



Project No.: S24088

April 16, 2024

Bryce Swetek, P.E.
Engineering Manager
via: bswetek@montsan.org
Montecito Sanitary District
1042 Monte Cristo Lane
Santa Barbara, CA 93108

RE: Structural Engineering Services for:

Montecito Sanitary District - WWTP Seismic Risk Assessment & Materials Study

1042 Monte Cristo Ln, Montecito, CA 93108

Dear Mr. Swetek,

We are excited to have the opportunity to propose our structural approach for this project. We have included herein our discussed level of service for Structural Engineering design.

We believe we bring you the following distinct advantages by using SSG for this project:

- 1) *Central Coast local*: with impromptu meetings or consultations available with minimal notice providing instant feedback for Staff and Consultants. In addition, we are a long-standing member of the Central Coast with our roots back to 1984, a place we care deeply for.
- 2) *Experience*: SSG and its employees have completed numerous Seismic Retrofit projects of varying structural systems, this demonstrates a keen understanding of the process involved in projects of this significance. Our staff is experienced, and licensed. We do not use under-experienced staff on projects of this stature, as it takes a keen understanding of higher order analysis.
- 3) *Relationships*: our personal working relationship with your staff and consultants is one of respect built on successful history of projects and servicing end clients with successful results. In addition, we have partnered with our normal teaming partners with successful delivery of large projects in this type of work, Earth Systems Pacific and Evan Reis Consulting.
- 4) *Communication*: we focus on clear and concise communication through all means possible, graphical, verbal and written. You have access to us at all reasonable hours, through several methods: email, phone and even in person!
- 5) *Defensible Construction Documents*: we take pride when a collection of bids for a client's project results in a tight grouping of construction costs. Using this as an indicator as a set of well-coordinated documents by the Design Team, we strive toward this goal. The property owner is best served when this is the norm and not the exception. It can also lead to much easier



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construction efforts, and a limited number of costly delays or time-consuming change order processing.

We have reviewed the Request for Proposal prepared by the Montecito Sanitary District, dated April 2, 2024. Based on this document, we have prepared the following Structural Engineering Services proposal for your consideration.

We welcome the opportunity to collaborate with staff and your consultant team as this project comes quickly to fruition. Should you have any questions, please feel free to contact our office.

Sincerely yours,

A handwritten signature in blue ink, appearing to read 'Michael E. Parolini', with a stylized flourish at the end.

Michael E. Parolini, P.E., S.E.
CA License No. S5405 & C69340



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Experience and Qualifications

Firm History:

SSG Structural Engineers, LLP is a California Limited Liability Partnership and a full-service professional structural engineering firm headquartered in San Luis Obispo.

40 years ago, in 1984, Michael F. Smith began a professional engineering firm in San Luis Obispo, California, focusing on structural engineering projects. In the spring of 2011, Mr. Smith partnered with two former employees, Lee Engelmeier and Michael Parolini, to rebrand as Smith Structural Group, which was then officially shortened to the current SSG Structural Engineers, LLP in 2018. Over the years we have continued to grow and expand in engineering experience and project scope, handling all different project types, sizes, and delivery methods. The SSG partners and staff combine for over 150 years of consulting structural engineering experience. While we are highly experienced, it should be noted that we are a firm of a single speciality. We are not a jack of all trades. We do one thing, and we do it exceptionally well. This office specializes in providing professional, complete, and responsible structural engineering services. SSG puts great importance on cost effective design, comprehensive and complete construction documents, and clear, timely communication to maintain a positive working relationship with our clients and consultants. We are committed to providing our clients the highest level of quality and service each project deserves.

The partnership between Mr. Smith, Mr. Engelmeier, and Mr. Parolini, along with the staff, consultants, and advisors of SSG Structural Engineers, LLP combine for over 250 individual years of consulting structural engineering experience in California. This office specializes in providing professional, complete and responsible Structural Engineering Services. We strive to uphold the highest standards of professionalism, quality control, communication, and representation in all projects.



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Company: SSG Structural Engineers, LLP (A California Limited Liability Partnership)

EIN: 45-1863270

Address: Central Coast: 811 El Capitan Way, Suite 240 San Luis Obispo, CA 93401
Central Valley: 8405 N. Fresno St., Ste. 120 Fresno, CA 93720
So. Central Valley 1800 21st Street, Suite C Bakersfield, CA 93301

Phone: (805) 439-2110 **Website:** www.ssgse.com

Registration: California Licensed Structural Engineer (6)
 California Licensed Civil Engineer (10)
 Other State Registrations as noted in resume briefs

Staff: 10: Licensed Engineers (6 Structural Engineers, 10 Professional Engineers)
 1: Staff Engineer-In-Training (EIT)
 7: Computer Aided Drafting Support Staff
 3: Administration

Consultant Qualifications:

Below is general information concerning the Consultant’s qualifications and descriptions of at least 3 relevant projects.

Michael Parolini was the Structural Engineer of Record for each of the following projects. Joe Klimczyk and Cheyne Kight, both were involved in the Structural Design of the projects.

County of San Luis Obispo Facilities Portfolio Seismic Risk Assessment

Location: San Luis Obispo County	Project Type/Delivery Method: Municipal / Evaluation
Date of Project Work: July 2023 - Present	Length of Project: TBD



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Contract Value: \$49,200	Project Owner: South San Luis Obispo County Sanitation District
Project Contact: Jeremy Ghent P.E. Phone: 805.489.6666 E-mail: jeremy@sslocsd.us	
Project Description: In-Ground Secondary Clarifier of Reinforced Concrete. Evaluation and determination of reasons for failure of newly constructed basin. The evaluation included coordination of material testing for in-situ concrete. The project is currenting in demolition and reconstruction. SSGSE was not the original designer of the project and provided expert PEER review of the evaluation and redesign.	

Anderson Hotel Seismic Retrofit

Location: San Luis Obispo, CA	Project Type/Delivery Method: Municipal / Design Assist
Date of Project Work: June 2021 -	Length of Project: 3 years
Contract Value: \$520,000	Project Owner: Housing Authority of San Luis Obispo
Project Contact: Michael Burke Phone: 805.594.5330 E-mail: mburke@haslo.org	
Project Description: Seismic retrofit of 1920's era non-ductile concrete building. The 6-story building in downtown San Luis Obispo is housing for the community's most vulnerable population. The retrofit is driven by insurance requirements of tax-credit investors and acceptable risk. This quantifiable risk model is designed to meet the requirements of these investors along with building code requirements. The Project is currently scheduled to complete construction in Fall 2024 and the Structural work is substantially complete.	



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Santa Paula High School McMahan Gymnasium Seismic Retrofit

Location: Santa Paula, CA	Project Type/Delivery Method: Education / Design-Bid-Build
Date of Project Work: 2019-2023	Length of Project: 4 years
Contract Value: \$95,000	Project Owner: Santa Paula Unified School District
Project Contact: Doug Henning Phone: 805.861.8353 E-mail: dhenning@santapaulaunified.org	
Project Description: Seismic evaluation and retrofit of 1950's post-war era Concrete gymnasium building. Gained DSA approval as prime consultant and construction completed in late 2023.	

Proposed Personnel:

SSG Structural Engineers

Michael Parolini, S.E.
Joe Klimczyk, S.E.
Cheyne Kight, S.E.
Support Engineers

Reis Consulting

Evan Reis, S.E.

