

**PREPARED FOR:**



**PREPARED BY:**



## **TECHNICAL PROPOSAL:**

**PROFESSIONAL DESIGN SERVICES TO THE  
SAN LORENZO VALLEY WATER DISTRICT:**

**CONSOLIDATION OF THE  
BRACKEN BRAE & FOREST  
SPRINGS MUTUAL WATER  
COMPANIES**

**CIVIL ENGINEERING SERVICES**

# TABLE OF CONTENTS

01	<b>COVER LETTER</b>	
02	<b>PROJECT DESCRIPTION &amp; APPROACH</b>	
03	<b>IDENTIFICATION OF PRIME CONSULTANT</b>	SHERWOOD DESIGN ENGINEERS
04	<b>IDENTIFICATION OF SUBCONSULTANTS</b>	TOWILL CONSULTANTS, INC., PACIFIC CREST ENGINEERING, INC., STREETER GROUP, AURUM CONSULTING ENGINEERS
05	<b>PROJECT ORGANIZATION &amp; TEAM EXPERIENCE</b>	ORG CHART   KEY PERSONNEL RESUMES   PROJECT MANAGEMENT APPROACH   WORKLOAD CAPACITY   QUALIFICATIONS STATEMENT
06	<b>EXPERIENCE &amp; PAST PERFORMANCE</b>	RELEVANT PROJECT EXPERIENCE
07	<b>SCOPE OF SERVICES</b>	SCOPE OF WORK   PROPOSED SCHEDULE   EXCEPTIONS
08	<b>INSURANCE</b>	

\*FEE PROPOSAL PACKAGED SEPARATELY PER RFP REQUIREMENTS

# 01. COVER LETTER



September 20th, 2021

Josh Wolff  
District Engineer  
San Lorenzo Valley Water District  
13060 Highway 9  
Boulder Creek, CA 95006  
JWolff@SLVWD.com

Transmittal:  
Request for Proposals for  
the San Lorenzo Valley Water  
District - Consolidation of  
the Bracken Brae & Forest  
Springs Mutual Water  
Companies

### FIRM INFO

#### ORGANIZATION TYPE

C-corporation

#### CALIFORNIA CERTIFICATION

Sherwood Design Engineers, LTD.  
C2671192

#### OFFICE LOCATIONS

San Francisco (HQ)  
New York  
Santa Cruz  
Atlanta  
Petluma  
Los Angeles

Dear Josh,

Sherwood Design Engineers (Sherwood) is pleased to present our proposal to the San Lorenzo Valley Water District (SLVWD) for Professional Design Services for Consolidation of the Bracken Brae and Forest Springs Mutual Water Companies. Sherwood has prepared a proposal that is reflective of the scope of work outlined in the RFP prepared by the SLVWD.

Sherwood is a locally based and nationally recognized engineering firm with experience in the design and specification of water pipelines, booster pump stations and water storage tanks. Most recently we have been working for the Forest Springs Utility Association and we are very familiar with this project and the setting.

Sherwood has extensive experience working in rural and environmentally sensitive settings and we have designed water conveyance and distribution systems, pumping systems, water storage tanks and SCADA systems for several water companies and utilities locally and throughout California. We have completed water works projects for many public and private clients including Caltrans, California State Parks and Recreation, Regional Park Agencies and Water Utilities throughout Central and Northern California.

Sherwood in association with Pacific Crest Engineering, Streeter Group, Inc, Aurum Consultants, and Towill, Inc has assembled a multi-disciplinary team of experienced engineers and land surveyors to complete this project. Our team will provide the full services of civil, structural, electrical, systems control, and geotechnical engineering and land surveying required to successfully complete this project within budget and schedule. As a team we have a clear understanding of the scope of work and the desired outcome of the SLVWD. As a small and agile team of engineers and surveyors we will work closely with you and your staff and maintain good and clear lines of communication, which we believe is critical to the success of these types of projects.

Sherwood has experience working with local, state and federal agencies and will provide permitting support required to implement the project. Sherwood is a local firm and is familiar with the local environment and the impacts resulting from the CZU Fire on the community and the issues that arise from community members' heightened concerns with water supply and fire protection. Sherwood designs will be prepared to be in compliance with District and California Waterworks Standards, including NSF certifications, where required.

Sherwood's substantial track record demonstrates our commitment to successfully completing mission-driven projects such as the SLVWD Consolidation of the Bracken Brae and Forest Springs Mutual Water Companies.

Sherwood Team Benefits include:

- **Water System Design Experience** that is compatible with the environment.
- **Local Core Team Members** with specific relevant experience and capacity are immediately available to the project.
- **Core Team Interest** in the development and implementation of responsible & resilient water systems.
- **Client Satisfaction** and a practice built on long-term relationships and repeat clients.
- **Technical Competency** with a proven track record of built work.

In closing, Sherwood recognizes the important role that SLVWD plays in providing potable water to the public, and we appreciate this opportunity to present our proposal for this project. Please contact me if you have any questions or require any additional information.

Sincerely,



Robyn Cooper, MS, PE, QSP/QSD  
Principal-in-Charge  
Sherwood Design Engineers  
1525 Seabright Avenue  
Santa Cruz, California 95062  
(831) 426-9054 x713  
rcooper@sherwoodengineers.com

# 02. PROJECT DESCRIPTION & APPROACH



### PROJECT UNDERSTANDING & APPROACH

Sherwood Design Engineers (Sherwood) understands that the San Lorenzo Valley Water District (District) proposes to construct improvements to its water distribution, pumping, and storage system in order to consolidate two small water systems, Forest Springs and Bracken Brae, into the District water system. Both small water systems were extensively damaged by the CZU Fire. The improvements will require installation of a total of 8,960 +/- lineal feet of water main, two bridge crossings, a new duplex booster pump station, and two new water tanks. The project does not include reconstruction of the distribution systems, which will be the responsibility of the small water systems.

Bracken Brae Water System serves 24 connections located at elevations ranging from ~815 to ~965 feet above Mean Sea Level (MSL) according to the Santa Cruz County GIS topographic contours. The proposed tank site at Bracken Brae is a steeply sloped and wooded parcel at the top of Burnside Bend. This parcel will require survey to determine optimal tank placement and actual elevation on the site.

Forest Springs Water System serves 128 connections at elevations ranging from ~950 to ~995 feet MSL according to the Santa Cruz County GIS topographic contours. The proposed tank site at Forest Springs Water System is a steeply sloped parcel at the top of Reservoir Road. The parcel will require survey to determine optimal tank placement and actual elevation on the site.

The scope of work for this project is as follows:

- Estimate demands, domestic and fire, of the two small water systems.
- Size and route 3,870 lineal feet of existing undersized water main pipeline in Big Basin Way to accommodate additional domestic and fire flow to the two mutual; including two bridge crossings.
- Size and route 2,090 lineal feet of water main pipeline to provide an interconnection to Bracken Brae, providing domestic and fire flow water supply.
- Size and route 3,000 lineal feet of water main pipeline to provide an interconnection to Forest Springs, providing domestic and fire flow water supply.
- Design of two new bridge crossings for the pipelines.
- Design of a new duplex booster pump station to pump the estimated water demand to the two small water systems. A hydraulic analysis of a single duplex booster pump station to create a single pressure zone encompassing both water systems will be conducted and implemented if feasible.
- Size and design two new water storage tanks, one for each of the smaller water systems on the lots identified for tank replacement.

Pipeline construction will include: installing new ductile iron water mains including valves, blow-offs, air reliefs, fittings, sample stations, and fire hydrants as appropriate; connection to the existing distribution system; and pavement restoration. All distribution and transmission mains will be designed in accordance with CA-DDW Waterworks Standards. All materials, appurtenances, installation and testing procedures will comply with ASTM and/or AWWA standards, as well as the SLVWD's water system construction standards.

Pavement restoration at the end of pipeline installation shall be completed in compliance with the County of Santa Cruz Public Works or Caltrans standards, depending on the location of the pipeline segment being replaced. Bridge crossings will be designed in accordance with County of Santa Cruz Public Works and Caltrans standards.

The scope of duplex booster pump station design will be predicated on tank site elevations and possible combination of the two mutual into a single pressure zone. At a minimum, the scope shall include analysis of required pump specifications; design of fire-hardened pump station(s); geotechnical analysis of station site(s); foundation or footing design; associated piping; vaults; valving; SCADA and electrical power connections; stormwater and erosion control design, both temporary for construction and permanent; and any required easements. The preferred location(s) will be within existing ROW.

The scope of tank design generally includes: tank sizing for domestic and fire; geotechnical analysis of tank sites; foundation or footing design; seismic and slosh analysis; tank design, to include access, venting, and mixing system design; yard piping and valving design; tank site layout; stormwater and erosion control design, both temporary for construction and permanent; and provision of Construction Specifications. Sherwood will develop the plans based on the existing survey and geotechnical work completed for the project. All work will be designed to be in conformance with District, County, State, and AWWA requirements.

All tanks, pumps, distribution mains, transmission mains, and services shall be designed in accordance with CA-DDW Waterworks Standards. All materials, appurtenances, installation and testing procedures shall comply with ASTM and/or AWWA standards, as well as the SLVWD's water system construction standards.

Sherwood has identified three (3) time sensitive tasks that will need to be initiated immediately upon issuance of the notice to proceed:

1. Completion of a preliminary basis of design report in cooperation with the District,
2. A survey of pipe routes and elevations for tank locations, and
3. Determination of any permitting requirements.

Sherwood is familiar with the physical setting and the site constraints at both water systems from having done work in the Santa Cruz Mountains for more than 20 years. Sherwood has been assisting Forest Springs in planning the rebuild of the distribution system and has staff that operated the Bracken Brae water system prior to the CZU Fire. Sherwood's local office in Santa Cruz is well suited to assist in this important project due to close proximity to the water systems and an intimate understanding of local regulatory agencies having worked with Santa Cruz County, Cal Fire, and the Monterey office of the State of California Division of Drinking water.



