FREYER & LAURETA, INC.

Civil Engineers – Surveyors – Construction Managers

Proposal for Engineering Services Grading Mitigation and Erosion Control Design Services to the San Lorenzo Valley Water District Foreman Pipeline Access Trail Rehabilitation

April 13, 2021

San Lorenzo Valley WATER DISTRICT

FREYER & LAURETA, INC. CIVIL ENGINEERS • SURVEYORS • CONSTRUCTION MANAGERS

ORIGINAL

April 13, 2021

San Lorenzo Valley Water District
13060 Highway 9
Boulder Creek, CA 95006
Attn: District Engineer (Foreman Intake Grading and Erosion Control)

Subject: **Engineering Services Proposal for the Foreman Intake Grading and Erosion Control Project**

Dear Mr. Wolff,

Freyer & Laureta, Inc. (F&L) is pleased to submit to the San Lorenzo Valley Water District (District) this Proposal to provide engineering design services for the Forman Intake Grading and Erosion Control Project (Project).

F&L has provided consulting engineering services for many public agencies throughout the Bay Area and excited for this opportunity to serve the District. Our services have included civil engineering design including roadway and utility design, land surveying, construction management, construction inspection, and project management services. In fact, F&L is currently providing construction management services for the Villa Del Monte Mutual Water Company in unincorporated Santa Cruz County.

For the project, F&L is teaming with Cal Engineering & Geology (CE&G) for the project geotechnical investigation, report, and slope stabilization technical support. Our team is committed and extremely excited to perform engineering services for this project, working closely with the District toward a successful project.

Jeffrey "Jeff" Tarantino, Vice President of F&L, will serve as F&L's Principal-in-Charge and Project Manager for this District project. Jeff's information is:

Jeffrey J. Tarantino, P.E.
144 North San Mateo Drive
San Mateo, CA 94401
Telephone: (650) 619-3226
Email: tarantino@freyerlaureta.com

Thank you for taking the time to review this proposal. Please call or email if you have any questions.

Very truly yours,
FREYER & LAURETA, INC.

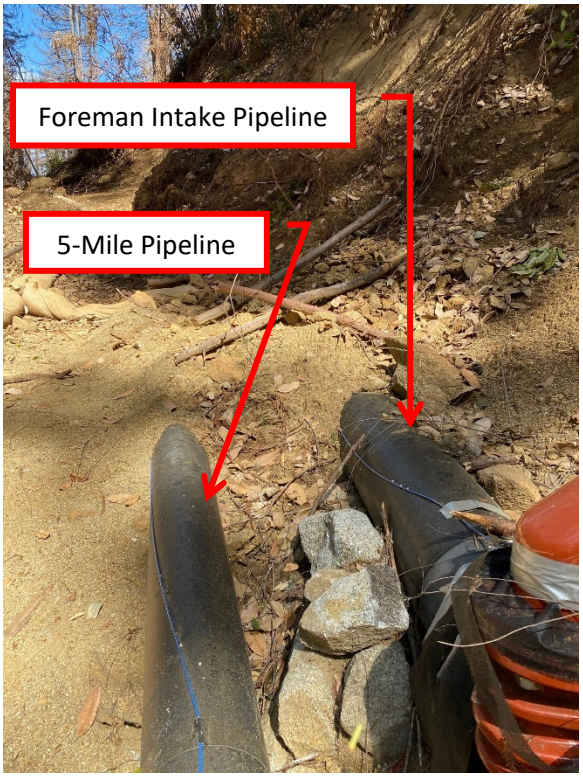
Jeffrey J. Tarantino, P.E.
Vice-President

Table of Contents

A. Contractual Scope of Services

A.1 Project Understanding

The San Lorenzo Valley Water District's (District's) Lyon Water Treatment Plant (WTP) is a surface water treatment plant. The raw water supply is both Foreman Creek and the 5 Mile Pipeline that conveys water from the Sweetwater leg and Peavine leg. The Foreman Intake Pipeline and parallel 5 Mile Pipeline were destroyed in the CZU fire. The District, under emergency provisions, rough graded an access road between the existing WTP and the Foreman Intake to reconstruct both the 12-inch Foreman Intake Pipelines and the 8-inch 5-Mile Pipeline. Both pipelines are fused High Density Polyethylene (HDPE) with shallow cover.



The District has established two primary goals for the Project, which are:

1. Protect the District's existing infrastructure, and
2. Protect the environment by reducing the long-term erosion risk.

The District has issued the Request for Proposals (RFP) for a consultant team to provide geotechnical investigation to evaluate the existing conditions of the rough graded area including the adjacent slopes, develop improvements to stabilize areas showing evidence of displacement, provide erosion control measures that provide erosion protection from the 10-year storm, and mitigates the slide risk from a 100-year storm. Based on our observations during the preproposal site visit, there are several areas that display evidence of soil displacement based on observed longitudinal cracking at the surface. We also observed several trees that have either fallen or appear to have the potential to fall in the near future.

F&L will team with Cal Engineering & Geology (CE&G) to develop a focused field investigation program to support development of pragmatic, cost effective solutions that consider the constructability challenges of the site to achieve the District's stated project goals. The Scopes of Work for each consultant (F&L and CE&G) are described in this Proposal.

A.2 Proposed Approach

A.2.1 Leverage Experience

The F&L Team has the resources and the experience to develop an investigation program that will support our team's effort to identify and develop potential alternative solutions with descriptions of potential construction and maintenance costs and risks. F&L and CE&G each has considerable experience identifying and designing innovative and cost-effective measures to stabilize trails and access roads in unstable hillside areas.

Our team understands that a key to successfully providing engineering services is to have an established framework for communication throughout the design process to ensure the District is obtaining the high level of service it deserves. Once we have identified potential stabilization/mitigation measures, the alternatives will be reviewed with the District to select the most cost effective and risk appropriate solution. Toward that goal, in addition to the Scope requirements of the RFP, **our team will conduct an Improvement Alternatives Workshop** with District staff to go over potential alternative designs. The Workshop will allow our team to collaborate with District staff to evaluate potential alternative slope stabilization approaches to select the most cost effective and resilient option.

We recognize that the Project site presents unique conditions and challenges related to balancing cost, constructability, and risk management. The existing rough graded access road was constructed under emergency conditions and it served as a means to reconstruct both the 12-inch Foreman Intake Pipeline and the 8-inch 5-Mile Pipeline. Based on our discussions with District staff, we understand that long-term vehicular access is not required and it is critical to stabilize the existing slope including providing erosion protection. The conditions and objectives reflect the situation typically faced by the United States Department of Agriculture (USDA) Forest Service with many of their facilities. Therefore, we recommend and propose to complete the project by applying our team's expertise and ***leveraging design guidance and standards from the USDA Forest Service and the Natural Resource Conservation Services (NRCS).*** This approach can be expected to yield technical solutions that incorporate hybrid soft- and hard-armor solutions that could incorporate both structural components such as retaining walls, and biotechnical components such as brush-layering of fill embankments to resist erosion. This approach will help us to consider innovative, yet tested stabilization techniques using a Forest Service-style approach to identify and develop solution(s) that protect the District's infrastructure and the surrounding environment.

A.2.2 Facilitate Design Reviews

F&L incorporates facilitated design review meetings into each submittal (as appropriate). The purpose of these meetings is to provide F&L staff an opportunity to present the submittal to key District staff that will be reviewing the technical information and engage those staff in open discussions. We have found that by utilizing a workshop setting to discuss the submittal that we can resolve District comments more efficiently than relying only on the typical submittal and resubmittal process. The workshops also provide an opportunity for our staff to explain detailed design assumptions that can help District staff better understand the selected solutions.

F&L will prepare detailed agendas that are distributed to all meeting attendees in advance

for a workshop and F&L will be responsible for facilitating the discussions. It will be apparent when a specific comment or question cannot be resolved during the meeting and therefore it becomes F&L's responsibility to capture the comment/question including providing a timeline for when a response to the comment/question will be provided to the District. Finally, F&L will produce meeting minutes to memorialize the discussions and response to comments so that all team members will have a record of decisions for reference as the project moves forward.