Earth Systems Pacific

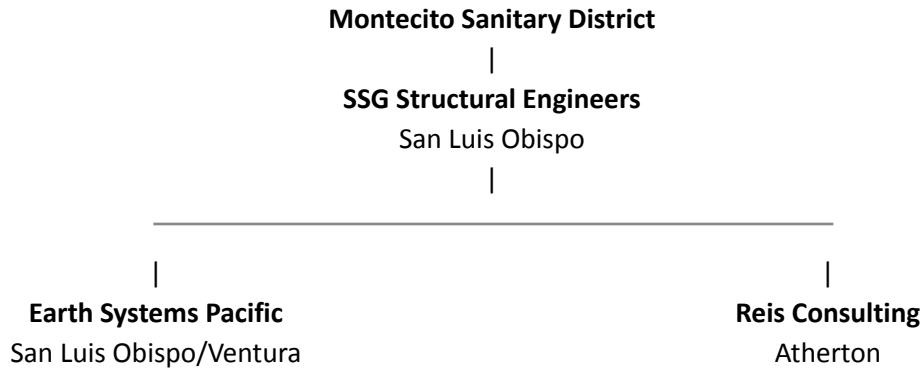
Robert Down, P.E.
Darrin Hasham, P.G., C.E.G.
Anthony Mazzei, P.E., G.E.
Todd Tranby, P.G., C.E.G.
William Grieder
David Burns
Karim Tadrous



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Brief Org Chart:



Client References:

Jeremy Ghent P.E., District Administrator, South San Luis Obispo County Sanitation District
805.489.6666 | jeremy@sslccsd.us

Michael Burke, Director of Construction and Development, Housing Authority of San Luis Obispo
805.594.5330 | MBurke@haslo.org

Douglas Henning, Facilities & Construction Manager, Santa Paula Unified School District
805-861-8353 | dhenning@santapaulausd.org



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Project Understanding and Approach

TASK 1: PROJECT MANAGEMENT, QUALITY ASSURANCE/QUALITY CONTROL, AND MEETINGS

This task includes project management and coordination activities as well as quality control/assurance, and meetings with the project team.

Task 1.1 Project Management. SSGSE will Monitor and coordinate the budget, schedule, subconsultants and the internal project team. Prepare monthly invoices and updated schedule.

The District's Project Manager will coordinate access to the WWTP and specific facilities within the study site as needed by SSGSE.

Task 1.2 Quality Control/Quality Assurance. Review and quality control all deliverables prior to submittal to the District.

Task 1.3 Meetings. Anticipated meetings include:

- Project kick-off meeting (on-site).
- Meeting with Consultants from MKN/Southland (remote)
- Draft Field Sampling Plan review meeting (remote).
- Draft WWTP Seismic and Materials Study review meeting (remote).
- Impromptu Meetings as they arise, or pseudo regular project updates (remote).

Prepare agenda and conduct kick-off meeting with District staff to review project scope and District's and SSGSE's expectations. Prepare a schedule for completion of the Study to be discussed at kick-off meeting. Include milestone dates for submittals and review meetings. SSGSE will anticipate two weeks for District review of each submittal. SSGSE will prepare and distribute meeting summaries following meetings.

TASK 2: REVIEW EXISTING INFORMATION

SSGSE will review and assess existing data relevant to the objectives of the Study. Such data may include record drawings of the WWTP, including treatment processes and building facilities, as well as geotechnical reports based on the WWTP or near the area.

TASK 3: FIELD INVESTIGATION AND TESTING – TREATMENT PROCESS FACILITIES



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After review of existing information, SSGSE will perform field investigation and testing activities on select treatment process facilities, as needed, to collect information for analysis. The selected treatment process facilities are identified below and are shown on Attachment A:

- Aeration Basins 1 and 2
- Secondary Clarifiers 1, 2, 3, and 4
- Chlorine Contact Chambers 1 and 2

SSGSE will consider the following activities and underlying goals as a basis for the field investigation and testing:

- Seismic Evaluations Tier 2 to Tier 3 per ASCE 41-17 or 23
 - Identify deficiencies in primary structural components.
 - Identify deficiencies in ancillary or non-structural components, such as pipe supports, walkways, and railing.
 - Identify retrofit procedures/alternatives.
- Ground Penetrating Radar (GPR)
 - Identify rebar quality/spacing and potential voids in concrete.
- Concrete Petrographic Testing
 - Identify potential of Alkali-silica reaction (ASR) in concrete.
- Concrete Core Testing
 - Identify concrete compressive strength, density, permeability, and other properties.
- Geotechnical Engineering
 - Borings and testing are required to ascertain the geologic vulnerability to seismic hazards
 - The quantity of and type of subterranean investigation will be determined with final review of the existing documentation
- Site Specific Geohazards & Seismic Response Spectra
 - Determination of all site geohazards, to determine risk and vulnerability
 - Geologist determination of Peak Ground Accelerations and Peak Ground Displacements are critical to determining risk for in-ground structures.

Prior to any sampling/testing activities and with assistance from District Staff, SSGSE will prepare a Field Sampling Plan. The Plan would identify locations of samples; a detailed schedule for sampling, including down/startup times of the facilities, and details on repairs to the facilities. District staff anticipates field inspection and material sampling of treatment process facilities would take approximately 5 working days based on emptying/cleaning the facilities as well as starting treatment process facilities up again to ensure on-going treatment during this field investigation work.

Task 3.1 Field Inspection. SSGSE will perform site visits as necessary to visually inspect the treatment process facilities and document findings.



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Task 3.2 Develop Draft Field Sampling Plan. SSGSE will develop a draft field sampling plan in coordination with the District. The draft will be provided in Word (.doc) format so the District may provide comments and suggested edits via “track changes”. SSGSE will anticipate a remote review meeting with the District to clarify comments per Task 1.3.

Task 3.3 Develop Final Field Sampling Plan. SSGSE will develop a final Field Sampling Plan incorporating comments from the District. The final Field Sampling Plan will be provided in PDF format.

Task 3.4 Field Sampling and Testing. SSGSE will perform site visits as necessary to plan, sample, and test the facilities and document findings. This task will include any field as well as laboratory required testing.

TASK 4: FIELD INVESTIGATION AND TESTING – BUILDING FACILITIES

After review of existing information, SSGSE will perform field investigation and testing activities on select treatment building facilities, as needed, to collect information for analysis. The selected building facilities are identified below and are shown on Attachment A:

- Digester Blower Building
- Administrative and Operations Building

SSGSE will provide the following activities and underlying goals as a basis for the field investigation and testing:

- Seismic Evaluations Tier 2 to Tier 3 (or combination thereof) per ASCE 41-17 or 23
 - Identify deficiencies in primary structural components.
 - Identify deficiencies in ancillary or non-structural components, such as pipe supports,
- Non-Structural Components such as walkways, railing, pumps, exposed MEP and cabinets.
 - Identify retrofit procedures/alternatives.
- Ground Penetrating Radar (GPR)
 - Identify rebar quantity/spacing and potential voids in concrete diaphragms and concrete masonry unit walls.
- Concrete/Concrete Masonry Unit Testing
 - Identify concrete/concrete masonry unit compressive strength, density, permeability, bond and other properties.
- Geotechnical Engineering
 - Borings and testing are required to ascertain the geologic vulnerability to seismic hazards
 - The quantity of and type of subterranean investigation will be determined with final review of the existing documentation
- Site Specific Geohazards & Seismic Response Spectra
 - Determination of all site geohazards, to determine risk and vulnerability
 - Geologist determination of Peak Ground Accelerations and Peak Ground Displacements are critical to determining risk for in-ground structures.

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Task 4.1 Field Inspections. SSGSE will perform site visits as necessary to inspect the buildings and document findings.

Task 4.2 Field Sampling and Testing. SSGSE will perform site visits as necessary to plan, sample, and test the buildings and document findings. This task will include field as well as laboratory required testing.

TASK 5: SEISMIC AND MATERIALS STUDY

Based on Tasks 2, 3, and 4, SSGSE will prepare a seismic and materials study. The Study will identify seismic and/or material deficiencies within the selected treatment process facilities and buildings; make retrofit recommendations for each individual structure and building; and provide an estimated cost for engineering and construction for each recommended retrofit alternative. The District anticipates that SSGSE will consider one to two alternatives for a retrofit project for each individual structure and building.