# 03. IDENTIFICATION OF PRIME CONSULTANT



## IDENTIFICATION OF PRIME CONSULTANT

SHERWOOD DESIGN ENGINEERS

**Legal Name:** Sherwood Design Engineers



**Address:** 1525 Seabright Ave, Santa Cruz, CA 95062

**Legal Form:** C-Corporation

**Parent Company:** N/A

**Main Point of Contact:** Peter Haase, M.S., P.E., Principal-in-Charge  
831.426.9054 ext: 105 | phaase@sherwoodengineers.com

**Project Team:**

CEO	1
COO	1
Director	4
Principal	6
Sr. Project Manager	9
Project Manager	7
Project Engineer	11
Design Engineer	41
CADD Technician	2
Admin. Staff	8
<b>Total</b>	<b>90</b>

**Firm Background:** SHERWOOD DESIGN ENGINEERS is a civil engineering practice committed to the optimal integration of ecology, infrastructure, and design. We specialize in sustainable infrastructure design, innovation, and sound engineering to make big ideas possible at a building, neighborhood, and regional scale. We have a proven track record of delivering projects from idea to implementation around the world. Sherwood works collaboratively with project teams to find ways to maximize efficiencies through an integrated and ecological approach that results in high-performance projects that are resilient, economical, and get approved and built.

Sherwood was founded in 2003 with 6 main offices in San Francisco, CA (HQ), Santa Cruz, CA, New York, NY, Atlanta, GA, Petaluma, CA, and Los Angeles, CA. Focused in civil and environmental engineering, and urban planning, we are committed to helping clients and fellow design practitioners understand holistic system relationships: watershed, ecosystem, and carbon/energy nexus. This greatly impacts the design and reach of a project and cultivates true sustainability. To help achieve these goals, Sherwood has developed an intimate understanding of California's state policy and county and city regulations. Our connections with public agencies run deep, from senior staff to the day-to-day contacts, as well as personal relationships that allow easy offline conversations that can create easier navigation through an often complex bureaucracy.

For litigations, the Golden Gateway Center opened a claim against RHAA Landscape Architect in 2018. Sherwood Design Engineers was a subconsultant under RHAA for the work completed. Therefore, the claim has extended to us as Co-defendants. The claim in question is for the improper installation of pavers for Davis Court in San Francisco, CA, which fell under the responsibility of RHAA. This was not a civil engineering related fault.

Sherwood Design Engineers has no bankruptcy filings.

# 04. IDENTIFICATION OF SUBCONSULTANTS



## IDENTIFICATION OF SUBCONSULTANTS

TOWILL, INC.



**Legal Name:** Towill, Inc.

**Address:** 2300 Clayton Road, Suite 1200, Concord, CA 94520

**Legal Form:** C-Corporation

**Parent Company:** N/A

**Main Point of Contact:** John T. May, PLS, Project Manager / Nor Cal Field Manager  
925.682.6976 x 1032 | john.may@towill.com

**Number of Staff & Discipline/Job Title of Each:**

Principal Land Surveyor / Geomatics Principal Manager	1
Senior Land Surveyor / Senior Project Manager	1
Project Surveyor	3
Associate Surveyor	5
Survey Technician (Office)	5
CADD Technician	4
<b>Total</b>	<b>19</b>

**Firm Background:** Towill, Inc. (Towill) is an experienced provider of geomatics engineering offering a broad range of advanced surveying, mapping, and GIS services which include land surveying; high accuracy specialty surveying; digital aerial photography; airborne, terrestrial, and mobile Light Detection and Ranging (LiDAR); digital 3D and 2D photogrammetric mapping; volumetrics; and geographic information systems (GIS).

Towill was founded in San Francisco in 1955, with current San Francisco Bay Area offices in Concord, San Jose, and Oakland, as well as offices in Fresno, Orange, and Rancho Cucamonga, CA, with an additional office in Colorado Springs, CO.

Towill is providing surveying and mapping services to multiple San Francisco Bay Area public agencies, including the City & County of San Francisco Department of Public Works; the Port of San Francisco; East Bay Municipal Utility District; County of San Mateo; Alameda County Public Works Agency; State of California Department of Water Resources; the City of Fremont; and the Port of Oakland. Towill has provided land surveying and mapping services on a wide variety of water storage and transmission facilities throughout California, providing surveying, mapping, LiDAR, and GIS of pipelines, reservoirs, watersheds, canals and aqueducts, intake and outlet structures, and other facilities, as well as utility mapping and tunnel surveys.

Towill’s staff includes numerous licensed and certified professionals: Professional Land Surveyors (PLS), Land Surveyors-in-Training (LIST), Professional Engineers (PE), Certified Photogrammetrists (CP), Registered Photogrammetrists (RPP), and GIS Professionals (GISP). Towill’s licensed or certified personnel are supported by an array of highly trained and experienced office and field staff. In addition, Towill has several FAA licensed Small Unmanned Aircraft System (sUAS) pilots.

Towill has not had any past bankruptcy filings and does not have any contracts or subcontracts which have been terminated, in default, or had claims made against it that resulted in litigation or arbitration in the last five years.

**Legal Name:** Pacific Crest Engineering, Inc.



**Address:** 444 Airport Blvd., Suite 106, Watsonville, CA 95076

**Legal Form:** S-Corporation

**Parent Company:** N/A

**Main Point of Contact:** Soma Goresky, PE, GE, Geotechnical Engineer  
831.722.9446 ext. 3629 | soma@pacengineering.net

**Number of Staff & Discipline/Job Title of Each:**

Principal Engineer	3
Associate Engineer	2
Staff Engineer/Geologist	4
Sr. Filed Technician/Special Inspector	4
Lab Technician	2
Administrative	1
<b>Total</b>	<b>16</b>

**Firm Background:** Pacific Crest Engineering is a local firm providing full service geotechnical, materials testing, special inspection and environmental engineering consulting services to the public and private sectors of the Monterey Bay area. We are a certified Small Business company (#47199) with the State of California.

Established in 2001, our office has been locally established in Watsonville, California for 21 years, which means our entire staff is centrally located and committed to meeting the project needs with efficiency and expedience.

We are well experienced in local municipal and public works projects, including performing geotechnical engineering projects for the County of Santa Cruz, Soquel Creek Water District, San Lorenzo Valley Water District, the City of Santa Cruz, the City of Watsonville and the University of California, among others. Several of members of the Pacific Crest Engineering team have 30 years or more of experience in the Monterey Bay area, comprising several hundred projects that include geotechnical studies for water tanks, roadways, multi-use trails, pipelines, public works improvements, bridges, utilities and below ground structures.

**Legal Name:** Streeter Group, Inc.

**Address:** 2571 Main Street, Suite C, Soquel, CA 95073

**Parent Company:** N/A

**Main Point of Contact:** Brad Streeter, P.E., Principal Engineer  
831.477.1781 | brad@streetergroup.com

**Number of Staff & Discipline/Job Title of Each:**

Principal Engineer	1
Principal Architect	1
<b>Total</b>	<b>2</b>

**Firm Background:** Incorporated in 1998, Streeter Group, Inc (SGI) is an architectural and structural engineering consulting firm committed to providing the highest quality of professional services.

SGI has provided professional architectural and structural engineering services for hundreds of commercial, industrial and residential projects. We provide construction documents and construction phase services for commercial and retail buildings, educational facilities, industrial facilities, high-end residential, retaining walls, vehicular and pedestrian bridges, water tank foundations and rollercoasters. Our projects have spanned across the continental United States, China, and the United Arab Emirates.

SGI puts each client’s needs first. Every project is completed by one of the firms’ principals who oversees the project from beginning to end. Through this direct contact, all clients can count on receiving personal attention, accountability, effective communication, and efficient service. We have earned a reputation of providing quality services and are committed to providing the best service possible for our clients.

At SGI, we remain committed to our original mission: To be a consulting company with vision, integrity, strength and experience, and to provide the very best professional Architectural and Structural Engineering services available.

In the 24 years of business, SGI has never filed bankruptcy, had a contract terminated due to default or had claims that resulted in litigation or arbitration.







## IDENTIFICATION OF SUBCONSULTANTS

AURUM CONSULTING ENGINEERS



**Legal Name:** Aurum Consulting Engineers Monterey Bay, Inc

**Address:** 404 W. Franklin Street, Suite 100, Monterey, CA 93940  
1798 Technology Drive, Suite 242, San Jose, CA 95110

**Legal Form:** S-Corporation

**Parent Company:** N/A

**Main Point of Contact:** Najib Anwary, PE, Senior Project Manager  
408.564.7925 ext: 201 | najib@acemb.com

**Number of Staff & Discipline/Job Title of Each:**

Director	1
Sr. Project Manager	2
Project Manager	3
Designer	7
CADD Manager	1
Drafter	3
Admin. Staff	2
<b>Total</b>	<b>19</b>

**Firm Background:** Aurum Consulting Engineers, offers statewide electrical and low voltage systems design services from conception to the completion of construction. As an electrical engineering design firm incorporated in 1998, Aurum has successfully completed well over 6,000 projects and has a clear understanding what it takes for the construction process to move along smoothly. Our added value consists of integrating the design process with all trades involved, while adapting to the client's requirements and focusing on a value conscious design. Director, Eldridge O. Bell, P.E. has Engineering and Project Management capabilities include over 16 years of Consulting Electrical Engineering involving power, lighting, fire alarm and electrical systems design for new construction and remodel/ renovation of commercial, industrial and government. Eldridge has been the Electrical Engineer for relevant projects such as Samuel P Taylor State Park Accessibility Upgrades, Salt Point State Park Accessibility Upgrades and Pfeiffer Campground ADA Upgrades with TEF Design.