A.2.3 Quality Assurance/Quality Control Program

In our experience, the engineering design effort to develop construction drawings, specifications, and opinion of probable construction costs requires both peer review during design development as well as principal level review prior to every submittal. F&L has created a proactive quality control (QC) program for all our projects. We recognize that a passive review process where a reviewer is given a submittal at the last minute to review quickly before the submittal deadline does not provide the necessary oversight for our work product. All our staff are involved in the QC program because it takes active engagement from staff preparing the detailed calculations, drawings, specifications, etc. and the assigned QC officer to deliver a high quality and complete product to the client.

The QA/QC program proposed for the District's project includes:

- Written QA/QC work plan identifying key tasks from the scope of work and key deliverable dates. Using the key deliverable dates, an internal schedule is developed to guide staff in providing sufficient time for necessary QA/QC. The work plan will be amended for each task order is issued that contains the specific scope and budget.
- Throughout development of the project deliverables regular QC checks will be performed. The QC check involves bi-weekly team meetings where the project manager and key staff present progress to the QA/QC officer assigned to the project. The team meetings create an environment of team work and helps to minimize the potential for the project development process to get off track.
- For each submittal, a detailed QA/QC review is performed along with preparation of submittal review log to allow the team and QA/QC officer to document all comments along with responses to those comments.

A.3. Scope of Services

A.3.1. Task I: Project Management

F&L will serve as the lead engineer for the team and will provide overall project management services including:

- Providing regular updates to the District on progress through telephone and email correspondence;
- Prepare monthly invoices including reviewing progress completed compared to budget expenditures; and
- Provide monthly summary of accomplishments during the billing period and planned tasks for the next billing period.

Deliverables

1. Monthly Invoices with progress reports

A.3.2. Task II: Site Investigation, Data Collection, Record Research

F&L Team partner, CE&G, will perform a geotechnical investigation to evaluate the existing conditions and support identification and development of potential approaches to stabilize the existing slopes. Site investigation and subsurface exploration effort is designed to focus on slope stability and landsliding Issues. CE&G scope of work includes the following tasks:

- Review available geologic and geotechnical reports and maps pertinent to the site and review of pertinent records provided to us by the design team and District staff.
- Reconnaissance of the project site to observe the current surface conditions, marking proposed boring locations.
- Complete geologic mapping (concurrently with reconnaissance) of the surficial features at the site and in the vicinity.
- Conduct subsurface exploration by drilling and sampling two or three exploratory borings using limited access drill rig within the existing rough graded access road to provide data for grading, slope stabilization, and/or retaining wall design criteria. This task will include developing a staging for drill rig mobilization and demobilization operations, including any needed brush clearing needed. The borings will be drilled to depths ranging from 15 to 25 feet below the ground surface, unless drilling refusal is encountered. CE&G budgeted one 12-hour day to complete the field exploration. The borings will be advanced using a portable Minuteman drilling rig equipped with solid stem augers. Soil sampling and penetration testing will be performed generally at 5-foot intervals. Recovered soil samples will be transported to our laboratory. The borings will be backfilled in general accordance with Santa Cruz County guidelines. Soil cuttings collected from the borings will be distributed unobtrusively on-site.
- Perform geotechnical laboratory testing on selected soil samples obtained from the borings to evaluate pertinent engineering properties. CE&G's proposed laboratory testing program is anticipated to include natural moisture content and dry density, and shear strength.
- Perform geotechnical engineering analysis on the collected data to identify stabilization options and support the design and construction of the selected stabilization and erosion protection measures.
- Prepare a Geotechnical Investigation Report for the selected improvements. The geotechnical investigation report will address the following:
    - Introduction and description of the project;
    - A summary of information from our data research and review;
    - Discussion of site geology and site faulting;
    - Description of our geologic mapping, field investigation, and laboratory testing performed;
    - Logs of the borings and results of laboratory test results;
    - Discussion of soil and bedrock conditions encountered;
    - Discussion of our findings with regard to potential grading and earth retention system selection and design;
    - Recommendations for earthwork, including temporary and permanent cut and fill slopes;
    - Recommendations for earth retaining structure design and construction;
    - A vicinity map and site plan showing the project location;

- A site plan showing site features we mapped and the locations of our explorations;
- Geologic cross-section(s) at key locations that may warrant significant remedial grading to stabilize the access road.

Deliverables

1. Geotechnical Investigation Report

A.3.3 Task III: Basis of Design

Following completion of the geotechnical investigation and site review, the F&L Team will develop a Basis of Design (BOD) to identify and present potential improvements along the Project limits. The BOD will include:

- Summary of Geotechnical Report including identifying soil stabilization design criteria;
- Hydrologic analysis to establish the site-specific design criteria for both the 10-year and 100-year storm utilizing the County of Santa Cruz Design Criteria dated June 2019;
- Alternative slope stabilization and erosion mitigation approaches;
- Risk evaluation for each potential alternative slope stabilization method;
- Opinion of preliminary probable construction cost for each alternative; and
- Suggested preferred alternative.

Following the BOD submittal, the F&L Team will prepare for and facilitate a technical review workshop with District staff. The goal of the workshop is for the F&L team to present the proposed design criteria, alternatives evaluation, and suggested preferred alternative to District staff to solicit feedback and comments. In our experience, the technical workshops present the best opportunity for the F&L Team to collaborate with the District staff to resolve questions and concerns through open discussion. Following the BOD technical review workshop, the F&L Team will produce minutes including response to comments and a Final BOD.

Deliverables

2. Draft BOD
3. Technical Review Workshop Agenda and Minutes
4. Final BOD including response to comments.

A.3.4 Task IV: Construction Documents

Our team proposes that following the BOD completion that we proceed to prepare draft bid documents (plans, specifications, and estimate – PS&E). It is our team's opinion that key decisions and alternative selection will be completed during the BOD phase that will allow our team to proceed immediately with construction documents. We also recognize the potential risk that the existing conditions poses as the calendar approaches the beginning of the 2021 wet season. We propose to streamline our efforts to expedite bid and construction document preparation.

The bid and construction documents are anticipated to include:

- Title Sheet
- General Notes and Design Criteria
- Grading, Erosion Control, and Drainage Plans
- Retaining Structures Sections and Details
- Erosion Control Measures Details
- Civil Details

In addition to the drawings described above, the F&L Team will produce technical specifications for the proposed improvements.

The team will also update the applicable preliminary opinion of probable construction cost developed with the BOD.

Following the draft construction documents submittal, the F&L Team will facilitate a design review workshop. Similar to the BOD technical review workshop, the goal will be to review key Project details and discuss District staff questions and comments.

The F&L Team will proceed with developing the final construction documents for the District's use in soliciting construction bids. F&L will assist the District with the bid process including attending one pre-bid meeting/site walk and preparing one bid addendum.

Deliverables

1. Draft Bid and Construction Documents
2. Design Review Workshop Agenda and Minutes
3. Final Construction Documents including response to comments.
4. One Bid Addendum

A.4. Schedule

As requested in the RFP, we have developed our team's proposed schedule for the Scope of Services presented in Section A.3. Our proposed schedule is included as Attachment 1 to this proposal.