Task 5.1 Develop Draft Study. SSGSE will develop a draft Study. The draft will be provided in Word (.doc) format so District staff may provide comments and suggested edits via “track changes”. SSGSE will anticipate a remote review meeting with the District to clarify comments per Task 1.3.

Task 5.2 Develop Final Technical Memorandum. SSGSE will develop a final Study incorporating comments from the District. The final Study will be provided in PDF format and signed by a Professional Structural Engineer registered in the State of California.



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2. COMPENSATION, TERMS, AND CONDITIONS:

Compensation shall be invoiced as services are rendered in accordance with the prime agreement between the SEOR and the Client.

Structural Engineering Services	Compensation
Structural Evaluation Services	HNTE \$95,270
Sub-Consultant:	
Evan Reis Consulting, Structural Risk Assessment	HNTE \$12,000
Earth Systems Pacific	
Geotechnical Investigation	T&M \$18,000
Geohazards & Site Specific Seismic Study	T&M \$25,000
Materials Testing Allowance	T&M \$52,000
Cost Estimate Allowance (optional)	\$10,000
Total Budget	HNTE \$212,270



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EXCLUSIONS: The following services are specifically excluded from the scope of services provided under the conditions of this proposal.

- A. Engineering or design unrelated to the standard practice of Structural Engineering.
- B. Survey Work.
- C. 100% Construction Documentation.
- D. Material testing or Special Inspection Services.
- E. Design revisions, partial or complete outside the scope of Design Development.
- F. Preparation of 'As-Built' Drawings or shop drawings.
- G. Preparation of demolition drawings, site surveys or building services surveys.
- H. Review and approval of substitute or alternate materials.
- I. Site, grading or civil work.
- J. Construction cost or scheduling estimating.
- K. Special construction consulting and inspection services.
- L. Payment of Municipal, Agency or permit fees.
- M. Safety supervision.
- N. Construction cost or scheduling estimating.
- O. Safety supervision.
- P. Preparation/Production of Shop Drawings.
- Q. Corrosion Engineering.
- R. Solar PV arrays and their anchorage
- S. Fire protection component anchorage and bracing is design-build per fire protection sub-consultant.
- T. Cladding support/envelope design as it pertains to water & wind intrusion design
- U. Civil and Landscape site structures.
- V. Site shoring or shoring design for any means and methods of the contractor during excavations. Including shoring of existing buildings.
- W. Cal-Green, LEED® or other sustainable Consulting outside of that related to the scope of Structural Engineering.

Some of these services may be provided on a time and material basis, should they become necessary during the course of the project.



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Estimated Preliminary Schedule

Task	Estimated Timeline
Project Startup, Documentation Gathering, Staff Interviews and alignment, Preparation of Site Investigation	May 1 - May 15, 2024
Desktop Review and Initial Site Visit	May 15 - May 31, 2024
Materials Testing	June 1 - On-going based on access
Geotechnical Borings and Investigation	June 1 - August 31, 2024
Geohazard Study and Site Specific Response Spectra Analysis	May 15 - August 31, 2024
Tier 1 Checklist and Outcomes	June 1 - June 20, 2024
Staff Review Period	June 20 - Jun 30, 2024
Tier 2 Evaluation and Retrofit Scheme Test-Fit	June 20 - July 12, 2024
Staff Review Period	July 12 - July 28, 2024
Tier 2+ Retrofit Scheme documentation and Optional Cost Estimate	July 28 - September 30, 2024



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Estimated Level of Effort

The following table lists the primary personnel involved in the project, the anticipated hours associated with each individual’s level of effort as an aggregate sum. Included is the Professional Rate Sheet listing the different classifications of labor.

Personnel	Role	Anticipated Hours
Michael Parolini, S.E. ++	SEOR, QA, Project Manager	77 Hours
Joe Kilimczyk, S.E.	Structural Evaluation, Reporting	190 Hours
Cheyne Kight, S.E.	Structural Evaluation	172 Hours
Support Staff	CAD, Administrative	50 Hours
Evan Reis, S.E.	Structural Engineering Risk Consultant	55 Hours
Robert Down, P.E.	Geotechnical Engineering, Materials Testing Coordination	**

++ Project Point of Contact

** HNTE budget provided above based on previous experience and ROM of anticipated materials testing instances, Geotechnical Information, and Geology Requirements.



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SSGSE HOURLY RATE SHEET

Effective January 1, 2023

Position	Rate per hour
Principal Structural Engineer	\$220
Principal Engineer	\$210
Senior Structural Engineer	\$165
Structural Engineer	\$150
Senior Project Engineer	\$140
Project Engineer	\$130
Staff Engineer	\$120
Production Operator	\$95
Production Technician	\$80
Administrative Professional	\$60

Reimbursable Expenses shall be billed at a rate of 1.1 times direct cost

(Printing, Shipping, Mileage is billed at the current Federal IRS standard rate)

EVAN REIS CONSULTING HOURLY RATE SHEET

Structural Risk Consultant \$220/hr

EARTH SYSTEMS PACIFIC RATE SHEET

Attachment B



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This proposal is an instrument of service and is the property of SSG Structural Engineers, LLP. All drawings, information, specifications, ideas, designs and arrangements represented within proposal (as well as, attached exhibits, addenda, etc.) shall remain the property of the Engineer. No part thereof shall be copied, disclosed to other or used in connection with any work or project other than the specific project for which they have been prepared and developed, without the expressed written consent of the Engineer.

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Conflicts

No Conflicts exist preventing SSG Structural Engineers from completing this offer of Structural Engineering Services. Planned staff vacations and other absences are accounted for in the proposed preliminary schedule. Being dependent on laboratory collection and testing of in-situ materials can be a scheduling delay. Working with Earth Systems for all these decades has afforded us the opportunity to collaborate on their timelines. Another potential conflict arises from availability of the basins. Operations of the plant will require that we work with staff to minimize downtime and repair work from destructive materials testing.

Quality Assurance/Quality Control

SSG has in-house Quality Assurance processes. Every project goes through a complete technical review with a Principal Engineer in responsible charge, as well as a review of the coordination amongst construction drawings, specifications, or reports as appropriate. This review is required prior to any draft or final project leaves the office. All too often firms are skipping QA/QC procedures in today's world of digital delivery. This can lead to costly change orders or worse for projects in the municipal world.

Assumptions and Additional Comments

It is assumed that the District's Project Manager will coordinate access to the WWTP and specific facilities within the study site as needed by the Consultant. In addition, reasonable accommodation will be made for destructive testing to the facilities and time off line will be sufficient for said testing and reconstruction of sample areas

Contract Requirements

SSG Structural Engineers, LLP accepts the terms of Montecito Sanitary District's Professional Services Agreement (PSA).



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Attachment A: Resumes

Team Qualifications outside of SSG Structural Engineers, LLP. As staff has a history with SSG, but not specifically our Engineering Partners on the project we have included the following outline of qualifications for our delivery partners.



NAME: Evan Reis, S.E.

DESCRIPTION OF EXPERIENCE AND QUALIFICATIONS:

Evan Reis, SE, is the Principal of Reis Consulting and Executive Director of the US Resiliency Council. He works with public agencies and private companies nationwide to promote resilience and protect buildings and infrastructure against natural and man-made risks. Evan focuses on developing comprehensive resilience management strategies that include, mitigation, emergency management and business continuity planning, and financial risk transfer.

Evan graduated with his Bachelors and Masters Degrees in Structural Engineering from Stanford University in 1988. He co-founded Certus Consulting in 2004, providing engineering and risk management services to some of California's largest organizations in the education, healthcare, high technology, energy, insurance, and government services sectors. He has been an active member of the Structural Engineers Association of Northern California, the Earthquake Engineering Research Institute, and the Risk and Insurance Management Society. Evan co-founded the US Resiliency Council in 2011 as a way to educate building stakeholders and the public about the gap between the growing sustainability movement and true resilient design.

SPECIFIC PROJECT ROLE:

Title: Seismic Risk Prioritization / Cost Benefit Analysis

Brief Description: Evan will be responsible for developing a risk assessment of the project building will estimate the damage ("probable maximum loss") associated with the proposed retrofit solution.