Aurum Consulting Engineers is a California certified SBE and DBE enterprise.  
Aurum Consulting Engineers has no claims, lawsuits or litigations.  
Aurum Consulting Engineers has no bankruptcy filings.

# 05. PROJECT ORGANIZATION & TEAM EXPERIENCE



SHERWOOD DESIGN ENGINEERS

CIVIL ENGINEERING | HYDROLOGY | PRIME

Robyn Cooper PE, MS, QSP/QSD	Principal-in-Charge
Andy Greenberg	Project Manager
Fred Yukic, PE, MS	Sr. Project Engineer
Bill Shirefly, EIT	Design Engineer
Ciro Milazzo	Systems Engineer

SUBCONSULTANTS

TOWILL, INC.

LAND SURVEYOR

John T. May, PLS	Survey Task Lead
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PACIFIC CREST ENGINEERING, INC

GEOTECHNICAL SERVICES

Soma Goresky, PE, GE	Geotechnical Engineer
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STREETER GROUP

STRUCTURAL ENGINEER

Brad Streeter, SE	Principal Engineer
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AURUM CONSULTING ENGINEERS

ELECTRICAL ENGINEER

Najib Anwary, PE, LEED AP BD+C	Sr. Project Manager
Martin H. Perez, SET	Sr. Project Manager

**YEARS OF EXPERIENCE**

20 years

**EDUCATION**

San Jose State University,  
Master of Science in Civil Engineering

Humboldt State University,  
Bachelor of Science in Environmental  
Resource Engineering

**PROFESSIONAL  
REGISTRATION**

Registered Professional Engineer,  
State of California (73041)

Qualified SWPPP Developer /  
Practitioner (22251)

**PROFESSIONAL  
AFFILIATIONS**

Society of Women Engineers,  
Member

American Society of Civil Engineers,  
Member

Engineers Without Borders, Member

**ROBYN COOPER, PE, MS, QSP/QSD****PRINCIPAL-IN-CHARGE | SHERWOOD DESIGN ENGINEERS**

Robyn Cooper is a Senior Project Manager at Sherwood Design Engineers, a registered professional engineer in the State of California and also a QSP/D. Robyn has over 20 years of experience working in the areas of civil and environmental engineering with a focus in water and wastewater treatment and engineering. Her career has included a broad range of civil and environmental projects, related to water, water treatment, and water distribution. Robyn has focused on projects involving alternative water and wastewater treatment systems including surface water treatment, constructed wetlands, wastewater disposal and reclamation. Robyn has also performed hydraulic modeling, data collection, construction oversight, and water quality sampling and monitoring.

Robyn holds a B.S. in Environmental Resources Engineering from Cal Poly Humboldt and a M.S. in Water Resources Engineering from San Jose State University.

**Role:** Robyn will serve as the Principal-in-Charge for this project. She will provide key design oversight and direction, as well as direct the team on the overall conceptualization of the sustainable engineering design. She will lead internal team design meetings and key presentations to the Client and stakeholders.

**YEARS OF EXPERIENCE**

20 years

**EDUCATION**

University of Vermont,  
Bachelor of Science in Civil  
Engineering

**PROFESSIONAL  
AFFILIATIONS**

American Public Works Association,  
Member

**ANDY GREENBERG****PROJECT MANAGER | SHERWOOD DESIGN ENGINEERS**

Andy serves as a Project Manager out of Sherwood's Santa Cruz Office. He has extensive experience in planning, design, and permitting of wet utility projects. His expertise in civil engineering includes water system distribution, tank design and installation, pump systems, and pipeline layout.

Andy's project experience includes the design of water conveyance and distribution systems, the design of water storage tanks and booster pump systems. Andy has assisted with the permitting of water systems for both rural and urban water companies.

Recently, Andy completed a water improvement feasibility study to analyze and develop preliminary plans and preliminary cost estimates for a new water system for the community of Forest Springs in Boulder Creek, California. Andy has an intimate knowledge of the community and area as a result of his work on this project over the past year.

On his projects, Andy has helped to facilitate multidisciplinary teams through planning, design, and rigorous local, state, and federal stormwater permitting approval processes. His work experience involves managing projects from planning through construction that include hydrology and hydraulics modeling, stormwater management design, grading and drainage design, SWPPP preparation and implementation, and creek and habitat restoration.

**Role:** Andy will lead the day to day design work within Sherwood. As Project Manager, he will work with the design team to ensure the project is completed according to plan and incorporates the necessary infrastructure improvements. Andy will prepare and maintain the project schedules and attend the monthly meetings. Andy will provide technical support and review of the plans, specifications and cost estimates. Andy will coordinate and supervise work completed by the subcontractors. Andy will provide bid assistance and construction administration services throughout the duration of the project.

**YEARS OF EXPERIENCE**

41 years

**EDUCATION**

University of California, Davis  
Master of Science in Civil Engineering

University of California, Davis  
Bachelor of Science in Civil  
Engineering

**PROFESSIONAL  
REGISTRATION**

Registered Professional Engineer,  
State of California (No. 46369)

T3 Water Treatment Plant Operator,  
State of California

Licensed Well Driller,  
State of California

**FRED YUKIC, P.E., M.S.****SR. PROJECT ENGINEER | SHERWOOD DESIGN ENGINEERS**

Fred serves as a Senior Project Engineer out of Sherwood's Santa Cruz Office. He has extensive experience in planning and permitting of water and wastewater treatment plants, evaluation of water distribution systems, operation of water and wastewater treatment plants, groundwater and wells, and soil and groundwater investigation and remediation. His expertise in civil engineering includes pipe and well hydraulics, groundwater hydrology, and water quality.

Fred's project experience includes permitting of water systems in San Juan Bautista through the State of California, permitting of water systems in Salinas Valley, planning a new water treatment plant for an industrial facility in the Santa Cruz Mountains, evaluating water distribution systems after the CZU Fire, and preparation of Watershed Sanitary Surveys for projects in Santa Cruz Mountains. Fred also has experience in groundwater resource evaluation in the Pajaro Valley and the Santa Clara Valley. Fred managed water well development and testing programs on groundwater remediation projects at the Aerojet facility in Folsom, California and at the LLNL site in Livermore, California.

**Role:** Fred will assist in the day to day design work within Sherwood. As Senior Project Engineer, he will work with the design team to ensure the project is completed according to plan and incorporates the necessary infrastructure improvements. Fred will assist with the review of existing conditions to develop and evaluate potential alternatives on the basis of sustainability targets, technical and economic feasibility, and implementation and phasing considerations.



**YEARS OF EXPERIENCE**

4 years

**EDUCATION**

California Polytechnic University,  
Bachelor of Science in Environmental  
Engineering  
Minor in City & Regional Planning

**PROFESSIONAL  
REGISTRATION**

Engineer in Training, State of  
California

**BILL SHIREFLY, E.I.T.****DESIGN ENGINEER | SHERWOOD DESIGN ENGINEERS**

Bill's work at Sherwood focuses on civil, environmental, and water resources engineering and design. His projects include hydraulic and hydrologic analysis, stormwater management, water and wastewater treatment design and permitting, and low-impact development design. He has experience with AutoCAD Civil3D, WaterCAD, ArcGIS, GRASS GIS, HEC-RAS, and other helpful pieces of software.

Bill has experience working in academic, public and private sectors as an environmental engineer. He has worked on a wide variety of civil engineering projects including wet utility planning and design and construction supervision. Bill has designed water and sewer projects for public and private clients including water conveyance, distribution and water storage tank projects. Bill has designed pump stations for both water and wastewater projects. Bill recently completed the water improvement project for the community of Forest Springs and prepared the preliminary design plans for a new water distribution system and storage tanks. Bill also prepared a detailed opinion of probable cost and basis of design report for the project.

**Role:** Bill will support Robyn and Andy to complete the field engineering, engineering design plans, specifications, basis of design documents, opinion of probable cost estimates for the improvements. Bill will be responsible to conduct the water distribution modeling and sizing as required to meet the needs and permitting requirements of the project. Bill will also be involved in the construction administrative services for the project.

**YEARS OF EXPERIENCE**

38 years

**EDUCATION**

Bachelor of Science in Electrical Engineering, San Jose State University

**PUBLICATIONS**

A Parameterized Modeling System for Improves Process Corner Simulation

US Patent 6,448,841 - 2002 - High Efficiency Charge Pump Circuit

US Patent 6,344,959 - 2002 - Method for Sensing Output Voltage on Charge Pump

US Patent 5,506,532 - 1996 - Output Limiter for Class-D BICMOS Hearing Aid Output Amplifier

**CIRO MILAZZO****SYSTEMS ENGINEER | SHERWOOD DESIGN ENGINEERS**

Ciro Milazzo is a Controls and Systems Engineer at Sherwood, applying his expertise to design of control systems, generation of process and instrumentation diagrams and control narratives, and related project management.

Ciro has 38 years of professional experience in Electronic and Electrical Engineering. After graduating from San Jose State University with a Bachelor of Science in Electrical Engineering, Ciro spent 30 years working in the Santa Clara Valley on the design, development and manufacture of complex control system integrated circuits. As a side specialization Ciro has worked extensively in the areas of data analysis, design automation, and programming.

Eight years ago, Ciro began applying his comprehensive knowledge of control systems, electronic components, and programming to the water and wastewater treatment domains. Since then Ciro has designed, built, programmed, installed, and commissioned over a dozen different control systems for water and wastewater treatment facilities. These include PLC based and relay logic based control panels, SCADA user interfaces, radio networks, and cellular modems. For three years Ciro also managed an operations department which serviced and maintained over 30 water and wastewater treatment facilities, developing a good practical knowledge of treatment methods and their associated control requirements.

