a 15' tall wall for a header or king stud.
<input type="checkbox"/>	4. Manufactured support frames and curbs using hot rolled or cold-formed steel (i.e., light gauge) for mechanical, electrical, or plumbing equipment weighing less than 2000# (equipment only) (connections of such frames to superstructure elements using welding will require special inspection as noted in selected item(s) for Sections 19, 19.1 and/or 19.2 of listing above).
<input type="checkbox"/>	5. Manufactured components (e.g., Tolco, B-Line, Afcon, etc.) for mechanical, electrical, or plumbing hanger support and bracing (connections of such components to superstructure elements using welding will require special inspection as noted in selected item(s) for Sections 19, 19.1 and/or 19.2 of listing above).
<input type="checkbox"/>	6. TV Brackets, projector mounts with a valid listing (see DSA IR A-5) and recreational equipment (e.g., playground structures, basketball backstops, etc.) (connections of such elements to superstructure elements using welding will require special inspection as noted in selected item(s) for section 19, 19.1 and/or 19.2 located in the Steel/Aluminum category).
<input type="checkbox"/>	7. Any support for exempt non-structural components given in CBC Section 1617A.1.18 (which replaces ASCE 7-16, Section 13.1.4) meeting the following: A) when supported on a floor/roof, <400# and resulting composite center of mass (including component's center of mass) ≤4' above supporting floor/roof, B) when hung from a wall or roof/floor, <20# for discrete units or <5 plf for distributed systems.

# DSA 103: LISTING OF STRUCTURAL TESTS & SPECIAL INSPECTIONS (SIGNATURE)

**Application Number:** 04-118898

**School Name:** Mt. San Jacinto

**School District:** Mt. San Jacinto

Community College

Community College District

**DSA File Number:**

**Increment Number:** 3

**Date Submitted:** 4/1/2020

Name of Architect or Engineer in general responsible charge:

Name of Structural Engineer (When structural design has been delegated):

Signature of Architect or Structural Engineer:

Date:

**Note:** Do not use secured electronic or digital signatures preventing DSA mark-ups.

**DSA STAMP**

## DSA 103: LIST OF REQUIRED VERIFIED REPORTS

**Application Number:** 04-118898

**School Name:** Mt. San Jacinto  
Community College

**School District:** Mt. San Jacinto  
Community College District

**DSA File Number:**

**Increment Number:** 3

**Date Submitted:** 4/1/2020

1. Soils Testing and Inspection: Geotechnical Verified Report Form DSA 293
2. Structural Testing and Inspection: Laboratory Verified Report Form DSA 291
3. Concrete Batch Plant Inspection: Laboratory Verified Report Form DSA 291
4. Prestressed / Post-Tensioned Concrete Inspection: Laboratory Verified Report Form DSA 291, or, for independently contracting SI, Special Inspection Verified Report Form DSA 292
5. Precast Concrete Inspection: Laboratory Verified Report Form DSA 291, or, for independently contracting SI, Special Inspection Verified Report Form DSA 292
6. Post-installed Anchors: Laboratory Verified Report Form DSA 291, or, for independently contracting SI, Special Inspection Verified Report Form DSA 292
7. Masonry Inspection: Laboratory Verified Report Form DSA 291, or, for independently contracting SI, Special Inspection Verified Report Form DSA 292
8. Shop Welding Inspection: Laboratory Verified Report Form DSA 291, or, for independently contracting SI, Special Inspection Verified Report Form DSA 292
9. Field Welding Inspection: Laboratory Verified Report Form DSA 291, or, for independently contracting SI, Special Inspection Verified Report Form DSA 292
10. High-Strength Bolt Installation Inspection: Laboratory Verified Report Form DSA 291, or, for independently contracting SI, Special Inspection Verified Report Form DSA 292





**Geotechnical Engineering  
Construction Inspection  
Materials Testing  
Environmental**

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[www.mtgline.com](http://www.mtgline.com)

August 30, 2019

MTG<sub>L</sub> Project No. 8767A02

MTG<sub>L</sub> Log No. 19-2089

Mt. San Jacinto Community College District  
1499 North State Street  
San Jacinto, California 92583

**Subject: GEOTECHNICAL INVESTIGATION**  
Mt. San Jacinto College  
5,000 Seat Stadium and Buildings at Menifee Valley Campus  
28237 La Piedra Road  
San Jacinto, Riverside County, California

In accordance with your request and authorization, MTG<sub>L</sub>, Inc. has completed a Geotechnical Investigation for the subject site. MTG<sub>L</sub>, Inc. is pleased to present the following report which addresses both engineering geologic and geotechnical conditions of the subject site, including a description of the site conditions, results of MTG<sub>L</sub>, Inc.'s field exploration and laboratory testing, and MTG<sub>L</sub>, Inc.'s conclusions and recommendations for site grading and foundations design.

The Menifee Valley campus of Mt. San Jacinto College is located at 28237 La Piedra Road, in the City of Menifee, Riverside County, California. The project will consist of constructing a new 5,000 seat sports stadium and associated buildings, along with various site pavement improvements, in the southeastern portion of the existing school campus.

Based on MTG<sub>L</sub>, Inc.'s investigation, the site will be suitable for construction, provided the recommendations presented herein are incorporated into the plans and specifications for the proposed construction. Details related to geologic conditions, seismicity, site preparation, foundation and pavement design, and construction considerations are also included in the subsequent sections of this report.



**Geotechnical Engineering  
Construction Inspection  
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**GEOTECHNICAL INVESTIGATION**

Mt. San Jacinto College  
5,000 Seat Stadium and Buildings at  
Menifee Valley Campus  
28237 La Piedra Road  
Menifee, Riverside County, California

Prepared For:

Mt. San Jacinto Community College District  
1499 North State Street  
San Jacinto, California 92583

Prepared By:

MTGL, Inc.  
14467 Meridian Parkway, Building 2A  
Riverside, California 92518

August 30, 2019

MTGL Project No. 8767A02

MTGL Log No. 19-2089

MTG<sub>L</sub>, Inc. appreciates this opportunity to be of continued service and look forward to providing additional consulting services during the planning and construction of the project. Should you have any questions regarding this report, please do not hesitate to contact us at your convenience.

Respectfully submitted,

MTG<sub>L</sub>, Inc.



Bruce A. Hick, P.E., G.E.  
Vice President | Engineering Manager

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**ATTACHMENTS:**

Figure 1 – Site Vicinity Map

Figure 2 – Boring and Percolation Test Location Plan

Figure 3 – Retaining Wall Drainage Detail

Appendix A – References

Appendix B – Field Investigation

Appendix C – Laboratory Testing Procedures

Appendix D – Limited Engineering Geologic Hazard Evaluation of Property

Appendix E – Agricultural Suitability Testing and Analysis Report

Appendix F – Standard Grading Specifications

Appendix G – Percolation Testing

## 1.00 INTRODUCTION

In accordance with your request and authorization, MTGL, Inc. has completed a Geotechnical Investigation for the subject project located on the campus of the Mt. San Jacinto Menifee Valley College at 28237 La Piedra Road, in the City of Menifee, Riverside County, California. The following report presents a summary of MTGL, Inc.'s findings, conclusions and recommendations based on the field investigation, laboratory testing, and engineering analysis.

### 1.01 PLANNED CONSTRUCTION

Based upon information provided, MTGL understands that plans are to construct a 5,000 seat sports stadium and associated buildings/site improvements (see Boring Location Map, Figure 2). MTGL anticipates the stadium to have a synthetic turf and running track. Additional track and field sport facilities, pedestrian, vehicular, and fire apparatus pavement improvements (both asphalt concrete and Portland cement concrete) are also anticipated.

It is anticipated that the stadium grandstands will be metal frame structures supported by conventional shallow foundations. It is anticipated that any proposed new buildings will be single or two story, of wood frame construction with conventional continuous (perimeter) and isolated pad (column) foundations, with concrete slab-on-grade floors. Maximum foundation loads of 3,000 plf for continuous foundations and 200 kips for isolated pad foundations are anticipated. Sewage disposal, if needed, is anticipated to be by a public sewer system. Due to the relatively flat site topography at each site, maximum slope heights of 10 feet are anticipated.

### 1.02 SCOPE OF WORK

The scope of MTGL, Inc.'s geotechnical services included the following:

- Review of geologic, seismic, ground water and geotechnical literature.
- Logging, sampling and backfilling of thirteen (13) exploratory borings drilled with an 8" hollow stem auger drill rig to a maximum depth of 51.5 feet below existing grades.
- Drilling, conducting and backfilling of three (3) soil percolation test borings drilled with an 8" hollow stem auger drill rig to a maximum depth of 10 feet below existing grades.
- Laboratory testing of representative samples (See Appendix C).
- Geotechnical engineering review of data and engineering recommendations.
- Preparation of this report summarizing MTGL, Inc.'s findings and presenting MTGL, Inc.'s conclusions and recommendations for the proposed construction.

### 1.03 SITE DESCRIPTION

The Menifee Valley campus of Mt. San Jacinto College is located at 28237 La Piedra Road, in the City of Menifee, Riverside County, California (see Site Vicinity Map, Figure 1). The school site is located at approximate 33.6750° North Longitude and -117.1675° West Latitude. The campus is bounded to the north by La Piedra Road, on the south by Albion Lan Lane and on the west by Antelope Road, all paved improved streets. The Valley Wide Recreation and Parks District Menifee Gym and residential developments are situated adjacent to the eastern boundary of the campus.

The proposed sports stadium is located in the southeastern portion of the school campus. Access to this areas is via asphalt concrete pavements in developed campus areas north of the proposed stadium development and dirt trails in undeveloped campus areas west of the proposed stadium development. This portion of the campus currently consists of a grass soccer (athletic) field and undeveloped fields (see Boring and Percolation Test Location Plan, Figure 2). An emergency generator is planned to be constructed just southeast of Building 700 in the main building campus area (Boring B-10 on Boring and Percolation Test Location Plan, Figure 2).

An existing sewer line trends in a north-south direction through the central portion of the proposed stadium athletic field area. Topographically, the proposed stadium development area is essentially planar, gently sloping to the east/southeast at less than a 2 percent gradient. Elevation at the proposed stadium development area is approximately 1,434 feet above mean sea level. Drainage across the proposed stadium development area is by sheet flow to the east/southeast into a north-south trending dirt drainage channel situated along the eastern edge of the main campus.

### 1.04 FIELD INVESTIGATION

Prior to the field investigation, a site reconnaissance was performed by an engineer from MTGL, Inc. to evaluate the locations with respect to obvious subsurface structures and access for the drilling rig. The subsurface investigation consisted of drilling and sampling thirteen (13) test borings and three (3) percolation test borings utilizing a truck-mounted drill rig equipped with an 8" diameter hollow stem auger. Boring B-10 was conducted in the proposed emergency generator construction area just southeast of Building 700 in the main campus building complex (see Boring and Percolation Test Location Plan, Figure 2). See Appendix B for further discussion of the field exploration including Logs of Test Borings.

Borings were logged and sampled using Modified California Ring (Ring) and Standard Penetration Test (SPT) samplers at selected depth intervals. Samplers were driven into the bottom of the boring with successive drops of a 140-pound weight falling 30 inches. Blows required to drive the last 12 inches of the 18-inch Ring and SPT samplers are shown on the boring logs in the “blows/foot” column (Appendix B). SPT was performed in the borings in general accordance with the American Standard Testing Method (ASTM) D1586 Standard Test Method. Representative bulk soil samples were also obtained from the borings.

Each soil sample collected was inspected and described in general conformance with the Unified Soil Classification System (USCS). The soil descriptions were entered on the boring logs (see Appendix B). All samples were sealed and packaged for transportation to MTG<sub>L</sub>, Inc.’s laboratory. After completion of drilling, borings were backfilled with the soil cuttings.

#### 1.05 LABORATORY TESTING

Laboratory tests were performed on representative samples to verify the field classification of the recovered samples and to determine the geotechnical properties of the subsurface materials. All laboratory tests were performed in general conformance with ASTM or State of California Standard Methods. The results of our laboratory tests are presented in Appendix C of this report.

### 2.00 FINDINGS

#### 2.01 REGIONAL GEOLOGIC CONDITIONS

As discussed in the Limited Engineering Geologic Hazard Evaluation of Property Report dated August 22, 2019 (Project No. 19016-01) prepared by Anderson Geology in Appendix D of this report, the project site is regionally located in the west-central portion of the Perris Block, within the northern Peninsular Ranges Geomorphic Province of Southern California, near the intersection of the east-central boundary of the Transverse Range Province and southern boundary of the Mojave Desert Province. Locally, the site is situated within the Menifee Valley. Located within Perris Valley to the north and Paloma Valley to the south. Detailed discussions of the geologic setting of the project site is presented in the referenced Geologic Hazard Evaluation in Appendix D of this report.



2.02 SITE SOIL CONDITIONS

The proposed stadium development area is located on generally planar terrain in the southeast portion of the college campus at an average elevation of approximately 1,434 feet above sea level. The existing college campus is surrounded by existing residential and recreation developments or paved, improved streets.

Thirteen (13) 8-inch diameter hollow stem auger soil borings and three (3) percolation test borings were advanced to characterize near-surface geologic conditions and to obtain soil samples for analyses. Boring locations and pertinent data for each boring are presented in the table below.

Boring No.	Depth (ft.)	Latitude	Longitude	Approx. Fill Thickness (ft)	Groundwater Depth (ft. bgs)
B1	51.5	33.6742°	-117.1650°	0	No GW
B2	16.0	33.6746°	-117.1651°	0	No GW
B3	16.0	33.6747°	-117.1648°	0	No GW
B4	11.0	33.6750°	-117.1652°	0	No GW
B5	11.0	33.6737°	-117.1652°	0	No GW
B6	16.0	33.6737°	-117.1644°	0	No GW
B7	16.0	33.6733°	-117.1644°	0	No GW
B8	16.0	33.6733°	-117.1634°	0	No GW
B9	21.0	33.6740°	-117.1634°	0	No GW
B10	11.0	33.6736°	-117.1681°	0	No GW
B11	16.0	33.6745°	-117.1633°	0	No GW
B12	11.0	33.6748°	-117.1636°	0	No GW
B13	16.5	33.6743°	-117.1639°	0	No GW
P1	11.0	33.6731°	-117.1686°	0	No GW
P2	11.0	33.6741°	-117.1633°	0	No GW
P3	11.0	33.6749°	-117.1648°	0	No GW

Grass turf was located at the surface of Borings B1, B2 and B3. As shown on the attached boring logs, the site is underlain by alluvium. The site soils consist of highly interbedded silty sands, clayey sands, sandy gravel, relatively clean sands, sandy and clayey silts and sandy and silty clays (SM, SC, GP, SP, ML and CL soil types based upon the Unified Soil Classification System. Ground water was not encountered in any of the borings at the time of drilling (maximum depth drilled of 51.5 feet).

2.03 FLOODING POTENTIAL

The site is located within an area described as having a “minimal flood hazard” (FEMA Map #06065C2070H, 8/18/2014).

#### 2.04 SURFACE AND GROUNDWATER CONDITIONS

No areas of ponding or standing water were present at the time of the field exploration. Further, no springs or areas of natural seepage were observed at the time of the field exploration.

Ground water was not encountered in any of the borings at the time of drilling (maximum depth drilled of 51.5 feet). Historic high groundwater levels in the immediate site vicinity are approximately 10 below existing ground surface (USGS, 1996).

#### 2.05 FAULTING AND SEISMICITY

Detailed discussions of the faulting and seismicity of the proposed building site is presented in the referenced Geologic Hazard Evaluation Report in Appendix D of this report.

#### 2.06 LIQUEFACTION POTENTIAL AND DYNAMIC SOIL SETTLEMENT

Liquefaction is a phenomenon where earthquake-induced ground vibrations increase the pore pressure in saturated, granular soils until it is equal to the confining, overburden pressure. When this occurs, the soil can completely lose its shear strength and enter a liquefied state. The possibility of liquefaction is dependent upon grain size, relative density, confining pressure, saturation of the soils, strength of the ground motion and duration of ground shaking. In order for liquefaction to occur three criteria must be met: underlying loose, coarse-grained (sandy) soils, a groundwater depth of less than about 50 feet and a nearby large magnitude earthquake.

The site is not within a Seismic Special Studies Zone as currently mapped by the California Division of Mines and Geology (see Geologic Hazard Evaluation Report in Appendix D of this report). Based on the high relative density/consistency of the subsurface soils and depth to groundwater (in excess of 50 feet below the existing ground surface), the potential for liquefaction is very low. Based upon review of the City of Menifee General Plan (2010), the project site is not indicated as having a liquefaction susceptibility. Due to the dense/high consistency nature of the subsurface soils, estimated dynamic settlement (“dry sand”) settlement of the site soils are anticipated to be negligible.

#### 2.07 LANDSLIDES

The site is not located in a hillside area of the county where earthquake induced landslides would cause permanent ground displacements. No reported occurrences of landslides or mudflows are known to have recently affected the site. Therefore, the potential for landslides and mudflows is considered to be very low at the site.

## 2.08 TSUNAMI AND SEICHE HAZARD

Given the inland location of the site at an elevation of approximately 1,4341 feet MSL, the inundation hazard posed by tsunami is considered to be very low. Seiches are not considered a hazard due to the absence of above-ground tanks or reservoirs located immediately up gradient from the site. Detailed discussions of the secondary seismic hazards of the proposed stadium development area is presented in the referenced Geologic Hazard Evaluation Report in Appendix D of this report.

## 3.00 CONCLUSIONS

### 3.01 GENERAL CONCLUSIONS

Based on our Geotechnical review of the planned construction, it is our opinion that the site is suitable for the proposed construction provided our conclusions are taken into consideration during design, and our recommendations are incorporated into the construction plans and specifications and implemented during grading and construction.

Given the findings of the investigation, it appears that the site geology is suitable for the proposed construction. Based on the investigation, it is our opinion that the proposed development is safe against landslides and settlement provided the recommendations presented in our report are incorporated into the design and construction of the project. Grading and construction of the proposed project will not adversely affect the geologic stability of adjacent properties. The nature and extent of the investigation conducted for the purposes of this declaration are, in our opinion, in conformance with generally accepted practice in this area. Therefore, the proposed project appears to be feasible from a geologic standpoint.

### 3.02 SEISMIC DESIGN PARAMETERS

The USGS Seismic Design Maps application, was used to calculate the CBC site specific design parameters as required by the 2016 California Building Code. Based upon the subsurface data, the site can be classified as Site Class D. Detailed discussions of seismic design criteria for the proposed building site is presented in the referenced Geologic Hazard Evaluation Report in Appendix D of this report. The spectral acceleration values for 0.2 second and 1 second periods obtained from the computer program and in accordance with the 2016 California Building Code are tabulated below.

Ground Motion Parameter	Design Value
S <sub>s</sub>	1.5 g
S <sub>1</sub>	0.6 g
Site Class	D
F <sub>a</sub>	1.0
F <sub>v</sub>	1.5
S <sub>DS</sub>	1.0 g
S <sub>D1</sub>	0.6 g
MCE <sub>R</sub>	0.505 g

### 3.03 SOIL INFILTRATION TESTING

To establish the design infiltration rate, we have utilized the Percolation Test Procedures of the Riverside County Department of Environmental Health as specified in the Technical Guidance Document Appendices of the Model Water Quality Management Plan. Three (3) 8-inch diameter percolation test holes were drilled to a maximum depth of 10 feet. Each test hole was pre-soaked to allow the water flow to hold a constant level at least 5 times the holes' radius above the gravel at the bottom of the hole. The approximate locations of the test holes are depicted on the Boring and Percolation Test Location Plan, Figure 2.

Based on the samples obtained from the percolation test borings, the subsurface materials are classified as silty sands to sandy clays (SM and CL soil types) in accordance with the Unified Soil Classification System as shown on the accompanying boring logs (Appendix B). Our field test data sheets are attached in Appendix G of this report.

The grain-size distribution affects soil permeability. Coarse-grained soils with large median particle sizes will yield higher infiltration rates. Finer grained soils will yield lower percolation rates.

Although the measured percolation rate obtained from the field test is related to the infiltration rate, the two rates are not equivalent. The percolation rate incorporates both downward and horizontal fluxes of water through the soil column whereas infiltration only refers to a downward flux of water. Thus, the measured percolation rate obtained from the field was converted to a reasonable estimate of the infiltration rate using the Porchet Method (i.e. Inverse Borehole Method).

$$I_t = \frac{\Delta H (60r)}{\Delta t (r + 2H_{avg})}$$

$\Delta H$  = Change in height over time  
 $\Delta t$  = Time interval  
 $H_{avg}$  = Average head over time interval  
 $I_t$  = Tested infiltration rate

The measured percolation rates and estimated infiltration rates are as follows:

Test Hole	Test Date	Test Depth	Measured Percolation Rate (minutes/inch)	Estimated Infiltration Rate (inches/hour)
P-1	8/10/19	11 ft	10.00	0.47
P-2	8/10/19	11 ft	120.00	0.06
P-3	8/10/19	11 ft	120.00	0.04

Long-term sustainable infiltration rates may be affected by several factors including the degree of saturation of the adjacent ground and the infiltration of finer grained soils into the system. To account for these factors, the application of these rates should therefore consider the use of an appropriate factor of safety.

The development of the factor of safety should be based upon the more conservative rate obtained during testing and include consideration of the impacts of deteriorated performance, life safety issues and should anticipate that the measured test rates will be reduced over time.

Due to the fine-grained (clayey) and cemented nature of the subsurface soils encountered in the percolation test borings, the measured percolation and infiltration rates were relatively low. Long-term sustained use of underground storm water disposal systems on this project may result in “mounding” of subsurface waters within the disposal fields. The use of alternative storm water disposal systems should be considered for this project.

#### 4.00 RECOMMENDATIONS

MTGL, Inc.'s recommendations are considered minimum and may be superseded by more conservative requirements of the architect, structural engineer, building code, or governing agencies. The foundation recommendations are based on the expansion index and shear strength of the on-site soils. Import soils, if necessary should have a "very low" expansion index potential and should be approved by the Geotechnical Engineer prior to importing to the site. In addition to the recommendations in this section, additional general earthwork and grading specifications are included in Appendix F.

##### 4.01 EXCAVATION CHARACTERISTICS/SHRINKAGE

The exploratory borings were advanced with little difficulty and no significant "oversize" materials were encountered within the anticipated depths of site grading/construction. Accordingly, it is expected that all earth materials will be rippable with conventional heavy duty grading equipment and oversized materials are not expected.