EDUCATION:

School: Stanford University

Degree: Bachelor of Science in Civil Engineering, Masters of Science in Structural Engineering

REGISTRATIONS:

Structural Engineer / California S3850

Civil Engineer / California C45464

ASSOCIATIONS:

US Resiliency Council: Co-founder and executive director

Alliance for National and Community Resilience: Board member

National Institute of Building Sciences: Multihazard Mitigation Council

Risk and Insurance Management Society

Earthquake Engineering Research Institute

Structural Engineers Association of California



EARTH SYSTEMS Resume

ROBERT DOWN, PE Managing Principal

Robert Down is the managing principal of Earth Systems' central coast division. As such, he is responsible for executive management of projects and staff, ensuring that high standards of technical accuracy and quality are consistently met. A Registered Civil Engineer, Mr. Down has over 27 years of experience in the geotechnical engineering and construction materials testing/inspection profession. He has conducted geotechnical engineering investigations for numerous water and sewer projects throughout San Luis Obispo and Santa Barbara counties, including the City of San Luis Obispo Water Resource Recovery Facility Upgrades, the South San Luis Obispo County Sanitation District Wastewater Treatment Plant Redundancy project, and the City of Morro Bay Water Reclamation Facility. During his career, he has been actively involved in CalGeo, the Society of Civil Engineers, and Engineers Without Borders. His education consists of Bachelor of Science degree in Civil Engineering from California Polytechnic State University, San Luis Obispo, where he also taught senior level courses in soil mechanics, foundation design, and civil engineering materials. He has been employed with the Earth Systems companies in San Luis Obispo since 1998.

AREAS OF EXPERTISE

- Geotechnical engineering investigations
- Interpretation of laboratory and field data
- Supervision and project management of materials testing and special inspection projects
- Development of geotechnical solutions for adverse soil conditions, including unstable subgrades, saturated soils, caving or unstable trench conditions, expansive soils, and hydro collapse of soils
- Special inspection of construction materials, including soils, reinforced concrete, masonry, steel, and bolting
- Pavement construction and rehabilitation, including use of recycled materials
- Evaluation of acceptability of construction materials
- Resolution of special inspection issues and non-compliance

PROJECT EXPERIENCE

- City of San Luis Obispo Water Resource Recovery Facility Upgrades, San Luis Obispo, CA
- South San Luis Obispo County Sanitation District Wastewater Treatment Plant Redundancy project, Oceano, CA
- Paso Robles West Main Tank Project, Paso Robles, CA
- City of Morro Bay Water Reclamation Facility, Morro Bay, CA
- Los Osos Water Recycling and Collection System, Los Osos, CA
- Santa Maria Wastewater Treatment Plant Pond Berm Removal, Santa Maria, CA
- Paso Robles Wastewater Treatment Plant Tertiary Treatment Facilities Project, Paso Robles, CA
- Chumash Wastewater Treatment Plant MBR Upgrade, Santa Ynez, CA



REGISTRATIONS AND CERTIFICATIONS

Registered Professional Engineer (Civil), State of California (No. 70206)

ICC Certified Soil Special Inspector

Hazardous Waste Operations and Emergency Response, 40-hour and 8-hour refresher courses (OSHA 29 CFR 1910.120 and Title 8, CCR 5192)

Certified Nuclear Gauge Operator

EDUCATION

B.S., Civil Engineering, California Polytechnic State University, San Luis Obispo

PROFESSIONAL AFFILIATIONS

Member — American Society of Civil Engineer

Member — American Public Works Association

Member — ASTM International

Member — Central Coast International Code Council

Member — Engineers Without Borders

EMAIL

rdown@earthsystems.com



EARTH SYSTEMS Resume

DARRIN HASHAM, PG, CEG Engineering Geologist

As an engineering geologist with Earth Systems Pacific, Darrin Hasham oversees geologic hazards investigations, fault investigations, slope stability studies, coastal bluff retreat assessments, and landslide analyses. Mr. Hasham has over 23 years of experience on major projects, including schools, hospitals, bridges, dams, highways, landfills, pipelines, and tunnels. He has been responsible for oversight and management of large-scale field operations, including managing, training, and mentoring staff. Mr. Hasham's areas of expertise include geologic hazards assessments, seismic analysis, fault investigation, analysis of liquefaction and lateral spreading, and slope stability evaluation. Mr. Hasham received his Bachelor of Science degree in Geological Sciences from California Polytechnic State University at Pomona, and his Master of Science Degree from California State University, Los Angeles. He is former chairperson and current regional director of the Association of Engineering Geologists.

AREAS OF EXPERTISE

- Geologic hazard studies
- Landslide evaluation and mitigation
- Seismic analysis, including determination of design peak bedrock accelerations, design earthquake magnitudes, and seismic response spectra
- Fault investigation
- Assessment of potential for fault rupture
- Evaluation of liquefaction and lateral spreading potential
- Slope stability analysis
- Slope reinforcement
- Erosion studies and mitigation
- Fluvial geomorphology
- Assessment of potential for naturally-occurring asbestos (NOA) and radon

PROJECT EXPERIENCE

- Guadalupe Wastewater Treatment Plant, Guadalupe, CA
- Morro Bay Water Reclamation Facility, Morro Bay, CA
- Greenfield Wastewater Treatment Plant Upgrade, Greenfield, CA
- Oakshores Wastewater Treatment Plant Upgrade, Bradley, CA
- San Miguel Wastewater Treatment Plant, San Miguel, CA
- Santa Cruz Wastewater Treatment Plant Headworks, Santa Cruz, CA
- City of San Luis Obispo Verde-Luneta-Ramona Sewer Exploration, San Luis Obispo, CA
- Drinkwater Reservoir, Santa Clarita, CA
- Grant Lake Dam, June Lake, CA
- Reservoir B-14, Hacienda Heights, CA
- Soto Trunk Line Sewer, Los Angeles, CA
- Northeast Interceptor Sewer (NEIS), Los Angeles, CA



REGISTRATIONS AND CERTIFICATIONS

Registered Professional Geologist, State of California, 2004 (No. 7740)

Certified Engineering Geologist, State of California, 2006 (No.2423)

EDUCATION

M.S., Geological Sciences, California State University, Los Angeles

B.S., Geological Sciences, California Polytechnic State University, Pomona

PROFESSIONAL AFFILIATIONS

Former Chairperson – Current Regional Director - Association of Environmental & Engineering Geologists, Southern California Region

EMAIL

dhasham@earthsystems.com



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EARTH SYSTEMS Resume

KARIM TADROUS Special Inspector

Mr. Tadrous performs materials testing and special inspection of construction materials. He holds ICC certifications for reinforced concrete, pre-stressed concrete, structural masonry, spray-applied fireproofing, and structural steel and bolting. He has provided materials testing and special inspection services for numerous public works projects, including bridges, roadways, and other infrastructure. He studied engineering at Ventura College, graduating with an Associate of Arts degree in 2020. He has been in the materials testing and inspection field for approximately 5 years and joined Earth Systems in 2023.