**Role:** As Systems Engineer, Ciro will be responsible to develop the process instrumentation diagram and control narrative that will define the SCADA work required for the project. Ciro will work closely with the District staff to assure that the proposed SCADA system will be compatible with the District system. Ciro will also assist the project through construction.

**YEARS OF EXPERIENCE**

24 years

**EDUCATION**

San Jose State University,  
Bachelor of Arts in History

**PROFESSIONAL  
REGISTRATION**

Registered Professional Land Surveyor in  
the State of California (#8570)

**PROFESSIONAL  
AFFILIATIONS**

American Council of Engineering  
Companies California (ACEC-CA), South  
Bay Chapter Board of Directors 2017  
Present; South Bay Chapter President  
2016/2017

California Land Surveyors Association  
(CLSA), Member, Board of Directors 2010  
2014

California Marine Affairs and Navigation  
Conference (CMANC), Member

Rocky Mountain Electric League (RMEL),  
Member

**JOHN T. MAY, PLS****SURVEY TASK LEAD | TOWILL, INC.**

Mr. May has 24 years of surveying experience as a Senior Land Surveyor, Project Manager, Project Surveyor, Field Survey Supervisor, and Survey Party Chief. He is an excellent task leader and regularly schedules and supervises Towill's field survey crews. His experience includes geodetic control surveys, topographic surveys, cadastral/boundary surveys and right of way engineering surveys (encompassing ALTA/NSPS surveys, right of way mapping, subdivision and parcel maps, lot line adjustments, certificates of compliance, legal descriptions, Records of Survey, and Corner Records), many types of construction surveys, monitoring surveys, and bathymetric surveys. In addition, his experience complying with a wide array of federal, state, and local government technical standards, administrative requirements, and safety protocols is substantial.

**Role:** As Survey Task Lead, Mr. May will be responsible for development of field survey workplans, oversight of survey activities, and QC of final deliverables



## SOMA GORESKY, PE, GE

### GEOTECHNICAL ENGINEER | PACIFIC CREST ENGINEERING, INC.

Ms. Goresky's experience in the fields of civil and geotechnical engineering dates back to 1986. She has worked extensively in the San Francisco Bay and Monterey Bay Area Counties. She is responsible for executing and supervising geotechnical investigations for commercial and industrial land developments, municipal public works projects, public and private schools, and single-family and residential subdivisions. She has prepared geotechnical recommendations for a wide range of structures including multistory commercial and industrial buildings, bridges, fire stations, municipal water tanks, pump stations and water distribution lines.

#### YEARS OF EXPERIENCE

36 years

#### EDUCATION

San Jose State University  
Master of Science in Civil Engineering

University of California, Santa Cruz,  
Bachelor of Science in Biology/  
Environmental Studies

#### PROFESSIONAL REGISTRATION

Registered Professional Geotechnical  
Engineer, State of California (GE 2252)

Registered Professional Engineer,  
State of California (CE 43959)

#### PROFESSIONAL AFFILIATIONS

American Society of Civil Engineers,  
Member

California Geotechnical Engineers  
Association, Member

National Society of Professional  
Engineers, Member

**Role:** In her role as Associate Geotechnical Engineer, Ms. Goresky has extensive experience in the practice of geotechnical engineering and also manages complex design level and construction phase projects. For the Consolidation of the Bracken Braid and Forest Springs Mutual Water Companies Ms. Goresky will be the responsible project geotechnical engineer and will direct and manage the scope of work required to provide geotechnical design parameters for the proposed tank and pump station sites, as well as for pipeline alignments, as needed.

**YEARS OF EXPERIENCE**

36 years

**EDUCATION**

Cal Poly San Luis Obispo,  
Bachelor of Science in Civil  
Engineering

**PROFESSIONAL  
REGISTRATION**

Registered Professional Engineer  
States of California, New Jersey,  
Oregon, Virginia

**PROFESSIONAL  
AFFILIATIONS**

Structural Engineers Association of  
Northern California

**BRAD STREETER, SE****PRINCIPAL STRUCTURAL ENGINEER | STREETER GROUP**

Mr. Streeter founded Streeter and Associates in September 1996 in order to provide high quality structural and civil engineering services. The company incorporated in July of 1998 and the name of the company was changed to Streeter Group, Inc. Mr. Streeter has over thirty-six years of structural and civil engineering experience, with his primary experience being in the structural design of residential and commercial new construction, retrofit and rehabilitation of buildings, vehicle bridges, retaining walls, and large custom wooden roller coasters.

**Role:** Mr. Streeter will provide structural engineering services in support of proposed pipeline improvements.

**YEARS OF EXPERIENCE**

14 years

**EDUCATION**

University of the Pacific  
Bachelor of Science Electrical  
Engineering

**PROFESSIONAL  
REGISTRATION**

Registered Professional Engineer in  
California Electrical Engineer E21043

**PROFESSIONAL  
AFFILIATIONS**

National Society of Professional  
Engineers (NSPE)

Institute of Electrical and Electronic  
Engineers (IEEE)

U.S. Green Building Council (USGBC)

**NAJIB ANWARY, PE, LEED AP BD+C****SR. PROJECT MANAGER | AURUM CONSULTING ENGINEERS**

Najib's Engineering and Project Management capabilities include design of power, lighting, fire alarm and electrical systems and project management for new construction and remodel/renovation of hospital/medical, educational, commercial, industrial, government and residential projects. He is thoroughly familiar with DSA (Division of the State Architects) requirements and has a proven record of approved projects. Najib has also provided electrical engineering services for design-build contractors and has provided electrical inspection for design-build government projects. He is the in-house LEED and alternative energy expert.

**Role:** Najib's role will be to design power systems and will be Principal in charge and responsible for review and signature. Najib will be involved in Schematic Design, Design Development and Construction Documents designs. Najib will be heading Construction Support and meetings, when necessary.



**YEARS OF EXPERIENCE**

36 years

**EDUCATION**

Hartnell College,  
Associate in Arts Degree  
Electromechanical Drafting Certificate

**PROFESSIONAL REGISTRATIONS**

NICET Level IV Certification in  
Fire Alarm Systems  
Certificate No. 136258

**PROFESSIONAL AFFILIATIONS**

National Fire Protection Association  
(NFPA)

BICSI Member

**MARTÍN H. PÉREZ, SET****SR. PROJECT MANAGER | AURUM CONSULTANT ENGINEERS**

Martin's Electrical Engineering design experience spans more than twenty years involving Power Systems, Low Voltage Systems, Emergency Power Systems, Lighting Systems and Fire Alarm Systems for new and renovation projects. His projects have included office buildings, commercial buildings, educational facilities, parks and recreation spaces, computer rooms, hotels and housing projects.

Martin has a proven record of approved projects at DSA (Division of the State Architect) over the last 15 years and is the staff specialist in Fire Alarm Systems design. He has been in charge of numerous fire alarm system designs for educational facilities that range from Elementary Schools, Middle schools, High Schools, Community Colleges and Universities as well as Health and Commercial facilities.

He has a complete knowledge of the latest California Energy Compliance (Title 24) requirements.

**Role:** Martin will be responsible for design of Technology, Security, Fire Alarm and AV Systems on the project. Martin will be helping design each of the phases. Martin will be responsible for design of Technology, Security, Fire Alarm and AV Systems on the project. Martin will be helping design each of the phases.

### PROJECT TEAM EXPERIENCE

Sherwood has assembled a multi-disciplinary team of civil, structural, electrical, systems and geotechnical engineers and land surveyors to provide the scope of work outlined in the RFP and necessary for the completion of the project. Our team is composed of highly qualified and experienced professionals that have successfully completed similar water infrastructure projects that have included main pipeline replacements, pumping systems, water storage tanks, and SCADA projects in the Santa Cruz Mountains, Monterey Bay Area and more broadly throughout California. Sherwood has worked closely with our subconsultant team for many years, and we are excited to bring this team forward for this important project.

### PROJECT MANAGEMENT APPROACH

Sherwood has a very clear project management structure that is applied to all of our projects and has a proven track record of success. A Sherwood Project Manager will supervise and coordinate all technical aspects of the project. The Project Manager will be supported by a Project Engineer and Design Engineer(s) to complete the field engineering, design work and construction administrative services. The Principal-In-Charge will support the Project Manager with all aspects of the project including contract negotiation and administration, technical approach and review, and client relations.

As part of the project management approach Sherwood clearly defines the role of our staff and subconsultants and develops and implements clear, well organized and realistic work plans and schedules to complete the work and provide deliverables on time and within budget.

Sherwood's staff and our subconsultants have a good understanding of the environmental setting and technical issues that are required to complete this project. Our team has a clear understanding how we will approach data collection, research, and field engineering and technical investigation required to complete the design plans.

If problems or technical issues arise, the Sherwood Team will evaluate and develop options to resolve them and convey this information to the Client to determine the most appropriate course of action.

### WORKLOAD CAPACITY

Sherwood has assembled a design team that has the technical competency and experience to complete the work. All of the team members have worked together on similar projects that have defined timelines, budgets, and technical requirements. Our forecasted workload is steady allowing us to have a consistent flow of projects. Sherwood employs industry leading accounting software that tracks budgets and staff time allocations providing us with the visibility to forecast work and adjust accordingly based on project demands. Each project manager updates their projection of hours for each staff member on each project. This provides the office leadership an accurate understanding of upcoming workload with time in advance to plan for additional assistance. We continue to interview to look for the best available talent to add to our team. Our staff is dedicated to their projects and clients, consistently providing a high level of service.