B. Team Background

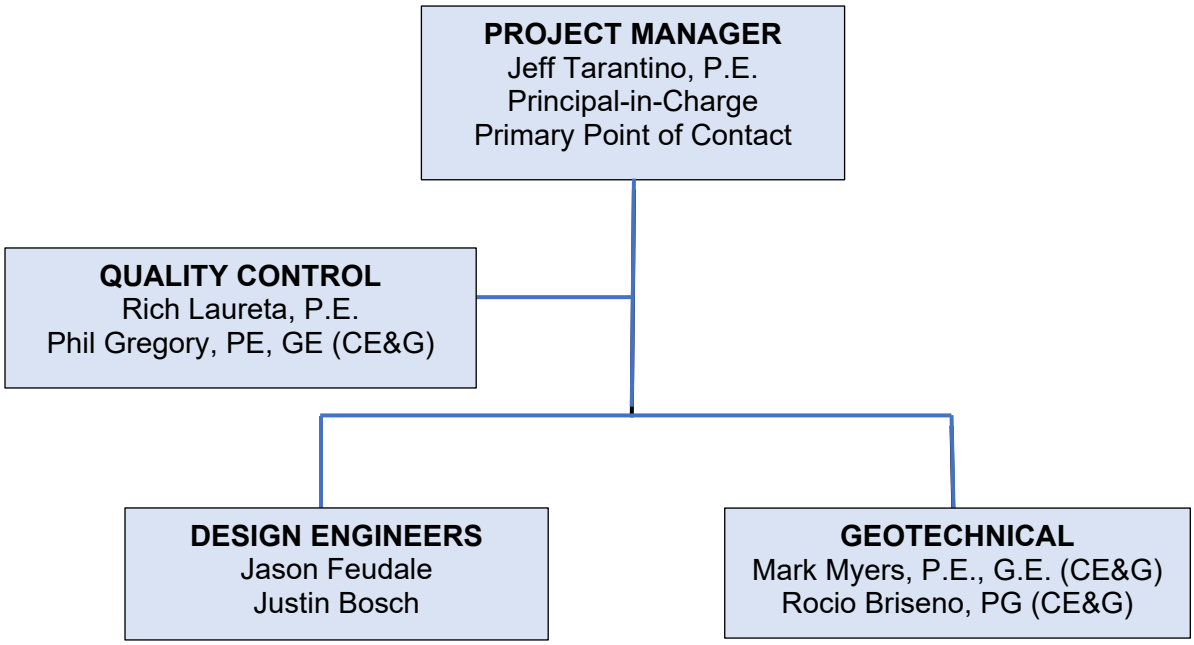
B.1 Project Team

Freyer & Laureta, Inc. F&L is an award-winning civil engineering and surveying firm with offices in San Mateo, Oakland, and San Francisco, California, founded in 1997. All work for this project will be performed out of the San Mateo office. F&L will leverage our experience with a variety of infrastructure replacement projects to provide the District with a high-quality product on time and on budget. Furthermore, F&L is committing Principal-level involvement to provide the District with the most skilled and experienced personnel available from our firm.

Since its founding in 1993, CE&G has provided award-winning geotechnical, geologic, and related civil engineering services to public agency clients throughout the Bay Area. In addition to a full-range of geotechnical consulting services, CE&G also has full design capabilities, in which they routinely prepare complete PS&E packages for public works agencies on geotechnical-related projects.

The professional engineers and geologists at CE&G have an average of 20+ years professional experience. More than 70% of CE&G's project managers have been with CE&G for 14+ years.

B.2 Organizational Capacity



B.3 References

FREYER & LAURETA, INC.

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C. *Consultant's Expectations of Owner*

Below is a list of expectations that F&L has for the District:

- In order to meet our proposed schedule, we request a one-week period for the District to review all submittals.
- A copy of the existing site topographic survey for design purposes.
- Prepare the Front End Documents for use in bidding the Project.
- Permits and CEQA clearance are not required for the Project.

D. Identification of Possible Extra Services

Below is a list of additional services not identified in this RFP that may be necessary to properly characterize the site and design the proposed access road.

- Staking the road alignment for visualization of the route. A fee for this is included in our Fee Proposal, listed as a potential added service with a budget for staking.
- Retaining wall design is potentially required for this project. A budget cost is included in our fee proposal.
- Please note that CEQA documentation and permitting is not included in this proposal because the project lacks definition to provide this service. Our team can provide this service however cannot provide a fee for this service at this time.

E. Exceptions to this RFP

The F&L team has fully read the RFP and does not take exception(s) to any portion of the RFP.

F. Insurance Statement

F&L meets the insurance requirements listed in the RFP and will provide a certificate when selected for the project.

G. Total Professional Fee and Fee Schedules

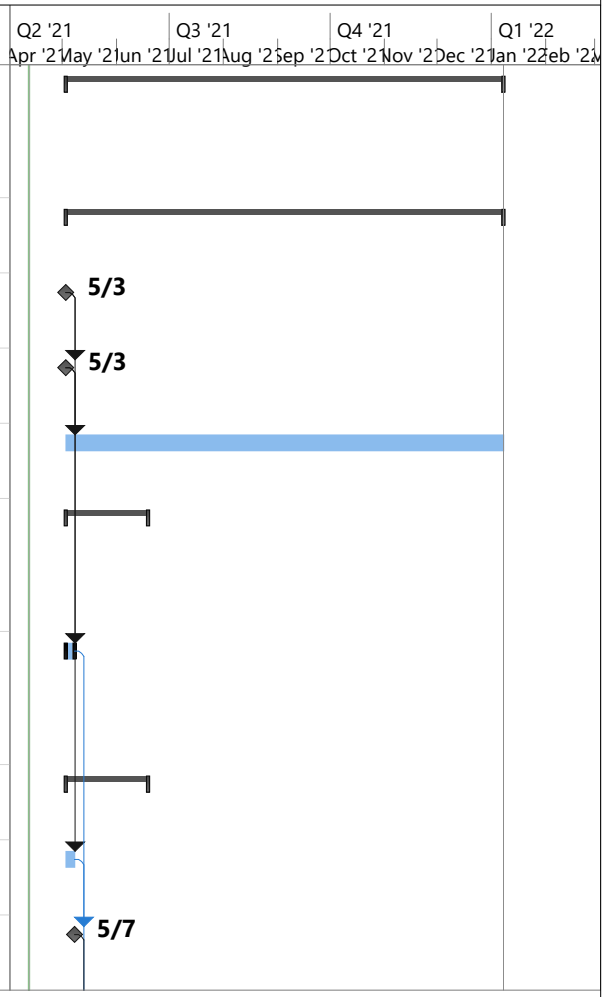
We have provided our proposed fee and proposed project schedule in a separate envelope as requested in the RFP.

ATTACHMENT 1

PROPOSED PROJECT SCHEDULE

Proposed Schedule
Foremain Intake Grading and Erosion Control Design

ID	Task Name	Duration	Start	Finish	Predecessors
1	**Foreman Intake Grading and Erosion Control Design Project**	**180 days**	**Mon 5/3/21**	**Fri 1/7/22**	
2	**Task I: Project Management**	**180 days**	**Mon 5/3/21**	**Fri 1/7/22**	
3	Notice to Proceed	0 days	Mon 5/3/21	Mon 5/3/21	
4	Kick-off Meeting	0 days	Mon 5/3/21	Mon 5/3/21	3
5	Monthly Invoicing	180 days	Mon 5/3/21	Fri 1/7/22	3
6	**Task II: Site Investigation, Data Collection, and Record Research**	**35 days**	**Mon 5/3/21**	**Fri 6/18/21**	
7	Review existing records, limits of project, field reconnaissance	5 days	Mon 5/3/21	Fri 5/7/21	4
8	**Geotechnical Investigation/Report**	**35 days**	**Mon 5/3/21**	**Fri 6/18/21**	
9	Prepare for field work	5 days	Mon 5/3/21	Fri 5/7/21	4
10	Field Investigation	0 days	Fri 5/7/21	Fri 5/7/21	9