AREAS OF SPECIALIZATION

- Special inspection of various types of foundations, including caissons, driven piles, and micropiles
- Shop and field welding inspection
- Concrete sampling and testing
- Special inspection of reinforced, pre-stressed, and lightweight concrete
- Masonry sampling, testing and special inspection
- Torque testing and proof load/pull testing of bolts and anchors
- Materials testing of specialty materials
- Determination of size and location of reinforcing steel in concrete block structures

PROJECT EXPERIENCE

- Simi Valley Sanitation Clarifiers, Simi Valley, CA
- Rancho San Carlos Bridge, Montecito, CA
- 817 Romero Canyon Road OWTS, Montecito, CA
- State Street Undercrossing, Santa Barbara, CA
- 905 Camino Viejo Road, Montecito, CA
- Mandalay Bridge Improvements, Oxnard, CA
- Edison Bridge Improvements, Oxnard, CA
- Santa Barbara County Fire Community Facility, Santa Barbara, CA
- Dos Pueblos High School CTE Pavilion, Goleta, CA

REGISTRATIONS AND CERTIFICATIONS

ACI Concrete Field Testing Technician

ICC Reinforced Concrete Special Inspector (No. 9538606)

ICC Prestressed Concrete Special Inspector (No. 9538606)

ICC Structural Masonry Special Inspector (No. 9538606)

ICC Structural Steel and Bolting Special Inspector (No. 9538606)

EMAIL

ktadrous@earthsystems.com



EARTH SYSTEMS Resume

TODD TRANBY, PG, CEG Engineering Geologist

Todd Tranby has over 30 years of experience in the counties of Ventura and Santa Barbara. He has served as an engineering geologist and primary point of contact for numerous projects in this region, including hospitals, colleges, water treatment facilities, master planned communities, commercial developments, and industrial facilities. Mr. Tranby is known for his excellent client service and attention to meeting client goals with respect to services, budget, and timeframes. He is responsible for team management, scheduling of services, and oversight of technical services. As a registered professional geologist and certified engineering geologist, his areas of expertise include geologic hazards study, fault assessment, and analysis of seismicity, including potentials for liquefaction, lateral spreading, and seismically induced slope failure. For projects under construction, he oversees scheduling of field activities and supervises the field technician and special inspection staff. Mr. Tranby received a Bachelor of Science degree in geophysics from the University of California at Santa Barbara. He has been with Earth Systems since 1989.

AREAS OF EXPERTISE

- Geologic and geotechnical engineering investigations, including subsurface exploration, laboratory testing of soil samples, engineering analyses, and report preparation
- Evaluation and mitigation of potential geologic hazards such as faulting, ground rupture, seismicity, liquefaction, slope stability, bluff retreat, and landslides
- Engineering analyses related to seismically induced and static settlements, slope stability, soil liquefaction, and slope stabilization
- Exploratory trenching and test pit logging
- Geotechnical issues related to grading and excavation
- Oversight of laboratory/field testing programs and special inspection operations
- Grading observation and special inspection during construction activities

PROJECT EXPERIENCE

- Montecito Sanitary District Highway 101 Pipeline, Montecito, CA
- State Route 192 Sewer Line at Oak Grove Drive, Santa Barbara, CA
- Aeration Blowers Project, City of Ventura Wastewater Plant, Ventura, CA
- Proposed Reservoir, Farmers Irrigation Company, Santa Paula, CA
- Lake Cachuma Secured Pipeline Project, Santa Barbara, CA
- Carpinteria Sanitary District Rincon Point Sewer Expansion, Carpinteria, CA
- City of Port Hueneme Cross Base Water Pipeline Extension, Port Hueneme, CA
- FY 2018 Replacement Water Main, Mountain Drive, County of Santa Barbara, CA
- Via Real Sewer Main Relocation, Carpinteria, CA
- United Water Conservation District Saticoy Facility, Ventura County, CA
- Strickland Mutual Water Company Water Tank, El Rio, CA
- Mariano Water Tanks, Ventura, CA



REGISTRATIONS AND CERTIFICATIONS

Registered Professional Geologist,
State of California, 1996 (No. 6550)

Certified Engineering Geologist,
State of California, 1997 (No. 2078)

EDUCATION

B.S., Geophysics, University of California,
Santa Barbara, 1988

PROFESSIONAL AFFILIATIONS

Geological Society of America

Association of Engineering Geologists

Coast Geologic Society

American Society of Civil Engineers

American Council of Engineering Companies

EMAIL

ttranby@earthsystems.com



EARTH SYSTEMS Resume

ANTHONY MAZZEI, PE, GE Geotechnical Engineer

A registered civil and geotechnical engineer with 38 years of experience, Anthony Mazzei is managing principal of Earth Systems' Ventura and Santa Barbara offices. Mr. Mazzei has extensive experience with water and sewer treatment, storage, and distribution projects in Ventura and Santa Barbara Counties. During the design phase process, he supervises geotechnical engineering investigations and provides consultation regarding geotechnical issues that may impact the project. During project construction, he provides technical assistance as necessary, including development of mitigation measures for situations such as unstable soils and high groundwater conditions. Mr. Mazzei is a Registered Professional Civil and Geotechnical Engineer in the State of California and a Registered Civil Engineer in Arizona. Mr. Mazzei received a Bachelor of Science degree in civil engineering from the University of Pittsburgh, and a Master of Science degree in geotechnical engineering from Arizona State University.

AREAS OF EXPERTISE

- Geotechnical engineering
- Materials engineering
- Geotechnical aspects of grading
- Stabilization of slopes and earthen embankments
- Development of geotechnical criteria for shallow and deep foundations, including caissons, driven piles, and micropiles
- Development of geotechnical solutions for adverse soil conditions, including unstable subgrades, saturated soils, caving or unstable trench conditions, expansive soils, and hydro collapse of soils
- Settlement analysis
- Analysis of slopes for local and global stability
- Pavement construction and rehabilitation, including hot mix asphalt, full-depth reclamation, overlays, recycled materials, cold foam asphalt and cement/lime stabilization.
- Use of recycled materials
- Evaluation of acceptability of construction materials

RELEVANT PROJECT EXPERIENCE

- Extraction Barrier and Brackish Water Treatment Plant, Point Magu, CA
- El Rio Iron and Manganese Treatment Project, Phase 1, Ventura County, CA
- Lake Piru Sediment Sampling and Testing, Lake Piru, CA
- Carpinteria Advanced Water Purification Project, Carpinteria, CA
- Ventura Mound Well No. 2, Ventura, CA
- Simi Valley Sanitation Facility, Various Projects, Simi Valley, CA
- Carter Water Treatment Plant, Santa Barbara, CA
- Harbor Boulevard Main Force Main Extension, Ventura, CA
- Lake Piru Water Treatment Plant Slope Repair/Drainage Improvements, CA
- 600 Zone Booster Pump Station, Santa Paula, CA



REGISTRATIONS AND CERTIFICATIONS

Registered Professional Engineer
(Geotechnical) State of California, 2009 (No. 2823)

Registered Professional Engineer (Civil)
State of California, 2005 (No. 67802)

Registered Professional Engineer (Civil)
State of Arizona, 1990 (No. 24415)

CASQA Certificate No. 21300

EDUCATION

M.S., Geotechnical Engineering, Arizona
State University, 1989

B.S., Civil Engineering, University of
Pittsburgh, 1985

PROFESSIONAL AFFILIATIONS

Member - American Society of Civil
Engineers

Member - International Society of Soil
Mechanics and Foundation Engineers

EMAIL

tmazzei@earthsystems.com



EARTH SYSTEMS Resume

DAVID BURNS Special Inspector/ Inspection Department Supervisor

David Burns is the supervisor of our special inspection and materials testing department and a senior inspector with over 30 years of experience in construction materials testing and inspection. As one of Earth Systems' most senior and experienced staff members, Mr. Burns has performed sampling, testing, and special inspection of all types of construction materials, including soil, asphalt, concrete, masonry, grout, and deep foundation installation. He has been the supervisor of Earth Systems' inspection and materials testing department since 1999. In this capacity, he supervises a staff of special inspectors and materials technicians, providing quality control and quality assurance of field operations. He prepares special inspection reports and other documentation to verify conformance of work with the project plans and specifications. He obtained a Bachelor's degree in Civil Engineering from California State University, San Luis Obispo, and has been employed with Earth Systems since 1989.