Shrinkage is the decrease in volume of soil upon removal and recompaction expressed as a percentage of the original in-place volume, which will account for changes in earth volumes that will occur during grading. MTGL, Inc.'s estimate for shrinkage of the on-site fill and native soils are expected to range from 17 to 22 percent.

##### 4.02 SETTLEMENT CONSIDERATIONS

Foundations should be designed to resist the anticipated settlements. Settlement of an individual foundation will vary depending on the plan dimensions of the foundation and the actual load supported. It is estimated maximum settlement of foundations designed and constructed in accordance with the recommendations presented in this report to be on the order of  $\frac{3}{4}$  inch. Differential settlement between similarly loaded and adjacent footings are expected to be a maximum of approximately  $\frac{1}{2}$  inch across 40 feet, provided footings are founded on similar materials. Settlement of all foundations is expected to occur rapidly and should be essentially complete shortly after initial application of the loads.

##### 4.03 SITE CLEARING RECOMMENDATIONS

All surface vegetation, grass turf, existing landscaping, trash, debris, asphalt concrete, Portland cement concrete and underground utilities should be cleared and removed from the proposed construction sites. Underground facilities such as utilities, pipes or underground storage tanks may

exist at the site. Removal of underground tanks is subject to state law as regulated by the County, City and/or Fire Department. If storage tanks containing hazardous or unknown substances are encountered, the proper authorities must be notified prior to any attempts at removing such objects.

Any water wells, if encountered during construction, should be exposed and capped in accordance with the requirements of the regulating agencies. Depressions resulting from the removal of foundations of existing buildings, underground tanks and pipes, buried obstructions and/or tree roots should be backfilled with properly compacted material.

#### 4.04 SITE GRADING RECOMMENDATIONS

All fill materials should be compacted to at least 90 percent of maximum dry density as determined by ASTM Test Method D1557. Fill materials should be placed in loose lifts, no greater than 8 inches prior to applying compactive effort. All engineered fill materials should be moisture-conditioned and processed as necessary to achieve a uniform moisture content that is near optimum moisture content and within moisture limits required to achieve adequate bonding between lifts. Compaction should be verified by testing.

#### 4.05 SITE OVEREXCAVATION

Building plans, grading plans, structural plans and foundation elevations were not available at the time of MTG<sub>L</sub>, Inc.'s investigation. Therefore, once formal plans are prepared and available for review, this office should review these plans from a geotechnical viewpoint, comment on any changes, and revise the recommendations of this report as necessary.

All artificial fills, organics, debris, trash and topsoil should be removed from the grading area and hauled offsite. Recommendations for site grading to prepare the building pad area for the support of structures are as follows.

It is recommended that the existing soils within building or foundation areas be over excavated to a minimum depth of 2 feet below the bottom of the proposed footings or 4 feet below the existing grade, whichever is greater. The required horizontal limits of the over excavated area shall be defined as the area extending from the edge of the building perimeter/footing for a distance of 5 feet, where obtainable.

Hardscape areas which include all paved areas will require a minimum depth of 2 feet of removal and recompaction. Processing for hardscape areas should extend a minimum distance of 2 feet outside the hardscape limits, where obtainable.

#### 4.06 FILL MATERIALS

Removed and/or overexcavated soils may be moisture-conditioned to near optimum moisture content and recompacted as engineered fill, except for soils containing detrimental amounts of organic material. Our subsurface investigation indicates that the near surface materials are generally at or below its optimum moisture content. The fill materials should be compacted to a minimum of 90% of the maximum dry density per ASTM D-1557. Compaction should be verified by testing.

Imported materials shall be coarse grained, non-expansive, and non-plastic in nature. The materials should be free from vegetable matter and other deleterious substances, shall not contain rocks or lumps of a greater dimension than 3 inches, and shall be approved by the geotechnical consultant. Soils of poor gradation, expansion, or strength properties shall be placed in areas designated by the geotechnical consultant or shall be mixed with other soils providing satisfactory fill material.

#### 4.07 FOUNDATIONS

Spread and/or continuous footings on compacted fill materials may be used to support the proposed structure/building foundations and designed using an allowable bearing pressure of 2,500 psf. This allowable bearing pressure may be increased by 20% for each additional foot of width and/or depth, to a maximum value of 4,000 psf. The allowable bearing capacity may also be increased by one-third for considerations of short term wind or seismic loads. The recommended minimum footing width and embedment depth below the lowest adjacent grade are as follows:

<b>Foundation Type</b>	<b>Minimum Width</b>	<b>Minimum Depth</b>
Continuous (Interior)	12 inches	18 inches
Continuous (Perimeter)	12 inches	18 inches
Spread Footings	24 inches	18 inches

Soil resistance developed against lateral structural movement can be obtained from the passive pressure value of 350 pcf. The upper one foot of passive pressure should be neglected unless confined by pavement or slab. For sliding resistance, a friction coefficient of 0.35 may be used at the concrete and soil interface. The passive pressure and the friction of resistance could be combined without reduction. In addition, the lateral passive resistance is taken into account only if it is ensured that the soil against embedded structures will remain intact with time.



The near surface soils have an expansion index classification of “very low” (0-20). Therefore, nominal reinforcement consisting of two #5 bars placed within 3 inches of the top of footings and two #5 bars placed within 3 inches of the bottom of footings are recommended. However, the structural engineer may require heavier reinforcement. Spread foundations should be reinforced as required by the structural engineer.

#### 4.08 CONCRETE SLABS ON GRADE AND MISCELLANEOUS FLATWORK

A minimum of six (6) inches thickness should be designed for structural concrete slab-on-grade within heavy use areas of buildings or structures. Concrete slabs on grade and miscellaneous flatwork that are not subjected to vehicular loads may be designed with a minimum thickness of 5.0 inches for normal loading conditions. However, if heavier loads are anticipated, a modulus of subgrade reaction of 250 pounds per cubic inch may be used when the slabs are supported by compacted fill.

All slabs and flatwork should be reinforced with a minimum #4 bars, 18 inches on center, each direction, placed at the mid-height of the slab. The structural engineer may require heavier reinforcement. Special care should be taken so that reinforcement is placed at the slab mid-height.

Floor slabs should be separated from footings, structural walls, and utilities and provisions made to allow for settlement or swelling movements at these interfaces. If this is not possible from a structural or architectural design standpoint, it is recommended that the slab connection to footings be reinforced such that there will be resistance to potential differential movement.

Control joints should be constructed on all slabs on grade to create squares or rectangles with a maximum spacing of 12 feet on large slab areas. Where flatwork is adjacent to curbs, reinforcing bars should be placed between the flatwork and the curbs. Expansion joint material should be used between flatwork and curbs, and flatwork and buildings.

Vehicular concrete pavers should be designed with one (1) inch sand over eight (8) inches of Caltrans Class II aggregate base over a minimum of twenty-four (24) inches of subgrade compacted to at least 90 percent of maximum dry density. Any aggregate base material should be compacted to at least 95 percent of maximum dry density. Compaction should be verified by testing.

Subsurface moisture and moisture vapor naturally migrate upward through the soil and where the soil is covered by a building or pavement. To reduce the impact of the subsurface moisture and potential impact of future introduced moisture (such as landscape irrigation or precipitation) damp

proofing should be provided under all slabs on grade with moisture sensitive floor coverings. The damp proofing should consist of a minimum 15 mil polyethylene liner placed with 2 inches of sand below and 2 inches of sand above the polyethylene liner. The liner should be carefully fitted around service openings with joints lapped not less than 6 inches.

Damp proofing typically will not necessarily assure that floor slab moisture transmission rates will meet floor-covering manufacturer standards. Other factors such as surface grades, adjacent planters, the quality of slab concrete and the permeability of the on-site soils will affect slab moisture. In many cases, floor moisture problems are the result of either improper curing of floors slabs or improper application of flooring adhesives. We recommend contacting a flooring consultant experienced in the area of concrete slab-on-grade floors for specific recommendations regarding the proposed flooring applications. We make no guarantee nor provide any assurance that use of a vapor retarder system will reduce concrete slab-on-grade floor moisture penetration to any specific rate or level, particularly those required by floor covering manufacturers. The builder and designers should consider all available measures for floor slab moisture protection.

Special precautions must be taken during the placement and curing of all concrete slabs. Excessive slump (high water-cement ratio) of the concrete and/or improper curing procedures used during either hot or cold weather conditions could lead to excessive shrinkage, cracking, or curling of the slabs. High water-cement ratio and/or improper curing also greatly increase the water vapor permeability of concrete. It is recommended that all concrete placement and curing operations be performed in accordance with the American Concrete Institute (ACI) manual.

The subgrade soils beneath all concrete flatwork should be compacted to a minimum of 90% relative compaction for a minimum depth of 24 inches. The geotechnical engineer should monitor the compaction of the subgrade soils and perform testing to verify that proper compaction has been obtained.

#### 4.09 PREWETTING RECOMMENDATION

Prior to placing concrete slabs and flatwork, the underlying soils should be brought to near optimum moisture content for a depth of six inches prior to the placement of concrete. The geotechnical consultant should perform in-situ moisture tests to verify that the appropriate moisture content has been achieved a maximum of 24 hours prior to the placement of concrete or moisture barriers.

Once the slab subgrade soil has been pre-wetted and compacted, the soil should not be allowed to dry prior to concrete placement. If the subgrade soil is dry, the moisture content of the soil should be restored prior to placement of concrete and re-tested.

Proper moisture conditioning and compaction of subgrade soils prior to placement is very important prior to concrete placement. Even with proper site preparation, some soil moisture changes of the subgrade soils supporting the concrete flatwork due to edge effects (shrink/swell) may occur. Drying and/or wetting of subgrade soils adjacent to landscaped areas or open fields may increase the potential of shrink/swell effects beneath concrete flatwork areas. To help reduce edge effects, lateral cutoffs, such as inverted curbs are recommended. Control joints should be used to reduce the potential for flatwork panel cracks as a result of minor soil shrink/swell.

#### 4.10 SOIL CORROSION POTENTIAL

Soluble sulfate tests indicate that concrete at the subject site will have a “moderate” (Class S1) exposure to water soluble sulfate in the soil. Recommendations for concrete exposed to sulfate-containing soils are presented below.

**RECOMMENDATIONS FOR CONCRETE EXPOSED TO SULFATE CONTAINING SOILS**

Sulfate Exposure Severity	Class	Water soluble sulfate (SO <sub>4</sub> ) in soil (% by wgt)	Sulfate (SO <sub>4</sub> ) in water (ppm)	Max Water to Cement Ratio by Weight	Minimum Compressive Strength (psi)	Cement Type	Calcium Chloride Admixture
Negligible	S0	0.00 - 0.10	0-150	---	2,500	---	No Restriction
<b>Moderate</b>	<b>S1</b>	0.10 - 0.20	150-1,500	0.50	4,000	II/V	No Restriction
Severe	S2	0.20 - 2.00	1,500-10,000	0.45	4,500	V	Not Permitted
Very Severe	S3	Over 2.00	Over 10,000	0.45	4,500	V Plus Pozzolan	Not Permitted

Corrosivity testing consisting of soils reactivity (pH) and resistivity (ohms-cm) were also tested on representative soils. The test results indicate that the soils have a soil reactivity (pH) of 8.3, and a resistivity 1,000 ohms-cm. A neutral or non-corrosive soil has a reactivity value ranging from 5.5 to 8.4. Generally, soils that could be considered corrosive to metal have resistivities less than 3,000 ohms. Those soils with resistivity values of less than 1,000 ohms-cm can be considered extremely corrosive.

Based on our test results, near surfaces are anticipated to have a moderate to high corrosion potential. Protection of buried metal with sand bedding and protective coatings may be used to further reduce corrosion potential. A qualified corrosion engineer should be consulted to further assess the corrosion potential, as necessary.

#### 4.11 ATHLETIC FIELD DESIGN

Prior to installation of any synthetic turf, the upper twelve (12) inches of the subgrade soils should be scarified, adjusted to within 2 percent of optimum moisture content, and compacted to a minimum of 90 percent relative compaction. Compaction should be confirmed by testing. Synthetic turfs should be underlain by a minimum of six (6) inches of Class II permeable base, along with subdrains, both perimeter and flat tile drains, installed as recommended by the landscape architect. An impervious 30-mil liner should be placed between the bottom of the base material and the compacted subgrade. All drains should be conducted to an approved drainage outlet.

A representative sample of the site soils was transported to Waypoint Analytical for testing and analysis for nutrient levels, agricultural suitability, and physical characteristics in preparation for new landscape installation. Results of this testing and analysis along with recommendations for landscape installation are presented in Appendix E of this report.

#### 4.12 RETAINING WALLS

Embedded structural walls should be designed for lateral earth pressures exerted on the walls. The magnitude of these earth pressures will depend on the amount of deformation that the wall can yield under the load. If the wall can yield sufficiently to mobilize the full shear strength of the soils, it may be designed for the “active” condition. If the wall cannot yield under the applied load, then the shear strength of the soil cannot be mobilized and the earth pressures will be higher. These walls such as basement walls and swimming pools should be designed for the “at rest” condition. If a structure moves towards the retained soils, the resulting resistance developed by the soil will be the “passive” resistance.

For design purposes, the recommended equivalent fluid pressure for each case for walls constructed above the static groundwater table and backfilled with non-expansive soils is provided below. Retaining wall backfill should be compacted to at least 90% relative compaction based on the maximum density defined by ASTM D1557. Retaining structures may be designed to resist the following lateral earth pressures.

- Allowable Bearing Pressure – 2,500 psf
- Coefficient of Friction (Soil to Footing) – 0.35
- Passive Earth Pressure - equivalent fluid weight of 350 pcf (Maximum of 2,500 psf)
- At rest lateral earth pressure - 60 pcf
- Active Earth Pressures – equivalent fluid weights:

Slope of Retained Material	Equivalent Fluid Weight (pcf)
Level	40
2:1 (H:V)	65

It is recommended that all retaining wall footings be embedded at least 18 inches below the lowest adjacent finish grade, or a minimum of 12 inches below adjacent soil grade. In addition, the wall footings should be designed and reinforced as required for structural considerations. The wall areas should be over-excavated to a minimum depth of 2 feet below the bottom of the proposed footings. The required horizontal limits of the over excavated area shall be defined as the area extending from the edge of the footing for a minimum distance of 2 feet.

Lateral resistance parameters provided above are ultimate values. Therefore, a suitable factor of safety should be applied to these values for design purposes. The appropriate factor of safety will depend on the design condition and should be determined by the project Structural Engineer. If any super-imposed loads are anticipated, this office should be notified so that appropriate recommendations for earth pressures may be provided.

Retaining structures should be drained to prevent the accumulation of subsurface water behind the walls. Back drains should be installed behind all retaining walls exceeding 3.0 feet in height. A typical detail for retaining wall back drains is presented as Figure 3. Alternatively, a pre-manufactured drainage product (i.e. Mira-Drain™ or equivalent) may be utilized instead of an aggregate drain. All back drains should be outlet to suitable drainage devices. Walls and portions thereof that retain soil and enclose interior spaces and floors below grade should be waterproofed and damp-proofed accordingly. Any pre-manufactured product should be installed in strict conformance with the manufacturer's requirements.

#### 4.13 SEISMICALLY INDUCED LATERAL EARTH PRESSURES

A seismic lateral increment of 30 pcf (equivalent fluid weight) may be applied as an incremental force which should be applied to the back of the wall in the upper 1/3 of the wall and also applied as a reduction of force to the front of the wall in the upper 1/3 of the footing.

#### 4.14 PAVEMENT RECOMMENDATIONS

Recommended pavement structural sections are based on the procedures outlined in "Design Procedures for Flexible Pavements" of the Highway Design Manual, California Transportation Department. This procedure uses the principal that the pavement structural section must be of adequate thickness to distribute the load from the design traffic (TI) to the subgrade soils in such a manner that the stresses from the applied loads do not exceed the strength of the soil (R value).

All asphalt concrete pavement sections should be supported by a minimum twenty-four (24) inch thickness of subgrade compacted to at least 90 percent relative compaction. Compaction should be verified by testing.

Pavement sections were designed based on an R-Value of 30 and assumed Traffic Index of 4.0 for light auto parking and drive lanes, 5.0 for commercial vehicles/access lanes, and 7.0 for truck access/fire lanes. The recommend structural sections are as follows:

**ASPHALT PAVEMENT STRUCTURAL SECTION**

<b>Pavement Area</b>	<b>Traffic Index</b>	<b>Asphalt Thickness</b>	<b>Aggregate Base Thickness</b>
Light Auto Parking / Drive Lanes	4.0	3.5"	4.0"
Commercial Vehicles / Access Lanes	5.0	4.0"	4.0"
Truck Access/Fire Lanes (Heavy Truck Traffic)	7.0	4.0" 5.0"	9.5" 7.5"

Portland cement concrete (PCC) pavements for areas which are subject to traffic loads may be designed with a minimum thickness of 6.0 inches of Portland cement concrete on 4.0 inches of compacted aggregate base. As recommended in Section 4.10 of this report, project Portland cement concrete should have a minimum compressive strength of 4,000 psi.

Prior to paving, the exposed subgrade soils should be scarified, adjusted to within 2% of optimum moisture and compacted to a minimum of 90% relative compaction for a minimum depth of 12 inches. All aggregate base courses should be compacted to a minimum of 95% relative compaction. Compaction should be confirmed by testing.

#### 4.15 CONSTRUCTION CONSIDERATIONS

##### 4.15.1 MOISTURE SENSITIVE SOILS/WEATHER RELATED CONCERNS

The upper soils encountered at this site may be sensitive to disturbances caused by construction traffic and to changes in moisture content. During wet weather periods, increases in the moisture content of the soil can cause significant reduction in the soil strength and its support capabilities. In addition, soils that become excessively wet may be slow to dry and thus significantly delay the progress of the grading operations. Therefore, it will be advantageous to perform earthwork and foundation construction activities during the dry season. Much of the on-site soils may be susceptible to erosion during periods of inclement weather. As a result, the project Civil Engineer/Architect and Grading Contractor should take appropriate precautions to reduce the potential for erosion during and after construction.

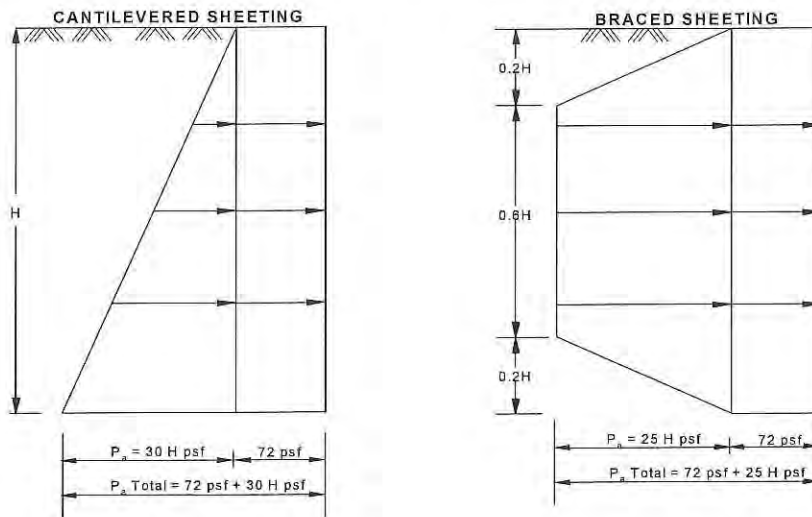
##### 4.15.2 DRAINAGE AND GROUNDWATER CONSIDERATIONS

Historic high groundwater levels in the immediate site vicinity are approximately 100 feet below grade. Since this is below the anticipated depths of grading, the installation of subdrains is not expected to be necessary. However, variations in the ground water table may result from fluctuation in the ground surface topography, subsurface stratification, precipitation, irrigation, and other factors such as impermeable and/or cemented formational materials overlain by fill soils. In addition, during retaining wall excavations, seepage may be encountered. Therefore, it is recommended that a representative of MTG<sub>L</sub>, Inc. be present during grading operations to evaluate areas of seepage. Drainage devices for reduction of water accumulation can be recommended should these conditions occur.

Water should not be allowed to collect in the foundation excavation, on floor slab areas, or on prepared subgrades of the construction area either during or after construction. Undercut or excavated areas should be sloped to facilitate removal of any collected rainwater, groundwater, or surface runoff. Positive site drainage should be provided to reduce infiltration of surface water around the perimeter of the building and beneath the floor slabs. The grades should be sloped away from the building and surface drainage should be collected and discharged such that water is not permitted to infiltrate the backfill and floor slab areas of the building.

4.15.3 TEMPORARY EXCAVATIONS AND SHORING

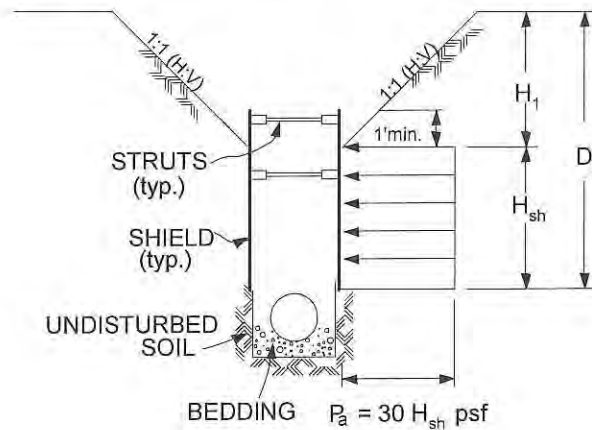
Short term temporary excavations in existing soils may be safely made at an inclination of 1:1 (horizontal to vertical) or flatter. If vertical sidewalls are required in excavations greater than 5 feet in depth, the use of cantilevered or braced shoring is recommended. Excavations less than 5 feet in depth may be constructed with vertical sidewalls without shoring or shielding. Our recommendations for lateral earth pressures to be used in the design of cantilevered and/or braced shoring are presented below. These values incorporate a uniform lateral pressure of 72 psf to provide for the normal construction loads imposed by vehicles, equipment, materials, and workmen on the surface adjacent to the trench excavation. However, if vehicles, equipment, materials, etc. are kept a minimum distance equal to the height of the excavation away from the edge of the excavation, this surcharge load need not be applied.



SHORING DESIGN: LATERAL SHORING PRESSURES

Design of the shield struts should be based on a value of 0.65 times the indicated pressure,  $P_a$ , for the approximate trench depth. The wales and sheeting can be designed for a value of 2/3 the design strut value.