### QUALIFICATIONS STATEMENT

Sherwood is a locally based team of experienced engineers that is familiar with the scope and setting of the project. The local Santa Cruz office has specialized in water engineering projects for over the past 25 years and has served both public and private clients throughout the Santa Cruz Mountains and taken projects from site assessment and planning through design, permitting, and construction. Sherwood is the engineer of record for several small water companies in the region and has successfully completed a wide range of projects including water treatment, storage, water distribution and SCADA systems. Our team includes the full-breadth of disciplines to provide the District with a comprehensive and complete set of engineering documents that will avoid change orders or conflicts during construction.

# 06. EXPERIENCE & PAST PERFORMANCE

**LOCATION**

Boulder Creek, California

**CLIENT**

Forest Springs Camp &  
Conference Center

**SIZE**

~ 1 mile distribution pipelines  
60,000 Gallon Tank x2

**SCHEDULE**

Eight (8) Months  
Completed 2021

**BUDGET**

\$50,000

**CONSTRUCTION COST**

\$4.5 Million

**REFERENCE**

Mike Judd

Treasurer / Consolidation

Committee Chair

Forest Springs Improvement  
& Maintenance Association

401 Acorn Drive,

Boulder Creek, CA 95006

408.755.5567

mjudd@

completeprobesolutions.com

## FOREST SPRINGS IMPROVEMENT & MAINTENANCE ASSOCIATION



Forest Springs owns and operates a small domestic public water system that services approximately 101 parcels in area of Boulder Creek in the Santa Cruz Mountains in California. The water system is very aged, and non-conforming to existing standards. The originally water system was constructed in the 1920's. The system was also severely damaged during the recent CZU Lightning Complex Fire. The project involved developing preliminary engineering plans to consolidate the water system with the San Lorenzo Valley Water District (SLVWD), a larger municipal water system.

Sherwood Design Engineers (Sherwood) prepared preliminary engineering documents to assist the community to develop a plan to consolidate the water system to the SLVWD system. Sherwood, prepared schematic plans and a hydraulic model of a new water distribution system to serve the community and to define pressure zones. Sherwood also prepared a preliminary engineering report, and an opinion of probable costs for the overall improvements that will include over a mile of water distribution pipelines, two new 60,000 gallon water storage tanks, a new 12-inch and 8-inch force main to convey water from the SLVWD to the new water storage tanks.

The preliminary plans included also included identifying control valves, flush off assemblies, fire hydrants, thrust blocking and other related appurtenances. The proposed improvements will conform to both the SLVWD and State water works standards.





## EAST BAY MUNICIPAL UTILITY DISTRICT

**LOCATION**

East Bay, California

**CLIENT**

East Bay Municipal Utilities  
District

**SIZE**

System serves 332 SqMi

**SCHEDULE**

Three (3) Years  
Est. Completion 2023

**BUDGET**

\$2 Million

**CONSTRUCTION COST**

\$14 Million

**REFERENCE**

Andrew Hawksworth  
Associate Civil Engineer  
Plant Engineering Services  
375 11th Street  
Oakland, CA 94607  
510.287.1388  
andrew.hawksworth@ebmud.  
com



*Image of Lafayette Reservoir; one of three sites of project focus.*

The East Bay Municipal Utility District's (The District) existing water system serves approximately 1.4 million customers and spans 332-sq.mi. in both Alameda and Contra Costa counties. These systems are supplied by several reservoirs located in the East Bay and Sierra Foothills - many of which also double as community recreational facilities. The main focus of this project are improvements to the wastewater collection system at the Camanche South Shore Recreation Area, constructed in the 1960's, and Lafayette Reservoir.

Sherwood is working in close collaboration with the District and design team to provide design and engineering services for the replacement of approximately 12,000 linear feet of small diameter gravity collection system and associated structures. Additionally, our team is providing design and engineering services to replace approximately 6,200 feet of small diameter force main and upgrading a total of seven sanitary sewer lift stations.

To ensure that each system meets the client's needs and sustainability goals while still maintaining the sites' connection to the community, our team is conducting evaluations of existing conditions, geotechnical investigations, and seismic upgrades as needed.

## TROUT GULCH MUTUAL WATER COMPANY

### LOCATION

Aptos, CA

### CLIENT

Trout Gulch Mutual Water Company

### SCHEDULE

Three (3) Years  
Completed 2018

### BUDGET

\$250,000

### CONSTRUCTION COST

\$3.5 Million

### REFERENCE

Patricia Newby  
General Manager  
Trout Gulch Mutual Water Co.  
90 Victoria Ln,  
Aptos, CA 95003  
831.662.3204  
tgw.staff@gmail.com



Photographs of the site. Below: The Norman Tank

Sherwood Design Engineers (formerly Fall Creek Engineering) was retained by Trout Gulch Mutual Water System to design and supervise the construction of 3.5 miles of new water mains, a new water storage tank, booster pump system, a new water supply well and provide construction administration and as-built drawings for a USDA funded project.

Water main replacement and tank installation and repair included:

- Installation of a new 30,000 gallon water tank to improve the domestic and fire flow protection
- Construction rehabilitation of the Norman water tank
- Replacement of inadequately sized or deteriorating water lines
- Installation of new plumbing fixtures, electrical equipment, and monitoring devices
- SCADA system improvements

Well replacement project included:

- Replacement of existing well on Victoria Lane with new (in the same location) that has a capacity of at least 50 gpm





# 07. SCOPE OF SERVICES

Sherwood Design Engineers (Sherwood) in association with our subconsultants, Pacific Crest Engineering, Inc. (PCEI), Towill, Inc. (Towill) and Streeter Group, Inc. (Streeter) have prepared a scope of work that reflects the outline presented in the Request for Proposal prepared by the Water District. The following sections present our proposed scope of work:

## **PART A - PRELIMINARY DESIGN PHASE**

### **PHASE 1 - KICK-OFF MEETING, BASIS OF DESIGN WORKSHOP, & PRELIMINARY PROJECT SCHEDULE**

#### **1.1. Kick-Off Meeting**

As the initial phase of work, Sherwood proposes to conduct a kick-off meeting with the District staff to review the overall scope of work, discuss a preliminary schedule and to establish communication procedures.

#### **1.2. Basis of Design Workshop and Outline**

Sherwood proposes to conduct a half-day Basis Of Design (BOD) workshop with District Staff to discuss and review preferred design choices, construction types, and materials to be used in the design of new pipelines, pump station(s) and water tanks. Subsequent to the workshop, Sherwood will prepare a BOD outline and include key notes that reflect decisions made during the workshop.

#### **1.3. Preliminary Schedule**

Sherwood proposes to prepare a preliminary schedule identifying delivery dates for all preliminary deliverables identified during the Part A – Preliminary Design Phase of the project.

#### **Deliverables:**

- Meeting minutes
- Basis of Design Outline and Notes
- Preliminary Schedule for Part A work

## **PHASE 2 – PRELIMINARY BASIS OF DESIGN DOCUMENT, PRELIMINARY DESIGN PLANS (30%), OUTLET SPECIFICATIONS & PRELIMINARY OPINION OF PROBABLE COSTS**

#### **2.1. Preliminary Basis of Design Document**

During this phase of work, Sherwood will prepare a preliminary Basis of Design (BOD) document that will include the key design criteria selected for sizing, material, and special site considerations, such as trenching in Caltrans and County rights-of-way or easements.

#### **2.2 Preliminary 30% Design Plans**

Sherwood will prepare preliminary design plans completed to the 30% level of completion. These plans will show the layout/routing of the new pipelines, the

location and layout of the new pump station and the layout of the new water storage tanks. The plans will include typical details for key appurtenances of the water system improvements.

During this initial design phase of work, Sherwood and Streeter will meet with Caltrans staff to review the bridge cross on Highway 236 and determine what design criteria and standards will be required. This information will be presented in notes in the preliminary plans and discussed in the Basis of Design document.

#### **2.3 Preliminary Outline Specification & Preliminary Opinion of Probable Costs**

Prepare preliminary design phase documents consisting of final design criteria, preliminary drawings, outline specifications and a preliminary opinion of probable costs. The preliminary cost estimate will be complete as a Class 3 level estimate pursuant to the cost estimate classification system established by the International Association of Cost Engineering (IAAEC).

#### **Deliverables:**

- Preliminary Basis of Design Document
- Preliminary 30% Engineering Design Plans
- Preliminary Outline Specifications
- Preliminary Opinion of Probable Costs

## **PHASE 3 - SURVEY AND UTILITY LOCATION & MAPPING, ANALYSIS OF RIGHT OF WAYS & EASEMENTS**

#### **3.1. Topographic Survey, Utility Location and Base Map**

Under the direction of Sherwood, Towill will conduct the necessary field surveys, topographic and utility locating and mapping to obtain the site information needed to support the preparation of accurate design plans. Utility mapping will be based upon information obtained by consultant from utility owners and field locators. Sherwood has included a fee allowance under direct expenses to retain a local utility locator firm, such as Bess Test Lab Inc. to conduct utility locating services, as required. Towill will prepare an accurate base map for the engineering plans. The survey work will provide topographic information within 0.10 feet accuracy and a one-foot contour interval.

#### **3.2. Analysis of Right-Of-Ways and Easements**

Towill will provide research and calculations based on available Santa Cruz County records to define the location of the proposed waterline alignment(s) to determine any necessary property acquisitions or easement requirements. This task does not include any Title reports

or consultations with a Title company if certain locations are undefinable based on the available public records as the exact location of the alignment is unknown at the time of this proposal and it is uncertain which properties will be impacted we are providing an allocation amount to be charged against on a time & materials basis per the attached rate schedule. We are allocating 24 hours of Survey technician time and 24 hours of professional land surveyor time to this task. If the time spent is less than the allocation, we will only invoice the amount needed to complete the task. Should the time exceed the allocation an adjustment in the allocation will be provided by the client by change order to cover the additional hours.