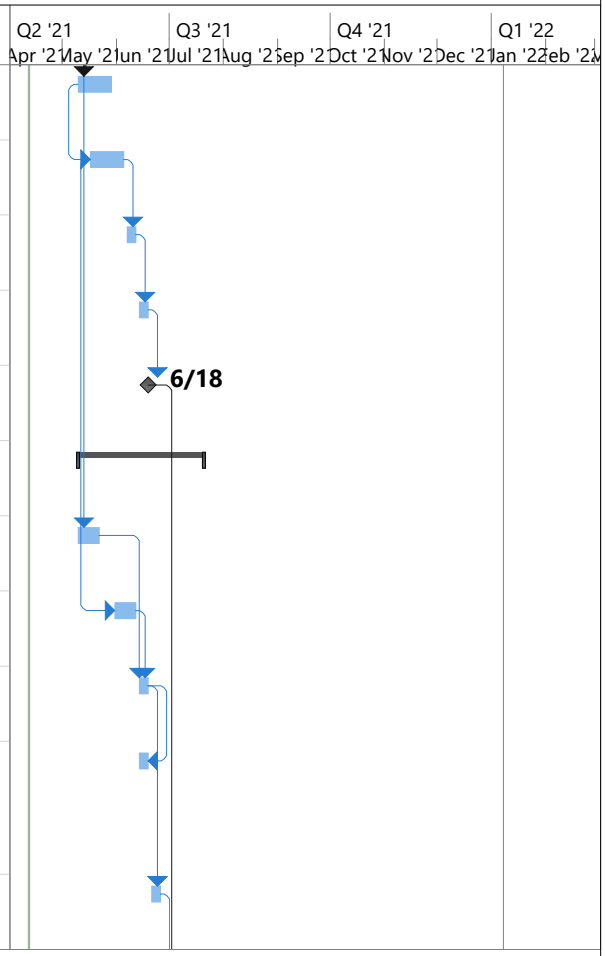


Client: San Lorenzo Valley Water District

Task		Inactive Summary		External Tasks	
Split		Manual Task		External Milestone	
Milestone		Duration-only		Deadline	
Summary		Manual Summary Rollup		Progress	
Project Summary		Manual Summary		Manual Progress	
Inactive Task		Start-only			
Inactive Milestone		Finish-only			

Proposed Schedule
Foremain Intake Grading and Erosion Control Design

ID	Task Name	Duration	Start	Finish	Predecessors
11	Laboratory Analysis	15 days	Mon 5/10/21	Fri 5/28/21	10
12	Prepare draft geotechnical report	15 days	Mon 5/17/21	Fri 6/4/21	11SS+5 days
13	Internal Review	5 days	Mon 6/7/21	Fri 6/11/21	12
14	Prepare geotechnical report submittal	5 days	Mon 6/14/21	Fri 6/18/21	13
15	Submit geotechnical report	0 days	Fri 6/18/21	Fri 6/18/21	14
16	**Task III: Basis of Design Report**	**52 days**	**Mon 5/10/21**	**Tue 7/20/21**	
17	Perform hydrologic analysis and calculations	10 days	Mon 5/10/21	Fri 5/21/21	7
18	Develop slope stabilization alternatives	10 days	Mon 5/31/21	Fri 6/11/21	12SS+10 days
19	Perform risk assessment	5 days	Mon 6/14/21	Fri 6/18/21	17,18
20	Develop opinions of probable construction cost	5 days	Mon 6/14/21	Fri 6/18/21	19FF
21	Prepare internal draft BOD	5 days	Mon 6/21/21	Fri 6/25/21	19,20



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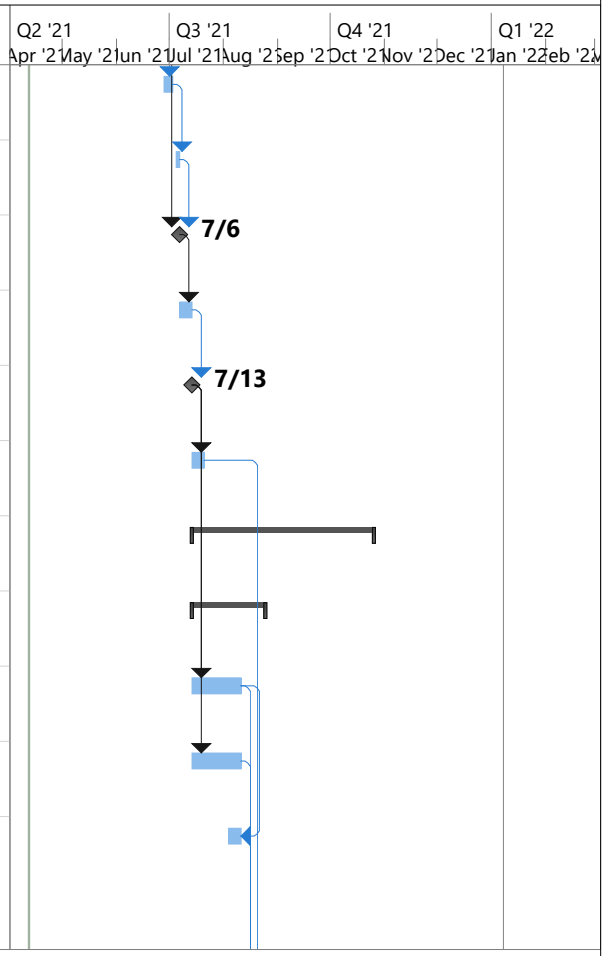
Inactive Task		Start-only			
Inactive Milestone		Finish-only			

Proposed Schedule
Foremain Intake Grading and Erosion Control Design

ID	Task Name	Duration	Start	Finish	Predecessors
22	Internal Review	5 days	Mon 6/28/21	Fri 7/2/21	21
23	Prepare draft BOD	2 days	Mon 7/5/21	Tue 7/6/21	22
24	Draft BOD submittal	0 days	Tue 7/6/21	Tue 7/6/21	23,15
25	District Review	5 days	Wed 7/7/21	Tue 7/13/21	24
26	BOD Technical Review Workshop	0 days	Tue 7/13/21	Tue 7/13/21	25
27	Prepare final BOD	5 days	Wed 7/14/21	Tue 7/20/21	26
28	**Task IV: Construction Documents**	**74 days**	**Wed 7/14/21**	**Mon 10/25/21**	
29	**Draft Construction Documents**	**30 days**	**Wed 7/14/21**	**Tue 8/24/21**	
30	Prepare Drawings	20 days	Wed 7/14/21	Tue 8/10/21	26
31	Prepare Technical Specifications	20 days	Wed 7/14/21	Tue 8/10/21	26
32	Update Opinion of Probable Construction Cost	5 days	Wed 8/4/21	Tue 8/10/21	30FF



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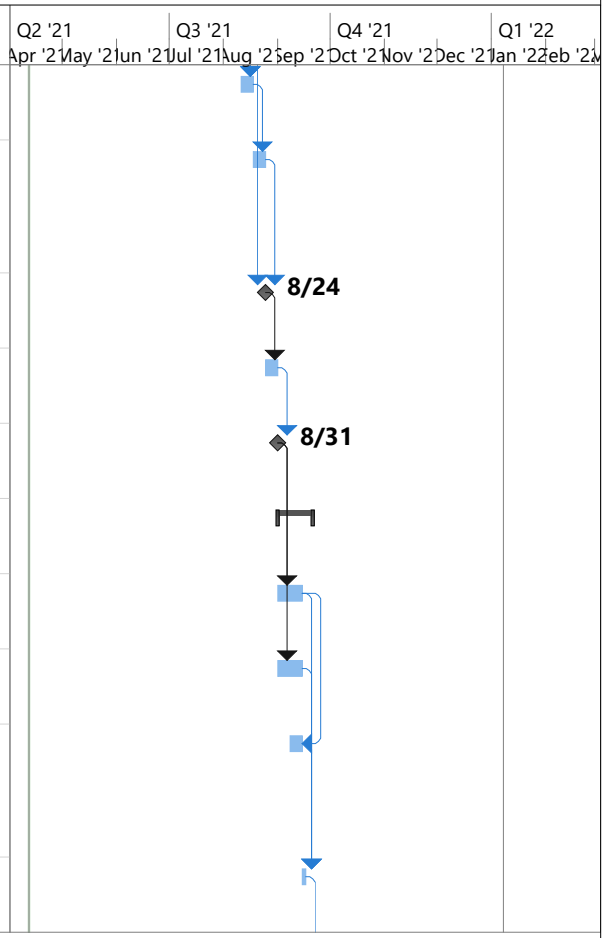
Inactive Milestone		Finish-only			