HEIGHT OF SHIELD,  $H_{sh}$  = DEPTH OF TRENCH,  $D_t$ , MINUS DEPTH OF SLOPE,  $H_1$

#### TYPICAL SHORING DETAIL

Placement of the shield may be made after the excavation is completed or driven down as the material is excavated from inside of the shield. If placed after the excavation, some overexcavation may be required to allow for the shield width and advancement of the shield. The shield may be placed at either the top or the bottom of the pipe zone. Due to the anticipated thinness of the shield walls, removal of the shield after construction should have negligible effects on the load factor of pipes. Shields may be successively placed with conventional trenching equipment.

Vehicles, equipment, materials, etc. should be set back away from the edge of temporary excavations a minimum distance of 15 feet from the top edge of the excavation. Surface waters should be diverted away from temporary excavations and prevented from draining over the top of the excavation and down the slope face. During periods of heavy rain, the slope face should be protected with sandbags to prevent drainage over the edge of the slope, and a visqueen liner placed on the slope face to prevent erosion of the slope face.

Periodic observations of the excavations should be made by the geotechnical consultant to verify that the soil conditions have not varied from those anticipated and to monitor the overall condition of the temporary excavations over time. If at any time during construction conditions are encountered which differ from those anticipated, the geotechnical consultant should be contacted and allowed to analyze the field conditions prior to commencing work within the excavation. All Cal/OSHA construction safety orders should be observed during all underground work.

#### 4.15.4 UTILITY TRENCHES

All Cal/OSHA construction safety orders should be observed during all underground work. All utility trench backfill within street right of way, utility easements, under or adjacent to sidewalks, driveways, or building pads should be observed and tested by the geotechnical consultant to verify proper compaction. Trenches excavated adjacent to foundations should not extend within the footing influence zone defined as the area within a line projected at a 1:1 (horizontal to vertical) drawn from the bottom edge of the footing. Trenches crossing perpendicular to foundations should be excavated and backfilled prior to the construction of the foundations. The excavations should be backfilled in the presence of the geotechnical engineer and tested to verify adequate compaction beneath the proposed footing.

Utilities should be bedded and backfilled with clean sand or approved granular soil to a depth of at least 1-foot over the pipe. The bedding materials shall consist of sand, gravel, crushed aggregates, or native soils that are free draining with a sand equivalence of not less than 30. The bedding should be uniformly watered and compacted to a firm condition for pipe support.

The remainder of the backfill shall be typical on-site soil or imported soil which should be placed in lifts not exceeding 8 inches in thickness, watered or aerated to near optimum moisture content, and mechanically compacted to at least 90% of maximum dry density (ASTM D1557).

The bedding and backfill materials and placement shall conform to the requirements of the latest Standard Specifications for Public Works Construction (Greenbook).

#### 4.15.5 SITE DRAINAGE

The site should be drained to provide for positive drainage away from structures in accordance with the building code and applicable local requirements. Unpaved areas should slope no less than 2% away from structure. Paved areas should slope no less than 1% away from structures. Concentrated roof and surface drainage from the site should be collected in engineered, non-erosive drainage devices and conducted to a safe point of discharge. The site drainage should be designed by a civil engineer.

#### 4.16 GEOTECHNICAL OBSERVATION/TESTING OF EARTHWORK OPERATIONS

The recommendations provided in this report are based on preliminary design information and subsurface conditions as interpreted from the investigation. Our preliminary conclusion and recommendations should be reviewed and verified during site grading, and revised accordingly if exposed Geotechnical conditions vary from our preliminary findings and interpretations. The

Geotechnical consultant should perform Geotechnical observation and testing during the following phases of grading and construction:

- During site grading and overexcavation.
- During foundation excavations and placement.
- Upon completion of retaining wall footing excavation prior to placing concrete.
- During excavation and backfilling of all utility trenches
- During processing and compaction of the subgrade for the access and parking areas and prior to construction of pavement sections.
- When any unusual or unexpected Geotechnical conditions are encountered during any phase of construction.

## 5.00 LIMITATIONS

The findings, conclusions, and recommendations contained in this report are based on the site conditions as they existed at the time of MTG<sub>L</sub>, Inc.'s investigation, and further assume that the subsurface conditions encountered during MTG<sub>L</sub>, Inc.'s investigation are representative of conditions throughout the site. Should subsurface conditions be encountered during construction that are different from those described in this report, this office should be notified immediately so that our recommendations may be re-evaluated.

This report was prepared for the exclusive use and benefit of the owner, architect, and engineer for evaluating the design of the facilities as it relates to geotechnical aspects. It should be made available to prospective contractors for information on factual data only, and not as a warranty of subsurface conditions included in this report.

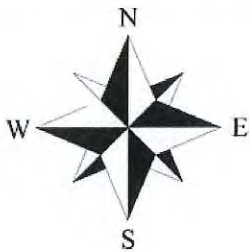
MTG<sub>L</sub>, Inc.'s investigation was performed using the standard of care and level of skill ordinarily exercised under similar circumstances by reputable soil engineers and geologists currently practicing in this or similar localities. No other warranty, express or implied, is made as to the conclusions and professional advice included in this report.

This firm does not practice or consult in the field of safety engineering. MTG<sub>L</sub>, Inc.'s does not direct the Contractor's operations, and are not responsible for their actions. The contractor will be solely and completely responsible for working conditions on the job site, including the safety of all persons and property during performance of the work. This responsibility will apply continuously and will not be limited to MTG<sub>L</sub>, Inc.'s normal hours of operation.

The findings of this report are considered valid as of the present date. However, changes in the conditions of a site can occur with the passage of time, whether they are due to natural events or to human activities on this or adjacent sites. In addition, changes in applicable or appropriate codes and standards may occur, whether they result from legislation or the broadening of knowledge.

Accordingly, this report may become invalidated wholly or partially by changes outside our control. Therefore, this report is subject to review and revision as changed conditions are identified.

**FIGURES**



Source: Google Maps

## SITE LOCATION MAP



APPROXIMATE LOCATION



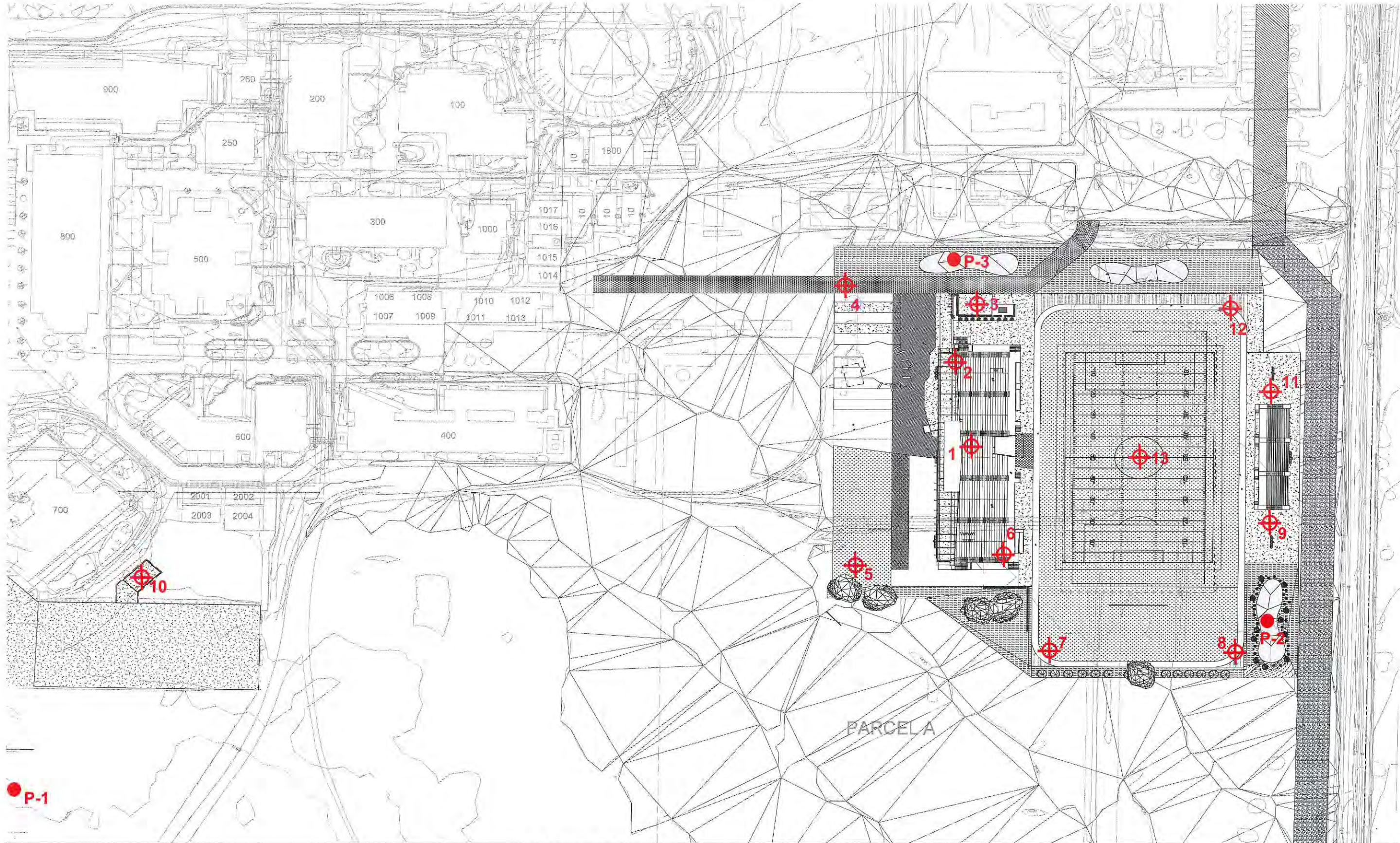
MSJC Menifee Stadium  
28237 La Piedra Road, Menifee, California




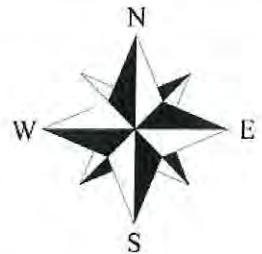
Project Number:  
8767A02

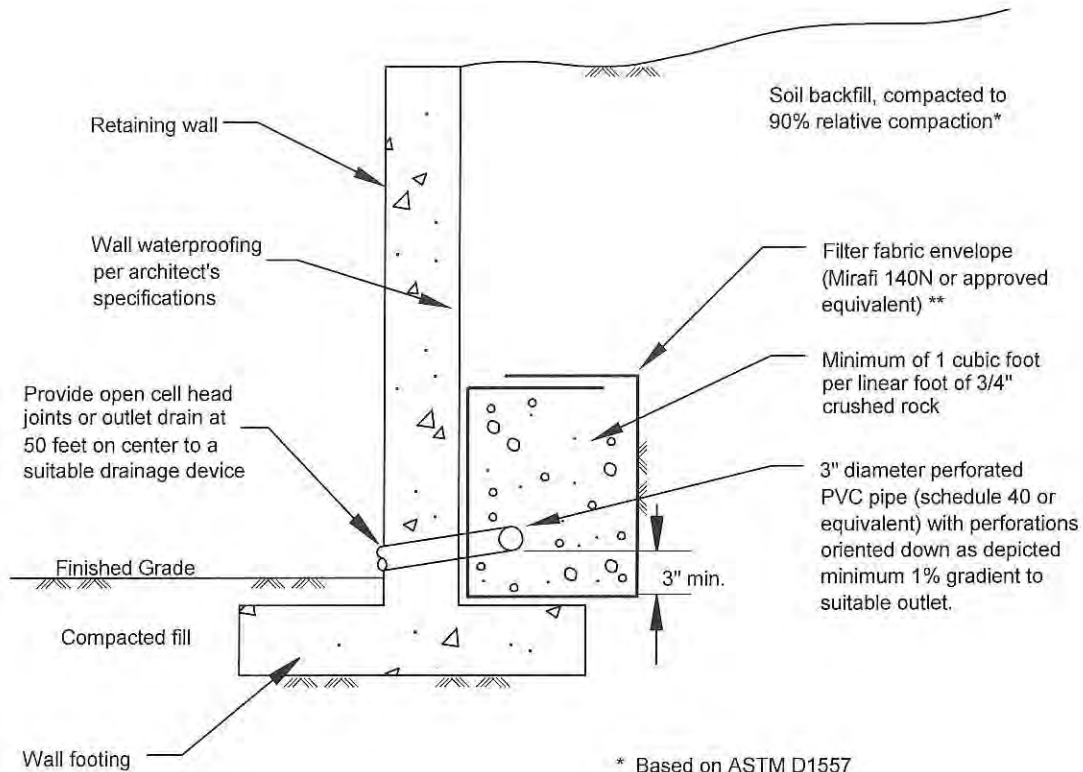
Scale: Not to Scale

Date: 8/30/2019

Figure No. 1



<b>Legend:</b>  Boring Sample Location B-13  Percolation Test Location P-3		<b>MSJC Meniffee Stadium</b> <b>Boring and Percolation</b> <b>Test Locations</b>		Project Number: 8767A02	28237 La Piedra Road, Meniffee, CA	
		Scale: Not to Scale				
Date: 8/30/2019 Figure No. 2						



\* Based on ASTM D1557

\*\* If class 2 permeable material (See gradation to left) is used in place of 3/4" - 1 1/2" gravel. Filter fabric may be deleted. Class 2 permeable material compacted to 90% relative compaction. \*

**SPECIFICATIONS FOR CLASS 2 PERMEABLE MATERIAL (CAL TRANS SPECIFICATIONS)**

Sieve Size	% Passing
1"	100
3/4"	90-100
3/8"	40-100
No.4	25-40
No.8	18-33
No.30	5-15
No.50	0-7
No.200	0-3

**RETAINING WALL DRAINAGE DETAIL**

Figure 3



**APPENDIX A**

**REFERENCES**

## APPENDIX A

### REFERENCES

Anderson Geology Consulting, LLC, 2019, Limited Engineering Geologic Hazard Evaluation of Property, Proposed Stadium Facility and Associated Parking/Support Structures, 28237 La Piedra Road, City of Menifee, California, Project No. 19016-01, dated August 22, 2019 (included in Appendix D of this report).

City of Menifee General Plan, 2010.

Federal Emergency Management Agency, Revised August 18, 2004, Flood Insurance Rate Map, Riverside County, FEMA Map 060065C2070H.

U. S. Geological Survey, 1996, Well-Construction, Water Quality and Water-Level Data and Pond Infiltration Estimates for Three Ground Water Subbasins, Riverside County, California, USGS Report No. 96-4294, 1996.

**APPENDIX B**

**FIELD EXPLORATION PROGRAM**

## APPENDIX B

### FIELD EXPLORATION PROGRAM

The subsurface conditions for this Geotechnical Investigation were explored by excavating exploratory borings with an 8-inch hollow-stem-auger to a maximum depth of 51.5 feet below existing grade. All drive samples were obtained by California Tube or SPT Samplers. The approximate locations of the borings are shown on the Boring Location Map (Figure 2). The field exploration was performed under the supervision of a Geotechnical Engineer/Geologist who maintained a continuous log of the subsurface soils encountered and obtained samples for laboratory testing.

Subsurface conditions are summarized on the accompanying Logs of Borings. The logs contain factual information and interpretation of subsurface conditions between samples. The stratum indicated on these logs represents the approximate boundary between earth units and the transition may be gradual. The logs show subsurface conditions at the dates and locations indicated, and may not be representative of subsurface conditions at other locations and times.

Identification of the soils encountered during the subsurface exploration was made using the field identification procedure of the Unified Soils Classification System (ASTM D2488). A legend indicating the symbols and definitions used in this classification system and a legend defining the terms used in describing the relative compaction, consistency or firmness of the soil are attached in this appendix. Bag samples of the major earth units were obtained for laboratory inspection and testing, and the in-place density of the various strata encountered in the exploration was determined

The exploratory borings were located in the field by using cultural features depicted on a preliminary site plan provided by the client. Each location should be considered accurate only to the scale and detail of the plan utilized.

The exploratory borings were backfilled with native soil cuttings, compacted, and patched where appropriate.

UNIFIED SOIL CLASSIFICATION SYSTEM					
No. 200 U.S. Standard Sieve is the smallest particle visible	Coarse-grained soils >1/2 of materials is larger than #200 sieve	GRAVELS are more than half of coarse fraction larger than #4 sieve	Clean Gravels (less than 5% fines)	GW	Well-graded gravels, gravel-sand mixtures, little or no fines
			Gravels with fines	GP	Poorly-graded gravels, gravel-sand mixtures, little or no fines
		SANDS are more than half of coarse fraction larger than #4 sieve	Clean Sands (less than 5% fines)	GM	Silty Gravels, poorly-graded gravel-sand-silt mixtures
			Sands with fines	GC	Clayey Gravels, poorly-graded gravel-sand-clay mixtures
	Fine-grained Soils > 1/2 of materials is smaller than #200 sieve	SILTS AND CLAYS Liquid Limit Less than 50	SW	Well-graded sands, gravelly sands, little or no fines	
			SP	Poorly-graded sands, gravelly sands, little or no fines	
			SM	Silty Sands, poorly-graded sands-gravel-clay mixtures	
			SC	Clayey Sands, poorly-graded sand-gravel-silt mixtures	
			ML	Inorganic clays of low to med plasticity, gravelly, sandy, silty, or lean clays	
		SILTS AND CLAYS Liquid Limit Greater than 50	CL	Inorganic clays of low to med plasticity, gravelly, sandy, silty, or lean clays	
			OL	Organic silts and clays of low plasticity	
			MH	Inorganic silts, micaceous or diatomaceous fine sands or silts	
			CH	Inorganic clays of high plasticity, fat clays	
			OH	Organic silts and clays of medium to high plasticity	
Highly Organic Soils				PT	Peat, humus swamp soils with high organic content

GRAIN SIZE				SIZE PROPORTION
Description	Sieve Size	Grain Size	Approximate Size	Trace – Less than 5%
Boulders	>12"	>12"	Larger than basketball-sized	Few – 5% to 10%
Cobbles	3"- 12"	3"- 12"	Fist-sized to basketball-sized	Little – 15% to 20%
Gravel	Coarse ¾"- 3"	¾"- 3"	Thumb-sized	Some – 30% to 45%
	Fine #4 - ¾"	0.19" - 0.75"	Peat-sized to thumb-sized	Mostly – 50% to 100%
Sand	Coarse #10 - #4	0.075" - 0.19"	Rock salt-sized to pea-sized	<b>MOISTURE CONTENT</b>
	Medium #40 - #10	0.017" - 0.075"	Sugar-sized to rock salt-sized	Dry – Absence of moisture
	Fine #200 - #40	0.0029" - 0.017"	Flour-sized to sugar-sized	Moist – Damp but not visible
Fines	Passing #200	<0.0029"	Flour-sized or smaller	Wet – Visible free water

CONSISTENCY FINE GRAINED SOILS			RELATIVE DENSITY COARSE GRAINED SOILS		
Apparent Density	SPT (Blows/Foot)	Mod CA Sampler (Blows/Foot)	Apparent Density	SPT (Blows/Foot)	Mod CA Sampler (Blows/Foot)
Very Soft	<2	<3	Very Loose	<4	<5
Soft	2-4	3-6	Loose	4-10	5-12
Firm	5-8	7-12	Medium Dense	11-30	13-35
Stiff	9-15	13-25	Dense	31-50	36-60
Very Stiff	16-30	26-50	Very Dense	>50	>60
Hard	>30	>50			

# BORING NO. 1

Logged by: BAH

Date Drilled: 7/30/2019

Method of Drilling: 8-inch diameter hollow-stem auger - CME 75

Elevation: 1433' msl

DEPTH (FT)	BLOWS PER FT	DRIVE SAMPLE	BULK SAMPLE	DENSITY (PCF)	MOISTURE (%)	DESCRIPTION	LAB TESTS
1						Grass Turf at Surface	Maximum Density & Optimum Moisture, R-Value, Expansion Index, Remolded Direct Shear (90%)
2	25	CAL		120	11	<u>Alluvium</u> : Silty Sand with Clay (SM), dark reddish brown, moist, medium dense	
3							
4	31	CAL		114	14		
5							
6	30	CAL		122	12	<u>Alluvium</u> : Clayey Sand with Silt (SC), dark brown, moist, medium dense	
7							
8	34	CAL		120	17		
9							
10							
11	39	CAL		111	14	<u>Alluvium</u> : Clayey Silt with Sand (ML), reddish brown, moist, very stiff	
12							
13							
14							
15							
16	29	CAL		111	18		
17							
18							
19							
20							
21	37	CAL		111	12	Grades with up to 1" Gravel	
22							
23							
24							
25							
26	60	CAL		114	10.0	<u>Alluvium</u> : Clayey Sand with Silt (SC), reddish brown, moist, dense	
27							
28							
29							
30							



## BORING NO. 1 (Continued)

Logged by: **BAH**

Date Drilled: 7/30/2019

Method of Drilling: 8-inch diameter hollow-stem auger - CME 75

Elevation: 1433' msl

DEPTH (FT)	BLOWS PER FT	DRIVE SAMPLE	BULK SAMPLE	DENSITY (PCF)	MOISTURE (%)	DESCRIPTION	LAB TESTS
31	46	CAL		109	9	(Continued) <u>Alluvium:</u> Silty Sand with Clay (SM), dark reddish brown, moist, medium dense	
32							
33							
34							
35							
36	28	CAL			11	<u>Alluvium:</u> Sandy Silt (ML), light brown, moist, very stiff	
37							
38							
39							
40							
41	41	SPT			15	Grades with Clay, hard	
42							
43							
44							
45							
46	66	SPT			7	<u>Alluvium:</u> Silty Sand with Clay (SM), light reddish brown moist, very dense	
47							
48							
49							
50							
51	46	SPT			18	<u>Alluvium:</u> Clayey Silt with Sand (ML), dark brown, moist, hard	
52						Total Depth: 51.5 feet As Planned	
53						Groundwater not encountered	
54						Backfilled with tailings on 7/30/2019	
55							
56							
57							
58							
59							
60							