This task does not include the preparation of any record maps or legal descriptions, if needed, for waterline right of way property acquisitions or easements. A separated proposal can be provided at a later date if it is to be determined necessary.

#### **Deliverables:**

- Draft and Final Topographic Base Maps with Rights-of-way
- ACAD file of project right of way and easement encumbrances based on available Contra Costa County records.

### **PHASE 4 - GEOTECHNICAL INVESTIGATION & REPORT**

#### **4.1. Project Review, Site Reconnaissance & Administration**

Project coordination, contract administration, site reconnaissance and review of available maps, geologic and geotechnical information pertaining to the study area.

#### **4.2. Boring Locations, Utility Notifications, Permits & Traffic Control**

A draft site plan map depicting our planned boring locations will be prepared and submitted to the District for review prior to drilling our test borings.

Pacific Crest Engineering, Inc. will field mark the proposed test boring locations in white paint and notify subscribing utility companies via Underground Service Alert (USA) a minimum of 72-hours (as required by law) prior to performing exploratory borings at the site. We will also retain a private utility locator service to scan our proposed boring locations.

We will prepare and submit an encroachment permit application, along with an associated traffic control plan, to the County of Santa Cruz prior to our field investigation.

We will prepare a Traffic Control Plan in accordance with

Cal Trans MUTC 2003 for our field boring work within the Highway 236 ROW and public roadways. We will subcontract with an outside traffic control company to provide traffic control during our drilling activities.

We will also submit an application to procure and obtain an encroachment permit from Cal-Trans for our drilling activities within the Highway 236 ROW. Please note that the permit process through Cal-Trans could take 6 to 8 weeks.

#### **4.3. Subsurface Investigation**

Pacific Crest Engineering proposes to drill borings at accessible locations at each of the two proposed tank sites, the booster pump station, and selected locations along the proposed water main alignment.

The number of borings will vary depending on site conditions and accessibility issues, however for preliminary planning purposes we are proposing the following drilling program:

- Bracken Brae Tank Site (Burnside Bend); 2 to 4 borings
- Forest Springs Tank Site (Reservoir Road); 2 to 4 borings
- Booster Pump Station, (State Highway 236); 2 to 4 borings
- Bracken Brae Water Main Interconnection; 3 to 4 borings
- Forest Springs Water Main Interconnection; 3 to 4 borings

Due to the steep topography at the proposed tank sites, our boring locations will be limited to areas that can be accessed with either a truck or a track-mounted drilling rig. The borings will be drilled at depths ranging from 10 to 20 feet below ground surface, or until bedrock is encountered, whichever is less.

Disturbed and "undisturbed" soil and bedrock samples will be taken at selected depths within the test borings.

A log of soil, bedrock, and groundwater conditions will be maintained. Disturbed and/or undisturbed soil and bedrock samples will be taken at maximum 5-foot vertical intervals.

Test borings will be backfilled by placing the drill spoils back in the hole and tamping the spoils with the drill auger. Within pavement areas the spoils will be placed to within 2 feet of the surface and then dry cement will be placed over the spoils.

#### 4.4. Laboratory Testing

Laboratory testing on representative disturbed and “undisturbed” soil and bedrock samples. Laboratory testing will include, as applicable, moisture content, unit weight, Atterberg Limits, grain size distribution, shear strength, and Cal-Trans corrosion analysis (maximum of 5 corrosion tests).

#### 4.5. Geotechnical Analysis & Report

Pacific Crest Engineering Inc. will perform a geotechnical engineering analysis of the data gathered in Task Nos. 1 through 4 and based on this analysis will provide our findings, conclusions and recommendations for the design and construction of the proposed project. Topics covered in our report will include:

- A qualitative discussion of the seismic hazards associated with the site, including liquefaction, lateral spreading, dynamic compaction, landsliding, seismic shaking, and the proximity to mapped active and potentially active faults.
- Site and subgrade preparation recommendations, including compaction recommendations,
- recommendations as to the suitability of the onsite earth materials for use as engineered fill,
- recommendations for imported fill material, recommendations for stable cut and fill slope gradients, and backfill requirements for utility trenches.
- Foundation design and construction recommendations, including recommended foundation type(s), foundation embedment depths, and the allowable bearing pressures to use in foundation design.
- Retaining wall recommendations, including the active, at-rest and passive lateral earth pressures to use in retaining wall design, and anticipated lateral seismic forces.
- Recommendations for site drainage, including provisions to control both surface and subsurface drainage, as needed.

Pacific Crest Engineering Inc. will prepare and submit a geotechnical investigation report including a scaled drawing with boring locations, geotechnical data (boring logs, lab tests) and geotechnical design summary (conclusions and recommendations as summarized above).

The report will be prepared and signed by a California Registered Geotechnical Engineer practicing in the local area.

#### Deliverables:

- Draft Geotechnical Investigation Report

- Final Geotechnical Investigation Report

### PART B - FINAL DESIGN PHASE, PERMITTING, & BID ASSISTANCE

Sherwood proposes to complete the final engineering design documentation work in three progressive phases of work, design development (60%), permit compliance (95%) and final construction (100%) documents. At each phase of work Sherwood will provide engineering design plans, specifications, estimates (PS&Es) and an updated BOD summary to document what work has been advanced in the submittal and what work is remaining to be completed in the next set of documents.

During this phase of work, Sherwood will prepare a hydraulic model of the new water conveyance lines using WaterCAD to analyze pressure, velocity and flow conditions in the new pipelines.

During this phase of work, Sherwood will work closely with the District to determine where additional field investigation and potholing may be required to determine utility locations and routing at critical crossings and points of connections. Sherwood has included an allowance for three days of potholing to occur during this phase of work, which includes time for both excavation and backfilling and pavement repair, if required.

#### PHASE 5 - DESIGN DEVELOPMENT (60%) ENGINEERING DESIGN PLANS, DRAFT SPECIFICATIONS, REVISED BOD & OPINION OF PROBABLE COSTS.

##### 5.1. Design Development (60%) Engineering Design Plans.

Sherwood will prepare the design development (DD) (60%) engineering design plans that will show in plan view the routing of the new water mains, the layout in plan and profile of the new pump station and water storage tanks. The DD plans will include pipeline alignments with stationing, the location of key features including pressure regulating valves, flow control valves, fire hydrants, air-release valves, sample taps, and blow-off assemblies. Sherwood will prepare plans for the new booster pump station including plan and profiles for the new pump system, civil, mechanical, electrical, and structural engineering plans for the pump station system. Sherwood will prepare engineering plans for the new water tank sites that will include civil, mechanical, and structural engineering sheets. Sherwood will include engineering details in the DD plan set.

##### 5.2. Draft Specifications.

Sherwood will prepare draft specifications following the District’s preferred format and guidelines.

**5.3. Revised Opinion of Probable Cost Estimate.**

Sherwood will prepare an updated Opinion of Probable Cost Estimate for the improvements. The revised cost estimate will be completed as a Class 2 level estimate pursuant to the IAAEC guidelines.

**5.4. Updated BOD Document.**

Sherwood will update the BOD document to document any potential design modifications or changes in the plans and to outline the work to be completed in the next phase of work.

**Deliverables:**

- Design Development Engineering Design Plans
- Draft Specifications
- Revised Opinion of Probable Cost Estimate
- Updated Basis of Design Document

**PHASE 6 – PERMIT COMPLIANCE (95%) ENGINEERING DESIGN PLANS, FINAL SPECIFICATIONS, REVISED BOD, & OPINION OF PROBABLE COSTS****6.1. Permit Compliance (95%) Engineering Design Plans.**

Sherwood will advance the engineering design plans to the Permit Compliance 95% level of completion. The revised plans will address comments and revisions requested by the District. The plans will be sufficiently completed to be submitted to the County and Caltrans for final review and permitting. The 95% plans will be part of the construction bidding documentation.

**6.2. Revised Specifications.**

Sherwood will prepare revised specifications following the District's preferred format and guidelines.

**6.3. Revised Opinion of Probable Cost Estimate.**

Sherwood will prepare the final updated Opinion of Probable Cost Estimate for the improvements.

**6.4. Updated BOD Document.**

Sherwood will update the BOD document to document any potential design modifications or changes in the plans.

**Deliverables:**

- Permit Compliance (95%) Engineering Design Plans
- Final Specifications
- Final Opinion of Probable Cost Estimate
- Updated and Final Basis of Design Document

**PHASE 7 – FINAL 100% CONSTRUCTION DOCUMENTS (ENGINEERING PLANS AND SPECIFICATIONS)**

Sherwood will prepare the final construction documents (CDs) completed to the 100% level of completion. The final

plans will address any comments or revisions required by the District, County, Caltrans and will be used for the construction of the project.

**Deliverables:**

- Final 100% Engineering Design Plans (one mylar plan set, a PDF set and AutoCAD files)
- Final Specifications (PDF and WORD file formats)

**PHASE 8 – PERMITTING ASSISTANCE**

Sherwood will provide support to the District, as needed, to obtain permits from or approvals of Santa Cruz County Public Works, Caltrans, and any other governmental authorities having jurisdiction to review or approve the final design of the project. Sherwood will attend meetings and assist District in consultations with such authorities and revise the drawings and specifications in response to directives from such authorities, as identified in Phase 6 and 7, above.

**PHASE 9 – PREPARATION OF BIDDING DOCUMENTS**

Sherwood will prepare and furnish draft bidding documents for review and approval by the District, its legal counsel, and regulatory and funding agencies, as required. Sherwood will revised and finalize the bidding documents in accordance with comments and instructions from District staff and other reviewing agencies.