Proposed Schedule
Foremain Intake Grading and Erosion Control Design

ID	Task Name	Duration	Start	Finish	Predecessors
33	Internal Review	5 days	Wed 8/11/21	Tue 8/17/21	30,31,32
34	Prepare Draft Construction Documents Submittal	5 days	Wed 8/18/21	Tue 8/24/21	33
35	Submit Draft Construction Documents	0 days	Tue 8/24/21	Tue 8/24/21	34,27
36	District Review	5 days	Wed 8/25/21	Tue 8/31/21	35
37	Construction Documents Review Workshop	0 days	Tue 8/31/21	Tue 8/31/21	36
38	**Final Construction Documents**	**14 days**	**Wed 9/1/21**	**Mon 9/20/21**	
39	Update Drawings	10 days	Wed 9/1/21	Tue 9/14/21	37
40	Update Technical Specifications	10 days	Wed 9/1/21	Tue 9/14/21	37
41	Update Opinion of Probable Construction Cost	5 days	Wed 9/8/21	Tue 9/14/21	39FF
42	Internal Review	2 days	Wed 9/15/21	Thu 9/16/21	39,40,41



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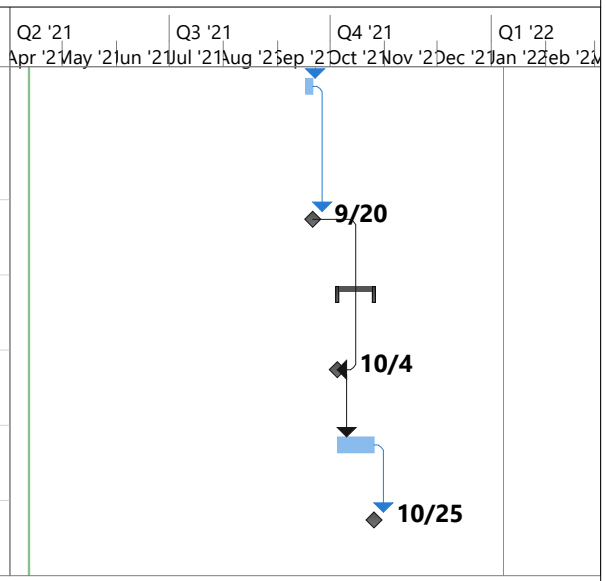
Inactive Task		Start-only			
Inactive Milestone		Finish-only			

Proposed Schedule
Foremain Intake Grading and Erosion Control Design

ID	Task Name	Duration	Start	Finish	Predecessors
43	Prepare Final Construction Documents Submittal	2 days	Fri 9/17/21	Mon 9/20/21	42
44	Submit Final Construction Document	0 days	Mon 9/20/21	Mon 9/20/21	43
45	**Bid Support**	**15 days**	**Mon 10/4/21**	**Mon 10/25/21**	
46	Issue Construction Documents for Bid	0 days	Mon 10/4/21	Mon 10/4/21	44FF+10 days
47	Bid Period	15 days	Tue 10/5/21	Mon 10/25/21	46
48	Award Construction Contract	0 days	Mon 10/25/21	Mon 10/25/21	47



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ATTACHMENT 2

KEY STAFF RESUMES

FREYER & LAURETA, INC. CIVIL ENGINEERS · SURVEYORS · CONSTRUCTION MANAGERS

Jeffrey J. Tarantino, P.E.
Vice-President

Education: Bachelor of Science in Civil Engineering
Santa Clara University

Professional Qualification: Registered Civil Engineer – California No. 63936

Mr. Tarantino has extensive experience in civil engineering design and construction that has been developed during his 20 years of civil and environmental work experience. Mr. Tarantino has served as project manager on numerous program management, planning, design, permitting and construction management projects. His project experience includes civil site development, water supply treatment and distribution , wastewater treatment and collection, water reuse treatment and distribution, flood control , groundwater extraction and treatment systems, and water quality. Mr. Tarantino serves as the primary point of contact with permitting and environmental resources agencies on behalf of clients to facilitate open dialogue with the agencies. Mr. Tarantino has demonstrated a unique ability to assist clients to bridge technical and non-technical challenges to deliver multi-beneficial projects within budget and on schedule. A representative sampling of past and current projects includes:

Development and Campus Projects

UCSF, Minnesota Street Student Housing
UCSF, Campus Wide Technical Criteria Development
1000 Channel Street (SF) Owner, One Mission Bay
Uber Headquarters, 1455 and 1515 Third Street
TNDC, Candlestick Block 10A
Alexandria Real Estate Equities (ARE), 1450 Owens
UC Berkeley, Berkeley Way Project
UCSF, Weill Institute for Neuroscience
Mission Bay, Park P2-P8
Mission Bay, Park P3
TNDC, 681 Florida Street
ARE, Confidential Site (San Mateo County

Infrastructure Projects

City of Burlingame, Water Distribution
Valley of the Moon Water District, Water Distribution
City of Calistoga, Water Treatment
Mission Bay, Wastewater Collection
City of Pacifica, Wastewater Collection
Town of Hillsborough, Creek Stabilization
UCSF, 2nd Parcel Infrastructure
Town of Hillsborough, Water Distribution
City of San Mateo, Wastewater Collection
Coastside County Water District, Water Distribution
City of Burlingame, Storm Drain Collection
City of Pacifica, Stormwater Collection
City of San Mateo, Stormwater Collection
UCSF, Surcharge Removal

Environmental Projects

SLAC National Laboratories, Groundwater Treatment
Aircraft Service International Group, Groundwater Treatment
City of Emeryville, Soil Remediation
Peninsula Open Space Trust, Soil Remediation

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150 Executive Park Boulevard, Suite 4200
San Francisco, CA 94134

FREYER & LAURETA, INC. CIVIL ENGINEERS · SURVEYORS · CONSTRUCTION MANAGERS

Richard J. Laureta, P.E.
President

Education: Bachelor of Science in Civil Engineering
California Polytechnic State University, San Luis Obispo

Professional Qualification: Registered Civil Engineer – California No. 55783
Registered Civil Engineer – Hawaii No. 10545

Mr. Laureta has broad experience in civil engineering design and construction. In his 25 years of professional engineering experience, he has participated in the design, project management, and construction coordination of private sector engineering projects, as well as city, county, state and federal rehabilitation projects. His broad experience gives him the knowledge necessary to be an integral part of multi-disciplined teams in the planning, design and installation of challenging civil engineering projects. Mr. Laureta has a growing reputation in urban master planning and wastewater collection design and construction management. He serves as the District Engineer for the West Bay Sanitary District in Menlo Park and the East Palo Alto Sanitary District. The combination of his design experience and his expertise in computer-aided drafting ensures accurate design drawings. His experience and dedication to the profession allows him to be a contributor to the success of diverse engineering projects. A representative sampling of past and current projects includes:

District Engineer/Public Works Projects
West Bay Sanitary District, District Engineer
East Palo Alto Sanitary District, District Engineer
Silicon Valley Clean Water, Conveyance System
City of San Leandro, Wastewater Collection Systems
City of Burlingame, Storm Drain Collection Systems
University of San Francisco, Misc. Projects

Office/Commercial/Residential Projects
Britannia Oyster Point, South San Francisco
Hercules Properties PUD, Hercules
McGrath Rentcorp Offices, Livermore
Childrens' Center, NAS North Island, San Diego
Marriott Courtyard, So. San Francisco
Bay West Cove, So. San Francisco
Sutro Tower Improvements, San Francisco

Infrastructure Master Planning and Design
Mission Bay Residential Area
Mission Bay Park NP 1-2 Project
Mission Bay Park NP 3-5 Project
Mission Bay Park P16
Mission Bay Drive and Circle Project
Mission Bay Blocks 29 - 32 and 33 - 34
Utility Master Plan, South of Channel

Roadway and Infrastructure Projects
Naval Training Center Drainage Design, San Diego
Rankin Pump Station Design, San Francisco
Ralston Avenue Grade Separation, Belmont
Special Weapons Area Pump Station, NAS North Island
Pier 45 Seismic Retrofit, San Francisco
Guadalupe River Retaining Walls, San Jose
Bollman Water Treatment Plant Expansion, Concord

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Jason J. Feudale
Associate Engineer

Education: Bachelor of Science in Civil Engineering, California State University Chico

Mr. Feudale has 15 years of experience in municipal and construction engineering. The experience he has gained in grading, drainage, erosion control, and utility design provides Freyer & Laureta a high level of independent and efficient production of civil engineering construction documents. Mr. Feudale has also gained a great deal of experience in construction inspection. He serves as the construction inspector for both the West Bay Sanitary District and the East Palo Alto Sanitary District, and Erosion Control Inspector for the town of Portola Valley. Past engineering project experience includes:

Infrastructure Planning and Design

Blocks 11-12 Public Infrastructure, San Francisco
Illinois Pump Station, East Palo Alto
Stowe Lane Pump Station, San Mateo County
Foothills Park Maintenance and Parking Lot, Palo Alto
Neighborhood Storm Drain Project # 1, Burlingame
Neighborhood Storm Drain Project # 2, Burlingame
2010 Sanitary Sewer Improvement Project, East Palo Alto
West Bay Sanitary District Offices Building, Menlo Park
Britannia Oyster Point, So San Francisco
Village Square Pump Station, Portola Valley
Sewer Pipe line Replacement, San Leandro
Sewer Point Repair, San Leandro
Wicks & Blue Dolphin Pump Stations, San Leandro
Menalto Pedestrian Improvements, Menlo Park
Sewer Trunkline Realignment, East Palo Alto
West Bay Sanitary District Belle Haven, Menlo Park

Construction Management and Inspection

Kebcenell Residence Drive Way, Portola Valley
Peak Lane Grinder Pump Force Main, Portola Valley
Cervantes Road Grinder Pump Force Main, Portola Valley
Westridge Drive Sewer Project, Portola Valley
Pope Street Emergency Sewer Project, Menlo Park
Los Trancos Sewer Project, San Mateo County
Sewer Trunkline Realignment, East Palo Alto
Veterans Hospital Sewer, Menlo Park
Royal Oak Sewer, Menlo Park
Lane Woods Sewer, Menlo Park
Heritage Oaks Sewer, Menlo Park
Morgan Lane Sewer I & II, Menlo Park
Gloria Way Well Treatment Project, East Palo Alto
Sewer Siphon Replacement, East Palo Alto

GIS Mapping

West Bay Sanitary District
East Palo Alto Sanitary District

Sanitary Sewer Flow Metering

East Palo Alto Sanitary District

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San Mateo, CA 94401

PHILLIP GREGORY, P.E., G.E.

Senior Principal Engineer

CE&G
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RELEVANT EXPERIENCE

Zander Drive Landslide **Orinda, CA**
Project manager for the geologic and geotechnical characterization and stabilization alternatives and feasibility study for a 300 foot wide, 1,000 foot long and 105+ foot deep landslide below a city street and two city-owned parcels. Geotechnical investigations included the review of numerous previous reports and studies, completion of a subsurface exploration, instrumental, monitoring, and testing program; preparation of a landslide characterization report, a design alternatives report, and cost estimating. The project study had a cost of $165,000 and the estimated stabilization cost was $3 million. Due to the high cost of stabilization, CE&G prepared PS&E to implement drainage improvements and developed a landslide monitoring program.

SF Bay Trail - George Miller Trail **Martinez, CA**
Principal-in-charge for geotechnical, civil, planning study, conceptual plan development, alternatives analysis, design of landslide repairs, field observations, and laboratory testing for conversion of a landslide prone segment of Carquinez Scenic Drive into a segment of the Bay Trail. Services were completed for the Contra Costa County Public Works Department and East Bay Regional Park District. Work included geotechnical investigation of several landslides, development of alternatives, estimates, and preparation of geotechnical alternatives and planning reports. Project received CalGeo's 2015 Outstanding Project of the Year Award.

Soquel-San Jose Road Landslide Repair **Santa Cruz, CA**
Project engineer to provide emergency services for two sections of roadway (sections PM 5.91 and PM 5.36) in the Santa Cruz mountains after sustaining severe damage from 2016-2017 storm season. Provided geotechnical investigation and preparation for site survey, development and design of temporary bridge crossing, conceptual design alternatives, coordination with County staff applications for federal funding, PS&Es, bidding assistance, and engineering services during construction.

McKillop Road Embankment Stabilization **Oakland, CA**
Project manager for the geotechnical investigation and design of a double retaining wall system used to stabilize McKillop Road from a landslide migrating toward the street. Project included design of a 160 linear foot inner soldier pile wall with two rows of tiebacks, and 190 linear feet outer soldier pile shoring wall connected to the inner wall using tie rods. Work consisted of preparing calculations and plans on an emergency basis.

Vargas Road Realignment and Creek Bank **Fremont, CA**
Provided and prepared a geotechnical investigation and a geotechnical report, design concept report, and full PS&E for repair of failure of a narrow rural road situated above a deeply incised ephemeral creek. The creek bank stabilization measures included biotechnical slope stabilization and installation of rock weirs within the creek bed. The existing road was relocated from the top of the creek bank, requiring widening of the road at the base of an ascending slope. The widening was completed by over-excavating the existing slope and constructing a geogrid reinforced steepened slope. Part-time observation of the construction was provided to assist County inspection personnel on an as-needed basis.

Vasco Road Realignment **Livermore, CA**
Project manager for geotechnical study completed for Alameda County Public Works Agency for re-alignment of approximately 1.2 km of major roadway between eastern Alameda and Contra Costa counties. Project consists of large 25 meter cut into faulted and intensely fractured bedrock situated along an active trace of the Greenville Fault. Work included completion of approximately 20 coreholes and borings, exploratory trenching, geophysics, and design of reinforced soil embankments and retaining walls.

CERTIFICATIONS
- CA Civil Engineer No. 40728
- CA Geotechnical Engineer No. 2193

YEARS OF EXPERIENCE
37 (28 with CE&G)

EDUCATION
M.S., Civil Engineering (Geotechnical), University of California at Berkeley, 1984
B.S., Civil Engineering, University of California at Berkeley, 1983

ACCOMPLISHMENTS
- Managed more than 100 public works geotechnical investigation and geo-design projects for ten - separate agencies
- Former soil testing instructor at Chabot Junior College in Hayward
- Invited lecturer on geosynthetics, slope stability, and erosion control
- Former co-Chairman of the Slope Technology Committee of IECA
- Project engineer for design and analysis of various embankment dams through western U.S.
- Designer of over 150 geogrid reinforced slopes and retaining walls

Penitencia Water Treatment FM Seismic Retrofit **San José, CA**
Technical reviewer as part of a team of structural and geotechnical engineers and geologists to complete a landslide study, Landslide Displacement Hazard Analysis (LDHA), and provide geotechnical design recommendations to prevent catastrophic failure due to an earthquake. The project includes three adjacent pipelines that service the Penitencia Water Treatment Plant (PWTP) which is located over the slow-moving Penitencia Creek Landslide. All three pipelines cross the stable Santa Clara Valley floor onto the landslide mass.

Roadway Slope Stabilizations **Lafayette, CA**
Managed and undertook geotechnical investigation, stabilization design, and construction observation and testing for ten separate FEMA or FHWA funded emergency repairs on roads throughout the city.

Roadway Slope Stabilization **Pleasant Hill, CA**
Supervised a geotechnical investigation, stabilization design, and construction observation and testing for FHWA funded emergency repair of slopes above Taylor Boulevard, a major four lane road in Pleasant Hill.

Road Improvements **Lafayette, CA**
Managed geotechnical investigation and analysis for road restoration project involving retaining walls, embankment fills, and cut slopes.

Cowell Road Embankment Stabilization **Concord, CA**
Project manager for stabilization of 500 foot long four lane roadway embankment using cast-in-place-drilled piers and tiebacks. Completed full PS&E for project and coordinated construction with the City of Concord.

Pavement Rehabilitation **Mountain View, CA**
Manager for geotechnical investigation and testing portion of pavement rehabilitation project that included reconstruction of pavement on four municipal streets. Work included subsurface exploration and laboratory testing, development of structural pavement sections, recommendations for lime stabilization, and geotechnical observations and testing during construction.

Sculpted Soil Nail Retaining Structure **Orinda, CA**
Project manager for design and construction observation of soil nail retaining structure built to stabilize failing cutslope along a city road. Project included geotechnical investigation, preparation of contractor qualifications package, PS&E, and construction observation and testing.

St. Mary's Road Slide Repair **Lafayette, CA**
Principal-in-Charge and lead technical reviewer for the geotechnical exploration and design of repairs to re-establish the failed shoulder edge above Lafayette Creek. Prepared conceptual design, schedule, and engineering estimate for initial review by FEMA and the City. Conceptual work enabled expedited permitting by the City's environmental consultant, as well as completion of project.