## BORING NO. 2

Logged by: **BAH**

Date Drilled: 7/30/2019

Method of Drilling: **8-inch diameter hollow-stem auger - CME 75**

Elevation: 1433' msl

DEPTH (FT)	BLOWS PER FT	DRIVE SAMPLE	BULK SAMPLE	DENSITY (PCF)	MOISTURE (%)	DESCRIPTION	LAB TESTS
1						Grass Turf at Surface.	Direct Shear
2		CAL					
3	17	CAL			7.8	<u>Alluvium</u> : Silty Sand (SM), moderate-dark brown, slightly moist, medium dense.	
4		CAL					
5	32	CAL		109	17.1	<u>Alluvium</u> : Silty Sand (SM), trace Gravel, moderate brown, moist, medium dense	
6		CAL					
7	30	CAL		125	10.9	<u>Alluvium</u> : Gravelly_Silty Sand (SM), moist, medium dense.	
8		CAL					
9		CAL					
10		CAL					
11	22	CAL		118	10.1	<u>Alluvium</u> : Silty Sand w/ Gravel and Clay (SM/SC), moderate brown, moist, medium dense.	
12		CAL					
13		CAL					
14		CAL					
15		CAL					
16	28	CAL		100	15.3	<u>Alluvium</u> : Silty Sand w/ Clay and Gravel (SM), reddish brown, slightly moist, med. dense.	
17						Total Depth: 16.0 feet Groundwater not encountered Backfilled with tailings on 7/30/2019	
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							





## BORING NO. 3

Logged by: **KO**

Date Drilled: 7/30/2019

Method of Drilling: **8-inch diameter hollow-stem auger - CME 75**

Elevation: 1433' msl

DEPTH (FT)	BLOWS PER FT	DRIVE SAMPLE	BULK SAMPLE	DENSITY (PCF)	MOISTURE (%)	DESCRIPTION	LAB TESTS
1						Grass Turf at Surface.	Consolidation
2	25	CAL		104	7.4	<u>Alluvium</u> : Silty Sand (SM), trace Gravel, tan brown, slightly moist, medium dense.	
3							
4	8	CAL				<u>Alluvium</u> : Silty Sand (SM), trace Gravel, medium brown, slightly moist, loose.	
5							
6	24	CAL		99	7.4	<u>Alluvium</u> : Gravelly Silty Sand (SM), medium brown, slightly moist, medium dense.	
7							
8							
9							
10							
11	31	CAL		115	15.5	<u>Alluvium</u> : Fine Sandy Clay w/ Gravel (CL), rust red, moist, very stiff.	
12							
13							
14							
15							
16	42	CAL					
17						Total Depth: 16.0 feet Groundwater not encountered Backfilled with tailings on 7/30/2019	
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							



# BORING NO. 4

Logged by: **KO**

Date Drilled: 7/30/2019

Method of Drilling:

8-inch diameter hollow-stem auger - CME 75

Elevation: 1433' msl

DEPTH (FT)	BLOWS PER FT	DRIVE SAMPLE	BULK SAMPLE	DENSITY (PCF)	MOISTURE (%)	DESCRIPTION	LAB TESTS
1							
2		CAL					
3	27	CAL		124	10.4	<u>Alluvium</u> : Silty Sand (SM), dark brown, slightly moist, medium dense.	
4							
5		CAL					
6	28	CAL		108	12.6	<u>Alluvium</u> : Silty Sand w/ Clay (SM), medium brown, slightly moist, medium dense.	
7							
8							
9							
10		CAL					
11	28	CAL		87	7.6	<u>Alluvium</u> : Gravelly Silty Sand (SM), med. brown, slightly moist, medium dense.	
12						Total Depth: 11.0 feet Groundwater not encountered Backfilled with tailings on 7/30/2019	
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							



# BORING NO. 5

Logged by: **KO**

Date Drilled: **7/30/2019**

Method of Drilling:

**8-inch diameter hollow-stem auger - CME 75**

Elevation: **1434' msl**

DEPTH (FT)	BLOWS PER FT	DRIVE SAMPLE	BULK SAMPLE	DENSITY (PCF)	MOISTURE (%)	DESCRIPTION	LAB TESTS
1							
2							
3	36	CAL		92	8.0	<u>Alluvium</u> : Silty Sand w/ Clay (SM), trace Gravel, medium brown, slightly moist, dense.	
4							
5							
6	16	CAL		118	5.0		
7						<u>Alluvium</u> : Silty Sand w/ Gravel (SM), reddish brown, slightly moist, medium dense.	
8							
9							
10						<u>Alluvium</u> : Gravelly Silty Sand w/ Clay (SM), med. brown, moist, cemented, medium dense.	
11	33	CAL		143	10.3		
12						Total Depth: 11.0 feet Groundwater not encountered Backfilled with tailings on 7/30/2019	
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							



## BORING NO. 6

Logged by: **KO**

Date Drilled: 7/30/2019

Method of Drilling: **8-inch diameter hollow-stem auger - CME 75**

Elevation: 1434' msl

DEPTH (FT)	BLOWS PER FT	DRIVE SAMPLE	BULK SAMPLE	DENSITY (PCF)	MOISTURE (%)	DESCRIPTION	LAB TESTS
1							
2	40	CAL		120	7.4	<u>Alluvium</u> : Silty Sand w/ Clay (SM), trace Gravel, reddish/medium brown, slightly moist, dense.	
3							
4	38	CAL					
5							
6	23	CAL		107	7.8		
7							
8	57	CAL		111	5.7	<u>Alluvium</u> : Gravel w/ fine to med. Sand and Silt (GW-GP), brown, slightly moist, dense.	
9							
10	57	CAL		112	9.4	<u>Alluvium</u> : Gravelly Silty Sand (SM), reddish brown, slightly moist, dense.	
11							
12							
13							
14							
15							
16	23	CAL		107	18.8	<u>Alluvium</u> : Clayey Silt w/ fine to med. sand (ML), reddish brown, moist, very stiff.	
17						Total Depth: 16.0 feet Groundwater not encountered Backfilled with tailings on 7/30/2019	
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							



# BORING NO. 7

Logged by: **KO**

Date Drilled: 7/30/2019

Method of Drilling:

8-inch diameter hollow-stem auger - CME 75

Elevation: 1434' msl

DEPTH (FT)	BLOWS PER FT	DRIVE SAMPLE	BULK SAMPLE	DENSITY (PCF)	MOISTURE (%)	DESCRIPTION	LAB TESTS
1							
2		CAL					
3	31	CAL		115	6.0	<u>Alluvium:</u> Silty Sand (SM), trace Gravel, reddish brown, slightly moist, medium dense.	
4		CAL					
5	55	CAL		104	11.6	<u>Alluvium:</u> Fine to medium Sandy Clay (CL), reddish brown, slightly moist, hard.	
6		CAL					
7	55	CAL		103	10.9	<u>Alluvium:</u> Cemented Silty Sand w/ Clay (SM), trace Gravel, medium brown, moist, dense.	
8		CAL					
9		CAL					
10		CAL					
11	40	CAL		102	6.6	<u>Alluvium:</u> Silty Sand w/ Gravel (SM), brown, slightly moist, dense.	
12		CAL					
13		CAL					
14		CAL					
15		CAL					
16	36	CAL		107	14.9	<u>Alluvium:</u> Silty Sand w/ Clay (SM), trace Gravel, reddish brown, moist, dense.	
17						Total Depth: 16.0 feet Groundwater not encountered Backfilled with tailings on 7/30/2019	
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							



# BORING NO. 8

Logged by: KO

Date Drilled: 7/30/2019

Method of Drilling: 8-inch diameter hollow-stem auger - CME 75

Elevation: 1433' msl

DEPTH (FT)	BLOWS PER FT	DRIVE SAMPLE	BULK SAMPLE	DENSITY (PCF)	MOISTURE (%)	DESCRIPTION	LAB TESTS
1							
2	39	CAL		112	6.2	<u>Alluvium:</u> Silty Sand (SM), trace Gravel, medium brown, slightly moist, dense.	
3							
4	47	CAL		94	3.8		
5							
6	37	CAL					
7							
8							
9							
10							
11	31	CAL		102	6.6	<u>Alluvium:</u> Sandy Clay (CL), red brown, slightly moist, mottled, very stiff.	
12							
13							
14							
15							
16	50	CAL		107	14.9	<u>Alluvium:</u> Fine to Medium Sand (SP), yellow brown, moist, dense.	
17							
18						Total Depth: 16.0 feet Groundwater not encountered Backfilled with tailings on 7/30/2019	
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							



# BORING NO. 9

Logged by: KO  
Method of Drilling:

8-inch diameter hollow-stem auger - CME 75

Date Drilled: 7/30/2019  
Elevation: 1432' msl

DEPTH (FT)	BLOWS PER FT	DRIVE SAMPLE	BULK SAMPLE	DENSITY (PCF)	MOISTURE (%)	DESCRIPTION	LAB TESTS
1							
2		CAL		113	5.7	<u>Alluvium:</u> Silty Sand (SM), trace Gravel, medium-dark brown, slightly moist, medium dense.	Consolidation
3	26						
4		CAL			4.8	Grades with up to 1/2" Gravel.	
5	44						
6							
7		CAL		92	16.2	<u>Alluvium:</u> Fine Sandy Clay (CL), red-brown, moist, very stiff.	
8							
9							
10		CAL				<u>Alluvium:</u> Silt w/ fine-medium sand (ML), red-brown, slightly moist, very stiff.	
11	28						
12							
13							
14							
15		CAL		117	13.1	<u>Alluvium:</u> Silty Sand w/ Clay (SM), green brown, moist, medium dense.	
16	33						
17							
18							
19							
20		CAL				<u>Alluvium:</u> Silty Sand (SM), medium brown, moist, dense.	
21	36			112	13.0		
22						Total Depth: 21.0 feet Groundwater not encountered Backfilled with tailings on 7/30/2019	
23							
24							
25							
26							
27							
28							
29							
30							



# BORING NO. 10

Logged by: KO

Date Drilled: 7/31/2019

Method of Drilling: 8-inch diameter hollow-stem auger - CME 75

Elevation: 1439' msl

DEPTH (FT)	BLOWS PER FT	DRIVE SAMPLE	BULK SAMPLE	DENSITY (PCF)	MOISTURE (%)	DESCRIPTION	LAB TESTS
1							
2		CAL					
3	56	CAL		127	5.7	<u>Alluvium</u> : Fine to medium Sandy Clay (CL), trace gravel, med. brown, slightly moist, hard.	
4							
5		CAL					
6	42	CAL				<u>Alluvium</u> : Silty Sand (SM), trace Gravel, med brown, slightly moist, dense.	Direct Shear
7							
8	35	CAL				Grades more silt.	Consolidation
9							
10		CAL					
11	39	CAL		119	11.4	<u>Alluvium</u> : Fine to medium Sandy Clay (CL), red-brown, slightly moist, very stiff.	
12						Total Depth: 11.0 feet Groundwater not encountered Backfilled with tailings on 7/31/2019	
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							





# BORING NO. 11

Logged by: **KO**

Date Drilled: 7/31/2019

Method of Drilling:

8-inch diameter hollow-stem auger - CME 75

Elevation: 1431' msl

DEPTH (FT)	BLOWS PER FT	DRIVE SAMPLE	BULK SAMPLE	DENSITY (PCF)	MOISTURE (%)	DESCRIPTION	LAB TESTS
1							
2	21	CAL		97	6.9	<u>Alluvium</u> : Cemented Silty Sand w/ Gravel (SM), medium brown, slightly moist, medium dense.	#200 Wash 66% Passing #200 Sieve
3							
4	26	CAL		117	7.5	<u>Alluvium</u> : Clayey Sand w/ Gravel (SC), medium-dark brown, slightly moist, medium dense.	
5							
6	33	CAL		113	12.2	<u>Alluvium</u> : Sandy Clay (CL), mottled brown-gray, organics, slightly moist, very stiff.	
7							
8	48	CAL		110	9.0	<u>Alluvium</u> : Clayey Sand (SC), trace Gravel, mottled red-brown, slightly moist, dense.	
9							
10							
11	31	CAL		112	16.2		
12							
13							
14							
15							
16	36	CAL		118	12.5		
17						Total Depth: 16.0 feet	
18						Groundwater not encountered	
19						Backfilled with tailings on 7/31/2019	
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							



# BORING NO. 12

Logged by: **KO**

Date Drilled: **7/31/2019**

Method of Drilling: **8-inch diameter hollow-stem auger - CME 75**

Elevation: **1431' msl**

DEPTH (FT)	BLOWS PER FT	DRIVE SAMPLE	BULK SAMPLE	DENSITY (PCF)	MOISTURE (%)	DESCRIPTION	LAB TESTS
1							
2							
3	26	CAL			6.9	<u>Alluvium</u> : Cemented Silty Sand w/ Gravel (SM), trace clay, med. brown, slightly moist, medium dense.	
4							
5							
6	51	CAL		113	11.1		
7							
8							
9							
10							
11	49	CAL		121	14.1	<u>Alluvium</u> : Silty Sand (SM), trace Gravel, red-brown, moist, dense.	
12						Total Depth: 11.0 feet Groundwater not encountered Backfilled with tailings on 7/31/2019	
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							



# BORING NO. 13

Logged by: **KO**

Date Drilled: **7/31/2019**

Method of Drilling: **8-inch diameter hollow-stem auger - CME 75**

Elevation: **1432' msl**

DEPTH (FT)	BLOWS PER FT	DRIVE SAMPLE	BULK SAMPLE	DENSITY (PCF)	MOISTURE (%)	DESCRIPTION	LAB TESTS
1							
2	27	SPT			9.2	<u>Alluvium</u> : Silty Sand (SM), red-brown, slightly moist, medium dense.	
3							
4	47	SPT			8.3	<u>Alluvium</u> : Sandy Clay (CL), trace Gravel, dark brown, slightly moist, hard.	
5							
6	58	SPT			8.9	Grades with up to 1/4" gravel, red-brown.	
7							
8							
9							
10							
11	43	SPT			15.3	<u>Alluvium</u> : Cemented Silty Sand (SM), red-brown, slightly moist, dense.	
12							
13							
14							
15							
16	49	SPT					
17						Total Depth: 16.5 feet Groundwater not encountered Backfilled with tailings on 7/31/2019	
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							



# PERCOLATION TEST 1

Logged by: KO

Date Drilled: 7/31/2019

Method of Drilling: 8-inch diameter hollow-stem auger - CME 75

Elevation: 1432' msl

DEPTH (FT)	BLOWS PER FT	DRIVE SAMPLE	BULK SAMPLE	DENSITY (PCF)	MOISTURE (%)	DESCRIPTION	LAB TESTS
1							
2							
3							
4						Alluvium: Silty Sand (SM), red-brown, slightly moist.	
5							
6							
7							
8							
9							
10							
11	72	CAL		118	11.7	Alluvium: Cemented Silty Sand (SM), red-brown, moist, very dense.	
12						Total Depth: 11.0 feet Groundwater not encountered Perforated pipe and gravel installed for percolation test.	
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							



## PERCOLATION TEST 2

Logged by: **KO**

Date Drilled: 7/31/2019

Method of Drilling: **8-inch diameter hollow-stem auger - CME 75**

Elevation: 1432' msl

DEPTH (FT)	BLOWS PER FT	DRIVE SAMPLE	BULK SAMPLE	DENSITY (PCF)	MOISTURE (%)	DESCRIPTION	LAB TESTS
1							
2							
3							
4						<u>Alluvium:</u> Silty Sand w/ Clay (SM), dark brown, slightly moist.	
5							
6							
7							
8							
9							
10							
11	27	CAL		103	20.8	<u>Alluvium:</u> Sandy Clay (CL), red-brown, moist, very stiff.	
12						Total Depth: 11.0 feet Groundwater not encountered Perforated pipe and gravel installed for percolation test.	
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							



# PERCOLATION TEST 3

Logged by: KO

Date Drilled: 7/31/2019

Method of Drilling: 8-inch diameter hollow-stem auger - CME 75

Elevation: 1432' msl

DEPTH (FT)	BLOWS PER FT	DRIVE SAMPLE	BULK SAMPLE	DENSITY (PCF)	MOISTURE (%)	DESCRIPTION	LAB TESTS	
1						<p><u>Alluvium:</u> Silty Sand w/ Clay (SM), med. brown, slightly moist.</p> <p>Grades with Clay.</p>		
2								
3								
4								
5								
6								
7								
8						<p>Total Depth: 11.0 feet Groundwater not encountered Perforated pipe and gravel installed for percolation test</p>		
9								
10								
11	36	CAL		117	15.1			<p><u>Alluvium:</u> Sandy Clay (CL), trace Gravel, red-brown, moist, very stiff.</p>
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								



**APPENDIX C**

**LABORATORY TESTING PROCEDURES**

## APPENDIX C

### LABORATORY TESTING PROCEDURES

1. Classification  
Soils were classified visually, generally according to the Unified Soil Classification System. Classification tests were also completed on representative samples in accordance with ASTM D1140 (“200 Wash”). The test results are included on the Log of Borings.
2. Maximum Density  
Maximum density tests were performed on a representative bag sample of the near surface soils in accordance with ASTM D1557.
3. Direct Shear  
Direct Shear Tests were performed on in-place and remolded samples of site soils in accordance with ASTM D3080. Graphical plots of the tests are included in this appendix.
4. Consolidation  
Consolidation tests were performed on representative, relatively undisturbed samples of the underlying soils to determine compressibility characteristics in accordance with ASTM D2435. Test results are presented in this appendix.
5. R-Value Testing  
R-Value testing was completed in substantial compliance with Caltrans Test Method 301. Graphical plots of the tests are included in this appendix.
6. Expansion Index  
Expansion Index testing was completed in accordance with the standard test method ASTM D4829. Test results are presented below.

Sample Location	Expansion Index	Expansion Classification
B-1 @ 0-5 ft	5	Very Low
B-10 @ 0-5 ft	15	Very Low



7. Corrosion

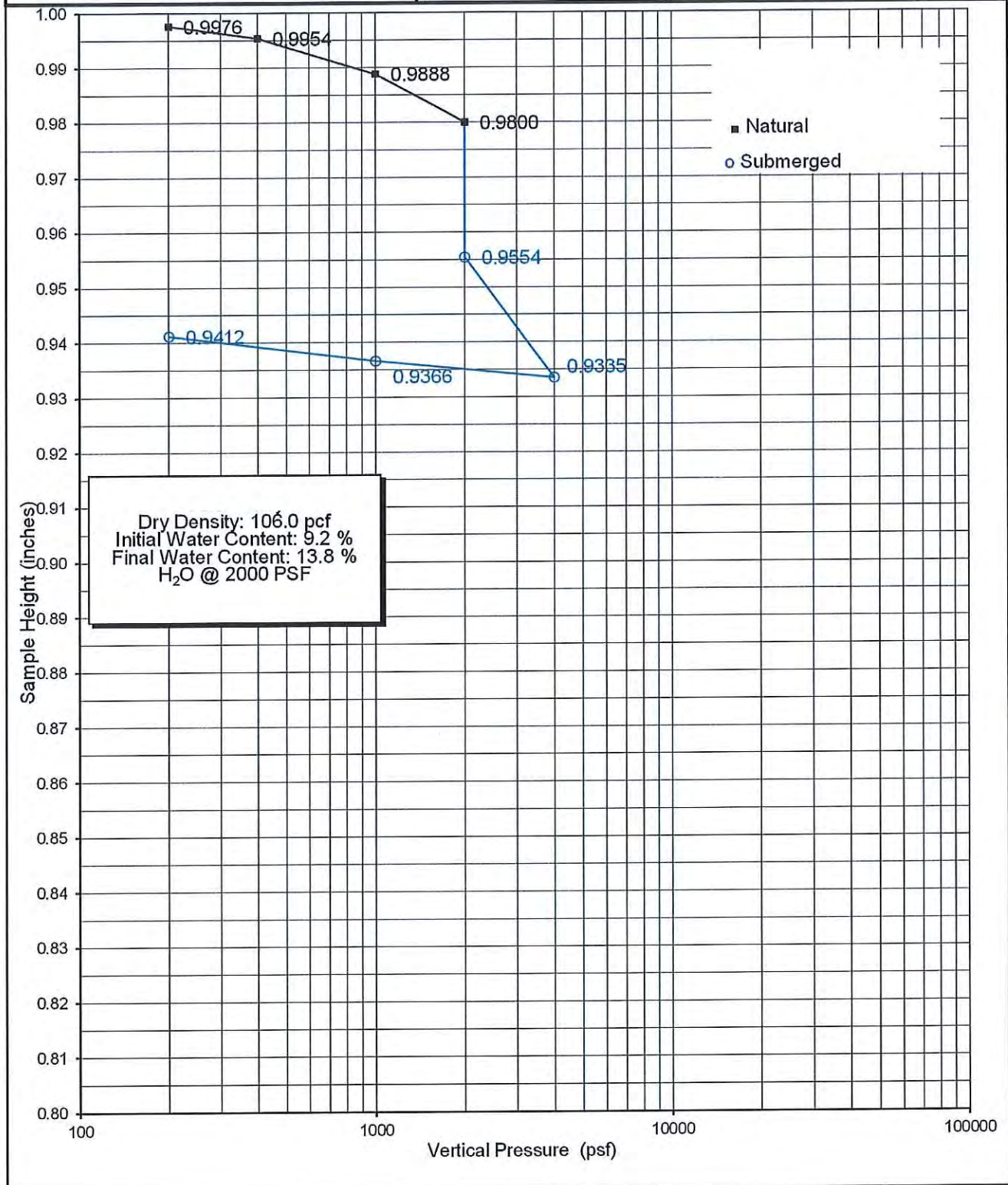
Chemical testing was performed on representative samples to determine the corrosion potential of the onsite soils. Testing consisted of pH, chlorides (CTM 422), soluble sulfates (CTM 417), and resistivity (CTM 643). Test results are as follows:

<b>Sample Location</b>	<b>pH</b>	<b>Chlorides (ppm)</b>	<b>Sulfates (ppm)</b>	<b>Resistivity (ohm-cm)</b>
B-3 @ 0-5 ft	8.3	86	210	1,000

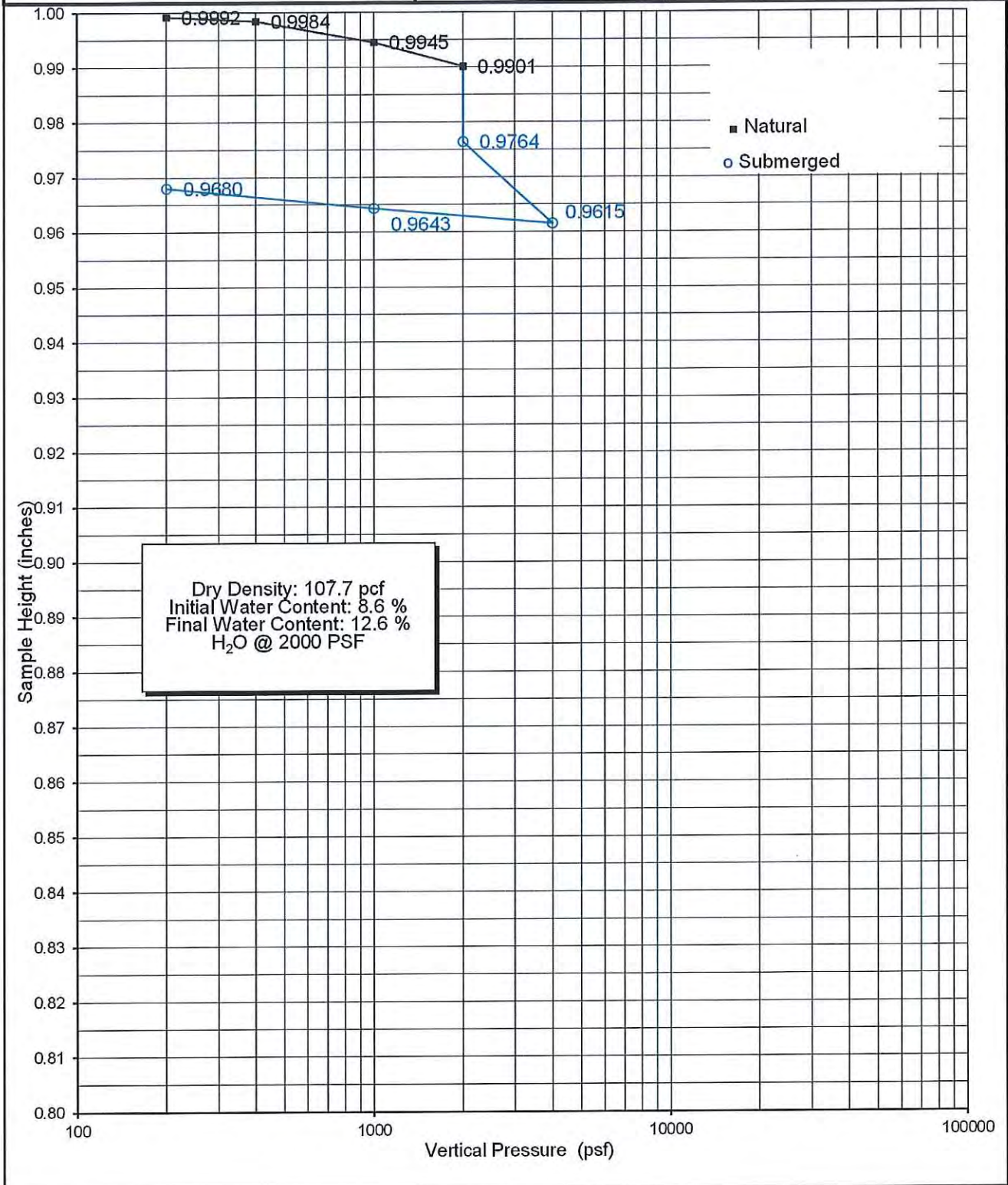
8. Agricultural Suitability

Agricultural suitability was conducted by Waypoint Analytical on of a representative sample of the site soils obtained by MTG<sub>L</sub>, Inc. Analysis of the test results and recommendations regarding landscape installation is presented in Appendix E of this report.