**Deliverables:**

- Draft Bidding Documents
- Final Bidding Documents

**PART C - BIDDING PHASE  
PHASE 10 - PROJECT BIDDING**

During the bidding process, Sherwood will assist with the following:

1. Sherwood will assist the District in advertising for and obtaining bids for the work and, where applicable, maintain a record of prospective bidders to whom bidding documents have been issued.
2. Sherwood will attend pre-bid conferences.
3. Sherwood will prepare addenda as necessary to clarify, correct or change the bidding documents.
4. Sherwood will provide information or assistance needed by District during the negotiations with prospective contractors.
5. Sherwood will consult with District as to the acceptability of subcontractors, suppliers, and other individuals and entities proposed by prospective contractors for those portions of the work as to which such acceptability is required by the bidding documents.



6. Sherwood will determine the acceptability of substitute materials and equipment proposed during the bidding or negotiating phase when substitution prior to the award of contracts is allowed by the bidding documents.
7. Sherwood will assist the District in evaluating bids and in assembling and awarding contracts for the work. Sherwood will prepare a bid review matrix that will compare the different contract proposals based on costs, scope of services provided, exclusions and other items.

**Deliverables:**

- Record of Prospective Bidders and List of Document Recipients
- Design Addenda
- Bid Review Matrix

**PART D – CONSTRUCTION PHASE****PHASE 11 – CONSTRUCTION ADMINISTRATIVE SERVICES**

During the construction phase of the project, Sherwood will provide ongoing construction administration services that will include the following:

1. Sherwood will issue necessary clarifications and interpretations of the contract documents as appropriate to the orderly completion of contractor's work. Such clarifications and interpretations will be consistent with the intent of and reasonably inferable from the contract documents.
2. Sherwood will review and approve or take other appropriate action with respect to submittals, shop drawings and samples and other data which contractor is required to submit, but only for conformance with the information given in the contract documents and compatibility with the design concept of the completed project as a functioning whole as indicated by the contract documents. Such reviews and approvals or other action will not extend to means, methods, techniques, sequences, or procedures of construction or to safety precautions and programs incident thereto. Sherwood will meet any contractor's submittal schedule that engineer has accepted.
3. Sherwood will evaluate and determine the acceptability of substitute or "or- equal" materials and equipment proposed by contractor.
4. Sherwood will respond to contractor's requests for information (RFIs) and prepare supplemental information (SIs) as required.
5. Sherwood will attend construction meetings and conduct periodic field inspections, as

needed. Sherwood will prepare trip reports that will summarize the purpose of the inspection and to present our findings and recommendations for any proposed modifications.

**Deliverables:**

- Copies of emails or letters clarifying basis of design or extent of work.
- Approved submittals
- Copies of RFI responses and SIs
- Trip Reports

All documents will be provided in PDF format and supplied to the District electronically.

**PART E – PROJECT MANAGEMENT & INFORMATION COLLECTION**

Sherwood will provide ongoing project management, meeting, and information collection related activities through the course of the project that will include the following:

**PHASE 12 – PREPARE AND UPDATE PROJECT SCHEDULES**

Sherwood understands that the District intends to publish an RFP for construction of the work not later than August 1, 2022. Sherwood will prepare a project schedule that accommodates this schedule. Sherwood will maintain and coordinate a project schedule that will establish clear milestones and deadlines for all deliverables during the design portion of the project. Sherwood will coordinate the schedule with our subconsultants to assure that schedule milestones and deadlines are met.

**PHASE 13 – ATTEND MONTHLY MEETINGS WITH DISTRICT STAFF**

Sherwood will attend at least one meeting with District Staff each month during the design portion of the project and additional meetings to review project status at key milestones. Sherwood will attend meetings at the District's main office, or at the various job sites if that becomes advisable.

**PHASE 14 – PREPARE QA/QC PLAN**

Sherwood will provide a QA/QC plan to the District that describes our internal quality control and quality assurance procedures for the project.

**PHASE 15 – PREPARE MONTHLY INVOICES & MONTHLY PROGRESS REPORTS**

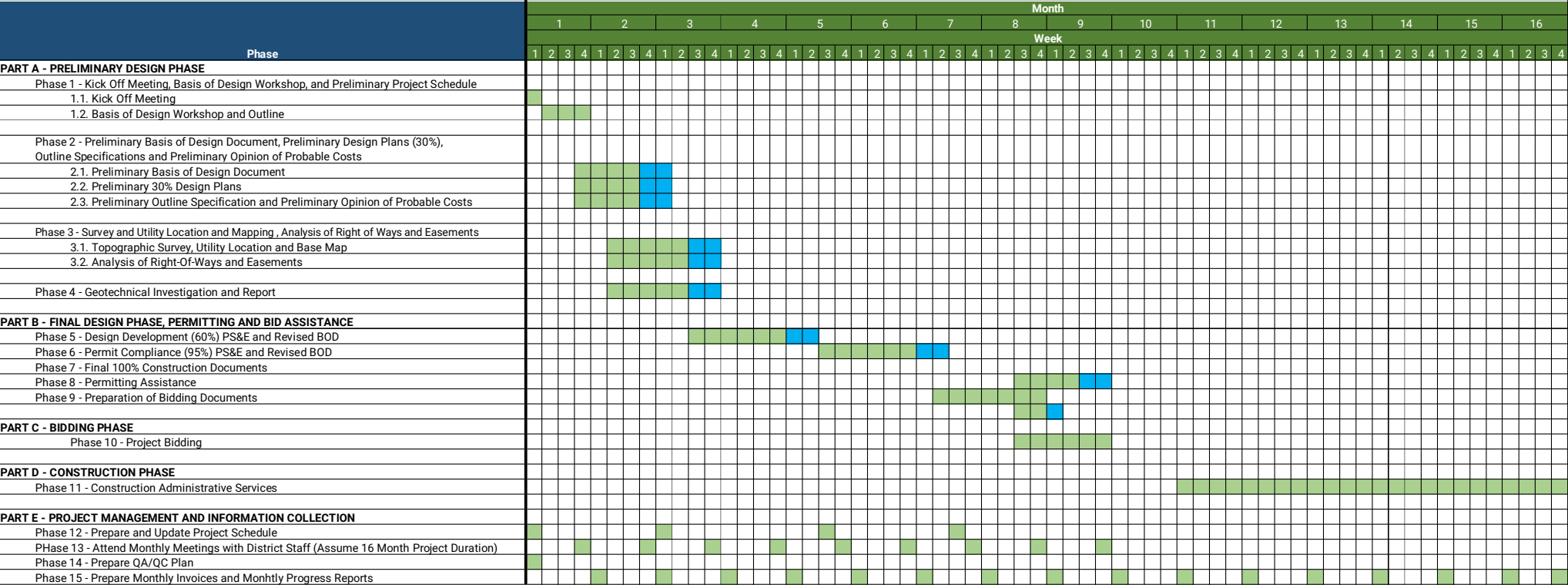
Sherwood will prepare monthly invoices and a monthly project status report for the District.



SCOPE OF SERVICES

PROPOSED SCHEDULE | EXCEPTIONS

SCHEDULE: SAN LORENZO VALLEY WATER DISTRICT: CONSOLIDATION OF THE BRACKEN BRAE & FOREST SPRINGS MUTUAL WATER COMPANIES



Sherwood Design Engineers San Lorenzo Valley Water District Review

EXCEPTIONS

Sherwood Design Engineers has reviewed the documents associated with the RFP for Professional Design Services to the San Lorenzo Valley Water District: Consolidation of the Bracken Brae and Forest Springs Mutual Water Companies project and agrees to the terms and conditions outlined by the Client in relation to civil engineering services for this project.



# 08. INSURANCE

Below is Sherwood Design Engineers insurance information. Subconsultant certificates of insurance available upon request.

## SHERWOOD DESIGN ENGINEERS



### CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)  
12/3/2021

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

<b>PRODUCER</b> AssuredPartners of Washington, LLC A/E Insurance Services PMB #369, 19689 7th Ave NE, Ste 183 Poulsbo WA 98370		<b>CONTACT</b> NAME: Allison Barga CA Lic #0K93926 PHONE (A/C, No. Ext): 360-626-2007 FAX (A/C, No.): 360-626-2007 E-MAIL ADDRESS: allison.barga@assuredpartners.com	
<b>INSURED</b> Sherwood Design Engineers Ltd 2548 Mission Street San Francisco CA 94110		<b>INSURER(S) AFFORDING COVERAGE</b> INSURER A: Arch Insurance Company NAIC # 11150 INSURER B: RLI INSURANCE COMPANY 13056 INSURER C: INSURER D: INSURER E: INSURER F:	

COVERAGES CERTIFICATE NUMBER: 1354810496 REVISION NUMBER:

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL SUBR INSD WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
B	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input checked="" type="checkbox"/> PROJECT <input type="checkbox"/> LOC <input type="checkbox"/> OTHER:		PSB0008586	12/1/2021	12/1/2022	EACH OCCURRENCE \$ 1,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 1,000,000 MED EXP (Any one person) \$ 10,000 PERSONAL & ADV INJURY \$ 1,000,000 GENERAL AGGREGATE \$ 2,000,000 PRODUCTS - COM/POP AGG \$
B	<input type="checkbox"/> AUTOMOBILE LIABILITY <input type="checkbox"/> ANY AUTO <input type="checkbox"/> OWNED AUTOS ONLY <input checked="" type="checkbox"/> SCHEDULED AUTOS <input checked="" type="checkbox"/> HIRED AUTOS ONLY <input checked="" type="checkbox"/> NON-OWNED AUTOS ONLY		PSA0002814	12/1/2021	12/1/2022	COMBINED SINGLE LIMIT (Ea accident) \$ 1,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$ \$
B	<input checked="" type="checkbox"/> UMBRELLA LIAB <input checked="" type="checkbox"/> EXCESS LIAB <input type="checkbox"/> OCCUR <input type="checkbox"/> DED <input type="checkbox"/> RETENTION \$		PSE0004255	12/1/2021	12/1/2022	EACH OCCURRENCE \$ 5,000,000 AGGREGATE \$ 5,000,000 \$
	<b>WORKERS COMPENSATION AND EMPLOYERS' LIABILITY</b> ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	Y/N <input type="checkbox"/>	N/A			PER STATUTE <input type="checkbox"/> OTHER <input type="checkbox"/> E.L. EACH ACCIDENT \$ E.L. DISEASE - EA EMPLOYEE \$ E.L. DISEASE - POLICY LIMIT \$
A	Professional Liab: Claims Made		PAAEP0034904	12/1/2021	12/1/2022	\$5,000,000 Per Claim \$5,000,000 Aggregate