AREAS OF EXPERTISE

- Foundation excavation observation and testing, including conventional foundations, driven piles, drilled cast-in-place caissons, micropiles, helical piers, bridge abutments
- Sampling and testing of asphalt concrete pavement
- Sampling and field density testing of soil and aggregate
- Concrete sampling, testing and special inspection
- Special inspection of reinforced and lightweight concrete
- Masonry sampling, testing and special inspection
- Torque testing and proof load/pull testing of bolts and anchors
- Special inspection of shotcrete placement
- Materials testing of specialty materials

RELEVANT PROJECT EXPERIENCE

- City of San Luis Obispo Water Resource Recovery Facility Upgrades, San Luis Obispo, CA
- South San Luis Obispo County Sanitation District Wastewater Treatment Plant Redundancy project, Oceano, CA
- San Luis Obispo Water Reclamation Facility SST Project, San Luis Obispo, CA
- San Luis Obispo Water Reclamation Facility Biosolids Cover, San Luis Obispo, CA
- Los Osos Water Recycling and Collection System, Los Osos, CA
- Nacimiento Water Treatment Plant, Thunderbird Well Project, Paso Robles, CA
- Paso Robles Wastewater Treatment Plant Tertiary Treatment Facilities Project, Paso Robles, CA



REGISTRATIONS AND CERTIFICATIONS

Engineer-in-Training, XE083391, 1991

ACI Certified Concrete Field Testing Technician, Grade 1 (No. 01046665)

ICC Certified Special Inspector: Reinforced Concrete (No. 0855060-84)

ICC Certified Special Inspector: Structural Masonry (No. 0855060-84)

DSA Certified Inspector: Masonry (No. 5796)

NICET/ICC Certified Soil Special Inspector (No. 8028887-EC)

Caltrans-certified for Test Methods 504, 518, 533, 539, 540, 543, 556, 557

Hazardous Waste Operations and Emergency Response, 40-hour and 8-hour refresher courses (OSHA 29 CFR 1910.120 and Title 8, CCR 5192)

Certified Nuclear Gauge Operator

EDUCATION

B.S., Civil Engineering, California State University, San Luis Obispo

EMAIL

dburns@earthsystems.com



EARTH SYSTEMS Resume

WILLIAM GRIEDER Field and Laboratory Technician

William Grieder performs materials and construction testing of soils, asphalt, and concrete. In this capacity, he reviews plans and specifications with respect to required soil density, optimum moisture content, depths of overexcavation, slope angles, and other information pertinent to the project earthwork program. He provides field density testing, obtains samples, observes and monitors construction procedures, prepares reports documenting field observations and test results, and verifies that materials and placement are in compliance with project plans and specifications. He also works as a laboratory technician in our materials testing laboratory, performing a variety of tests on soil, concrete, masonry, aggregate, and asphalt samples. He has provided field and laboratory testing for projects in Santa Barbara and Ventura counties, including buildings, bridges, roadways, and water and sewer infrastructure. A 2019 college graduate with a Bachelor of Science degree in physics from Humboldt State University, Mr. Grieder joined Earth Systems in 2021.

AREAS OF SPECIALIZATION

- Soil classification and testing, including Atterberg limits, California Bearing Ratio, maximum density vs. optimum moisture, expansion index, and many other ASTM soil test methods
- Concrete testing, including compression, density, shrinkage, and moisture content
- Masonry testing, including absorption, compression, moisture content, specific gravity and unit weight of concrete block
- Asphalt concrete testing, including bulk specific gravity, compaction, maximum density, and asphalt content
- Special sample preparation and testing

PROJECT EXPERIENCE

- Carpinteria Advanced Water Purification Facility, Ventura, CA
- State Route 192 Sewer Line at Oak Grove Drive, Santa Barbara, CA
- Aeration Blowers Project, City of Ventura Wastewater Plant, Ventura, CA
- Simi Valley Sanitation Wastewater Treatment Plant Clarifiers, Compressor Pad, and Primary Influent Structure, Simi Valley, CA
- City of Ventura Mound Well No. 3, Ventura, CA
- North Ventura Avenue 6-inch Sewer Lateral, Ventura, CA
- Tadjiguas Landfill Resource Recovery, Goleta, CA



REGISTRATIONS AND CERTIFICATIONS

ACI Field Testing Technician (No. 02091952)

Caltrans-certified for Test Methods 125 HMA, 125 GEN, 125 AGG, 231, 375, 504, 518, 539, 540, 543, 556, 557

Certified Nuclear Gauge Operator

EDUCATION

B.S., Physics, Humboldt State University, California, 2019

A.S., Physics/Engineering, Ventura College, California

EMAIL

wgrieder@earthsystems.com



structural engineers

Project No.: S24088

April 16, 2024

Attachment B: Earth Systems Pacific Hourly Rates



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FFC SCHEDULE

(Effective January 1, 2024)

This schedule presents rates for professional and technical services in the fields of geotechnical engineering, engineering geology, environmental consulting, construction observation and testing, and special inspection. Listed are charges for services most frequently performed by Earth Systems. Additional services not listed are available and can be discussed upon request; fixed-fee quotes for some services can also be provided upon request. To discuss a scope of work and fees for a specific project, please contact our office.

<u>PERSONNEL</u>	<u>Hourly Rate</u>
Principal Professional.....	\$230.00
Associate Professional.....	\$215.00
Senior Professional.....	\$200.00
Project Professional.....	\$175.00
Staff Professional.....	\$150.00
Special Inspector, Prevailing Wage*.....	\$160.00
Technician, Prevailing Wage*.....	\$150.00
Special Services/Caltrans Technician.....	\$150.00
Technical Assistant.....	\$125.00
Special Services Technician.....	\$150.00
Special Inspector.....	\$115.00
Technician.....	\$105.00
Clerical/Administrative.....	\$90.00

* Technician/Inspector Classifications as defined by the State of California Department of Industrial Relations.

BASIS OF CHARGES, GENERAL

- Field services for regular work days for non- Prevailing Wage projects are subject to a 2-hour minimum charge.
- Work performed on Saturdays, night work, and for premium hours (before 7 a.m., after 5 p.m. or more than 8 hours in one day) for personnel are at time and one-half. Work performed on Sundays and holidays, or when time exceeds 12 hours in one day, is at double time. Work performed on weekends, holidays, and when work starts outside of regular business hours is subject to a 4-hour minimum charge.
- Charges are calculated in one-hour increments and accumulate on a portal-to-portal basis.
- A 2-hour cancellation charge applies if scheduled inspection or testing is cancelled after 3 p.m. the day prior to the scheduled work.
- Mileage is invoiced at a rate of \$0.85/mile (portal-to-portal).
- Nuclear density gauge charge: \$10.00/test.
- Weekly special inspection report charged at staff engineer hourly rate.
- Subcontracted services, materials, rental equipment, out of town travel, and expenses are charged at cost plus 20%. Fixed per diem rates for specific projects can be provided upon request.
- Report copies: \$30.00 each (minimum). Posting of electronic documents to project websites will be charged at clerical/administrative services rate.
- Invoices are payable upon presentation. Invoices thirty days past due are subject to a service charge of one and one-half percent per month. Payments using a credit card will be assigned a 3% surcharge.
- Rates are effective through December 31, 2024.

PREVAILING WAGE PROJECTS

- Field services for regular work days for Prevailing Wage projects are subject to a 4-hour minimum charge, and after 4 hours will be billed in 1-hour increments.
- The prevailing wage (PW) rates presented herein are based on current rates established by the Department of Industrial Relations (DIR). If, during the course of the project, prevailing wage rates are increased by DIR, rates are subject to adjustment. Also, please note requirements concerning overtime, shift work, travel time, holidays, and other factors can vary for different classifications of work under prevailing wage regulations.
- Electronic submittal of Certified Payroll to DIR for prevailing wage projects will be assessed a fee of \$90.00/week. Additional time required to address specific requests related to DIR/Labor Compliance will be charged at the clerical/administrative service rates.



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FEE SCHEDULE - MATERIALS TESTING

(Effective January 1, 2024)

BASIS OF CHARGES

Rates for field work such as materials sampling, construction inspection, and field evaluation will be in accordance with the Personnel Rates listed in the basic Fee Schedule. The below listed rates apply to standard ASTM test methods. An additional hourly charge (technician rate) will be applied for cutting, capping, or other preparation of non-standard samples and, where noted, for steel samples.