Sir Francis Drake Boulevard Embankment Repair **Lagunitas, CA**
Principal geotechnical engineer for design of a retaining wall with tiebacks for stabilization of a 140 foot section of roadway along Sir Francis Drake Boulevard near M.P. 15.43 adjacent to Lagunitas Creek. Work included PS&E for design of the cast-in-drilled-hole piles (providing: length, size, depth, spacing, and location), design of the concrete facing for the wall, design of tieback loads, and design of reinforcing steel for the retaining wall.

Peaceful Glen Road **Vacaville, CA**
Project manager for a geotechnical investigation and design of stabilization measures for a 200 foot segment of Peaceful Glen Road adjacent to Sweeney Creek. The roadway was undermined by progressive lateral migration of the creek resulting in a lane closure. The project was included as an emergency repair to an already planned 800 foot long road widening project for Solano County. Work included geologic mapping, review of aerial photos, subsurface investigation, testing, and analysis to determine the limits of instability and design parameters. Design calculations for a tiered Ultra Block wall were also prepared for the county who prepared PS&E.

Mt. Diablo Creek at Ayers Road **Concord, CA**
Project manager for the preparation of plans, specifications, and estimates and also provided permitting assistance and engineering support during construction for the Mt. Diablo Creek bank stabilization and restoration located at the Ayers Road overcrossing.

Stanley Boulevard Embankment Reconstruction **Alameda Co, CA**
Provided emergency investigation, design, and preparation of PS&E for 15 meter high geocell faced, geogrid reinforced embankment reconstruction for the major arterial road between Pleasanton and Livermore. Project was FHWA-funded and received an outstanding achievement award from the local chapter of the American Public Works Association.

Camino Sobrante Retaining Wall/ Embankment Repair **Orinda, CA**
Managed the geotechnical investigation of a failing 19 foot high retaining wall supporting a heavily trafficked residential street in Orinda. Prepared separate geotechnical investigation report, plans, technical specifications, and estimates using modified Caltrans format. Project also included bidding assistance and construction observation and testing.

Highway 1 Widening Retaining Walls **Carmel, CA**
Quality control and technical reviewer for design including Caltrans PS&E of segmental retaining walls incorporated as part of a Caltrans reviewed and approved widening of Highway 1 in Carmel. Project incorporated pile supported retaining walls due to environmental constraints.

MARK MYERS, P.E., G.E.

Principal Engineer

CE&G

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RELEVANT EXPERIENCE

Alhambra Valley Road **Martinez, CA**

Project manager for design level geotechnical investigation of a federally funded widening project located between Martinez and Richmond, California. The project included both widening and changing the alignment of an 1,800 foot long section of the road which is located above a creek and traverses two spur ridges and an alluvial filled ravine. Bedrock was exposed in the existing cuts but varied to 40 feet deep in the ravines. CE&G worked with the County to evaluate several alternatives for the roadway and provided preliminary stabilization designs for cost evaluation of the alternatives. The final configuration of the project included cuts in excess of 30 feet and fills up to about 8 feet thick. The engineer's estimate for the project was $895,000 and constructions is planned for summer 2011.

River Road Bridge Replacement **Norco, CA**

Retained to provide engineering services for the replacement of a structurally deficient bridge in Riverside County over Santa Ana River. The new bridge accommodates 4 lanes of traffic and pedestrian and bicycle traffic. CE&G designed approach embankments and the temporary shoring. CE&G designed the approach embankments as reinforced earth slopes as a means of limiting the footprint of the approaches and reduce the environmental impacts of the project.

St. Mary's Road Stabilization **Lafayette, CA**

Project Manager for an investigation and design of stabilization measures for a failed road embankment above a 40-foot-tall creek bank along the main road in Lafayette. Investigation included geologic mapping, subsurface drilling and sampling, laboratory testing, and preparation of a geotechnical design and alternatives memorandum. The stabilization measures include a drilled CIDH pile retaining wall with tieback anchors and creek stabilization measures. CE&G completed a geotechnical investigation and prepared complete PS&E for the project which was bid in June and construction completed in November 2017. CE&G also provided engineering services during construction of the project. The project was funded with FHWA monies.

Memorial Park Trail **Hayward, CA**

Project engineer for two trail stabilization projects for the Hayward Area Recreation and Park District (HARD). The projects consisted of constructing a soldier pile and wood lagging retaining wall to support the trail adjacent to Ward Creek and constructing a segmental block retaining wall founded on piles and grade beam, and constructing stabilization piles. Work included preparation of a design memorandum, plans, specifications, and engineer's estimates for the trail stabilization projects.

Cowell Road Embankment Stabilization **Concord, CA**

Lead design engineer for stabilization of 500 foot long four lane roadway embankment using cast-in-place-drilled piers and tiebacks. Completed full PS&E for project and coordinated construction with the City of Concord. Project was completed on time and within budget.

McKillop Road Embankment Stabilization **Oakland, CA**

Lead design engineer for the design of a double retaining wall system used to stabilize McKillop Road from a landslide migrating toward the street. Project included design of a 160 linear feet inner soldier pile wall with two rows of tiebacks, and 190 linear feet outer soldier pile shoring wall connected to the inner wall using tie rods.

Road Improvements **Orinda, CA**

Managed site investigation and performed preliminary geotechnical design calculations for the improvement of two intersections and the addition of turning lanes. The project involved retaining walls, earthwork, and temporary shoring.

CERTIFICATIONS

CA Civil Engineer No.57494
CA Geotechnical Engineer No.2580

YEARS OF EXPERIENCE

24 (22 with CE&G)

EDUCATION

M.S., Civil Engineering (Geotechnical), University of California at Davis
B.S., Civil Engineering, Case Western Reserve University

ACCOMPLISHMENTS

- Geotechnical investigations for public works projects related to facility improvements and repairs
- Liquefaction hazard assessment and analysis
- Evaluation (static, seismic, rapid drawdown) of embankment dams
- Design of pier and lagging, tie-back, masonry, segmental block, and soil nail retaining wall systems
- Geogrid reinforced slopes and retaining wall systems
- Seismic embankment deformation analyses
- Forensic geotechnical studies and expert witness services

Highway 1 Retaining Walls **Carmel, CA**
Lead design engineer for segmental retaining walls incorporated as part of a Caltrans reviewed and approved widening of Highway 1 in Carmel. Design included considerations for environmentally sensitive Monterey Cypress tress. Scope included preparing non-proprietary technical specifications in the Caltrans Special Provisions format.

Roadway Stabilization **Belmont, CA**
Project manager and lead engineer responsible for geotechnical investigation, testing, analyses, and design of stabilization measures for a 200 foot long section of roadway undermined by both shallow and deep landslide processes. The active landslides were within a larger mapped landslide which was inactive. The project required geologic mapping, the review of aerial photos, subsurface investigation, testing, and analysis to determine the limits of landsliding and design parameters. Prepared five conceptual repairs for discussion with the City and the City Attorney prior to preparing plans for the repair.

Stanley Boulevard Embankment Reconstruction **Alameda Co., CA**
Project engineer to provide emergency investigation, design, and preparation of PS&E for 15 meter high geocell faced, geogrid reinforced embankment reconstruction for the major arterial road between Pleasanton and Livermore. Project was FHWA-funded and received an outstanding achievement award from the local chapter of the American Public Works Association.

Bicycle Trail and Bridge **Cupertino, CA**
Manager for geotechnical investigation for newly paved bike trail and pre-fabricated bridge over creek. Services provided included coordination with Santa Clara Valley Water Agency and Cupertino, subsurface exploration and testing, preparation of geotechnical design report with bridge foundation and pavement structural section recommendations.

Pier and Lagging Retaining Wall **Novato, CA**
Design and preparation of plans and specifications for a retaining wall supporting the edge of a private road along a slope.