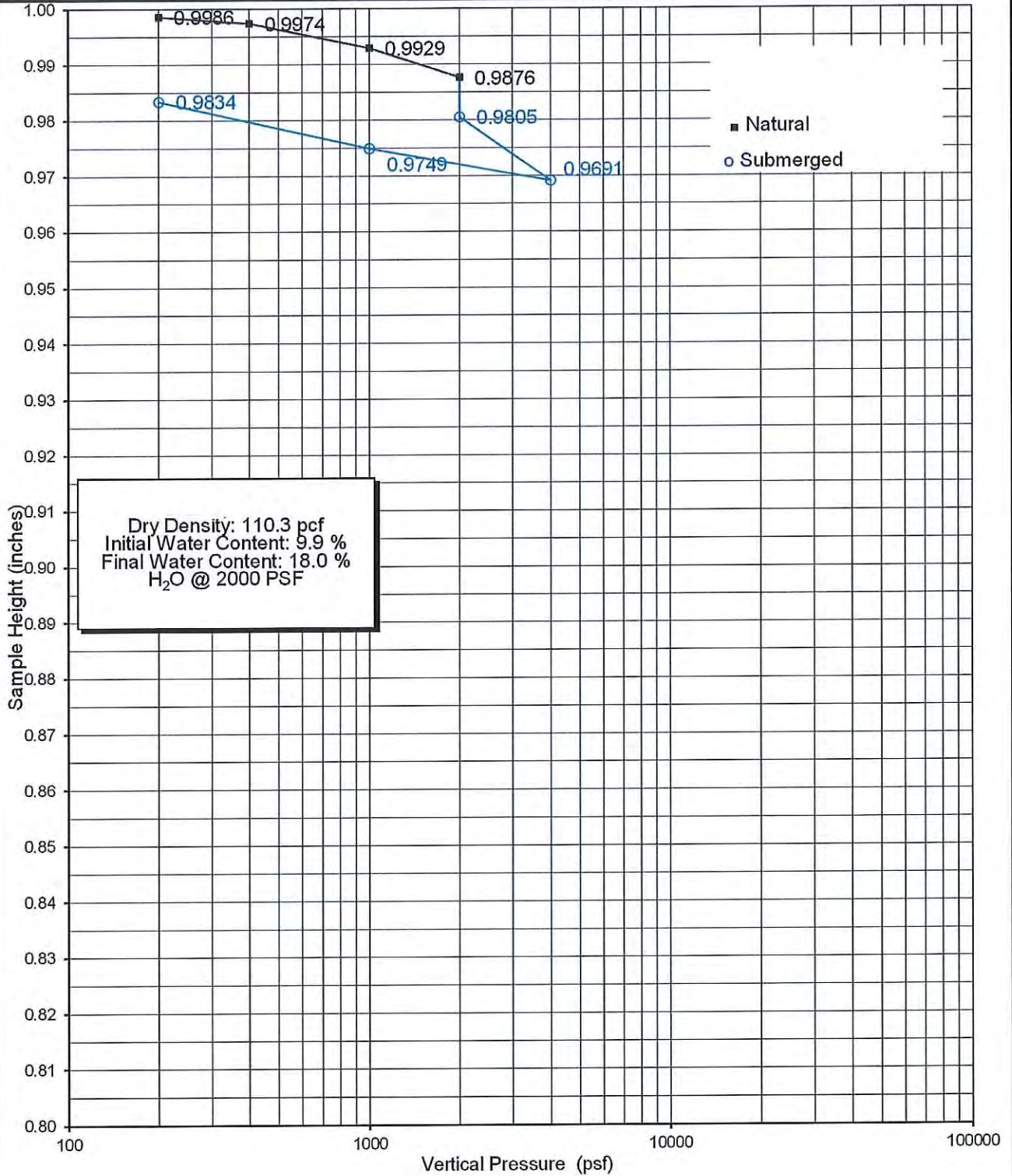
Boring / Sample No.	B-3	Depth:	3.0'	Date	08-08-19
---------------------	-----	--------	------	------	----------

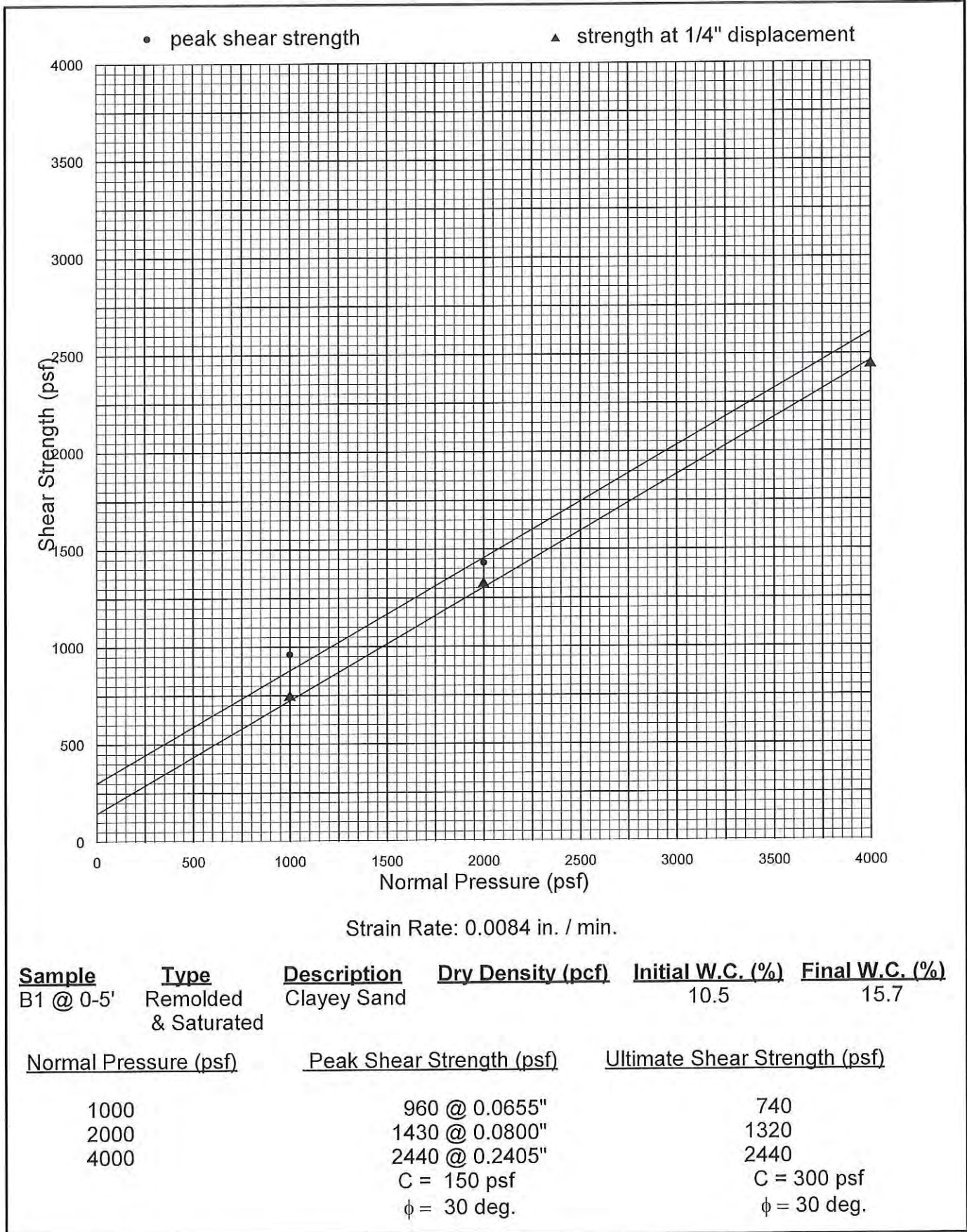


Boring / Sample No.	B-10	Depth:	7.5'	Date	08-08-19
---------------------	------	--------	------	------	----------



Boring / Sample No.	B-9	Depth:	10.0'	Date	08-08-19
---------------------	-----	--------	-------	------	----------

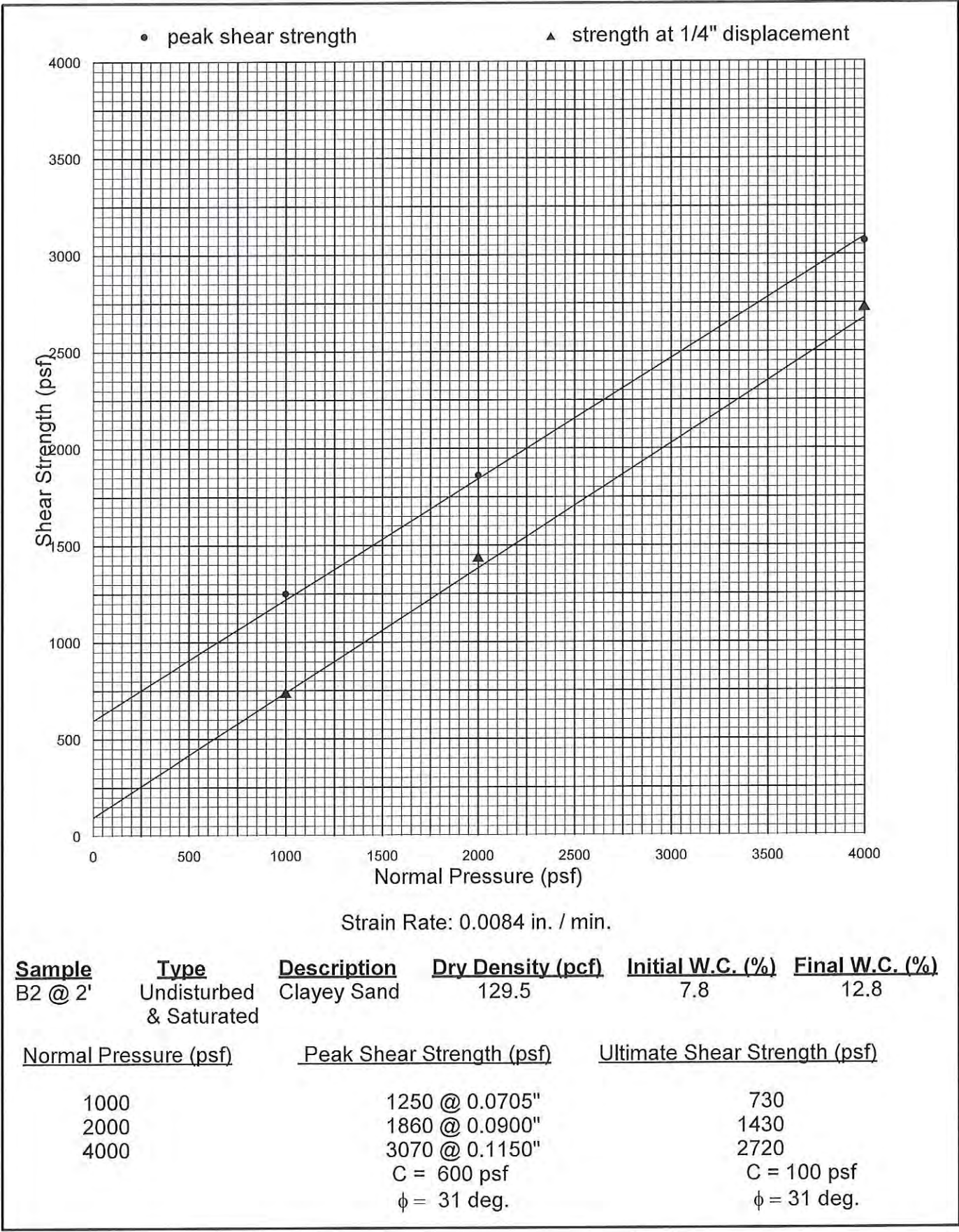


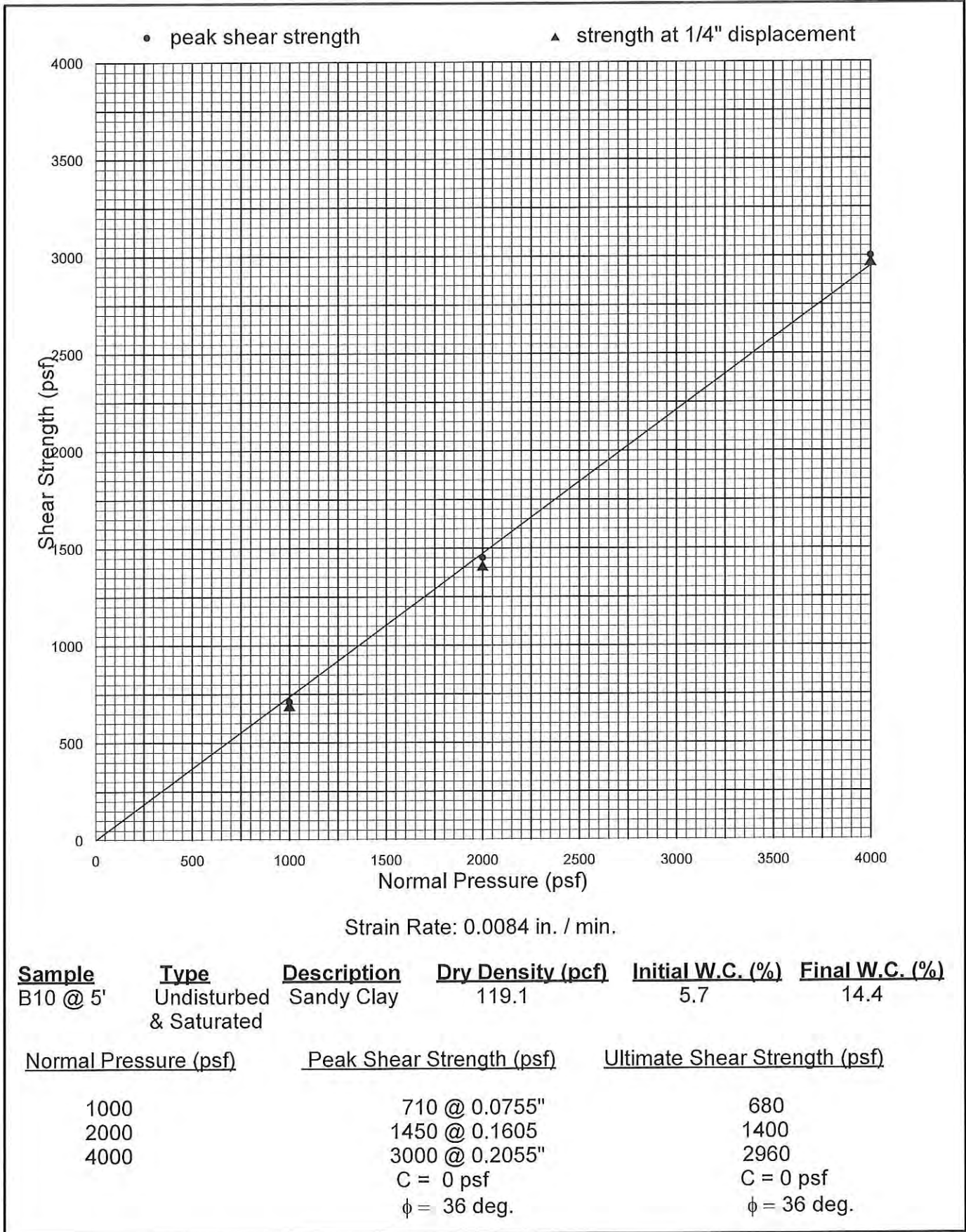


<u>Sample</u>	<u>Type</u>	<u>Description</u>	<u>Dry Density (pcf)</u>	<u>Initial W.C. (%)</u>	<u>Final W.C. (%)</u>
B1 @ 0-5'	Remolded & Saturated	Clayey Sand		10.5	15.7

<u>Normal Pressure (psf)</u>	<u>Peak Shear Strength (psf)</u>	<u>Ultimate Shear Strength (psf)</u>
1000	960 @ 0.0655"	740
2000	1430 @ 0.0800"	1320
4000	2440 @ 0.2405"	2440

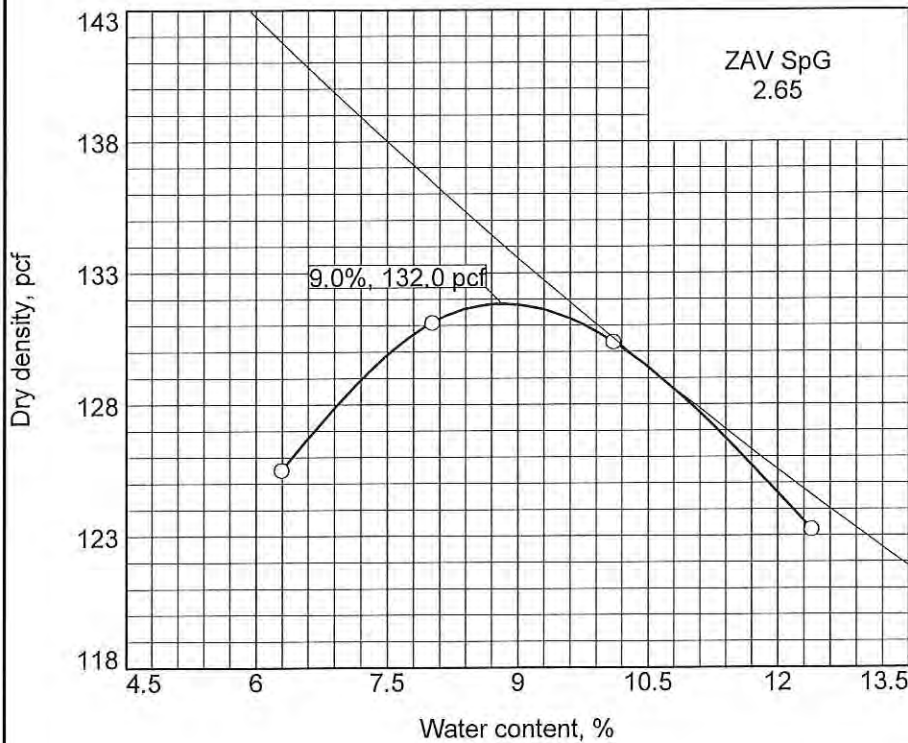
$C = 150 \text{ psf}$        $C = 300 \text{ psf}$   
 $\phi = 30 \text{ deg.}$        $\phi = 30 \text{ deg.}$





# COMPACTION TEST REPORT

**Curve No.**  
**565**



**Test Specification:**  
ASTM D 1557-12 Method A Modified

Preparation Method MOIST  
 Hammer Wt. 10 lb.  
 Hammer Drop 18 in.  
 Number of Layers five  
 Blows per Layer 25  
 Mold Size 0.03333 cu. ft.  
 Test Performed on Material  
 Passing #4 Sieve  
 NM      LL      PI       
 Sp.G. (ASTM D 854) 2.65  
 %>#4      %<No.200       
 USCS (CL) AASHTO       
 Date Sampled 7/30/19  
 Date Tested 8/1/19  
 Tested By RS