SOILS

All prices are based on California and Modified California sample sizes (2" – 2.5" diameter) unless noted otherwise. Preparation of 3" diameter samples add \$20.00. Testing of contaminated soil will be per quote. Contaminated samples will be returned to sender for proper disposal.

Atterberg Limits: Liquid Limit or Plastic Limit.....	\$115.00
Atterberg Limits: Plasticity Index	\$250.00
California Bearing Ratio, 3 Points; Incl. Ref Maximum Density.....	\$650.00
California Bearing Ratio, 9 Points; Incl. Ref Maximum Density.....	\$975.00
Consolidation, One Dimensional.....	\$225.00
Consolidation, Timed, Per Point.....	\$100.00
Corrosivity Tests.....	Per Quote
Direct Shear, 3 Points Minimum	\$315.00
Expansion Index Test.....	\$205.00
Maximum Density and Optimum Moisture: 4" Mold	\$325.00
Maximum Density and Optimum Moisture: 6" Mold	\$325.00
Maximum Density and Optimum Moisture: California Impact.....	\$330.00
Moisture and Unit Weight Determination, from Ring Samples	\$45.00
Moisture Only.....	\$40.00
Permeability Tests, Constant Head or Falling Head	Per Quote
R-Value	\$325.00
R-Value, CA State Highway/Set of 3, Cement, Lime, Other Additives.....	\$375.00
Hydro Collapse Potential.....	\$165.00
Sieve/Hydrometer Analysis, Assumed Specific Gravity, with 200 Wash.....	\$250.00
Sieve Analysis, Aggregate Base/Subbase	\$155.00
Sieve Analysis 200 Wash Only	\$135.00
Sieve Analysis with Wash	\$150.00
Sieve Analysis, Oversize Material	\$215.00
Specific Gravity.....	\$150.00
Swell Test, Undisturbed	\$205.00
Swell Test, Remolded	\$230.00
Unconfined Compressive Strength, Untreated	\$150.00
Unconfined Compressive Strength, Lime or Cement Treated Material.....	\$190.00

THERMAL RESISTIVITY TESTS

Concrete, 1 Point with Moisture Content (Requires Special Collection Process)	Per Quote
Field Testing using Thermal Resistivity Meter.....	Per Quote
Soil, Per Moisture Point, Per Sample.....	Per Quote
Soil, 3 Moisture Points with Dry-Out Curve, Per Sample	Per Quote

CONCRETE AGGREGATE

Abrasion, L.A. Rattler, 100 and 500 revolutions, ASTM C131 (Small Size Aggregate).....	\$300.00
Abrasion, L.A. Rattler, 100 and 500 Revolutions, ASTM C535 (Large Size Aggregate).....	\$560.00
Absorption, Coarse Aggregate	\$100.00
Absorption, Fine Aggregate.....	\$150.00
Clay Lumps and Friable Particles in Aggregate.....	\$125.00
Cleaness Value of Coarse Aggregate	\$175.00
Crushed Particles, Each Size	\$150.00
Durability Index, Coarse or Fine Aggregate.....	\$200.00



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FEE SCHEDULE - MATERIALS TESTING - Continued

(Effective January 1, 2024)

CONCRETE AGGREGATE-Continued

Flat and Elongated Particles in Aggregate	\$125.00
Organic Impurities in Fine Aggregate	\$100.00
Potential Reactivity of Aggregate by Chemical Method, Each Size	Per Quote
Sand Equivalent	\$170.00
Sieve Analysis, Washed	\$200.00
Soundness, Sodium Sulfate, 5 Cycles	\$450.00
Specific Gravity, Coarse Aggregate	\$150.00
Specific Gravity, Fine Aggregate	\$150.00
Uncompacted Void Content of Fine Aggregate, with Fine Aggregate Angularity	\$285.00
Unit Weight of Aggregate	\$150.00

CONCRETE CYLINDERS, BEAMS AND CORES

Compression Test/Storage of Cast Cylinders (4x8)	\$45.00
Compression Test/Storage of Cast Cylinders (6x12)	\$75.00
Compression Test of Cored Samples, Cored at Laboratory	\$120.00
Compression Test of Cores Delivered by Others	\$100.00
Compression Test of Lightweight Concrete	\$50.00
Density of Concrete Cylinders	\$80.00
Density of Hardened Concrete	\$105.00
Flexural Strength, Simple Beam with Third Point Loading	\$180.00
Grading of Shotcrete Cores	\$490.00
Sample Storage, Monthly Per Sample	\$45.00
Shrinkage, Set of 3	\$400.00
Unit Weight of Lightweight Concrete	\$130.00
Enviro Recycle Fee/Form Stripping, Per Shotcrete Panel/Beam	\$65.00

MASONRY

Absorption of Block, Set of 3	\$165.00
Compression Test, 2" x 4" Mortar Cylinders	\$40.00
Compression Test, 3" x 3" x 6" Grout Samples	\$45.00
Compression Test on Block, Set of 3	\$165.00
Compression Test on Grouted Prisms, Includes Cutting	\$165.00
Compression Test on Masonry Cores	\$85.00
Coring of Grouted Masonry by Subcontractor	cost + 20%
Masonry Shrinkage, Set of 3	\$245.00
Moisture Content of Block as Received, Set of 3	\$105.00
Shear Test on Masonry Cores, 2 faces	\$150.00
Specific Gravity and Unit Weight of Block, Set of 3	\$170.00

FIREPROOFING

Fireproof Bond Test	Per Quote
Fireproofing Density Test	\$80.00

ASPHALT CONCRETE

Bulk Specific Gravity of Compacted Specimens and Core Samples	\$80.00
Compaction of Lab Samples, CA Kneading Compactor, Set of 3	\$240.00
Compaction of Lab Samples, CA Kneading Compactor, Set of 5	\$400.00
Compaction of Lab Samples, Marshall Method Set of 3 – (50 blows/side)	\$245.00
Compaction of Lab Samples, Marshall Method Set of 3 – (75 blows/side)	\$260.00
Extraction of Oil from A.C. Mixtures	Per Quote
Extraction of Oil from Rubberized Mixtures	Per Quote
Gyratory Compactor, Per Set of Field Mixed Asphalt	\$495.00



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FEE SCHEDULE - MATERIALS TESTING - Continued

(Effective January 1, 2024)

ASPHALT CONCRETE-Continued

Hamburg Wheel Tracker Test, Per Set of Field Mixed Asphalt.....	\$890.00
Ignition Oven Binder Content, After Initial Correction Value is Determined	\$275.00
Ignition Oven Binder Content Correction Value Per Mix Design, Average of 3.....	\$850.00
Ignition Oven Gradation Correction Value, Per Mix Design	Per Quote
Moisture Content	\$50.00
Sieve Analysis of Extracted Aggregate.....	\$285.00
Sieve Analysis of Ignition Oven Residue	\$270.00
Specific Gravity, Theoretical Maximum, Rice Method	\$170.00
Stability and Flow, Marshall Apparatus, Set of 3.....	\$240.00
Stabilometer, Hveem S-Value, Set of 3	\$350.00

REINFORCING AND STRUCTURAL STEEL

Bend Test of Welded Specimen, Sample Preparation Not Included.....	\$75.00
Pipe Flattening Test, Sample Preparation Not Included	\$75.00
Reinforcing Steel Coupler Tensile and Slip Tests.....	\$175.00
Structural Steel Bend Test, Sample Preparation Not Included.....	\$75.00
Structural Steel Machining/Sample Preparation.....	cost + 20%
Structural Steel Tensile Test, Sample Prep Not Included	\$75.00
Tensile and Bend Tests of Reinforcing Bar, #2 through #9.....	\$150.00
Tensile and Bend Tests of Reinforcing Bar, #10 through #18.....	Per Quote