BART Ramp Pathway and Retaining Walls **Orinda, CA**
As Project Manager to City of Orinda (as subconsultant to LCC, Inc.) completed a geotechnical investigation, designed retaining walls, and prepared technical specifications for the Orinda BART/Downtown Orinda pedestrian path. The project was funded in part by BART to improve the pedestrian path and make the path ADA compliant. Project involved working around CCCSD's force main and pump station, and enabling them to remain active during the project.

School Retaining Wall Repair **Laguna Beach, CA**
Prepared calculations and plans which were reviewed by DSA for the repair of a distressed retaining wall.

Camp Parks Development Project **Dublin, CA**
Currently providing geotechnical peer review for a 2,485 acre development project consisting of 1,995 residential units in 24 neighborhoods, 200,000 sq. ft. of commercial use development, a 30 acre community park, a 5 acre neighborhood park, and an elementary school site. The project is being developed by two developers. CE&G reviewed the original geotechnical report and fault investigation and is currently reviewing the grading and improvement plans of each of the neighborhoods and public infrastructure improvements.

Reinforced Slopes **Simi Valley, CA**
Completed design calculations and prepared plans and specifications for the construction of a 1800 foot long 55 foot tall 1H:1V geogrid reinforced slope for new shopping center.

Segmental Block Retaining Walls **Various, CA**
Complete design analysis and plan preparation for various segmental block retaining walls given the geotechnical constraints of the particular site.

Tieback Pier and Lagging Retaining Wall **Martinez, CA**
Design and preparation of plans for a tieback retaining wall. The wall was designed to protect a home from an above slope erosion/landslide problem.

Retaining Walls at Home Depot **Auburn, CA**
Manager and lead designer of large retaining walls constructed to develop site for construction of new Home Depot in Auburn, California. Services included coordination of geotechnical and civil engineering project consultants, design analyses and calculations, preparation of plans, specifications, and estimates for the retaining walls, and part-time engineering assistance during bidding and construction of the project. The project included retaining walls up to 20 feet tall and over 1200 feet long.

Retaining Walls for Commercial Development **Corona, CA**
Manager and lead engineer for the design of nine Lock + Load mechanically stabilized earth retaining walls which varied in height up to 46 feet tall. The tallest wall was constructed to avoid needing to design a three story building to retain a hillside. The wall was designed and constructed near vertical with a bridge at the top with allows cars to park on the retained ground or on the roof of the building. In addition to extensive coordination with the design team, the project also required gaining the confidence of the City in both the proposed project and in our capabilities following failure of mechanically stabilized earth retaining walls within the City. CE&G looked into the failure experienced by the City and was able to demonstrate that the failed wall had been inadequately designed and constructed and that the failure was not due to a global problem with mechanically stabilized earth retaining walls.

ROCIO BRISEÑO, P.G.

Project Geologist

CE&G
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RELEVANT EXPERIENCE

Industrial Creek Flood Wall Exploration **Hayward, CA**
Field exploration geologist for geotechnical investigation for Alameda County Flood Control and Water Conservation District's flood wall improvement project which extends from Industrial Parkway southwest to the Line B confluence with Line D, and south along Line B from the LineB/Line D condluence to Industrial Parkway. Performed borehole loggings, and prepared log reports for CE&G's geotechnical evaluation of the sites.

Redwood Creek Repair **Redwood City, CA**
Staff field geologist for a geotechnical exploration and report providing geotechnical design recommendations for Redwood City's 2017 Redwood Creek Improvements Project for the Jefferson Branch between Clinton Street and El Camino Real and the Redwood Branch between Hudson Street and 650 feet northeast of Ebener Street in Redwood City, California. Work included completion of a subsurface investigation consisting of five exploratory borings, and preparation of a geotechnical report of findings and recommendations. Performed borehole loggings, and prepared log reports.

Ardenwood Creek Bridges **Fremont, CA**
Field exploration geologist for geotechnical investigation for three new pre-fabricated bridges in the East Bay Regional Park District's Coyote Hills Regional Park along Ardenwood Creek. Field exploration included mud rotary drilling and sampling with Pitcher barrels. Responsible for logging of borings and coordination with permitting agencies.

Dalton Tank Replacement **Livermore, CA**
Field exploration geologist for geotechnical investigation for replacement water tank in Livermore hills. Field exploration included hollow stem auger drilling with drive samples. Responsible for logging of borings and coordination with permitting agencies.

Levee Condition Assessment **Sunnyvale, CA**
Project geologist for levee evaluations as part of an infrastructure improvement project. Participated in levee evaluations, mapping, and plan specification review to identify and document deficiencies.

Water Quality Lab Investigation **San Jose, CA**
Field exploration geologist for geotechnical investigation for the planned improvements at the Santa Clara Valley Water District's Water Quality Laboratory facility. Field exploration included hollow stem auger drilling and drive sampling and CPT soundings. Responsible for logging of borings and coordination with permitting agencies.

Stevens Creek Bank Repair **Mountain View, CA**
Field exploration geologist for geotechnical investigation for the planned improvements at the Santa Clara Valley Stevens Creek flood control property. CE&G's services included a geotechnical investigation, subsurface exploration, laboratory testing, developing alternative repair concepts, and post-design review and analysis. As Staff Geologist, performed borehole loggings, and prepared log reports as part of the subsurface investigation.

Carondelet Athletic Center **Walnut Creek, CA**
Field geologist responsible for construction observation and testing of earthwork done for the construction of the Carondelet Athletic Complex in Walnut Creek. Performed compaction tests, concrete and shotcrete special inspection, pier hole measurements and observation, construction documentation, and preparing of construction observation and testing summary letters.

CERTIFICATIONS
CA Professional Geologist No. 9859
ACI Concrete Field Testing Technician Grade 1 ID No. 01358061
Nuclear Gauge Technician CPN
ICC Soils Field Testing Technician Grade 1 Certified
Commercial 107 UAS Pilot
HAZWOPER

YEARS OF EXPERIENCE
6 (5 with CE&G)

EDUCATION
B.S., Geology, San Francisco State University, 2015

ACCOMPLISHMENTS
- Field exploration experience with a variety of drilling and sampling methods
Logging of boring and trenches
Piezometer and inclinometer casing installation and monitoring; Construction observation and testing experience

Dam Instrumentation Monitoring **San Jose, CA**
Field geologist responsible for the monitoring and troubleshooting of vibrating wire piezometers as part of the Calero Dam seismic retrofit design work for the Santa Clara Valley Water District.

Levee Instrumentation Monitoring **Milpitas, CA**
Field geologist responsible for the monitoring and troubleshooting of vibrating wire piezometers as part the levee and flood walls design work for the Santa Clara Valley Water District.

Slope Instrumentation Monitoring **Blackhawk, CA**
Field geologist responsible for the monitoring and evaluation of eight inclinometers and seven vibrating wire piezometers as part of a six year long evaluation of slope stability for the Blackhawk Geologic Hazard Abatement District.

Potrero Hills Landfill Module 17B **Suisun City, CA**
Provided Construction Quality Assurance Monitoring for the construction of a new solid waste disposal cell at the municipal landfill in Suisun City. Responsibilities included duties of the CQA field technician which included, field testing of earthwork and low permeability clay liner, logging of the geosynthetic liner system installation, documentation of the placement of the drainage and operations layers, and subgrade acceptance.

Homewood Suites **Pleasant Hill, CA**
Field gelogist responsible for construction observation and testing of earthwork done for the construction of the the new Homewood Suite by Hilton in Pleasant Hill. Performed compaction tests, concrete special inspection, construction documentation, and preparing of construciton observation and testing summary letters.

Zone 5 Line A Soil/Bentonite Wall **Alameda Co., CA**
Staff geologist for construction observation and testing services for the construction of a seepage barrier below the southern levee of Alameda Creek in Fremont. Duties included observation and testing of the levee degrading, the soil mixing operation for a subsurface cut-off wall, testing of the fill placed during the regarding operation, sample collection, construction specifications verification for quality assurance purposes, and special inspection of steel and concrete.

Sulphur Creek Levee Improvements **Hayward, CA**
Duties included construction observation and testing services for the purposes of certification of approximately 1,000 feet of levee, backfill placement observations and testing for the bypass structures, and documentation of construction activities for the Alameda County Public Works Agency.

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