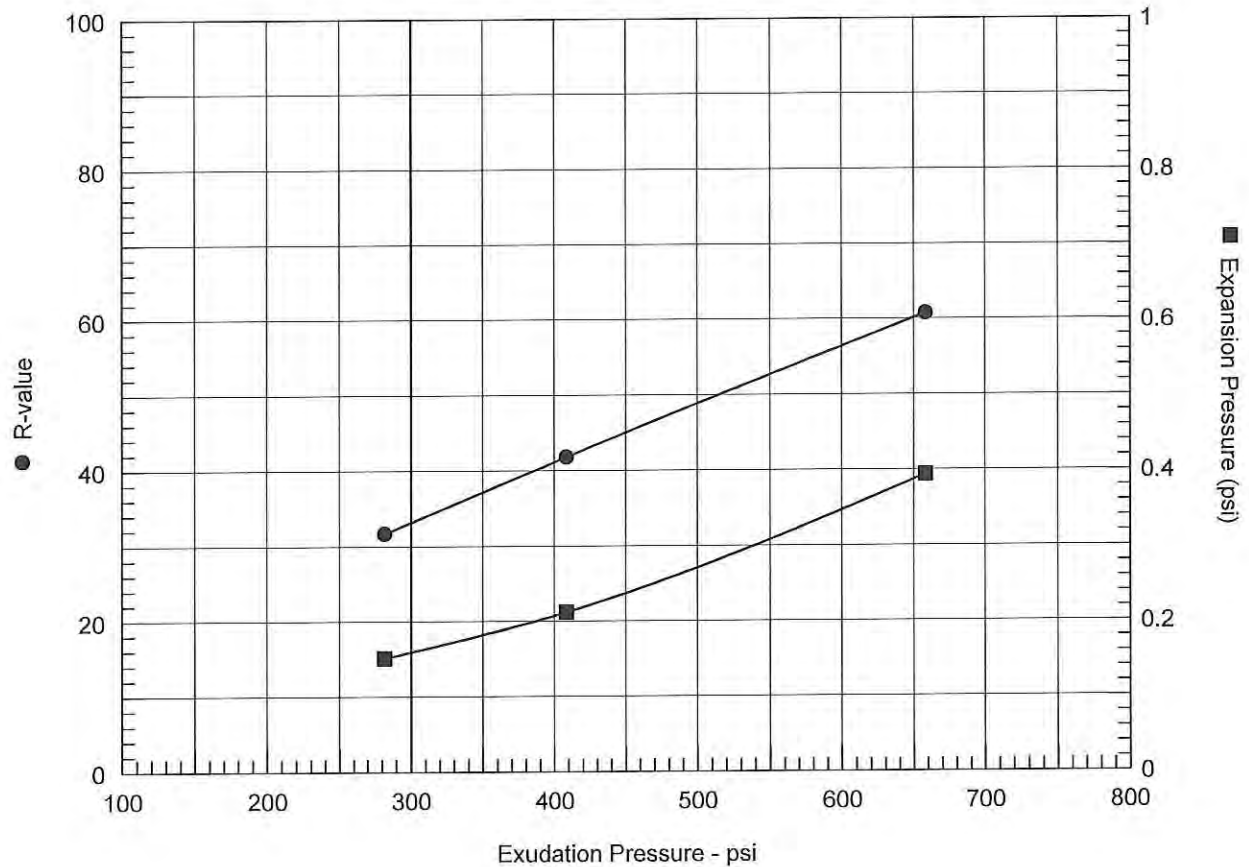
### TESTING DATA

	1	2	3	4	5	6
WM + WS	6220.0	6296.0	6267.0	6143.0		
WM	4126.0	4126.0	4126.0	4126.0		
WW + T #1	369.3	349.1	316.9	327.8		
WD + T #1	328.6	317.1	293.4	308.4		
TARE #1	0.0	0.0	0.0	0.0		
WW + T #2						
WD + T #2						
TARE #2						
MOISTURE	12.4	10.1	8.0	6.3		
DRY DENSITY	123.2	130.4	131.1	125.5		

TEST RESULTS	Material Description
Maximum dry density = 132.0 pcf Optimum moisture = 9.0 %	
Project No. 8767A02    Client: Project: MENIFEE STADIUM	Remarks: SAMPLED BY: PN
○ Location: B1@0-5' BULK    Sample Number: 565 MTGL, Inc.	Checked by: CF Title: LAB SUPER
Anaheim, CA	Figure



# R-VALUE TEST REPORT



Resistance R-Value and Expansion Pressure - ASTM D2844

No.	Compact. Pressure psi	Density pcf	Moist. %	Expansion Pressure psi	Horizontal Press. psi @ 160 psi	Sample Height in.	Exud. Pressure psi	R Value	R Value Corr.
1	350	128.8	9.5	0.39	28	2.40	658	63.2	60.8
2	200	125.7	10.9	0.15	72	2.45	282	31.7	31.7
3	250	126.5	10.5	0.21	52	2.43	408	43.6	41.8

Test Results	Material Description
<p>R-value at 300 psi exudation pressure = 33.2</p> <p>Exp. pressure at 300 psi exudation pressure = 0.16 psi</p>	
<p>Project No.: 8767A02</p> <p>Project: MENIFEE STADIUM</p> <p>Location: B1@0-5' BULK</p> <p>Sample Number: 565</p> <p>Date: 8/6/2019</p>	<p>Tested by:</p> <p>Checked by:</p> <p>Remarks:</p>
<p>R-VALUE TEST REPORT</p> <p><b>MTGL, Inc.</b></p>	<p>Figure _____</p>

**APPENDIX D**

**“Limited Engineering Geologic Hazard Evaluation of Property”  
Anderson Geology Consulting, LLC,  
Project No. 18030-01,  
Dated August 20, 2018**



August, 2019

Project No. 18030-01

To: MTGL Inc.  
2992 East La Palma Avenue, Suite A  
Anaheim, California 92806

Attention: Mr. Pablo Naranjo

Subject: Limited Engineering Geologic Hazard Evaluation of Property  
Proposed Stadium Facility and Associated Parking/Support Structures  
28237 La Piedra Road, City of Menifee, California

## Introduction

At your request, ANDERSON GEOLOGY CONSULTING, LLC. (AG) has prepared a limited engineering geologic hazard evaluation for the proposed stadium structure and associated parking and support buildings at Mt. San Jacinto Community College, 28237 La Piedra Road, City of Menifee, California (Figure 1). It is our understanding that the proposed improvements include construction of a new sports complex consisting of an approximately 5000-seat stadium with associated parking and support structures along the southwest portion of the subject site. The purpose of this evaluation was to characterize site geologic and geotechnical conditions, to assess potential geologic and seismic hazards, and to provide generalized conclusions and recommendations with respect to the impact of the identified hazards to the proposed onsite development. Environmental hazards were not addressed as part of the current scope of work. This hazard evaluation has been prepared in general conformance with the *Checklist for the Review of Engineering Geology and Seismology Reports for California Public Schools, Hospitals, and Essential Services Buildings (CGS Note 48, 2013)*.

## Scope of Services

- Review of the referenced geologic maps and reports for the subject site and surrounding area.
- Review of site specific geotechnical data provided by MTGL;
- Seismic and geologic hazard analysis for the site and surrounding area; and
- Preparation of this report and its illustrations.

This Report presents our findings, conclusions and recommendations of a limited engineering geologic hazard evaluation for the subject site. It should be noted that this hazard evaluation did not include subsurface exploration and it is understood that in-depth investigation of soil, geologic and foundation conditions, are outside the scope of services requested. This work does not warranty the future performance of the property in any respect, nor does the work constitute an approval or certification of prior or future work by other geotechnical consultants. The scope of work does not include laboratory testing of soil samples, nor specific recommendations for design and construction of the proposed improvements. AG's expertise and scope of services do not include assessment of potential subsurface environmental contaminants or environmental health hazards.

## List of Illustrations

- Figure 1 – Site Location and Seismic Hazards Map – Rear of Text
- Figure 2 – Geologic Map– Rear of Text
- Figure 3 – Regional Fault Map – Rear of Text
- Appendix A – References
- Appendix B – Seismic Deaggregation
- Appendix C – Seismic Design Criteria

## Site Location and History

The subject site is located at 28237 La Piedra Road, City of Menifee, California (Figure 1) within the Mt. San Jacinto Community College campus. The site is bounded to the north by La Piedra Road, east by the Valley Wide Recreation and Parks District Menifee Gym, south by Albion Lane and west by Antelope Road. Residential communities are located to the north, south and east of the subject site.

The proposed building area is situated along the southeast portion of the Mt. San Jacinto Community College campus. Based on a review of the site topographic map prepared by Cozad & Fox, Inc., the site is located at an elevation of approximately 1,434-feet above mean sea level (msl). The site is essentially level with maximum grade changes of less than 4-feet across the area of proposed development. Grade changes across the site are accommodated through gently sloping ground throughout the site. No significant retaining structures and or slopes were identified during our site review.

The site is currently developed as the Mt. San Jacinto Community College (Mt. San Jacinto Community College District) and is developed with classrooms, office and administrative space, athletic facilities, associated structures, asphalt paved parking and utility infrastructure. The location of the proposed development currently consists of a turf athletic area as well as undeveloped fields.

No information regarding past site grading or development was reviewed for the subject site and surrounding area. Past grading is anticipated to have occurred during construction of the building pads and associated structures, parking areas and hardscape improvements, as well as during construction of the adjacent streets and utility infrastructure.

## Geologic Setting

The subject site is regionally located in the west-central portion of the Perris Block, within the northern Peninsular Ranges Geomorphic Province of Southern California, near the intersection of the east-central boundary of the Transverse Range Province and southern boundary of the Mojave Desert Province. The Perris Block is a relatively stable, internally unfaulted mass of crustal rocks bounded to the north-northeast by the San Jacinto Fault and to the south-southwest by the Elsinore Fault. Locally the site is situated within the Menifee Valley, located between Perris Valley to the north and Paloma Valley to the south. Based on regional geologic mapping (USGS, 1991) the site is anticipated to be underlain by Holocene age, younger alluvium (Qya) partially derived from the older alluvium in the surrounding area. The alluvial material is reported to consist of unconsolidated gray to brown medium to coarse-grained sandy alluvium. The alluvial material is anticipated to be underlain at depth by cretaceous age volcanic rocks of the Peninsular Range batholith and Mesozoic age meta-sedimentary and volcanic rocks.

## **Earth Materials**

Exploratory borings performed by MTGL (2019) indicate that the site is underlain to a maximum-drilled depth of 51.5 feet by medium dense alluvial deposits. The alluvial deposits consist predominantly of dark reddish brown to brown clayey to silty sands and sandy silts. The alluvial deposits are reported to be generally moist and medium dense to stiff. Groundwater was not encountered to a maximum-drilled depth of 51.5-feet bgs.

## **GEOLOGIC HAZARDS**

### **Structure**

The alluvial deposits exposed at the site are generally massive clayey to silty sands and sandy silts with no significant geologic structure. The underlying bedrock is not exposed at the site, and is anticipated to be located at a depth of greater than 50-feet below existing ground surface. Since the bedrock is not present within sloping areas, and is covered by a massive sequence of alluvial deposits, there is no known adverse geologic bedding structure that is likely to affect stability at the site.

### **Slope Stability**

Our findings indicate that the site is composed of massive alluvial deposits with no significant geologic structure. No evidence of deep-seated gross instability was noted at the site during our literature and map review, or during MTGL's site-specific investigation. Based upon the past performance of the site and nearby slopes, the site appears to have performed well since the site was originally constructed.

Slope creep is not expected to be significant on this lot due to the relatively flat nature of the site. Other slope effects such as erosion should not adversely affect proposed improvements providing appropriate foundation setbacks are utilized, runoff is controlled and slopes and drainage features are properly maintained.

To our understanding, no slopes are planned as part of the proposed construction. Planned structures are expected to obtain bearing at depths and setbacks outside of the influence of the existing slopes and or adjacent retaining walls. Any planned building structures that are constructed along the top of slopes should be constructed with deepened foundation elements as necessary to maintain setbacks from the bottom of the footings at least equal to a horizontal distance of H/3 to the slope surface. Perimeter footings should not be allowed to surcharge existing retaining walls on adjoining properties. In general, these conditions are not expected to affect foundation construction based on current conceptual plans.

### **Groundwater**

Groundwater was not encountered during MTGL's site exploration to a maximum drilled depth of 51.5-feet bgs. Perched groundwater can occur at shallow depth within the alluvial deposits and at the alluvium-bedrock contact. Groundwater is anticipated to remain at depths greater than 50-feet and is not anticipated to be a significant design or construction constraint, provided proper surface drainage and subdrainage systems (if necessary) are incorporated into the project.

### **Water Infiltration**

Introduction of subsurface water could adversely impact the subject site and/or neighboring properties. In general, surface and subsurface drainage should be directed toward approved offsite outlets. If onsite

infiltration is proposed, additional infiltration testing should be performed for the subject site by the geotechnical consultant.

### **Surficial Runoff**

Proposed development should incorporate engineering and landscape drainage designed to transmit surface flow to the street and/or storm drain system via non-erosive pathways. Care should be taken to not allow water to pond or infiltrate soil adjacent to foundation elements.

### **Faulting / Seismic Considerations**

The major concern relating to geologic faults is ground shaking that affects many properties over a wide area. Direct hazards from faulting are essentially due to surface rupture along fault lines that could occur during an earthquake. Therefore, geologists have mapped fault locations and established a criteria for determining the risks of potential surface rupture based on the likelihood of renewed movement on faults that could be located under a site.

Based on criteria established by the California Division of Mines and Geology (CDMG), now referred to as the California Geological Survey (CGS), faults are generally categorized as active, potentially active or inactive (Jennings, 1994). The basic principle of faulting concern is that existing faults could move again, and that faults which have moved more recently are the most likely faults to move again and affect us. As such, faults have been divided into categories based on their age of last movement. Although the likelihood of an earthquake or movement to occur on a given fault significantly decreases with inactivity over geologic time, the potential for such events to occur on any fault cannot be eliminated within the current level of understanding.

By definition, faults with no evidence of surface displacement within the last 1.6 million years are considered inactive and generally pose no concern for earthquakes due to renewed movement. Potentially-active faults are those with the surface displacement within the last 1.6 million years. Further refinement of potentially active faults are sometimes described based on the age of the last known movement such as late Quaternary (last 700,000 years) implying a greater potential for renewed movement. In fact, most potentially active faults have little likelihood of moving within the time frame of construction life, but the degree of understanding of fault age and activity is sometimes not well understood due to absence of geologic data or surface information, so geologists have acknowledged this doubt by using the term "potentially active." A few faults that were once thought to be potentially active, have later been found to be active based on new findings and mapping. Active faults are those with a surface displacement within the last 11,000 years and therefore most likely to move again. The State of California has, additionally, mapped known areas of active faulting as designated Alquist-Priolo (A-P) "Special Studies Zones," which requires special investigations for fault rupture to limit construction over active faults.

The site is not located within a fault-rupture hazard zone as defined by the Alquist-Priolo Special Studies Zones Act (CDMG, 1974) and no evidence of active faulting has been reported onsite (Figure 1). Also, based on mapping by the State (CGS, 2010 and Jennings, 1994), there are no active faults mapped at the site. The site is however bounded to the north-northeast by the San Jacinto Fault Zone and to the south-southwest by the Elsinore Fault Zone. Both of these fault zones are considered active and capable of producing significant ground shaking (magnitude 8+) during a seismic event.

The closest major active faults to the site are the San Jacinto Fault located approximately 22.18 km north-northeast of the site and the Elsinore Fault located approximately 12.21 km to the south-southeast of the site (Figure 3).

### CBC Seismic Ground Motion Analysis

The seismic design criteria based on the 2016 California Building Code (CBC) is presented in the following table:

<i>Selected Seismic Design Parameters from 2016 CBC/ASCE 7-10</i>	<i>Seismic Design Values</i>	<i>Reference</i>
Latitude	33.6750 North	
Longitude	-117.1675 West	
Nearest Seismic Source	Elsinore Fault	USGS 2014
Distance to Nearest Seismic Source	7.6 Miles (12.2 km)	USGS 2014
Site Class per Table 20.3-1 of ASCE 7-10	D	OSHPD, 2019
Spectral Acceleration for Short Periods ( $S_s$ )	1.5 g	OSHPD, 2019
Spectral Accelerations for 1-Second Periods ( $S_1$ )	0.6 g	OSHPD, 2019
Site Coefficient $F_a$ , Table 11.4-1 of ASCE 7-10	1.000	OSHPD, 2019
Site Coefficient $F_v$ , Table 11.4-2 of ASCE 7-10	1.500	OSHPD, 2019
Design Spectral Response Acceleration at Short Periods ( $S_{DS}$ ) from Equation 11.4-4 of ASCE 7-10	1.0 g	OSHPD, 2019
Design Spectral Response Acceleration at 1-Second Period ( $S_{D1}$ ) from Equation 11.4-4 of ASCE 7-10	0.6 g	OSHPD, 2019
Peak Ground Acceleration ( $MCE_R$ ) Corrected for Site Class Effects from Equation 11.8-1 of ASCE 7-10	0.505 g	OSHPD, 2019
Seismic Design Category, Section 11.6 of ASCE 7-10	D	OSHPD, 2019

### Historical Seismicity

A search of recorded historical seismic events within a 50km radius of the subject site was performed using the USGS website. A total of 12 seismic events with a magnitude of 4.5 or greater have occurred within a 50km radius since 1900. The closest seismic event was a magnitude 5.3 earthquake that occurred on September 23, 1985, approximately, 21.4 km east of the site (N33.704N, W-116.938). The largest reported seismic event was a magnitude 6.7 earthquake (San Jacinto Earthquake) that occurred on April 21, 1918 approximately 24.8 km west of the site (N33.647, W-117.433). No earthquakes are reported to have occurred below the subject site, however, the site and surrounding area will be subject to significant shaking during seismic events on local and regional faults and future earthquakes should be anticipated.

### Secondary Seismic Hazards

Review of the Technical Background Report to the Safety Element of the General Plan -City of Menifee, Riverside County- (2010) indicates the site is not located within a zone of liquefaction or landslide susceptibility. These findings are in keeping with the results of our study.

Other secondary seismic hazards to the site include deep rupture, shallow ground cracking, lurching with lateral movement and settlement. With the absence of active faulting onsite, the potential for deep fault

rupture is not present. The potential for shallow ground cracking to occur during an earthquake is a possibility at any site, and may occur during significant seismic events on nearby faults. The potential for seismically induced lurching is considered low due to the gently sloping nature of the site and surrounding area. The potential for seismically induced settlement is considered moderate due to the presence of unconsolidated alluvial deposits underlying the site. The potential for settlement should be addressed during design and construction of the proposed improvements. The potential for tsunami inundation at the site elevation is nil.

The subject site is not located within a 100 or 500-year flood hazard area as identified by FEMA flood hazard maps and the City Menifee Safety Element (2010). The site is, however, located within a mapped potential dam inundation area.

## **CONCLUSION AND RECOMMENDATIONS**

Based on our limited engineering geologic hazard evaluation of the subject site and our understanding of the proposed improvements, construction of the proposed stadium structure and associated parking and support buildings appears feasible from an geologic hazard standpoint, providing our recommendations are considered during design, grading and construction of the proposed improvements.

### **Conclusions**

The geologic hazards at the site are primarily from shaking due to movement of nearby or distant faults during earthquake events. The site consists of a flat lot located on gently sloping alluvial deposits. There is no adverse geologic structure, active faulting beneath the site, shallow groundwater or other indications of geologic hazards that would affect the site as previously discussed.

- The subject site is anticipated to be underlain at depth by crystalline bedrock. The bedrock is overlain by alluvial deposits. The alluvial deposits are anticipated to generally consist of medium dense to stiff clayey to silty sands and sandy silts.
- No active faults are known to transect the site and therefore the site is not expected to be adversely affected by surface rupturing. It will, however, be affected by ground motions from earthquakes during the design life of the site. The potential for seismically induced liquefaction affecting the site is considered low.
- The potential for seismically induced settlement is considered moderate due to the presence of unconsolidated alluvial deposits underlying the site.
- Groundwater is not expected to be a concern during construction. Suitable drainage elements need to be installed at retaining walls to mitigate possible transient seepage.
- The potential for land sliding affecting the site is considered to be very low given the gently sloping nature of the site and the massive nature of the alluvial deposits underlying the site.

### **Recommendations**

Proposed improvements to the subject site should be designed and built in conformance with current California Building Code standards (CBSC, 2016) and ASCE standards (ASCE, 2010) as well as the requirements of the City of Menifee and County of Riverside. The recommendations provided by MTGL should also be implemented during design, grading and construction of the proposed improvements.



## Limitations

This report has been prepared for the exclusive use of our client, MTGL Inc, within the scope of services requested by our client for the specific property at 28237 La Piedra Road, City of Menifee described herein. This report or its contents should not be used or relied upon for other projects or purposes, or by other parties without the acknowledgement of AG and the consultation of a geotechnical professional. The means and methods used by AG for this study are based on local geotechnical standards of practice, care, and requirements of governing agencies. No warranty or guarantee, expressed or implied, is given.

Our findings, conclusions, and recommendations are professional opinions based on a review of available existing geologic/seismic data as well as site specific subsurface data collected at a given time by outside consultants. By nature, geologic conditions can vary from point to point, can be very different in-between exploration points, and can also change over time. Our conclusions and recommendations are, by nature, preliminary and subject to verification and/or modification during grading and construction when more subsurface data is exposed.