BOLT TESTS

Bolt Tests, Chemical or Mechanical.....	cost + 20%
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WELDER QUALIFICATION

AWS D1.1: 3/8" Plate, Per Position	Per Quote
AWS D1.1: 1" Plate, Per Position.....	Per Quote
AWS D1.3: Sheet Steel.....	Per Quote
AWS D1.4: Reinforcing Bar	Per Quote
ASME/API Pipe Sections	Per Quote

EQUIPMENT/CHARGES (Does Not Include Personnel)

110-Volt Portable Electric Generator	\$120.00/day
Anchor Pull Test Equipment	\$25.00/hr.
Bailer (Disposable) with Dedicated Rope	\$35.00/ea.
Concrete and Asphalt Concrete Coring Equipment.....	\$280.00/day
Concrete Slab Moisture Transmission Kit.....	\$45.00/ea.
Conductivity Meter.....	cost + 20%
Cut-Off Saw.....	\$90.00/day
DIR Compliance/eCPR, Per Week.....	\$90.00
Double Ring Infiltrometer (Per Set).....	\$165.00/day
Drum Dolly.....	\$40.00/day
Drums	\$90.00/ea.
DSA Box Posting, Per Week	\$90.00
Dynamometer, In-line Scale	\$200.00/day
Hammer Drill	\$65.00/day
Hand Auger/Sampler Equipment	\$65.00/day
LOCK N' LOAD® VOC Sample Preservation System	\$35.00/ea.
Magnetic Particle Equipment	\$200.00/day
Manometer	\$155.00/day
Mini-Troll Groundwater Level Transducer	\$115.00/day
Mobile Laboratory.....	Per Quote



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FEE SCHEDULE - MATERIALS TESTING - Continued

(Effective January 1, 2024)

EQUIPMENT/CHARGES (Does Not Include Personnel)-Continued

Nuclear Density Equipment, Per Test.....	\$10.00/ea.
Paint Thickness/Hardness Meter	\$140.00/day
Per Diem.....	Per Quote
Percolation Tank System and Trailer.....	\$260.00/day
Personal Protective Equipment Level C.....	Per Quote
Photo-Ionization Detector (PID).....	\$100.00/day
Pulse Velocity Meter	Per Quote
Rebound Hammer (Schmidt Hammer).....	\$80.00/day
Reinforcing Steel Image (GPR).....	\$50.00/image
Reinforcing Steel Locating Equipment (DR-Meter)	\$200.00/day
Reinforcing Steel Locating Equipment (GPR)	\$400.00/day
Safety and Specialty Equipment.....	Per Quote
Sampling Consumables	Per Quote
Skidmore Bolting Calibration Equipment	\$250.00/day
Slope Inclinator Equipment, Per Hole	\$35.00/day
Soil Sampling Containers (Glass)	\$10.00/ea.
Soil Sampling Containers (Metal).....	\$25.00/ea.
Submersible pump with controller.....	\$125/well/day
Tape Extensometer	\$200.00/day
Tension Equipment	\$200.00/day
Torque/Tension Equipment	\$200.00/day
Vehicle Mileage Charge.....	\$0.85/mile
Water Level Indicator	\$55.00/day
Water quality multi-parameter probe	\$100.00/day
Winsor Probe, Set of 3	\$110.00/day



structural engineers

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DRILLING SERVICES

(Effective January 1, 2024)

DRILLING AND SAMPLING CAPABILITIES

- Geotechnical borings to depths of 75 feet.
- Borings for hazardous materials studies.
- Monitoring well and piezometer installation.
- Drill crews experienced in hazardous materials drilling and sample acquisition.
- Drill crews trained in 40-hour Health and Safety course (HAZWOPER).
- Steam cleaners, grout mixers, and other auxiliary equipment available.
- Standard Penetration Sampler (2" o.d. split spoon).
- Modified California Sampler (lengths: 18", 24", 3" o.d.; 2.5" i.d. rings); resin fiber, brass, or stainless steel rings available.
- Shelby Tubes (3" i.d.).

DRILLING RATES (NON-PREVAILING WAGE)

DRILLING EQUIPMENT/PERSONNEL

Gtech GT-8 with driller and helper	\$325.00/hr.
Simco EP200 direct-push rig with driller and helper	\$275.00/hr.
Additional drill helper	\$105.00/hr.
Driller/Rig preparation.....	\$105.00/hr.
Staff Professional.....	\$150.00/hr.

AUXILIARY EQUIPMENT/MISCELLANEOUS

Support truck.....	\$200.00/day + \$0.85/mile
Drill support trailer	\$130.00/day
Generator	\$120.00/day
Per diem	Per Quote
Traffic control equipment (signs, cones)	Per Quote

DRILLING RATES (PREVAILING WAGE)

Gtech GT-8 with driller and helper.....	\$395.00/hr.
Simco EP200 direct-push rig.....	\$370.00/hr.
Additional drill helper.....	\$150.00/hr.

Hourly rates for prevailing wage projects are subject to adjustment based upon changes in general prevailing wage determinations or their application by the Department of Industrial Relations (DIR). Rates are effective through December 31, 2024.

BASIS OF CHARGES

1. Minimum drill time is 4 hours. Drill crew overtime (hours more than 8 hours a day) and Saturday work are 1.5 times the hourly rate. Sunday work is two times the hourly rate. Holiday work is per quote.
2. Rates for 3-man crew available on request.
3. Assembly and demobilization of materials are charged at the drill helper hourly rate.
4. Subcontractors are charged on a cost plus 20% basis.
5. Materials are charged on a cost plus 20% basis.
6. Drilling in material that causes more than normal wear to the equipment may be subject to additional charges. The client will be notified prior to drilling in such material.
7. Earth Systems Pacific's drillers and drill crews have been trained in the 40-hour course developed by the EPA and will satisfy the Federal OSHA requirements (29-CFR 1910-120) for personnel working on sites containing hazardous materials.
8. Drilling jobs must be confirmed a minimum of 48 hours prior to the start of work. Jobs cancelled less than 48 hours prior to the start of work will be subject to the 4-hour minimum charge, plus any charges for material acquisition, rig preparation, etc., that have been incurred.
9. The client is responsible for the accurate location of all subterranean structures and utilities, and agrees to waive any claim against Earth Systems Pacific for damage done to subterranean structures and utilities not identified or accurately located. The client also agrees to obtain free access to the site for all equipment and personnel necessary for Earth Systems Pacific to perform the work.



structural engineers

Project No.: S24088

April 16, 2024



EARTH SYSTEMS

4378 Santa Fe Road | San Luis Obispo, CA 93401 | (805) 544-3276 | www.earthsystems.com

EXPERT WITNESS SERVICES

(Effective January 1, 2024)

The following rates apply to deposition testimony, arbitration testimony, hearings and court appearances.

HOURLY CHARGES FOR PERSONNEL

Principal Professional	\$500.00
Associate Professional	\$425.00
Senior Professional	\$375.00
Project Professional	\$300.00
Staff Professional	\$250.00
Clerical/Admin Services	\$150.00

SPECIAL SERVICES

Deposition	\$500.00/hr.
Arbitration	\$500.00/hr.
Court Appearance/Hearings	\$2,000.00/half day
Standby to Appear	\$2,000.00/day

BASIS OF CHARGES

- Hourly rates are charged during investigation, analysis, consultation, and preparation services.
- Estimated deposition fee payable in advance by party requesting deposition. The difference between advance payment and final fee to be billed or refunded in accordance with the fee and billing information in this schedule. Fee for reviewing deposition transcript will be billed at hourly rates to the party requesting the review.
- Minimum half day charge will apply to court appearances and hearings. Time extending through the noon hour will be subject to the full day charge of \$4,000.00.
- Days, or portions thereof, reserved for appearances at hearings, court, or arbitrations, during which we are not required to be away from our offices will be subject to a standby charge of \$750.00. Standby at other locations will be charged at the general hourly rates.