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required) for evidence only

#### CERTIFICATE HOLDER

Sherwood Design Engineers  
 2548 Mission Street  
 San Francisco CA 94110

#### CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

*Anthony Z. [Signature]*

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ACORD 25 (2016/03)

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### CERTIFICATE OF LIABILITY INSURANCE

Acc#: 2763871

DATE (MM/DD/YYYY)  
10/01/2021

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

<b>PRODUCER</b> Lockton Companies, LLC 3657 Briarpark Dr., Suite 700 Houston, TX 77042		<b>CONTACT</b> NAME: PHONE (A/C, No. Ext): 888-828-8365 FAX (A/C, No.): E-MAIL ADDRESS:	
<b>INSURED</b> SHERWOOD DESIGN ENGINEERS, LTD. 2548 MISSION ST SAN FRANCISCO, CA 94110-2512		<b>INSURER(S) AFFORDING COVERAGE</b> INSURER A: Indemnity Insurance Co. of North America NAIC # 43575 INSURER B: INSURER C: INSURER D: INSURER E: INSURER F:	

COVERAGES CERTIFICATE NUMBER: REVISION NUMBER:

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL SUBR INSD WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
	<input type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input type="checkbox"/> OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input type="checkbox"/> PROJECT <input type="checkbox"/> LOC <input type="checkbox"/> OTHER:					EACH OCCURRENCE \$ DAMAGE TO RENTED PREMISES (Ea occurrence) \$ MED EXP (Any one person) \$ PERSONAL & ADV INJURY \$ GENERAL AGGREGATE \$ PRODUCTS - COM/POP AGG \$
	<input type="checkbox"/> AUTOMOBILE LIABILITY <input type="checkbox"/> ANY AUTO <input type="checkbox"/> ALL OWNED AUTOS <input type="checkbox"/> SCHEDULED AUTOS <input type="checkbox"/> HIRED AUTOS <input type="checkbox"/> NON-OWNED AUTOS					COMBINED SINGLE LIMIT (Ea accident) \$ BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$ \$
	<input type="checkbox"/> UMBRELLA LIAB <input type="checkbox"/> EXCESS LIAB <input type="checkbox"/> OCCUR <input type="checkbox"/> DED <input type="checkbox"/> RETENTION \$					EACH OCCURRENCE \$ AGGREGATE \$ \$
A	<b>WORKERS COMPENSATION AND EMPLOYERS' LIABILITY</b> ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	Y/N <input type="checkbox"/>	N/A	C70124282	10/01/2021	PER STATUTE <input type="checkbox"/> OTHER <input type="checkbox"/> E.L. EACH ACCIDENT \$ 1,000,000 E.L. DISEASE - EA EMPLOYEE \$ 1,000,000 E.L. DISEASE - POLICY LIMIT \$ 1,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

#### CERTIFICATE HOLDER

SHERWOOD DESIGN ENGINEERS, LTD.  
 2548 MISSION ST  
 SAN FRANCISCO, CA 94110

#### CANCELLATION

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AUTHORIZED REPRESENTATIVE

*[Signature]*

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### **LOS ANGELES**

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### **SONOMA**

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Petaluma, CA 94952  
707.780.1742



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DESIGN ENGINEERS

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



**PREPARED FOR:**



**PREPARED BY:**



## **FEE PROPOSAL:**

**PROFESSIONAL DESIGN SERVICES TO THE  
SAN LORENZO VALLEY WATER DISTRICT**

## **CONSOLIDATION OF THE BRACKEN BRAE & FOREST SPRINGS MUTUAL WATER COMPANIES**

**CIVIL ENGINEERING SERVICES**

### **CONTACT:**

Robyn Cooper, MS, PE, QSP/QSD  
Principal-in-Charge  
Sherwood Design Engineers  
(831) 426-9054 x713  
[rcooper@sherwoodengineers.com](mailto:rcooper@sherwoodengineers.com)

# FEE PROPOSAL

## SUMMARY FEE TABLE

### SAN LORENZO VALLEY WATER DISTRICT: CONSOLIDATION OF THE BRACKEN BRAE & FOREST SPRINGS MUTUAL WATER COMPANIES

#### SUMMARY FEE TABLE

Phase	Total Costs
<b>PART A - PRELIMINARY DESIGN PHASE</b>	
Phase 1 - Kick Off Meeting, Basis of Design Workshop, and Preliminary Project Schedule	
1.1. Kick Off Meeting	\$930
1.2. Basis of Design Workshop and Outline	\$6,238
Phase 2 - Preliminary Basis of Design Document, Preliminary Design Plans (30%), Outline Specifications and Preliminary Opinion of Probable Costs	
2.1. Preliminary Basis of Design Document	\$10,440
2.2. Preliminary 30% Design Plans	\$30,028
2.3. Preliminary Outline Specification and Preliminary Opinion of Probable Costs	\$8,558
Phase 3 - Survey and Utility Location and Mapping , Analysis of Right of Ways and Easements	
3.1. Topographic Survey, Utility Location and Base Map	\$41,450
3.2. Analysis of Right-Of-Ways and Easements	\$28,950
Phase 4 - Geotechnical Investigation and Report	\$41,250
<b>PART B - FINAL DESIGN PHASE, PERMITTING AND BID ASSISTANCE</b>	
Phase 5 - Design Development (60%) PS&E and Revised BOD	\$70,958
Phase 6 - Permit Compliance (95%) PS&E and Revised BOD	\$54,928
Phase 7 - Final 100% Construction Documents	\$21,918
Phase 8 - Permitting Assistance	\$10,387
Phase 9 - Preparation of Bidding Documents	\$6,757
<b>PART C - BIDDING PHASE</b>	
Phase 10 - Project Bidding	\$8,596
<b>PART D - CONSTRUCTION PHASE</b>	
Phase 11 - Construction Administrative Services	\$42,370
<b>PART E - PROJECT MANAGEMENT AND INFORMATION COLLECTION</b>	
Phase 12 - Prepare and Update Project Schedule	\$5,060
Phase 13 - Attend Monthly Meetings with District Staff (Assume 16 Month Project Duration)	\$8,580
Phase 14 - Prepare QA/QC Plan	\$5,210
Phase 15 - Prepare Monthly Invoices and Monthly Progress Reports	\$11,920
<b>Total Hours + Fees</b>	<b>\$414,528</b>
<b>Total for Professional Fees</b>	<b>\$414,528</b>
<b>Direct Expenses</b>	
Materials and Reproductions	\$1,500
Drillers	\$24,750
Traffic Control Crew	\$6,000
Laboratory Testing	\$6,000
Permit Fees	\$1,700
Mileage	\$1,000
<b>Total for Direct Expenses</b>	<b>\$40,950</b>
<b>Total Estimated Fees and Expenses</b>	<b>\$455,478</b>

SAN LORENZO VALLEY WATER DISTRICT: CONSOLIDATION OF THE BRACKEN BRAE & FOREST SPRINGS MUTUAL WATER COMPANIES

DETAILED FEE TABLE

Phase	Principal Engineer		Project Manager		Senior Engineer		Design Engineer II		Design Engineer I		Systems Engineer		Administration		Geotechnical Engineering	Land Surveying	Structural Engineering	Electrical Engineering	Total Costs
	250		215		215		165		160		215		120		LS	LS	LS	LS	
	Hrs	Fees	Hrs	Fees	Hrs	Fees	Hrs	Fees	Hrs	Fees	Hrs	Fees	Hrs	Fees					
PART A - PRELIMINARY DESIGN PHASE																			
Phase 1 - Kick Off Meeting, Basis of Design Workshop, and Preliminary Project Schedule																			
1.1. Kick Off Meeting																			
1.2. Basis of Design Workshop and Outline																			
Phase 2 - Preliminary Basis of Design Document, Preliminary Design Plans (30%), Outline Specifications and Preliminary Opinion of Probable Costs																			
2.1. Preliminary Basis of Design Document																			
2.2. Preliminary 30% Design Plans																			
2.3. Preliminary Outline Specification and Preliminary Opinion of Probable Costs																			
Phase 3 - Survey and Utility Location and Mapping , Analysis of Right of Ways and Easements																			
3.1. Topographic Survey, Utility Location and Base Map																			
3.2. Analysis of Right-Of-Ways and Easements																			
Phase 4 - Geotechnical Investigation and Report																			
PART B - FINAL DESIGN PHASE, PERMITTING AND BID ASSISTANCE																			
Phase 5 - Design Development (60%) PS&E and Revised BOD																			
Phase 6 - Permit Compliance (95%) PS&E and Revised BOD																			
Phase 7 - Final 100% Construction Documents																			
Phase 8 - Permitting Assistance																			
Phase 9 - Preparation of Bidding Documents																			
PART C - BIDDING PHASE																			
Phase 10 - Project Bidding																			
PART D - CONSTRUCTION PHASE																			
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PART E - PROJECT MANAGEMENT AND INFORMATION COLLECTION																			
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Phase 15 - Prepare Monthly Invoices and Monhtly Progress Reports																			
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Traffic Control Crew																			
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Permit Fees																			
Mileage																			
Total for Direct Expenses																			



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