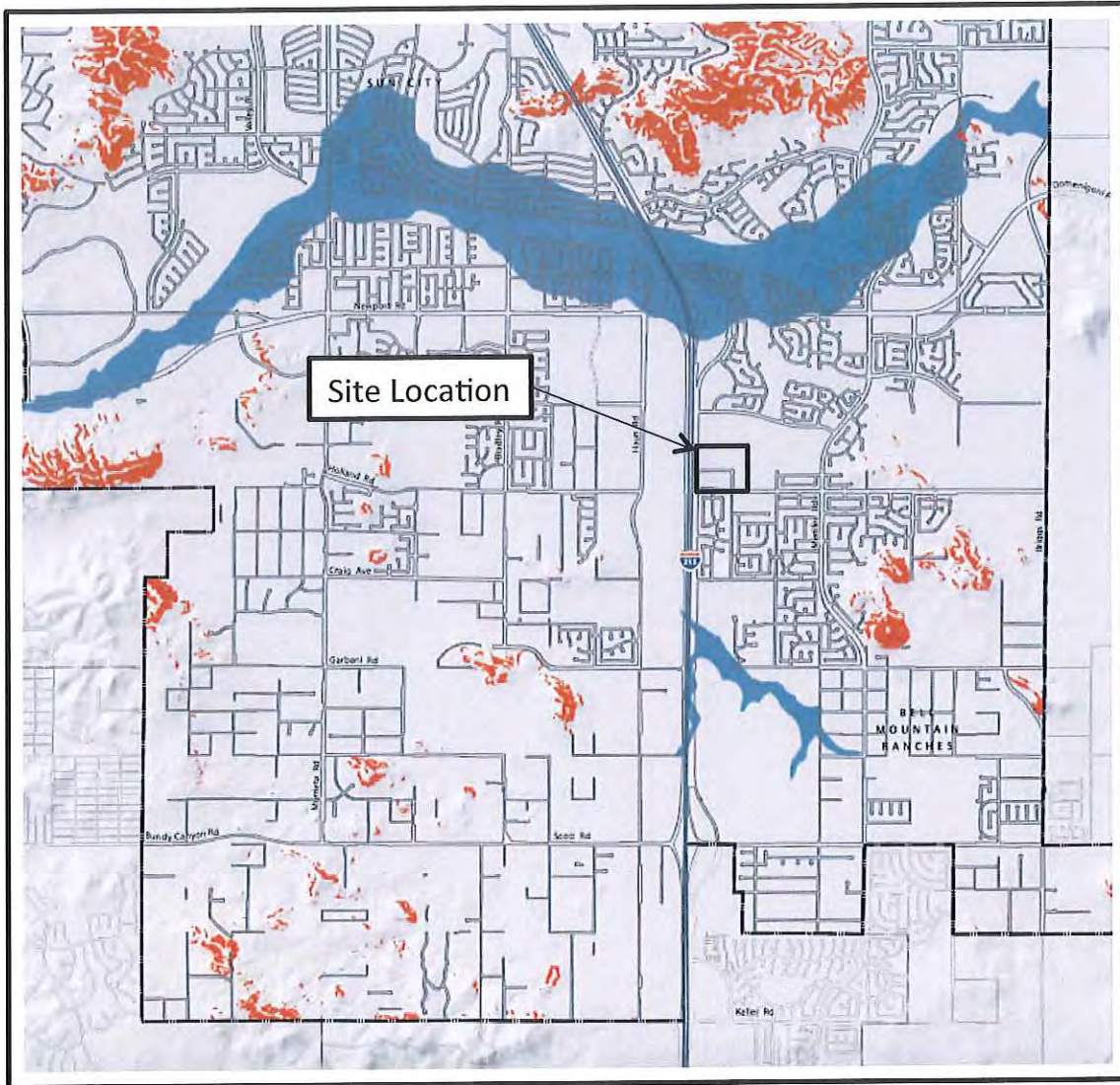
If you have any questions regarding this report, please contact our office. We appreciate the opportunity to provide our services.

Respectfully submitted,



Peter Anderson CEG 2596  
Principal Engineering Geologist



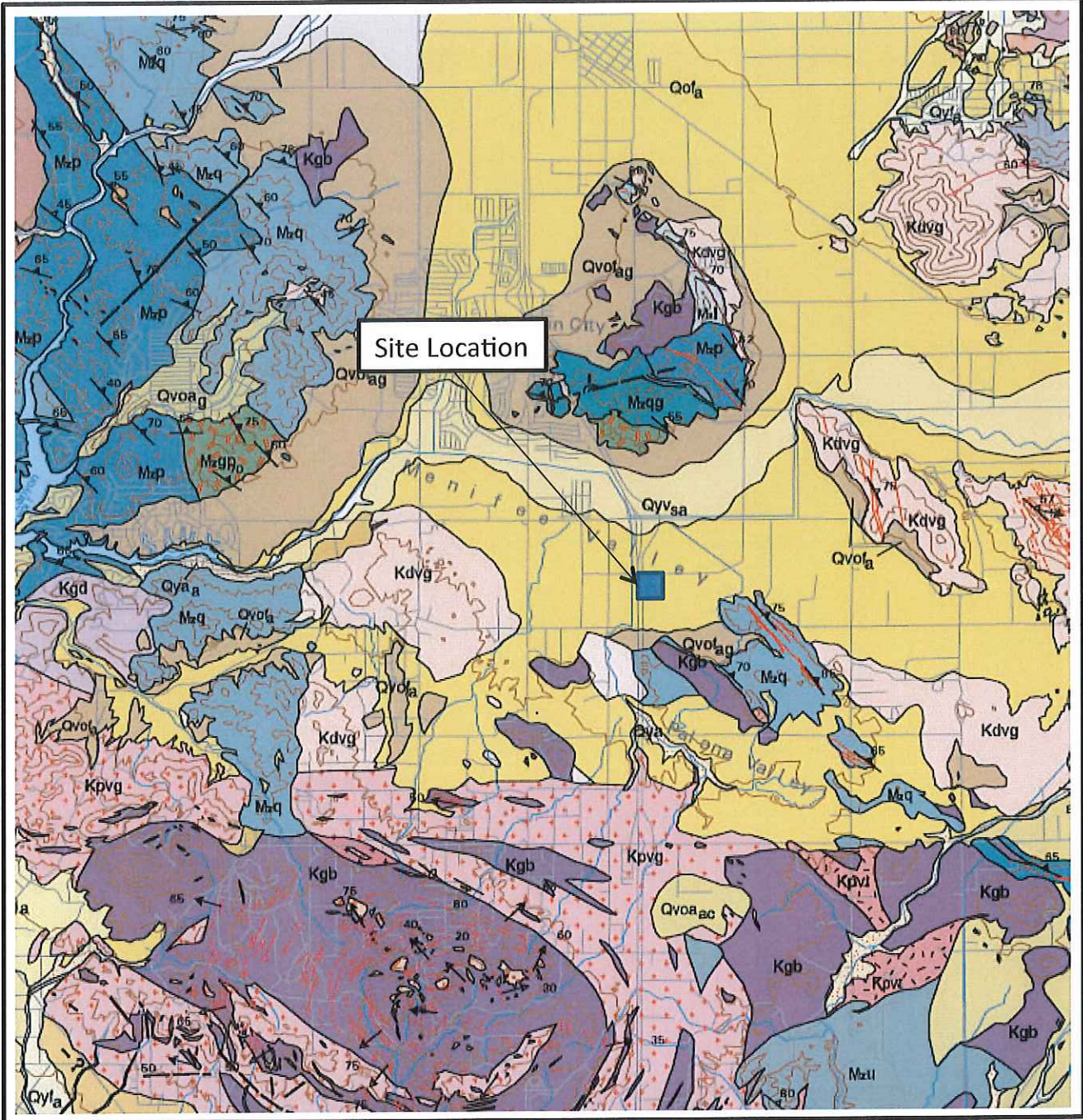


Source: City of Menifee General Plan-Safety Element, 2010

**SEISMIC HAZARDS**

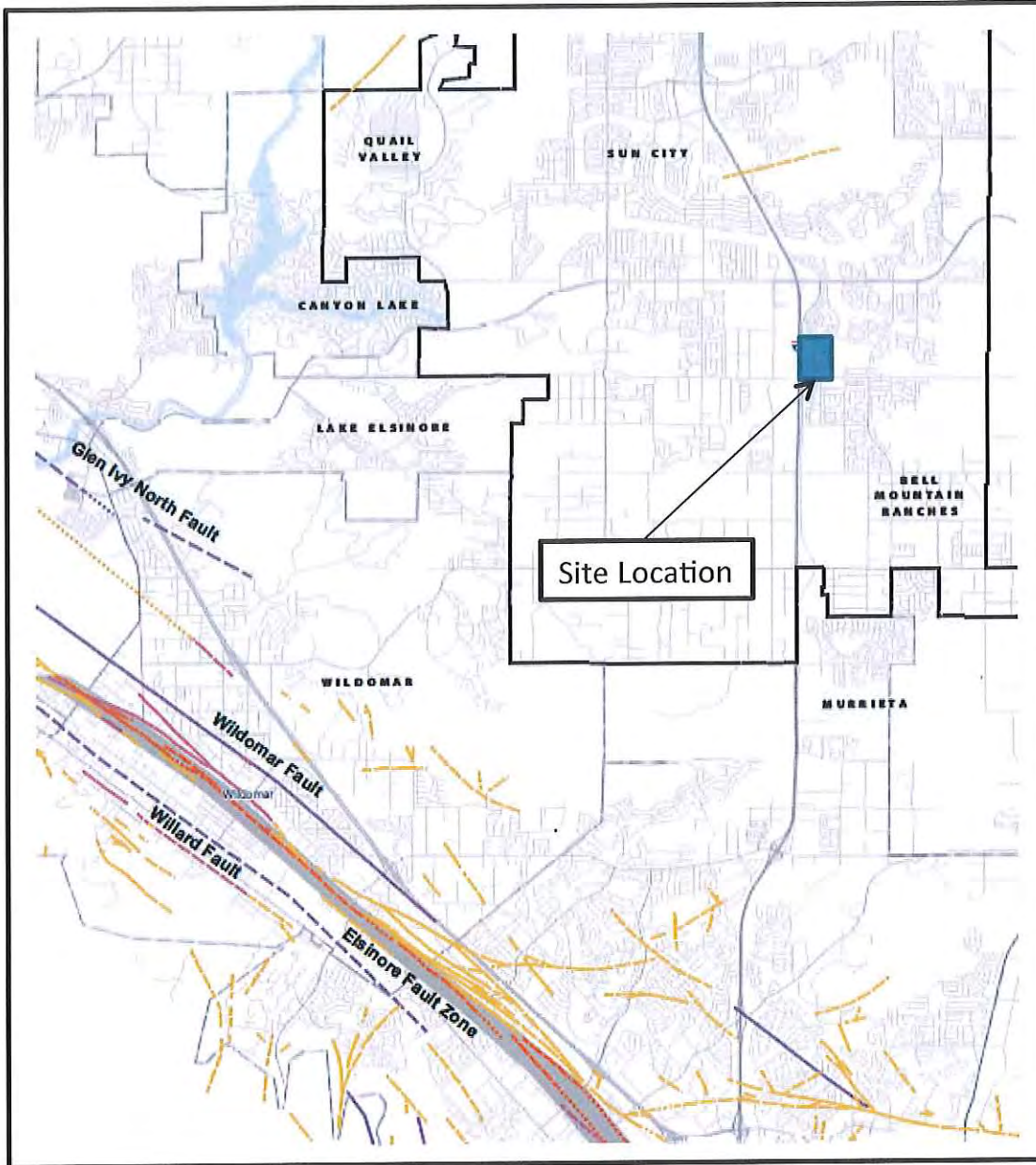
- Liquefaction: Areas where local geological and groundwater conditions suggest a potential for liquefaction.
- Landslide: Areas where local topographic and geological conditions suggest the potential for earthquake-induced landslides.

<b>Site Location and Seismic Hazard Map</b>		
<p>Mt. San Jacinto Community College 28237 La Piedra Road City of Menifee, California</p>	<p>Project Number: 19016-01 Date: August 2019 Figure No. 1</p>	



Source: Source: Santa Ana 30'x60' Quadrangle, USGS 2004

<b>Geologic Map</b>		<b>A/G</b>
<p>Mt. San Jacinto Community College 28237 La Piedra Road City of Menifee, California</p>	<p>Project Number: 19016-01 Date: August 2019 Figure No. 2</p>	



Source: City of Menifee General Plan-Safety Element, 2010

Active fault zoned under the Alquist-Priolo Earthquake Fault Zone Act. (CGS; 2002)

Fault that has not moved in the Holocene or late Pleistocene. (Morton & Miller; 2006)

Fault that has moved in the Holocene or late Pleistocene. (Morton & Miller; 2006)

Faults that has moved in the Quaternary. (Jennings; 1994)

Faults that predates the Quaternary. (Jennings; 1994)

----- Inferred Location

----- Inferred Location

----- Inferred Location

----- Inferred Location

----- Inferred Location

----- Approximate Location

----- Approximate Location

----- Approximate Location

----- Approximate Location

----- Approximate Location

----- Known Location

----- Known Location

----- Known Location

----- Known Location

----- Known Location

### Fault Map

Mt. San Jacinto Community College  
28237 La Piedra Road  
City of Menifee, California

Project Number: 19016-01  
Date: August 2019  
Figure No. 3



# 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.

## ^ Input

Edition

Dynamic: Conterminous U.S. 2014 (v4.

Spectral Period

Peak ground acceleration

Latitude

Decimal degrees

33.675

Time Horizon

Return period in years

2475

Longitude

Decimal degrees, negative values for western longitudes

-117.1675

Site Class

Please select...

^ Hazard Curve



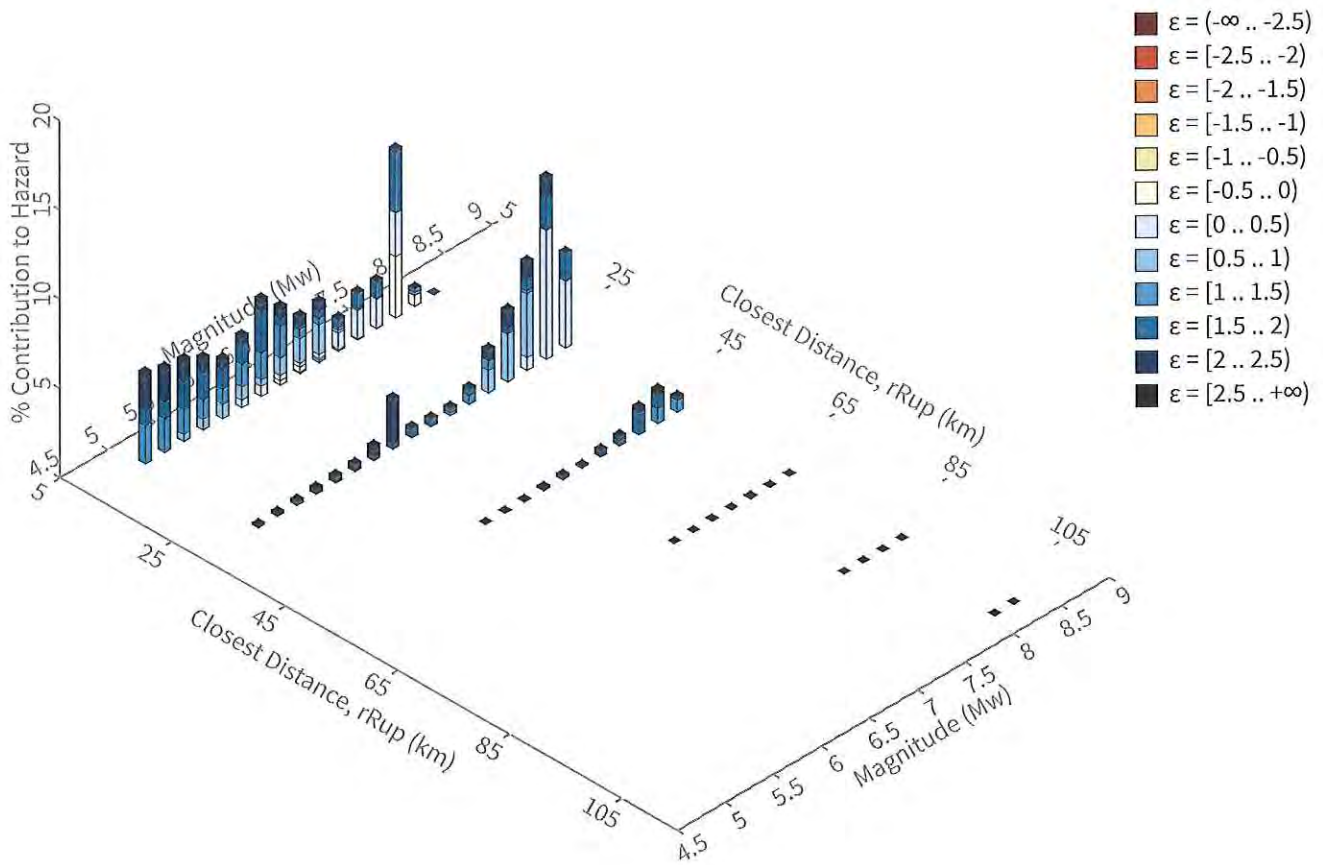
Please select "Edition", "Location" & "Site Class" above to compute a hazard curve.

Compute Hazard Curve

# ^ Deaggregation

Component

Total



# Summary statistics for, Deaggregation: Total

## Deaggregation targets

**Return period:** 2475 yrs  
**Exceedance rate:** 0.0004040404 yr<sup>-1</sup>  
**PGA ground motion:** 0.85498778 g

## Recovered targets

**Return period:** 2856.8418 yrs  
**Exceedance rate:** 0.00035003688 yr<sup>-1</sup>

## Totals

**Binned:** 100 %  
**Residual:** 0 %  
**Trace:** 0.12 %

## Mean (for all sources)

**r:** 17.43 km  
**m:** 6.94  
 **$\epsilon_0$ :** 1.24  $\sigma$

## Mode (largest r-m bin)

**r:** 22.33 km  
**m:** 8.1  
 **$\epsilon_0$ :** 0.81  $\sigma$   
**Contribution:** 10.12 %

## Mode (largest $\epsilon_0$ bin)

**r:** 22.18 km  
**m:** 8.1  
 **$\epsilon_0$ :** 0.36  $\sigma$   
**Contribution:** 7.21 %

## Discretization

**r:** min = 0.0, max = 1000.0,  $\Delta$  = 20.0 km  
**m:** min = 4.4, max = 9.4,  $\Delta$  = 0.2  
 **$\epsilon$ :** min = -3.0, max = 3.0,  $\Delta$  = 0.5  $\sigma$

## Epsilon keys

**$\epsilon 0$ :** [- $\infty$  .. -2.5)  
 **$\epsilon 1$ :** [-2.5 .. -2.0)  
 **$\epsilon 2$ :** [-2.0 .. -1.5)  
 **$\epsilon 3$ :** [-1.5 .. -1.0)  
 **$\epsilon 4$ :** [-1.0 .. -0.5)  
 **$\epsilon 5$ :** [-0.5 .. 0.0)  
 **$\epsilon 6$ :** [0.0 .. 0.5)  
 **$\epsilon 7$ :** [0.5 .. 1.0)  
 **$\epsilon 8$ :** [1.0 .. 1.5)  
 **$\epsilon 9$ :** [1.5 .. 2.0)  
 **$\epsilon 10$ :** [2.0 .. 2.5)  
 **$\epsilon 11$ :** [2.5 .. + $\infty$ ]



## Deaggregation Contributors

Source Set	Source	Type	r	m	$\epsilon_0$	lon	lat	az	%
UC33brAvg_FM32		System							31.81
	San Jacinto (Stepovers Combined) [2]		22.18	7.99	0.89	116.989°W	33.809°N	47.93	13.15
	Elsinore (Temecula) rev [0]		12.21	7.48	0.74	117.249°W	33.590°N	218.65	9.59
	Elsinore (Glen Ivy) rev [3]		19.07	6.44	1.72	117.373°W	33.685°N	273.48	1.87
	San Andreas (San Bernardino S) [6]		45.07	7.96	1.79	116.820°W	33.959°N	45.38	1.74
	Elsinore (Glen Ivy) rev [2]		24.66	6.53	1.96	117.428°W	33.721°N	282.02	1.53
UC33brAvg_FM31		System							31.69
	San Jacinto (Stepovers Combined) [2]		22.18	8.00	0.89	116.989°W	33.809°N	47.93	13.23
	Elsinore (Temecula) rev [0]		12.21	7.44	0.76	117.249°W	33.590°N	218.65	9.53
	Elsinore (Glen Ivy) rev [3]		19.07	6.44	1.72	117.373°W	33.685°N	273.48	1.83
	San Andreas (San Bernardino S) [6]		45.07	7.95	1.79	116.820°W	33.959°N	45.38	1.73
	Elsinore (Glen Ivy) rev [2]		24.66	6.50	1.98	117.428°W	33.721°N	282.02	1.47
UC33brAvg_FM31 (opt)		Grid							18.26
	PointSourceFinite: -117.168, 33.733		7.69	5.81	1.31	117.168°W	33.733°N	0.00	2.41
	PointSourceFinite: -117.168, 33.733		7.69	5.81	1.31	117.168°W	33.733°N	0.00	2.41
	PointSourceFinite: -117.168, 33.715		6.59	5.70	1.25	117.168°W	33.715°N	0.00	2.34
	PointSourceFinite: -117.168, 33.715		6.59	5.70	1.25	117.168°W	33.715°N	0.00	2.34
UC33brAvg_FM32 (opt)		Grid							18.24
	PointSourceFinite: -117.168, 33.733		7.69	5.81	1.31	117.168°W	33.733°N	0.00	2.40
	PointSourceFinite: -117.168, 33.733		7.69	5.81	1.31	117.168°W	33.733°N	0.00	2.40
	PointSourceFinite: -117.168, 33.715		6.59	5.70	1.25	117.168°W	33.715°N	0.00	2.34
	PointSourceFinite: -117.168, 33.715		6.59	5.70	1.25	117.168°W	33.715°N	0.00	2.34



# Mt San Jacinto CC

Latitude, Longitude: 33.6750, -117.1675



Date	4/15/2019, 10:47:55 AM
Design Code Reference Document	ASCE7-10
Risk Category	III
Site Class	D - Stiff Soil

Type	Value	Description
$S_S$	1.5	$MCE_R$ ground motion. (for 0.2 second period)
$S_1$	0.6	$MCE_R$ ground motion. (for 1.0s period)
$S_{MS}$	1.5	Site-modified spectral acceleration value
$S_{M1}$	0.9	Site-modified spectral acceleration value
$S_{DS}$	1	Numeric seismic design value at 0.2 second SA
$S_{D1}$	0.6	Numeric seismic design value at 1.0 second SA

Type	Value	Description
SDC	D	Seismic design category
$F_a$	1	Site amplification factor at 0.2 second
$F_v$	1.5	Site amplification factor at 1.0 second
PGA	0.505	$MCE_G$ peak ground acceleration
$F_{PGA}$	1	Site amplification factor at PGA
$PGA_M$	0.505	Site modified peak ground acceleration
$T_L$	8	Long-period transition period in seconds
$S_sRT$	1.759	Probabilistic risk-targeted ground motion. (0.2 second)
$S_sUH$	1.7	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration
$S_sD$	1.5	Factored deterministic acceleration value. (0.2 second)
$S_1RT$	0.672	Probabilistic risk-targeted ground motion. (1.0 second)
$S_1UH$	0.659	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration.
$S_1D$	0.6	Factored deterministic acceleration value. (1.0 second)
PGAd	0.505	Factored deterministic acceleration value. (Peak Ground Acceleration)

$C_{RS}$	1.035	Mapped value of the risk coefficient at short periods
$C_{R1}$	1.02	Mapped value of the risk coefficient at a period of 1 s

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**APPENDIX E**

**AGRICULTURAL SUITABILITY AND ANALYSIS REPORT**



Anaheim Office  
Lab No: 19-214-0010  
August 19, 2019

MTGL, Inc.  
2992 E. La Palma Ave., Suite A  
Anaheim, CA 92806

Attn: Pablo

**Project: MSJC Job# 8767A02**

Attached are the results of the analysis performed on a soil sample that was collected from the above mentioned project site by the client and received by our laboratory on 8/02/2019. This sample was analyzed for nutrient levels, agricultural suitability, and physical characteristics in preparation for a new landscape installation.

Analytical Results and Comments:

The texture of the soil is classified as a 'gravelly loam' based on the USDA soil classification standards. The estimated water infiltration rate, which may vary with the degree of soil compaction, is 0.28 inches per hour. Organic content is low indicated by the 0.3% by total dry weight reading.

The reaction of the soil is slightly alkaline at 7.6 on the pH scale, which could cause some plants to show yellowing of foliage beginning with the younger growth. Qualitative lime is favorably absent allowing for downward pH adjustment. Incorporating soil sulfur to a depth of 6 inches will adjust the pH downward. That change will happen slowly and most effectively to the depth of incorporation.

Salinity (ECe) is safely low at 1.4 dS/m. Soluble sodium is safely low and properly balanced by calcium and magnesium in regards to soil structure and water infiltration, as indicated by the safely low sodium adsorption ratio (SAR) of 4.5. Boron is safely and sufficient for plant nutrition measured at 0.36 ppm.

In terms of fertility, phosphorus and potassium levels are low. Nitrogen, calcium, and magnesium levels are sufficient for plant nutrition. With regard to the micronutrients, copper is ample while zinc, manganese, and iron levels are low.


Recommendations

Surface Soil Preparation for Turf, Groundcover, and Mass Planting

If feasible, prior to amending the areas where severe compaction exists, the surface soil should be ripped or tilled to a 9-inch depth. Uniformly broadcast and blend the following with existing soil to a 6-inch depth.

<u>Materials</u>	<u>Amount per 1000 sq.ft.</u>
Nitrogen fortified organic amendment (compost* or redwood or fir sawdust)	4 cu. yards
Soil Sulfur	8 lbs.
Triple superphosphate (0-45-0)	7 lbs.
Potassium sulfate (0-0-50)	10 lbs.

\* Rates and fertilizers may have to be adjusted depending on analysis of selected compost.

4741 East Hunter Ave., Ste. A Anaheim CA 92807  
(714) 282-8777  (714) 282-8575 fax  
www.waypointanalytical.com

## Tree and Shrub Planting Guidelines

1. Excavate planting pits at least twice the diameter of the rootball.
2. The top of the rootball should be at or slightly above final grade.
3. To improve soil chemistry, uniformly blend 2 lbs. of iron sulfate per cubic yard of backfill soil. Handle iron sulfate with caution since it will severely stain moist concrete.
4. Organic material is not required in the backfill; however if you wish, the amended surface soil or a soil blend consisting of no more than 20% by volume organic matter can be placed in the upper 12 inches of backfill only. Soil below this depth should not contain any added organic matter because of the threat of plant disease and/or anaerobic soil conditions developing.
5. Place slow release fertilizer tablets in the upper 12 inches of backfill at manufacturer's recommended rates. If fertilizer amended soil is used as a backfill the addition of slow release fertilizer tablets is not necessary.
6. Do not cover the original rootball with other soil. Ideally, a temporary soil berm is often constructed around the outer edge of the rootball to help channel water into the rootball and then into surrounding soil until roots are established in the backfill and the rootball is no longer the sole source of water for the plant.
7. Ideally, a weed and turf free zone, preferably 2-3 ft. in diameter, should be maintained just beyond the diameter of the planting hole. A 2-4 inch deep layer of coarse mulch can be placed around the tree or shrub; mulch should be kept a minimum 4-6 inches from the trunk.

## Maintenance Fertilization

For turf, groundcover, and mass planting areas, uniformly broadcast sulfur coated urea at the rate of 5 lbs. per 1000 sq. ft. The first application should occur approximately 30-45 days after planting, with repeat applications every 60-90 days or as growth and color dictate. In early fall and spring, substitute a complete fertilizer such as 16-6-8, or equal, for the sulfur coated urea at the rate of 6 lbs. per 1000 sq. ft. to ensure continuing supplies of phosphorus and potassium. Tree and shrub plantings can be maintained with the above fertilizers; however, the frequency between applications should be every 90-120 days, or as color and growth dictate, with the first application 90 days after planting. Follow each fertilization with a thorough irrigation. When plants have become well established, fertilizer applications can be less frequent.

As noted above, some of the micronutrients are below optimum. When these nutrients are low, especially in an alkaline soil, deficiencies can sometimes show in the plants. If deficiencies show once plants have become established, they may be addressed upon the first sign of deficiency. Symptoms of manganese deficiency may be seen as a general loss of color in the young leaves, followed by yellowing between veins and brownish-black spots appearing. Iron and zinc deficiency symptoms are often characterized by yellow, almost white, interveinal chlorosis on the youngest growth. If these symptoms are apparent once plants are established, then an application of iron, zinc, and/or manganese chelate at the manufacturer's label rate may improve appearance. Chelates are generally more effective on alkaline soils than some of the other forms of trace elements.

If we can be of any further assistance, please feel free to contact us.



Joe Kiefer



Project : MSJC

Job # 8767A02

Report No : 19-214-0010

Purchase Order :

Date Recd : 08/02/2019

Date Printed : 08/12/2019

Page : 1 of 1

### COMPREHENSIVE SOIL ANALYSIS

Sample Description - Sample ID	Half Sat %		pH	ECe dS/m	NO <sub>3</sub> -N ppm	NH <sub>4</sub> -N ppm	PO <sub>4</sub> -P ppm	K ppm	Ca ppm	Mg ppm	Cu ppm	Zn ppm	Mn ppm	Fe ppm	Organic % dry wt.	Lab No.
	TEC	Qual Lime														
Site Soil	17	7.6	None	1.4	13	21	6	23	2380	514	1.2	0.5	4	8	0.3	06858
	171	None														

Saturation Extract Values										Percent of Sample Passing 2 mm Screen					USDA Soil Classification	Lab No.
Ca meq/L	Mg meq/L	Na meq/L	K meq/L	B ppm	SO <sub>4</sub> meq/L	SAR	Gravel %		Sand			Silt	Clay			
4.2	2.6	8.3	0.1	0.36	8.4	4.5	Coarse 5-12	Fine 2-5	Very Coarse 1-2	Coarse 0.5-1	Med. to Very Fine 0.05-0.5	.002-.05	0-.002	06858		
							12.9	7.1	6.0	9.0	30.1	28.9	25.9	Gravelly Loam	06858	

Sufficiency factor (1.0=sufficient for average crop) below each nutrient value. N factor based on 200 ppm constant feed. SAR = Sodium adsorption ratio. Half Saturation %=approx field moisture capacity. Nitrogen(N), Potassium(K), Calcium(Ca) and Magnesium(Mg) by sodium chloride extraction. Phosphorus(P) by sodium bicarbonate extraction. Copper(Cu), Zinc(Zn), Manganese(Mn) & Iron(Fe) by DTPA extraction. Sat. ext. method for salinity (ECe as dS/m).Boron (B), Sulfate(SO<sub>4</sub>), Sodium(Na). Gravel fraction expressed as percent by weight of oven-dried sample passing a 12mm(1/2 inch) sieve. Particle sizes in millimeters. Organic percentage determined by Walkley-Black or Loss on Ignition.

\* LOW , SUFFICIENT , HIGH

Page 3 of 3



## COMPREHENSIVE SOIL ANALYSIS

Sample Description - Sample ID	Half Sat %	pH	ECe dS/m	NO <sub>3</sub> -N ppm	NH <sub>4</sub> -N ppm	PO <sub>4</sub> -P ppm	K ppm	Ca ppm	Mg ppm	Cu ppm	Zn ppm	Mn ppm	Fe ppm	Organic % dry wt.	Lab No.
	TEC	Qual Lime													
Site Soil	17	7.6	1.4	13	21	6	23	2380	514	1.2	0.5	4	8	0.3	06858
	171	None													

Sufficiency Factors									
Percent of Sample Passing 2 mm Screen									
Gravel %			Sand			Clay			
Coarse 5 - 12	Fine 2 - 5	SAR	Very Coarse 1 - 2	Coarse 0.5 - 1	Med. to Very Fine 0.05 - 0.5	Silt .002-.05	Clay 0-.002		Lab No.
12.9	7.1	4.5	6.0	9.0	30.1	28.9	25.9		06858

Saturation Extract Values									
Ca meq/L	Mg meq/L	Na meq/L	K meq/L	B ppm	SO <sub>4</sub> meq/L	USDA Soil Classification			
4.2	2.6	8.3	0.1	0.36	8.4	Gravelly Loam			

Sufficiency factor (1.0=sufficient for average crop) below each nutrient value. N factor based on 200 ppm constant feed. SAR = Sodium adsorption ratio. Half Saturation %=approx field moisture capacity. Nitrogen(N), Potassium(K), Calcium(Ca) and Magnesium(Mg) by sodium chloride extraction. Phosphorus(P) by sodium bicarbonate extraction. Copper(Cu), Zinc(Zn), Manganese(Mn) & Iron(Fe) by DTPA extraction. Sat. ext. method for salinity (ECe as dS/m), Boron (B), Sulfate(SO<sub>4</sub>), Sodium(Na). Gravel fraction expressed as percent by weight of oven-dried sample passing a 12mm(1/2 inch) sieve. Particle sizes in millimeters. Organic percentage determined by Walkley-Black or Loss on Ignition.

\* LOW , SUFFICIENT , HIGH

**APPENDIX F**

**STANDARD GRADING SPECIFICATIONS**

## APPENDIX F

### GENERAL EARTHWORK AND GRADING SPECIFICATIONS

#### GENERAL

These specifications present general procedures and requirements for grading and earthwork as shown on the approved grading plans, including preparation of areas to be filled, placement of fill, installation of subdrains, and excavations. The recommendations contained in the attached geotechnical report are a part of the earthwork and grading specifications and shall supersede the provisions contained herein in the case of conflict. Evaluations performed by the Consultant during the course of grading may result in new recommendations, which could supersede these specifications, or the recommendations of the geotechnical report.

#### EARTHWORK OBSERVATION AND TESTING

Prior to the start of grading, a qualified Geotechnical Consultant (Geotechnical Engineer and Engineering Geologist) shall be employed for the purpose of observing earthwork procedures and testing the fills for conformance with the recommendations of the geotechnical report and these specifications. It will be necessary that the Consultant provide adequate testing and observation so that he may determine that the work was accomplished as specified. It shall be the responsibility of the Contractor to assist the Consultant and keep them apprised of work schedules and changes so that he may schedule his personnel accordingly.

It shall be the sole responsibility of the Contractor to provide adequate equipment and methods to accomplish the work in accordance with applicable grading codes or agency ordinances, these specifications and the approved grading plans.

Maximum dry density tests used to determine the degree of compaction will be performed in accordance with the American Society for Testing and Materials Test Method (ASTM) D1557.

#### PREPARATION OF AREAS TO BE FILLED

Clearing and Grubbing: All brush, vegetation and debris shall be removed or piled and otherwise disposed of.

Processing: The existing ground which is determined to be satisfactory for support of fill shall be scarified to a minimum depth of 6 inches. Existing ground, which is not satisfactory, shall be overexcavated as specified in the following section.

Overexcavation: Soft, dry, spongy, highly fractured or otherwise unsuitable ground, extending to such a depth that surface processing cannot adequately improve the condition, shall be overexcavated down to firm ground, approved by the Consultant.

Moisture conditioning: Overexcavated and processed soils shall be watered, dried-back, blended, and mixed as required to have a relatively uniform moisture content near the optimum moisture content as determined by ASTM D1557.

Recompaction: Overexcavated and processed soils, which have been mixed, and moisture conditioned uniformly shall be recompacted to a minimum relative compaction of 90 percent of ASTM D1557.

Benching: Where soils are placed on ground with slopes steeper than 5:1 (horizontal to vertical), the ground shall be stepped or benched. Benches shall be excavated in firm material for a minimum width of 4 feet.

#### FILL MATERIAL

General: Material to be placed as fill shall be free of organic matter and other deleterious substances, and shall be approved by the Consultant.

Oversize: Oversized material defined as rock, or other irreducible material with a maximum dimension greater than 12 inches, shall not be buried or placed in fill, unless the location, material, and disposal methods are specifically approved by the Consultant. Oversize disposal operations shall be such that nesting of oversized material does not occur, and such that the oversize material is completely surrounded by compacted or densified fill. Oversize material shall not be placed within 10 feet vertically of finish grade or within the range of future utilities or underground construction, unless specifically approved by the Consultant.

Import: If importing of fill material is required for grading, the import material shall meet the general requirements.

## FILL PLACEMENT AND COMPACTION

Fill Lifts: Approved fill material shall be placed in areas prepared to receive fill in near-horizontal layers not exceeding 6 inches in compacted thickness. The Consultant may approve thicker lifts if testing indicates the grading procedures are such that adequate compaction is being achieved with lifts of greater thickness. Each layer shall be spread evenly and shall be thoroughly mixed during spreading to attain uniformity of material and moisture in each layer.

Fill Moisture: Fill layers at a moisture content less than optimum shall be watered and mixed, and wet fill layers shall be aerated by scarification or shall be blended with drier material. Moisture conditioning and mixing of fill layers shall continue until the fill material is at uniform moisture content at or near optimum.

Compaction of Fill: After each layer has been evenly spread, moisture conditioned, and mixed, it shall be uniformly compacted to not less than 90 percent of maximum dry density in accordance with ASTM D1557. Compaction equipment shall be adequately sized and shall be either specifically designed for soil compaction or of proven reliability, to efficiently achieve the specified degree of compaction.

Fill Slopes: Compacting on slopes shall be accomplished, in addition to normal compacting procedures, by backrolling of slopes with sheepsfoot rollers at frequent increments of 2 to 3 feet as the fill is placed, or by other methods producing satisfactory results. At the completion of grading, the relative compaction of the slope out to the slope face shall be at least 90 percent in accordance with ASTM D1557.

Compaction Testing: Field tests to check the fill moisture and degree of compaction will be performed by the consultant. The location and frequency of tests shall be at the consultant's discretion. In general, these tests will be taken at an interval not exceeding 2 feet in vertical rise, and/or 1,000 cubic yards of fill placed. In addition, on slope faces, at least one test shall be taken for each 5,000 square feet of slope face and/or each 10 feet of vertical height of slope.

## SUBDRAIN INSTALLATION

Subdrain systems, if required, shall be installed in approved ground to conform to the approximate alignment and details shown on the plans or herein. The subdrain location or materials shall not be changed or modified without the approval of the Consultant. The Consultant, however, may recommend and, upon approval, direct changes in subdrain line, grade or materials. All subdrains should be surveyed for line and grade after installation and sufficient time shall be allowed for the surveys, prior to commencement of fill over the subdrain.

## EXCAVATION

Excavations and cut slopes will be examined during grading. If directed by the Consultant, further excavation or overexcavation and refilling of cut areas, and/or remedial grading of cut slopes shall be performed. Where fill over cut slopes are to be graded, unless otherwise approved, the cut portion of the slope shall be made and approved by the Consultant prior to placement of materials for construction of the fill portion of the slope.

**APPENDIX G**  
**PERCOLATION TESTING**

**PERCOLATION TEST DATA**

Project:	Menifee Stadium	Project No:	8767A02	Date:	8/10/2019
Test Hole No.:	P-1	Tested by:	J. Vargas		
Depth of Hole (in), <b>D<sub>f</sub></b> :	132	USCS Soil Classification:	SM		
Test Hole Dimensions (inches)			Length	Width	
Diameter (inches) =	8	Sides (if rectangular) =	N/A	N/A	

**Sandy Soil Criteria Test \***

Trial No.	Start Time	Stop Time	Time Interval, (min.)	Initial Depth to Water (in)	Final Depth to Water (in)	Change in Water Level (in)	Greater than or Equal to 6" (y/n)
1	11:18 AM	11:43 AM	25	101.00	106	5	No

\*If two consecutive measurements show that six inches of water seeps away in less than 25 minutes, the test shall be run for an additional hour with measurements taken every 10 minutes. Otherwise, pre-soak (fill) overnight. Obtain at least twelve measurements per hole over at least six hours (approximately 30 minute intervals) with a precision of at least 0.25".

Trial No.	Start Time	Stop Time	$\Delta t$ Time Interval (min)	<b>D<sub>o</sub></b> Initial Depth to Water (in)	<b>D<sub>f</sub></b> Final Depth to Water (in)	$\Delta D$ Change in Water Level (in)	Percolation Rate (min/in)
1	11:50 AM	12:20 PM	30	105.00	118.00	13.00	2.31
2	12:20 PM	12:50 PM	30	107.00	116.00	9.00	3.33
3	12:50 PM	1:20 PM	30	109.00	115.00	6.00	5.00
4	1:20 PM	1:50 PM	30	109.00	116.00	7.00	4.29
5	1:50 PM	2:20 PM	30	109.25	116.00	6.75	4.44
6	2:20 PM	2:50 PM	30	111.00	119.00	8.00	3.75
7	2:50 PM	3:20 PM	30	109.00	114.00	5.00	6.00
8	3:20 PM	3:50 PM	30	109.75	114.00	4.25	7.06
9	3:50 PM	4:20 PM	30	108.00	112.00	4.00	7.50
10	4:20 PM	4:50 PM	30	110.00	113.00	3.00	10.00
11	4:50 PM	5:20 PM	30	109.00	112.00	3.00	10.00
12	5:20 PM	5:50 PM	30	107.00	110.00	3.00	10.00
13							
14							
15							

COMMENTS:



**PERCOLATION TEST DATA**

Project:	Menifee Stadium	Project No:	8767A02	Date:	8/10/2017
Test Hole No.:	P-2	Tested by:	J. Vargas		
Depth of Hole (in), $D_T$ :	60	USCS Soil Classification:	CL		
Test Hole Dimensions (inches)			Length	Width	
Diameter (inches) =	8	Sides (if rectangular) =	N/A	N/A	

**Sandy Soil Criteria Test \***

Trial No.	Start Time	Stop Time	Time Interval, (min.)	Initial Depth to Water (in)	Final Depth to Water (in)	Change in Water Level (in)	Greater than or Equal to 6" (y/n)
1	10:40 AM	11:05 AM	25	78.25	78.5	0.25	No

\*If two consecutive measurements show that six inches of water seeps away in less than 25 minutes, the test shall be run for an additional hour with measurements taken every 10 minutes. Otherwise, pre-soak (fill) overnight. Obtain at least twelve measurements per hole over at least six hours (approximately 30 minute intervals) with a precision of at least 0.25".

Trial No.	Start Time	Stop Time	$\Delta t$ Time Interval (min)	$D_o$ Initial Depth to Water (in)	$D_f$ Final Depth to Water (in)	$\Delta D$ Change in Water Level (in)	Percolation Rate (min/in)
1	11:06 AM	11:36 AM	30	78.50	78.75	0.25	120.00
2	11:36 AM	12:06 PM	30	78.75	79.00	0.25	120.00
3	12:06 PM	12:36 PM	30	79.00	79.25	0.25	120.00
4	12:36 PM	1:06 PM	30	78.50	78.75	0.25	120.00
5	1:06 PM	1:36 PM	30	78.50	78.75	0.25	120.00
6	1:36 PM	2:06 PM	30	78.25	78.50	0.25	120.00
7	2:06 PM	2:36 PM	30	78.25	78.75	0.50	60.00
8	2:36 PM	3:06 PM	30	78.00	78.25	0.25	120.00
9	3:06 PM	3:36 PM	30	78.50	79.00	0.50	60.00
10	3:36 PM	4:06 PM	30	78.00	78.25	0.25	120.00
11	4:06 PM	5:06 PM	30	78.00	78.25	0.25	120.00
12	4:36 PM	5:50 PM	30	78.50	78.75	0.25	120.00
13							
14							
15							

COMMENTS:

**PERCOLATION TEST DATA**

Project:	Menifee Stadium	Project No:	8767A02	Date:	8/10/19
Test Hole No.:	P-3	Tested by:	J. Vargas		
Depth of Hole (in), <b>D<sub>T</sub></b> :	132	USCS Soil Classification:	CL		
Test Hole Dimensions (inches)			Length	Width	
Diameter (inches) =	8	Sides (if rectangular) =	N/A	N/A	

Sandy Soil Criteria Test \*

Trial No.	Start Time	Stop Time	Time Interval, (min.)	Initial Depth to Water (in)	Final Depth to Water (in)	Change in Water Level (in)	Greater than or Equal to 6" (y/n)
1	10:35 AM	11:00 AM	25	113.00	113	0	No

\*If two consecutive measurements show that six inches of water seeps away in less than 25 minutes, the test shall be run for an additional hour with measurements taken every 10 minutes. Otherwise, pre-soak (fill) overnight. Obtain at least twelve measurements per hole over at least six hours (approximately 30 minute intervals) with a precision of at least 0.25".

Trial No.	Start Time	Stop Time	<b>Δt</b> Time Interval (min)	<b>D<sub>o</sub></b> Initial Depth to Water (in)	<b>D<sub>f</sub></b> Final Depth to Water (in)	<b>ΔD</b> Change in Water Level (in)	Percolation Rate (min/in)
1	11:02 AM	12:32 PM	30	113.00	113.25	0.25	120.00
2	12:20 PM	12:50 PM	30	113.25	113.50	0.25	120.00
3	12:50 PM	1:20 PM	30	113.25	113.50	0.25	120.00
4	1:20 PM	1:50 PM	30	112.00	112.75	0.75	40.00
5	1:50 PM	2:20 PM	30	112.00	112.50	0.50	60.00
6	2:20 PM	2:50 PM	30	112.50	112.75	0.25	120.00
7	2:50 PM	3:20 PM	30	112.50	112.75	0.25	120.00
8	3:20 PM	3:50 PM	30	112.00	112.50	0.50	60.00
9	3:50 PM	4:20 PM	30	112.00	112.25	0.25	120.00
10	4:20 PM	4:50 PM	30	112.00	112.25	0.25	120.00
11	4:50 PM	5:20 PM	30	112.25	112.50	0.25	120.00
12	5:20 PM	5:50 PM	30	110.50	110.75	0.25	120.00
13							
14							
15							

COMMENTS: